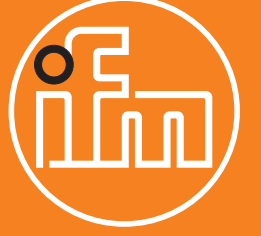


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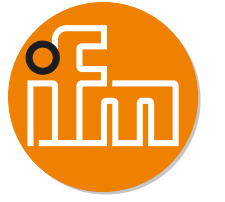
PHONE: +90 224 443 56 06 FAX: +90 224 443 56 07

bemak@bemakotomasyon.com

www.bemakotomasyon.com - www.bemakelektromarket.com

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BEMAK OTOMASYON TIC.LTD.STI.

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PHONE: +90 224 443 56 06 FAX: +90 224 443 56 07

bemak@bemakotomasyon.com

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AS-Interface

AS-Interface (actuator sensor interface) is a worldwide manufacturer-independent standard for the connection of actuators and sensors of the first field level. Data and power supply are jointly transmitted via a two-wire cable. Wiring complexity, documentation and set-up times are reduced.

ATEX

ATEX (Atmosphère explosible) is a brief description of the uniform EU directives 94/9/EC (for manufactures of units for hazardous areas) and 1999/92/EC (for operators of plants for hazardous areas) governing the safety requirements for explosion-hazardous areas. Since 30 June 2003, units for hazardous areas have to be approved to 94/9/EU regulations. For further information about international directives see the "Approvals" chapter.

e1 type approval

The e1 type approval by the German Federal Motor Transport Authority certifies that the units comply with the automotive standards.

IO-Link

IO-Link is a field-bus independent and open point-to-point communication interface. It is a low-cost possibility to transmit parameter, diagnosis and process data from a sensor or an actuator via an I/O module.

Safety

The EC Machinery Directive stipulates machinery should not present a risk. If safety is dependent on control systems, these must be designed so as to minimise malfunction. The IEC 62061 und ISO 13849-1 standards apply. Classification is made either in the Safety Integrity Level (SIL 1-3 in IEC 62061) or in the Performance Level (PL a-e in ISO 13849-1).

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Short-range and long-range object detection



Different measurement techniques

ifm offers a wide range of position sensors. Inductive, capacitive and magnetic sensors detect targets or objects in the range of a few millimetres up to several centimetres. For greater distances there are photoelectric sensors with ranges up to tens of metres.

Moreover, special types such as optical fork and angle sensors, fibre optics, colour and contrast sensors or cylinder sensors are used for position detection in special applications. ifm also offers suitable solutions for the detection of valve positions.

All sensors are fully electronic, i.e. they work without mechanical components. Advantage: they are wear-free and provide high switching frequencies.

Microprocessor technology makes it possible

The applied microprocessor technology allows fast and easy switch point setting via pushbuttons and potentiometer. Clearly visible LEDs indicate the switching status. In addition to the 3-wire output stage, many position sensors can also be supplied in a 2-wire version. ifm also offers sensors with a built-in AS-Interface (AS-i).

Special applications

Sensors are used in many different areas. These include machine and plant construction as well as applications in factory automation and process technology. Special solutions are, for example, provided for food applications or mobile machines.

Besides constructional measures such as high-quality housing materials and coatings, the sensors also comply with applicable approvals (e.g. ATEX or e1).

Regular and thorough testing in production to the highest standards combined with equally high standards at the development stage ensure a consistently high quality.

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Position sensors

Inductive sensors for all application areas



Inductive sensors

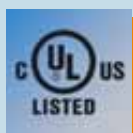
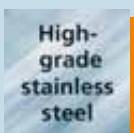
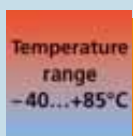
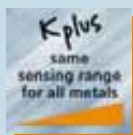


Sensors for all application areas

Wide choice of housing types and operating voltages

High-quality housing materials

Vast selection of assembly and connection technology



Inductive sensors

Inductive sensors offer ideal characteristics compared to mechanical switches: non-contact operation free from any wear and tear, high switching frequencies and accuracy. In addition, they are insensitive to vibration, dust and moisture. Inductive sensors detect all metals without contact.

Application sensors

Temperature shocks, mechanical influences or aggressive cleaning agents are just a few of the possible environmental influences to which sensors are subjected. ifm therefore offers inductive sensors which have been developed for special applications. The use of selected housing materials such as stainless steel, LCP, PEEK, PBT or Duroplast and an innovative, consistent sealing concept from the sensor to the connector ensure ideal protection against penetrating media.

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Position sensors

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Sensors with IO-Link

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.

M12 connector · Output function  /  · 3-wire · DC PNP/NPN · Wiring diagram no. 36 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M12 / L = 60	0.375...3.75 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	600	100	1	IF6123
	M12 / L = 60	0.7...7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	600	100	2	IF6124
	M18 / L = 60	0.75...7.5 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	3	IG6615
	M18 / L = 60	1.3...13 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	4	IG6616
	M30 / L = 65	1.3...13 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	5	II5973
	M30 / L = 65	2.3...23 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	6	II5974

M12 connector · Output function  /  · 3-wire · DC PNP/NPN · Wiring diagram no. 37 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	40 x 40 x 54	2.1...21 f	PA (polyamide)	10...30	IP 67	100	100	7	IM5172
	40 x 40 x 54	2.6...26 nf	PA (polyamide)	10...30	IP 67	100	100	7	IM5173

f = flush / nf = non flush / qf = quasi-flush

Sensors for industrial applications with increased sensing range

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.

M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23

	M12 / L = 45	4 f	Brass	10...30	IP 67	700	100	8	IFS200
	M12 / L = 50	7 nf	Brass	10...30	IP 67	700	100	9	IFS201

M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 38 · Connector groups 8, 10, 19, 21, 23

	M18 / L = 46	8 f	Brass	10...30	IP 67	300	100	10	IGS200

You can find wiring diagrams and scale drawings from page 134



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 38 · Connector groups 8, 10, 19, 21, 23

	M18 / L = 51	12 nf	Brass	10...30	IP 67	250	100	11	IGS201

M12 connector · Output function  · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 8, 10, 11, 18, 19, 21, 23

	M12 / L = 70	4 f	Brass	10...30	IP 67	500	100	12	IFS208
	M12 / L = 70	7 nf	Brass	10...30	IP 67	500	100	13	IFS209
	M18 / L = 70	8 f	Brass	10...30	IP 67	400	100	14	IGS208
	M18 / L = 70	12 nf	Brass	10...30	IP 67	300	100	15	IGS209
	M30 / L = 70	15 f	Brass	10...36	IP 67	100	100	16	IIS206
	M30 / L = 70	22 nf	Brass	10...36	IP 67	100	100	17	IIS207

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23

	M12 / L = 45	4 f	Brass	10...30	IP 67	700	100	18	IFS204
	M12 / L = 50	7 nf	Brass	10...30	IP 67	700	100	19	IFS205

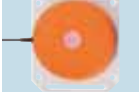
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M12 / L = 70	4 f	Brass	10...30	IP 67	700	100	20	IFS212
	M12 / L = 70	7 nf	Brass	10...30	IP 67	700	100	21	IFS213
	M18 / L = 45	8 f	Brass	10...30	IP 67	400	100	22	IGS204
	M18 / L = 50	12 nf	Brass	10...30	IP 67	300	100	23	IGS205

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M18 / L = 70	8 f	Brass	10...36	IP 67	400	100	14	IGS212
	M18 / L = 70	12 nf	Brass	10...36	IP 67	300	100	15	IGS213
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 202									
	M30 / L = 50	15 f	Brass	10...30	IP 67	100	100	24	IIS204
	M30 / L = 50	22 nf	Brass	10...30	IP 67	100	100	25	IIS205
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M30 / L = 70	15 f	High-grade st. steel	10...36	IP 67	100	100	16	IIS210
	M30 / L = 70	22 nf	High-grade st. steel	10...36	IP 67	100	100	17	IIS211
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...30	IP 67	700	100	18	IFS206
	M12 / L = 50	7 nf	Brass	10...30	IP 67	700	100	19	IFS207
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3									
	M18 / L = 45	8 f	Brass	10...30	IP 67	400	100	22	IGS206
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M18 / L = 50	12 nf	Brass	10...30	IP 67	300	100	23	IGS207
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 202									
	M30 / L = 50	15 f	Brass	10...30	IP 67	100	100	24	IIS208
	M30 / L = 50	22 nf	Brass	10...30	IP 67	100	100	25	IIS209



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  /  · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 70	8 f	Brass	10...36	IP 68	400	100	26	IG5953
	M18 / L = 72	12 nf	Brass	10...36	IP 68	250	100	27	IG5954
M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	M12 / L = 46	4 f	Brass	10...36	IP 67	700	100	28	IFS210
	M12 / L = 51	7 nf	Brass	10...36	IP 67	700	100	29	IFS211
	M18 / L = 46	8 f	Brass	10...36	IP 67	400	100	30	IGS210
Cable 2 m · Output function  · 2-wire · AC · Wiring diagram no. 4									
	Ø 100	70 nf	PBT	90...250	IP 65	5	200	31	I12001*
	Ø 100	70 nf	PBT	90...250	IP 65	5	200	32	I12003*
	Ø 164	120 nf	PBT	90...250	IP 65	3	200	33	I22001*
	Ø 164	120 nf	PBT	90...250	IP 65	3	200	34	I22003*
Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 5									
	Ø 100	70 nf	PBT	10...36	IP 65	5	250	31	I17001
	Ø 100	70 nf	PBT	10...36	IP 65	5	250	32	I17003
	Ø 164	120 nf	PBT	10...36	IP 65	3	250	33	I27001

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

7/8" connector · Output function  · 2-wire · AC · Wiring diagram no. 6 · Connector groups 35, 36



Ø 164

120 nf

PBT

90...250

IP 65

3

200

35

I22006*

f = flush / nf = non flush / qf = quasi-flush

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Sensors for industrial applications, threaded housings

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable 0.3 m · with M12 connector · Output function  · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 8, 10, 11, 18, 19, 21, 23



M8 / L = 37

3 f

Brass

10...30

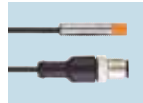
IP 67

1000

100

36

IE5351



M8 / L = 37

5 nf

Brass

10...30

IP 67

700

100

37

IE5352

Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 1, 2, 3



M8 / L = 37

3 f

Brass

10...30

IP 67

1000

100

38

IE5344



M8 / L = 37

5 nf

Brass

10...30

IP 67

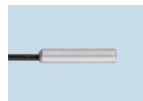
700

100

39

IE5346

Cable 2 m · Output function  · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 41



M8 / L = 37

3 f

Brass

10...30

IP 67

1000

100

40

IE5343



M8 / L = 37

5 nf

Brass

10...30

IP 67

700

100

39

IE5345

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 5



M8 / L = 35

1 f

Brass

10...36

IP 67

750

200

41

IE5072



M8 / L = 35

2 nf

PBT

10...36

IP 67

800

200

41

IE5099



M8 / L = 50

1 f

Brass

10...36

IP 67

750

200

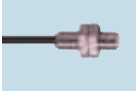
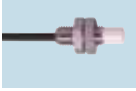
42

IE5121

You can find wiring diagrams and scale drawings from page 134



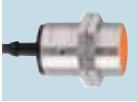
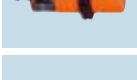
Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 5									
	M8 / L = 50	1 f	PBT	10...36	IP 67	1000	200	42	IE5129
	M8 / L = 20	1.5 f	stainless steel	10...30	IP 67	4000	200	43	IE5348
	M8 / L = 27	2 f	High-grade st. steel	10...30	IP 67	1500	100	44	IE5368
	M8 / L = 27	4 nf	High-grade st. steel	10...30	IP 67	500	100	45	IE5369
	M12 / L = 35	2 f	Brass	10...36	IP 67	1500	150	46	IF5188
	M12 / L = 35	4 nf	Brass	10...36	IP 67	1500	150	47	IF5249
	M12 / L = 71	2 f	Brass	10...55	IP 67	800	250	48	IF5297
	M12 / L = 71	2 f	PBT	10...55	IP 67	800	250	48	IF5313
	M12 / L = 71	4 nf	Brass	10...36	IP 67	1500	250	49	IF5329
	M12 / L = 71	4 nf	PBT	10...36	IP 67	400	250	48	IF5345
	M18 / L = 38	5 f	Brass	18...36	IP 67	500	125	50	IG5221
	M18 / L = 38	8 nf	Brass	18...36	IP 67	200	125	51	IG5285
	M18 / L = 80	5 f	Brass	10...36	IP 67	500	250	52	IG5397
	M18 / L = 80	8 nf	Brass	10...36	IP 67	300	250	53	IG5398
	M18 / L = 80	5 f	PBT	10...36	IP 67	500	250	52	IG5399
	M18 / L = 80	8 nf	PBT	10...36	IP 67	300	250	52	IG5401

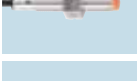
Product selectors and further information can be found at: www.ifm.com

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 5

	M30 / L = 45	10 f	Brass	18...36	IP 67	300	125	54	II5166
	M30 / L = 81	10 f	Brass	10...36	IP 67	250	250	55	II5256
	M30 / L = 81	15 nf	Brass	10...36	IP 67	250	250	56	II5284
	M30 / L = 81	15 nf	PBT	10...36	IP 67	250	250	55	II5300
	M30 / L = 45	15 nf	Brass	18...36	IP 67	250	125	57	II5346
	M30 / L = 81	10 f	PBT	10...36	IP 67	250	250	55	II5369
	M5 / L = 30	0.8 f	stainless steel	10...36	IP 65	2000	100	58	IY5029
	M5 / L = 27	1.5 nf	stainless steel	10...30	IP 67	1800	100	59	IY5049
	M5 / L = 23	0.8 f	stainless steel	10...30	IP 65	2000	100	60	IY5051
	M5 / L = 23	1.2 f	stainless steel	10...30	IP 65	2000	100	60	IY5052

Cable 2 m · Output function  /  · 2-wire · DC PNP/NPN · Wiring diagram no. 42

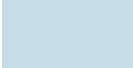
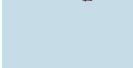
	M8 / L = 50	2 nf	PBT (Pocan)	5...36	IP 67	2000	200	42	IE5202
	M8 / L = 50	1 f	Brass	5...36	IP 67	2000	200	42	IE5222
	M8 / L = 50	2 nf	Brass	5...36	IP 67	2700	200	61	IE5238
	M12 / L = 71	4 nf	PBT	10...55	IP 67	1500	400	48	IF5597
	M12 / L = 71	2 f	PBT	10...55	IP 67	1100	400	48	IF5644



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable 2 m · Output function / · 2-wire · DC PNP/NPN · Wiring diagram no. 42

	M12 / L = 71	2 f	Brass	10...55	IP 67	1100	400	48	IF5645
	M12 / L = 71	4 nf	Brass	10...55	IP 67	1500	400	49	IF5646
	M18 / L = 80	8 nf	PBT	10...55	IP 67	300	400	52	IG5533
	M18 / L = 80	5 f	PBT	10...55	IP 67	700	400	52	IG5593
	M18 / L = 80	5 f	Brass	10...55	IP 67	700	400	52	IG5594
	M18 / L = 80	8 nf	Brass	10...55	IP 67	300	400	53	IG5596
	M30 / L = 81	15 nf	PBT	10...55	IP 67	200	400	55	II5436
	M30 / L = 81	10 f	PBT	10...55	IP 67	450	400	55	II5488
	M30 / L = 81	10 f	Brass	10...55	IP 67	450	400	55	II5489
	M30 / L = 81	15 nf	Brass	10...55	IP 67	200	400	56	II5491
	M30 / L = 45	10 f	Brass	10...55	IP 67	450	400	54	II5493

M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M12 / L = 45	2 f	Brass	10...30	IP 67	700	100	18	IF5214
	M12 / L = 50	4 nf	Brass	10...30	IP 67	700	100	19	IF5215

M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23

	M12 / L = 70	2 f	Brass	10...36	IP 67	700	100	12	IF5216
	M12 / L = 70	4 nf	Brass	10...36	IP 67	700	100	13	IF5217

Product selectors and further information can be found at: www.ifm.com

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M18 / L = 45	5 f	Brass	10...30	IP 67	400	100	22	IGS214

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23

	M18 / L = 70	5 f	Brass	10...36	IP 67	400	100	14	IGS216
	M18 / L = 70	8 nf	Brass	10...36	IP 67	300	100	15	IGS217
	M8 / L = 53	1 f	Brass	10...36	IP 67	750	200	62	IE5090
	M8 / L = 62	4 nf	Brass	10...36	IP 67	300	200	63	IE5288
	M8 / L = 62	2 f	Brass	10...36	IP 67	1000	250	64	IE5312
	M8 / L = 50	2 f	High-grade st. steel	10...36	IP 68 / IP 69K	1000	100	65	IE5379

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23

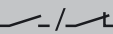
	M8 / L = 62	2 f	Brass	10...36	IP 67	800	250	66	IE5327

M12 connector · Output function  /  · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 8, 10, 19, 21, 23

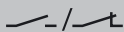
	M8 / L = 69	1 f	Brass	5...36	IP 67	2700	200	67	IE5203
	M12 / L = 83	2 f	Brass	10...55	IP 67	1100	300	68	IF5598
	M12 / L = 83	4 nf	Brass	10...55	IP 67	1500	300	69	IF5647
	M18 / L = 70	5 f	Brass	10...55	IP 67	700	400	70	IG5595
	M18 / L = 76	8 nf	Brass	10...55	IP 67	300	400	71	IG5597
	M30 / L = 78	10 f	Brass	10...55	IP 67	450	400	72	II5490



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 8, 10, 19, 21, 23									
	M30 / L = 78	15 nf	Brass	10...55	IP 67	200	400	73	II5492
M8 connector · Output function  · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 1, 2, 3									
	M8 / L = 40	3 f	Brass	10...30	IP 65 / IP 67	800	100	74	IE5338
	M8 / L = 40	5 nf	High-grade st. steel	10...30	IP 65 / IP 67	600	100	75	IE5340
M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	M8 / L = 50	2 f	Brass	10...36	IP 65 / IP 67	1300	200	76	IE5287
	M8 / L = 30.5	2 f	High-grade st. steel	10...30	IP 65 / IP 67	800	100	77	IE5366
	M8 / L = 30.5	4 nf	High-grade st. steel	10...30	IP 65 / IP 67	800	100	78	IE5367
	M5 / L = 45	0.8 f	stainless steel	10...36	IP 65	2000	100	79	IY5036
	M5 / L = 41	1.5 nf	stainless steel	10...30	IP 67	1800	100	80	IY5048
M8 connector · Output function  · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 43 · Connector groups 1, 2, 3									
	M8 / L = 40	3 f	Brass	10...30	IP 65 / IP 67	800	100	74	IE5349
	M8 / L = 40	5 nf	High-grade st. steel	10...30	IP 65 / IP 67	600	100	75	IE5350
M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 7 · Connector groups 1, 2, 3									
	M8 / L = 50	1 f	Brass	10...36	IP 65 / IP 67	2000	200	76	IE5258

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

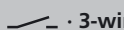
Terminals · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 44

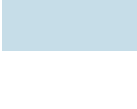
	M18 / L = 110	5 f	PBT	10...55	IP 65	800	400	81	IG5718
	M18 / L = 110	8 nf	PBT	10...55	IP 65	300	400	81	IG5719

f = flush / nf = non flush / qf = quasi-flush

Sensors for industrial applications with smooth sleeve

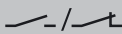
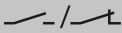
Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 5

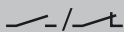
	Ø 20 / L = 77	10 nf	PBT	10...36	IP 67	300	250	82	IA5082
	Ø 34 / L = 82	20 nf	PBT	10...36	IP 67	60	250	83	IB5096
	Ø 6.5 / L = 35	1 f	Brass	10...36	IP 67	900	200	84	IT5001
	Ø 6.5 / L = 19	2 f	stainless steel	10...30	IP 67	1000	200	85	IT5039
	Ø 6.5 / L = 27	2 f	High-grade st. steel	10...30	IP 67	1500	100	86	IT5042
	Ø 4 / L = 30	0.8 f	stainless steel	10...36	IP 65	2000	100	87	IZ5026
	Ø 4 / L = 27	1.5 nf	stainless steel	10...30	IP 67	1800	100	88	IZ5047
	Ø 3 / L = 27	1 nf	stainless steel	10...30	IP 67	5000	100	89	IZ5048
	Ø 4 / L = 23	0.8 f	stainless steel	10...30	IP 65	2000	100	90	IZ5051
	Ø 4 / L = 23	1.2 f	stainless steel	10...30	IP 65	2000	100	90	IZ5052



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
Cable 2 m · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 42									
	Ø 20 / L = 77	10 nf	PBT	10...55	IP 67	300	400	82	IA5108
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	Ø 20 / L = 93	10 nf	PBT	10...36	IP 67	300	250	91	IA5127
M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	Ø 4 / L = 41	1.5 nf	stainless steel	10...30	IP 67	1800	100	92	IZ5046
	Ø 6.5 / L = 50	1 f	Brass	10...36	IP 65 / IP 67	2000	200	93	IT5021
	Ø 6.5 / L = 50	1.5 f	Brass	10...36	IP 65 / IP 67	1700	200	93	IT5034
	Ø 6.5 / L = 30.5	2 f	High-grade st. steel	10...30	IP 65 / IP 67	800	100	94	IT5040
	Ø 6.5 / L = 50	4 nf	High-grade st. steel	10...30	IP 67	300	100	95	IT5044
	Ø 4 / L = 45	0.8 f	stainless steel	10...36	IP 65	2000	100	96	IZ5035
Terminals · Output function  · 3-wire · DC PNP · Wiring diagram no. 8									
	Ø 20 / L = 92	10 nf	PBT	10...36	IP 65	300	250	97	IA5062
Terminals · Output function  · 3-wire · DC PNP · Wiring diagram no. 8									
	Ø 20 / L = 92	10 nf	PBT	10...36	IP 65	300	250	97	IA5063
Terminals · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 44									
	Ø 20 / L = 92	10 nf	PBT	10...55	IP 65	300	300	97	IA5122
	Ø 34 / L = 98	20 nf	PBT	10...55	IP 65	300	300	98	IB5124

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

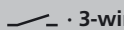
Terminals · Output function  · 3-wire · DC PNP · Wiring diagram no. 8

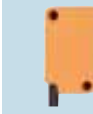
	Ø 34 / L = 98	20 nf	PBT	10...36	IP 65	350	250	98	IB5063
	Ø 34 / L = 98	30 nf	PBT	10...36	IP 65	350	200	98	IB5133

f = flush / nf = non flush / qf = quasi-flush

Sensors for industrial applications, rectangular housings

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

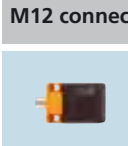
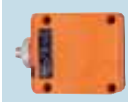
Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 5

	120 x 80 x 30	50 nf	PPE	10...36	IP 67	100	250	99	ID5026
	40 x 8 x 8	2 f	Brass	10...36	IP 65	2000	250	100	IL5002
	40 x 8 x 8	2 f	Brass	10...36	IP 65	2000	250	101	IL5003
	40 x 8 x 8	2.5 f	Brass	10...36	IP 65	2000	250	100	IL5020
	25 x 5 x 5	0.8 f	aluminium	10...30	IP 67	1000	100	102	IL5022
	40 x 12 x 26	2 f	PBT	10...36	IP 67	1400	250	103	IN5121
	40 x 12 x 26	4 nf	PBT	10...36	IP 67	1300	250	103	IN5129
	28 x 10 x 16	2 f	PBT	10...30	IP 67	800	200	104	IS5001
	28 x 10 x 16	3 nf	PBT	10...30	IP 67	100	200	104	IS5031
	28 x 10 x 16	4 nf	PBT	10...36	IP 67	2000	250	105	IS5070
	60 x 36 x 10	5 f	PBT	10...36	IP 67	400	250	106	IW5051

You can find wiring diagrams and scale drawings from page 134



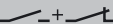
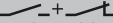
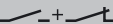
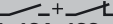
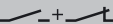
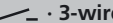
Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 5									
	60 x 36 x 10	8 nf	PBT	10...36	IP 67	300	250	106	IW5058
Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 9									
	40 x 12 x 26	2 f	PBT	10...36	IP 67	1400	250	103	IN5186
	40 x 12 x 26	4 nf	PBT	10...36	IP 67	1300	250	103	IN5188
	60 x 36 x 10	8 nf	PBT	10...36	IP 67	300	250	107	IW5053
Cable 2 m · Output function  /  · 2-wire · DC PNP/NPN · Wiring diagram no. 42									
	40 x 12 x 26	2 f	PBT	10...55	IP 67	1300	400	103	IN5207
	40 x 12 x 26	4 nf	PBT	10...55	IP 67	1200	300	103	IN5208
	28 x 10 x 16	2 f	PBT	5...36	IP 67	2000	200	104	IS5026
M12 connector · 2-wire · AS-i · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23									
	40 x 40 x 54	15 f	PBT	26.5...31.6	IP 67	100	–	7	IM5118
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	92 x 80 x 40	50 f	PPE	10...36	IP 67	70	250	108	ID5055
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	100	200	7	IM5115
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	80	200	7	IM5116
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	60	200	7	IM5117
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	109	IM5119

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	109	IM5120
M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 48 · Connector groups 8, 10, 19, 21, 23									
	40 x 40 x 54	15 f	PA (polyamide)	10...36	IP 67	200	100	174	IM5127
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	7	IM5128
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	200	200	109	IM5129
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	7	IM5130
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	200	200	7	IM5131
M12 connector · Output function  /  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	105 x 80 x 40	60 nf	PPE	10...36	IP 67	100	250	110	ID5046
M12 connector · Output function  +  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	109	IM5124
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	109	IM5125
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	200	200	109	IM5126
M12 connector · Output function  +  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	92 x 80 x 40	50 f	PPE	10...36	IP 67	70	250	108	ID5058



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	7	IM5132
M12 connector · Output function  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	7	IM5133
M12 connector · Output function  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	80	200	7	IM5134
M12 connector · Output function  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67 / IP 69K	200	200	7	IM5135
M12 connector · Output function  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	60	200	7	IM5136
M12 connector · Output function  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 19, 21, 23									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	100	200	7	IM5123
M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	40 x 8 x 8	2 f	Brass	10...36	IP 65	2000	250	111	IL5004
	40 x 8 x 8	2 f	Brass	10...36	IP 65	2000	250	112	IL5005
	40 x 12 x 26	4 nf	PBT	10...36	IP 65	1300	250	113	IN5212
	40 x 12 x 26	2 f	PBT	10...36	IP 67	1400	250	113	IN5230
	28 x 10 x 16	2 f	PBT	10...36	IP 67	800	200	114	IS5035
	28 x 10 x 16	4 nf	PBT	10...36	IP 67	2000	250	114	IS5071

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3									
	60 x 36 x 10	8 nf	PBT	10...36	IP 65	300	250	115	IW5064
M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 7 · Connector groups 1, 2, 3									
	60 x 36 x 10	8 nf	PBT	10...36	IP 67	300	250	115	IW5062
Terminals · Output function  /  · 2-wire · DC PNP/NPN · Wiring diagram no. 44									
	40 x 40 x 120	15 f	PPE	10...55	IP 65	350	400	116	IM5037
	40 x 40 x 120	20 nf	PPE	10...55	IP 65	300	400	116	IM5038
Terminals · Output function  /  · 3-wire · DC PNP · Wiring diagram no. 8									
	40 x 40 x 120	20 nf	PPE	10...36	IP 65	350	250	116	IM5019
	40 x 40 x 120	15 f	PPE	10...36	IP 65	350	250	116	IM5020
	40 x 40 x 120	30 nf	PPE	10...36	IP 65	100	250	116	IM5046
Terminals · Output function  /  · 3-wire · DC PNP · Wiring diagram no. 45									
	90 x 60 x 40	40 nf	PPE	10...36	IP 65	15	250	117	IC5005
	105 x 80 x 40	60 nf	PPE	10...36	IP 65	100	250	118	ID5005
Terminals · Output function  +  · 3-wire · DC PNP · Wiring diagram no. 12									
	40 x 40 x 118	20 f	PA 6.6	10...30	IP 68 / IP 69K	400	200	119	IV5004
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 40 x 118	20 f	PA 6.6	10...30	IP 68 / IP 69K	5	200	120	IV5060

f = flush / nf = non flush / qf = quasi-flush



Position sensors

Sensors for industrial applications, AC and AC/DC

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

1/2" connector · Output function  · 2-wire · AC/DC · Wiring diagram no. 13 · Connector group 33

	40 x 40 x 66	35 nf	PPE	20...250	IP 67	20 / 50	250 / 100	121	IM0049*

Cable 2 m · Output function  · 2-wire · AC · Wiring diagram no. 4

	M12 / L = 71.5	2 f	PBT	20...250	IP 67	25	200	122	IF0001*
	M12 / L = 71.5	4 nf	PBT	20...250	IP 67	25	200	122	IF0003*
	M12 / L = 71.5	2 f	Brass	20...250	IP 67	25	200	122	IF0005*
	M12 / L = 71	4 nf	Brass	20...250	IP 67	25	200	123	IF0007*

Cable 2 m · Output function  · 2-wire · AC/DC · Wiring diagram no. 14

	Ø 20 / L = 77	10 nf	PBT	20...250	IP 67	25 / 70	250 / 100	82	IA0004*
	Ø 34 / L = 82	20 nf	PBT	20...250	IP 67	25 / 50	250 / 100	83	IB0004*
	Ø 34 / L = 82	30 nf	PBT	20...250	IP 67	25 / 50	250 / 100	83	IB0026*
	120 x 80 x 30	50 nf	modified PPE	20...250	IP 65	25 / 35	250 / 100	99	ID0014*
	M18 / L = 80	5 f	PBT	20...250	IP 67	25 / 50	250 / 100	52	IG0005*
	M18 / L = 80	8 nf	PBT	20...250	IP 67	25 / 50	250 / 100	52	IG0006*
	M18 / L = 80	5 f	Brass	20...250	IP 67	25 / 50	250 / 100	52	IG0011*
	M18 / L = 80	8 nf	Brass	20...250	IP 67	25 / 50	250 / 100	53	IG0012*
	M30 / L = 81	10 f	PBT	20...250	IP 67	25 / 50	250 / 100	55	II0005*

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

Cable 2 m · Output function · 2-wire · AC/DC · Wiring diagram no. 14

	M30 / L = 81	15 nf	PBT	20...250	IP 67	25 / 50	250 / 100	55	II0006*
	M30 / L = 81	10 f	Brass	20...250	IP 67	25 / 50	250 / 100	55	II0011*
	M30 / L = 81	15 nf	Brass	20...250	IP 67	25 / 50	250 / 100	56	II0012*
	40 x 12 x 26	2 f	PBT	20...250	IP 67	25 / 50	250 / 100	103	IN0073*
	40 x 12 x 26	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	103	IN0081*

Cable 2 m · Output function · 2-wire · AC/DC · Wiring diagram no. 15

	Ø 20 / L = 77	10 nf	PBT	20...250	IP 67	25 / 70	250 / 100	82	IA0027*
	Ø 34 / L = 82	20 nf	PBT	20...250	IP 67	25 / 50	250 / 100	83	IB0017*
	Ø 34 / L = 82	30 nf	PBT	20...250	IP 67	25 / 50	250 / 100	83	IB0027*
	40 x 12 x 26	2 f	PBT	20...250	IP 67	25 / 50	250 / 100	103	IN0077*
	40 x 12 x 26	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	103	IN0085*

M12 connector · Output function · 2-wire · AC/DC · Wiring diagram no. 13 · Connector group 7

	40 x 40 x 66	35 nf	PPE	20...250	IP 67	20 / 50	250 / 100	124	IM0053*
	92 x 80 x 40	50 f	modified PPE	20...250	IP 67	25	250 / 100	108	ID0049*
	40 x 40 x 66	20 f	PPE	20...250	IP 67	25 / 140	250 / 100	124	IM0054*

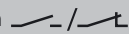
Terminals · Output function / · 2-wire · AC/DC · Wiring diagram no. 46

	90 x 60 x 40	40 nf	PPE	20...250	IP 65	10	250 / 100	117	IC0003*

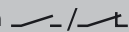


Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

Terminals · Output function  · 2-wire · AC/DC · Wiring diagram no. 46

	105 x 80 x 40	60 nf	modified PPE	20...250	IP 65	4	250 / 100	118	ID0013*

Terminals · Output function  · 2-wire · AC/DC · Wiring diagram no. 16

	Ø 20 / L = 92	10 nf	PBT	20...250	IP 65	25 / 70	250 / 100	97	IA0032*

	Ø 34 / L = 98	20 nf	PBT	20...250	IP 65	25 / 50	250 / 100	98	IB0016*

	40 x 40 x 120	20 nf	PPE	20...250	IP 65	20 / 55	250 / 100	116	IM0010*

	40 x 40 x 120	15 f	PPE	20...250	IP 65	20 / 55	250 / 100	116	IM0011*

f = flush / nf = non flush / qf = quasi-flush

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Sensors for industrial applications with analogue output 4...20 mA

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function 4...20 mA analogue · 3-wire · DC analogue · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23

	M12 / L = 70	0.2...2 f	Brass	15...30	IP 67	–	–	12	IF6028

	M12 / L = 70	0.4...4 nf	Brass	15...30	IP 67	–	–	13	IF6030

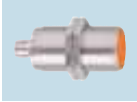
	M18 / L = 60	0.8...8 nf	Brass	15...30	IP 67	–	–	125	IG6083

	M18 / L = 60	0.5...5 f	Brass	15...30	IP 67	–	–	126	IG6086

	M30 / L = 70	1.0...15 nf	Brass	15...30	IP 67	–	–	17	II5913

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function 4...20 mA analogue · 3-wire · DC analogue · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23

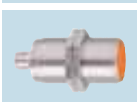
	M30 / L = 70	1.0...10 f	Brass	15...30	IP 67	–	–	16	II5916
	40 x 40 x 54	1...15 f	PA (polyamide)	15...30	IP 67	–	–	7	IM5139
	40 x 40 x 54	1...26 nf	PA (polyamide)	15...30	IP 67	–	–	7	IM5141

f = flush / nf = non flush / qf = quasi-flush

Sensors for industrial applications with analogue output 0...10 V

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function 0...10 V analogue · 3-wire · DC analogue · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23

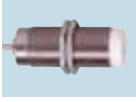
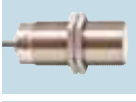
	M12 / L = 70	0.2...2 f	Brass	15...30	IP 67	–	–	12	IF6029
	M12 / L = 70	0.4...4 nf	Brass	15...30	IP 67	–	–	13	IF6031
	M18 / L = 60	0.8...8 nf	Brass	15...30	IP 67	–	–	125	IG6084
	M18 / L = 60	0.5...5 f	Brass	15...30	IP 67	–	–	126	IG6087
	M30 / L = 70	1.0...15 nf	Brass	15...30	IP 67	–	–	17	II5914
	M30 / L = 70	1.0...10 f	Brass	15...30	IP 67	–	–	16	II5917
	40 x 40 x 54	1...15 f	PA (polyamide)	15...30	IP 67	–	–	7	IM5140
	40 x 40 x 54	1...26 nf	PA (polyamide)	15...30	IP 67	–	–	7	IM5142

f = flush / nf = non flush / qf = quasi-flush



Position sensors

Sensors for industrial high temperature applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.
Cable 5 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 5									
	M12 / L = 56	3 f	stainless steel	10...35	IP 65	500	120	127	IF6074
	M18 / L = 77	8 nf	stainless steel	10...35	IP 65	400	150	128	IG6119
	M18 / L = 70	5 f	stainless steel	10...35	IP 65	400	150	129	IG6614
	M30 / L = 79	15 nf	stainless steel	10...35	IP 65	200	150	130	II5930
	M30 / L = 70	10 f	High-grade st. steel	10...35	IP 65	200	150	131	II5961
	M50 / L = 70	20 f	stainless steel	10...35	IP 65	100	150	132	I95045

f = flush / nf = non flush / qf = quasi-flush

Sensors for industrial applications on pipes and tubes

Type	Inside diameter [mm]	Operating principle	Minimum diameter of the steel ball [Ø mm]	Part speed max. [m/s]	Pulse stretching [ms]	Response time / break time [ms]	Drawing no.	Order no.
M12 connector · Output function  /  · 3-wire · DC NPN · Wiring diagram no. 18 · Connector groups 8, 10, 19, 21, 23								
	10.1	static	1.5	35	10...150	0.5 / 10	133	I7R202
	10.1	dynamic	0.6	35	0.1...150	0.2 / 0.2	133	I7R204
	15.1	static	2	35	10...150	0.5 / 10	134	I7R206
	15.1	dynamic	0.8	35	0.1...150	0.2 / 0.2	134	I7R208
	20.1	static	2.5	35	10...150	0.5 / 10	135	I7R210
	20.1	dynamic	1.0	35	0.1...150	0.2 / 0.2	135	I7R212

Type	Inside diameter [mm]	Operating principle	Minimum diameter of the steel ball [Ø mm]	Part speed max. [m/s]	Pulse stretching [ms]	Response time / break time [ms]	Drawing no.	Order no.

M12 connector · Output function  /  · 3-wire · DC NPN · Wiring diagram no. 18 · Connector groups 8, 10, 19, 21, 23

	25.1	static	3.0	35	10...150	0.5 / 10	136	I7R214
	25.1	dynamic	1.2	35	0.1...150	0.2 / 0.2	136	I7R216

M12 connector · Output function  /  · 3-wire · DC PNP · Wiring diagram no. 19 · Connector groups 8, 10, 11, 18, 19, 21, 23

	10.1	static	1.5	35	10...150	0.5 / 10	133	I7R201
	10.1	dynamic	0.6	35	0.1...150	0.2 / 0.2	133	I7R203
	15.1	static	2	35	10...150	0.5 / 10	134	I7R205
	15.1	dynamic	0.8	35	0.1...150	0.2 / 0.2	134	I7R207
	20.1	static	2.5	35	10...150	0.5 / 10	135	I7R209
	20.1	dynamic	1.0	35	0.1...150	0.2 / 0.2	135	I7R211
	25.1	static	3.0	35	10...150	0.5 / 10	136	I7R213
	25.1	dynamic	1.2	35	0.1...150	0.2 / 0.2	136	I7R215
	51	static	6	35	10...150	0.5 / 10	137	I7R217

Tube sensors for industrial applications

Type	Sensing range [mm]	Operating principle	Minimum diameter of the steel ball [Ø mm]	Part speed max. [m/s]	Pulse stretching [ms]	Response time / break time [ms]	Drawing no.	Order no.

Cable 0.09 m · with M12 connector · Output function  · 3-wire · DC NPN · Wiring diagram no. 18 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	≤ 14	static	3.0	35	100	0.5 / 100	138	I85003



Position sensors

Type	Sensing range [mm]	Operating principle	Minimum diameter of the steel ball [Ø mm]	Part speed max. [m/s]	Pulse stretching [ms]	Response time / break time [ms]	Draw- ing no.	Order no.

Cable 0.09 m · with M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 19 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	≤ 14	static	3.0	35	100	0.5 / 100	138	I85002

M8 connector · Output function  · 3-wire · DC NPN · Wiring diagram no. 18 · Connector groups 1, 3, 78, 84, 145

	≤ 14	static	3.0	35	100	0.5 / 100	139	I85001

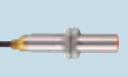
M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 19 · Connector groups 1, 2, 3, 78, 84, 145, 146

	≤ 14	static	3.0	35	100	0.5 / 100	139	I85000

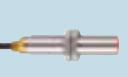
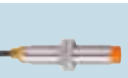
Sensors for industrial applications, oils and coolants and mobile applications with increased sensing range

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

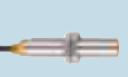
Cable 2 m · Output function  · 3-wire · DC NPN · Wiring diagram no. 20

	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	140	IFS254
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	141	IFS255
	M12 / L = 40	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	142	IFS258
	M12 / L = 40	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	143	IFS259

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 9

	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	140	IFS280
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	141	IFS282

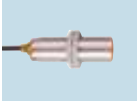
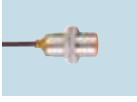
Cable 2 m · Output function  · 3-wire · DC NPN · Wiring diagram no. 21

	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	140	IFS281
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	141	IFS283

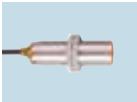
Product selectors and further information can be found at: www.ifm.com

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

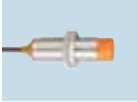
Cable 2 m · Output function · 3-wire · DC NPN · Wiring diagram no. 20

	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	144	IGS246
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	145	IGS247
	M18 / L = 40	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	146	IGS250
	M18 / L = 40	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	147	IGS251

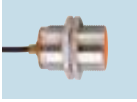
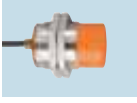
Cable 2 m · Output function · 3-wire · DC PNP · Wiring diagram no. 9

	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	144	IGS269
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	145	IGS270

Cable 2 m · Output function · 3-wire · DC NPN · Wiring diagram no. 21

	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	144	IGS271
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	145	IGS272

Cable 2 m · Output function · 3-wire · DC NPN · Wiring diagram no. 20

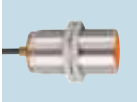
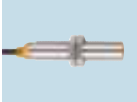
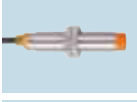
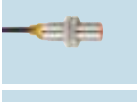
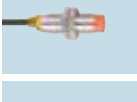
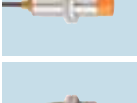
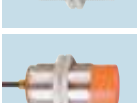
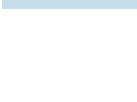
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	148	IIS240
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	149	IIS241
	M30 / L = 45	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	150	IIS244
	M30 / L = 45	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	151	IIS245

Cable 2 m · Output function · 3-wire · DC PNP · Wiring diagram no. 9

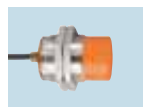
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	148	IIS264



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 9									
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	149	IIS263
Cable 2 m · Output function  · 3-wire · DC NPN · Wiring diagram no. 21									
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	148	IIS265
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	149	IIS266
Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 5									
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	140	IFS252
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	141	IFS253
	M12 / L = 40	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	142	IFS256
	M12 / L = 40	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	143	IFS257
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	144	IGS244
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	145	IGS245
	M18 / L = 40	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	146	IGS248
	M18 / L = 40	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	147	IGS249
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	148	IIS238
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	149	IIS239
	M30 / L = 45	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	150	IIS242

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable 2 m · Output function · 3-wire · DC PNP · Wiring diagram no. 5


M30 / L = 45

22 nf

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

100

100

151

IIS243
M12 connector · Output function · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 8, 10, 19, 21, 23, 202


M12 / L = 60

4 f

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

700

100

1

IFS242

M12 / L = 60

7 nf

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

700

100

2

IFS243

M12 / L = 45

4 f

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

700

100

18

IFS246

M12 / L = 45

7 nf

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

700

100

152

IFS247

M18 / L = 60

8 f

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

400

100

3

IGS234

M18 / L = 60

12 nf

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

300

100

4

IGS235

M18 / L = 45

8 f

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

400

100

22

IGS238

M18 / L = 45

12 nf

Brass

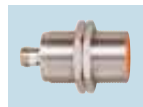
10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

300

100

153

IGS239

M30 / L = 60

15 f

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

100

100

154

IIS228

M30 / L = 60

22 nf

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

100

100

155

IIS229

M30 / L = 50

15 f

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

100

100

156

IIS232

M30 / L = 50

22 nf

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

100

100

157

IIS233
M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 202


M12 / L = 45

7 nf

Brass

10...30

IP 65 / IP 66 /
IP 67 / IP 68 /
IP 69K

700

100

152

IFS245



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 202

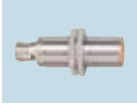
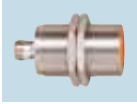
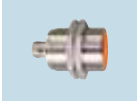
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	1	IFS240
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	2	IFS241
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	3	IGS232
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	4	IGS233
	M18 / L = 45	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	22	IGS236
	M18 / L = 45	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	153	IGS237
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	154	IIS226
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	155	IIS227
	M30 / L = 50	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	156	IIS230
	M30 / L = 50	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	157	IIS231
	M12 / L = 45	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	18	IFS244

M12 connector · Output function · 3-wire · DC NPN · Wiring diagram no. 23 · Connector groups 8, 10, 19, 21, 23, 202

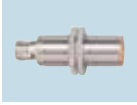
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	1	IFS249
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	2	IFS251
	M12 / L = 45	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	18	IFS262
	M12 / L = 45	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	152	IFS263

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function · 3-wire · DC NPN · Wiring diagram no. 23 · Connector groups 8, 10, 19, 21, 23, 202

	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	3	IGS241
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	4	IGS243
	M18 / L = 45	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	22	IGS254
	M18 / L = 45	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	153	IGS255
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	154	IIS235
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	155	IIS237
	M30 / L = 50	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	156	IIS248
	M30 / L = 50	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	157	IIS249

M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 202

	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	1	IFS248
	M12 / L = 60	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	2	IFS250
	M12 / L = 45	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	18	IFS260
	M12 / L = 45	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	152	IFS261
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	3	IGS240
	M18 / L = 60	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	4	IGS242
	M18 / L = 45	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	400	100	22	IGS252



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 202									
	M18 / L = 45	12 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	300	100	153	IGS253
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	154	IIS234
	M30 / L = 60	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	155	IIS236
	M30 / L = 50	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	156	IIS246
	M30 / L = 50	22 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	157	IIS247

f = flush / nf = non flush / qf = quasi-flush

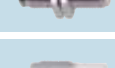
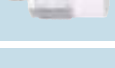
Sensors for oils and coolants with increased sensing range

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 24 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...30	IP 68	700	100	8	IFC202
M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 47 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 46	8 f	Brass	10...30	IP 68	300	100	10	IGC202
	M18 / L = 51	12 nf	Brass	10...30	IP 68	250	100	11	IGC203
M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...30	IP 68	700	100	8	IFC200
	M12 / L = 50	7 nf	Brass	10...30	IP 68	700	100	9	IFC201
M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 38 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 46	8 f	Brass	10...30	IP 68	400	100	10	IGC200

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 38 · Connector groups 8, 10, 19, 21, 23									
	M18 / L = 51	12 nf	Brass	10...30	IP 68	250	100	11	IGC201
M12 connector · Output function  · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M12 / L = 70	4 f	Brass	10...30	IP 68	500	100	12	IFC210
	M18 / L = 70	8 f	Brass	10...30	IP 68	400	100	14	IGC210
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...30	IP 68	700	100	18	IFC204
	M12 / L = 50	7 nf	Brass	10...30	IP 68	700	100	158	IFC205
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M12 / L = 45	4 f	Brass	10...36	IP 68	700	100	8	IFC206
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 60	4 f	Brass	10...30	IP 68	700	200	1	IFC229
	M12 / L = 60	7 nf	Brass	10...30	IP 68	700	200	2	IFC230
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 70	4 f	Brass	10...30	IP 68	700	100	20	IFC237
	M12 / L = 70	7 nf	Brass	10...30	IP 68	700	100	21	IFC238
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M18 / L = 46	8 f	Brass	10...36	IP 68	400	100	10	IGC204
	M18 / L = 51	12 nf	Brass	10...36	IP 68	300	100	11	IGC205



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23									
	M18 / L = 46	8 f	Brass	10...36	IP 68	400	100	10	IGC206
	M18 / L = 60	12 nf	Brass	10...36	IP 68	300	200	125	IGC220
	M18 / L = 60	8 f	Brass	10...36	IP 68	400	200	126	IGC221
	M18 / L = 70	8 f	Brass	10...36	IP 68	400	100	14	IGC224
	M18 / L = 70	12 nf	Brass	10...36	IP 68	300	100	15	IGC225
	M30 / L = 50	15 f	Brass	10...36	IP 68	100	100	159	IIC200
	M30 / L = 50	22 nf	Brass	10...36	IP 68	100	100	160	IIC201
	M30 / L = 60	15 f	Brass	10...36	IP 68	100	200	161	IIC206
	M30 / L = 60	22 nf	Brass	10...36	IP 68	100	200	162	IIC207
	M30 / L = 70	15 f	High-grade st. steel	10...36	IP 68	100	100	16	IIC210
	M30 / L = 70	22 nf	High-grade st. steel	10...36	IP 68	100	100	17	IIC211
	M8 / L = 50	2 f	High-grade st. steel	10...36	IP 67	1000	200	65	IE5381
	M8 / L = 50	4 nf	High-grade st. steel	10...36	IP 67	700	200	163	IE5382
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23									
	M12 / L = 50	7 nf	Brass	10...30	IP 68	700	100	158	IFC208

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 3

	M12 / L = 45	4 f	Brass	10...30	IP 68	700	100	18	IFC207

M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23

	M12 / L = 45	4 f	Brass	10...36	IP 68	700	100	8	IFC209
	M18 / L = 46	8 f	Brass	10...36	IP 68	400	100	10	IGC207
	M18 / L = 51	12 nf	Brass	10...36	IP 68	300	100	11	IGC208
	M18 / L = 46	8 f	Brass	10...36	IP 68	400	100	10	IGC209

M12 connector · Output function · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 8, 10, 19, 21, 23

	M12 / L = 60	4 f	Brass	10...36	IP 68	700	100	164	IFC234
	M12 / L = 60	7 nf	Brass	10...36	IP 68	500	100	165	IFC235
	M18 / L = 70	8 f	Brass	10...36	IP 68	400	100	14	IGC222
	M18 / L = 70	12 nf	Brass	10...36	IP 68	300	100	15	IGC223
	M30 / L = 70	15 f	Brass	10...30	IP 68	100	100	16	IIC208
	M30 / L = 70	22 nf	Brass	10...30	IP 68	100	100	17	IIC209

f = flush / nf = non flush / qf = quasi-flush



Position sensors

Sensors for oils and coolants, threaded housings

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable 0.8 m · with M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23

	M8 / L = 42	2 f	Brass	10...55	IP 67	1000	100	166	IE9902

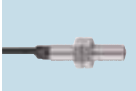
Cable 0.8 m · with M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 48 · Connector groups 8, 10, 19, 21, 23

	M12 / L = 54	2 f	Brass	10...55	IP 67	800	100	167	IF9920

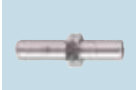
Cable 2 m · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 25

	M18 / L = 54	5 f	Brass	10...55	IP 67	700	400	168	IG5682

Cable 2 m · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 49

	M8 / L = 42	2 f	Brass	10...55	IP 67	1000	100	169	IE9203
	M12 / L = 54	2 f	Brass	10...55	IP 67	800	100	170	IF9222

M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23

	M12 / L = 60	2 f	Brass	10...55	IP 67	800	100	171	IF9924

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23

	M12 / L = 45	2 f	Brass	10...36	IP 68	700	200	8	IFC239
	M12 / L = 70	2 f	Brass	10...36	IP 68	700	200	12	IFC241
	M12 / L = 60	2 f	Brass	10...36	IP 68	700	200	164	IFC243

f = flush / nf = non flush / qf = quasi-flush

Sensors for oils and coolants, rectangular housings

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable 0.15 m · with M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23



26 x 26 x 26 10 f polyamide 10...36 IP 67 250 100 172 **IO5018**

Cable 0.8 m · with M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23



26 x 26 x 26 10 f polyamide 10...36 IP 67 250 100 172 **IO5017**

M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23



26 x 26 x 43 10 f polyamide 10...36 IP 67 250 100 173 **IO5016**

f = flush / nf = non flush / qf = quasi-flush

Sensors for oils and coolants with correction factor 1

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2



M12 / L = 65 8 nf High-grade st. steel 10...30 IP 68 2000 100 175 **IFC246**

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23



M18 / L = 65 5 f High-grade st. steel 10...30 IP 68 2000 100 176 **IGC232**

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23



M18 / L = 65 12 nf High-grade st. steel 10...30 IP 68 2000 200 177 **IGC233**

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector group --



M30 / L = 65 10 f High-grade st. steel 10...30 IP 68 2000 100 178 **IIC218**

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23



M30 / L = 65 22 nf High-grade st. steel 10...30 IP 68 1000 200 179 **IIC219**



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2

	M12 / L = 65	3 f	stainless steel (316L)	10...30	IP 68	2000	100	180	IFC259

M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3

	M8 / L = 65	1.5 f	High-grade st. steel	10...30	IP 67	1000	200	181	IE5390

	M8 / L = 65	4 nf	High-grade st. steel	10...30	IP 67	1000	200	182	IE5391

f = flush / nf = non flush / qf = quasi-flush

Sensors for oils and coolants with ceramic sensing face

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 8, 10, 11, 18, 19, 21, 23

	M12 / L = 70	4 f	Brass	10...30	IP 68	500	100	12	IFC210

	M18 / L = 70	8 f	Brass	10...30	IP 68	400	100	14	IGC210

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23

	M12 / L = 45	4 f	Brass	10...36	IP 68	700	100	8	IFC206

	M30 / L = 60	15 f	Brass	10...36	IP 68	100	200	161	IIC206

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23

	M12 / L = 45	4 f	Brass	10...36	IP 68	700	100	8	IFC209

	M18 / L = 46	8 f	Brass	10...36	IP 68	400	100	10	IGC209

f = flush / nf = non flush / qf = quasi-flush

Sensors for oils and coolants, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.

M12 connector · 2-wire · AS-i · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23

	M12 / L = 60	4 f	High-grade st. steel	26.5...31.6	IP 68	100	–	164	IFC247
	M18 / L = 60	8 f	High-grade st. steel	26.5...31.6	IP 68	100	–	126	IGC234
	M18 / L = 60	12 nf	High-grade st. steel	26.5...31.6	IP 68	100	–	125	IGC235
	M30 / L = 60	14 f	High-grade st. steel	26.5...31.6	IP 68	100	–	161	IIC220
	M30 / L = 60	22 nf	High-grade st. steel	26.5...31.6	IP 68	100	–	162	IIC221

f = flush / nf = non flush / qf = quasi-flush

Electromagnetic field immune Kplus sensors with correction factor 1

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.

M8 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 145, 146

	M8 / L = 40	3 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	183	IES200
	M8 / L = 40	6 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	184	IES201

M8 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 2

	M8 / L = 40	3 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	183	IEW200
	M8 / L = 40	6 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	184	IEW201

M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 202

	M12 / L = 45	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	18	IFS289
	M12 / L = 45	10 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	185	IFS290

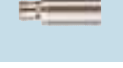
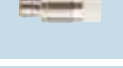
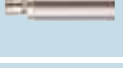
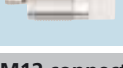
You can find wiring diagrams and scale drawings from page 134



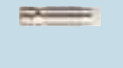
Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 202

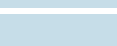
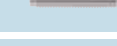
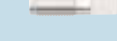
	M12 / L = 60	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	1	IFS285
	M12 / L = 60	10 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	186	IFS286
	M18 / L = 45	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	22	IGS279
	M18 / L = 45	15 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	187	IGS280
	M18 / L = 60	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	3	IGS277
	M18 / L = 60	15 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	188	IGS278
	M30 / L = 45	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	189	IIS269
	M30 / L = 60	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	154	IIS267
	M30 / L = 60	30 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	190	IIS268

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 148, 153, 184, 188, 193

	M12 / L = 45	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	18	IFS297
	M12 / L = 45	8 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	185	IFS298
	M12 / L = 45	10 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	185	IFS299
	M12 / L = 60	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	1	IFS304
	M12 / L = 60	8 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	186	IFS305
	M12 / L = 60	10 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	186	IFS306

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 148, 153, 184, 188, 193

	M18 / L = 45	8 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	22	IGS287
	M18 / L = 45	12 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	187	IGS288
	M18 / L = 45	15 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	187	IGS289
	M18 / L = 60	8 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	3	IGS290
	M18 / L = 60	12 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	188	IGS291
	M18 / L = 60	15 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	188	IGS292
	M30 / L = 45	15 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	189	IIS281
	M30 / L = 60	15 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	154	IIS282
	M30 / L = 60	22 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	190	IIS283
	M30 / L = 60	30 nf	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	190	IIS284

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 140, 141

	M12 / L = 65	3 f	Brass	10...30	IP 67	2000	100	180	IFW200
	M12 / L = 65	8 nf	Brass	10...30	IP 67	2000	100	191	IFW201
	M18 / L = 65	5 f	Brass	10...30	IP 67	2000	100	176	IGW200

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141

	M18 / L = 65	12 nf	Brass	10...30	IP 67	2000	200	177	IGW201



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 140, 141									
	M30 / L = 65	10 f	Brass	10...30	IP 67	2000	100	178	IIW200
	M30 / L = 65	22 nf	Brass	10...30	IP 67	2000	100	192	IIW201
	M12 / L = 65	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	180	IFW204
	M18 / L = 65	8 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	176	IGW202
	M30 / L = 65	15 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2000	100	178	IIW202
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	109	IM5119
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	109	IM5120
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	200	200	109	IM5129
M12 connector · Output function + · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 137, 138, 139, 140, 141									
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	109	IM5124
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	109	IM5125
	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67	200	200	109	IM5126
	40 x 40 x 54	20 f	PA (polyamide)	10...36	IP 67	200	200	7	IM5132
M12 connector · Output function + · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 40 x 54	35 nf	PA (polyamide)	10...36	IP 67	200	200	7	IM5133

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function + · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	40 x 40 x 54	40 nf	PA (polyamide)	10...36	IP 67 / IP 69K	200	200	7	IM5135

f = flush / nf = non flush / qf = quasi-flush

Electromagnetic field immune sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141

	M12 / L = 60	4 nf	Brass	10...36	IP 67	1000	250	193	IF5675
	M18 / L = 60	5 f	Brass	10...36	IP 67	700	250	126	IG5647
	M12 / L = 60	2 f	Brass	10...36	IP 67	1000	250	194	IF5670
	M12 / L = 60	2 f	Brass	10...36	IP 67	1000	250	194	IF5750
	M12 / L = 60	4 nf	Brass	10...36	IP 67	1000	250	193	IF5751
	M18 / L = 60	5 f	Brass	10...36	IP 67	700	250	126	IG5667
	M30 / L = 60	10 f	Brass	10...36	IP 67	250	250	195	II5503

M12 connector · Output function + · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 137, 138, 139, 140, 141

	92 x 80 x 40	50 f	PPE	10...36	IP 67	70	250	108	ID5059

f = flush / nf = non flush / qf = quasi-flush



Position sensors

Full metal sensors for oils and coolants

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23

	M12 / L = 45	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	18	IFC275
	M18 / L = 45	8 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	22	IGC258
	M30 / L = 50	15 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	50	100	156	IIC233

M12 connector · Output function · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 8, 10, 19, 21, 23

	M8 / L = 60	2 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	196	IEC203
	M12 / L = 60	3 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	164	IFC266
	M18 / L = 70	5 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	70	IGC252
	M30 / L = 70	10 f	High-grade st. steel	10...36	IP 67 / IP 68	50	100	197	IIC226

M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23

	M8 / L = 60	2 f	High-grade st. steel	10...36	IP 67 / IP 68 / IP 69K	100	100	196	IEC200
	M12 / L = 60	3 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	164	IFC258
	M18 / L = 70	5 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	70	IGC248
	M30 / L = 70	10 f	High-grade st. steel	10...36	IP 67 / IP 68	50	100	197	IIC224

M8 connector · Output function · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 1, 3

	M8 / L = 50	2 f	High-grade st. steel	10...36	IP 67	100	100	198	IEC202

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3



M8 / L = 50

2 f

High-grade st. steel

10...36

IP 67

100

100

198

IEC201

f = flush / nf = non flush / qf = quasi-flush

Full metal sensors for oils and coolants with correction factor 0

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23



M12 / L = 60

2.5 f

High-grade st. steel

10...36

IP 68

100

100

164

IFC263



M18 / L = 70

4.5 f

High-grade st. steel

10...36

IP 68

100

100

199

IGC249

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23



M12 / L = 60

2.5 f

High-grade st. steel

10...36

IP 68

100

100

164

IFC264



M18 / L = 70

4.5 f

High-grade st. steel

10...36

IP 68

100

100

199

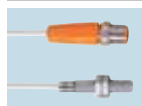
IGC250

f = flush / nf = non flush / qf = quasi-flush

Full metal sensors with non-stick coating against weld spatter

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable 0.3 m · with M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 137, 140, 141



M8 / L = 45

2 f

High-grade st. steel

10...36

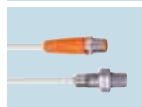
IP 67

150

100

200

IER203



M12 / L = 40

4 f

High-grade st. steel

10...36

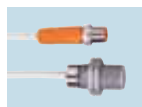
IP 67

75

100

201

IFR203



M18 / L = 40

6 f

High-grade st. steel

10...36

IP 67

50

100

202

IGR203



M30 / L = 40

12 f

High-grade st. steel

10...36

IP 67

25

100

203

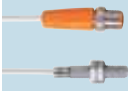
IIR203



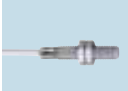
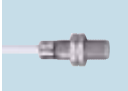
Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

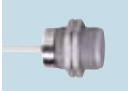
Cable 0.3 m · with M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 26 · Connector groups 137, 140, 141

	M8 / L = 45	2 f	High-grade st. steel	10...36	IP 67	150	100	200	IER206
	M12 / L = 40	4 f	High-grade st. steel	10...36	IP 67	75	100	201	IFR206
	M18 / L = 40	6 f	High-grade st. steel	10...36	IP 67	50	100	202	IGR206
	M30 / L = 40	12 f	High-grade st. steel	10...36	IP 67	25	100	203	IIR206

Cable 3 m · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 27

	M8 / L = 45	2 f	High-grade st. steel	10...36	IP 67	150	100	204	IER204
	M12 / L = 40	4 f	High-grade st. steel	10...36	IP 67	75	100	205	IFR204
	M18 / L = 40	6 f	High-grade st. steel	10...36	IP 67	50	100	206	IGR204
	M30 / L = 40	12 f	High-grade st. steel	10...36	IP 67	25	100	207	IIR204

Cable 5 m · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 27

	M12 / L = 40	4 f	High-grade st. steel	10...36	IP 67	75	100	205	IFR205
	M18 / L = 40	6 f	High-grade st. steel	10...36	IP 67	50	100	206	IGR205
	M30 / L = 40	12 f	High-grade st. steel	10...36	IP 67	25	100	207	IIR205

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 140, 141

	M12 / L = 45	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2	100	18	IFR207
	M18 / L = 45	8 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2	100	22	IGR207
	M30 / L = 50	15 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	2	100	156	IIR207

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 137, 140, 141

	M8 / L = 60	2 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	196	IER201
	M12 / L = 60	4 f	High-grade st. steel	10...36	IP 67	2	100	164	IFR202
	M18 / L = 70	6 f	High-grade st. steel	10...36	IP 67	2	100	70	IGR202
	M30 / L = 70	12 f	High-grade st. steel	10...36	IP 67	2	100	197	IIR202

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 137, 138, 139, 140, 141

	M8 / L = 60	2 f	High-grade st. steel	10...36	IP 67 / IP 68	100	100	196	IER200
	M12 / L = 60	4 f	High-grade st. steel	10...36	IP 67	2	100	164	IFR200
	M18 / L = 70	6 f	High-grade st. steel	10...36	IP 67	2	100	70	IGR200
	M30 / L = 70	12 f	High-grade st. steel	10...36	IP 67	2	100	197	IIR200

f = flush / nf = non flush / qf = quasi-flush

Full metal sensors for hygienic and wet areas

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 153, 184, 188, 193

	M12 / L = 45	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	18	IFT257
	M18 / L = 45	8 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	22	IGT258
	M30 / L = 50	15 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	50	100	156	IIT243



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 148, 152, 153, 155, 184, 186, 188, 192, 193

	M12 / L = 70	6 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	500	100	208	IFT246
	M18 / L = 70	12 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	500	100	209	IGT250
	M30 / L = 70	25 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	250	100	210	IIT232

M12 connector · Output function  · 3-wire · DC NPN · Wiring diagram no. 22 · Connector groups 148, 153, 184, 188, 193

	M18 / L = 70	5 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	70	IGT248
	M12 / L = 60	3 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	164	IFT244
	M30 / L = 70	10 f	High-grade st. steel	10...36	IP 68 / IP 69K	50	100	197	IIT230

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193

	M12 / L = 70	6 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	500	100	208	IFT245
	M18 / L = 70	12 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	500	100	209	IGT249
	M30 / L = 70	25 nf	High-grade st. steel	10...36	IP 65 / IP 67 / IP 68 / IP 69K	250	100	210	IIT231

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

	M18 / L = 70	5 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	70	IGT247
	M30 / L = 70	10 f	High-grade st. steel	10...36	IP 68 / IP 69K	50	100	197	IIT228
	M12 / L = 60	3 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	164	IFT240
	Ø 12 / L = 60	3 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	211	IFT243

f = flush / nf = non flush / qf = quasi-flush

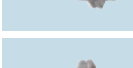
Sensors for hygienic and wet areas with increased sensing range

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

1/2" UNF-Connector · Output function · 2-wire · AC/DC · Wiring diagram no. 28 · Connector group 33

	M30 / L = 70	22 nf	High-grade st. steel	20...140	IP 68 / IP 69K	25 / 100	80	212	IIT002

Cable 10 m · Output function · 3-wire · DC PNP · Wiring diagram no. 5

	M12 / L = 50	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	213	IFT207
	M12 / L = 61	7 nf	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	214	IFT209
	M18 / L = 57	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	600	100	215	IGT207
	M18 / L = 62	12 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	216	IGT209
	M30 / L = 59	14 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	217	IIT206
	M30 / L = 59	22 nf	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	218	IIT208

Cable 6 m · Output function · 3-wire · DC PNP · Wiring diagram no. 5

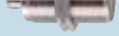
	M12 / L = 50	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	213	IFT206
	M12 / L = 61	7 nf	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	214	IFT208
	M18 / L = 57	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	600	100	215	IGT206
	M18 / L = 62	12 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	216	IGT208
	M30 / L = 59	22 nf	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	218	IIT207
	M30 / L = 59	14 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	217	IIT209



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

	M12 / L = 70	7 nf	High-grade st. steel	10...30	IP 68 / IP 69K	700	100	219	IFT202
	M12 / L = 70	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	500	100	12	IFT205
	Ø 12 / L = 70	7 nf	High-grade st. steel	10...30	IP 68 / IP 69K	700	100	220	IFT210
	M18 / L = 70	12 nf	High-grade st. steel	10...30	IP 68 / IP 69K	300	100	221	IGT202
	M18 / L = 70	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	400	100	14	IGT205
	M30 / L = 70	22 nf	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	17	IIT202
	M30 / L = 70	14 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	16	IIT204

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

	M12 / L = 50	7 nf	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	222	IFT200
	M12 / L = 45	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	8	IFT203
	M12 / L = 70	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	700	100	12	IFT216
	M12 / L = 70	7 nf	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	13	IFT217
	M18 / L = 51	12 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	223	IGT200
	M18 / L = 46	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	600	100	10	IGT203
	M18 / L = 70	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	400	100	14	IGT219
	M18 / L = 70	12 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	15	IGT220

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

	M30 / L = 50	22 nf	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	224	IIT200
	M30 / L = 50	14 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	159	IIT205
	M30 / L = 70	15 f	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	16	IIT212
	M30 / L = 70	22 nf	High-grade st. steel	10...36	IP 68 / IP 69K	100	100	17	IIT213

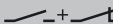
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 148, 153, 184, 188, 193

	M18 / L = 46	8 f	High-grade st. steel	10...36	IP 68 / IP 69K	600	100	10	IGT204
	M12 / L = 50	7 nf	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	222	IFT201
	M12 / L = 45	4 f	High-grade st. steel	10...36	IP 68 / IP 69K	800	100	8	IFT204
	M18 / L = 51	12 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	223	IGT201

f = flush / nf = non flush / qf = quasi-flush

Sensors for hygienic and wet areas

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable 2 m · Output function  · 4-wire · DC PNP · Wiring diagram no. 29

	M18 / L = 80	8 nf	High-grade st. steel	10...36	IP 67	320	250	53	IG5202

M12 connector · Output function  · 3-wire DC PNP · 2-wire DC PNP/NPN · Wiring diagram no. 39 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

	M18 / L = 70	8 nf	High-grade st. steel	10...36	IP 68 / IP 69K	300	100	221	IGT240

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

	M8 / L = 70	1 f	High-grade st. steel	10...36	IP 67	2000	200	225	IE5215

You can find wiring diagrams and scale drawings from page 134



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193									
	M8 / L = 55	2 nf	High-grade st. steel	10...36	IP 67	2000	200	226	IE5295
	M12 / L = 59	2 f	High-grade st. steel	10...36	IP 67	1100	200	227	IF5514
	M12 / L = 83	4 nf	High-grade st. steel	10...36	IP 67	400	250	69	IF5594
	M12 / L = 44	4 nf	High-grade st. steel	10...36	IP 67	1400	125	228	IF5796
	M12 / L = 59	4 nf	High-grade st. steel	10...36	IP 67	1400	250	229	IF5813
	M12 / L = 44	2 f	High-grade st. steel	10...36	IP 67	1200	250	230	IF5815
	M12 / L = 83	2 f	High-grade st. steel	10...36	IP 67	800	250	68	IF5851
	M18 / L = 90	8 nf	High-grade st. steel	10...36	IP 67	300	250	231	IG5602
	M18 / L = 76	5 f	High-grade st. steel	10...36	IP 67	500	250	232	IG5813
	M30 / L = 92	10 f	High-grade st. steel	10...36	IP 67	250	250	233	II5689
	M30 / L = 92	15 nf	High-grade st. steel	10...36	IP 67	200	250	234	II5776
M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 148, 153, 184, 188, 193									
	M12 / L = 83	2 f	High-grade st. steel	10...55	IP 67	1100	400	68	IF5759
	M12 / L = 83	4 nf	High-grade st. steel	10...55	IP 67	1500	300	69	IF5760
	M18 / L = 77	8 nf	High-grade st. steel	10...55	IP 67	300	300	235	IG5772

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.

M12 connector · Output function  /  · 2-wire · DC PNP/NPN · Wiring diagram no. 40 · Connector groups 148, 153, 184, 188, 193

	M18 / L = 90	5 f	High-grade st. steel	10...55	IP 67	700	400	236	IG5806
	M30 / L = 78	15 nf	High-grade st. steel	10...55	IP 67	200	400	73	II5733
	M30 / L = 92	10 f	High-grade st. steel	10...55	IP 67	450	400	233	II5751

M12 connector · Output function  +  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

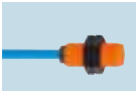
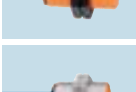
	M18 / L = 45	10 nf	High-grade st. steel	10...36	IP 67	300	250	237	IG5846

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 1D / 2G

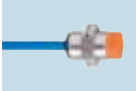
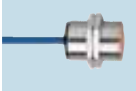
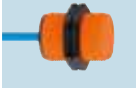
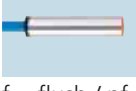
Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 K Ω [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Drawing no.	Order no.

Cable 2 m · Output function  · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 30

	M8 / L = 30	1 f	Brass	8.2 DC	7.5...30	80	70	2000	238	NE5001
	M12 / L = 30	2 f	PBT	8.2 DC	7.5...30	140	340	1200	239	NF5001
	M12 / L = 30	2 f	Brass	8.2 DC	7.5...30	140	340	1200	239	NF5002
	M12 / L = 30	4 nf	PBT	8.2 DC	7.5...30	140	130	1500	239	NF5003
	M12 / L = 30	4 nf	Brass	8.2 DC	7.5...30	140	130	1500	240	NF5004
	M18 / L = 33	5 f	PBT	8.2 DC	7.5...30	145	45	720	241	NG5001
	M18 / L = 33	5 f	Brass	8.2 DC	7.5...30	145	45	720	241	NG5002
	M18 / L = 33	8 nf	PBT	8.2 DC	7.5...30	155	50	300	241	NG5003



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 KΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.
Cable 2 m · Output function  · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 30										
	M18 / L = 33	8 nf	Brass	8.2 DC	7.5...30	155	50	300	242	NG5004
	M30 / L = 41	10 f	PBT	8.2 DC	7.5...30	145	140	450	243	NI5001
	M30 / L = 41	10 f	Brass	8.2 DC	7.5...30	145	140	450	243	NI5002
	M30 / L = 41	15 nf	PBT	8.2 DC	7.5...30	145	110	200	243	NI5003
	M30 / L = 41	15 nf	Brass	8.2 DC	7.5...30	145	110	200	244	NI5004
	40 x 12 x 26	4 nf	PBT	8.2 DC	7.5...30	110	135	400	245	NN5002
	28 x 10 x 16	2 f	PBT	8.2 DC	7.5...30	80	110	800	246	NS5002
	Ø 6.5 / L = 30	1 f	Brass	8.2 DC	7.5...30	80	70	2000	247	NT5001

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 1D / 1G / 2G

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 KΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.
M12 connector · Output function  · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 31 · Connector groups 195, 197										
	M12 / L = 50	7 nf	Brass	8.2 DC	7.5...30	210	145	700	9	NF500A
	M12 / L = 45	4 f	Brass	8.2 DC	7.5...30	210	115	700	8	NF501A
	M18 / L = 51	12 nf	Brass	8.2 DC	7.5...30	200	85	300	11	NG500A
	M18 / L = 46	8 f	Brass	8.2 DC	7.5...30	200	190	400	10	NG501A

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 kΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.

M12 connector · Output function  · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 31 · Connector groups 195, 197

	M30 / L = 50	22 nf	Brass	8.2 DC	7.5...30	250	120	100	160	NI500A
	M30 / L = 50	15 f	Brass	8.2 DC	7.5...30	230	210	100	159	NI501A

M12 connector · Output function  · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 32 · Connector group 197

	40 x 40 x 66	20 f	PPE	8.2 DC	7.5...30	250	450	200	124	NM500A
	40 x 40 x 66	35 nf	PPE	8.2 DC	7.5...30	220	710	100	124	NM501A

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 3D/3G

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 kΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.

M12 connector · Output function  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 196, 198

	40 x 40 x 54	40 nf	PC	10...30 DC	–	–	–	60	248	IM511A
	40 x 40 x 54	20 f	PC	10...30 DC	–	–	–	100	248	IM512A
	40 x 40 x 54	30 nf	PC	10...30 DC	–	–	–	100	248	IM513A

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 196, 198

	M12 / L = 70.2	6 nf	High-grade st. steel	10...36 DC	–	–	–	500	249	IF505A
	M18 / L = 70	12 nf	High-grade st. steel	10...36 DC	–	–	–	500	209	IG511A
	M30 / L = 70	25 nf	High-grade st. steel	10...36 DC	–	–	–	250	210	II503A
	M18 / L = 70	5 f	High-grade st. steel	10...36 DC	–	–	–	100	70	IG510A



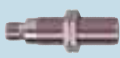
Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 KΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 2 · Connector groups 196, 198

	M30 / L = 70	10 f	High-grade st. steel	10...36 DC	–	–	–	50	250	II502A
	M12 / L = 60	3 f	High-grade st. steel	10...36 DC	–	–	–	100	251	IF503A

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 196, 198

	M18 / L = 70	5 f	High-grade st. steel	10...36 DC	–	–	–	100	70	IG512A
	M12 / L = 60	3 f	High-grade st. steel	10...36 DC	–	–	–	100	251	IF504A

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 3D

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 KΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.

Cable 2 m · Output function  · 2-wire · AC/DC · Wiring diagram no. 14

	M18 / L = 80	8 nf	Brass	20...250 AC/DC	–	–	–	25 / 50	252	IG001A*

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 5

	M18 / L = 80	8 nf	Brass	10...30 DC	–	–	–	300	252	IG513A

Cable 2 m · Output function  /  · 2-wire · DC PNP/NPN · Wiring diagram no. 42

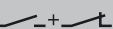
	M18 / L = 80	8 nf	Brass	10...30 DC	–	–	–	300	252	IG515A

Cable 6 m · Output function  · 2-wire · AC/DC · Wiring diagram no. 14

	M30 / L = 81	15 nf	Brass	20...250 AC/DC	–	–	–	25 / 50	253	II001A*

M12 connector · Output function  +  · 4-wire · DC PNP · Wiring diagram no. 11 · Connector groups 196, 198

	M18 / L = 80	10 nf	High-grade st. steel	10...30 DC	–	–	–	300	254	IG514A

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 kΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.
Terminals · Output function  · 4-wire · DC · Wiring diagram no. 33										
	40 x 40 x 105	20 f	PC	10...30 DC	–	–	–	100	255	IM510A
Terminals · Output function  · 4-wire · DC · Wiring diagram no. 34										
	40 x 40 x 105	20 f	PC	10...30 DC	–	–	–	100	255	IM509A
Terminals · Output function  · 2-wire · AC/DC · Wiring diagram no. 46										
	105 x 80 x 42	60 nf	PPE	20...250 AC/DC	–	–	–	4	256	ID002A*
Terminals · Output function  · 2-wire · AC/DC · Wiring diagram no. 50										
	40 x 40 x 105	40 nf	PC	20...250 AC/DC	–	–	–	10	255	IM002A*
Terminals · Output function  · 2-wire · DC · Wiring diagram no. 51										
	40 x 40 x 105	20 f	PC	10...55 DC	–	–	–	100	255	IM508A
Terminals · Output function  · 3-wire · AC/DC · Wiring diagram no. 50										
	40 x 40 x 105	20 f	PC	20...250 AC/DC	–	–	–	10	255	IM001A*
Terminals · Output function  · 3-wire · DC PNP · Wiring diagram no. 45										
	105 x 80 x 42	60 nf	PPE	10...30 DC	–	–	–	100	256	ID502A
Terminals · Output function  · 4-wire · DC · Wiring diagram no. 52										
	40 x 40 x 105	20 f	PC	10...30 DC	–	–	–	100	255	IM506A
	40 x 40 x 105	40 nf	PC	10...30 DC	–	–	–	100	255	IM507A

f = flush / nf = non flush / qf = quasi-flush

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.



Position sensors

Sensors with ATEX approval 2D / 3G

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 KΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 35 · Connector groups 196, 198

	M30 / L = 70	10 f	High-grade st. steel	10...36 DC	–	–	–	50	250	II504A

Terminals · Output function  /  · 3-wire · DC PNP · Wiring diagram no. 53

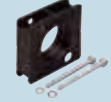
	105 x 80 x 42	60 nf	modified PPE	10...30 DC	–	–	–	100	256	ID503A

f = flush / nf = non flush / qf = quasi-flush

Switching amplifiers with ATEX approval

Type	Description	Order no.
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 1-channel · Relay output · Programmable output function · Short-circuit and wire monitoring	N0031A
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 2-channel · Relay outputs · Programmable output function · Short-circuit and wire monitoring	N0032A
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 2-channel · Relay outputs · Programmable output function · Short-circuit and wire monitoring	N0033A
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 1-channel · Relay output · Programmable output function · Short-circuit and wire monitoring	N0530A
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 1-channel · Transistor outputs · Programmable output function · Short-circuit and wire monitoring	N0531A
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 2-channel · Optocoupler output · Programmable output function · Short-circuit and wire monitoring	N0532A
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 2-channel · Relay outputs · Programmable output function · Short-circuit and wire monitoring	N0533A
	Switching amplifier for Namur sensors according to 94/9/EG (ATEX) · ATEX approval · Group II, category (1) G D · 2-channel · Transistor outputs · Programmable output function · Short-circuit and wire monitoring	N0534A

Accessories for sensors with smooth sleeve

Type	Description	Order no.
	Mounting clip · Ø 12 mm · for smooth body switches - Ø 12 mm · Form V · Housing materials: stainless steel	E11530
	Mounting clip · Ø 18 mm · for smooth body switches - Ø 18 mm · Form V · Housing materials: stainless steel	E11531
	Mounting clamp · Ø 4 mm · Housing materials: TPE	E10204
	Mounting clamp · Ø 6.5 mm · Housing materials: PPE	E10014
	Mounting clamp · Ø 20 mm · Housing materials: PA	E10192
	Mounting clamp · Ø 34 mm · Housing materials: PA	E10193
	Mounting clamp · Ø 20 mm · Housing materials: Mounting clamp: PBT / socket screw: steel galvanised	E10016
	Mounting clamp · Ø 34 mm · Housing materials: PBT	E10017
	Limit plungers · for type Ø 6.5 mm · with Sn = 1 mm f · Housing materials: Limit plungers: free cutting steel / plunger: C45K hardened on front / nut: Brass nickel-plated	E10155

Accessories for threaded M8 housings

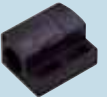
Type	Description	Order no.
	Angle bracket · for type M8 · Housing materials: stainless steel	E10734
	Mounting clamp · Ø 8 mm · Housing materials: aluminium black anodised	E10221
	Mounting clamp · Ø 8 mm · with end stop · for type M8 · Housing materials: PC	E11521
	Mounting sleeve · M12 x 1 - Ø 8 mm · 32 mm · with end stop · for type M8 · Housing materials: Brass special coating	E10848



Position sensors

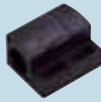
Type	Description	Order no.
	Mounting sleeve · M12 x 1 - Ø 8 mm · 42 mm · with end stop · for type M8 · Housing materials: Brass special coating	E10849
	Limit plungers · for types M8 x 1 · with Sn = 1 mm f, 2 mm f and 3 mm f · Housing materials: Limit plungers: free cutting steel / plunger: C45K hardened on front / nut: Brass nickel-plated	E10154

Accessories for threaded M12 housings

Type	Description	Order no.
	Angle bracket · for type M12 · Housing materials: stainless steel	E10735
	Mounting clip · O-shaped · for type M12 · Housing materials: stainless steel	E11533
	Mounting clamp · Ø 12 mm · Housing materials: PBT	E10015
	Mounting clamp · Ø 12 mm · with end stop · for type M12 · Housing materials: PC	E11047
	Mounting clamp · Ø 12 mm · with end stop · For sensors with 45° chamfer · for type M12 · Housing materials: PC	E11994
	Mounting sleeve · M16 x 1 - Ø 12 mm · 45 mm · with end stop · for type M12 · Housing materials: Brass nickel-plated	E10741
	Mounting sleeve · M16 x 1 - Ø 12 mm · 34 mm · with end stop · for type M12 · Housing materials: Brass nickel-plated	E10806
	Mounting sleeve · M16 x 1 - Ø 12 mm · with end stop · for type M12 · Housing materials: Brass nickel-plated	E11114
	Mounting sleeve · M16 x 1 - Ø 12 mm · 33.5 mm · with end stop · for type M12 · Housing materials: Brass anti-spatter / nut: Brass anti-spatter	E12452
	Lock nuts metal · M12 x 1 · Housing materials: Brass nickel-plated	E10024
	Lock nuts metal · M12 x 1 · Housing materials: stainless steel 316Ti / 1.4571	E10025

Type	Description	Order no.
	serrated washer · Ø 13 mm / Ø 18 mm · for type M12 · Housing materials: steel anti-spatter	E12412

Accessories for threaded M18 housings

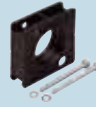
Type	Description	Order no.
	Angle bracket · for type M18 · Housing materials: stainless steel	E10736
	Mounting clip · O-shaped · for type M18 · Housing materials: stainless steel	E11534
	Mounting clamp · Ø 20 mm - Ø 18 mm · with reducing bush · for type M18 · Housing materials: PBT	E10076
	Mounting clamp · Ø 18 mm · with end stop · for type M18 · Housing materials: PC	E11048
	Mounting clamp · Ø 18 mm · with end stop · For sensors with 45° chamfer · for type M18 · Housing materials: PC	E11995
	Mounting sleeve · M24 x 1.5 - Ø 18 mm · 58 mm · with end stop · for type M18 · Housing materials: Brass nickel-plated	E10742
	Mounting sleeve · M24 x 1.5 - Ø 18 mm · 36 mm · with end stop · for type M18 · Housing materials: Brass nickel-plated	E10807
	Mounting sleeve · M22 x 1 - Ø 18 mm · with end stop · for type M18 · Housing materials: Brass white bronze coated	E11115
	Mounting sleeve · M22 x 1 - Ø 18 mm · 33.5 mm · with end stop · for type M18 · Housing materials: Brass anti-spatter / nut: Brass anti-spatter	E12453
	Plastic nut for flow plate · M18 x 1 · Housing materials: POM	E19503
	Lock nuts metal · M18 x 1 · Housing materials: Brass nickel-plated	E10027
	Lock nuts metal · M18 x 1 · Housing materials: stainless steel 316Ti / 1.4571	E10028



Position sensors

Type	Description	Order no.
	serrated washer · Ø 19 mm / Ø 27 mm · for type M18 · Housing materials: steel anti-spatter	E12413

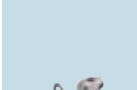
Accessories for threaded M30 housings

Type	Description	Order no.
	Angle bracket · for type M30 · Housing materials: stainless steel	E10737
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	E10077
	Mounting clamp · Ø 30 mm · with end stop · for type M30 · Housing materials: PC	E11049
	Mounting clamp · Ø 30 mm · with end stop · For sensors with 45° chamfer · for type M30 · Housing materials: PC	E11996
	Mounting sleeve · M36 x 1.5 - Ø 30 mm · 58 mm · with end stop · for type M30 · Housing materials: Brass nickel-plated	E10743
	Mounting sleeve · M36 x 1.5 - Ø 30 mm · 36 mm · with end stop · for type M30 · Housing materials: Brass nickel-plated	E10808
	Mounting sleeve · M36 x 1.5 - Ø 30 mm · 33.5 mm · with end stop · for type M30 · Housing materials: Brass anti-spatter / nut: Brass anti-spatter	E12454
	Lock nuts metal · M30 x 1.5 · Housing materials: Brass nickel-plated	E10030
	Lock nuts metal · M30 x 1.5 · Housing materials: stainless steel 316Ti / 1.4571	E10031
	serrated washer · Ø 31.6 mm / Ø 45 mm · for type M30 · Housing materials: steel anti-spatter	E12414

Accessories for rectangular housings

Type	Description	Order no.
	Mounting bracket · with integrated snap-on rail · for type IDC · Housing materials: stainless steel	E10730

System components

Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20718
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20719
	Mounting set · Ø 12.2 mm · Clamp mounting · free-standing M8 · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20856
	Mounting set · Ø 12.2 mm · Clamp mounting · free-standing M8 · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20857
	Mounting set · Ø 12.2 mm · Clamp mounting · free-standing M8 · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20860
	Mounting set · Ø 12.2 mm · Clamp mounting · free-standing M8 · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20861
	Mounting set · Ø 12.2 mm · Clamp mounting · aluminium profile · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20864
	Mounting set · Ø 12.2 mm · Clamp mounting · aluminium profile · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20865
	Mounting set · Ø 18.5 mm · Clamp mounting · aluminium profile · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20866
	Mounting set · Ø 18.5 mm · Clamp mounting · aluminium profile · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20867
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20869
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20870
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20873
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20874



Position sensors

Type	Description	Order no.



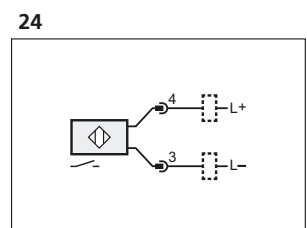
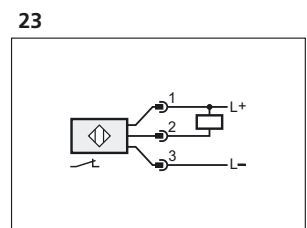
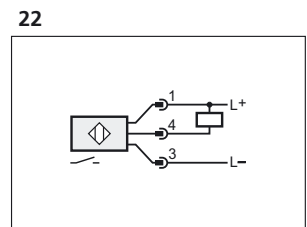
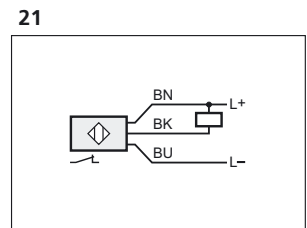
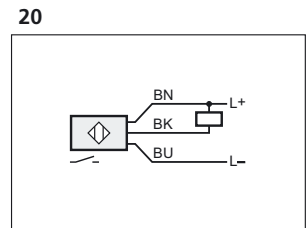
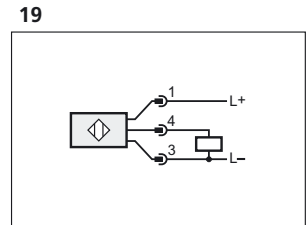
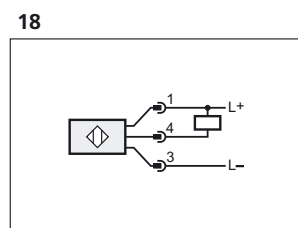
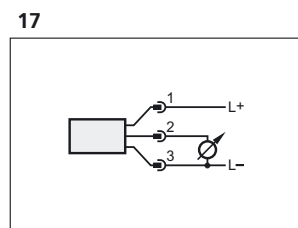
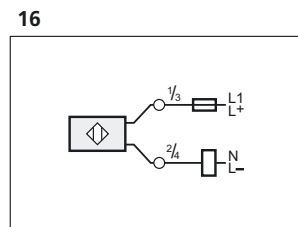
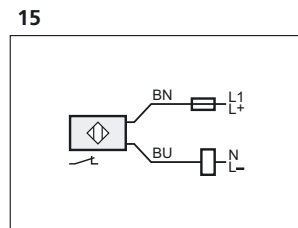
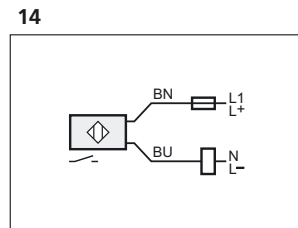
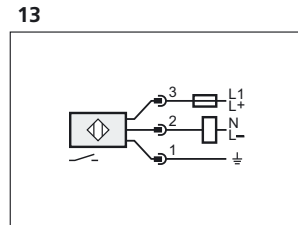
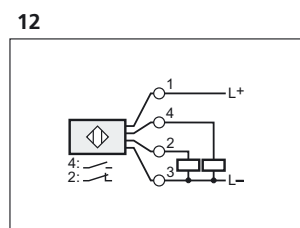
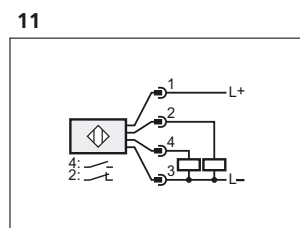
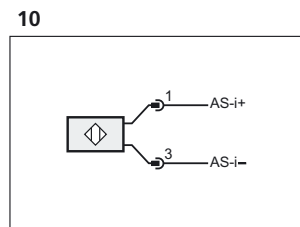
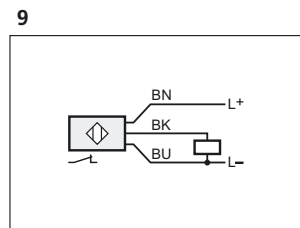
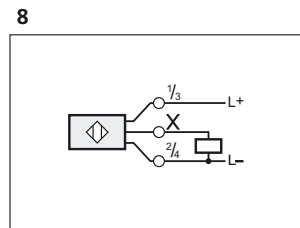
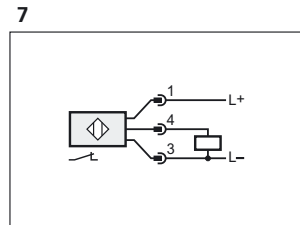
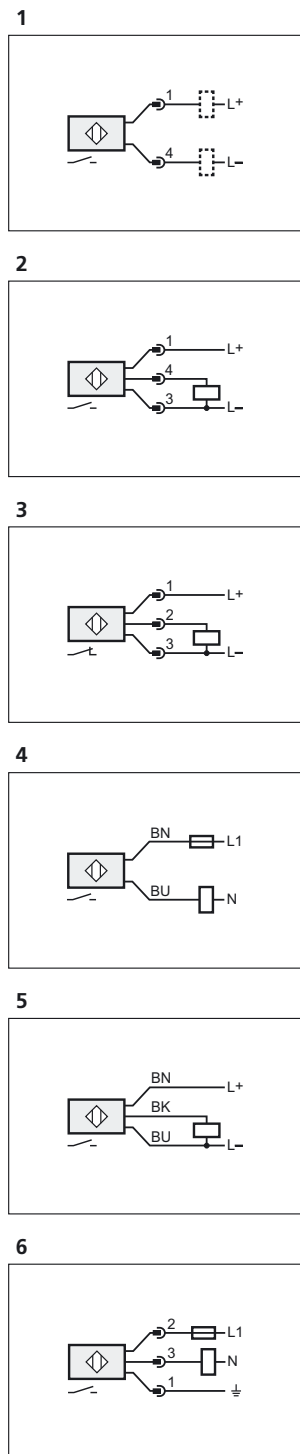
Mounting set · Ø 30.2 mm · Clamp mounting · aluminium profile · for type II, KI, OI, OI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc

E20875

Wiring diagrams

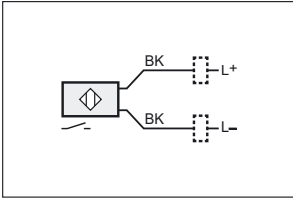
Core colours

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BU blue
BK black
WH white

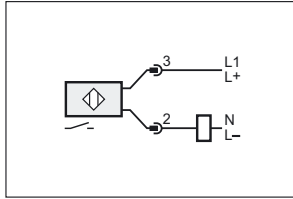


Wiring diagrams

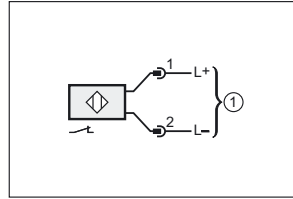
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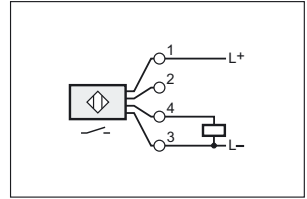
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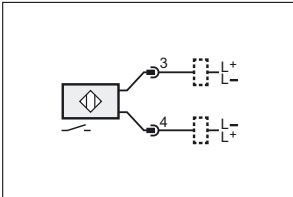
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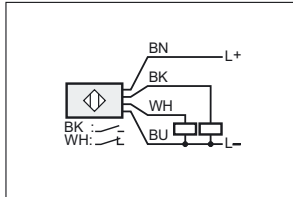
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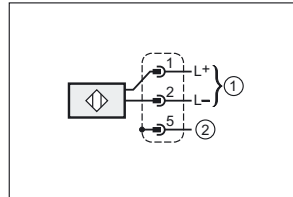


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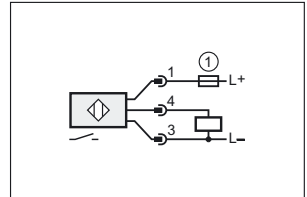


1: connection to NAMUR-amplifier

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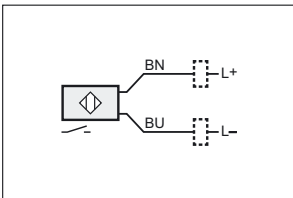


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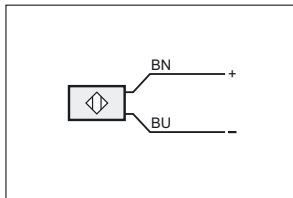


1: fuse

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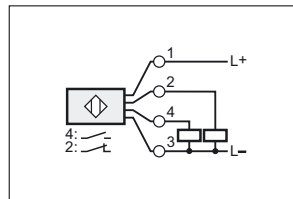


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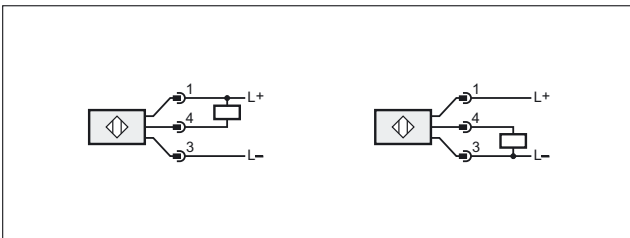


1: connection to NAMUR-amplifier, 2: Potential equalisation plug housing

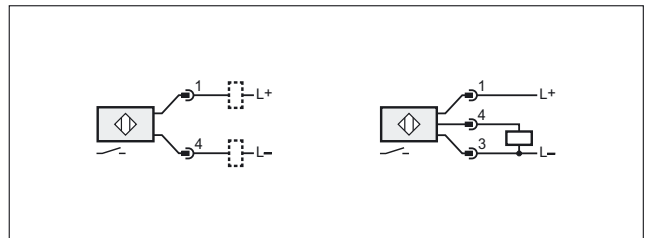
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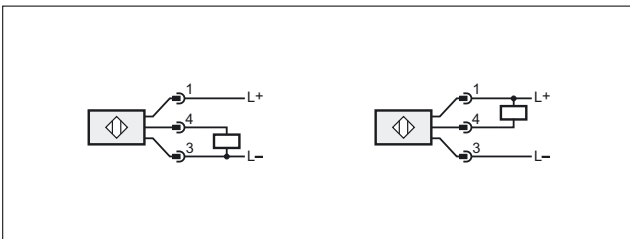
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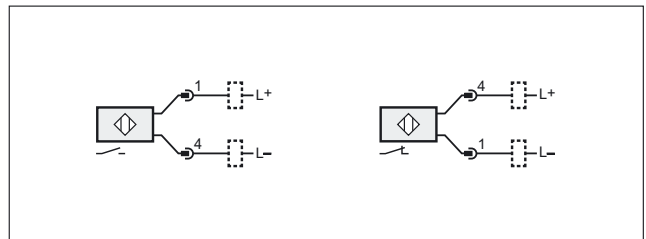
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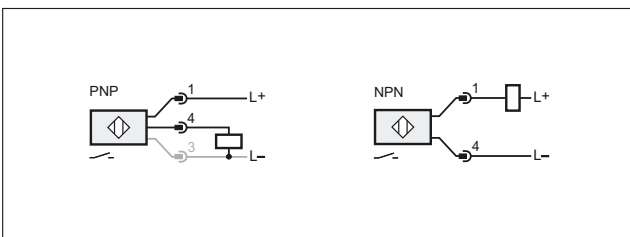
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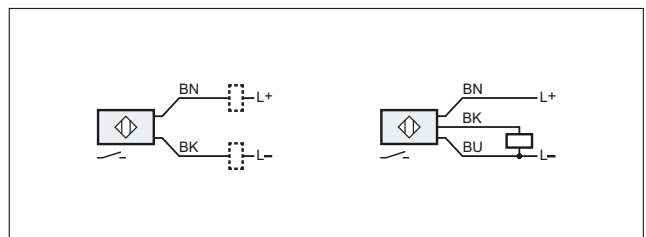
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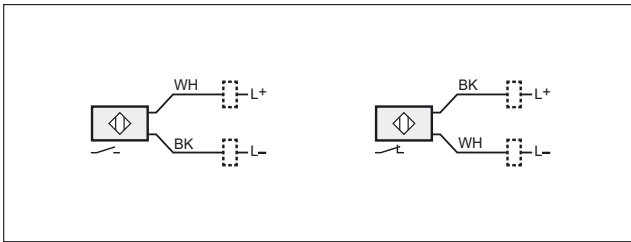




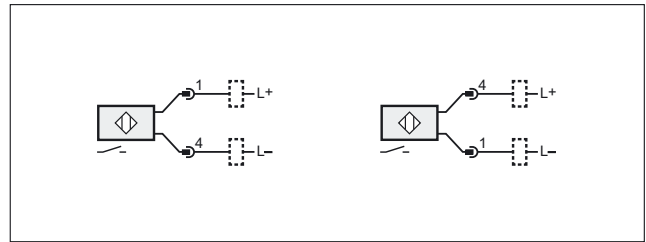
Position sensors

Wiring diagrams

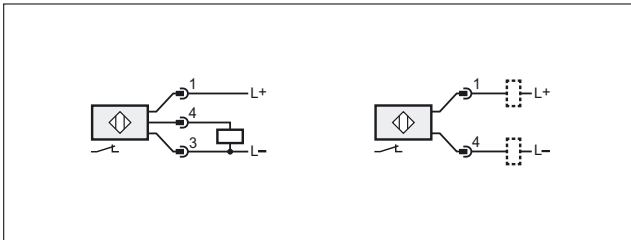
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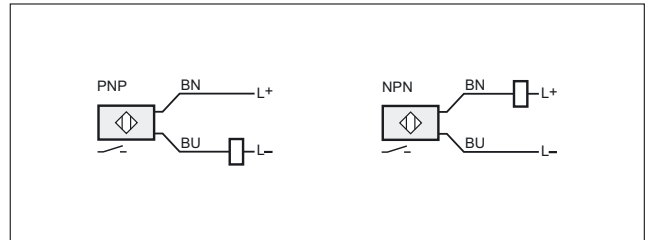
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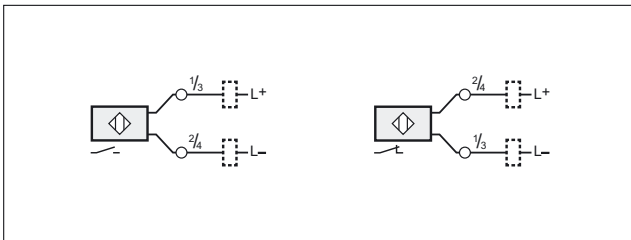
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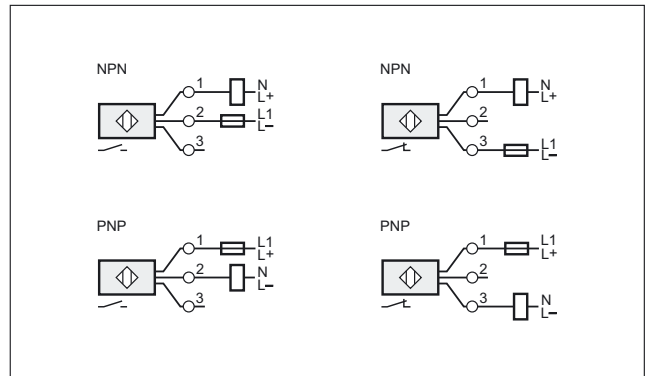
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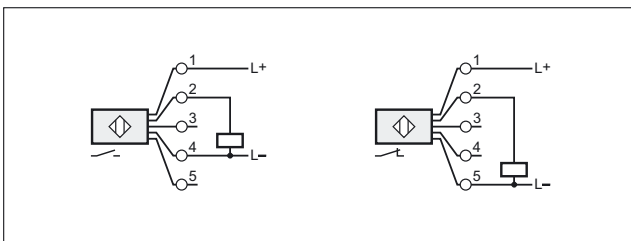
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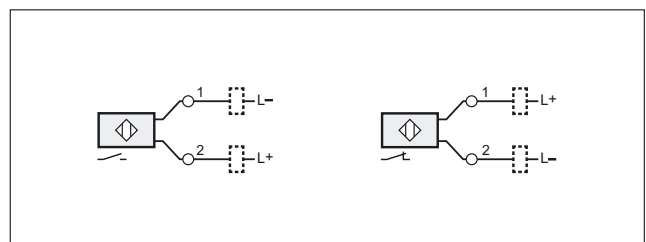
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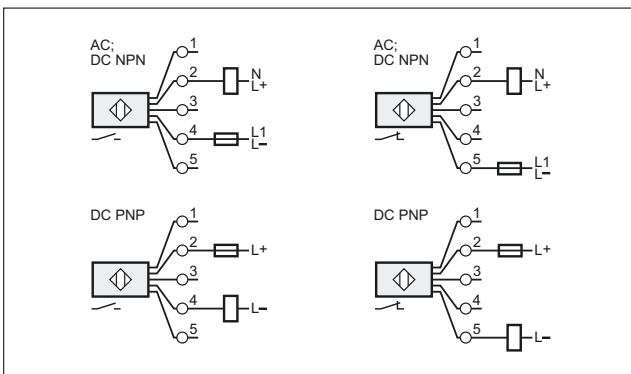
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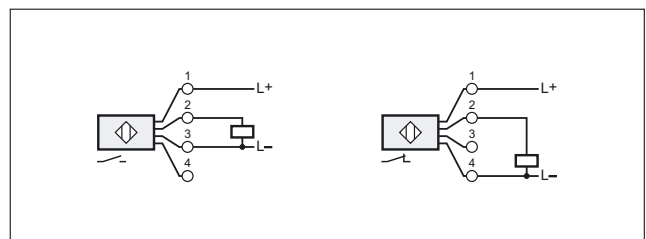
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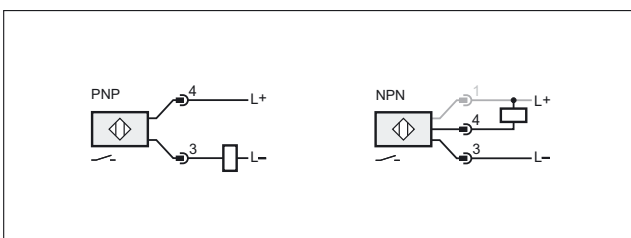
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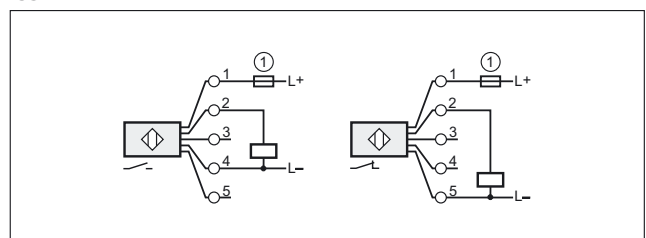
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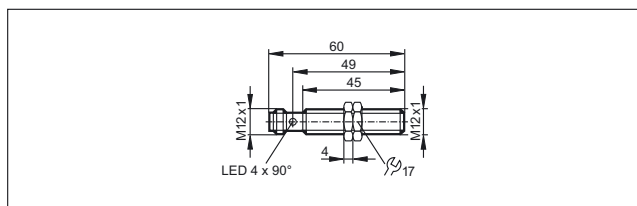
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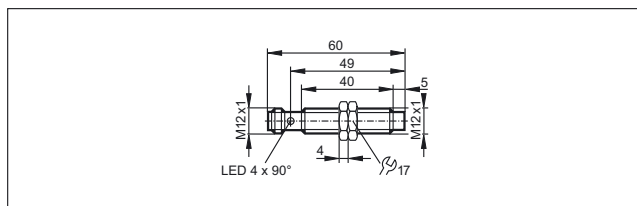
1: fuse

Scale drawings / drawing no. – CAD download: www.ifm.com

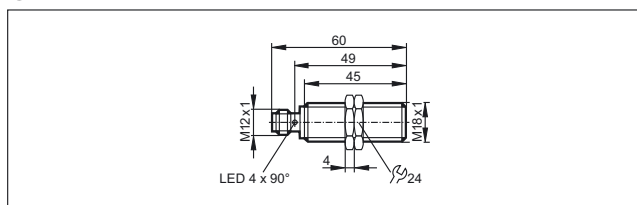
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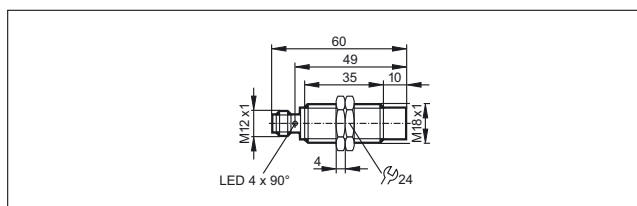
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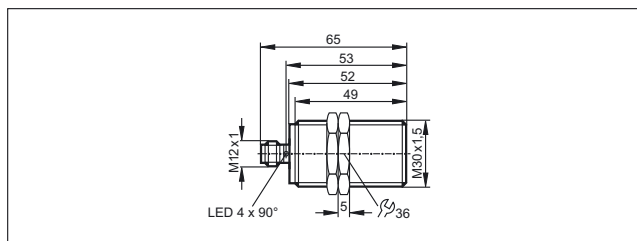
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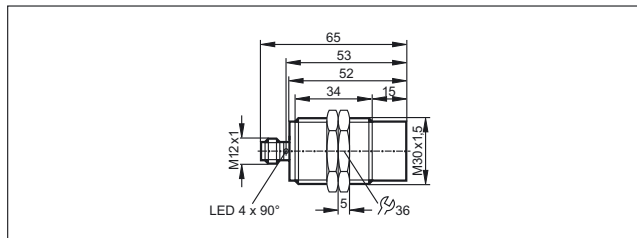
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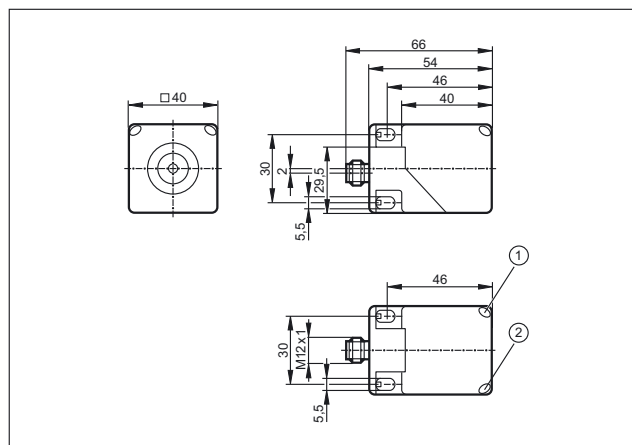
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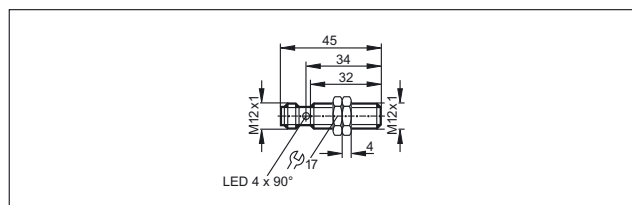


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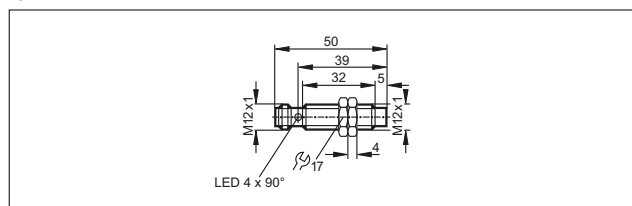


1: LED yellow, 2: LED green

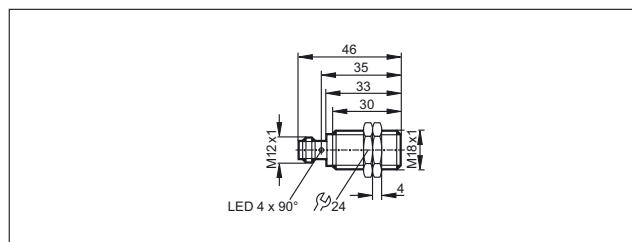
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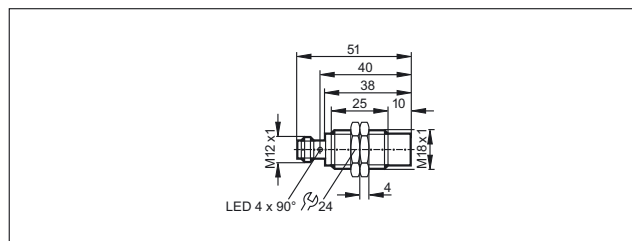
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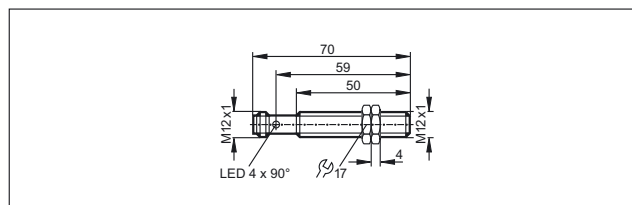
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11



12

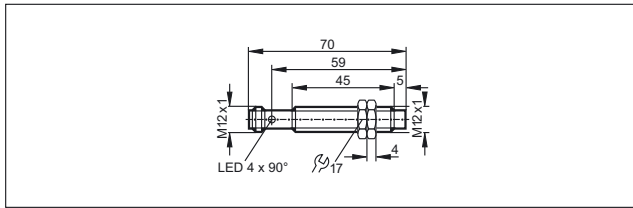




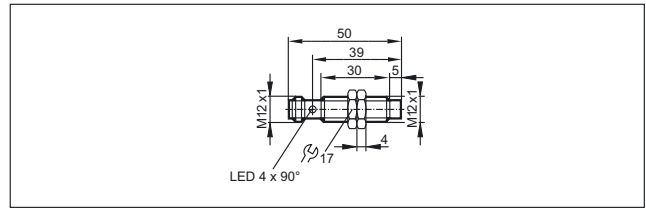
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

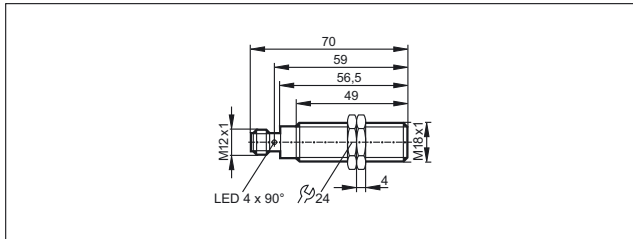
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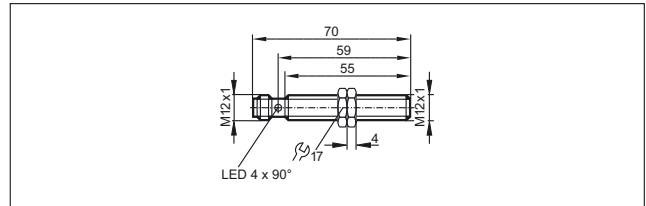
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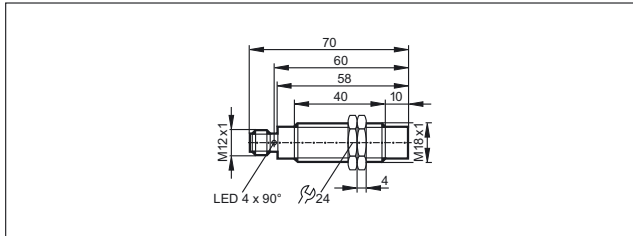
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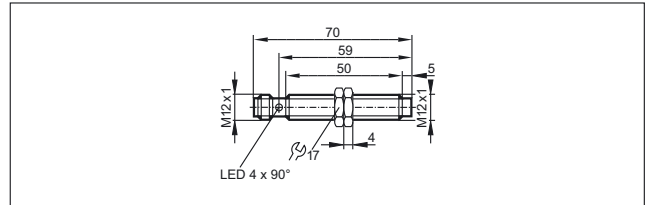
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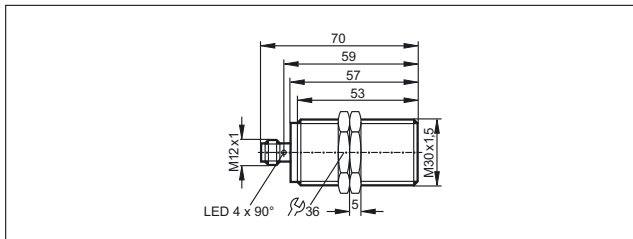
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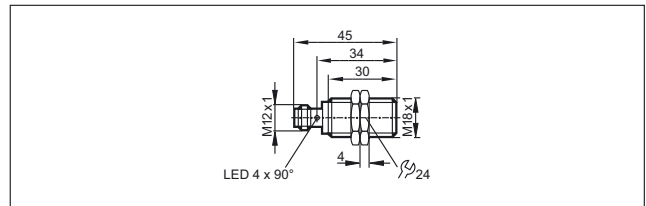
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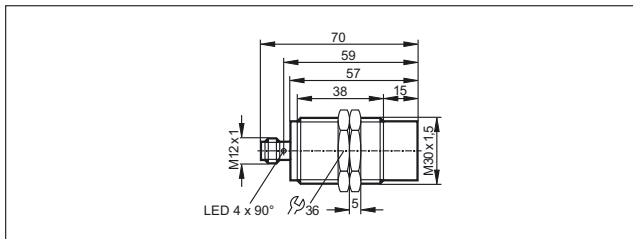
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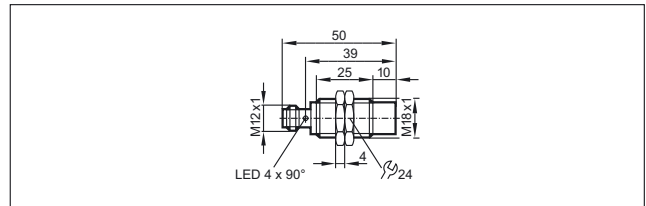
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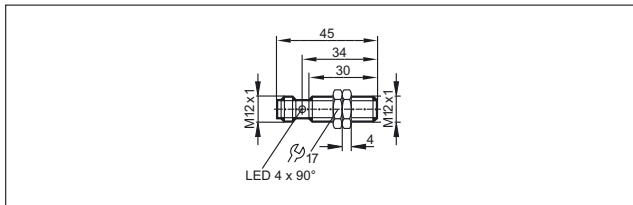
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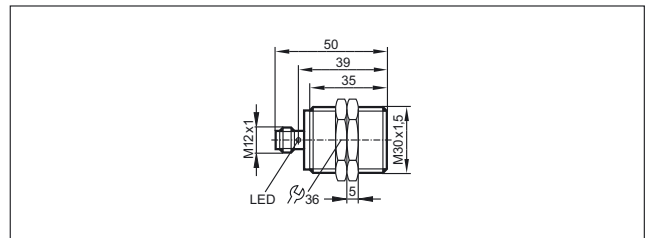
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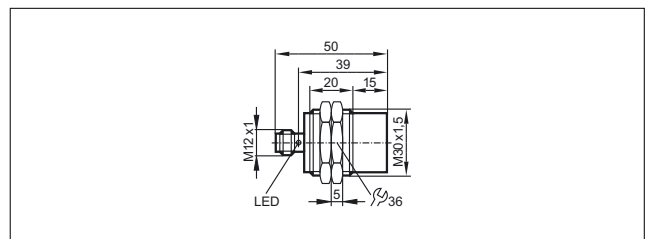
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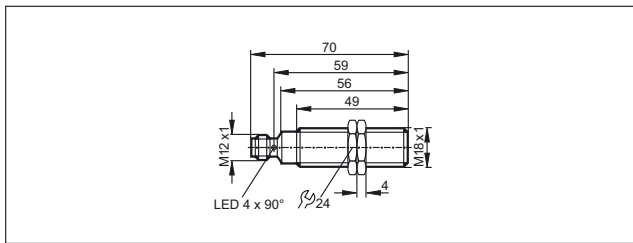


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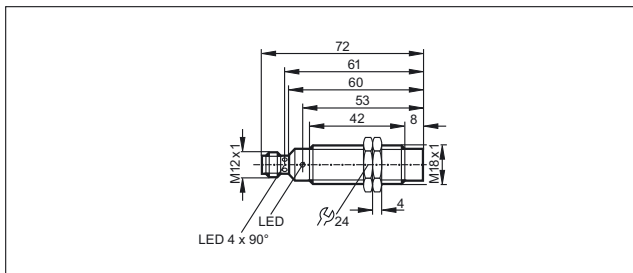


Scale drawings / drawing no. – CAD download: www.ifm.com

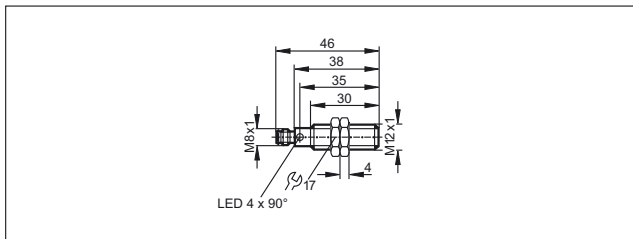
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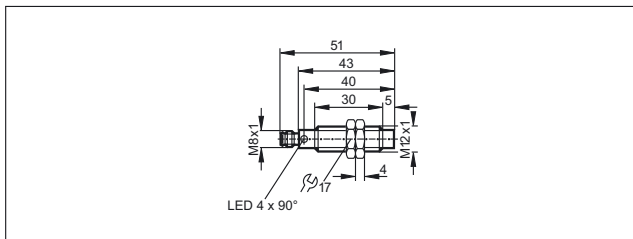
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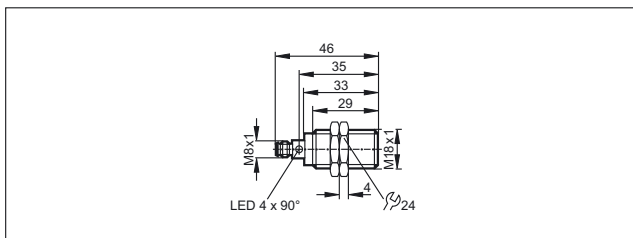
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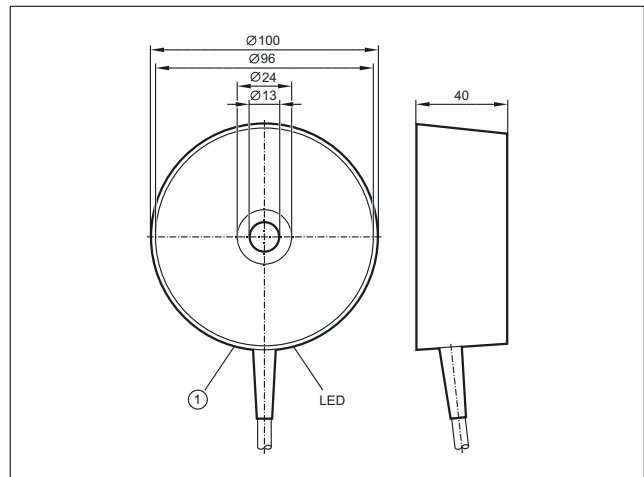
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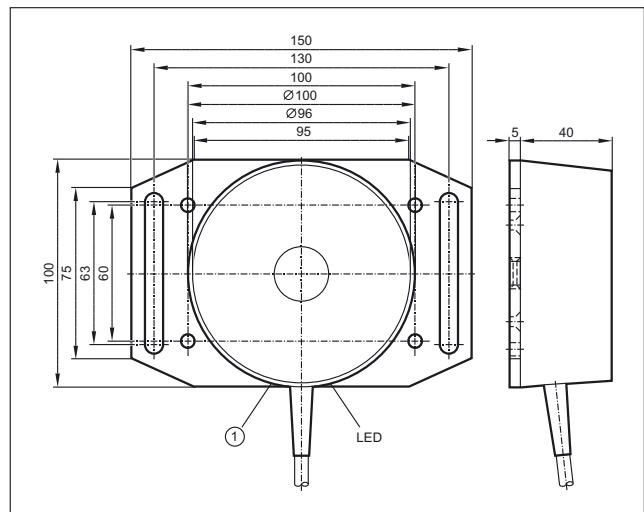


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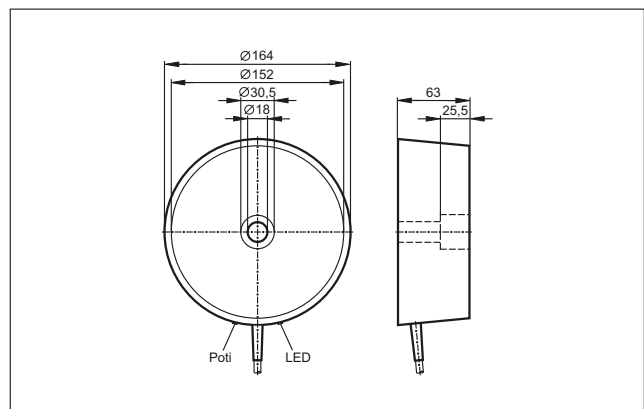
1: potentiometer

32



1: potentiometer

33

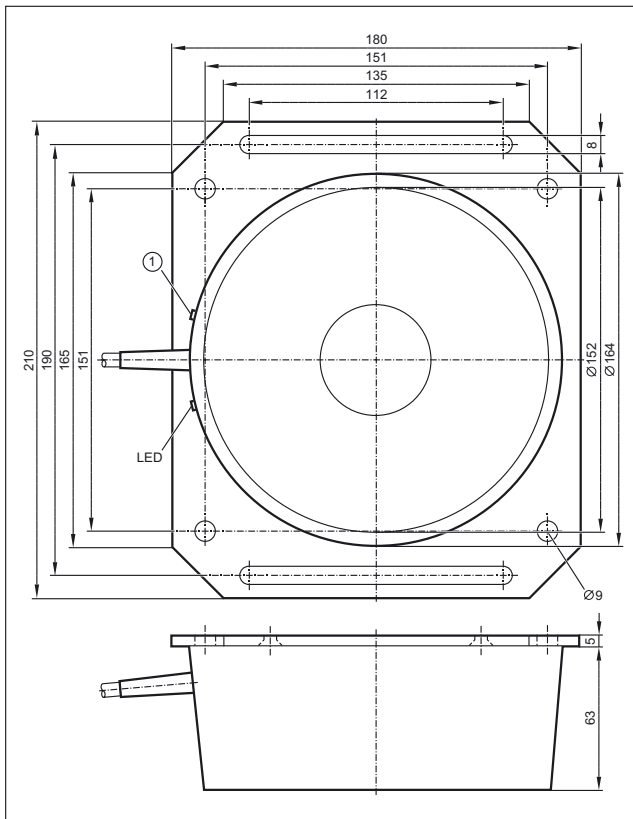




Position sensors

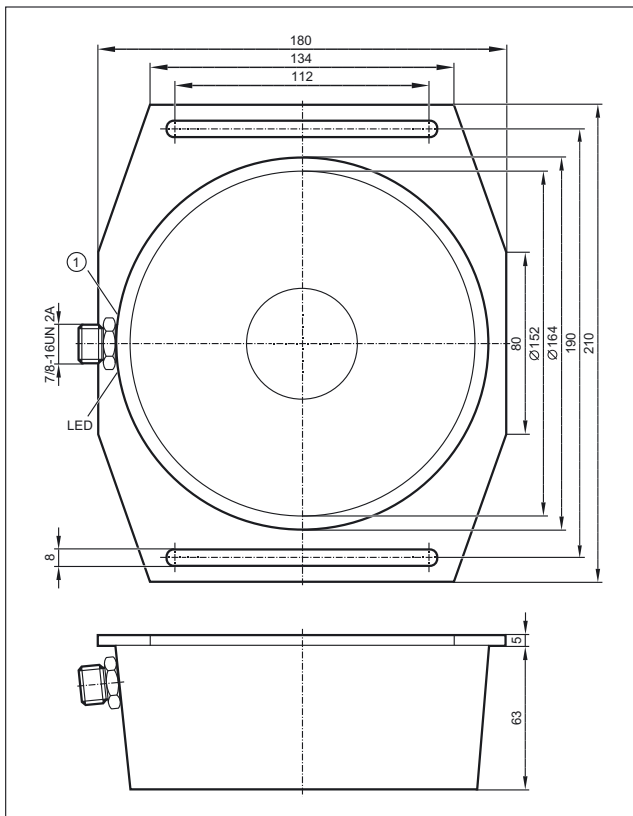
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34



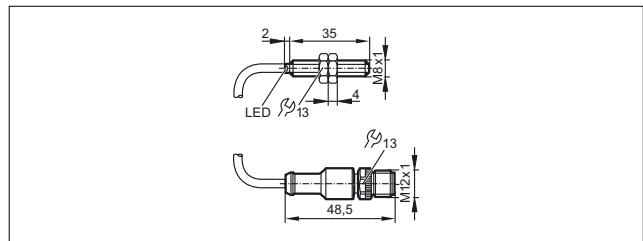
1: potentiometer

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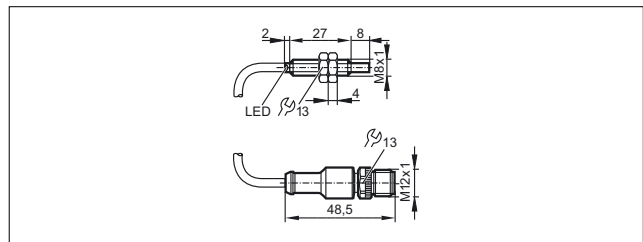


1: potentiometer

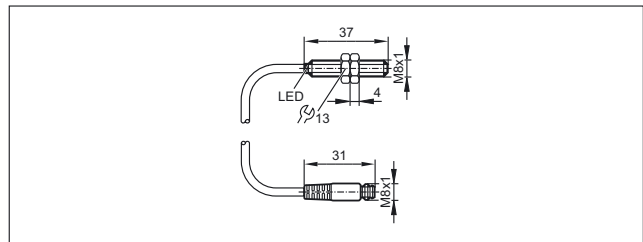
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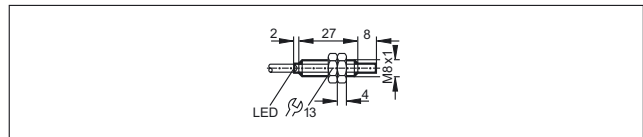
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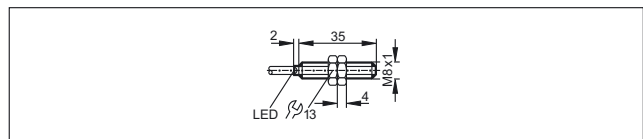
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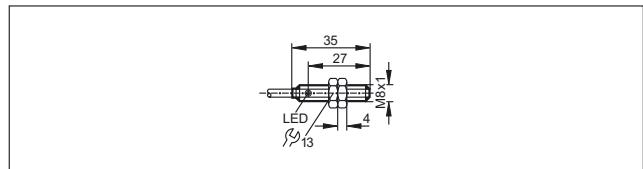
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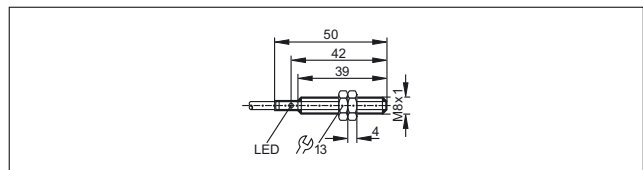
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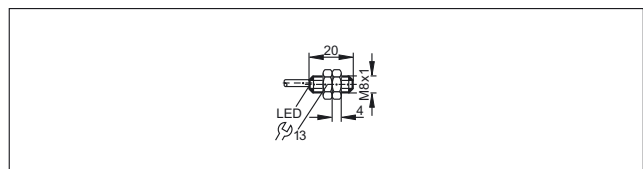
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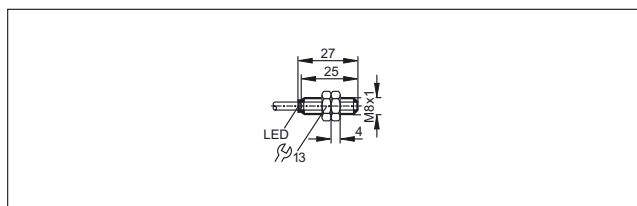


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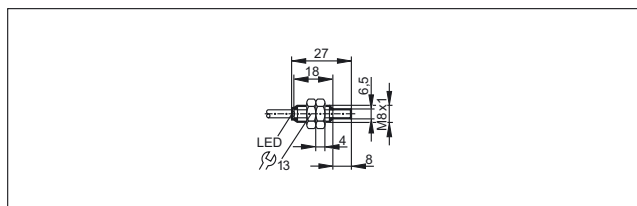


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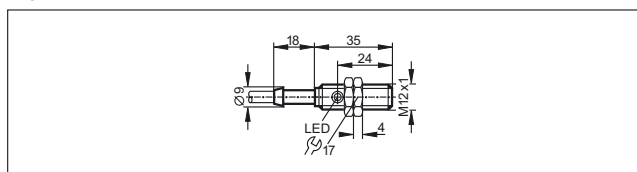
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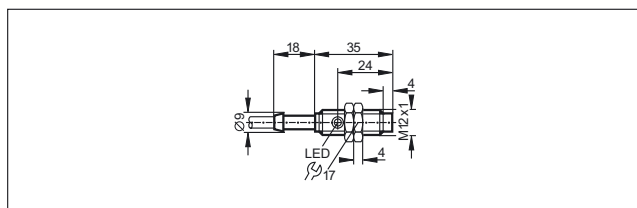
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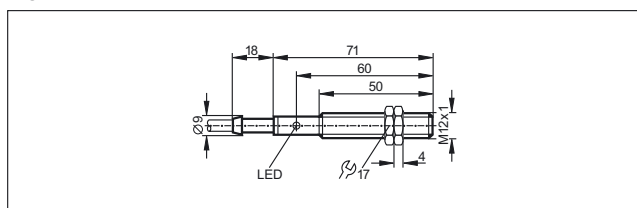
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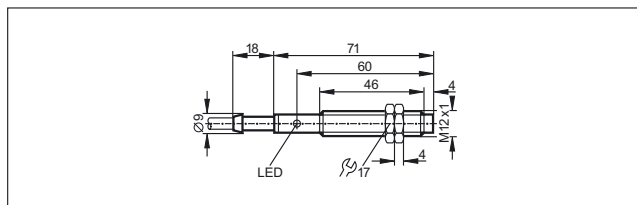
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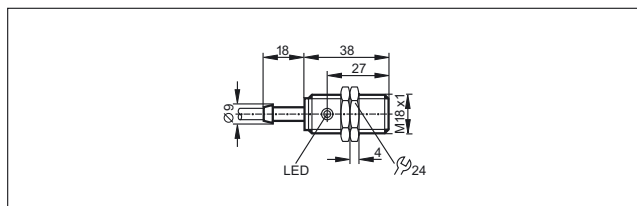
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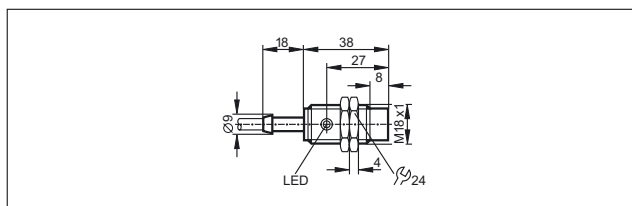
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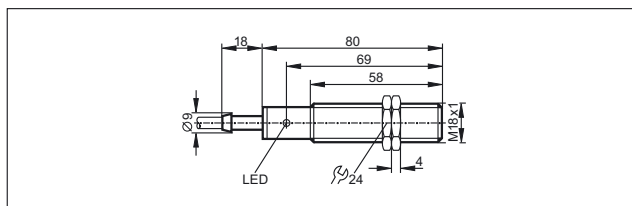
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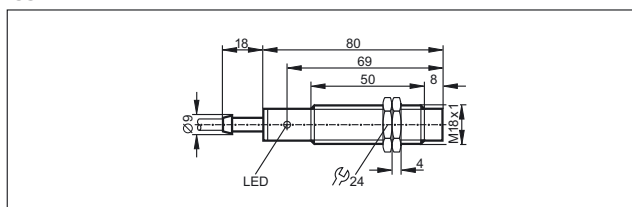
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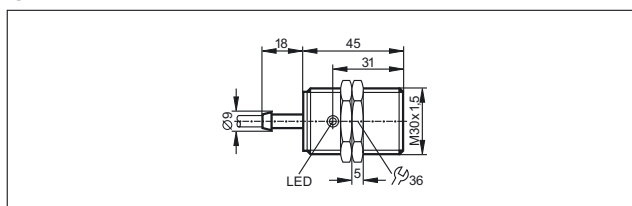
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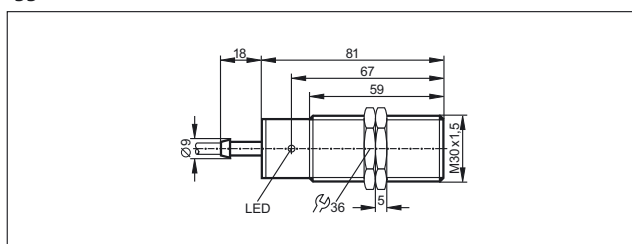
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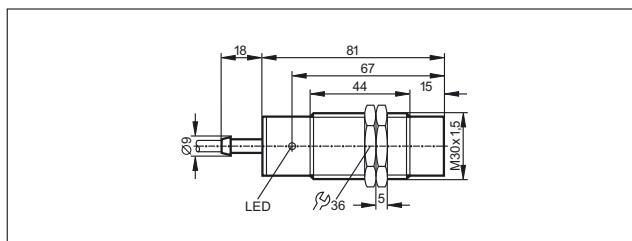
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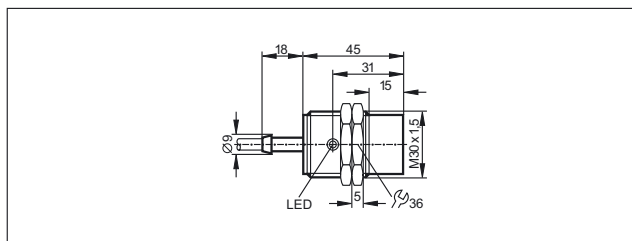
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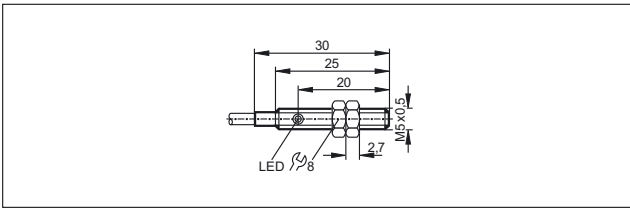




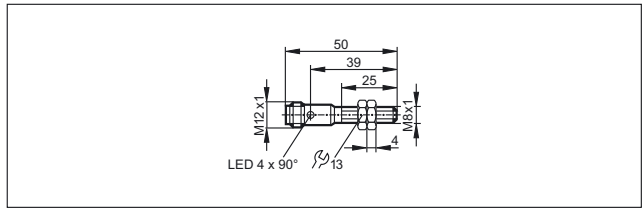
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

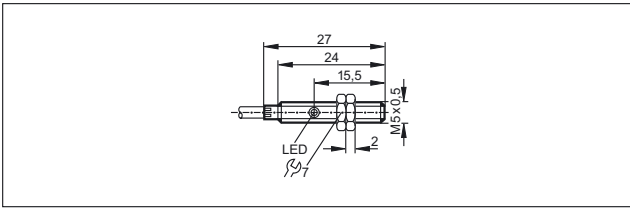
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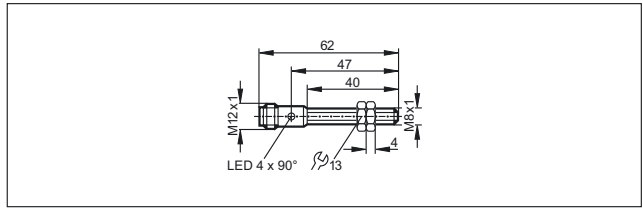
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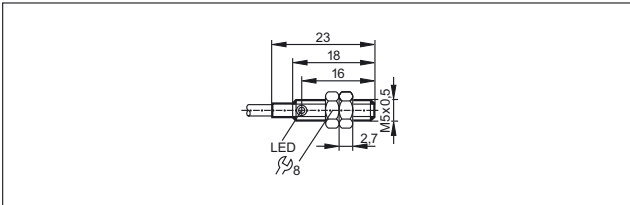
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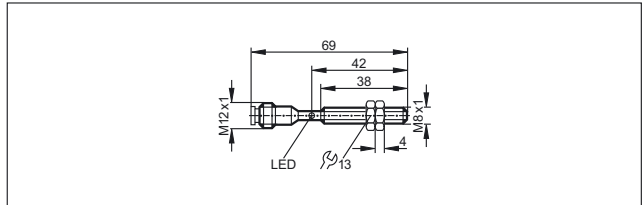
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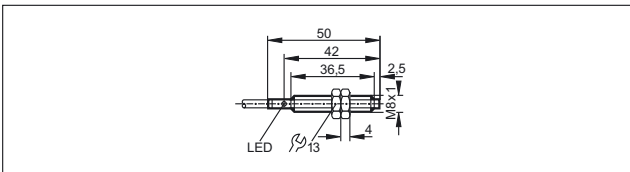
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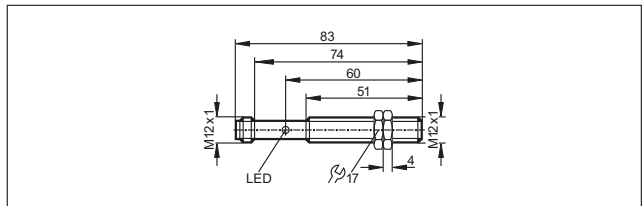
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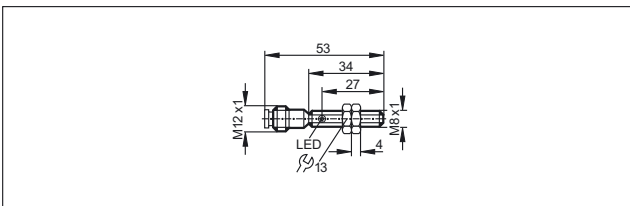
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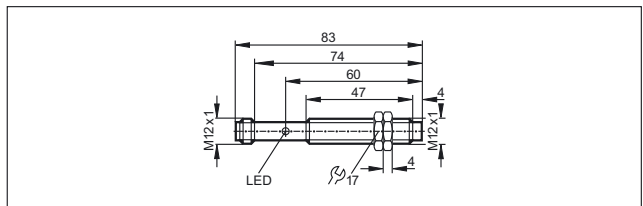
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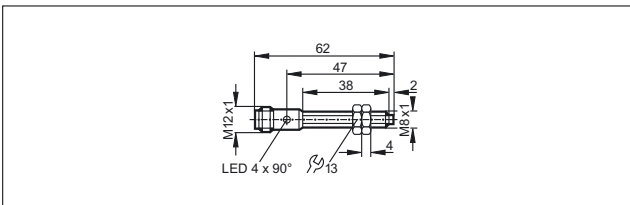
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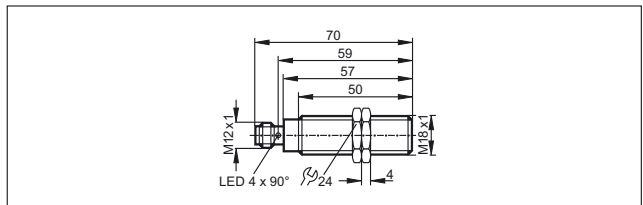
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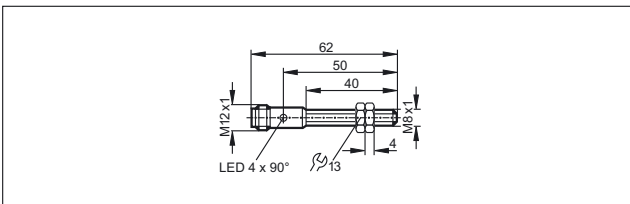
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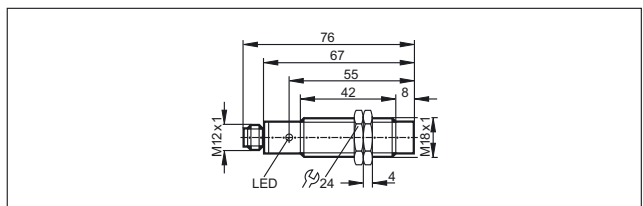
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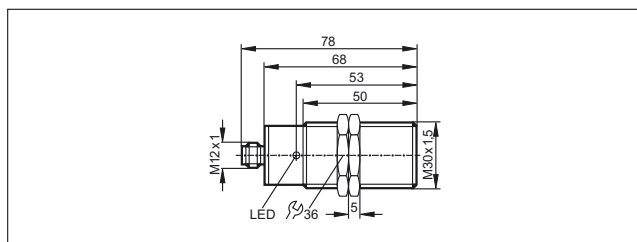


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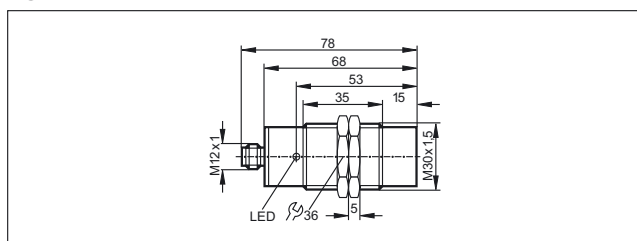


Scale drawings / drawing no. – CAD download: www.ifm.com

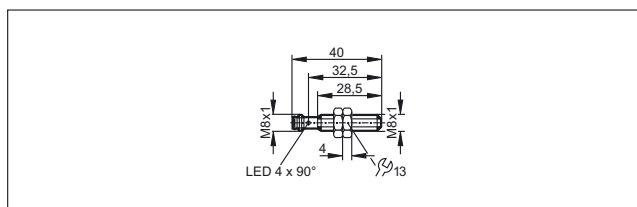
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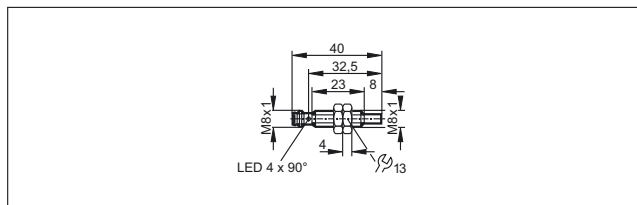
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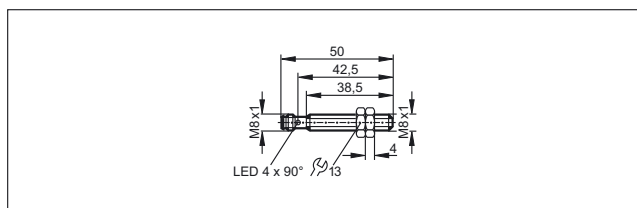
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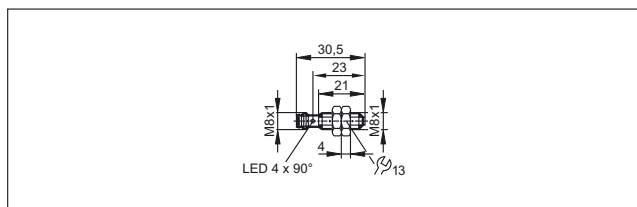
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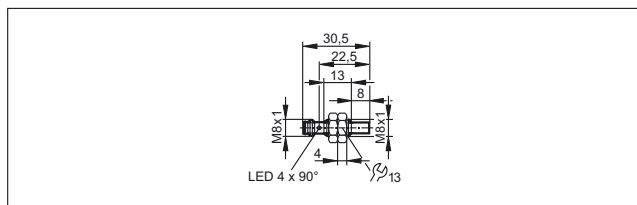
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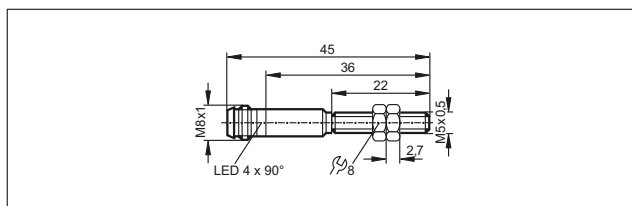
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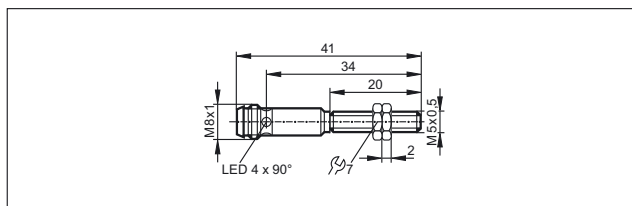
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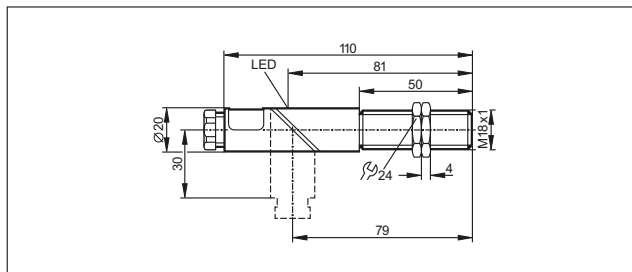
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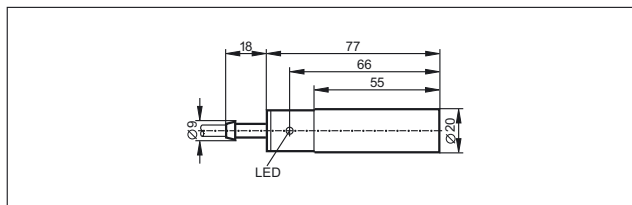
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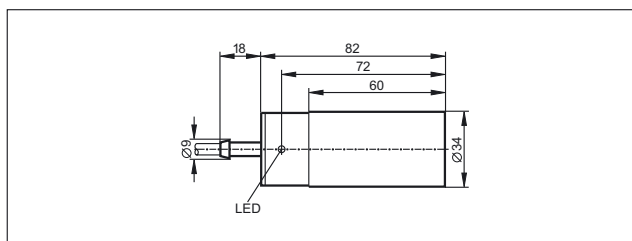
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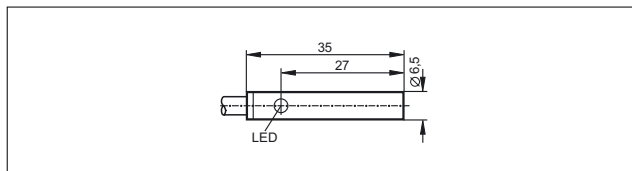
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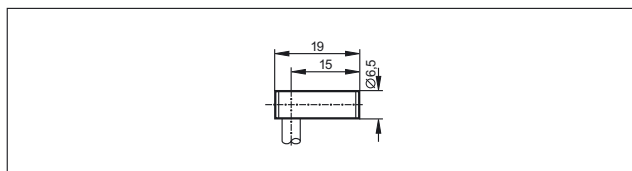
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84



85

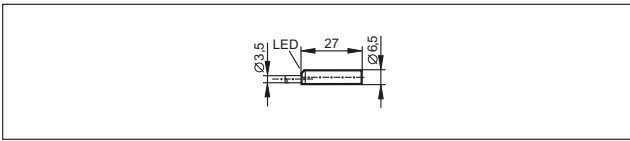




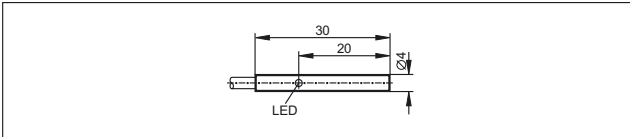
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

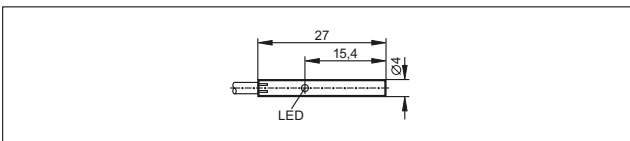
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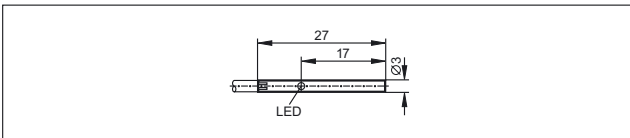
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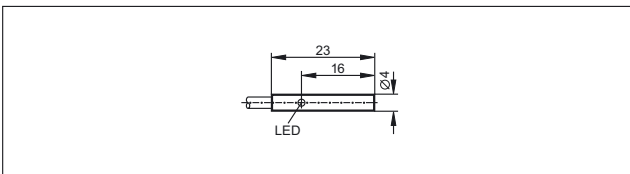
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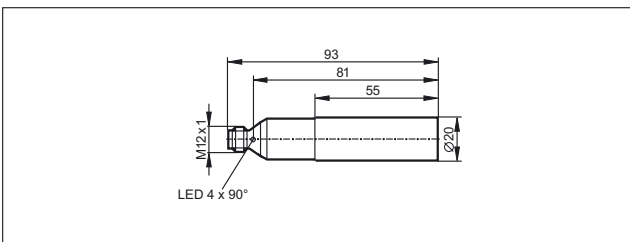
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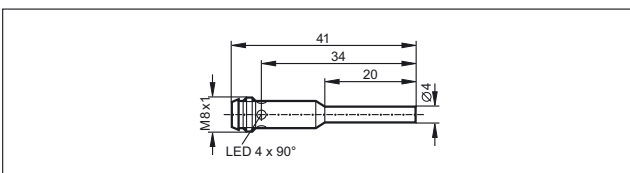
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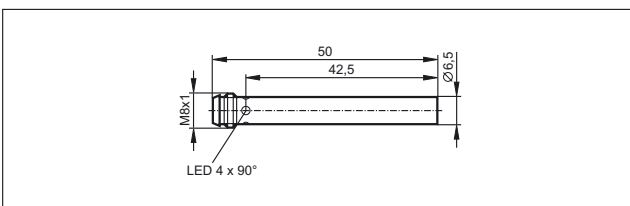
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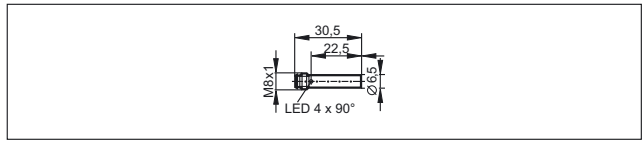
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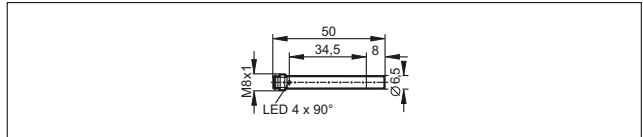
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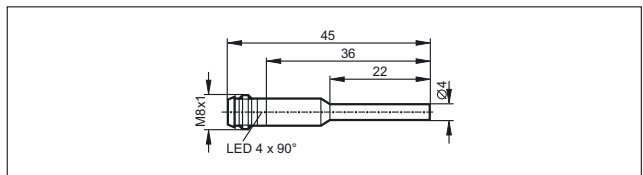
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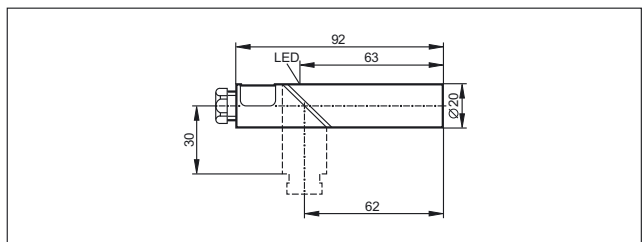
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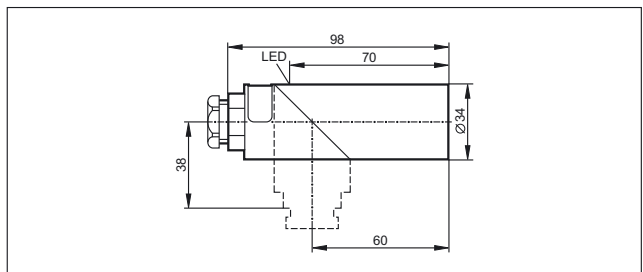
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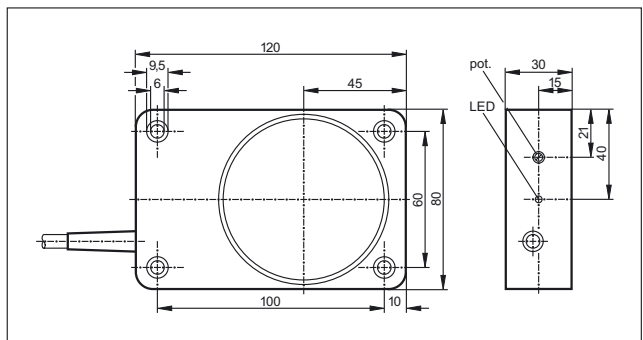
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98

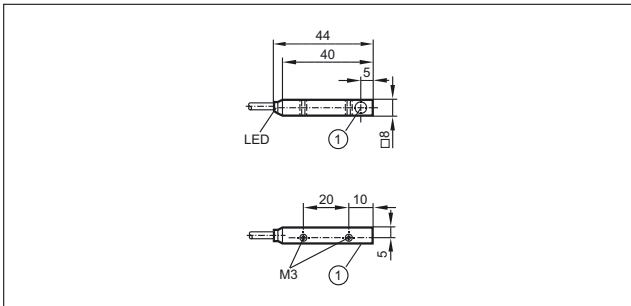


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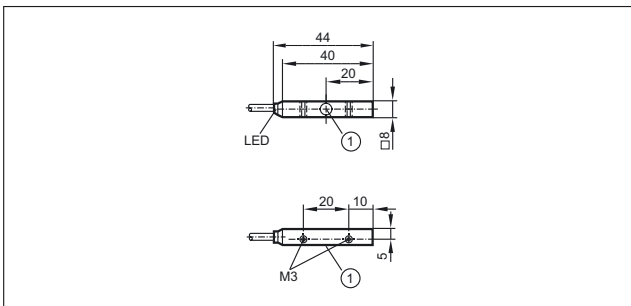
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100



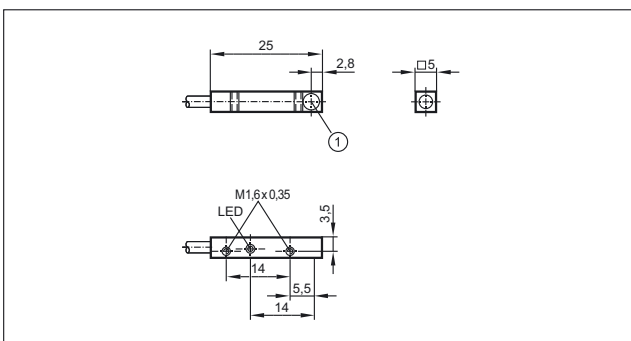
1: sensing face

101



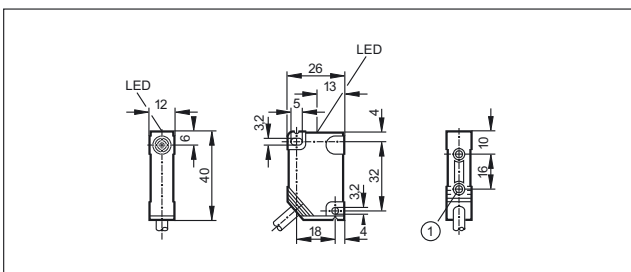
1: sensing face

102



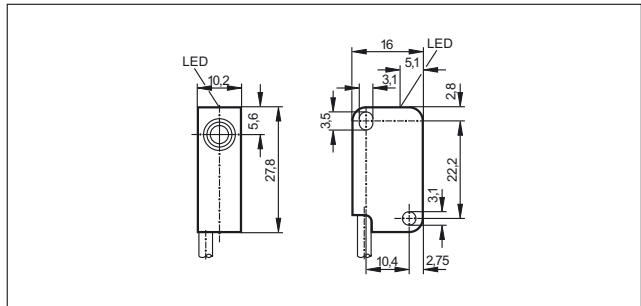
1: sensing face

103

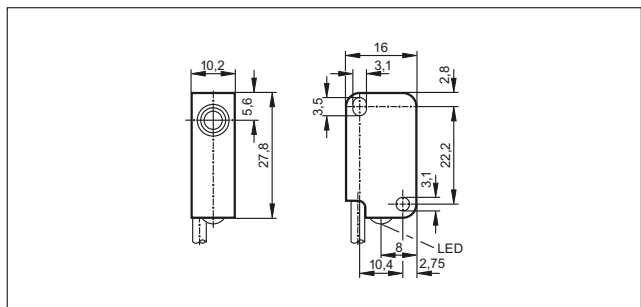


1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.

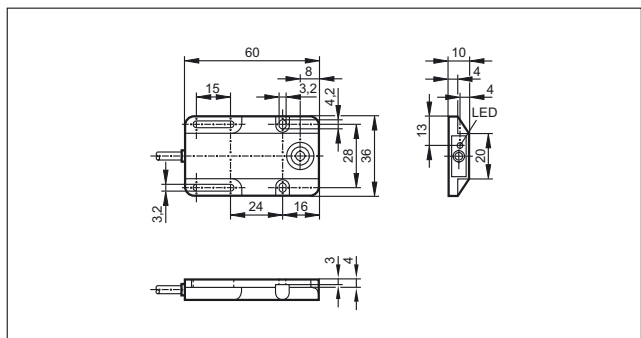
104



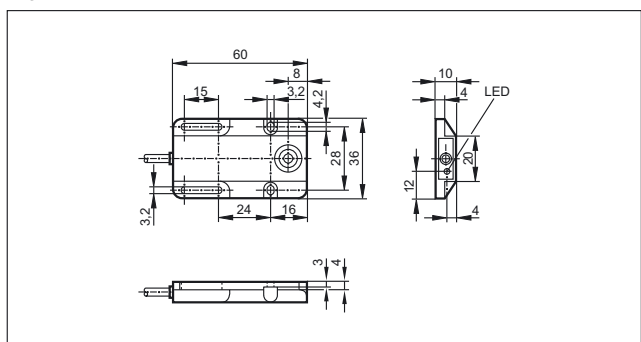
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106



107

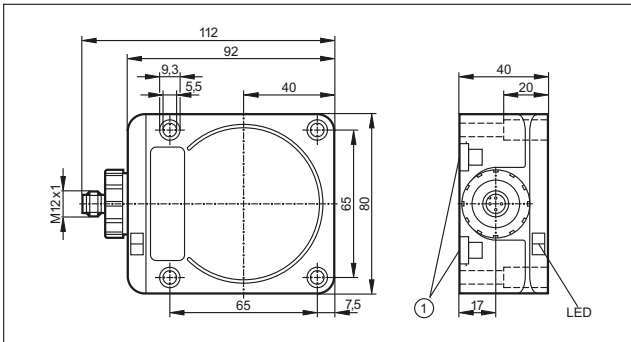




Position sensors

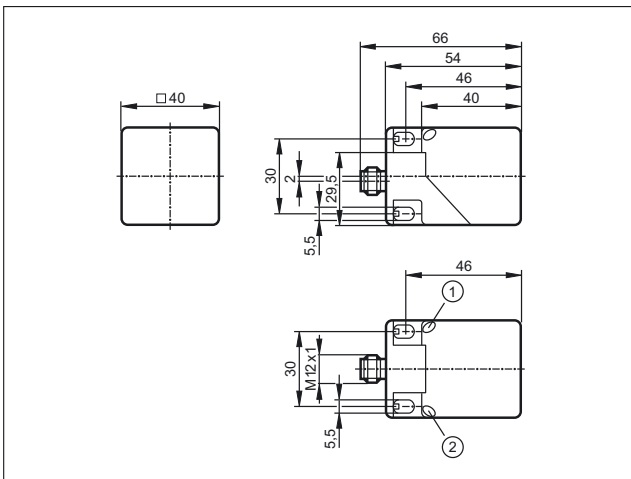
Scale drawings / drawing no. – CAD download: www.ifm.com

108



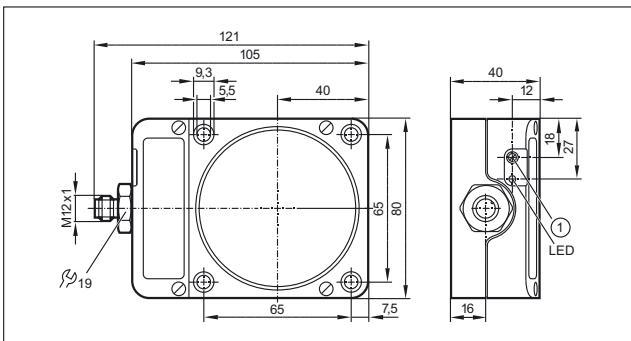
1: Mounting on DIN rail

109

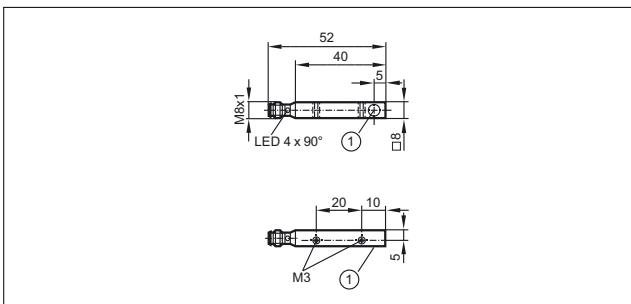


1: LED yellow, 2: LED green

110

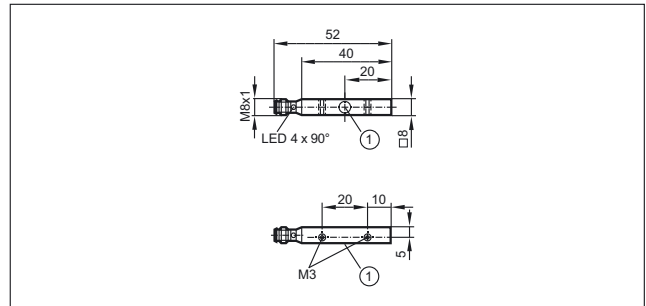


111



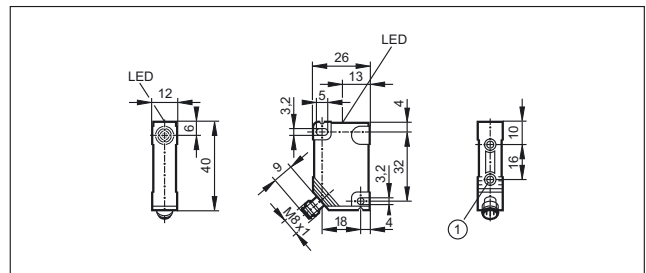
1: sensing face

112



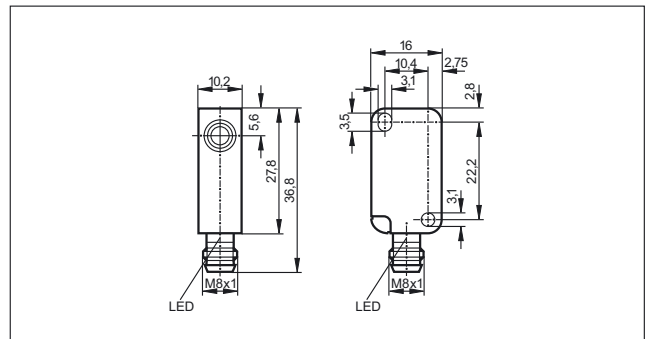
1: sensing face

113

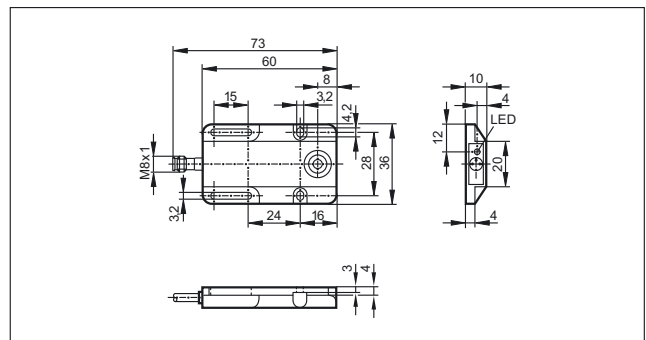


1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.

114

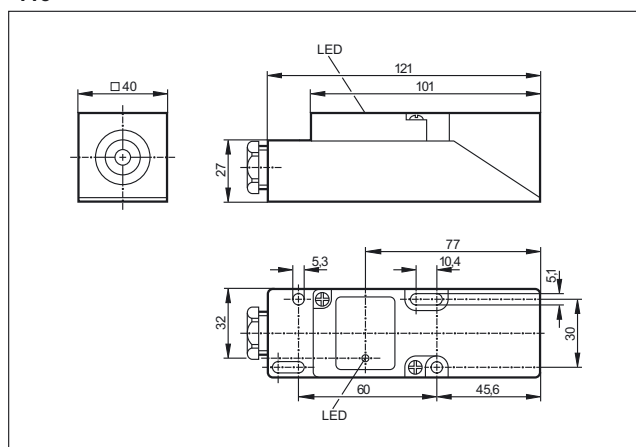


115

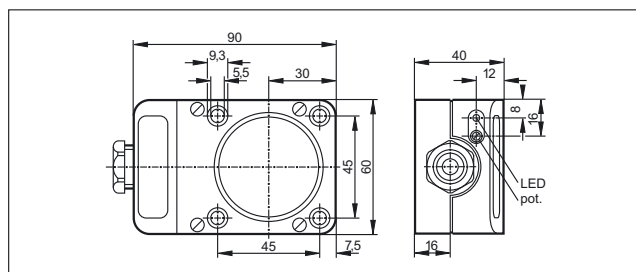


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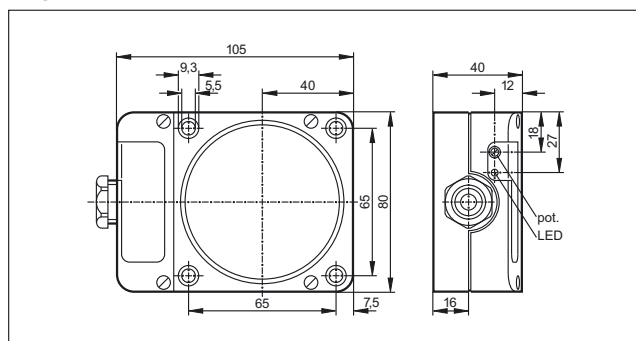
116



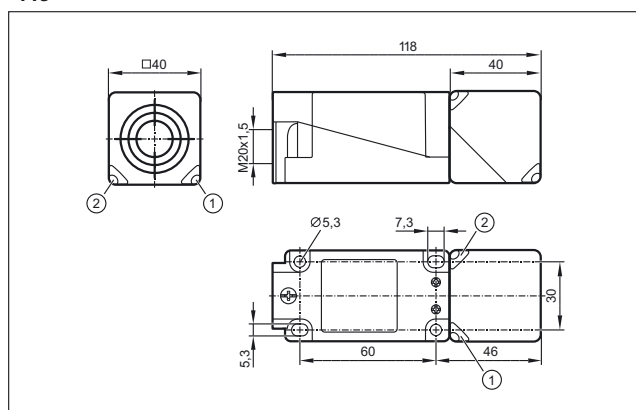
117



118

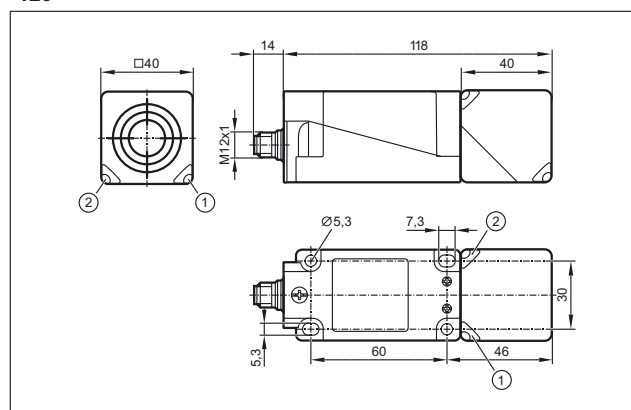


119



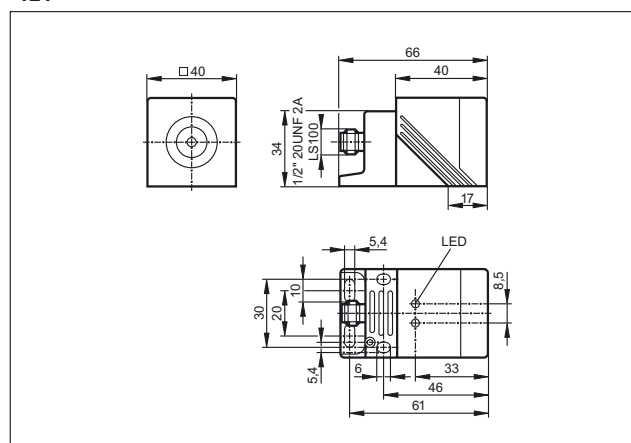
1: LED green, 2: LED yellow

120

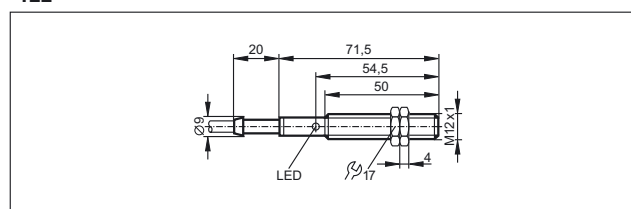


1: LED green, 2: LED yellow

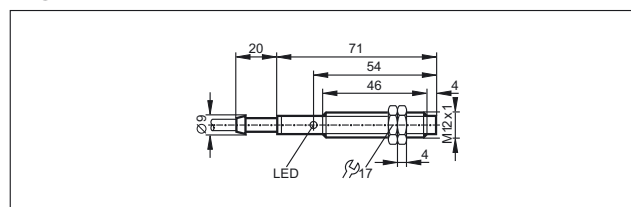
121



122



123

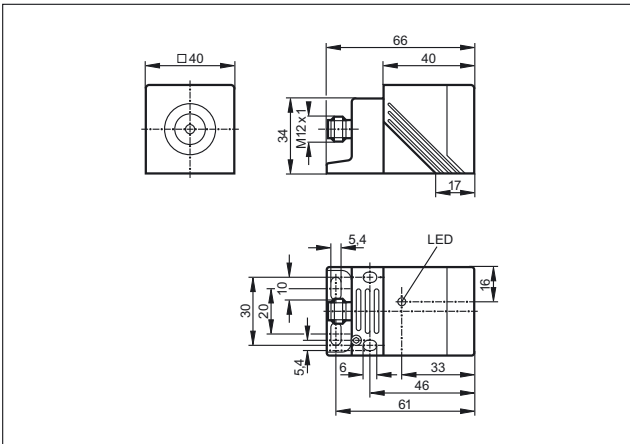




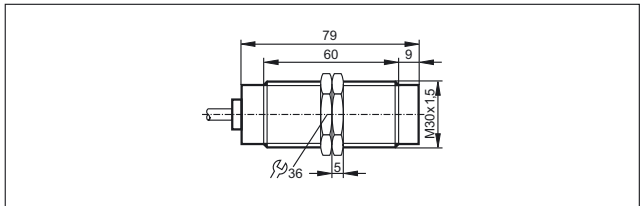
Position sensors

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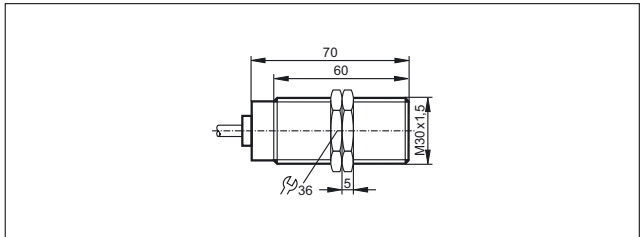
124



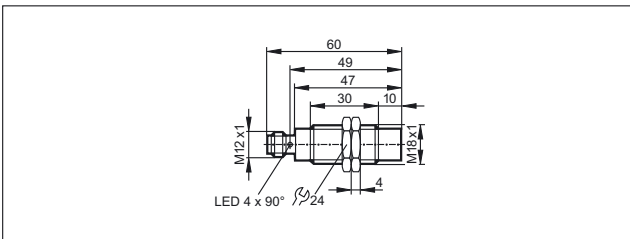
130



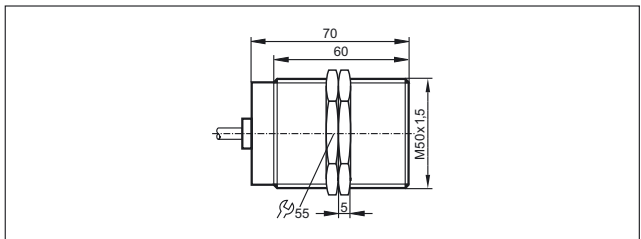
131



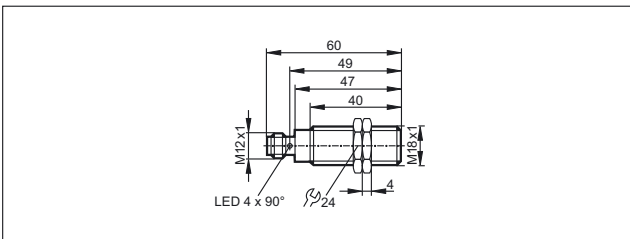
125



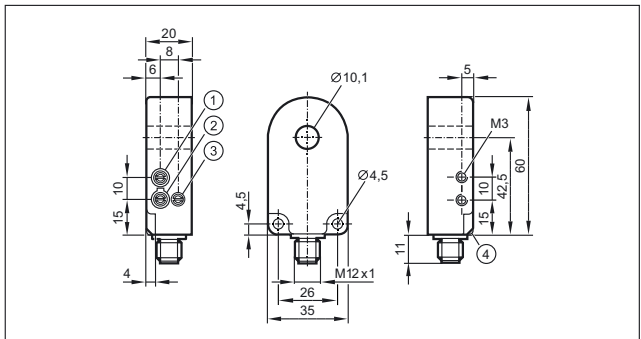
132



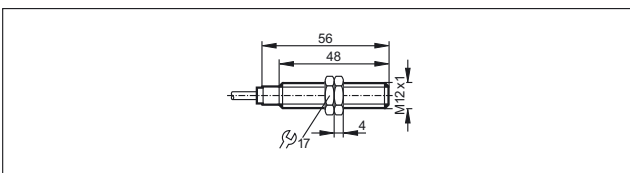
126



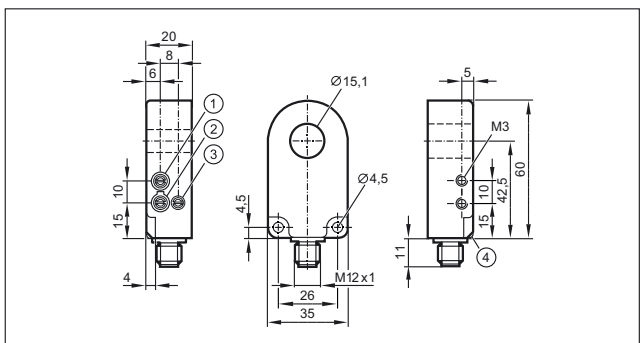
133



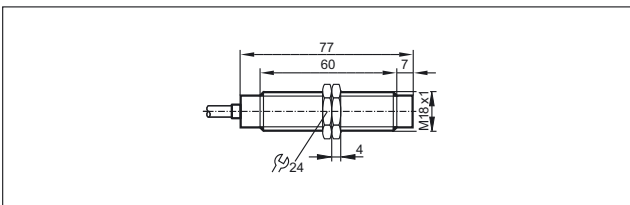
127



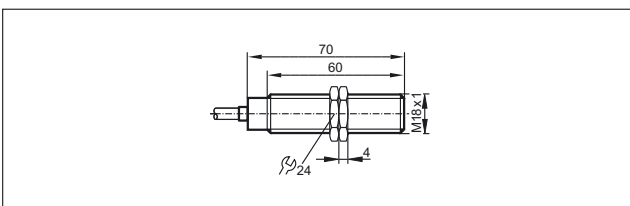
134



128

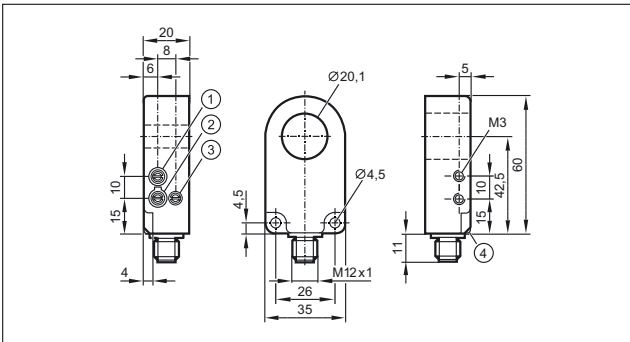


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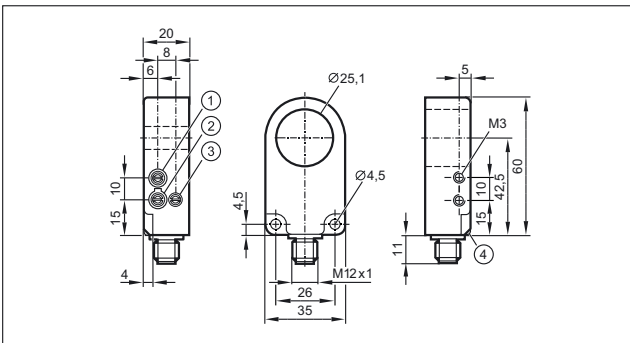


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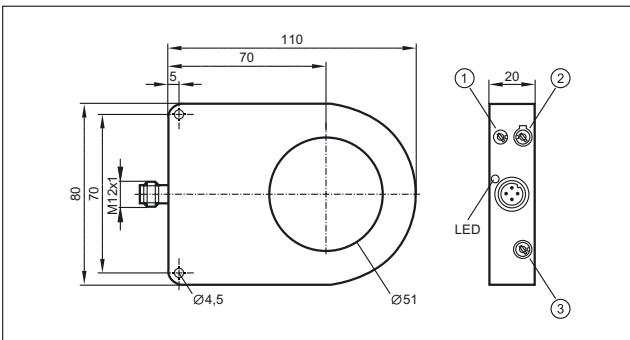
135



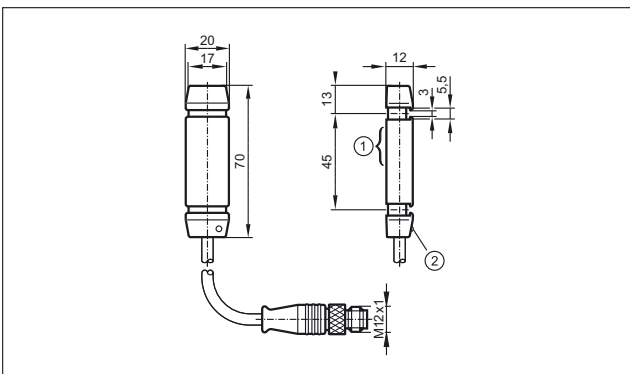
136



137

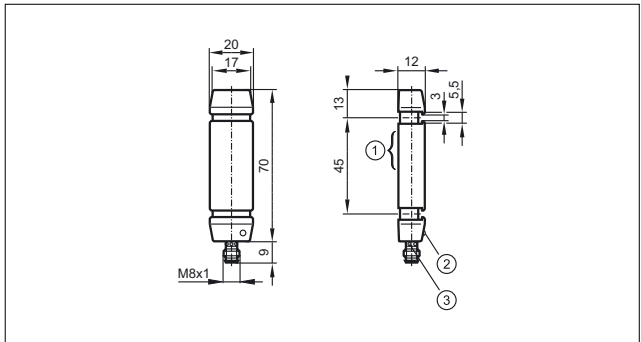


138



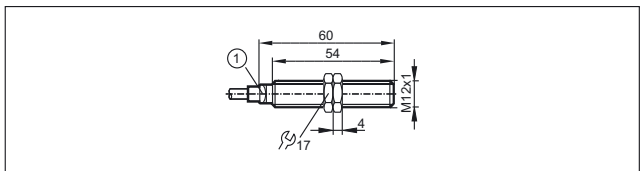
1: sensing face, 2: LED operating status

139



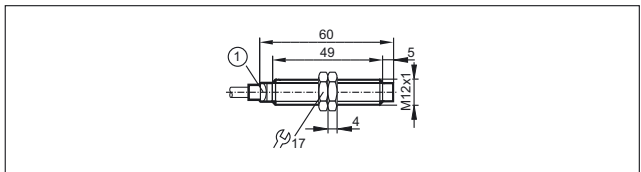
1: sensing face, 2: LED operating status, 3: LED switching status

140



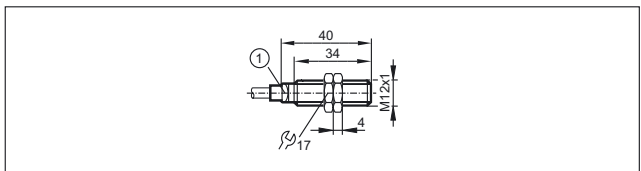
1: LED (yellow)

141



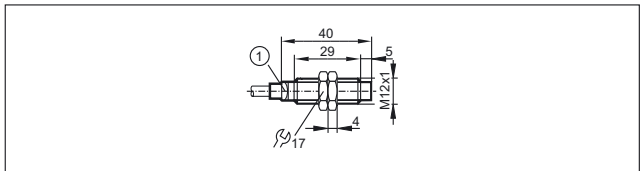
1: LED (yellow)

142



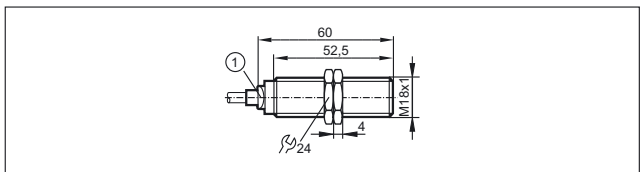
1: LED (yellow)

143



1: LED (yellow)

144



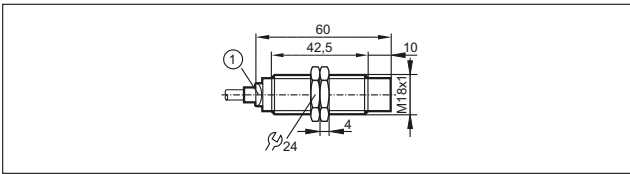
1: LED (yellow)



Position sensors

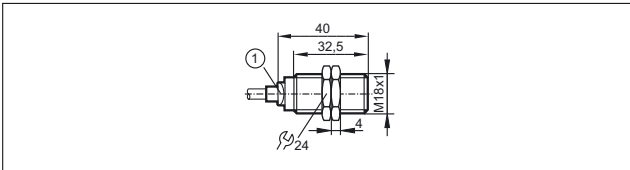
Scale drawings / drawing no. – CAD download: www.ifm.com

145



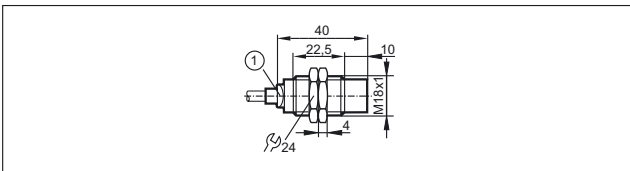
1: LED (yellow)

146



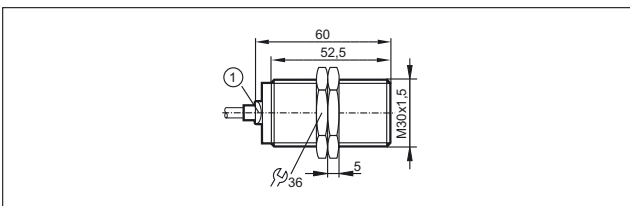
1: LED (yellow)

147



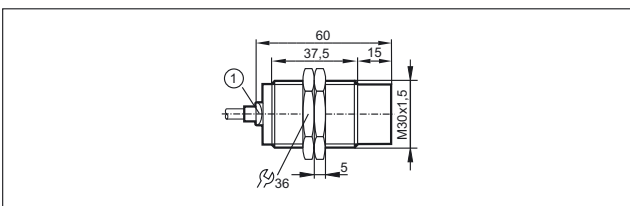
1: LED (yellow)

148



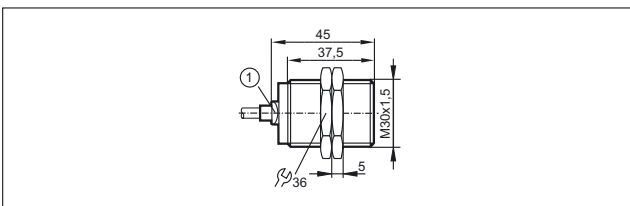
1: LED (yellow)

149



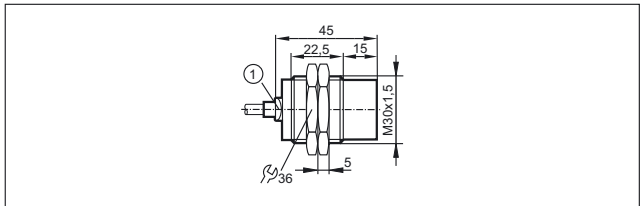
1: LED (yellow)

150



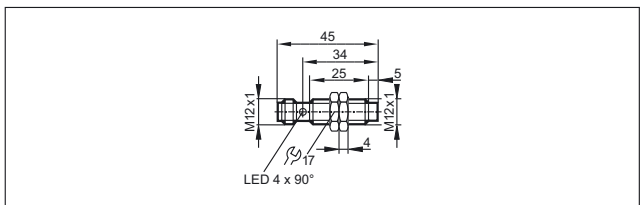
1: LED (yellow)

151

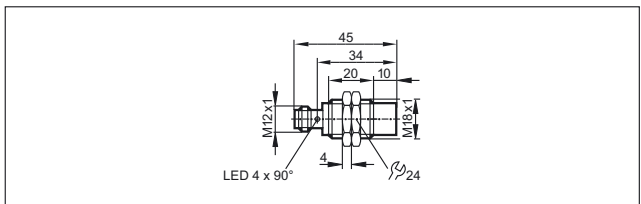


1: LED (yellow)

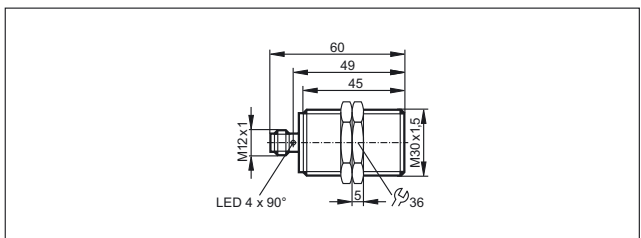
152



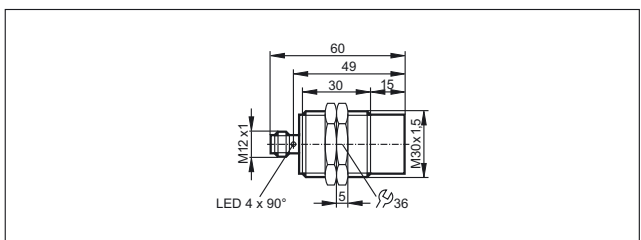
153



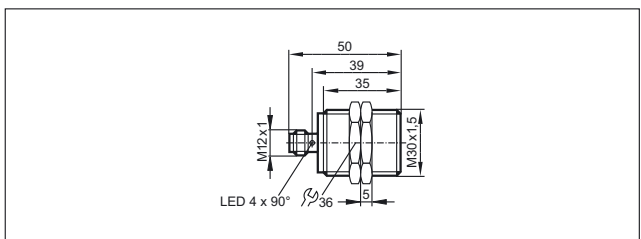
154



155

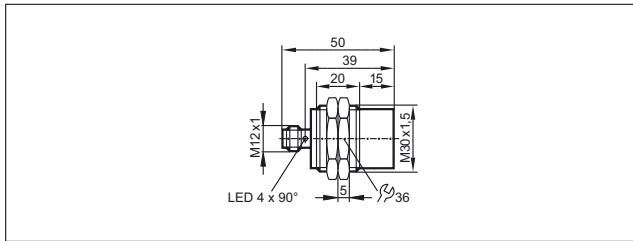


156

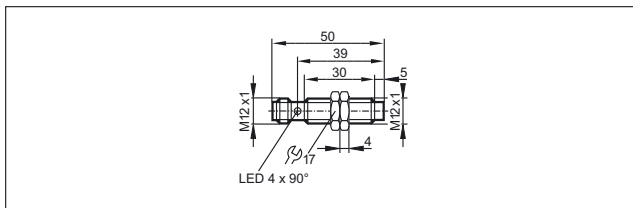


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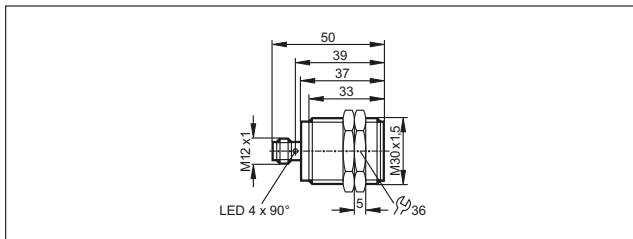
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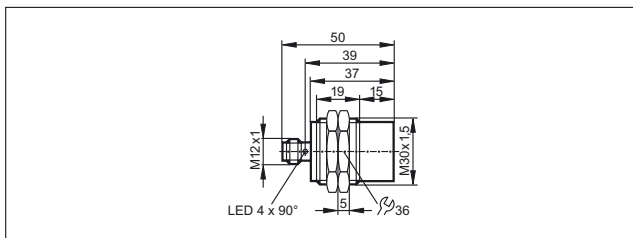
158



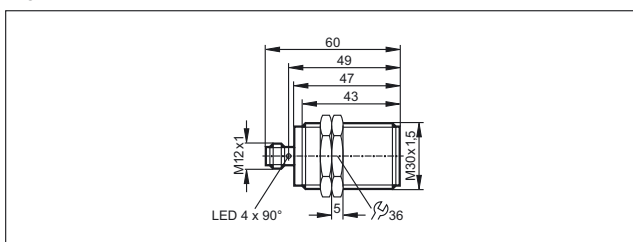
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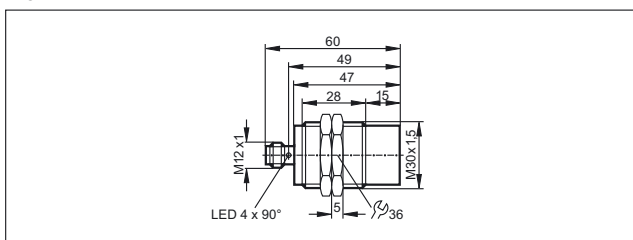
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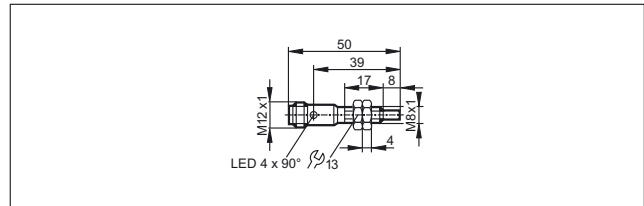
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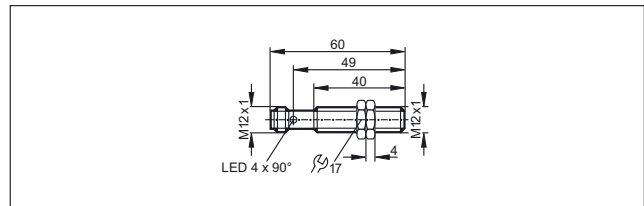
162



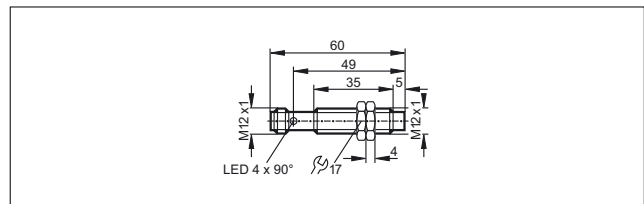
163



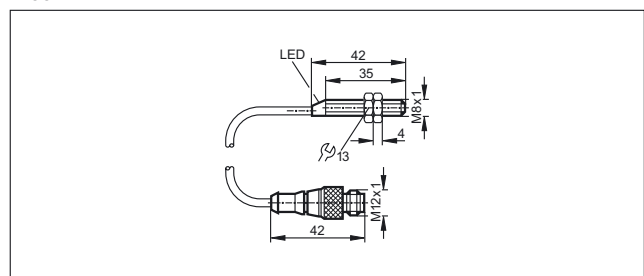
164



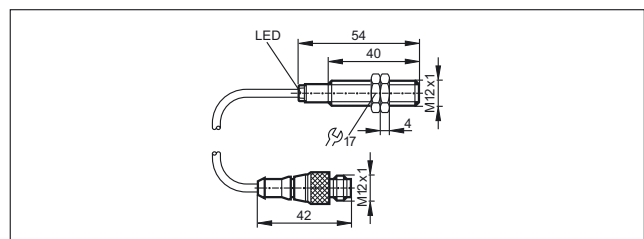
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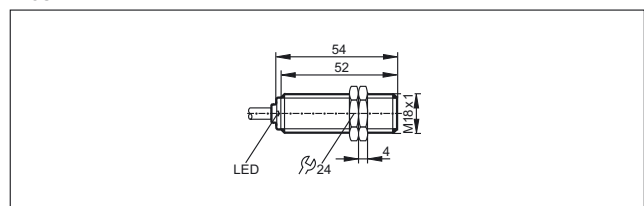
166



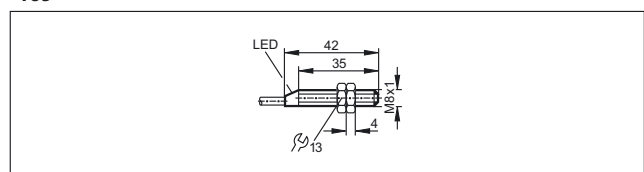
167



168



169

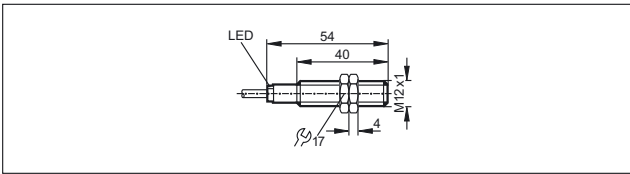




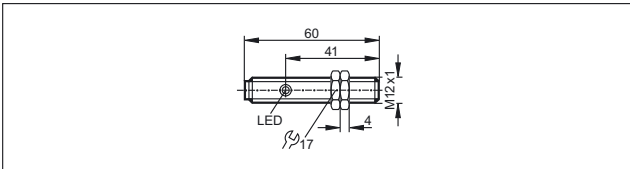
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

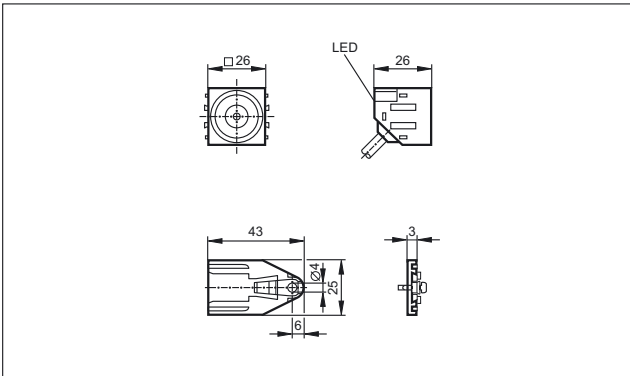
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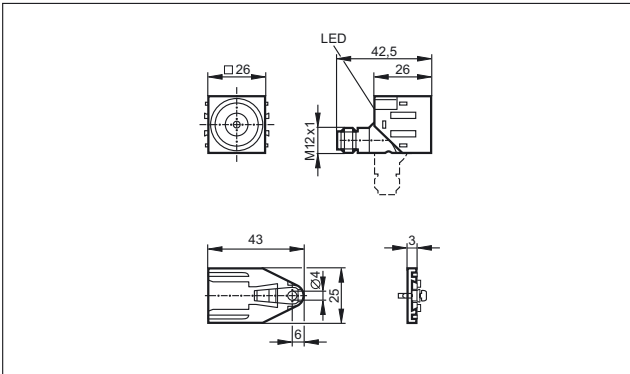
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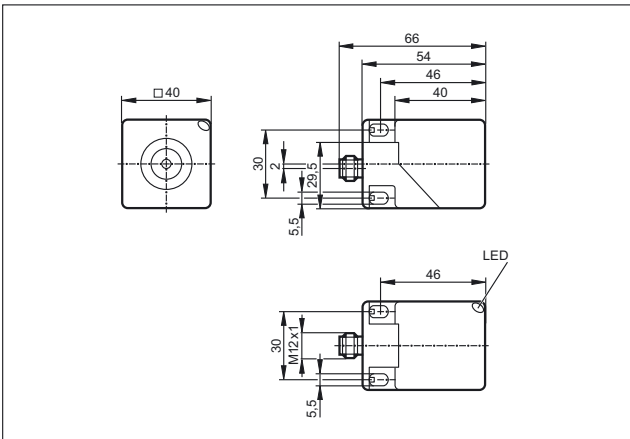
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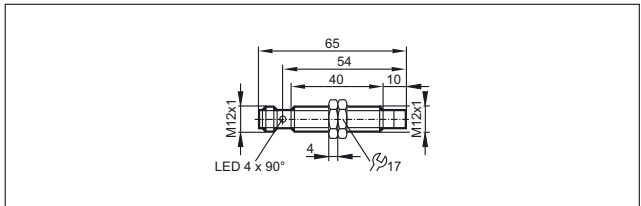
173



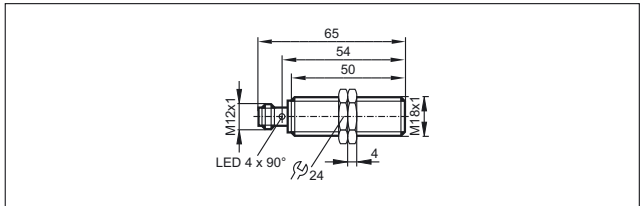
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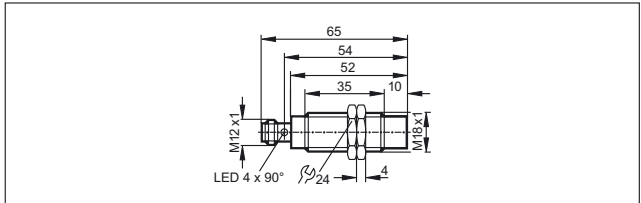
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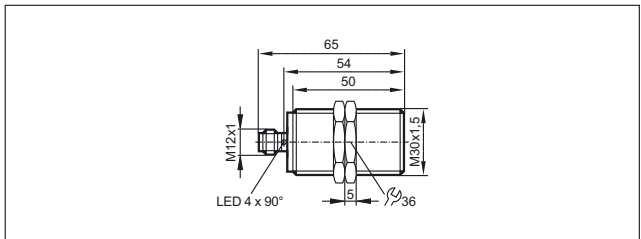
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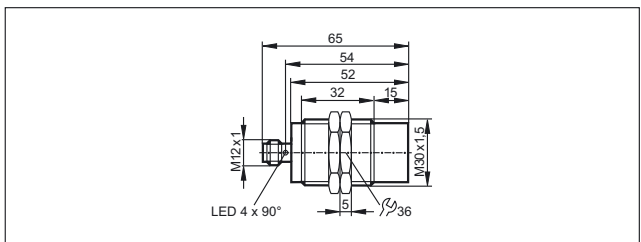
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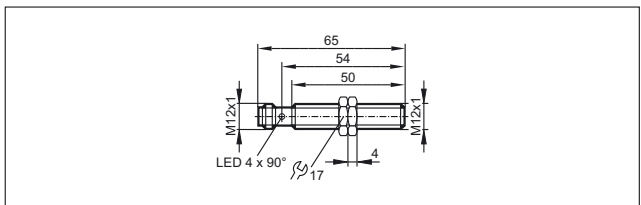
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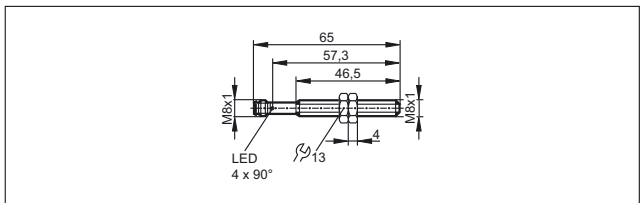
179



180

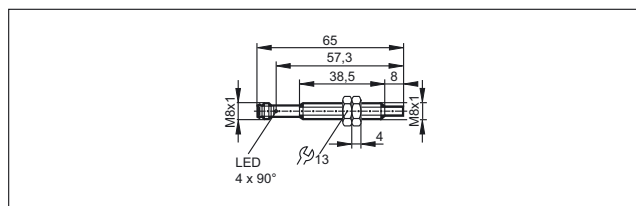


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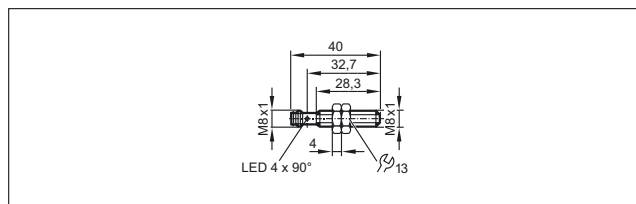


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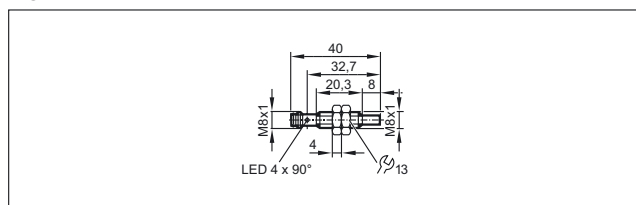
182



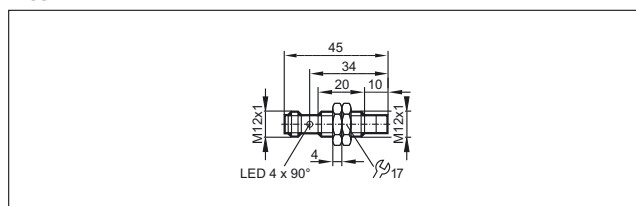
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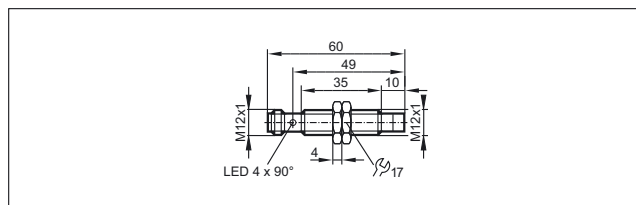
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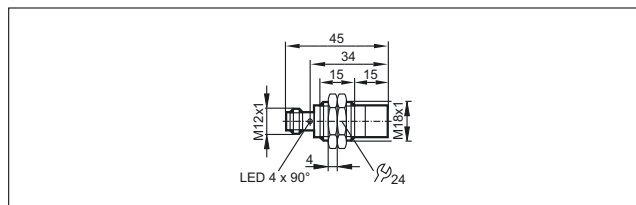
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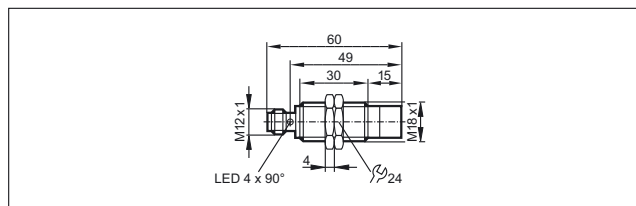
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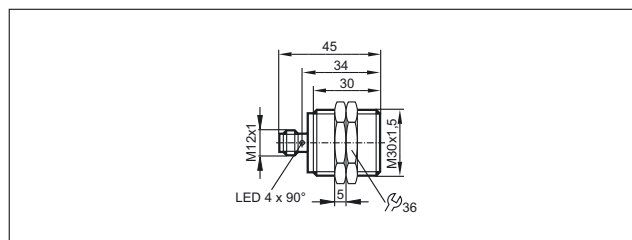
187



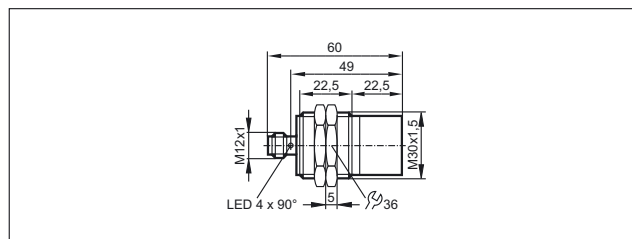
188



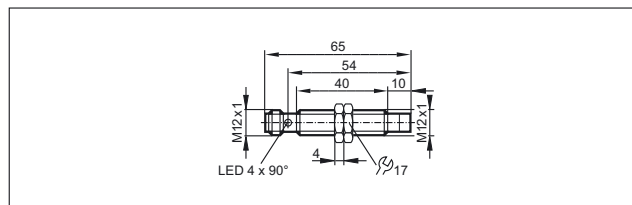
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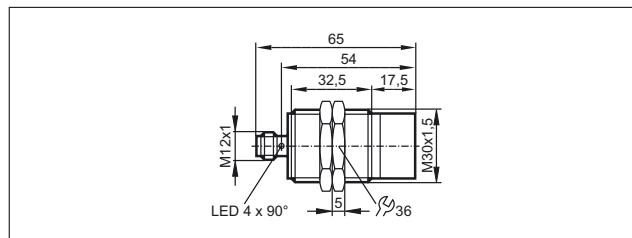
190



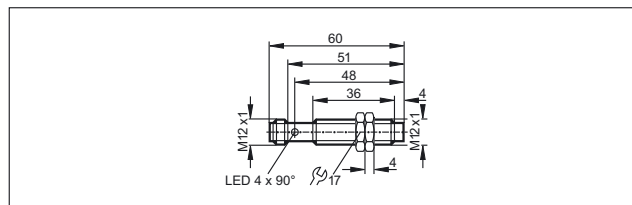
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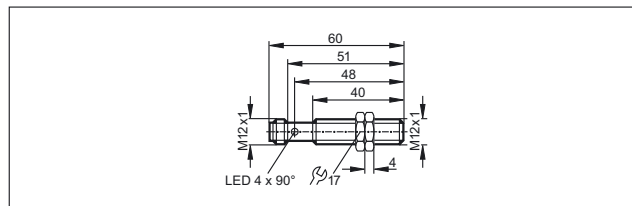
192



193



194

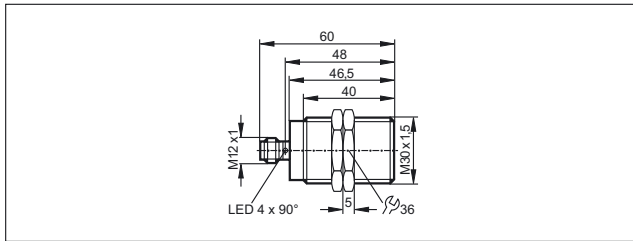




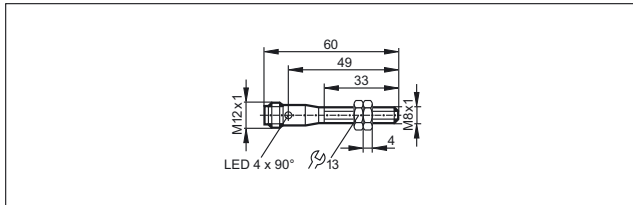
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

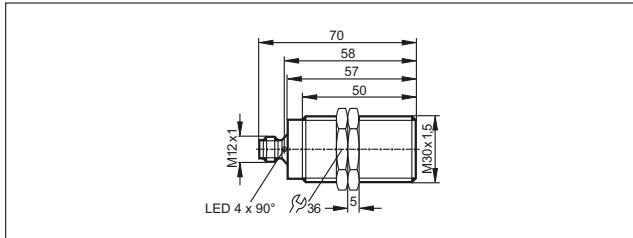
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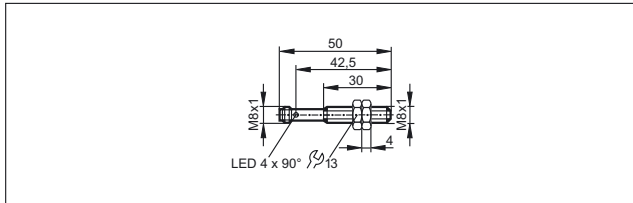
196



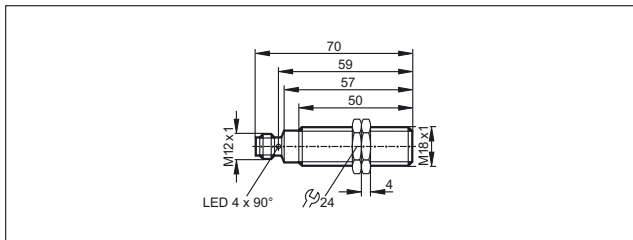
197



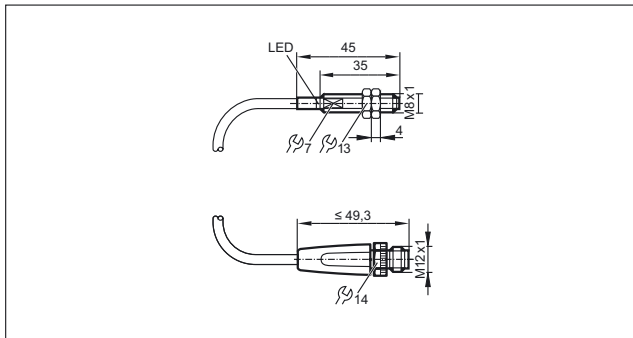
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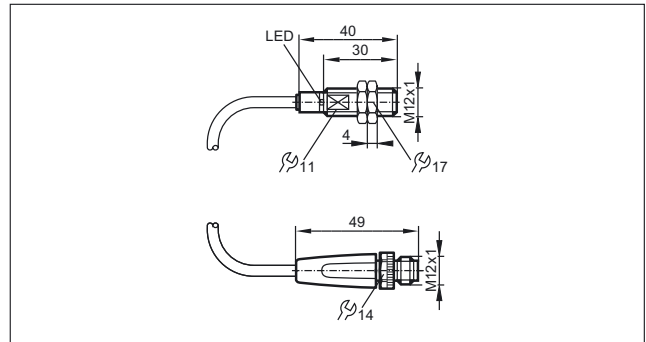
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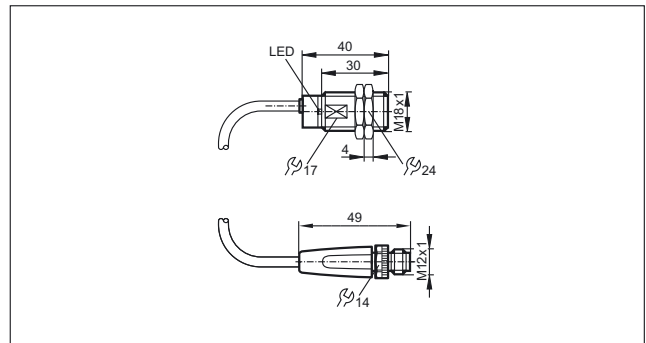
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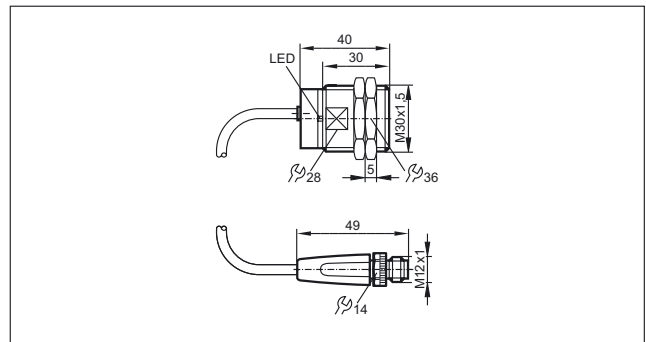
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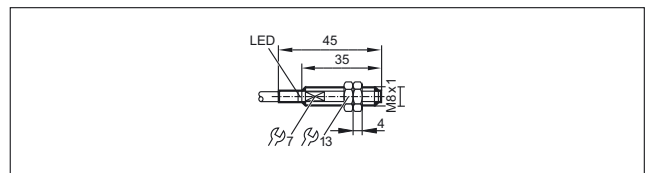
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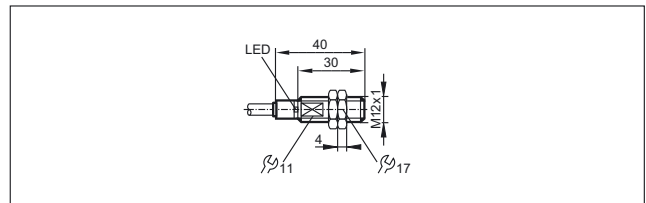
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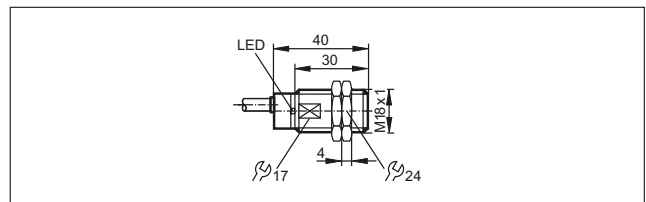
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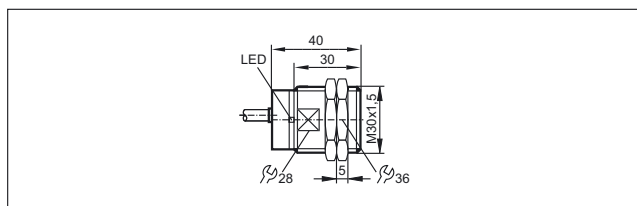


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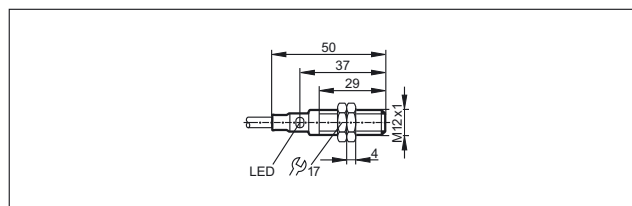


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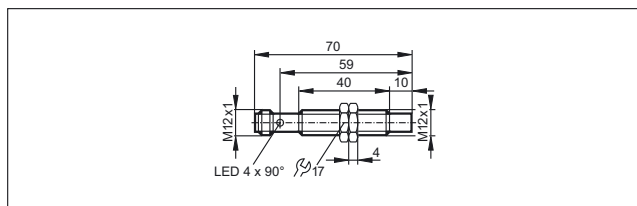
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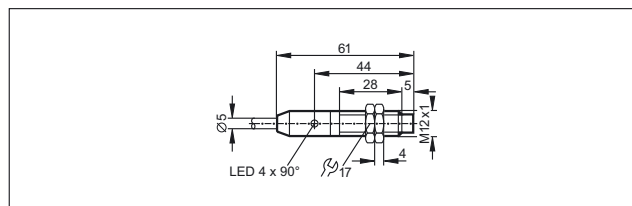
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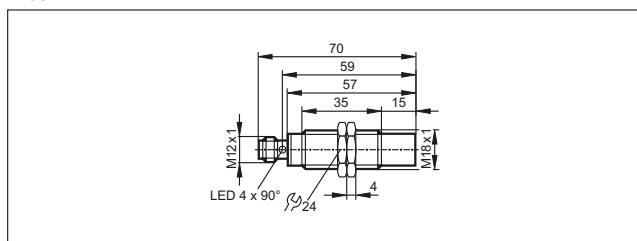
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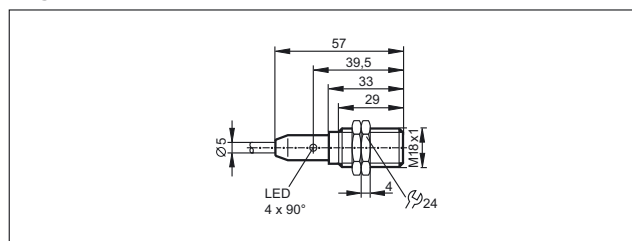
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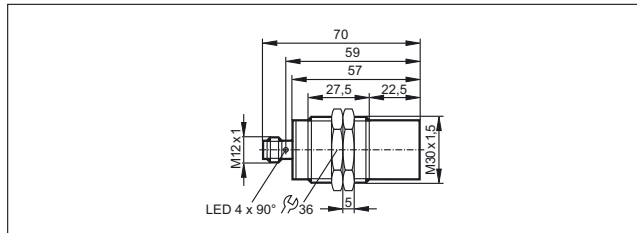
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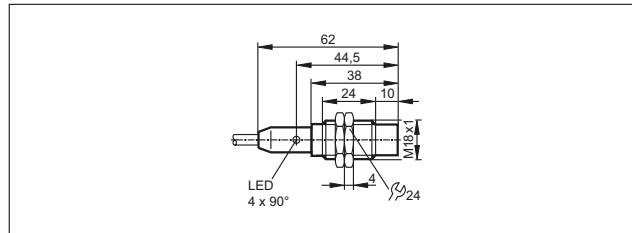
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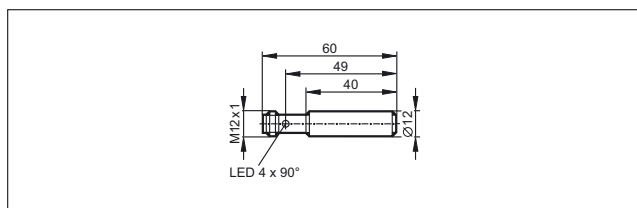
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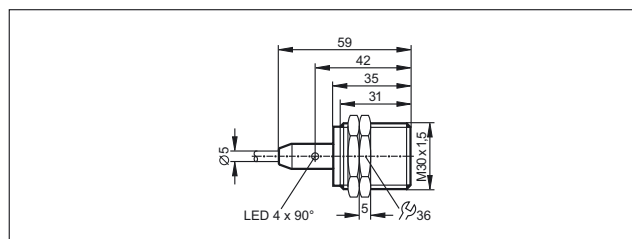
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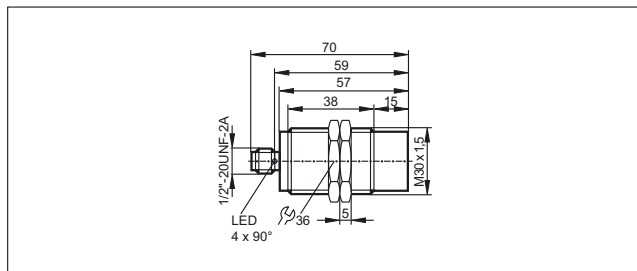
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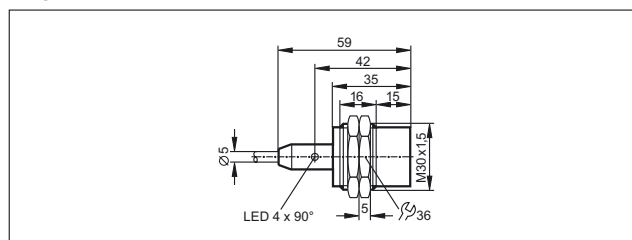
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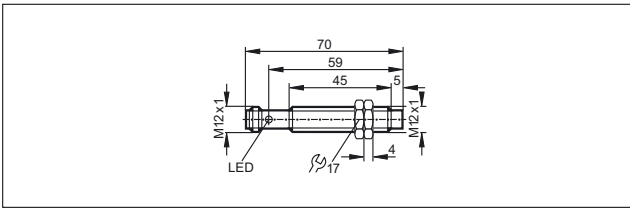




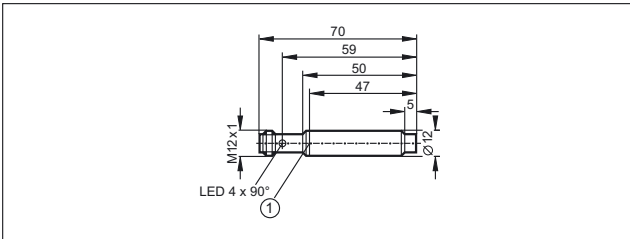
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

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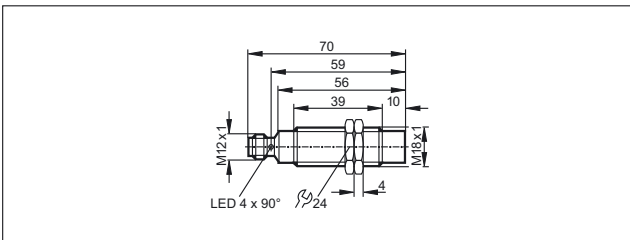


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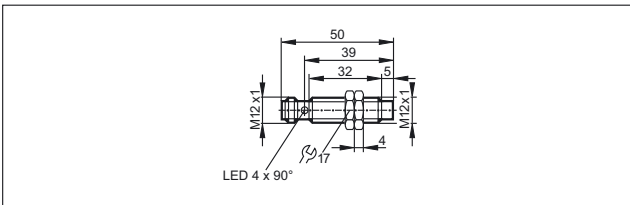


1: locating groove

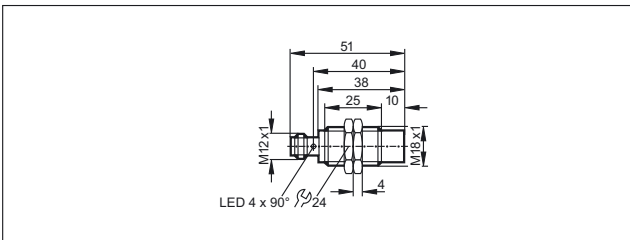
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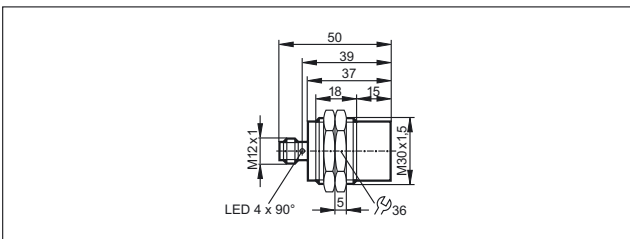
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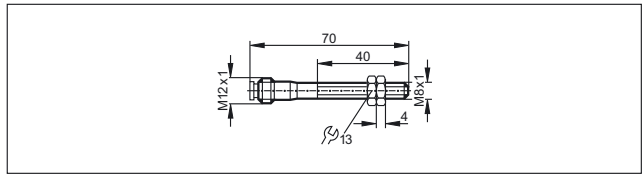
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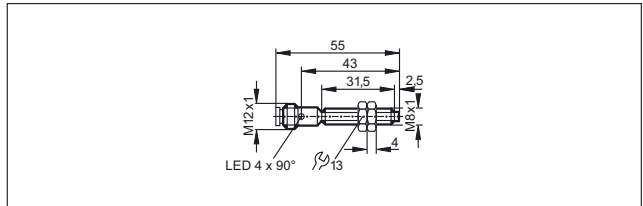
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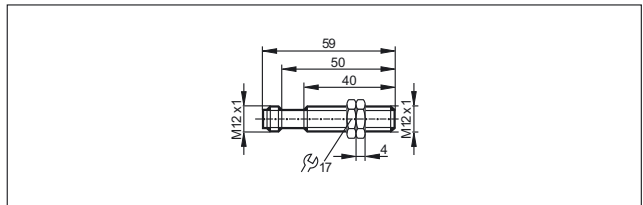
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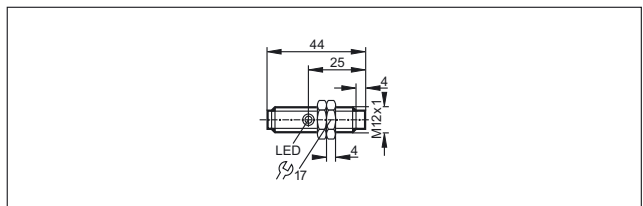
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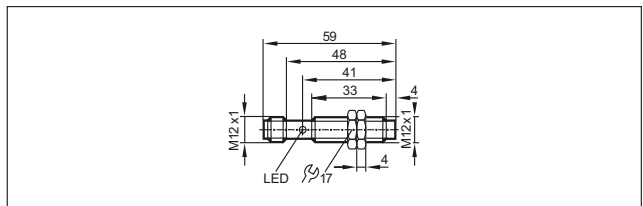
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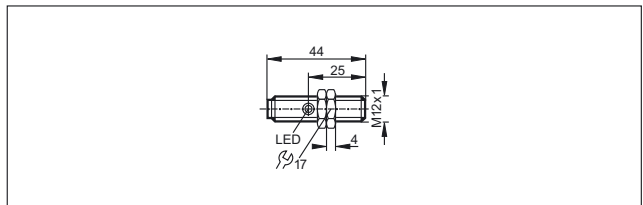
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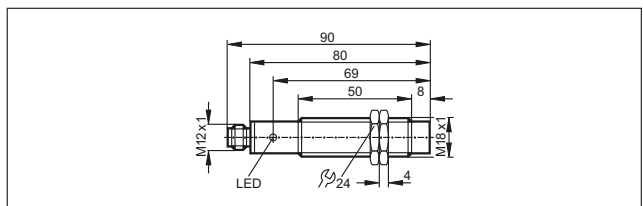
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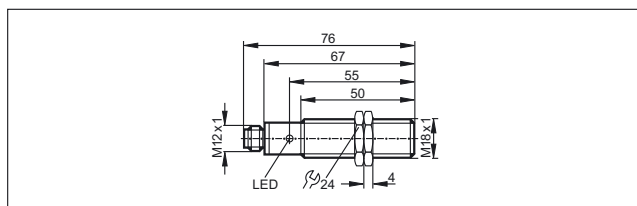


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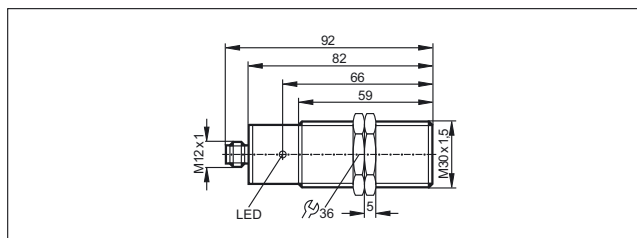


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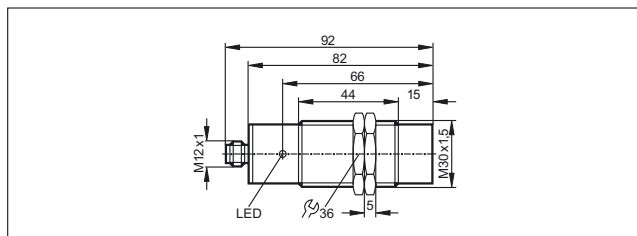
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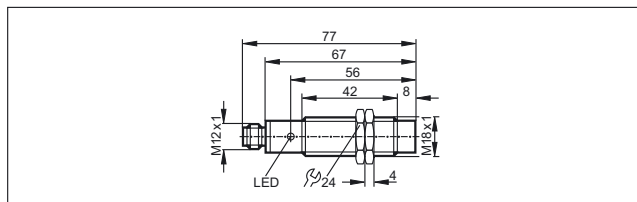
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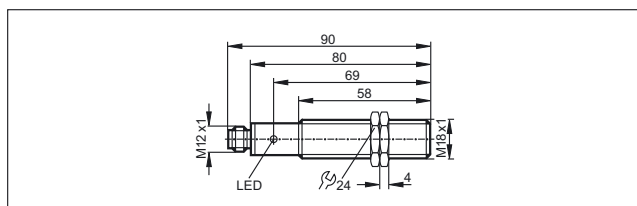
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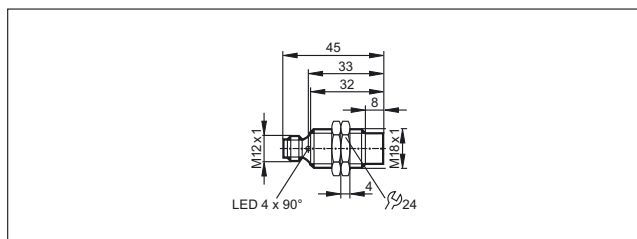
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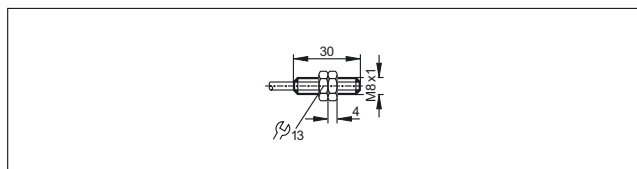
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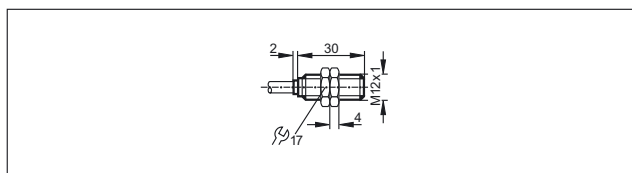
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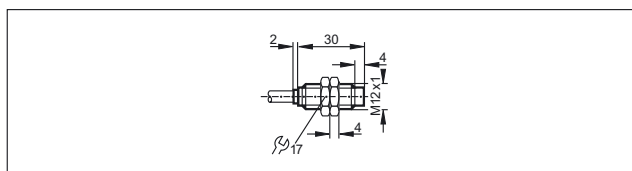
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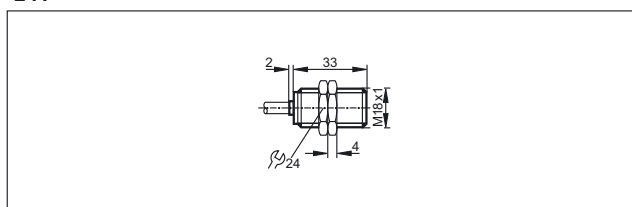
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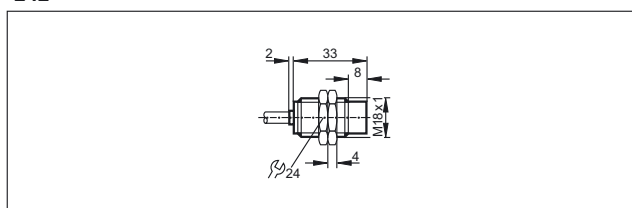
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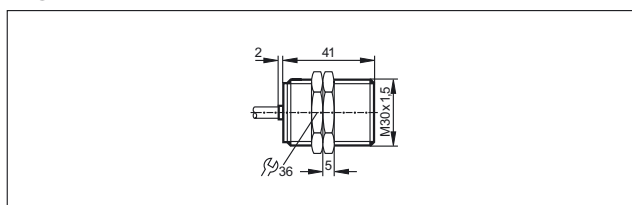
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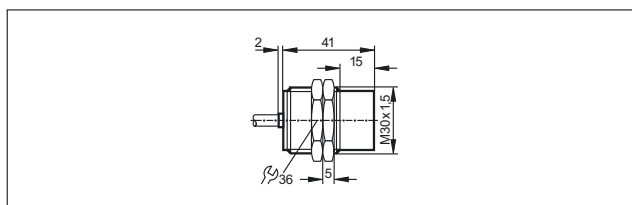
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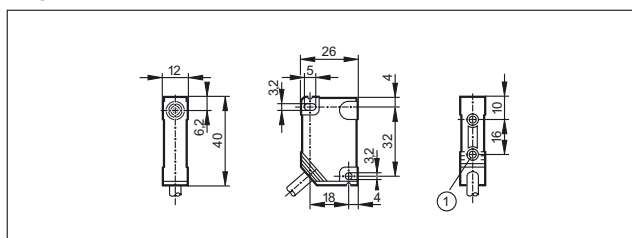
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244



245



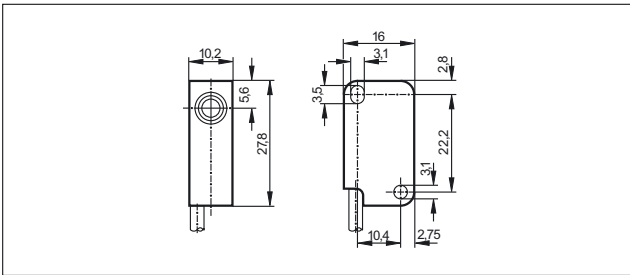
1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.



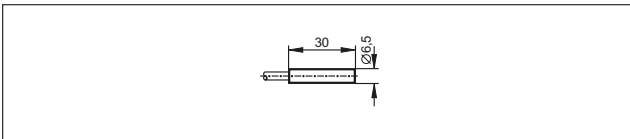
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

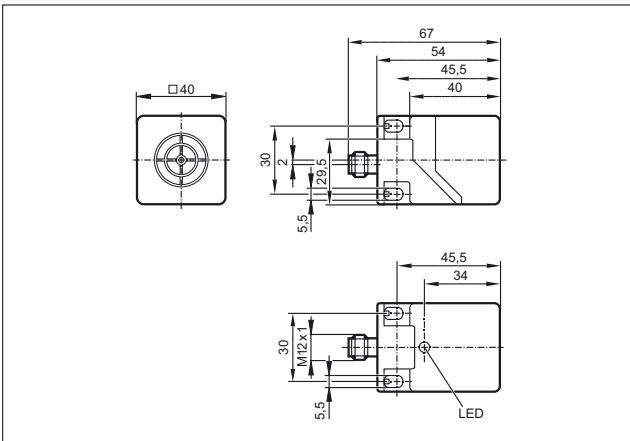
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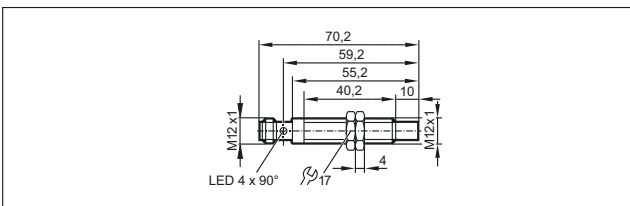
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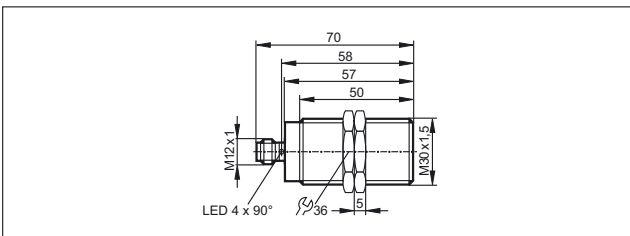
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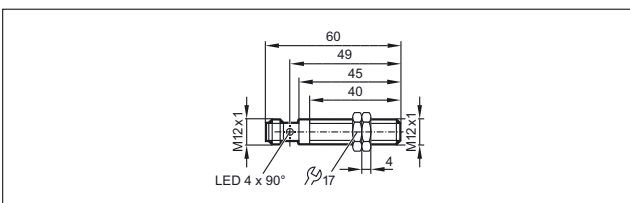
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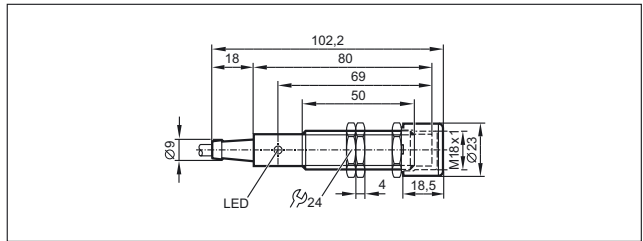
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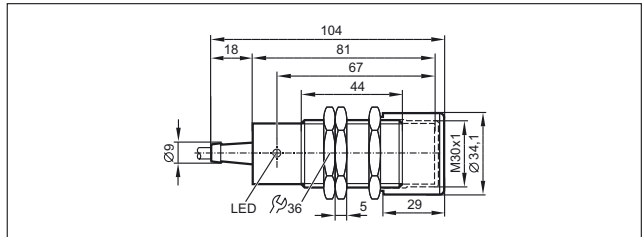
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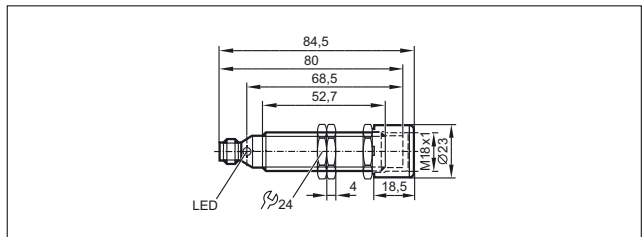


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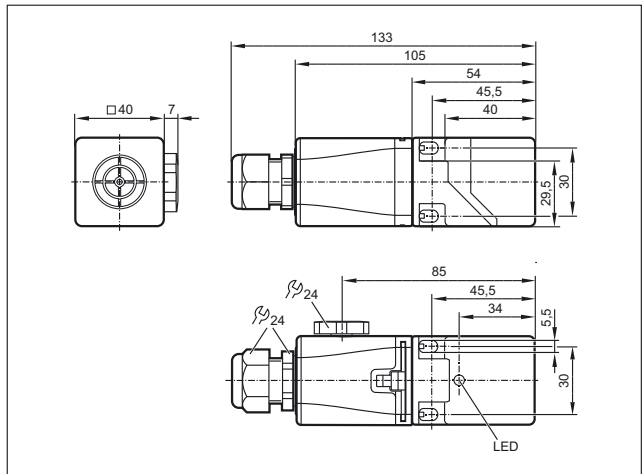


1: Sensor, 2: Sensor with protective cover

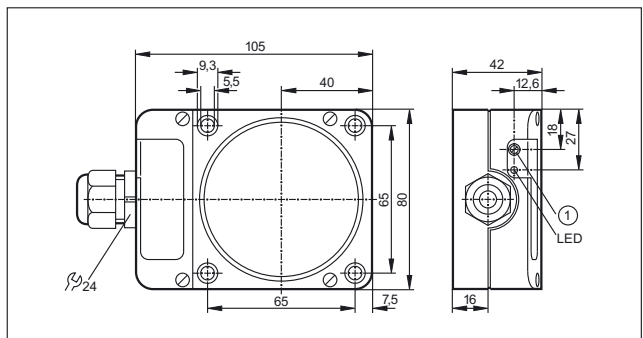
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1: potentiometer





Position sensors

Capacitive sensors ensure accurate detection of positions and levels



Capacitive sensors



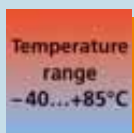
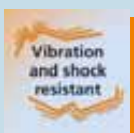
Easy parameter setting via IO-Link before installation of the sensor

Versatile data processing via IO-Link

Plastic or metal housings for different applications

Sensors for position and level detection

Mounting accessories for installation on tanks or sight glasses (bypass)



Capacitive sensors

Capacitive sensors are used for non-contact detection of any types of objects and for level monitoring. In contrast to inductive sensors, which only detect metallic objects, capacitive sensors can also detect non-metallic materials.

IO-Link for more convenience

IO-Link allows direct detection of the process value or switch-on/switch-off delays of the output. The parameters are set via the IO-Link interface.

Capacitive touch sensors

Capacitive touch sensors are wear and maintenance-free since switching does not require any pressure. Their operating principle is dynamic, static or latching. They are typically used as start / stop buttons or enable switches.

System overview	Page
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Position sensors

Sensors for level and position detection DC

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

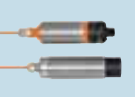
Cable 2 m · Output function · DC PNP · Wiring diagram no. 1

	M12 / L = 69	4 f	high-grade stainless steel	10...36	IP 65	50	100	1	KF5014
	M12 / L = 70	8 nf	high-grade stainless steel	10...36	IP 65	50	100	2	KF5015

Cable 2 m · Output function / · DC PNP · Wiring diagram no. 2

	M18 / L = 77	8 nf	PP	10...36	IP 65 / IP 67	10	200	3	KG5069

M12 connector · Output function / · DC PNP · Wiring diagram no. 19 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M30 / L = 116	nf	PPS	10...30	IP 67	10	200	4	KN5121

M12 connector · Output function / · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M18 / L = 87	12 nf	PBT	10...36	IP 65 / IP 67	10	200	5	KG5066
	M18 / L = 87	8 nf	PBT	10...36	IP 65 / IP 67	10	200	5	KG5071
	M30 / L = 90	20 nf	PBT	10...36	IP 65 / IP 67	10	200	6	KI5083

M12 connector · Output function / · DC PNP/NPN · Wiring diagram no. 20 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M30 / L = 90	20 nf	PBT	10...36	IP 65 / IP 67	10	200	6	KI5082

M12 connector · Output function · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M12 / L = 60	4 f	High-grade st. steel	10...36	IP 65	50	100	7	KF5001
	M12 / L = 61	8 nf	High-grade st. steel	10...36	IP 65	50	100	8	KF5002

M12 connector · Output function · DC NPN · Wiring diagram no. 4 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M12 / L = 60	4 f	High-grade st. steel	10...36	IP 65	50	100	7	KF5013

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  /  · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M30 / L = 90	8 f	High-grade st. steel	10...30	IP 65 / IP 67	10	100	9	KI5085
	M30 / L = 90	15 nf	High-grade st. steel	10...30	IP 65 / IP 67	10	100	10	KI5087

M12 connector · Output function  /  · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	11	KG6000

f = flush / nf = non flush / qf = quasi-flush

Sensors for level and position detection AC/DC

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

Cable 2 m · Output function  · AC/DC · Wiring diagram no. 5

	M18 / L = 84	8 nf	PBT	20...250	IP 67	25 / 50	150 / 100	12	KG0009*
	M30 / L = 81	15 nf	PBT	20...250	IP 65	25 / 40	200	13	KI0016*
	120 x 80 x 30	60 nf	modified PPO	20...250	IP 65	10	200	14	KD0012*

Cable 2 m · Output function  · AC/DC · Wiring diagram no. 6

	M18 / L = 84	8 nf	PBT	20...250	IP 67	25 / 50	150 / 100	12	KG0010*
	M30 / L = 81	15 nf	PBT	20...250	IP 65	25 / 40	200	13	KI0020*

1/2" UNF-Connector · Output function  /  · AC/DC · Wiring diagram no. 7 · Connector group 33

	M18 / L = 87	12 nf	PBT	20...250	IP 65 / IP 67	10	100	15	KG0016*
	M30 / L = 90	20 nf	PBT	20...250	IP 65 / IP 67	10	100	16	KI0054*



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

Terminals · Output function  /  · AC/DC · Wiring diagram no. 8

	M30 / L = 125	15 nf	PBT	20...250	IP 65	25 / 40	200	17	KI0024*

Terminals · Output function  /  · AC/DC · Wiring diagram no. 21

	105 x 80 x 40	60 nf	modified PPO	20...250	IP 65	10	200	18	KD0009*

f = flush / nf = non flush / qf = quasi-flush

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Sensors with IO-Link

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  /  · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	19	KI6000

Cable 2 m · Output function  · DC NPN · Wiring diagram no. 9

	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	KI5300

Cable 2 m · Output function  · DC PNP · Wiring diagram no. 10

	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	KI5301

Cable 2 m · Output function  · DC NPN · Wiring diagram no. 11

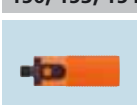
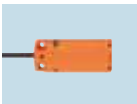
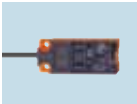
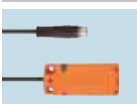
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	KI5302

Cable 2 m · Output function  · DC PNP · Wiring diagram no. 10

	M30 / L = 92	15 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	KI5304

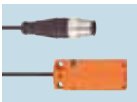
Cable 2 m · Output function  · DC PNP · Wiring diagram no. 1

	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	KI5303

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
Cable 2 m · Output function  · DC PNP · Wiring diagram no. 12									
	M30 / L = 92	15 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	20	KI5305
M12 connector · Output function  · DC NPN · Wiring diagram no. 4 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	KI5306
M12 connector · Output function  · DC PNP · Wiring diagram no. 13 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	KI5307
M12 connector · Output function  · DC NPN · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	KI5308
M12 connector · Output function  · DC PNP · Wiring diagram no. 15 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	KI5309
M12 connector · Output function  · DC PNP · Wiring diagram no. 13 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M30 / L = 92	15 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	KI5310
M12 connector · Output function  · DC PNP · Wiring diagram no. 15 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M30 / L = 92	15 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	21	KI5311
Cable 2 m · Output function  /  · DC PNP · Wiring diagram no. 2									
	20 x 7 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	22	KQ5100
	20 x 14 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	23	KQ6002
Cable with connector 0.04 m · Output function  /  · DC PNP · Wiring diagram no. 3 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	20 x 7 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	24	KQ5102



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
Cable with connector 0.04 m · Output function  /  · DC PNP · Wiring diagram no. 3 · Connector groups 4, 5, 80, 86, 147									
	20 x 14 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	25	KQ6004
Cable with connector 0.1 m · Output function  /  · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	20 x 7 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	26	KQ5101
	20 x 14 x 48	12 nf	PBT	10...30	IP 65 / IP 67	10	100	27	KQ6005
M12 connector · Output function  /  · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	11	KG6000
Cable 2 m · Output function  · DC NPN · Wiring diagram no. 9									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	KG5300
Cable 2 m · Output function  · DC PNP · Wiring diagram no. 10									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	KG5301
Cable 2 m · Output function  · DC NPN · Wiring diagram no. 11									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	KG5302
Cable 2 m · Output function  · DC PNP · Wiring diagram no. 1									
	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	KG5303
Cable 2 m · Output function  · DC PNP · Wiring diagram no. 10									
	M18 / L = 92.5	8 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	KG5304
Cable 2 m · Output function  · DC NPN · Wiring diagram no. 1									
	M18 / L = 92.5	8 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	28	KG5305

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · DC NPN · Wiring diagram no. 4 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	KG5306

M12 connector · Output function  · DC PNP · Wiring diagram no. 13 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	KG5307

M12 connector · Output function  · DC NPN · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	KG5308

M12 connector · Output function  · DC PNP · Wiring diagram no. 15 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M18 / L = 92.5	15 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	KG5309

M12 connector · Output function  · DC PNP · Wiring diagram no. 13 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M18 / L = 92.5	8 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	KG5310

M12 connector · Output function  · DC PNP · Wiring diagram no. 15 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M18 / L = 92.5	8 qf	PBT	10...30	IP 65 / IP 67 / IP 69K	30	200	29	KG5311

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 KΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.

Cable 2 m · Output function  · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 16

	M30 / L = 81	15 nf	PBT	8.2 DC	7.5...15	375	1	40	13	KI5030

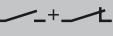
Cable 2 m · Output function  · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 17

	M34 / L = 92	15 nf	Brass	8.2 DC	7.5...15	375	1	40	30	KX5001

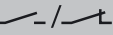


Position sensors

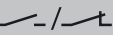
Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 KΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.

Terminals · Output function  · DC PNP · Wiring diagram no. 18

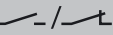
	M30 / L = 150	15 nf	PBT	10...30 DC	–	–	–	10	31	KI503A
	M30 / L = 125	15 nf	PBT	10...30 DC	–	–	–	10	32	KI505A

Terminals · Output function  · AC/DC · Wiring diagram no. 22

	M30 / L = 150	15 nf	PBT	20...250 DC / 30...250 AC	–	–	–	10	31	KI000A*
	M30 / L = 125	15 nf	PBT	20...250 DC / 30...250 AC	–	–	–	10	32	KI001A*

Terminals · Output function  · AC/DC · Wiring diagram no. 21

	105 x 80 x 42	60 nf	modified PPE	20...250 AC/DC	–	–	–	4	33	KD001A*

Terminals · Output function  · DC PNP · Wiring diagram no. 23

	105 x 80 x 42	60 nf	modified PPO	10...36 DC	–	–	–	10	33	KD501A

f = flush / nf = non flush / qf = quasi-flush

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Switching amplifiers with ATEX approval

Type	U _b [V]	Power / current consumption [VA] / [mA]	f [Hz]	T _a [°C]	Output	Protection	Draw- ing no.	Order no.

	115	1.0 /	10	-20...60	relay (1 changeover contact)	IP 20	34	N0030A
	230	1.0 /	10	-20...60	relay (1 changeover contact)	IP 20	34	N0031A
	115	1.3 /	10	-20...60	relay (1 changeover contact per channel)	IP 20	34	N0032A
	230	1.3 /	10	-20...60	relay (1 changeover contact per channel)	IP 20	34	N0033A
	24	/ < 23	10	-20...60	relay (1 changeover contact)	IP 20	34	N0530A

Product selectors and further information can be found at: www.ifm.com

Type	U _b [V]	Power / current consumption [VA] / [mA]	f [Hz]	T _a [°C]	Output	Protection	Draw- ing no.	Order no.
	24	/ < 50	5000	-20...60	2 transistor outputs PNP (100 mA, short-circuit protection)	IP 20	34	N0531A
	24	/ < 50	5000	-20...60	2 outputs (optocoupler, bipolar, 100 mA, short-circuit protection)	IP 20	34	N0532A
	24	/ < 50	10	-20...60	relay (1 changeover contact per channel)	IP 20	34	N0533A
	24	/ < 50	5000	-20...60	2 transistor outputs PNP (100 mA, short-circuit protection)	IP 20	34	N0534A

Dynamic capacitive touch sensors

Type	U _b [V]	I _{load} [mA]	Current consumption [mA]	Ambient temperature [°C]	Protection	Draw- ing no.	Order no.

Cable 2 m · Output function  · DC PNP

	24	200	30	-40...85	IP 67 / IP 69K	35	KT5010

Cable with connector 0.3 m · Output function  · DC PNP · Connector groups 4, 5, 80, 86, 147

	24	200	30	-40...85	IP 67 / IP 69K	35	KT5011

Cable 2 m · Output function  · DC PNP

	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	36	KT5309

Cable with connector 0.3 m · Output function  · DC PNP · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	KT5102

	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	KT5112

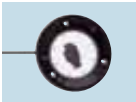
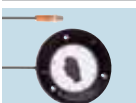
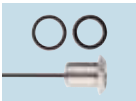
Cable 2 m · Output function  · DC PNP

	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	KT5111

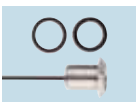


Position sensors

Static capacitive touch sensors

Type	U _b [V]	I _{load} [mA]	Current consumption [mA]	Ambient temperature [°C]	Protection	Draw- ing no.	Order no.
Cable 2 m · Output function  · DC PNP							
	24	200	30	-40...85	IP 67 / IP 69K	35	KT5012
Cable with connector 0.3 m · Output function  · DC PNP · Connector groups 4, 5, 80, 86, 147							
	24	200	30	-40...85	IP 67 / IP 69K	35	KT5013
Cable with connector 0.3 m · Output function  · DC PNP · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	KT5106
Cable 2 m · Output function  · DC PNP							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	KT5110
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	36	KT5310

Capacitive touch sensors with latching evaluation principle

Type	U _b [V]	I _{load} [mA]	Current consumption [mA]	Ambient temperature [°C]	Protection	Draw- ing no.	Order no.
Cable 2 m · Output function  · DC PNP							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	KT5150
Cable 0.3 m · Output function  · DC PNP · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	37	KT5151
Cable 2 m · Output function  · DC PNP							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	36	KT5350
Cable 0.3 m · Output function  · DC PNP · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	36	KT5351

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0011
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0012

Accessories

Type	Description	Order no.
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	E30398
	Cover ring 100 mm · for type KT50 · Housing materials: polycarbonate-ABS yellow	E80372
	Cover ring 100 mm · for type KT50 · Housing materials: polycarbonate-ABS green	E80373
	Cover ring 100 mm · for type KT50 · Housing materials: polycarbonate-ABS Red	E80374
	Cover ring 100 mm · for type KT50 · Housing materials: polycarbonate-ABS blue	E80375
	Cover ring 100 mm · for type KT50 · Housing materials: polycarbonate-ABS orange	E80376
	Symbol disc (plastic) · Ø 20.4 mm · for type KT51 / KT53 · Start symbol · Housing materials: Polyamide	E12377
	Symbol disc (plastic) · Ø 20.4 mm · for type KT51 / KT53 · Symbol Stop · Housing materials: Polyamide	E12378
	Symbol disc (plastic) · Ø 20.4 mm · for type KT51 / KT53 · Symbol ON · Housing materials: Polyamide	E12379
	Symbol disc (plastic) · Ø 20.4 mm · for type KT51 / KT53 · Symbol OFF · Housing materials: Polyamide	E12380



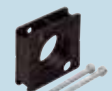
Position sensors

Type	Description	Order no.
	Symbol disc (plastic) · Ø 20.4 mm · for type KT51 / KT53 · Without symbol, transparent · Housing materials: Polyamide	E12386

Accessories mounting adapters

Type	Description	Order no.
	Mounting adapter · M18 x 1 - G ¾ · Housing materials: POM	E43900
	Mounting adapter · M18 x 1 - G 1 · Housing materials: POM	E43904
	Mounting adapter · M30 x 1.5 - G 1¼ · Housing materials: PVDF / EPDM	E11036
	Mounting adapter · M30 x 1.5 - G 1½ · Housing materials: PVDF / EPDM	E11034
	Mounting adapter · Ø 34 mm - G 1½ · Housing materials: POM	E11027
	Locknut · G ¾ · for mounting adapter · Housing materials: POM	E43902
	Locknut · G 1¼ · for mounting adapter · Housing materials: PVDF	E11030
	Locknut · G 1½ · for mounting adapter · Housing materials: PVDF	E11032
	Protective cover · G 1¼ · for mounting adapter · Housing materials: PES black transparent	E11078

Accessories mounting components

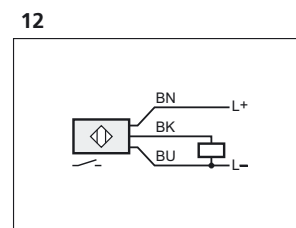
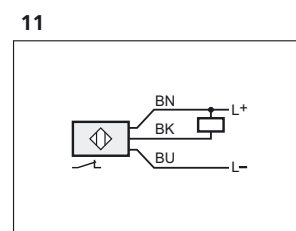
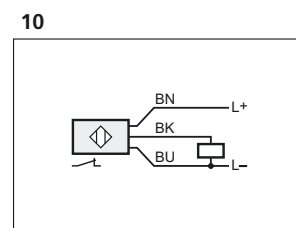
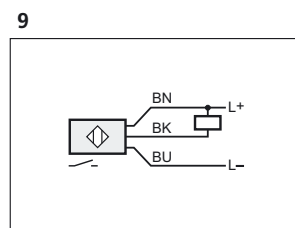
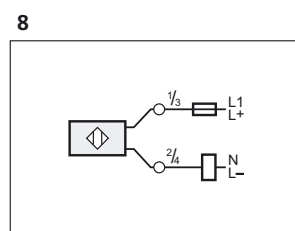
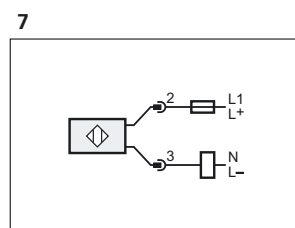
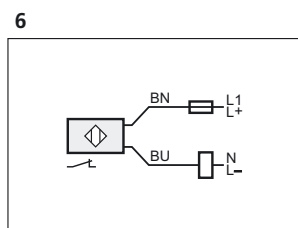
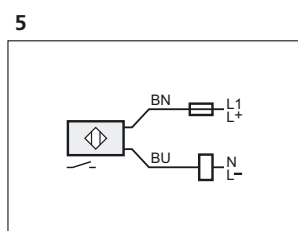
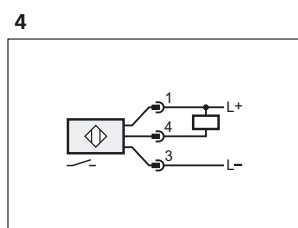
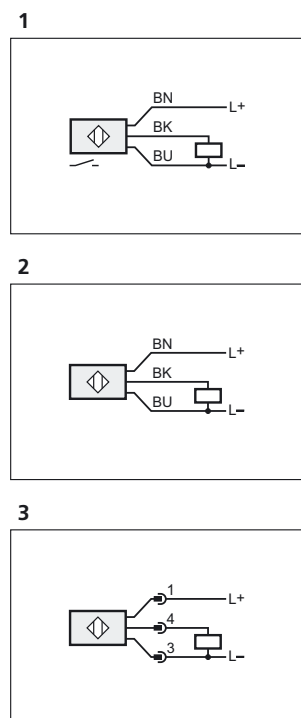
Type	Description	Order no.
	Mounting clamp · Ø 20 mm - Ø 18 mm · with reducing bush · for type M18 · Housing materials: PBT	E10076
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	E10077

Type	Description	Order no.
	Angle bracket · for type M12 · Housing materials: stainless steel	E10735
	Angle bracket · for type M18 · Housing materials: stainless steel	E10736
	Angle bracket · for type M30 · Housing materials: stainless steel	E10737
	Mounting adapter for free-standing mounting · for type KQ5, KQ6 · Housing materials: adapter: PBT / inserts: Brass / screw: steel galvanised	E12153
	Mounting adapter · Pipe and tube installation KQ5 / KQ6 with cable ties · Fixing of the types KQ5 and KQ6 to pipes and tubes · Housing materials: Mounting adapter: PA 12 black	E12163
	Fixing strap · Length: 760 mm · for capacitive level sensors · for type KNQ, KQ5, KQ6 · Housing materials: PA	E10880
	Mounting set · M30 x 1.5 / G 1/4...G 1 · for capacitive sensors on rising pipes G 1/4" - 1" · Housing materials: POM	E11037

Wiring diagrams

Core colours

BN brown
BU blue
BK black
GN/YE green/yellow

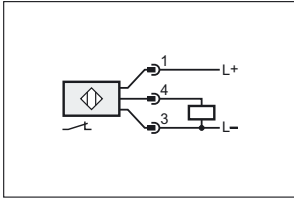




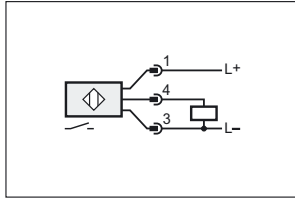
Position sensors

Wiring diagrams

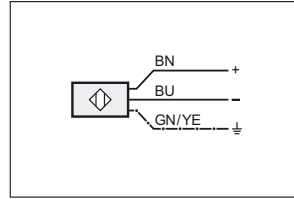
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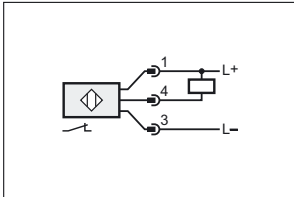
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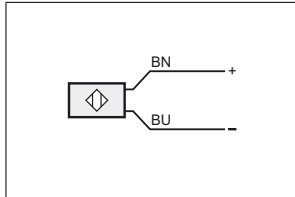
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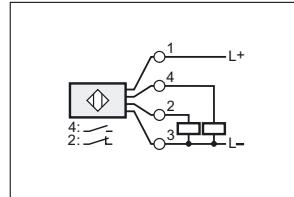
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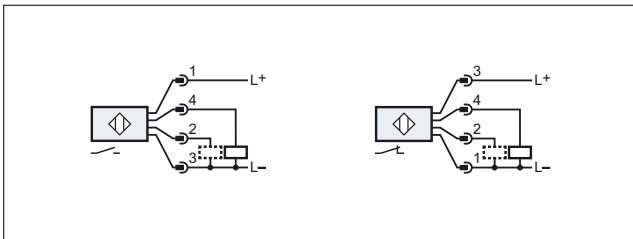
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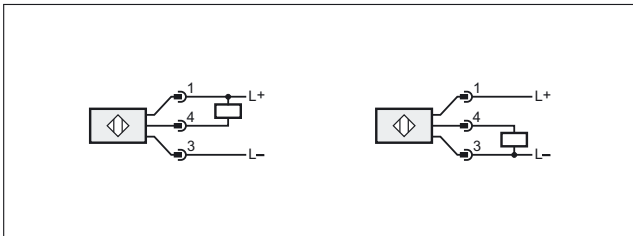


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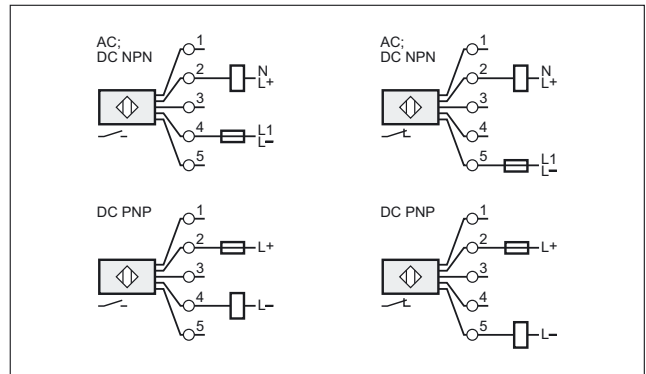


2: function check output / programming wire

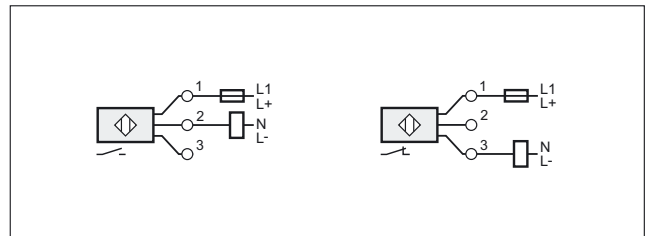
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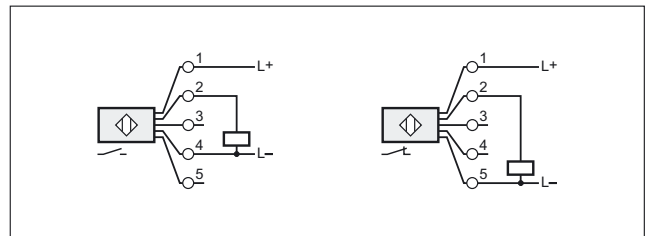
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22

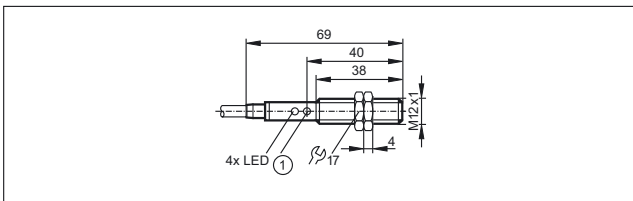


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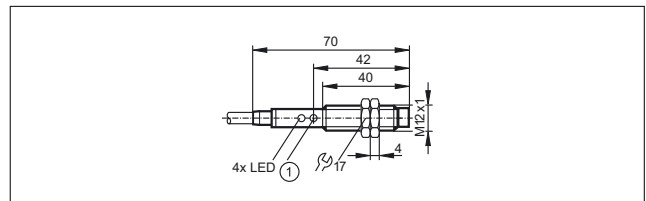


Scale drawings / drawing no. – CAD download: www.ifm.com

1

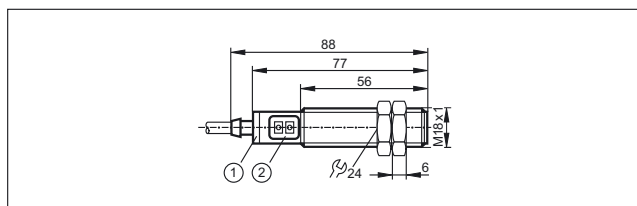


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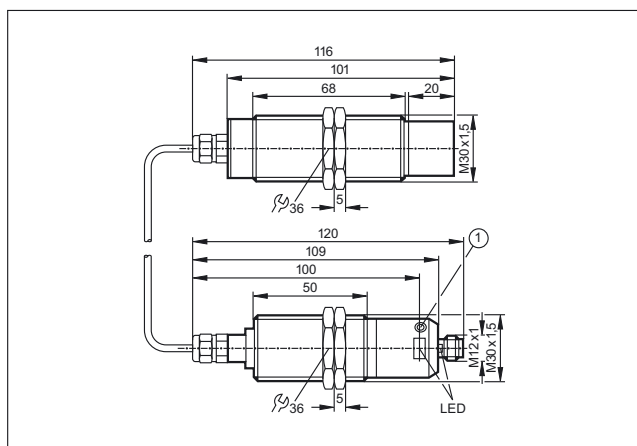
Scale drawings / drawing no. – CAD download: www.ifm.com

3



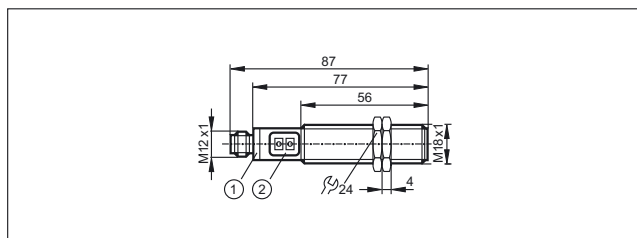
1: LED ring, 2: Programming buttons

4



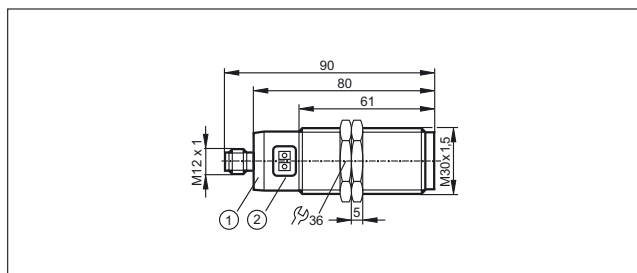
1: Programming button

5



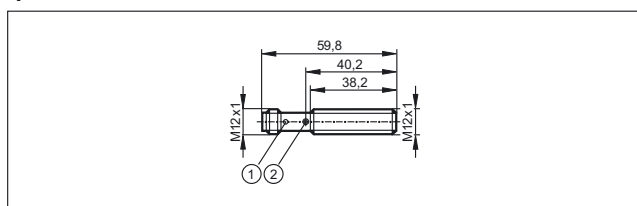
1: LED ring, 2: Programming buttons

6



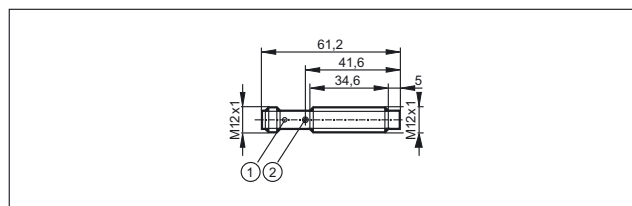
1: LED ring, 2: Programming buttons

7



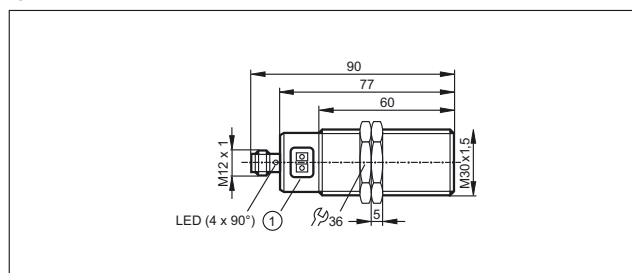
1: LED 4 x 90°, 2: potentiometer

8



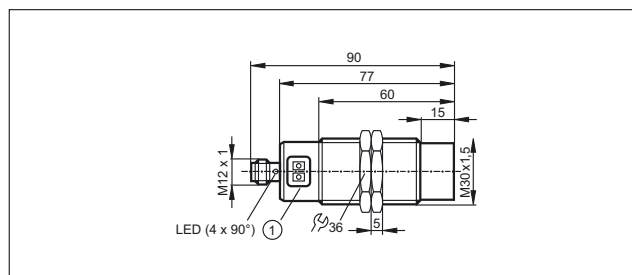
1: LED 4 x 90°, 2: potentiometer

9



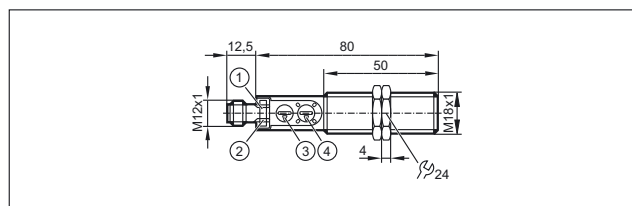
1: Programming buttons

10



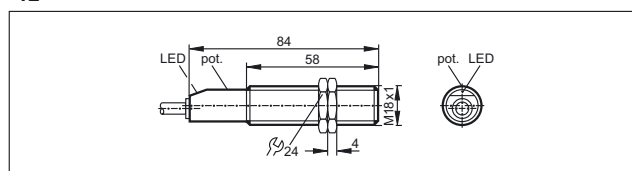
1: Programming buttons

11

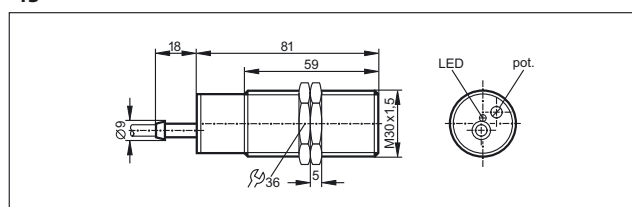


1: LED yellow (output status indication), 2: LED green (output status indication), 3: Potentiometer (sensing range), 4: Potentiometer (switching function)

12



13

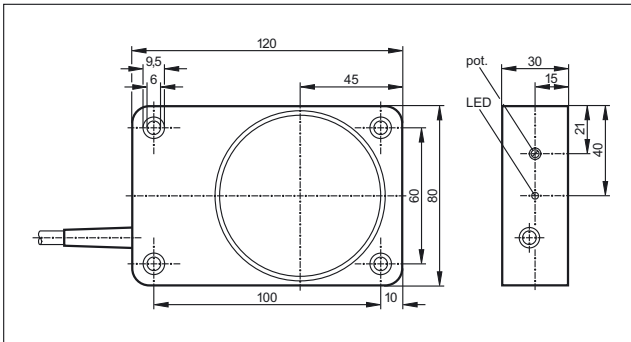




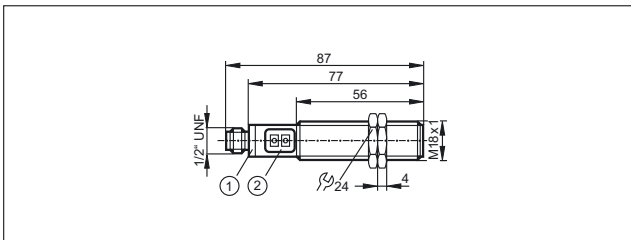
Position sensors

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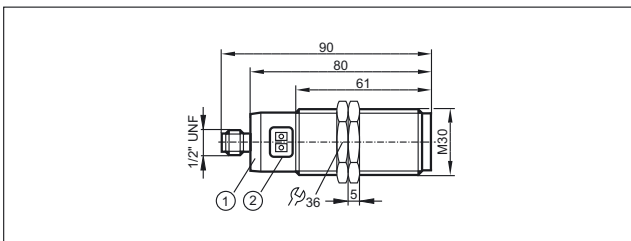
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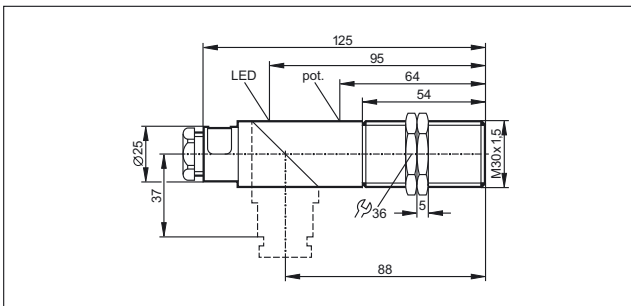


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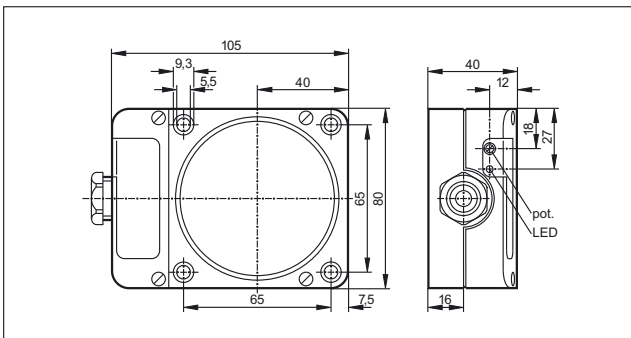


1: LED ring, 2: Programming buttons

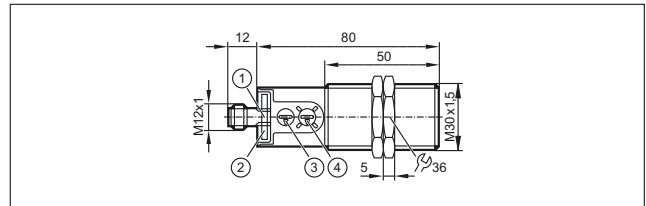
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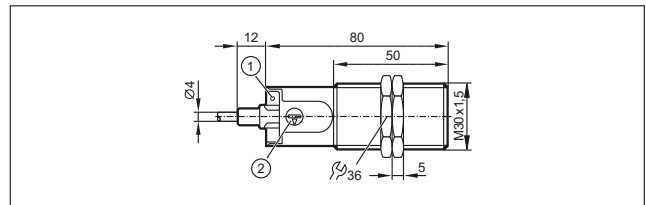


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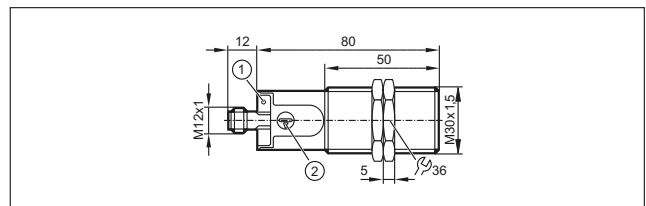
1: LED yellow (output status indication), 2: LED green (output status indication), 3: Potentiometer (sensing range), 4: Potentiometer (switching function)

20



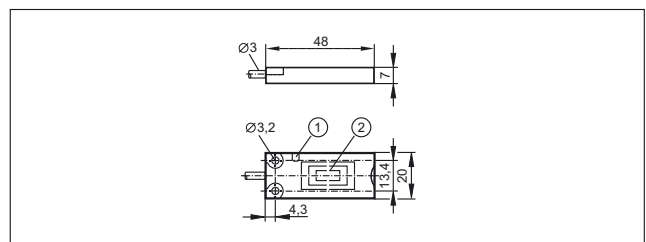
1: LED yellow (output status indication), 2: Potentiometer (sensing range)

21



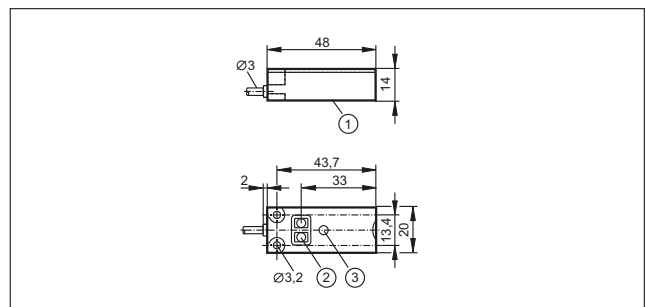
1: LED yellow (output status indication), 2: Potentiometer (sensing range)

22



1: LED, 2: sensing face

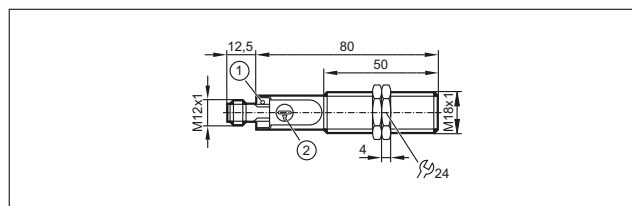
23



1: sensing face, 2: Programming buttons, 3: LED

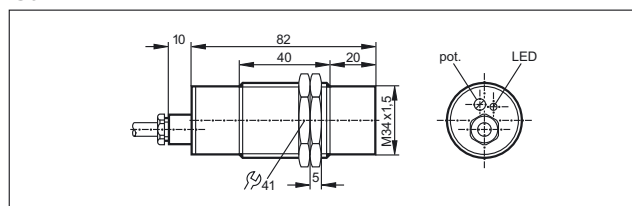
Scale drawings / drawing no. – CAD download: www.ifm.com

29



1: LED yellow (output status indication), 2: Potentiometer (sensing range)

30



31



32

Technical drawing of a mechanical assembly with a total length of 125mm. The drawing includes the following dimensions and callouts:

- Overall Length:** 125
- End Flange:**
 - Outer diameter: $\varnothing 36$
 - Inner diameter: $\varnothing 24$
 - Thickness: 17
 - Inner hole diameter: $\varnothing 28$
- Internal Components:**
 - Callout 1 points to a central screw/bolt.
 - Callout 2 points to a washer or spacer.
- Internal Flange:**
 - Outer diameter: $\varnothing 36$
 - Thickness: 5
- Internal Tube/Shaft:**
 - Length from internal flange face to end: 60
 - Length from internal flange face to center of screw: 67
 - Total length from end flange face to end: 80
 - End thread: M30 x 1.5



33

Technical drawing of the LED module showing front and side views with dimensions.

Front View Dimensions:

- Overall width: 105
- Distance from left edge to mounting hole center: 9.3
- Distance from mounting hole center to LED center: 5.5
- Distance from LED center to right edge: 40
- Overall height: 80
- Distance from bottom edge to LED center: 65
- Distance from LED center to right edge: 7.5
- Mounting hole diameter: $\varnothing 24$

Side View Dimensions:

- Overall width: 42
- Distance from left edge to LED center: 12.6
- LED height: 16
- Distance from LED center to right edge: 27
- Distance from bottom edge to LED center: 16
- LED label: ① LED

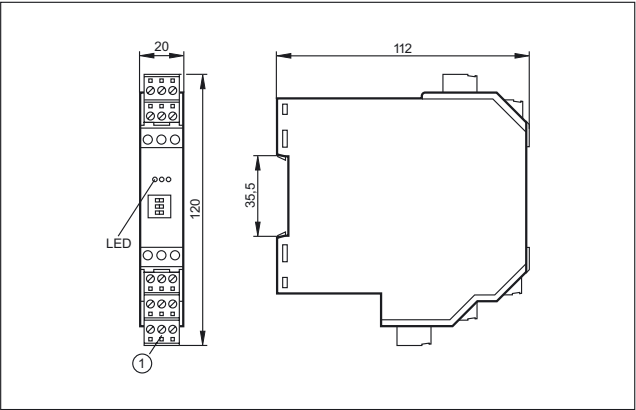




Position sensors

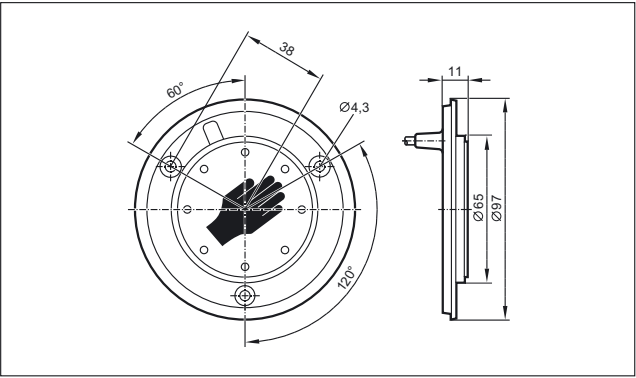
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34

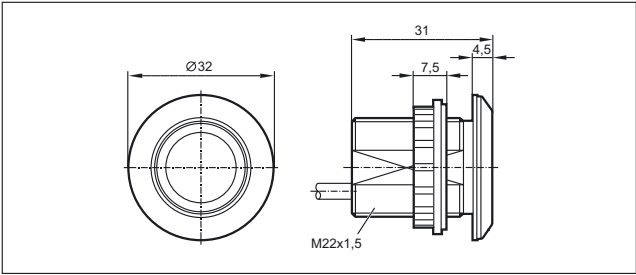


1: Combicon plug with screw terminals (optional)

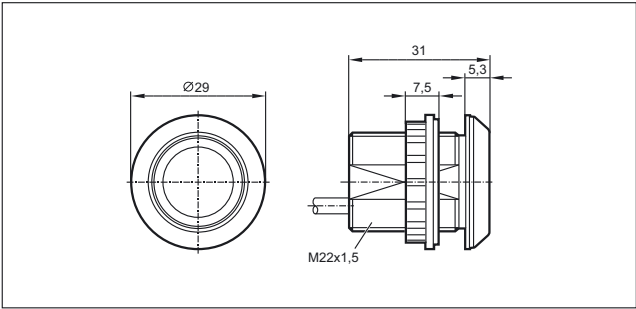
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36



37







Position sensors

Non-contact and wear-free detection with magnetic sensors



Magnetic sensors



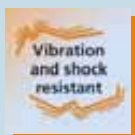
Detection also through non-magnetisable metals

Small designs with very long sensing ranges up to 100 mm

Cylinder and rectangular designs for demanding applications

High mechanical stability in case of shock or vibration

Flush or non-flush installation in non-magnetisable metals



Vibration
and shock
resistant



GMR
Technology



IP 68
IP 69 K



Temperature
resistant
up to
120°C

Magnetic sensors

Magnetic sensors are used in automation to detect positions without contact or wear and tear. Magnetic sensors come into their own where inductive sensors reach their limits. Advantage: Magnetic sensors offer small designs with very long sensing ranges. Depending on the orientation of the magnetic field, the sensor can be damped from the front or from the side.

Since magnetic fields penetrate all non-magnetisable materials, the sensors can detect magnets through walls made of non-ferrous metal, stainless steel, aluminium, plastic or wood.

In the food industry, for example, magnetic sensors are often used in connection with pigs (cleaning devices which pass through the inside of pipes). Magnetic sensors are used to determine their exact position from the outside through the wall of the stainless steel pipe.

System overview	Page
Full-metal sensors for high-pressure resistant applications on hydraulic cylinders and valves	182 - 183
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Sensors for industrial applications	184
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Sensors for hygienic and wet areas	185
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Position sensors

Full-metal sensors for high-pressure resistant applications on hydraulic cylinders and valves

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · DC PNP · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 93	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	1	MFH200
M12 connector · Output function  · DC NPN · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 93	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	1	MFH201
M12 connector · Output function  · DC PNP · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	2	MFH202
M12 connector · Output function  · DC NPN · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	2	MFH203
M12 connector · Output function  · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	2	MFH204
Cable 2 m · Output function  · DC PNP · Wiring diagram no. 4									
	M12 / L = 40	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	3	MFH205
Cable 2 m · Output function  · DC NPN · Wiring diagram no. 5									
	M12 / L = 40	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	3	MFH206
Cable 2 m · Output function  · DC PNP · Wiring diagram no. 6									
	M12 / L = 40	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	3	MFH207
Cable 2 m · Output function normally open / closed · DC PNP · Wiring diagram no. 7									
	M12 / L = 40	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	3	MFH208

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function normally open / closed · DC PNP · Wiring diagram no. 8

	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	100	4	MFH209

M12 connector · Output function · DC PNP · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M14 / L = 53	2 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	5	M9H200

f = flush / nf = non flush / qf = quasi-flush

Full metal sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function · DC PNP · Wiring diagram no. 1 · Connector groups 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	6	MFS211

	M18 / L = 60	70	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	7	MGS204

M12 connector · Output function · DC NPN · Wiring diagram no. 2 · Connector groups 148, 149, 153, 184, 188, 193, 202

	M12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	6	MFS209

M12 connector · Output function · DC PNP · Wiring diagram no. 3 · Connector groups 148, 149, 153, 184, 188, 193, 202

	M12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	6	MFS210

	M18 / L = 60	70	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	7	MGS206

M12 connector · Output function · DC NPN · Wiring diagram no. 2 · Connector groups 148, 149, 153, 184, 188, 193, 202

	M18 / L = 60	70	High-grade st. steel	10...30	IP 65 / IP 67	5000	200	7	MGS205

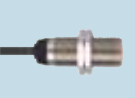


Position sensors

Sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

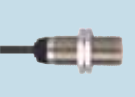
Cable 2 m · Output function · DC PNP · Wiring diagram no. 4

	M8 / L = 50	60	stainless steel (316L)	10...30	IP 67	5000	200	8	ME5011
	M12 / L = 50	60	High-grade st. steel	10...30	IP 67	5000	200	9	MFS201
	M18 / L = 50	70	stainless steel	10...30	IP 67	5000	200	10	MGS201

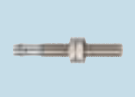
Cable 2 m · Output function · DC NPN · Wiring diagram no. 5

	M8 / L = 40	60	stainless steel (316L)	10...30	IP 67	5000	200	11	ME5015
	M12 / L = 50	60	High-grade st. steel	10...30	IP 67	5000	200	9	MFS202

Cable 2 m · Output function · DC PNP · Wiring diagram no. 6

	M18 / L = 50	70	stainless steel	10...30	IP 67	5000	200	10	MGS202

M8 connector · Output function · DC PNP · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146

	M8 / L = 60	60	stainless steel (316L)	10...30	IP 67	5000	200	12	ME5010

Cable 2 m · Output function · DC PNP · Wiring diagram no. 4

	28 x 10 x 16	60	PBT	10...30	IP 67	5000	200	13	MS5011

Cable with connector 0.15 m · Output function · DC PNP · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146

	40 x 12 x 26	60	PBT	10...30	IP 67	–	200	14	MN5200

M8 connector · Output function · DC PNP · Wiring diagram no. 9 · Connector groups 1, 2, 3, 78, 84, 145, 146

	28 x 10 x 16	60	PBT	10...30	IP 67	5000	200	15	MS5013

M8 connector · Output function · DC PNP · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146

	28 x 10 x 16	60	PBT	10...30	IP 67	5000	200	15	MS5010

Full metal sensors for hygienic and wet areas

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.

M12 connector · Output function  · DC PNP · Wiring diagram no. 1 · Connector groups 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 68 / IP 69K	5000	100	6	MFT202
	Ø 12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 68 / IP 69K	5000	100	16	MFT204
	M18 / L = 60	70	High-grade st. steel	10...30	IP 65 / IP 68 / IP 69K	5000	100	7	MGT203

Sensors for hygienic and wet areas

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.

M12 connector · Output function  · DC PNP · Wiring diagram no. 1 · Connector groups 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M12 / L = 60	60	High-grade st. steel	10...30	IP 65 / IP 68 / IP 69K	5000	100	6	MFT202

M12 connector · Output function  · DC PNP · Wiring diagram no. 1 · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

	M18 / L = 60	100	High-grade st. steel	10...30	IP 68 / IP 69K	–	200	7	MGT201

Accessories damping magnets

Type	Description	Order no.
	Damping magnet · M 3.2 · Housing materials: Barium ferrite	E12537
	Damping magnet · M 6.1 · Housing materials: Neodymium	E12538
	Damping magnet · M 6.1 · Housing materials: Neodymium	E12539
	Damping magnet · M 7.0 · Housing materials: Neodymium galvanised	E12540

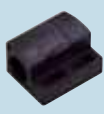


Position sensors

Type	Description	Order no.
	Damping magnet · M 7.1 · Housing materials: Neodymium / plastics	E12541
	Damping magnet · M 1.0 · Housing materials: Samarium cobalt	E10749
	Damping magnet · M 2.0 · Housing materials: AlNiCo	E10750
	Damping magnet · M 3.0 · Housing materials: Barium ferrite	E10751
	Damping magnet · M 3.1 · Housing materials: Barium ferrite / stainless steel	E12291
	Damping magnet · M 4.0 · Housing materials: Barium ferrite	E10752
	Damping magnet · M 4.1 · Housing materials: Barium ferrite / stainless steel	E11803
	Damping magnet · M 5.0 · Housing materials: Barium ferrite	E10753
	Damping magnet · M 5.1 · Housing materials: Barium ferrite with plastic coating / steel	E10754

Accessories mounting components

Type	Description	Order no.
	Angle bracket · for type M8 · Housing materials: stainless steel	E10734
	Angle bracket · for type M12 · Housing materials: stainless steel	E10735
	Angle bracket · for type M18 · Housing materials: stainless steel	E10736
	Mounting clamp · Ø 8 mm · Housing materials: aluminium black anodised	E10221

Type	Description	Order no.
	Mounting clamp · Ø 12 mm · with end stop · for type M12 · Housing materials: PC	E11047
	Mounting clamp · Ø 18 mm · with end stop · for type M18 · Housing materials: PC	E11048

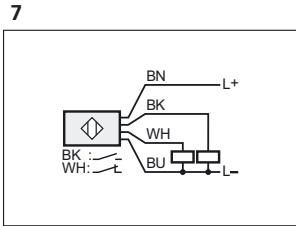
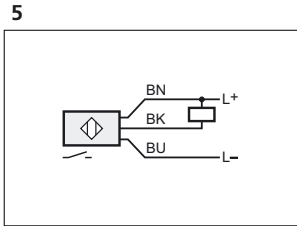
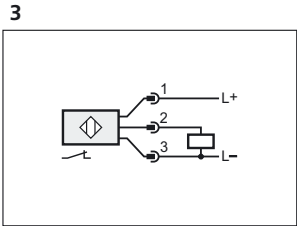
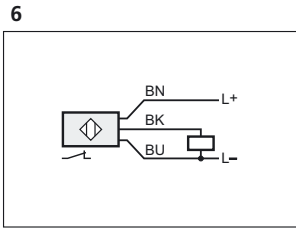
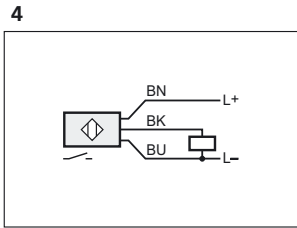
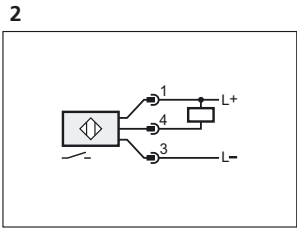
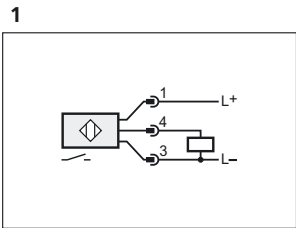
Accessories mounting sets

Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20718
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20719
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20869
	Mounting set · Ø 18.5 mm · Clamp mounting · Free-standing M10 · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20870
	Mounting set · Ø 18.5 mm · Clamp mounting · aluminium profile · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20866
	Mounting set · Ø 18.5 mm · Clamp mounting · aluminium profile · for type OG, IG, KG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20867

Wiring diagrams

Core colours

- BK black
BN brown
BU blue
WH white

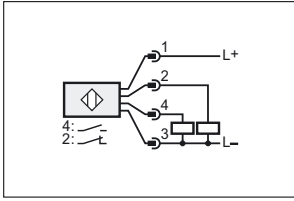




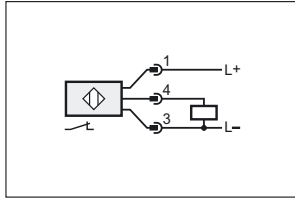
Position sensors

Wiring diagrams

8

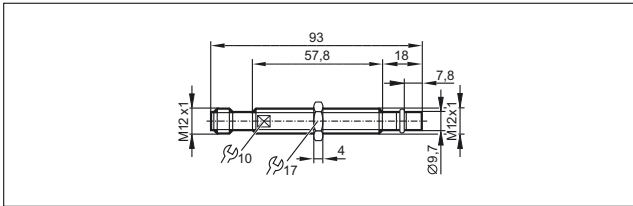


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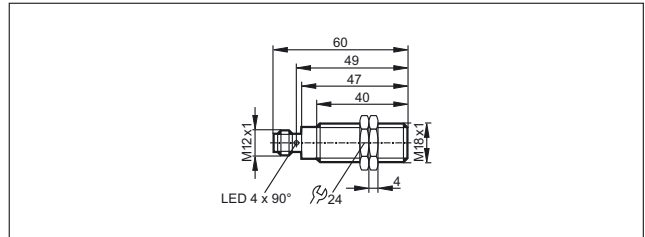


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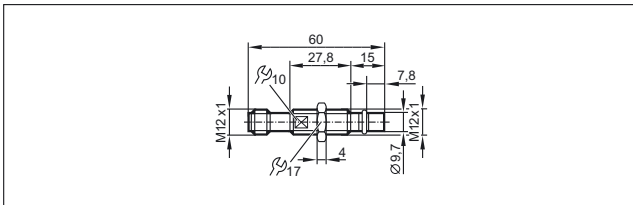
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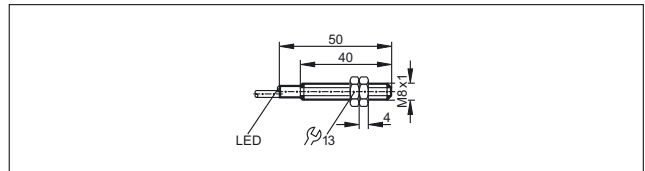
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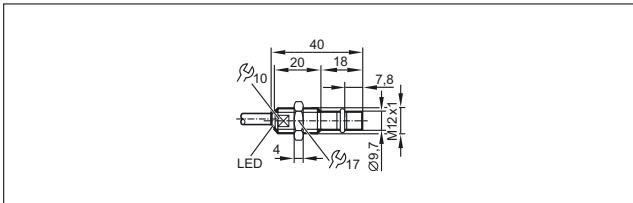
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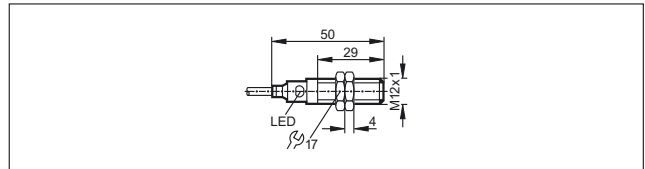
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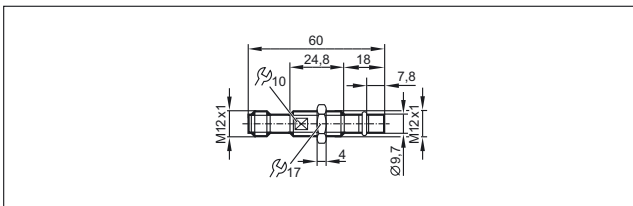
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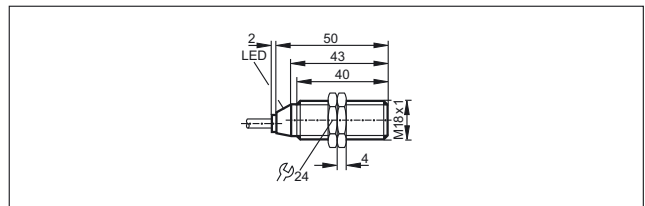
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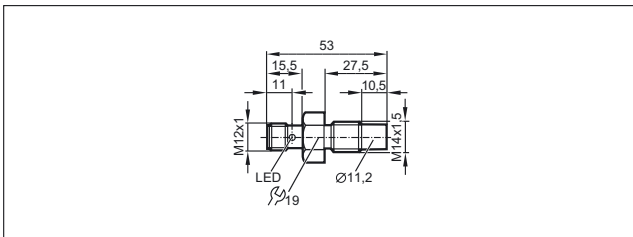
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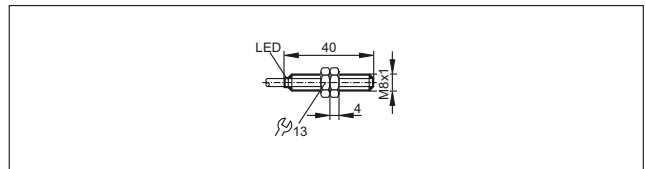
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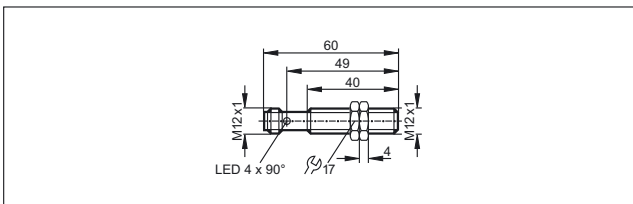
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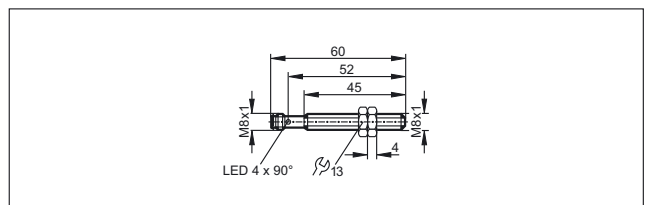
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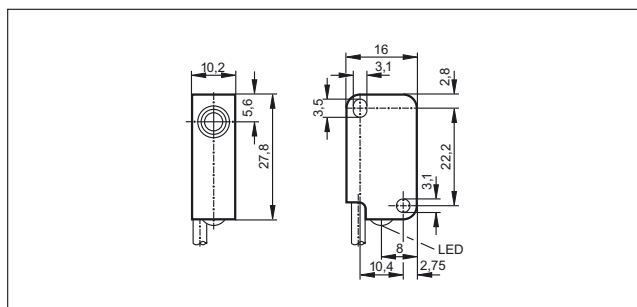
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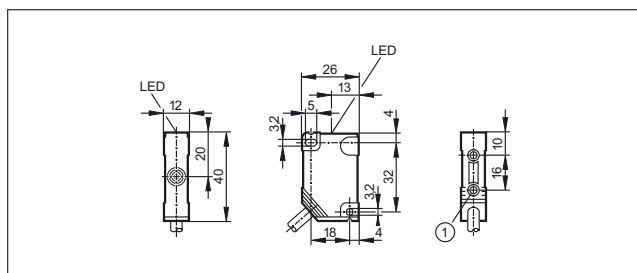
Product selectors and further information can be found at: www.ifm.com

Scale drawings / drawing no. – CAD download: www.ifm.com

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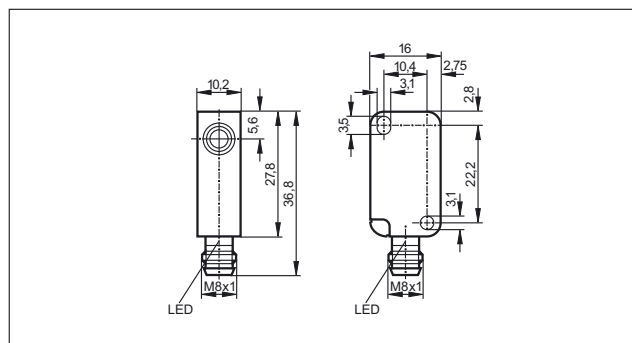


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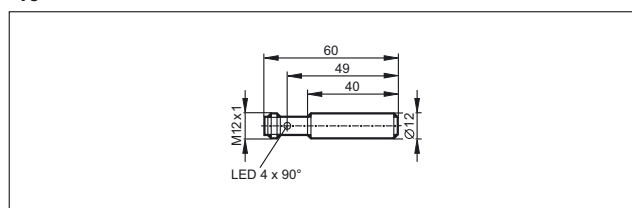


1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.

15



16





Position sensors

Accurate detection of the piston position in pneumatic cylinders



Cylinder sensors



Self-clamping fixture for easy adjustment and quick mounting

Convenient: Can be easily inserted from above into the slot

Suitable for almost all C- and T-slots

Unit versions available with connection cable and M8 or M12 cable plug

Wide selection of adapter accessories



Cylinder sensors

Cylinder sensors are used for position detection of pistons in pneumatic cylinders. They are directly mounted onto the cylinder. The ring magnet attached to the piston is detected through the housing wall of non-magnetisable material (e.g. aluminium, brass or stainless steel). ifm offers a standard solution for different cylinder types and manufacturers. Moreover, a wide range of adapters and fixing accessories ensures fast and reliable installation.

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Position sensors

T-slot sensors for industrial applications

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Drawing no.	Order no.

Cable 2 m · Output function · 3-wire · DC PNP · Wiring diagram no. 1

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	1	MK5100
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	200	-25...85	1	MK5115

Cable 2 m · Output function · 3-wire · DC NPN · Wiring diagram no. 2

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	1	MK5114

Cable 2 m · Output function · 2-wire · DC PNP/NPN · Wiring diagram no. 3

	25 x 5 x 6.5	PA (polyamide)	10...30	4000	IP 65 / IP 67	100	-25...85	1	MK5103

Cable 6 m · Output function · 3-wire · DC PNP · Wiring diagram no. 1

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	200	-25...85	1	MK5117

Cable 10 m · Output function · 3-wire · DC PNP · Wiring diagram no. 1

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	1	MK5124

Cable 0.3 m · with M8 connector (snap-fit) · Output function · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	2	MK5101
	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	200	-25...85	2	MK5106

Cable 0.3 m · with M8 connector (snap-fit) · Output function · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 1, 3, 78, 84, 145

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	2	MK5112

Cable 0.3 m · with M8 connector (snap-fit) · Output function · 2-wire · DC PNP/NPN · Wiring diagram no. 6 · Connector groups 1, 3, 145

	25 x 5 x 6.5	PA (polyamide)	10...30	4000	IP 65 / IP 67	100	-25...85	2	MK5104

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

Cable 0.3 m · with M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	3	MK5102

Cable 0.3 m · with M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	4	MK5107

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	200	-25...85	4	MK5108

Cable 0.3 m · with M8 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 6 · Connector groups 1, 3, 145

	25 x 5 x 6.5	PA (polyamide)	10...30	4000	IP 65 / IP 67	100	-25...85	3	MK5105

Cable 0.3 m · with M12 connector · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	25 x 5 x 6.5	PA (polyamide)	10...30	4000	IP 65 / IP 67	100	-25...85	4	MK5109

Cable 1 m · with M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	3	MK5122

M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146

	27.5 x 18 x 15.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	5	MK5900

M8 connector · Output function  · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 1, 3, 78, 84, 145

	27.5 x 18 x 15.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	5	MK5902

T-slot reed sensors for industrial applications, 2-wire

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

M8 connector · Output function  · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 7

	27.5 x 18 x 15.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	100	-25...70	5	MR0901*



Position sensors

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.
Cable 2 m · Output function  · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 8									
	30.5 x 5 x 6.5	PA (polyamide)	5...120	1000	IP 65 / IP 67	100	-25...70	6	MR0100*
Cable 6 m · Output function  · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 8									
	30.5 x 5 x 6.5	PA (polyamide)	5...120	1000	IP 65 / IP 67	100	-25...70	6	MR0117*
Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 7 · Connector groups 1, 3, 145									
	30.5 x 5 x 6.5	PA (polyamide)	5...60	1000	IP 65 / IP 67	100	-25...70	7	MR0101*
Cable 0.3 m · with M8 connector · Output function  · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 7 · Connector groups 1, 3, 145									
	30.5 x 5 x 6.5	PA (polyamide)	5...60	1000	IP 65 / IP 67	100	-25...70	8	MR0102*
Cable 0.3 m · with M12 connector · Output function  · 2-wire · AC/DC PNP/NPN · Wiring diagram no. 7 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	30.5 x 5 x 6.5	PA (polyamide)	5...60	1000	IP 65 / IP 67	100	-25...70	9	MR0107*

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 0,175 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

T-slot reed sensors for industrial applications, 3-wire

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.
Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire · AC/DC PNP · Wiring diagram no. 9 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	30.5 x 5 x 6.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	7	MR0119*
Cable 0.3 m · with M8 connector · Output function  · 3-wire · AC/DC PNP · Wiring diagram no. 9 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	30.5 x 5 x 6.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	8	MR0120*
Cable 2 m · Output function  · 3-wire · AC/DC PNP · Wiring diagram no. 10									
	30.5 x 5 x 6.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	6	MR0122*

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

Cable 6 m · Output function  · 3-wire · AC/DC PNP · Wiring diagram no. 10

	30.5 x 5 x 6.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	6	MR0123*

Cable 0.3 m · with M12 connector · Output function  · 3-wire · AC/DC PNP · Wiring diagram no. 9 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	30.5 x 5 x 6.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	9	MR0121*

M8 connector · Output function  · 3-wire · AC/DC PNP · Wiring diagram no. 9

	27.5 x 18 x 15.5	PA (polyamide)	5...50	1000	IP 65 / IP 67	350 / 500	-25...70	5	MR0902*

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 0,175 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

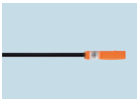
T-slot sensors for hygienic and wet areas

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67 / IP 69K	100	-25...85	1	MK5110

Cable 6 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67 / IP 69K	100	-25...85	1	MK5128

Cable 0.3 m · with M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67 / IP 69K	100	-25...85	10	MK5111

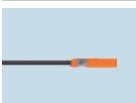
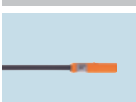
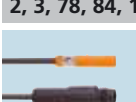
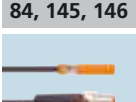
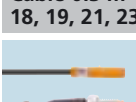
Cable 0.3 m · with M12 connector · Output function  · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67 / IP 69K	100	-25...85	11	MK5186



Position sensors

T-slot sensors for short-stroke cylinders

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.
Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	12	MK5140
Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 11									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	12	MK5156
Cable 10 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	12	MK5161
Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 1, 3, 78, 84, 145									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	13	MK5137
Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	13	MK5138
Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire · DC PNP · Wiring diagram no. 12 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	13	MK5155
Cable 0.3 m · with M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	14	MK5159
Cable 0.3 m · with M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	15	MK5139

T-slot sensors for short-stroke cylinders for hygienic and wet areas

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1

	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67 / IP 69K	100	-25...85	12	MK5158

Cable 0.3 m · with M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67 / IP 69K	100	-25...85	11	MK5157

T-slot sensors with ATEX approval 1G/1D

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

Cable 6 m · Output function  · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 3

	25 x 5 x 6.5	PA (polyamide)	–	2000	IP 65 / IP 67	–	-25...70	12	MK502A

T-slot sensors with ATEX approval 3D/3G

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

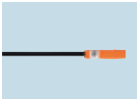
Cable 6 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1

	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-20...60	12	MK503A

T-slot sensors with ATEX approval 3D

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...60	1	MK500A

Cable 0.3 m · with M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 196, 198

	25 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...60	10	MK501A



Position sensors

T-slot reed sensors with ATEX approval 1G/1D

Type	Dimensions	Material	U _b	f	Protection	I _{load}	T _a	Drawing no.	Order no.
	[mm]		[V]	[Hz]		[mA]	[°C]		

Cable 6 m · Output function  · 2-wire · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 3

	30.5 x 5 x 6.5	PA (polyamide)	–	–	IP 65 / IP 67	–	-25...70	6	MR500A

T-slot reed sensors with ATEX approval 3D/3G

Type	Dimensions	Material	U _b	f	Protection	I _{load}	T _a	Drawing no.	Order no.
	[mm]		[V]	[Hz]		[mA]	[°C]		

Cable 6 m · Output function  · 2-wire · DC PNP/NPN · Wiring diagram no. 13

	30.5 x 5 x 6.5	PA (polyamide)	5...30	–	IP 65 / IP 67	100	-20...60	6	MR501A*

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 0,175 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

T-slot sensors for welding applications, weld-field immune

Type	Dimensions	Material	U _b	f	Protection	I _{load}	T _a	Drawing no.	Order no.
	[mm]		[V]	[Hz]		[mA]	[°C]		

Cable 0.3 m · with M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 137, 138, 139, 140, 141

	25 x 5 x 6.5	PA (polyamide)	10...30	9	IP 65 / IP 67	100	-25...85	4	MK5214

Cable 0.3 m · with M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4

	25 x 5 x 6.5	PA (polyamide)	10...30	9	IP 65 / IP 67	100	-25...85	3	MK5215

Two T-slot sensors on one connector

Type	Dimensions	Material	U _b	f	Protection	I _{load}	T _a	Drawing no.	Order no.
	[mm]		[V]	[Hz]		[mA]	[°C]		

Cable 0.3 m · with M8 connector · Output function  · 4-wire · DC PNP · Wiring diagram no. 14 · Connector groups 4, 5, 80, 86, 147

	25 x 5 x 6.5	PA (polyamide)	10...30	6000	IP 65 / IP 67	100	-25...85	16	MK5208

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

Cable 0.3 m · with M12 connector · Output function  · 4-wire · DC PNP · Wiring diagram no. 14 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

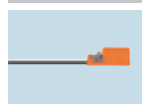


25 x 5 x 6.5 PA (polyamide) 10...30 6000 IP 65 / IP 67 100 -25...85 17 **MK5209**

Non flush C-slot sensors for industrial applications

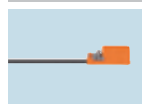
Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1



17.5 x 2.8 x 7.7 PA (polyamide) 10...30 10000 IP 65 / IP 67 100 -25...85 18 **MK5300**

Cable 2 m · Output function  · 3-wire · DC NPN · Wiring diagram no. 2



17.5 x 2.8 x 7.7 PA (polyamide) 10...30 10000 IP 65 / IP 67 100 -25...85 18 **MK5306**

Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146



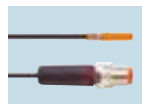
17.5 x 2.8 x 7.7 PA (polyamide) 10...30 10000 IP 65 / IP 67 100 -25...85 19 **MK5301**

Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 1, 3, 78, 84, 145



17.5 x 2.8 x 7.7 PA (polyamide) 10...30 10000 IP 65 / IP 67 100 -25...85 19 **MK5307**

Cable 0.3 m · with M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146



17.5 x 2.8 x 7.7 PA (polyamide) 10...30 10000 IP 65 / IP 67 100 -25...85 20 **MK5302**

Cable 0.5 m · with M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146



17.5 x 2.8 x 7.7 PA (polyamide) 10...30 10000 IP 65 / IP 67 100 -25...85 20 **MK5305**

Cable 0.3 m · with M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204



17.5 x 2.8 x 7.7 PA (polyamide) 10...30 10000 IP 65 / IP 67 100 -25...85 21 **MK5304**



Position sensors

Flush C-slot sensors for industrial applications

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1

	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	22	MK5312

Cable 2 m · Output function  · 3-wire · DC NPN · Wiring diagram no. 2

	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	22	MK5309

Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146

	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	23	MK5310

Cable 0.3 m · with M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146

	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	24	MK5311

Cable 0.3 m · with M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	25	MK5314

Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire · DC NPN · Wiring diagram no. 5 · Connector groups 1, 3, 78, 84, 145

	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	23	MK5308

Cable 0.5 m · with M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146

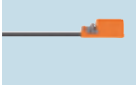
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	26	MK5315

C-slot sensors for short-stroke cylinders

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.

Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1

	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	22	MK5325

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Draw- ing no.	Order no.
Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	26.1 x 2.8 x 5.5	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	23	MK5326
Cable 0.3 m · with M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	25.8 x 2.8 x 5	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	27	MK5328
Cable 2 m · Output function  · 3-wire · DC PNP · Wiring diagram no. 1									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	28	MK5329
Cable 0.3 m · with M8 connector (snap-fit) · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	29	MK5330
Cable 0.3 m · with M8 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 1, 2, 3, 78, 84, 145, 146									
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	30	MK5331

Fixing straps for clean line cylinders

Type	Description	Order no.
	Fixing strap for clean-line cylinders · Piston diameter 8...12 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	E11816
	Fixing strap for clean-line cylinders · Piston diameter 16...20 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	E11817
	Fixing strap for clean-line cylinders · Piston diameter 25...32 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	E11818
	Fixing strap for clean-line cylinders · Piston diameter 40 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	E11819
	Fixing strap for clean-line cylinders · Piston diameter 50 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	E11820
	Fixing strap for clean-line cylinders · Piston diameter 63 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	E11821



Position sensors

Type	Description	Order no.
	Fixing strap for clean-line cylinders · Piston diameter 80 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	E11822
	Fixing strap for clean-line cylinders · Piston diameter 100 mm · for type MKT · Housing materials: adapter: PA / Fixing strap: stainless steel	E11823
	Fixing strap for clean-line cylinders · Piston diameter 10...16 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	E11975
	Fixing strap for clean-line cylinders · Piston diameter 20...25 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	E11976
	Fixing strap for clean-line cylinders · Piston diameter 32 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	E11977
	Fixing strap for clean-line cylinders · Piston diameter 40 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	E11978
	Fixing strap for clean-line cylinders · Piston diameter 50 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	E11979
	Fixing strap for clean-line cylinders · Piston diameter 63 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	E11980
	Fixing strap for clean-line cylinders · Piston diameter 80 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	E11981
	Fixing strap for clean-line cylinders · Piston diameter 100 mm · for type MKT · Housing materials: adapter: stainless steel / Fixing strap: stainless steel	E11982
	Adapter for clean-line cylinders · for types MKT (T-slot cylinder sensors) · Housing materials: PA	E11846
	Adapter for clean-line cylinders · for types MKT (T-slot cylinder sensors) · Housing materials: stainless steel	E11877

Clips

Type	Description	Order no.
	Clip · for types MKT (T-slot cylinder sensors) · Piston diameter 12 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	E11961
	Clip · for types MKT (T-slot cylinder sensors) · Piston diameter 16 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	E11958

Type	Description	Order no.
	Clip · for types MKT (T-slot cylinder sensors) · Piston diameter 20 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	E11959
	Clip · for types MKT and MKI (T-slot cylinder sensors) · Piston diameter 25 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	E11960
	Clip · for types MKT (T-slot cylinder sensors) · Clamping range 44-45 mm · Piston diameter 40 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	E12015
	Clip · for types MKT (T-slot cylinder sensors) · Clamping range 35-36 mm · Piston diameter 32 mm · Housing materials: POM / fixture: aluminium / screw: stainless steel	E12017

Adapters for tie rod and integrated profile

Type	Description	Order no.
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 5...11 mm · Housing materials: aluminium / screw: stainless steel	E11797
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 9...15 mm · Housing materials: aluminium / screw: stainless steel	E11799
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 14...20 mm · Housing materials: aluminium / screw: stainless steel	E11801
	Adapter for tie rod cylinders (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · Clamping range 3...7 mm · Housing materials: aluminium / screw: stainless steel	E11913
	Adapter for tie rod cylinders (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · Clamping range 5...7 mm · Housing materials: aluminium / screw: stainless steel	E11912
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 5...11 mm · Housing materials: aluminium / screw: stainless steel	E12231
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 9...13.5 mm · Housing materials: aluminium / screw: stainless steel	E12232
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 9...17 mm · Housing materials: aluminium / screw: stainless steel	E12233
	Adapter for tie rod / integrated profile cylinders · for types MKT (T-slot cylinder sensors) · Clamping range 13...15 mm · Housing materials: aluminium / screw: stainless steel	E12234



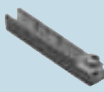
Position sensors

Adapters for trapezoidal slot cylinders

Type	Description	Order no.
	Adapter for trapezoidal slot cylinders · for types MKT (T-slot cylinder sensors) · Housing materials: aluminium alloy / set screw: stainless steel	E11796
	Adapter for trapezoidal slot cylinders · for types MKT (T-slot cylinder sensors) · Housing materials: aluminium alloy / set screw: stainless steel	E11957
	Adapter for trapezoidal slot cylinders · for types MKT (T-slot cylinder sensors) · Housing materials: aluminium alloy / set screw: stainless steel	E11988
	Adapter for Pneumax cylinders 1500 series (or cylinders of the same dimensions) · for types MKT / MRT (T-slot cylinder sensors) · Housing materials: aluminium	E12375

Various adapters and memorisation blocks

Type	Description	Order no.
	Adapter for Bosch Rexroth cylinders ICL series and Festo cylinders type CDN · for types MKT (T-slot cylinder sensors) · Housing materials: adapter: aluminium anodised / screw: stainless steel	E12164
	Adapter for Bosch-Rexroth cylinders PRA / PRB series (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · Housing materials: aluminium / screw: stainless steel	E11892
	Adapter for Bosch-Rexroth cylinders 523 series (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · L-slot · Housing materials: aluminium / screw: stainless steel	E11894
	Adapter for SMC cylinders ECDQ2 series (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · T-slot rail, flat · Housing materials: aluminium / screw: stainless steel	E11890
	Adapter for SMC cylinders CDQ2 series (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · T-slot rail, high · Housing materials: aluminium / screw: stainless steel	E11891
	Adapter for SMC cylinder CP95 · for types MKT (T-slot cylinder sensors) · Housing materials: stainless steel	E11872
	Adapter for Festo cylinders type DZH (or cylinders of the same dimensions) · for types MKT (T-slot cylinder sensors) · Housing materials: aluminium / screw: stainless steel	E11895
	Adapter for Norgren cylinders of the M series · for types MKT (T-slot cylinder sensors) · Housing materials: stainless steel	E12218
	Protective adapter for T-slot cylinder sensors · for types MKT (T-slot cylinder sensors) · Housing materials: diecast zinc coated / screws: stainless steel	E12259

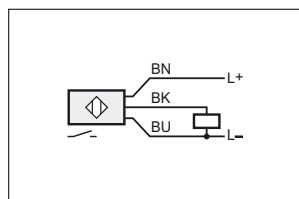
Type	Description	Order no.
	T-slot adapter for C-slot sensor · for types MKC (C-slot cylinder sensor) for installation in T-slot cylinders · (height 5 mm) · Housing materials: diecast zinc / fixing element: stainless steel	E11928
	T-slot adapter for C-slot sensor · for types MKC (C-slot cylinder sensor) for installation in T-slot cylinders · (height 7.7 mm) · Housing materials: diecast zinc / fixing element: stainless steel	E11914
	T-slot cylinder memorisation block · for types MKT (T-slot cylinder sensors) · Housing materials: PA / stainless steel	E11798
	C-slot cylinder memorisation block · for types MKC (C-slot cylinder sensors) · Housing materials: PA / stainless steel	E12004

Wiring diagrams

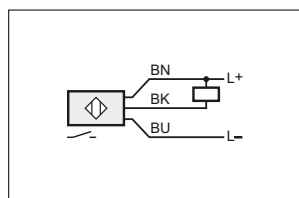
Core colours

BK black
BN brown
BU blue

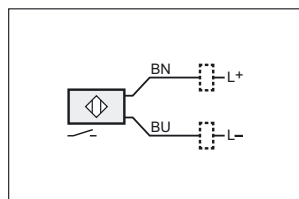
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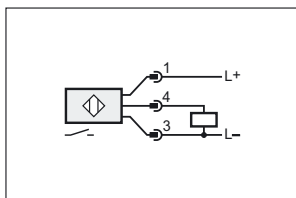
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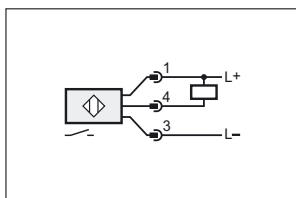
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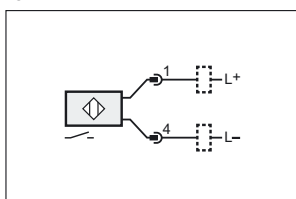
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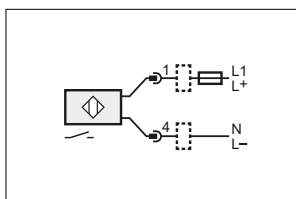
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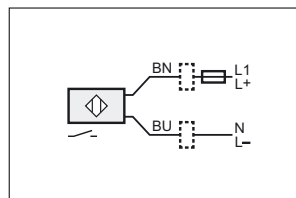
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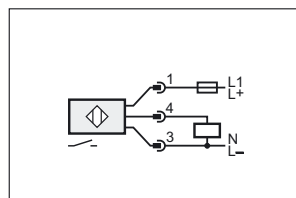
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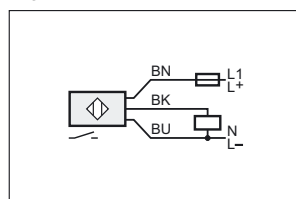
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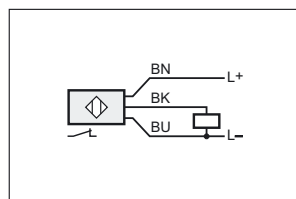
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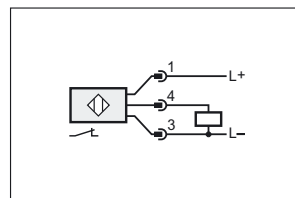
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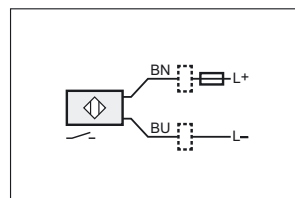
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12



13



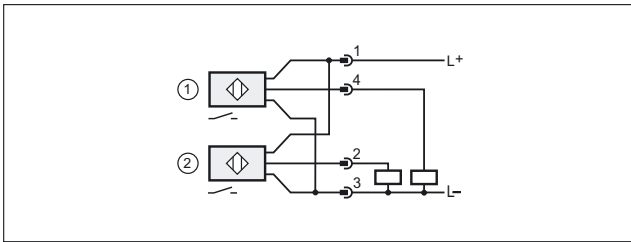
Note: miniature fuse to IEC60127-2 sheet 1, $\leq 0,175$ A (fast acting)



Position sensors

Wiring diagrams

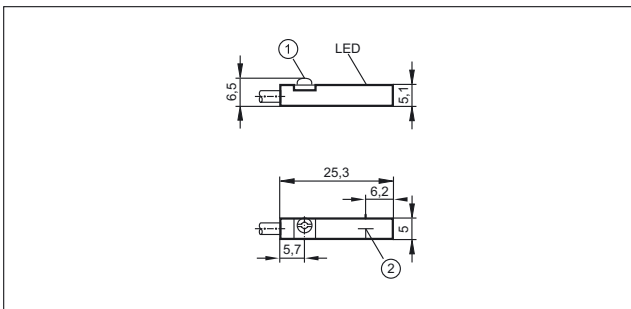
14



1: sensor 1, 2: sensor 2

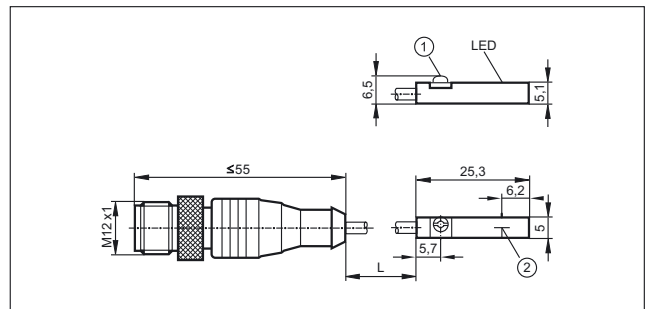
Scale drawings / drawing no. – CAD download: www.ifm.com

1



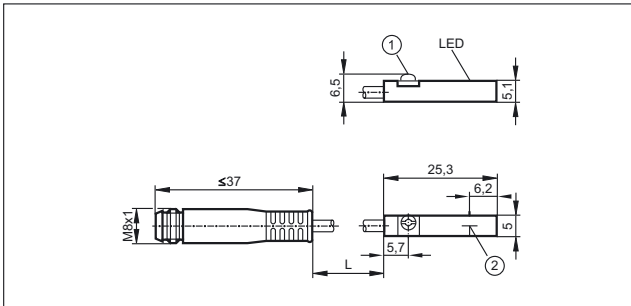
1: Fastening clamp, 2: sensing face

4



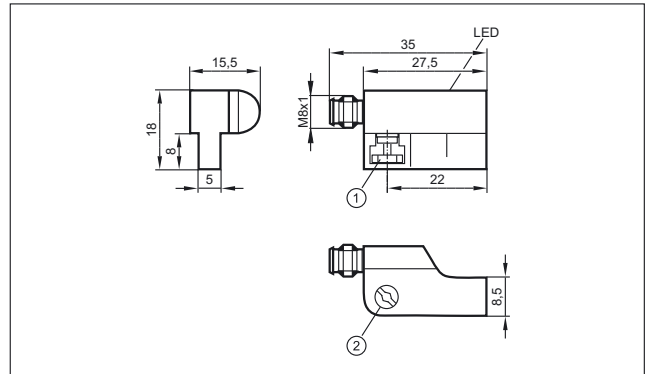
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2



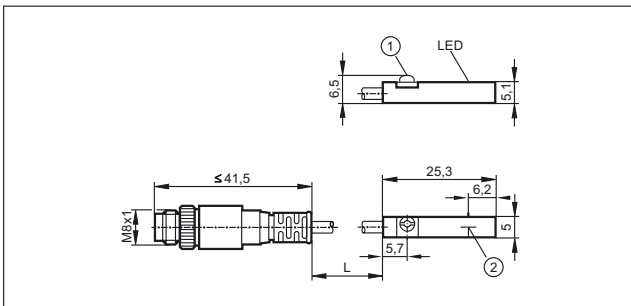
1: Fastening clamp, 2: sensing face

5



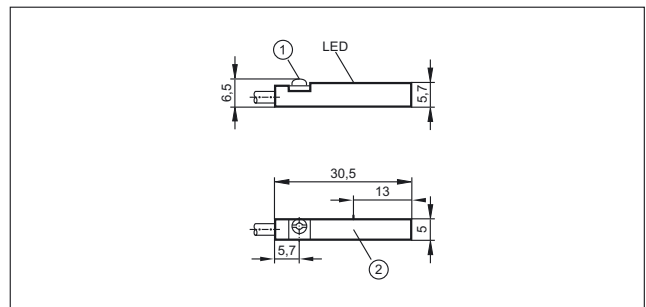
1: fixing element, 2: combined head screw for fixing element

3



1: Fastening clamp, 2: sensing face

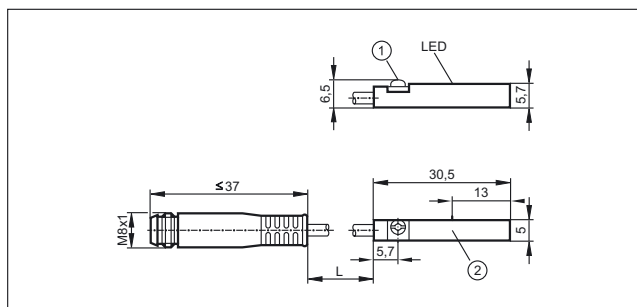
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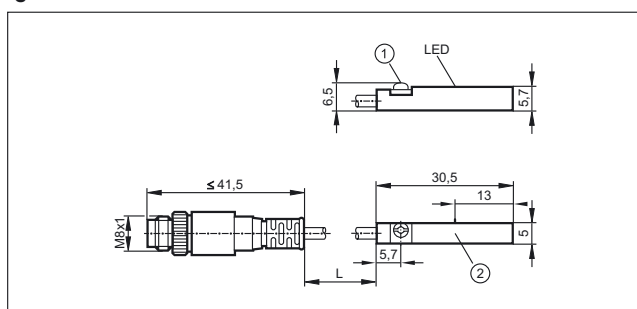
1: Clamping screw with combined slot/hexagon socket head AF 1.5,
2: sensing face

Scale drawings / drawing no. – CAD download: www.ifm.com

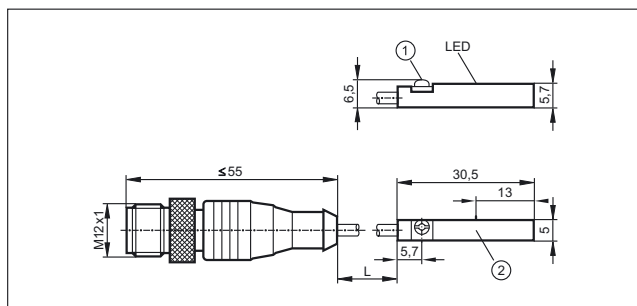
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1: Clamping screw with combined slot/hexagon socket head AF 1.5,
2: sensing face

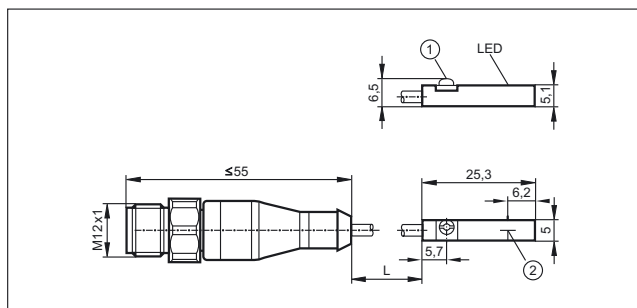
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1: Clamping screw with combined slot/hexagon socket head AF 1.5,
2: sensing face

9

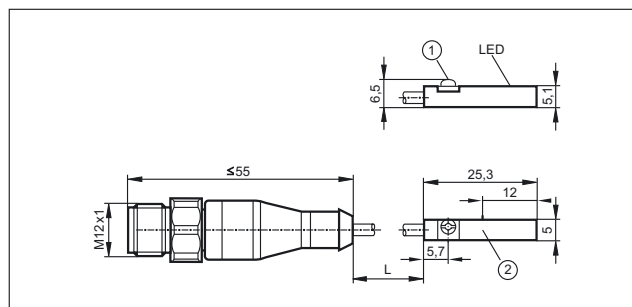
1: Clamping screw with combined slot/hexagon socket head AF 1.5,
2: sensing face

10



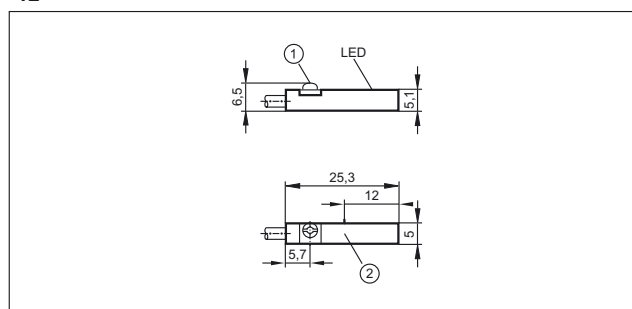
1: Fastening clamp, 2: sensing face

11



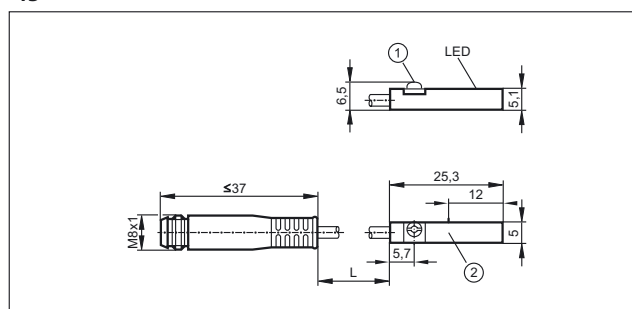
1: Fastening clamp, 2: sensing face

12



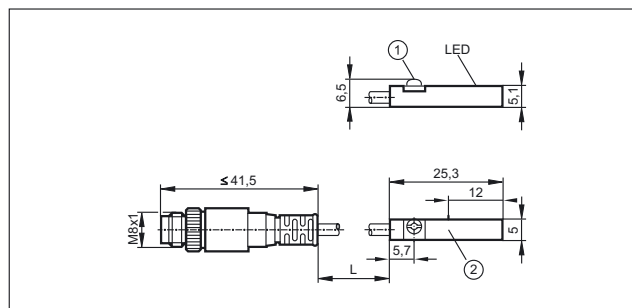
1: Fastening clamp, 2: sensing face

13



1: Fastening clamp, 2: sensing face

14



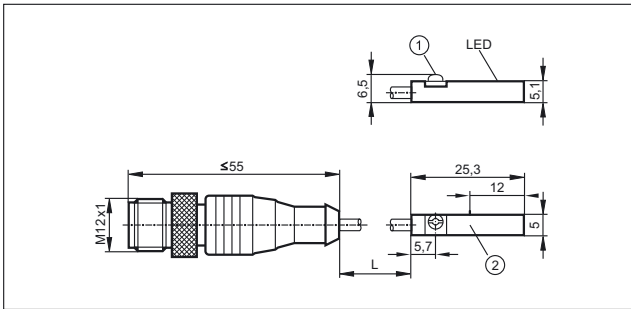
1: Fastening clamp, 2: sensing face



Position sensors

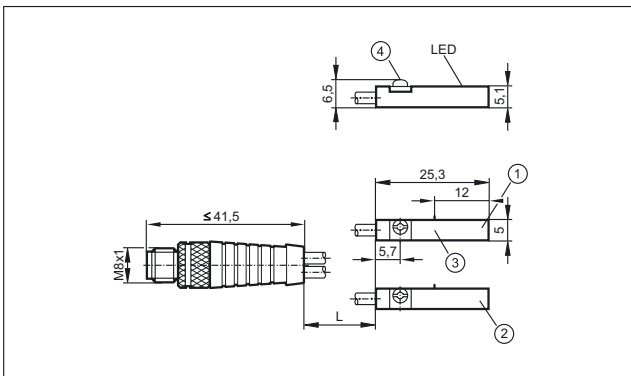
Scale drawings / drawing no. – CAD download: www.ifm.com

15



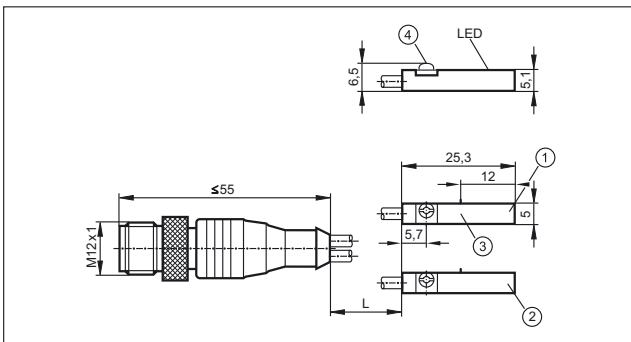
1: Fastening clamp, 2: sensing face

16



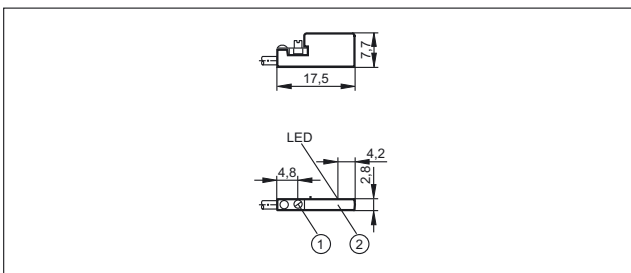
1: sensor 1, 2: sensor 2, 3: sensing face, 4: Fastening clamp

17



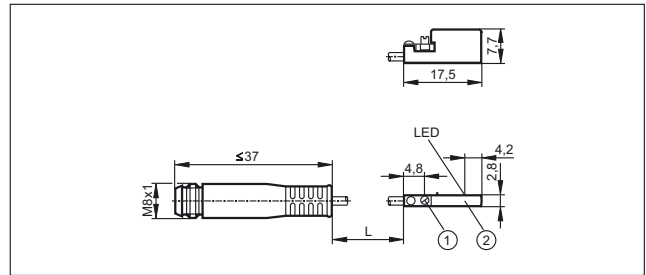
1: sensor 1, 2: sensor 2, 3: sensing face, 4: Fastening clamp

18



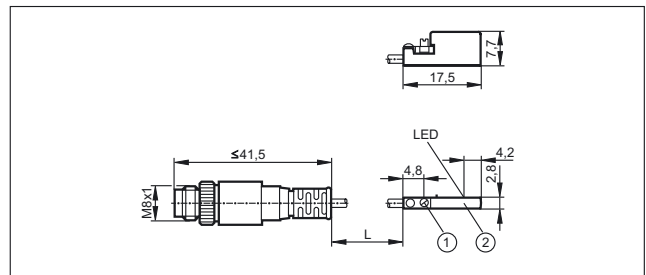
1: Fastening clamp, 2: sensing face

19



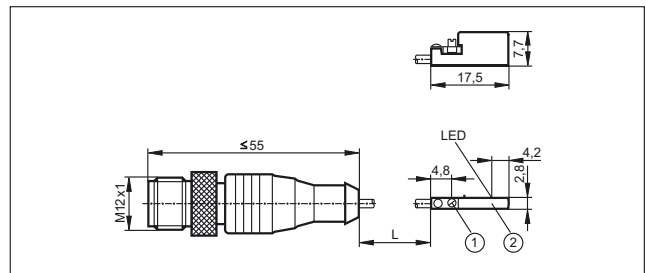
1: Fastening clamp, 2: sensing face

20



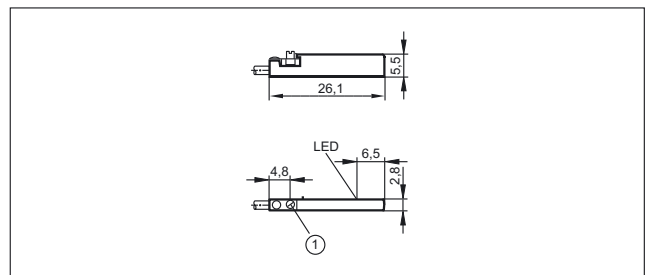
1: Fastening clamp, 2: sensing face

21



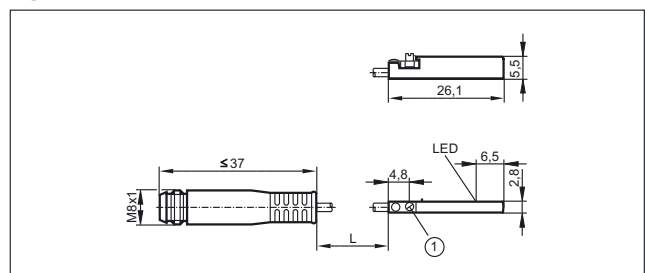
1: Fastening clamp, 2: sensing face

22



1: Fastening clamp

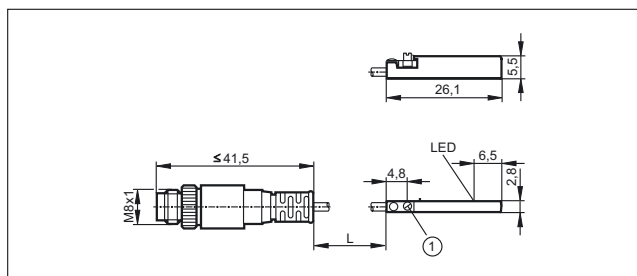
23



1: Fastening clamp

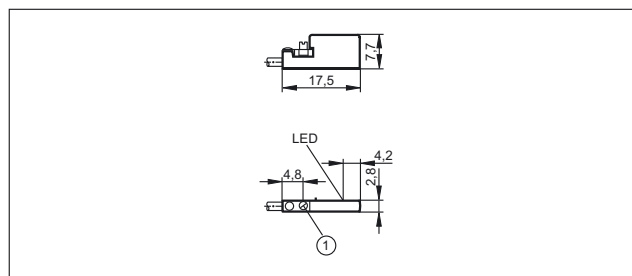
Scale drawings / drawing no. – CAD download: www.ifm.com

24



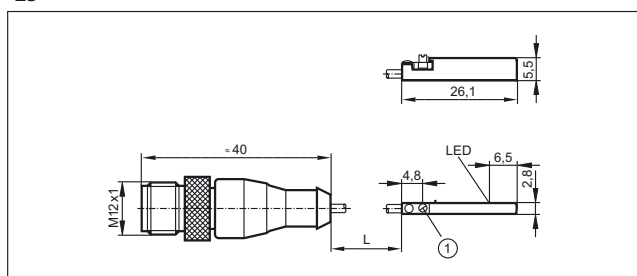
1: Fastening clamp

28



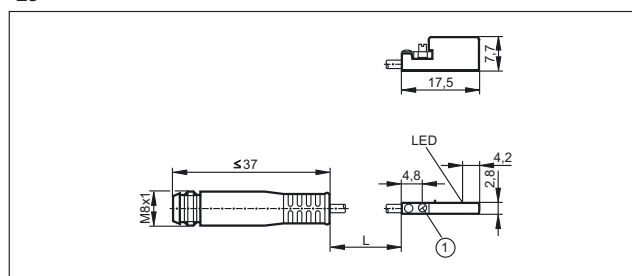
1: Fastening clamp

25



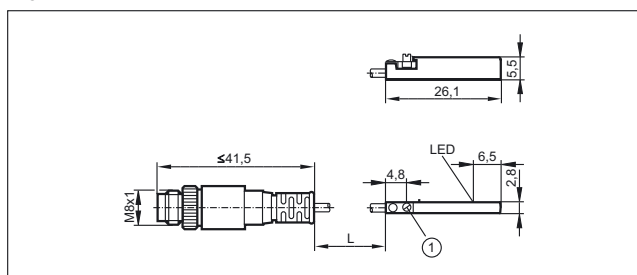
1: Fastening clamp

29



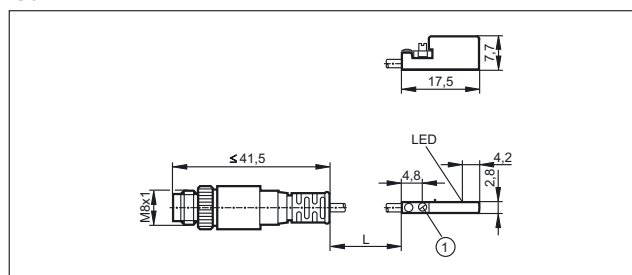
1: Fastening clamp

26



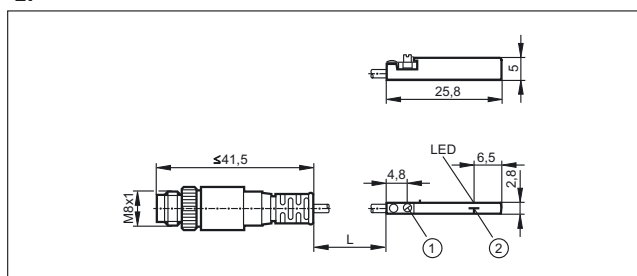
1: Fastening clamp

30



1: Fastening clamp

27



1: Fastening clamp, 2: sensing face



Position sensors

Ultrasonic sensors – hear what's hard to see



Ultrasonic sensors



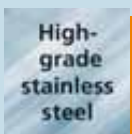
Robust high-grade stainless steel housing for demanding applications

M18 plastic housing available in the lengths 60 and 98 mm

The vibrating sound transducer reduces the deposit of dirt

Digital and analogue output for point level measurement and distance detection

Setting via teach button, wire teach or IO-Link



The alternative for difficult surfaces

Ultrasonic sensors transmit and receive sound waves in the ultrasonic range. The object to be detected reflects the sound waves and the distance information is determined via time of flight measurement. As opposed to photoelectric sensors colour, transparency or the object's surface shine do not play a role. Blister packages in packaging technology or transparent plastic bowls in the food industry, for example, can be reliably detected.

High performance

The ifm ultrasonic sensors in M18 design provide a particularly small blind zone and long sensing ranges which are usually only achieved by sensors of a considerably larger design. The sensors operate reliably with heavy soiling so that they can be used in applications in which photoelectric sensors meet their limits.

System overview	Page
Ultrasonic diffuse-reflection sensor with plastic housing	212 - 213
Ultrasonic diffuse-reflection sensor with stainless steel housing	213 - 216
Ultrasonic retro-reflective sensor	216
Accessories	217
Wiring diagrams	217
Scale drawings / drawing no. – CAD download: www.ifm.com	218



Position sensors

Ultrasonic diffuse-reflection sensor with plastic housing

Type	Dimensions [mm]	Sensing range [mm]	Material	U _B [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M18 / L = 60.5	300	PBT	10...30	IP 67	8	100	1	UGT200
	M18 / L = 60.5	800	PBT	10...30	IP 67	5	100	1	UGT201
	M18 / L = 60.5	1200	PBT	10...30	IP 67	5	100	1	UGT202

M12 connector · Output function  · 3-wire · DC NPN · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M18 / L = 60.5	300	PBT	10...30	IP 67	8	100	1	UGT209
	M18 / L = 60.5	800	PBT	10...30	IP 67	5	100	1	UGT210
	M18 / L = 60.5	1200	PBT	10...30	IP 67	5	100	1	UGT211

M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M18 / L = 60.5	300	PBT	10...30	IP 67	8	100	1	UGT212
	M18 / L = 60.5	800	PBT	10...30	IP 67	5	100	1	UGT213
	M18 / L = 60.5	1200	PBT	10...30	IP 67	5	100	1	UGT214

M12 connector · Output function 2 x normally open / closed programmable · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205

	M18 / L = 97.5	1600	PBT	10...30	IP 67	3	100	2	UGT203
	M18 / L = 97.5	2200	PBT	10...30	IP 67	2	100	2	UGT206

M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205

	M18 / L = 97.5	1600	PBT	10...30	IP 67	3	100	2	UGT204
	M18 / L = 97.5	2200	PBT	10...30	IP 67	2	100	2	UGT207

Product selectors and further information can be found at: www.ifm.com

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	PBT	10...30	IP 67	3	100	2	UGT205
	M18 / L = 97.5	2200	PBT	10...30	IP 67	2	100	2	UGT208

Ultrasonic diffuse-reflection sensor with stainless steel housing

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 60.5	300	1.4404	10...30	IP 67	8	100	1	UGT500
	M18 / L = 60.5	800	1.4404	10...30	IP 67	5	100	1	UGT503
	M18 / L = 60.5	1200	1.4404	10...30	IP 67	5	100	1	UGT506
M12 connector · Output function  · 3-wire · DC NPN · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 60.5	300	1.4404	10...30	IP 67	8	100	1	UGT521
	M18 / L = 60.5	800	1.4404	10...30	IP 67	5	100	1	UGT522
	M18 / L = 60.5	1200	1.4404	10...30	IP 67	5	100	1	UGT523
M12 connector · Output function 1x analogue 4...20 mA · 3-wire · DC analogue · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M18 / L = 60.5	300	1.4404	10...30	IP 67	–	–	1	UGT501
	M18 / L = 60.5	800	1.4404	10...30	IP 67	–	–	1	UGT504
	M18 / L = 60.5	1200	1.4404	10...30	IP 67	–	–	1	UGT507



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 0...10 V analogue · 3-wire · DC analogue · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M18 / L = 60.5	300	1.4404	10...30	IP 67	–	–	1	UGT502
	M18 / L = 60.5	800	1.4404	10...30	IP 67	–	–	1	UGT505
	M18 / L = 60.5	1200	1.4404	10...30	IP 67	–	–	1	UGT508
M12 connector · Output function · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M18 / L = 60.5	300	1.4404	10...30	IP 67	8	100	1	UGT524
	M18 / L = 60.5	800	1.4404	10...30	IP 67	5	100	1	UGT525
	M18 / L = 60.5	1200	1.4404	10...30	IP 67	5	100	1	UGT526
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	300	1.4542	10...30	IP 67	8	100	3	UGT580
	53 x 20 x 37.7	800	1.4542	10...30	IP 67	5	100	3	UGT582
	53 x 20 x 37.7	1200	1.4542	10...30	IP 67	5	100	3	UGT584
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	300	1.4542	10...30	IP 67	8	100	3	UGT581
	53 x 20 x 37.7	800	1.4542	10...30	IP 67	5	100	3	UGT583
	53 x 20 x 37.7	1200	1.4542	10...30	IP 67	5	100	3	UGT585
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC NPN · Wiring diagram no. 7 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	300	1.4542	10...30	IP 67	8	100	3	UGT586

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC NPN · Wiring diagram no. 7 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	800	1.4542	10...30	IP 67	5	100	3	UGT588
	53 x 20 x 37.7	1200	1.4542	10...30	IP 67	5	100	3	UGT590
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC NPN · Wiring diagram no. 7 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	300	1.4542	10...30	IP 67	8	100	3	UGT587
	53 x 20 x 37.7	800	1.4542	10...30	IP 67	5	100	3	UGT589
	53 x 20 x 37.7	1200	1.4542	10...30	IP 67	5	100	3	UGT591
M12 connector · Output function 1 x Schließer / Öffner programmierbar · 3-wire · DC PNP · Wiring diagram no. 3 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	53 x 20 x 37.7	300	1.4542	10...30	IP 67	8	100	3	UGT592
	53 x 20 x 37.7	800	1.4542	10...30	IP 67	5	100	3	UGT593
	53 x 20 x 37.7	1200	1.4542	10...30	IP 67	5	100	3	UGT594
M12 connector · Output function 2 x normally open / closed programmable · 3-wire · DC PNP · Wiring diagram no. 4 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	UGT509
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	UGT512
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	UGT510
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	UGT513
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	UGT511

You can find wiring diagrams and scale drawings from page 217



Position sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC PNP · Wiring diagram no. 5 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	UGT514
M12 connector · Output function 2 x normally open / closed programmable · 3-wire · DC NPN · Wiring diagram no. 8 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	UGT515
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	UGT518
M12 connector · Output function 1 x NO / NC programmable + 1 x current output · 3-wire · DC NPN · Wiring diagram no. 7 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	UGT516
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	UGT519
M12 connector · Output function 1 x NO / NC programmable + 1 x voltage output · 3-wire · DC NPN · Wiring diagram no. 7 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	3	100	2	UGT517
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	UGT520

Ultrasonic retro-reflective sensor

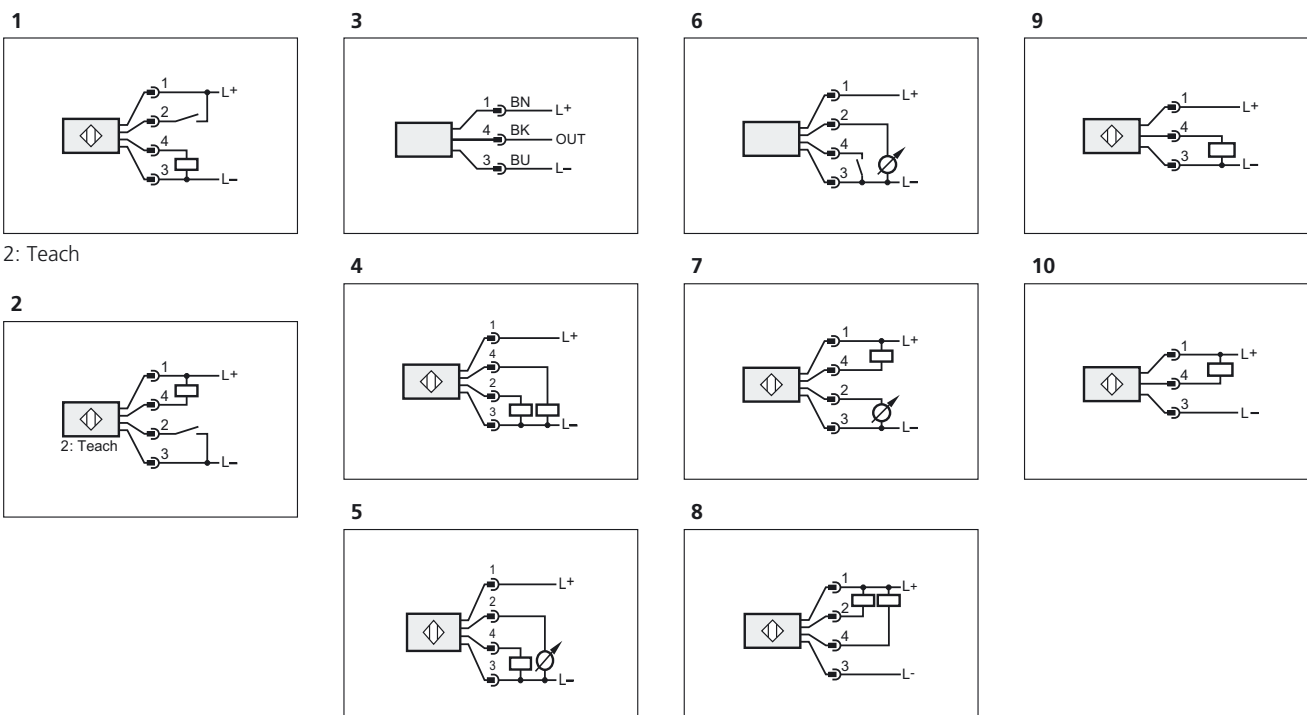
Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 3-wire · DC PNP · Wiring diagram no. 9 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	2	100	2	UGR500
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	UGR501
M12 connector · Output function  · 3-wire · DC NPN · Wiring diagram no. 10 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 95, 96, 97, 98, 99, 100, 107, 108, 109, 110, 111, 112, 130, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205									
	M18 / L = 97.5	1600	1.4404	10...30	IP 67	2	100	2	UGR502
	M18 / L = 97.5	2200	1.4404	10...30	IP 67	2	100	2	UGR503

Product selectors and further information can be found at: www.ifm.com

Accessories

Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20720
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	E21206
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20721
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	E21207
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20938
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E20940
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	E20951
	Sound Tube · for type UG · Housing materials: POM	E23000

Wiring diagrams

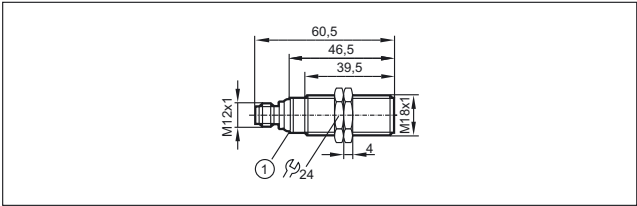




Position sensors

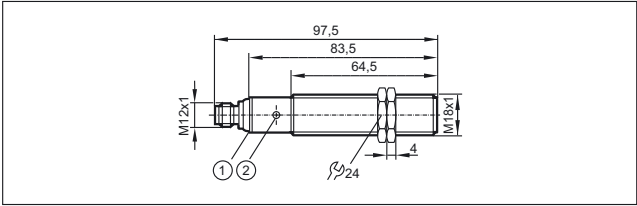
Scale drawings / drawing no. – CAD download: www.ifm.com

1



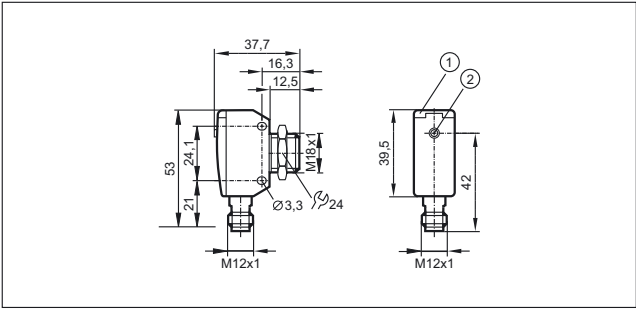
1: LEDs

2



1: LEDs, 2: teach button

3



1: LEDs, 2: teach button





Position sensors

Infrared / red light sensors for maximum detection zones



**Photoelectric sensors
for general applications**



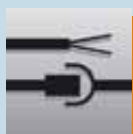
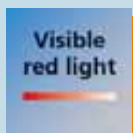
Visible red light for easy adjustment

Versions for use in hygienic and wet areas

LED display to check operation, switching status and function

Pushbuttons for quick and easy set-up

Wide range of system components for easy and secure mounting



Photoelectric sensors

Photoelectric sensors as „artificial eyes“ are fundamental to automation technology. They are used where a reliable and non-contact detection of the exact position of objects is required. The material of the object to be detected is of no importance. Compared to inductive sensors, photoelectric sensors have a much larger sensing zone.

They are available as through-beam, retro-reflective and diffuse reflection sensors in various designs and sizes.

For hygienic and wet areas, the products of the WetLine series offer special characteristics such as high ingress-resistance up to IP 68 / IP 69K or stainless steel housings.

System overview	Page
Cylindrical OF housing (M12) BasicLine	223 - 224
Cylindrical housing OG (M18) BasicLine	224 - 227
Cylindrical housing OG (M18) PerformanceLine	227 - 228
Cylindrical housing OG (M18) WetLine for hygienic and wet areas	228 - 230
Cylindrical housing OG (M18) BasicLine with lateral sensing face	230 - 231
Rectangular housing OG (M18)	231 - 232
OG series (M18) WetLine with rectangular housing for hygienic and wet areas	232
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Position sensors

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Cylindrical OF housing (M12) BasicLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · Cable 2 m · 10...36 DC · metal · IP67

	Transmitter	4 m	Infrared	700	–	1	1	OF5018
	Receiver	4 m	Infrared	–	H/D PNP	31	1	OF5019

Through-beam sensor · M12 connector · 10...36 DC · metal · IP65 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Transmitter	4 m	Infrared	700	–	2	2	OF5021
	Receiver	4 m	Infrared	–	H/D PNP	32	3	OF5022

Retro-reflective sensor · Cable 2 m · 10...36 DC · metal · IP67

	Retro-reflective sensor	0.05...2 m	Infrared	140	H/D PNP	31	1	OF5014
	Polarisation filter	0.2...0.8 m	Red	70	H/D PNP	31	1	OF5024
	Retro-reflective sensor	0.05...2 m	Infrared	140	H/D NPN	33	1	OF5050

Retro-reflective sensor · M12 connector · 10...36 DC · metal · IP65 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Retro-reflective sensor	0.05...2 m	Infrared	140	H/D PNP	32	3	OF5016
	Polarisation filter	0.2...0.8 m	Red	70	H/D PNP	32	3	OF5025
	Retro-reflective sensor	0.05...2 m	Infrared	140	H/D NPN	34	3	OF5051
	Polarisation filter	0.2...0.8 m	Red	70	H/D NPN	34	3	OF5062

Diffuse reflection sensor · Cable 2 m · 10...36 DC · metal · IP67

	Diffuse reflection sensor	1...200 mm	Infrared	92	H/D PNP	31	1	OF5010
	Diffuse reflection sensor	1...200 mm	Infrared	92	H/D NPN	35	1	OF5048



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

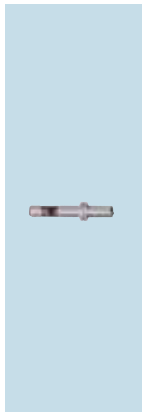
Diffuse reflection sensor · Cable 2 m · 10...36 DC · metal · IP67

	Diffuse reflection sensor	1...400 mm	Infrared	185	H/D PNP	31	1	OF5026

Diffuse reflection sensor · Cable 6 m · 10...36 DC · high-grade stainless steel · IP67

	Diffuse reflection sensor	1...200 mm	Infrared	92	H/D PNP	31	1	OF5032

Diffuse reflection sensor · M12 connector · 10...36 DC · metal · IP65 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Diffuse reflection sensor	1...200 mm	Infrared	92	H/D PNP	32	3	OF5012
	Diffuse reflection sensor	1...400 mm	Infrared	185	H/D PNP	32	3	OF5027
	Diffuse reflection sensor	1...200 mm	Infrared	92	H/D NPN	36	3	OF5049
	Diffuse reflection sensor	1...400 mm	Infrared	185	H/D NPN	36	3	OF5060

Cylindrical housing OG (M18) BasicLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Transmitter	8 m	Red	600	—	2	4	OGS100

Through-beam sensor · M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Receiver	8 m	Red	—	D PNP	3	4	OGE100
	Receiver	8 m	Red	—	H PNP	4	4	OGE101

Through-beam sensor · M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Receiver	8 m	Red	—	D NPN	5	4	OGE102
	Receiver	8 m	Red	—	H NPN	5	4	OGE103

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Transmitter	20 m	Red	800	–	2	5	OGS200

Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Receiver	20 m	Red	–	D PNP	3	5	OGE200
	Receiver	20 m	Red	–	H PNP	4	5	OGE201

Through-beam sensor · Cable 2 m · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67

	Transmitter	15 m	Infrared	2000	–	6	6	OG0028
	Receiver	15 m	Infrared	–	H AC/DC	7	6	OG0029*
	Receiver	15 m	Infrared	–	D AC/DC	7	6	OG0038*

Through-beam sensor · 1/2" connector · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67 · Connector group 33

	Transmitter	15 m	Infrared	2000	–	8	7	OG0030
	Receiver	15 m	Infrared	–	H AC/DC	9	7	OG0031*
	Receiver	15 m	Infrared	–	D AC/DC	9	7	OG0039*

Retro-reflective sensor · M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Polarisation filter	0.05...2.5 m	Red	200	D PNP	3	4	OGP100
	Polarisation filter	0.05...2.5 m	Red	200	H PNP	4	4	OGP101

Retro-reflective sensor · M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Polarisation filter	0.05...2.5 m	Red	200	D NPN	5	4	OGP102
	Polarisation filter	0.05...2.5 m	Red	200	H NPN	5	4	OGP103



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Retro-reflective sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.03...4 m	Red	160	D PNP	3	5	OGP200
	Polarisation filter	0.03...4 m	Red	160	H PNP	4	5	OGP201
Retro-reflective sensor · Cable 2 m · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67								
	Polarisation filter	3 m	Red	262	H AC/DC	7	6	OG0043*
	Polarisation filter	3 m	Red	262	D AC/DC	7	6	OG0032*
Retro-reflective sensor · 1/2" connector · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67 · Connector group 33								
	Polarisation filter	3 m	Red	262	H AC/DC	9	7	OG0044*
	Polarisation filter	3 m	Red	262	D AC/DC	9	7	OG0033*
Diffuse reflection sensor · M12 connector · 10...30 DC · plastics · IP65 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Diffuse reflection sensor	10...400 mm	Red	25	H PNP	3	8	OGT100
	Diffuse reflection sensor	10...400 mm	Red	25	D PNP	3	8	OGT101
Diffuse reflection sensor · M12 connector · 10...30 DC · plastics · IP65 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Diffuse reflection sensor	10...400 mm	Red	25	H NPN	5	8	OGT102
	Diffuse reflection sensor	10...400 mm	Red	25	D NPN	5	8	OGT103
Diffuse reflection sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP65 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Diffuse reflection sensor	2...600 mm	Red	50	H PNP	3	9	OGT200
	Background suppression	15...250 mm	Red	21	H PNP	3	9	OGH200

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Diffuse reflection sensor · Cable 2 m · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67

	Diffuse reflection sensor	1...600 mm	Infrared	< 169	H AC/DC	7	6	OG0034*
	Diffuse reflection sensor	1...600 mm	Infrared	< 169	D AC/DC	7	6	OG0040*

Diffuse reflection sensor · 1/2" connector · 20...250 AC/DC (47...63 Hz AC) · plastics · IP67 · Connector group 33

	Diffuse reflection sensor	1...600 mm	Infrared	< 169	H AC/DC	9	7	OG0035*
	Diffuse reflection sensor	1...600 mm	Infrared	< 169	D AC/DC	9	7	OG0041*

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Cylindrical housing OG (M18) PerformanceLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · Cable 2 m · 10...36 DC · high-grade stainless steel · IP67

	Transmitter	25 m	Red	1000	–	1	10	OGS501
	Receiver	25 m	Red	–	H/D PNP	10	11	OGE502

Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Transmitter	25 m	Red	1000	–	2	12	OGS500

Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Receiver	25 m	Red	–	H/D PNP	3	13	OGE500

Retro-reflective sensor · Cable 2 m · 10...36 DC · high-grade stainless steel · IP67

	Polarisation filter	0.03...5 m	Red	200	H/D PNP	10	11	OGP502



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Retro-reflective sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Polarisation filter	0.03...5 m	Red	200	H/D PNP	3	13	OGP500

Retro-reflective sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Polarisation filter	0.03...5 m	Red	200	H/D NPN	5	13	OGP503

Diffuse reflection sensor · Cable 2 m · 10...36 DC · high-grade stainless steel · IP67

	Background suppression	15...300 mm	Red	25	H/D PNP	10	11	OGH501

Diffuse reflection sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Diffuse reflection sensor	2...800 mm	Red	66	H/D PNP	3	13	OGT500
	Background suppression	15...300 mm	Red	25	H/D PNP	3	13	OGH500

Diffuse reflection sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Background suppression	15...300 mm	Red	25	H/D NPN	5	13	OGH504
	Background suppression	15...300 mm	Red	25	H/D NPN	5	13	OGH502

Cylindrical housing OG (M18) WetLine for hygienic and wet areas

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · Cable 6 m · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K

	Transmitter	20 m	Red	800	–	1	14	OGS301
	Receiver	20 m	Red	–	D PNP	10	14	OGE302
	Receiver	20 m	Red	–	H PNP	10	14	OGE303

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193

	Transmitter	20 m	Red	800	–	2	5	OGS300

Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

	Receiver	20 m	Red	–	D PNP	3	5	OGE300
	Receiver	20 m	Red	–	H PNP	4	5	OGE301

Retro-reflective sensor · Cable 6 m · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K

	Polarisation filter	0.03...4 m	Red	160	D PNP	10	14	OGP302
	Polarisation filter	0.03...4 m	Red	160	H PNP	10	14	OGP303

Retro-reflective sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

	Polarisation filter	0.03...4 m	Red	160	D PNP	3	5	OGP300
	Polarisation filter	0.03...4 m	Red	160	H PNP	4	5	OGP301

Diffuse reflection sensor · Cable 6 m · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K

	Background suppression	100 mm	Red	9	H PNP	10	15	OGH306
	Background suppression	100 mm	Red	9	D PNP	10	15	OGH307
	Background suppression	200 mm	Red	17	H PNP	10	15	OGH308
	Background suppression	200 mm	Red	17	D PNP	10	15	OGH309
	Background suppression	300 mm	Red	25	H PNP	10	15	OGH310
	Background suppression	300 mm	Red	25	D PNP	10	15	OGH311



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Diffuse reflection sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193

	Background suppression	100 mm	Red	9	H PNP	3	16	OGH300
	Background suppression	100 mm	Red	9	D PNP	3	16	OGH301
	Background suppression	200 mm	Red	17	H PNP	3	16	OGH302
	Background suppression	200 mm	Red	17	D PNP	3	16	OGH303
	Background suppression	300 mm	Red	25	H PNP	3	16	OGH304
	Background suppression	300 mm	Red	25	D PNP	3	16	OGH305

Cylindrical housing OG (M18) BasicLine with lateral sensing face

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...30 DC · high-grade stainless steel · IP68 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Transmitter	9 m	Red	< 3000	–	2	17	OG5129
	Receiver	9 m	Red	–	H PNP	11	17	OG5127
	Receiver	9 m	Red	–	D PNP	12	17	OG5128

Retro-reflective sensor · M12 connector · 10...30 DC · high-grade stainless steel · IP68 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Polarisation filter	3 m	Red	< 96	H PNP	11	17	OG5125
	Polarisation filter	3 m	Red	< 96	D PNP	12	17	OG5126

Diffuse reflection sensor · M12 connector · 10...30 DC · high-grade stainless steel · IP68 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Background suppression	100 mm	Red	< 16	H PNP	11	18	OG5123

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Diffuse reflection sensor · M12 connector · 10...30 DC · high-grade stainless steel · IP68 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Background suppression	200 mm	Red	< 28	H PNP	11	18	OG5124

Rectangular housing OG (M18)

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Transmitter	20 m	Red	800	–	2	19	OGS280
	Receiver	20 m	Red	–	D NPN	13	19	OGE282

Through-beam sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Receiver	20 m	Red	–	D PNP	14	19	OGE280
	Receiver	20 m	Red	–	H PNP	4	19	OGE281

Retro-reflective sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Polarisation filter	0.1...4 m	Red	160	D PNP	14	19	OGP280
	Polarisation filter	0.1...4 m	Red	160	H PNP	4	19	OGP281

Retro-reflective sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Polarisation filter	0.1...4 m	Red	160	D NPN	13	19	OGP282
	Polarisation filter	0.1...4 m	Red	160	H NPN	15	19	OGP283

Diffuse reflection sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Background suppression	100 mm	Red	7	H PNP	4	19	OGH280
	Background suppression	200 mm	Red	13	H PNP	4	19	OGH281



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Diffuse reflection sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204



Background suppression	15...200 mm	Red	13	H/D PNP	3	20	OGH580

Diffuse reflection sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Background suppression	100 mm	Red	7	H NPN	15	19	OGH282



Background suppression	200 mm	Red	13	H NPN	15	19	OGH283



Background suppression	15...200 mm	Red	13	H/D NPN	5	20	OGH581

OG series (M18) WetLine with rectangular housing for hygienic and wet areas

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...30 DC · metal · IP67 / IP68 / IP69K · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Transmitter	15 m	Red	800	–	2	21	OGS380

Through-beam sensor · M12 connector · 10...30 DC · metal · IP67 / IP68 / IP69K · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204



Receiver	15 m	Red	–	D PNP	14	21	OGE380

Receiver	15 m	Red	–	H PNP	4	21	OGE381

Receiver	15 m	Red	–	D NPN	13	21	OGE382

Diffuse reflection sensor · M12 connector · 10...30 DC · metal · IP67 / IP68 / IP69K · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204



Background suppression	100 mm	Red	7	H PNP	4	21	OGH380

Background suppression	200 mm	Red	13	H PNP	4	21	OGH381

Background suppression	100 mm	Red	7	H NPN	15	21	OGH382

Background suppression	200 mm	Red	13	H NPN	15	21	OGH383

Product selectors and further information can be found at: www.ifm.com

Rectangular O8 design

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Diffuse reflection sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67

	Background suppression	3...15 mm	Red	4	H PNP	16	22	O8H200
	Background suppression	1...30 mm	Red	4	H PNP	16	22	O8H206
	Background suppression	1...50 mm	Red	4	H PNP	16	22	O8H212
	Background suppression	1...80 mm	Red	4.5	H PNP	16	22	O8H218

Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 122, 123

	Background suppression	3...15 mm	Red	4	H PNP	4	22	O8H202
	Background suppression	1...30 mm	Red	4	H PNP	4	22	O8H208
	Background suppression	1...50 mm	Red	4	H PNP	4	23	O8H214
	Background suppression	1...80 mm	Red	4.5	H PNP	4	22	O8H220

Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147

	Background suppression	3...15 mm	Red	4	H PNP	4	22	O8H204
	Background suppression	1...30 mm	Red	4	H PNP	4	22	O8H210
	Background suppression	1...50 mm	Red	4	H PNP	4	22	O8H216
	Background suppression	1...80 mm	Red	4.5	H PNP	4	22	O8H222

Diffuse reflection sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67

	Background suppression	3...15 mm	Red	4	H NPN	17	22	O8H201



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Diffuse reflection sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67								
	Background suppression	1...30 mm	Red	4	H NPN	17	22	O8H207
	Background suppression	1...50 mm	Red	4	H NPN	17	22	O8H213
	Background suppression	1...80 mm	Red	4.5	H NPN	17	22	O8H219
Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 122, 123								
	Background suppression	3...15 mm	Red	4	H NPN	15	22	O8H203
	Background suppression	1...30 mm	Red	4	H NPN	15	22	O8H209
	Background suppression	1...50 mm	Red	4	H NPN	15	22	O8H215
	Background suppression	1...80 mm	Red	4.5	H NPN	15	22	O8H221
Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	3...15 mm	Red	4	H NPN	15	22	O8H205
	Background suppression	1...30 mm	Red	4	H NPN	15	22	O8H211
	Background suppression	1...50 mm	Red	4	H NPN	15	22	O8H217
	Background suppression	1...80 mm	Red	4.5	H NPN	15	22	O8H223
Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 122, 123								
	Diffuse reflection sensor	0...180 mm	Red	18	H PNP	4	24	O8T202
	Diffuse reflection sensor	0...180 mm	Red	18	H NPN	15	25	O8T203

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diag. no.	Draw- ing no.	Order no.
Diffuse reflection sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Diffuse reflection sensor	0...180 mm	Red	18	H PNP	4	25	O8T204
	Diffuse reflection sensor	0...180 mm	Red	18	H NPN	15	25	O8T205
Diffuse reflection sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67								
	Diffuse reflection sensor	0...180 mm	Red	18	H PNP	16	25	O8T200
	Diffuse reflection sensor	0...180 mm	Red	18	H NPN	17	25	O8T201
Retro-reflective sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 122, 123								
	Polarisation filter	20...1800 mm	Red	120	D PNP	14	25	O8P202
	Polarisation filter	20...1800 mm	Red	120	D NPN	13	25	O8P203
Retro-reflective sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	20...1800 mm	Red	120	D PNP	14	25	O8P204
	Polarisation filter	20...1800 mm	Red	120	D NPN	13	25	O8P205
Retro-reflective sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67								
	Polarisation filter	20...1800 mm	Red	120	D PNP	18	25	O8P200
	Polarisation filter	20...1800 mm	Red	120	D NPN	19	25	O8P201
Through-beam sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 122, 123								
	Receiver	3 m	Red	–	D PNP	14	26	O8E202
	Receiver	3 m	Red	–	D NPN	13	27	O8E203
	Transmitter	3 m	Red	200	–	2	28	O8S201

You can find wiring diagrams and scale drawings from page 261



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · Cable 0.3 m · with M8 connector · 10...30 DC · metal · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147

	Receiver	3 m	Red	–	D PNP	14	27	O8E204
	Receiver	3 m	Red	–	D NPN	13	27	O8E205
	Transmitter	3 m	Red	200	–	2	29	O8S202

Through-beam sensor · Cable 2 m · 10...30 DC · metal · IP65 / IP67

	Receiver	3 m	Red	–	D PNP	20	27	O8E200
	Receiver	3 m	Red	–	D NPN	21	27	O8E201
	Transmitter	3 m	Red	200	–	1	29	O8S200

Rectangular housing O7 BasicLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · Cable 0.2 m · with M8 connector · 10...30 DC · plastics · IP65 · Connector groups 1, 3, 78, 84, 145

	Transmitter	0...1.5 m	Red	90	–	2	30	O7S200

Through-beam sensor · Cable 0.2 m · with M8 connector · 10...30 DC · plastics · IP65 · Connector groups 1, 2, 3, 78, 84, 145, 146

	Receiver	0...1.5 m	Red	–	D PNP	14	31	O7E200
	Receiver	0...1.5 m	Red	–	H PNP	4	31	O7E201
	Receiver	0...1.5 m	Red	–	D NPN	13	31	O7E202
	Receiver	0...1.5 m	Red	–	H NPN	15	31	O7E203

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Retro-reflective sensor · Cable 0.2 m · with M8 connector · 10...30 DC · plastics · IP65 · Connector groups 1, 2, 3, 78, 84, 145, 146

	Polarisation filter	0.03...1 m	Red	55	D PNP	14	32	O7P200
	Polarisation filter	0.03...1 m	Red	55	H PNP	4	32	O7P201
	Polarisation filter	0.03...1 m	Red	55	D NPN	13	32	O7P202
	Polarisation filter	0.03...1 m	Red	55	H NPN	15	32	O7P203

Diffuse reflection sensor · Cable 0.2 m · with M8 connector · 10...30 DC · plastics · IP65 · Connector groups 1, 2, 3, 78, 84, 145, 146

	Background suppression	5...30 mm	Red	2.5	H PNP	4	33	O7H200
	Background suppression	5...30 mm	Red	2.5	D PNP	14	33	O7H201
	Background suppression	5...30 mm	Red	2.5	H NPN	15	33	O7H206
	Background suppression	5...30 mm	Red	2.5	D NPN	13	33	O7H207
	Background suppression	5...50 mm	Red	2.5	H PNP	4	33	O7H202
	Background suppression	5...50 mm	Red	2.5	H NPN	15	33	O7H208
	Background suppression	5...50 mm	Red	2.5	D NPN	13	33	O7H209
	Background suppression	5...50 mm	Red	2.5	D PNP	14	33	O7H203
	Background suppression	3...100 mm	Red	7	H PNP	4	33	O7H204
	Background suppression	3...100 mm	Red	7	D PNP	14	33	O7H205
	Background suppression	3...100 mm	Red	7	H NPN	15	33	O7H210
	Background suppression	3...100 mm	Red	7	D NPN	13	33	O7H211



Position sensors

Rectangular housing OJ BasicLine, lateral sensing face

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 1, 3, 78, 84, 145								
	Transmitter	0...10 m	Red	< 1000	–	2	34	OJS200
Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Receiver	10 m	–	–	D PNP	3	34	OJE200
Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Retro-reflective sensor	1.8 m	Red	64	D PNP	3	34	OJR200
	Polarisation filter	1.8 m	Red	64	D PNP	3	34	OJP200
Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Background suppression	100 mm	Red	< 13	H PNP	3	35	OJH200

Rectangular housing OJ PerformanceLine, lateral sensing face

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Transmitter	10 m	Red	1000	–	2	36	OJ5130
	Receiver	10 m	Red	–	H/D PNP	22	36	OJ5131
Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	0...2 m	Red	64	H/D PNP	22	36	OJ5126
Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147								
	Diffuse reflection sensor	1...600 mm	Red	60	H/D PNP	22	37	OJ5122

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147



Background suppression	15...400 mm	Red	< 18	H/D PNP	22	38	OJ5148

Rectangular housing OJ PerformanceLine, front sensing face

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147



Transmitter	10 m	Red	1000	–	2	39	OJ5108

Receiver	10 m	Red	–	H/D PNP	22	39	OJ5109

Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147



Polarisation filter	0...2 m	Red	64	H/D PNP	22	39	OJ5104

Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147



Diffuse reflection sensor	1...600 mm	Red	60	H/D PNP	22	40	OJ5100



Background suppression	15...400 mm	Red	< 18	H/D PNP	22	41	OJ5144

Rectangular plastic housing in O6 design

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67



Transmitter	10 m	Red	300	–	1	42	O6S200



Receiver	10 m	Red	–	H/D PNP	10	43	O6E200

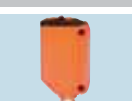


Receiver	10 m	Red	–	H/D NPN	23	43	O6E204



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Through-beam sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	10 m	Red	300	–	2	42	O6S201
Through-beam sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	10 m	Red	–	H/D PNP	3	43	O6E201
Through-beam sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Receiver	10 m	Red	–	H/D NPN	5	43	O6E205
Through-beam sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 3, 78, 84, 145								
	Transmitter	10 m	Red	300	–	2	44	O6S202
Through-beam sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Receiver	10 m	Red	–	H/D PNP	3	45	O6E202
Through-beam sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Receiver	10 m	Red	–	H/D PNP	3	45	O6E203
Through-beam sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 3, 78, 84, 145								
	Receiver	10 m	Red	–	H/D NPN	5	45	O6E206
Through-beam sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Receiver	10 m	Red	–	H/D NPN	5	45	O6E207
	Receiver	15 m	Infrared	–	H/D NPN	24	45	O6E216
	Receiver	15 m	Infrared	–	H/D PNP	3	45	O6E215
Diffuse reflection sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Background suppression	2...200 mm	Red	8	H/D PNP	10	46	O6H200

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Diffuse reflection sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	46	O6H201
Diffuse reflection sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	47	O6H202
Diffuse reflection sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	47	O6H203
Diffuse reflection sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Background suppression	2...200 mm	Red	8	H/D NPN	23	46	O6H204
Diffuse reflection sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	46	O6H205
Diffuse reflection sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 3, 78, 84, 145								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	47	O6H206
Diffuse reflection sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	47	O6H207
Retro-reflective sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	10	46	O6P200
Retro-reflective sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	46	O6P201
Retro-reflective sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	47	O6P202



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Retro-reflective sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	47	O6P203
Retro-reflective sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	23	46	O6P204
Retro-reflective sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	46	O6P205
Retro-reflective sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 3, 78, 84, 145								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	47	O6P206
Retro-reflective sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	47	O6P207
Through-beam sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Transmitter	10 m	Red	300	—	2	44	O6S203
	Transmitter	15 m	Infrared	460	—	2	44	O6S215
Diffuse reflection sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	10	46	O6T200
Diffuse reflection sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	46	O6T201
Diffuse reflection sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 2, 3, 78, 84, 145, 146								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	47	O6T202

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Diffuse reflection sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147



Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	47	O6T203

Diffuse reflection sensor · Cable 2 m · 10...30 DC · plastics · IP65 / IP67



Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	23	46	O6T204

Diffuse reflection sensor · Cable 0.3 m · with M12 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	46	O6T205

Diffuse reflection sensor · M8 connector, 3 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 1, 3, 78, 84, 145



Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	47	O6T206

Diffuse reflection sensor · M8 connector, 4 poles · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147



Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	47	O6T207

Diffuse reflection sensor	5...600 mm	Infrared	24	H/D NPN	24	47	O6T216

Diffuse reflection sensor	5...600 mm	Infrared	24	H/D PNP	3	47	O6T215

Rectangular housing O6 PerformanceLine, WetLine for hygienic and wet areas

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K



Transmitter	10 m	Red	300	—	1	48	O6S300



Receiver	10 m	Red	—	H/D PNP	10	49	O6E300

Through-beam sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193



Receiver	10 m	Red	—	H/D PNP	3	49	O6E301



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 145								
	Transmitter	10 m	Red	300	–	2	50	O6S302
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 145, 146								
	Receiver	10 m	Red	–	H/D PNP	3	51	O6E302
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Receiver	10 m	Red	–	H/D PNP	3	51	O6E303
Through-beam sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Transmitter	10 m	Red	300	–	2	48	O6S301
Through-beam sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Receiver	10 m	Red	–	H/D NPN	23	49	O6E304
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Transmitter	10 m	Red	300	–	25	50	O6S305
Through-beam sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Receiver	10 m	Red	–	H/D NPN	5	49	O6E305
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Transmitter	10 m	Red	300	–	2	50	O6S303
	Receiver	10 m	Red	–	H/D PNP	3	51	O6E309
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 145								
	Receiver	10 m	Red	–	H/D NPN	5	51	O6E306

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Receiver	10 m	Red	–	H/D NPN	5	51	O6E307
Diffuse reflection sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Background suppression	2...200 mm	Red	8	H/D PNP	10	52	O6H300
Diffuse reflection sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	52	O6H301
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 145, 146								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	53	O6H302
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Background suppression	2...200 mm	Red	8	H/D PNP	3	53	O6H303
Diffuse reflection sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Background suppression	2...200 mm	Red	8	H/D NPN	23	52	O6H304
Diffuse reflection sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	52	O6H305
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 145								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	53	O6H306
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Background suppression	2...200 mm	Red	8	H/D NPN	5	53	O6H307
	Background suppression	2...200 mm	Red	8	H/D PNP	3	53	O6H309



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP65 / IP67 · Connector groups 4, 5, 80, 86, 147								
	Background suppression	2...200 mm	Red	8	H+D PNP	26	54	O6H210
	Background suppression	100 mm	Red	6	H PNP	3	55	O6H211
	Background suppression	200 mm	Red	8	H PNP	3	55	O6H212
	Background suppression	100 mm	Red	6	H NPN	5	55	O6H213
	Background suppression	200 mm	Red	8	H NPN	5	55	O6H214
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Background suppression	2...200 mm	Red	8	H+D PNP	26	56	O6H310
Retro-reflective sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	10	52	O6P300
Retro-reflective sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	52	O6P301
Retro-reflective sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 145, 146								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	53	O6P302
Retro-reflective sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	53	O6P303
Retro-reflective sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	23	52	O6P304
Retro-reflective sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	52	O6P305

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Retro-reflective sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 145								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	53	O6P306
Retro-reflective sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	53	O6P307
	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	53	O6P309
	Polarisation filter	0.05...5 m	Red	150	H+D PNP	27	56	O6P310
Diffuse reflection sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	10	52	O6T300
Diffuse reflection sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 150, 153, 154, 184, 188, 190, 193								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	52	O6T301
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 145, 146								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	53	O6T302
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	53	O6T303
Diffuse reflection sensor · Cable 2 m · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	23	52	O6T304
Diffuse reflection sensor · Cable 0.3 m · with M12 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector groups 148, 153, 184, 188, 193								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	52	O6T305
Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 145								
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	53	O6T306



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 / IP68 / IP69K · Connector group 147

	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	53	O6T307
	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	53	O6T309

Rectangular O6 design for oils and coolants

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 ; IP68 · Connector groups 4, 5

	Transmitter	10 m	Red	300	–	2	50	O6S400
	Receiver	10 m	Red	–	H/D PNP	3	51	O6E400
	Receiver	10 m	Red	–	H/D NPN	5	51	O6E401

Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 ; IP68 · Connector groups 4, 5

	Background suppression	2...200 mm	Red	8	H/D PNP	3	53	O6H400
	Background suppression	2...200 mm	Red	8	H/D NPN	5	53	O6H401

Retro-reflective sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 ; IP68 · Connector groups 4, 5

	Polarisation filter	0.05...5 m	Red	150	H/D PNP	3	53	O6P400
	Polarisation filter	0.05...5 m	Red	150	H/D NPN	5	53	O6P401

Diffuse reflection sensor · M8 connector · 10...30 DC · high-grade stainless steel · IP65 / IP67 ; IP68 · Connector groups 4, 5

	Diffuse reflection sensor	5...500 mm	Red	15	H/D PNP	3	53	O6T400
	Diffuse reflection sensor	5...500 mm	Red	15	H/D NPN	5	53	O6T401

Rectangular housing O5 BasicLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	20 m	Red	500	–	2	57	O5S200
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	20 m	Red	–	D PNP	14	57	O5E200
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.1...7 m	Red	175	D PNP	14	58	O5P200
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	0.1...7 m	Red	175	H PNP	28	58	O5P201
Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP65 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	50...1400 mm	Red	50	H PNP	4	59	O5H200

Rectangular housing O5 PerformanceLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Through-beam sensor · Cable 2 m · 10...36 DC · plastics · IP67								
	Transmitter	25 m	Red	625	–	1	60	O5S501
	Receiver	25 m	Red	–	H/D PNP	10	61	O5E501
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Transmitter	25 m	Red	625	–	2	57	O5S500
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	25 m	Red	–	H/D PNP	3	62	O5E500



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Receiver

25 m

Red

–

H/D NPN

5

62

O5E502

Retro-reflective sensor · Cable 2 m · 10...36 DC · plastics · IP67



Polarisation filter

0.075...10 m

Red

250

H/D PNP

10

63

O5P501

Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204



Polarisation filter

0.075...10 m

Red

250

H/D PNP

3

64

O5P500

Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Polarisation filter

0.075...10 m

Red

250

H/D NPN

5

64

O5P502

Diffuse reflection sensor · Cable 2 m · 10...36 DC · plastics · IP67



Background suppression

50...1800 mm

Red

50

H/D PNP

10

63

O5H503

Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204



Background suppression

50...1800 mm

Red

50

H/D PNP

3

64

O5H500

Background suppression

60...700 mm

Red

35

H/D PNP

3

64

O5H501

Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Background suppression

50...1800 mm

Red

50

H/D NPN

5

64

O5H504

Rectangular housing O5 PerformanceLine with ATEX approval 3D

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...30 DC · plastics · IP65 · Connector groups 196, 198



Transmitter

25 m

Red

625

–

2

65

O5S51A

Receiver

25 m

Red

–

H/D PNP

3

65

O5E51A

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Retro-reflective sensor · M12 connector · 10...30 DC · plastics · IP65 · Connector groups 196, 198



Polarisation filter 0.075...10 m Red 250 H/D PNP 3 65 **O5P51A**

Diffuse reflection sensor · M12 connector · 10...30 DC · plastics · IP65 · Connector groups 196, 198



Background suppression 50...1800 mm Red 50 H/D PNP 3 65 **O5H51A**

Rectangular OA design with relay output

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Retro-reflective sensor · Terminals · 20...250 AC/DC (47...63 Hz AC) · plastics · IP65



Polarisation filter 0.2...8 m Red 420 H/D Relay 29 66 **OA0106***

Diffuse reflection sensor · Terminals · 20...250 AC/DC (47...63 Hz AC) · plastics · IP65



Diffuse reflection sensor 5...1500 mm Infrared 370 H/D Relay 29 66 **OA0108***

Through-beam sensor · Terminals · 20...250 AC/DC (47...63 Hz AC) · plastics · IP65



Transmitter 50 m Infrared 1500 – 30 66 **OA0101**

Receiver 25...50 m Infrared – H/D Relay 29 66 **OA0102***

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Rectangular housing O4 BasicLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Transmitter 0...50 m Red 1000 – 2 67 **O4S200**



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Receiver	0...50 m	Red	–	D PNP	14	68	O4E200
	Receiver	0...50 m	Red	–	H PNP	4	68	O4E201

Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Polarisation filter	0.3...18 m	Red	500	D PNP	14	69	O4P200
	Polarisation filter	0.3...18 m	Red	500	H PNP	4	69	O4P201

Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP65 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Background suppression	100...2000 mm	Red	100	H PNP	4	70	O4H200
	Background suppression	100...2000 mm	Red	100	D PNP	14	70	O4H201

Rectangular housing O4 PerformanceLine

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · Cable 2 m · 10...36 DC · plastics · IP67

	Transmitter	0...80 m	Red	2400	–	1	71	O4S501
	Receiver	0...80 m	Red	–	H/D PNP	10	72	O4E501

Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Transmitter	0...80 m	Red	2400	–	2	67	O4S500

Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Receiver	0...80 m	Red	–	H/D PNP	3	73	O4E500

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Retro-reflective sensor · Cable 2 m · 10...36 DC · plastics · IP67

	Polarisation filter	0.3...22 m	Red	660	H/D PNP	10	74	O4P501

Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Polarisation filter	0.3...22 m	Red	660	H/D PNP	3	75	O4P500

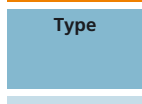
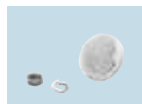
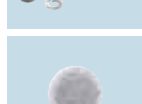
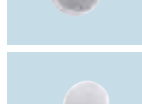
Diffuse reflection sensor · Cable 2 m · 10...36 DC · plastics · IP67

	Background suppression	100...2600 mm	Red	50	H/D PNP	10	76	O4H501

Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

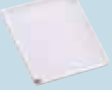
	Background suppression	100...2600 mm	Red	50	H/D PNP	3	77	O4H500

Prismatic reflectors, reflective tape and fixing components

Type	Description	Order no.
	Prismatic reflector · Ø 20 mm · round · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20003
	Prismatic reflector · Ø 25 mm · round · fixing by screw · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20953
	Prismatic reflector · Ø 35 mm · round · fixing by screw · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20954
	Prismatic reflector · Ø 42 mm · round · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20004
	Prismatic reflector · Ø 50 mm · round · fixing by screw · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20956
	Prismatic reflector · Ø 80 mm · round · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20005
	Prismatic reflector · 45 x 28 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20452



Position sensors

Type	Description	Order no.
	Prismatic reflector · 48 x 48 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: front plate: PMMA / base: ABS	E20744
	Prismatic reflector · 93 x 45 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20453
	Prismatic reflector · 96 x 96 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20454
	Prismatic reflector · 18 x 18 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: Solidchem	E21267
	Prismatic reflector · 56 x 38 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: Solidchem	E21268
	Prismatic reflector · 48 x 48 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: Solidchem	E21269
	Prismatic reflector · 96 x 96 mm · rectangular · For red light and infrared light retro-reflective sensors · Housing materials: Solidchem	E21270
	Mounting set · for reflector · Ø 25 mm · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20903
	Mounting set · for reflector · Ø 35 mm · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20907
	Mounting set · for reflector · Ø 50 mm · Clamp mounting · Free-standing M10 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20911
	Mounting set · for reflector · Ø 80 mm · Clamp mounting · free-standing M12 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20914
	Mounting set · for reflector · Ø 80 mm · Clamp mounting · free-standing M12 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20915
	Angle bracket · for reflector · 50 x 50 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571	E20724
	Reflective tape · TS-02 · 50 x 1000 mm · For red light and infrared light retro-reflective sensors · Housing materials: plastics / acrylic	E21015

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0011
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0012

Accessories OA

Type	Description	Order no.
	Mounting set · Clamp mounting · free-standing M12 · for type OA · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20893

Accessories OF design (M12)

Type	Description	Order no.
	angle support · 90° · for type OF · Housing materials: housing: ABS / lens: PC	E20590
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21200
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21201
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21202
	Mounting set · Ø 12.2 mm · Clamp mounting · rod mounting Ø 10 mm · for type OF, IF · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21203

Accessories OG design (M18)

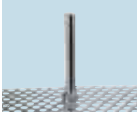
Type	Description	Order no.
	Angle bracket · for type M18 · Housing materials: stainless steel	E10736



Position sensors

Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20720
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20721
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	E21206
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	E21207

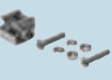
Accessories OI design (M30)

Type	Description	Order no.
	Angle bracket · for type M30 · Housing materials: stainless steel	E10737
	Mounting clamp · Ø 30 mm · with end stop · for type M30 · Housing materials: PC	E11049
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	E10077
	Mounting set · Ø 30.2 mm · Clamp mounting · aluminium profile · for type II, KI, OI, OL · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20875
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20873
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20874
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20938
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	E20951
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	E30398

Accessories O7 housing

Type	Description	Order no.
	Mounting set · O7 · Clamp mounting · rod mounting Ø 10 mm · Housing materials: fixture: stainless steel / clamp: stainless steel / screw: stainless steel / nut: stainless steel	E21237
	Mounting set · O7 · Free-standing mounting · free-standing · Housing materials: fixture: stainless steel / screws: stainless steel	E21238
	Mounting set · O7 · Free-standing mounting · with fine adjustment · free-standing · Housing materials: fixture: stainless steel / Spring: spring steel / screws: stainless steel	E21239
	Mounting set · O7 · ball joint · free-standing · Housing materials: fixture: diecast zinc / mounting base: diecast zinc / screws: stainless steel	E21240

Accessories OJ housing

Type	Description	Order no.
	Angle bracket · for type OJ · Housing materials: high-grade stainless steel	E20984
	Basic clip · OJ · Housing materials: high-grade stainless steel	E20965
	Basic clip · OJ · Housing materials: diecast zinc	E20964
	Swivel-mount clip · for type OJ · Housing materials: diecast zinc	E20974
	Mounting set · OJ · for side lens · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20968
	Mounting set · OJ · for side lens · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20969
	Mounting set · OJ · for side lens · rod mounting Ø 10 mm · Housing materials: clamp: diecast zinc / fixture: stainless steel 316Ti / 1.4571	E21095
	Mounting set · OJ · for side lens · Clamp mounting · rod mounting Ø 10 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21222
	Mounting set · OJ · for front lens · Clamp mounting · free-standing M8 · Housing materials: clamp: diecast zinc / fixture: stainless steel 316Ti / 1.4571	E20966

You can find wiring diagrams and scale drawings from page 261



Position sensors

Type	Description	Order no.
	Mounting set · OJ · for front lens · Clamp mounting · rod mounting · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21221

Accessories for O6 design

Type	Description	Order no.
	Angle bracket · O6 · for type O6 · Housing materials: stainless steel 316Ti / 1.4571	E21271
	Mounting set · O6 · Clamp mounting · rod mounting Ø 10 mm · for type O6 · Housing materials: stainless steel 316Ti / 1.4571	E21272
	Protective cover · O6 · for type O6 · Housing materials: stainless steel 316Ti / 1.4571	E21273
	Pinhole mask · 0.5 mm · for type O6E / O6S plastic · Housing materials: stainless steel	E21277
	Slot mask · 0.5 x 8 mm · for type O6E / O6S plastic · Housing materials: stainless steel	E21280

Accessories O5 housing

Type	Description	Order no.
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21087
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21085
	Angle bracket · O5, O4 · for mounting O5, O4 sensors instead of OL sensors · Dovetail clamp · Housing materials: Dovetail clamp: AlMgSi0.5 / fixture: AlMg3	E21122
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	E21088
	Mounting brackets Mounting on the back of the unit · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21086
	Mounting sleeve · O5 · for mounting O5 sensors instead of OC sensors · Housing materials: AlZnMgCu1.5 F51/52	E21114

Type	Description	Order no.
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	E21223
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21210
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21211
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	E21212
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 14 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21142
	Mounting set · Clamp mounting · With protective cover · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21084
	Mounting set · Clamp mounting · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21083
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	E30398

Accessories O4 housing

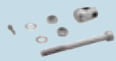
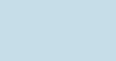
Type	Description	Order no.
	Angle bracket · O1D, O4 · for type O1D, O4 · Housing materials: stainless steel 316L / 1.4404	E21120
	Angle bracket · O4 · for type O4 · Housing materials: stainless steel 316L / 1.4404	E21117
	Angle bracket · O5, O4 · for mounting O5, O4 sensors instead of OL sensors · Dovetail clamp · Housing materials: Dovetail clamp: AlMgSi0.5 / fixture: AlMg3	E21122
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	E21088
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	E21215

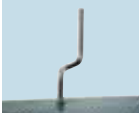
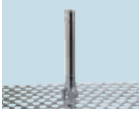


Position sensors

Type	Description	Order no.
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: high-grade stainless steel	E21216
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	E21217
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: high-grade stainless steel	E21218
	Mounting set · O4 · Clamp mounting · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	E21118
	Mounting set · O4 · Clamp mounting · With protective cover · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	E21119
	Mounting set · O4 · Clamp mounting · for type O4 · Housing materials: stainless steel 316L / 1.4404 / clamp: diecast zinc	E21118

Accessories for system components

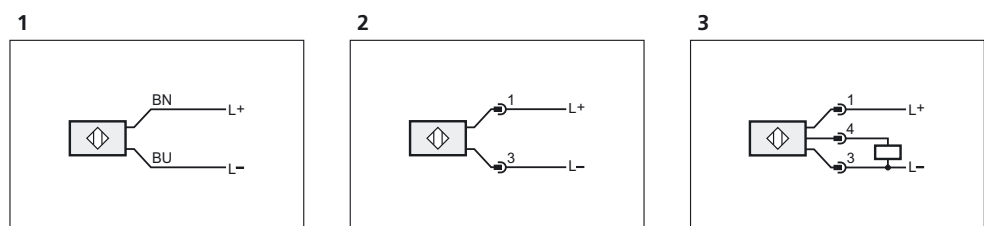
Type	Description	Order no.
	clamp · Ø 10 mm; M8 · free-standing M8 · Housing materials: clamp: diecast zinc	E20843
	clamp · Ø 10 mm; M8 · free-standing M8 · Housing materials: clamp: stainless steel 316Ti / 1.4571	E20844
	clamp · Ø 12 mm; M10 · Free-standing M10 · Housing materials: clamp: diecast zinc	E20716
	clamp · Ø 12 mm · rod mounting Ø 12 mm · Housing materials: clamp: diecast zinc	E20717
	clamp · Ø 12 mm · rod mounting Ø 12 mm · Housing materials: clamp: stainless steel	E21110
	clamp · Ø 14 mm; M12 · free-standing M12 · Housing materials: clamp: diecast zinc	E20796
	mounting rod · Ø 10 / M8 · Length: 150 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21081

Type	Description	Order no.
	mounting rod · Ø 10 / M8 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E80310
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20938
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E20940
	Head cap screw · M8 x 40 mm · ISO 4762 (DIN 912) · free-standing M8 · Housing materials: screw: steel galvanised	E21204
	Head cap screw · M10 x 45 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: steel galvanised	E21208
	Head cap screw · M10 x 45 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: high-grade stainless steel	E21209
	Head cap screw · M10 x 120 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: steel galvanised	E21213
	Head cap screw · M10 x 120 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: high-grade stainless steel	E21214
	Cube · M8 · aluminium profile · Housing materials: diecast zinc	E20950
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	E20951
	Protective bracket for free-standing and rod mounting · Ø 18 mm · Clamp mounting · Housing materials: stainless steel 316L / 1.4404	E21125
	Protective bracket for free-standing and rod mounting · Ø 18 mm · with end stop · Mounting clamp · Clamp mounting · Housing materials: Mounting clamp: PC black / Angle bracket: stainless steel 316L / 1.4404	E21126

Wiring diagrams

Core colours

BN	brown
BU	blue
BK	black

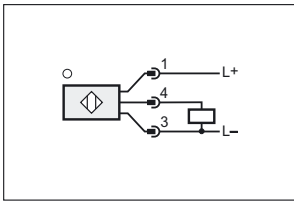




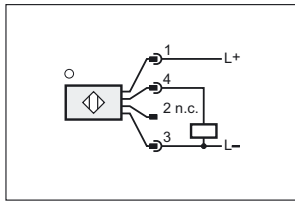
Position sensors

Wiring diagrams

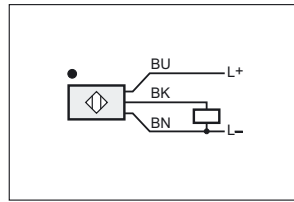
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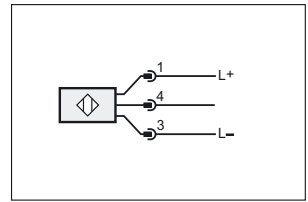
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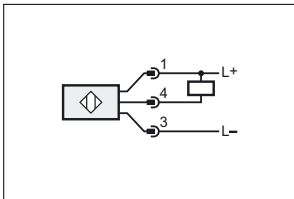
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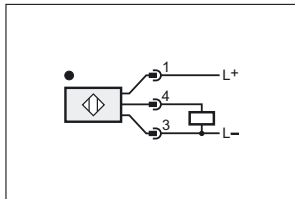
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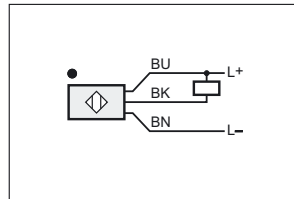
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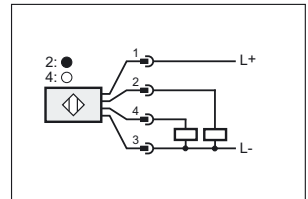
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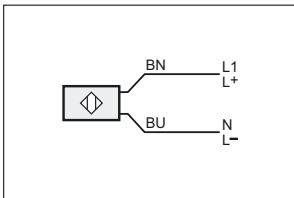
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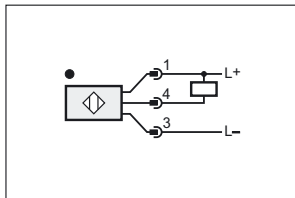
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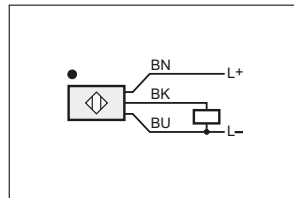
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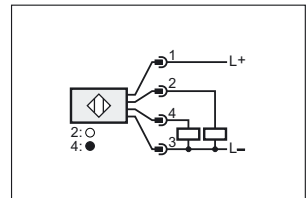
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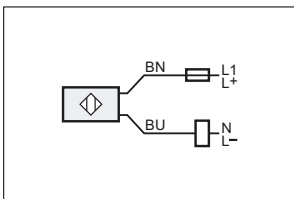
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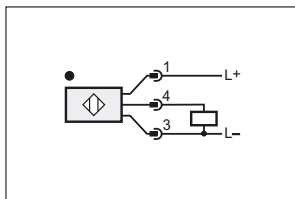
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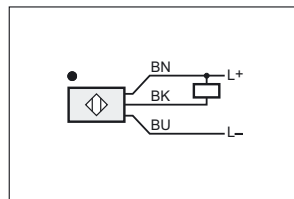
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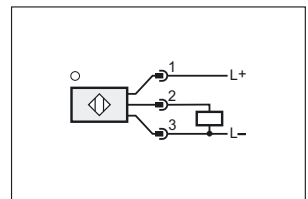
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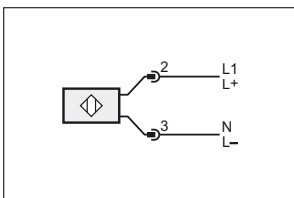
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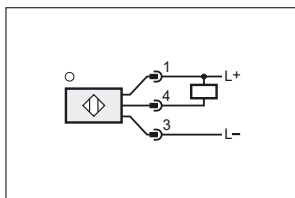
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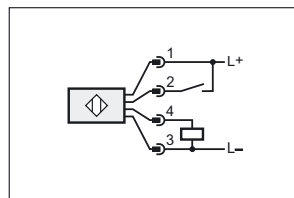
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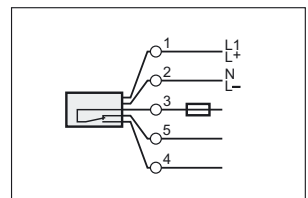
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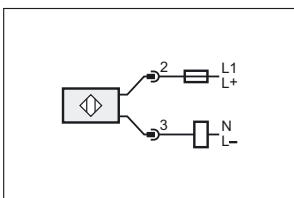
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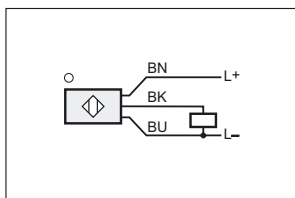
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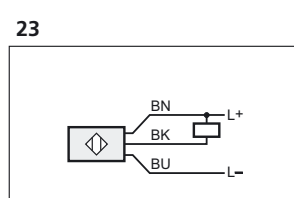
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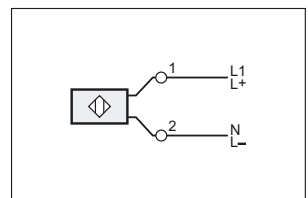
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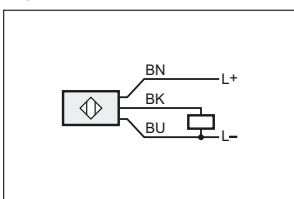
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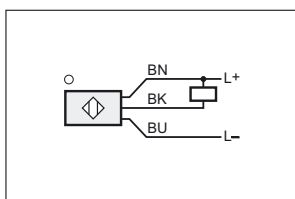
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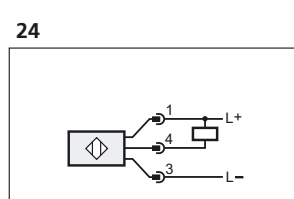
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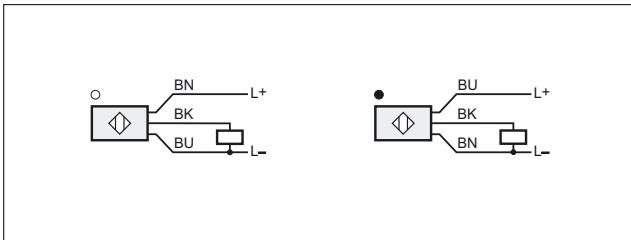
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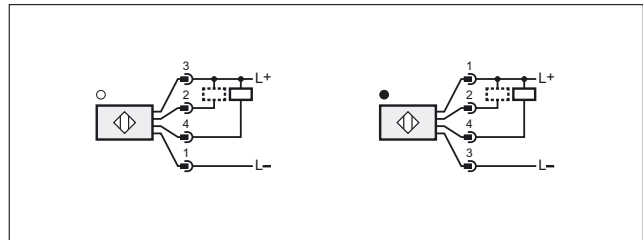
2: Teach

Wiring diagrams

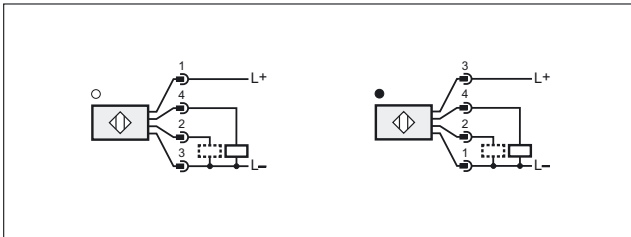
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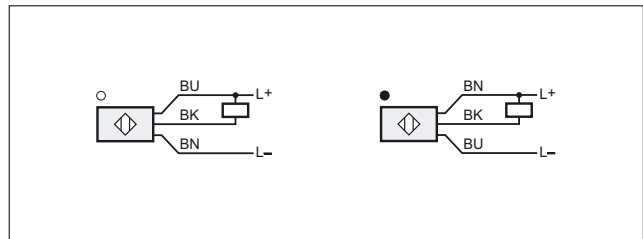


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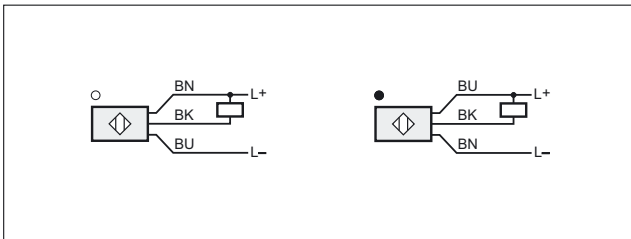


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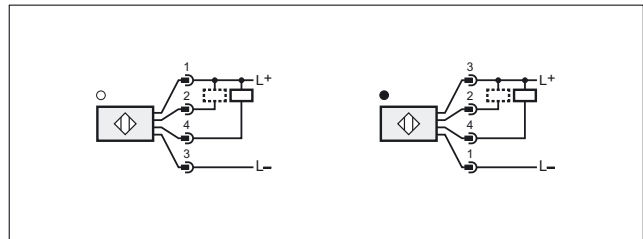
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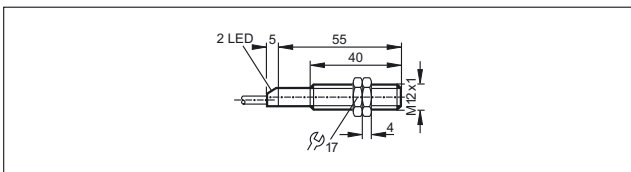
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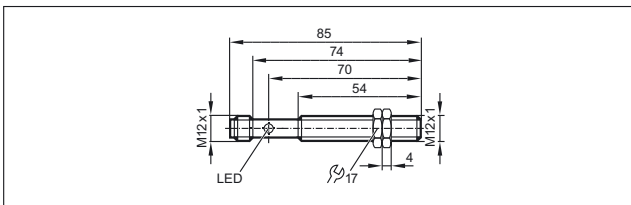
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Scale drawings / drawing no. – CAD download: www.ifm.com

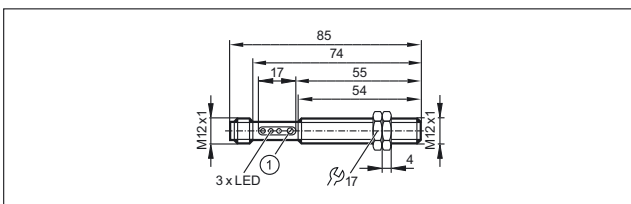
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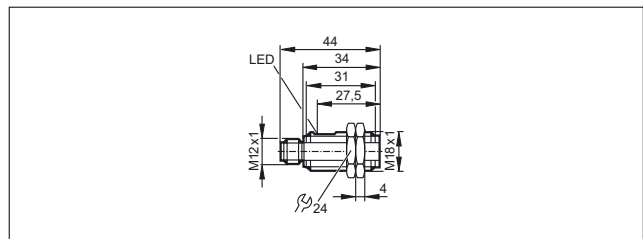


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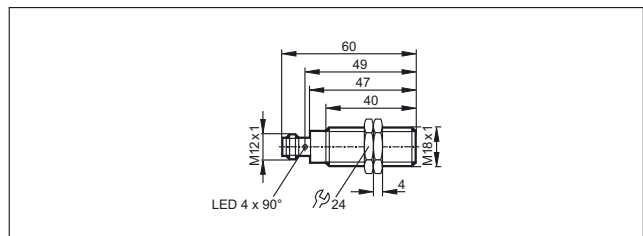


1: potentiometer

4



5

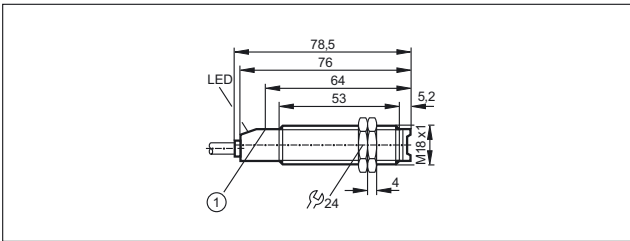




Position sensors

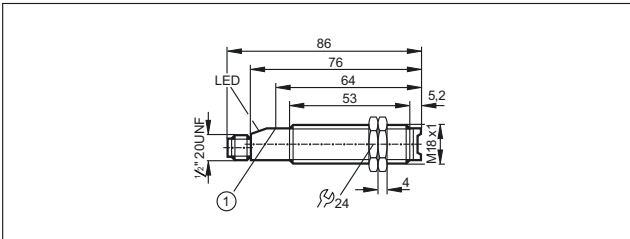
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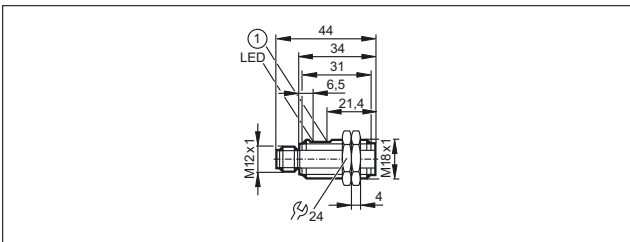
1: pushbutton

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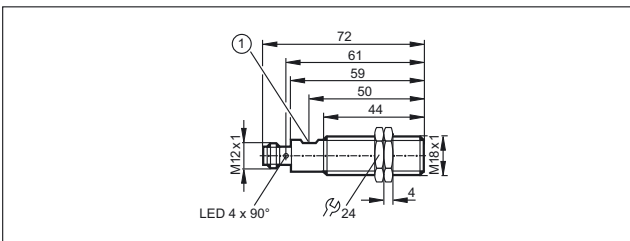
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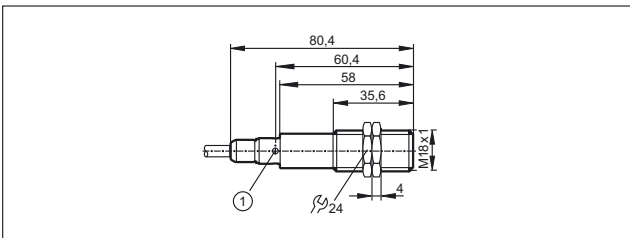
1: potentiometer

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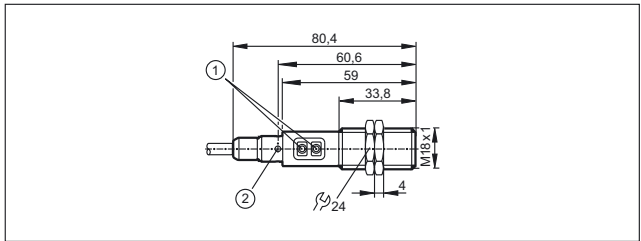
1: potentiometer

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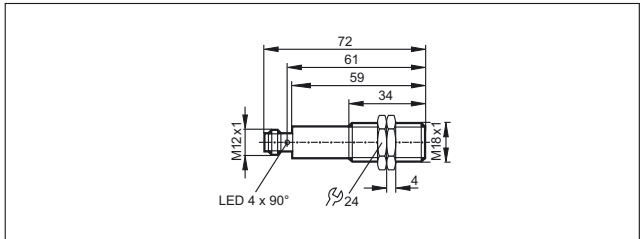
1: LED 4 x 90°

11

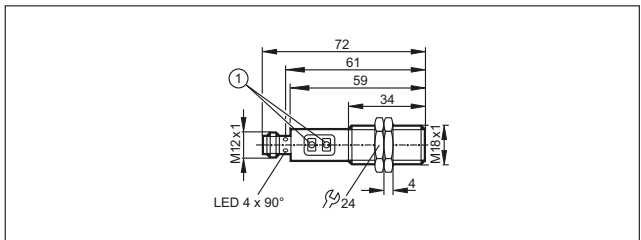


1: Programming buttons, 2: LED 4 x 90°

12

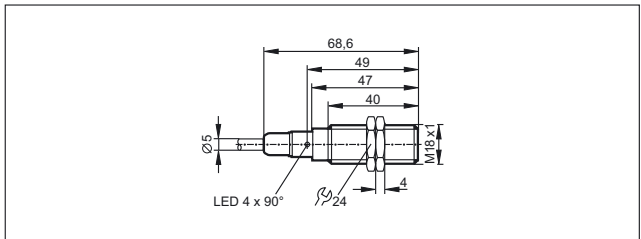


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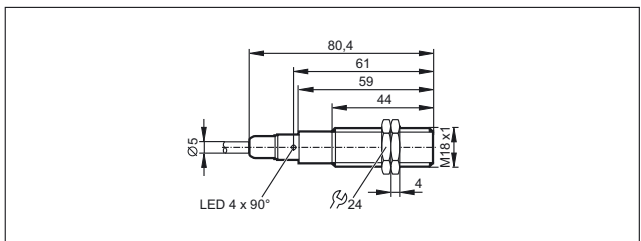


1: Programming buttons

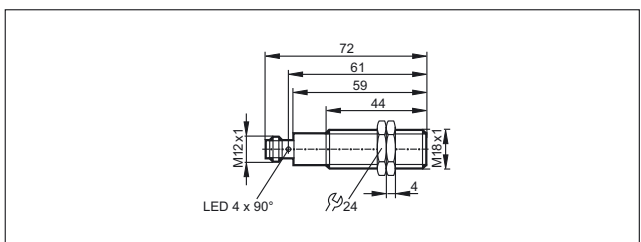
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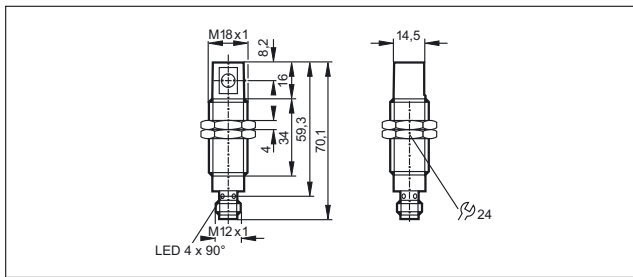


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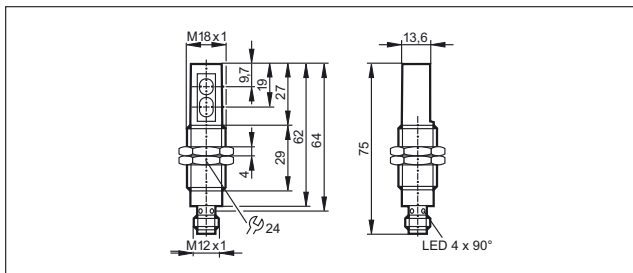


Scale drawings / drawing no. – CAD download: www.ifm.com

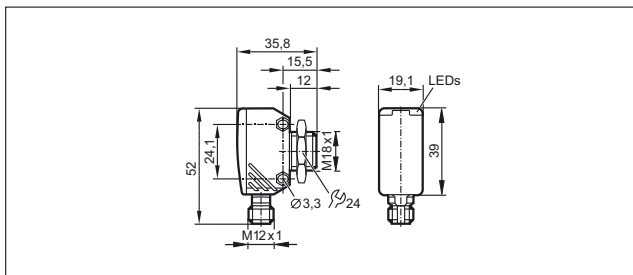
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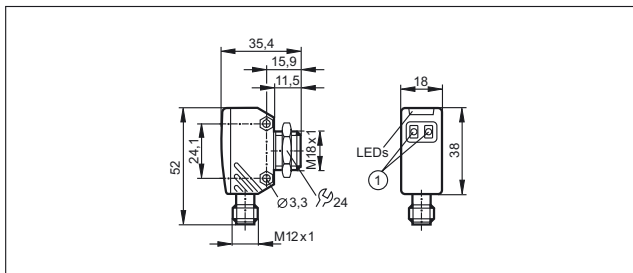
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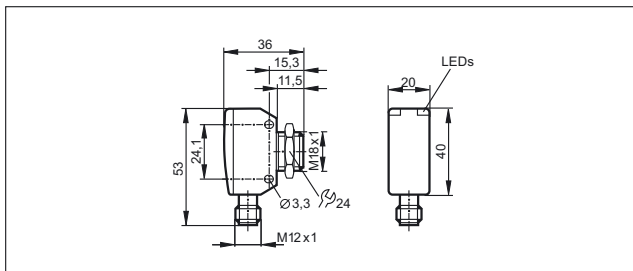


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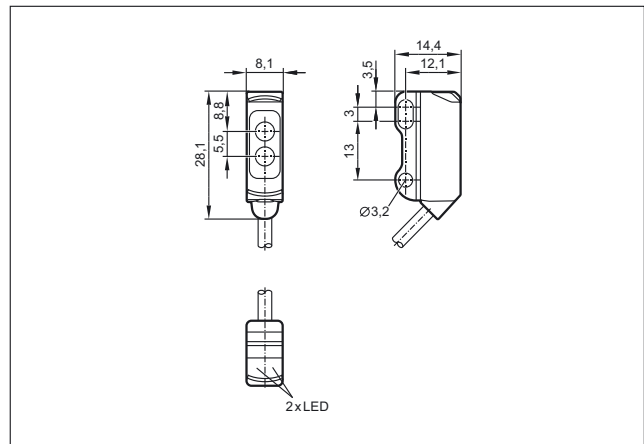


1: setting pushbuttons

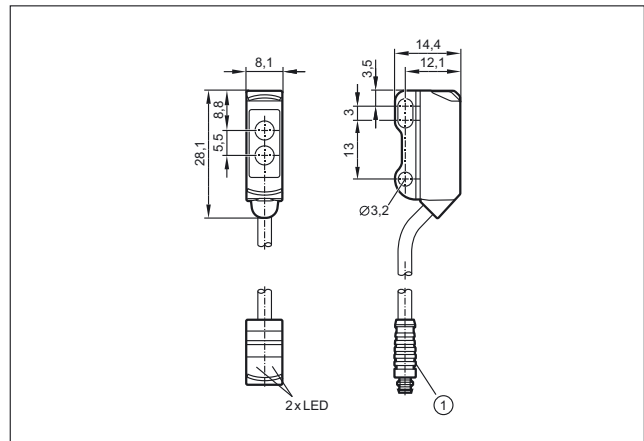
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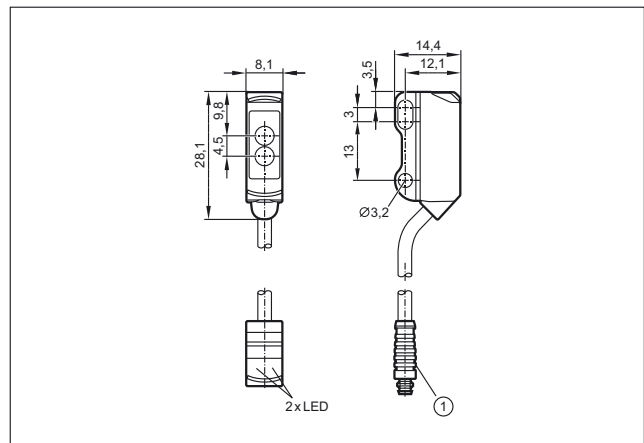


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1: illustration (example)

24



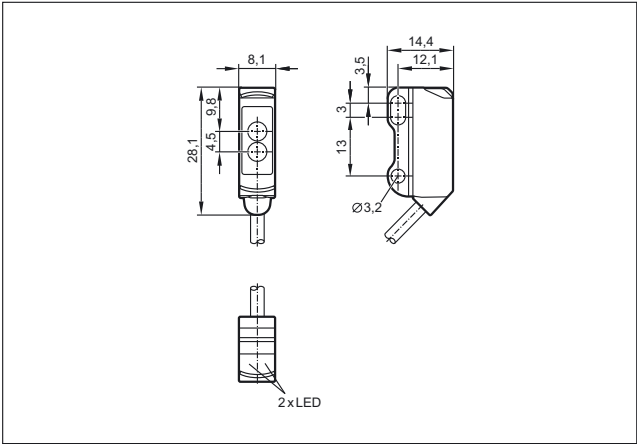
1: illustration (example)



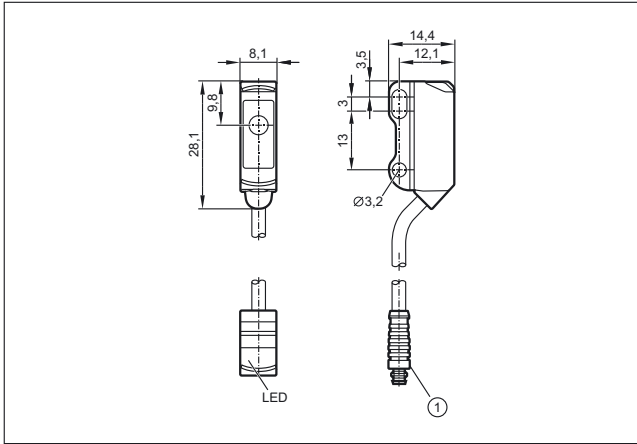
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

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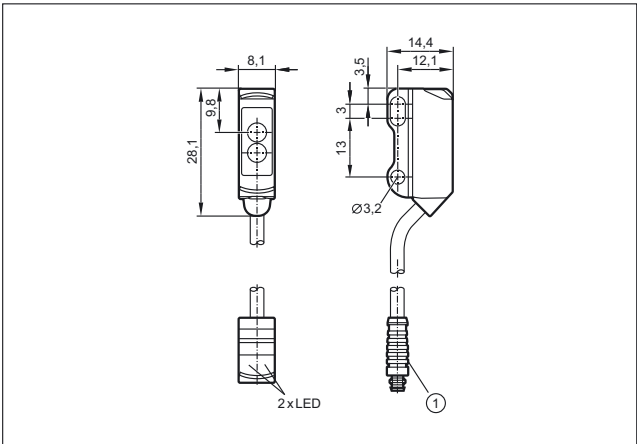


28



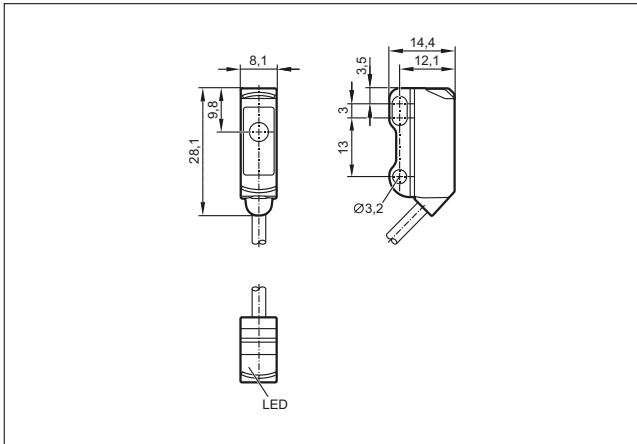
1: illustration (example)

26

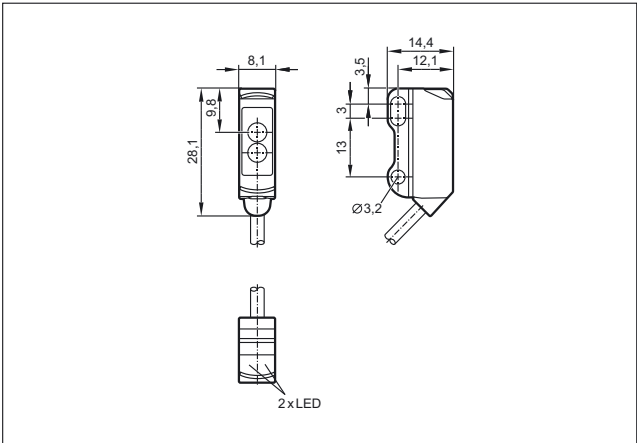


1: illustration (example)

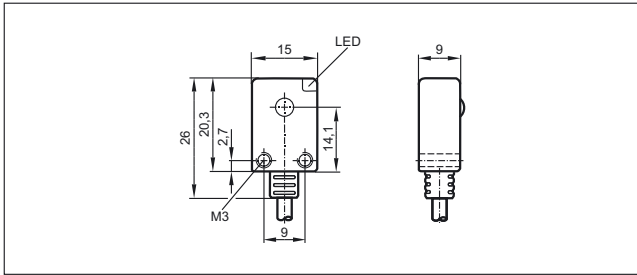
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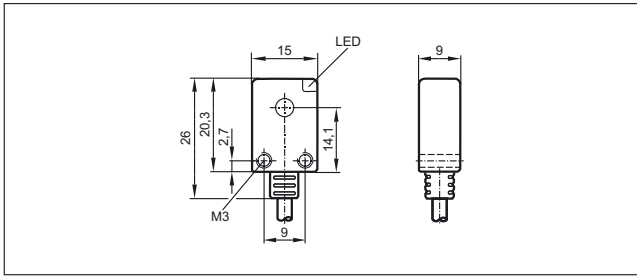
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30

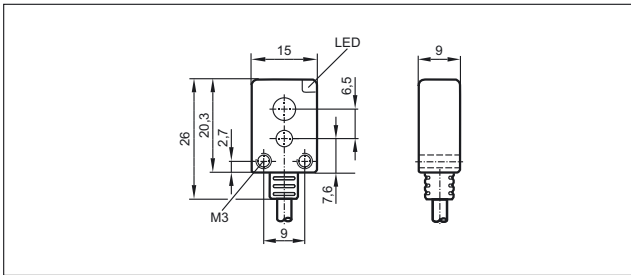


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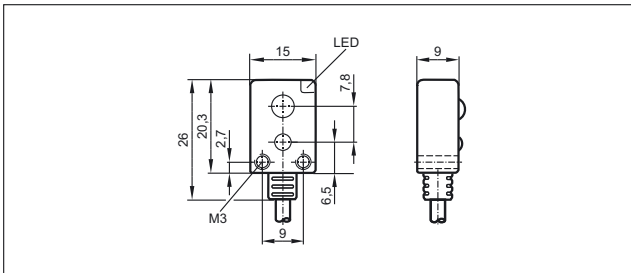


Scale drawings / drawing no. – CAD download: www.ifm.com

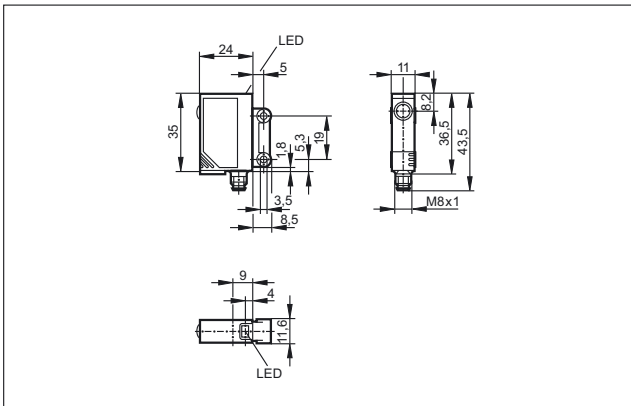
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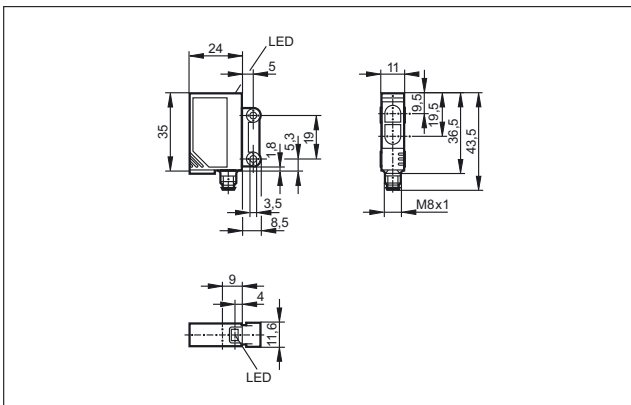
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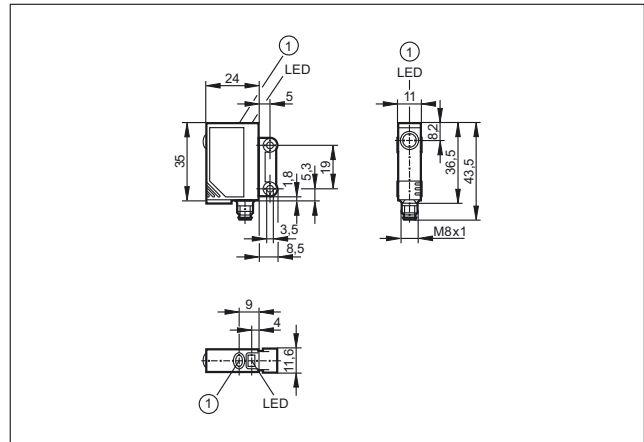
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35

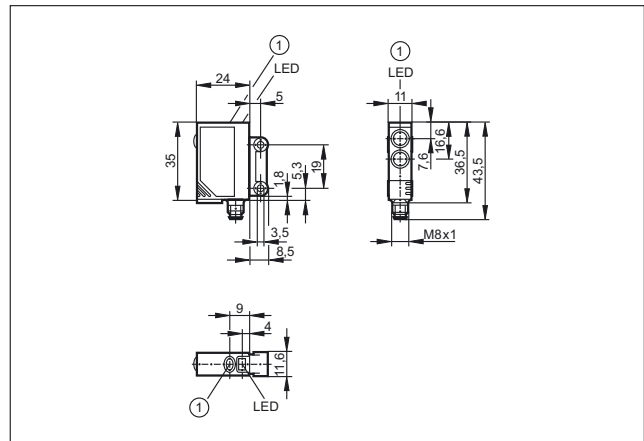


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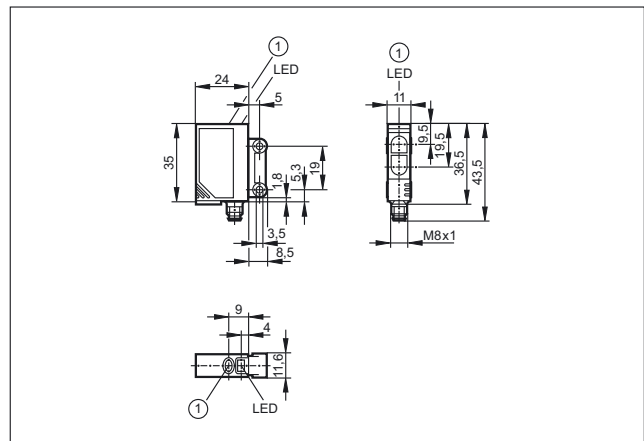
1: pushbutton

37



1: pushbutton

38



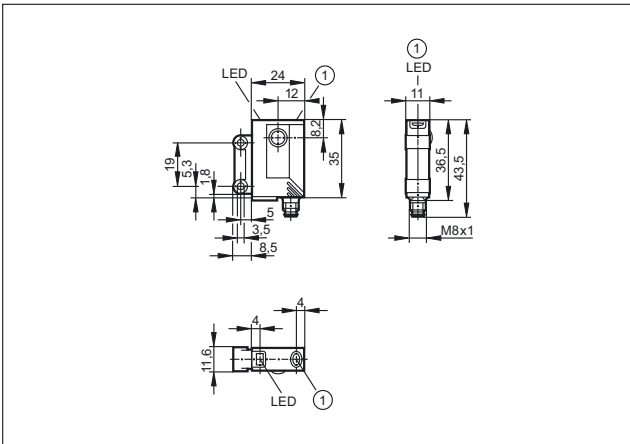
1: pushbutton



Position sensors

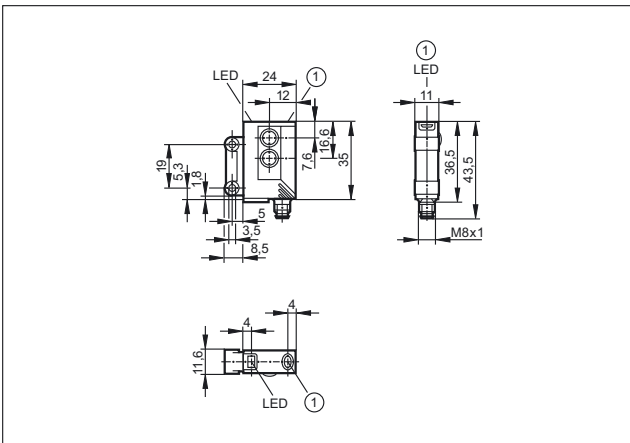
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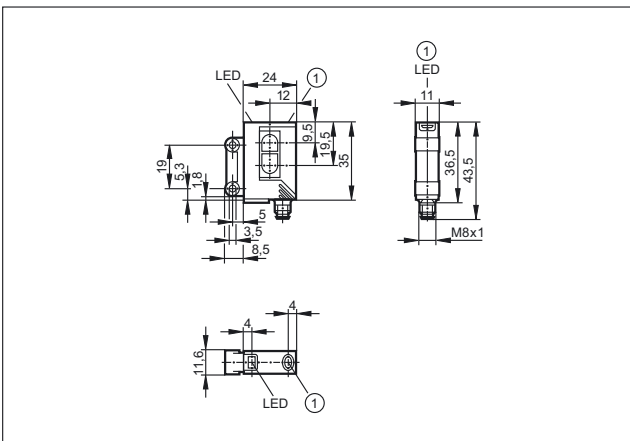
1: pushbutton

40



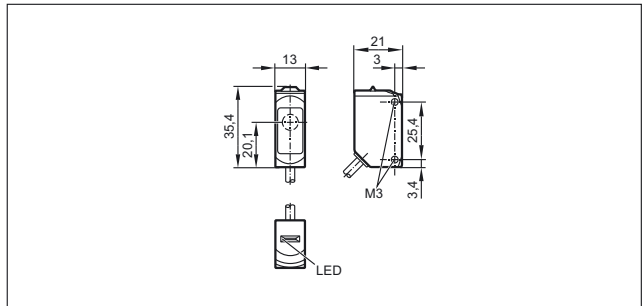
1: pushbutton

41

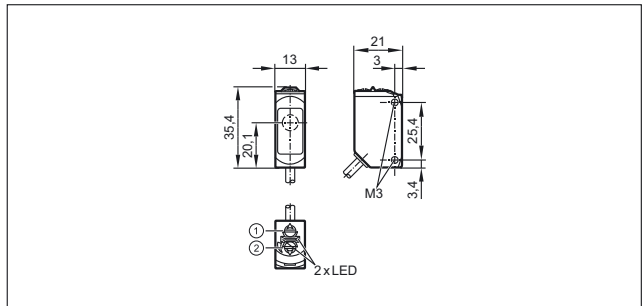


1: pushbutton

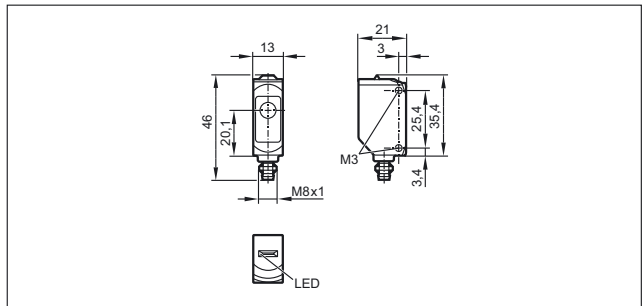
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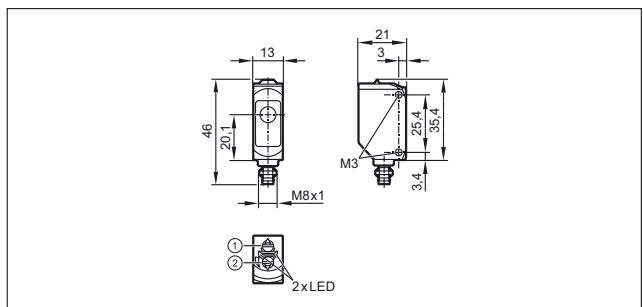
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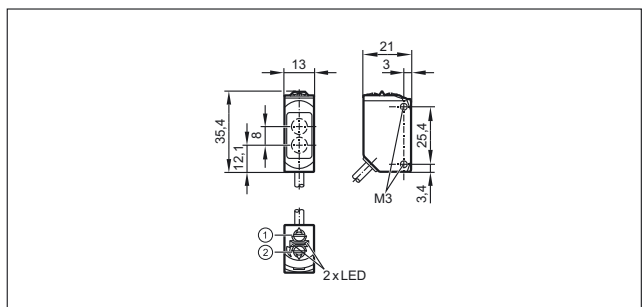
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45

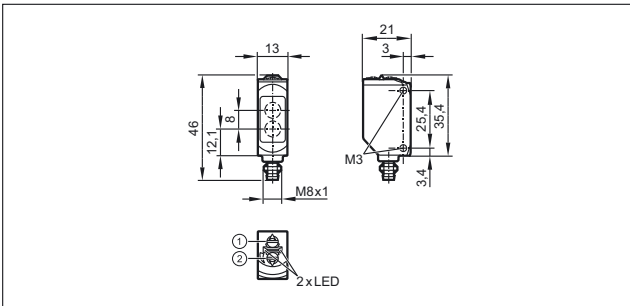


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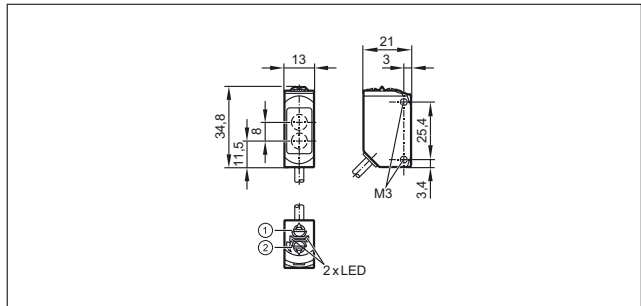


Scale drawings / drawing no. – CAD download: www.ifm.com

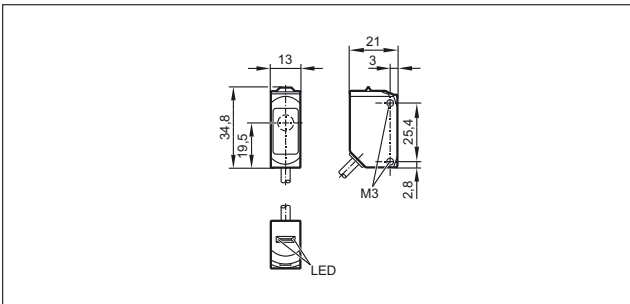
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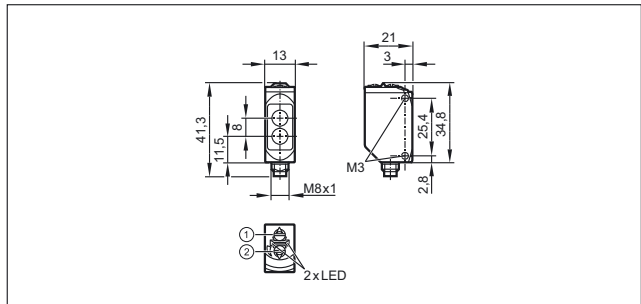
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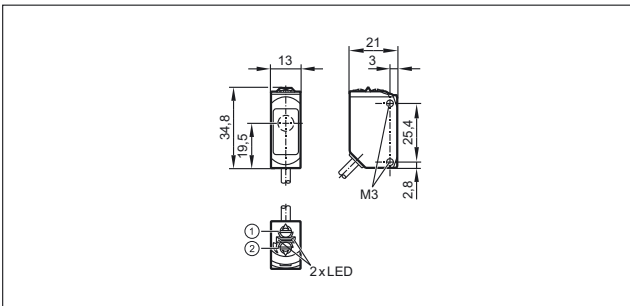
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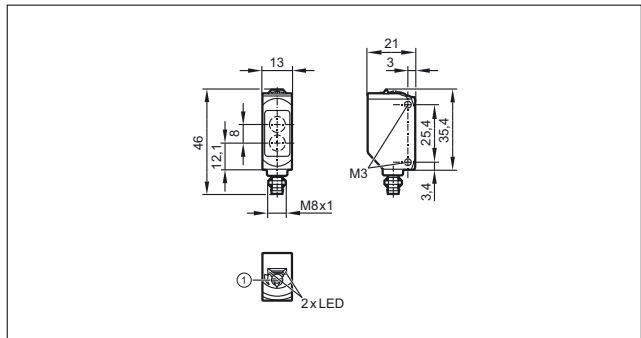
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49



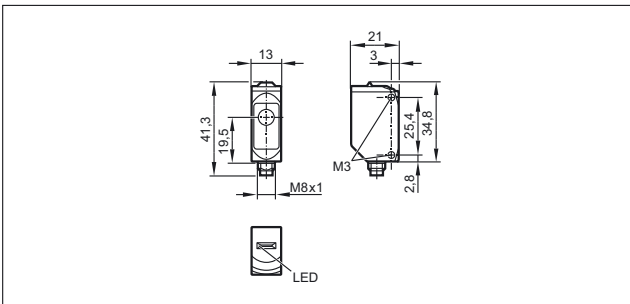
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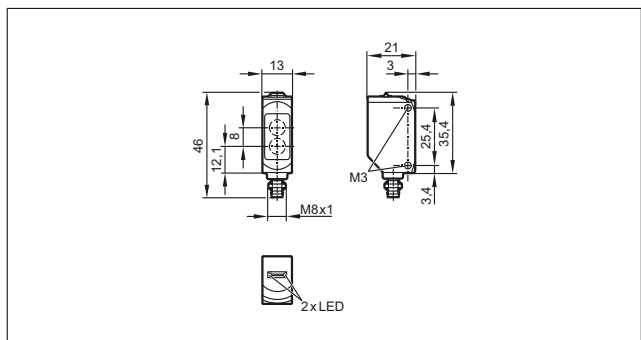
1:: output function switch, 2:: potentiometer sensitivity

1: potentiometer sensitivity

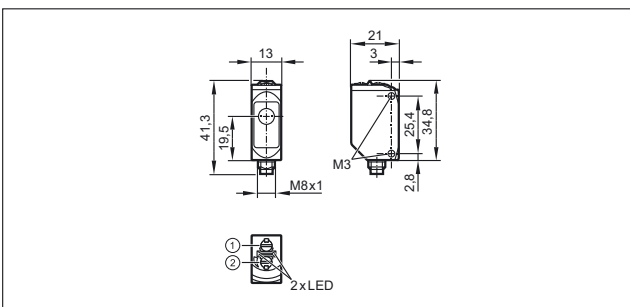
50



55



51



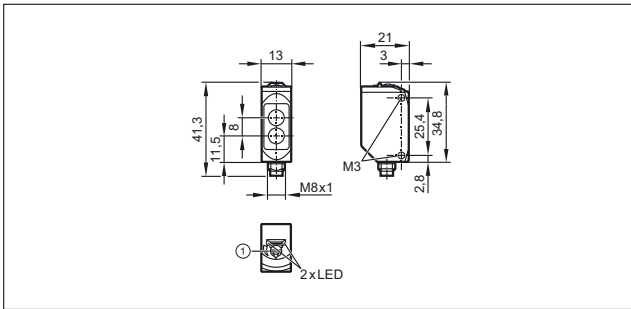
1:: output function switch, 2:: potentiometer sensitivity



Position sensors

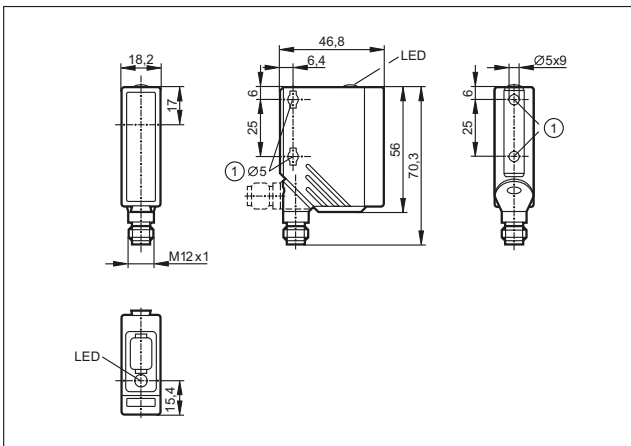
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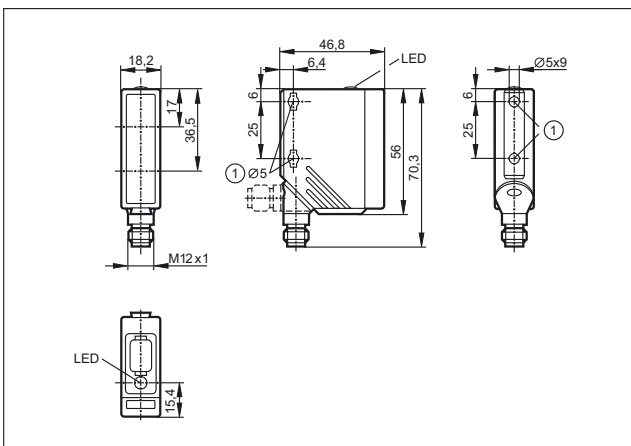
1: potentiometer sensitivity

57



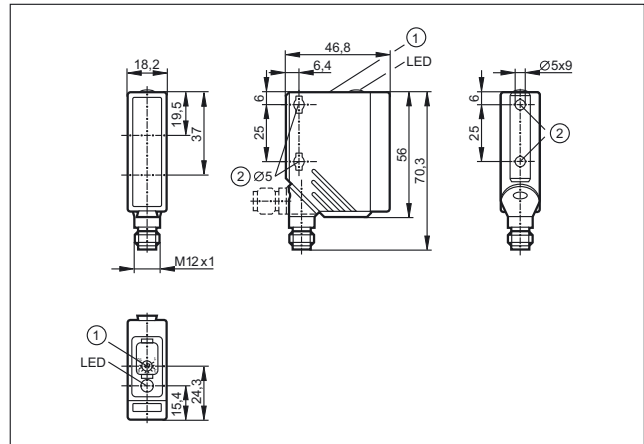
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

58



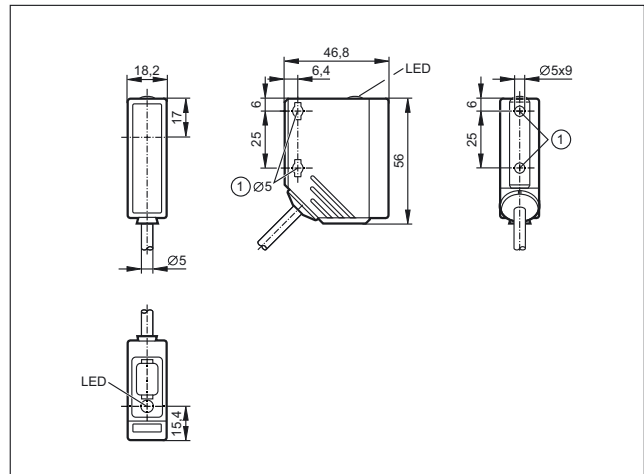
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

59



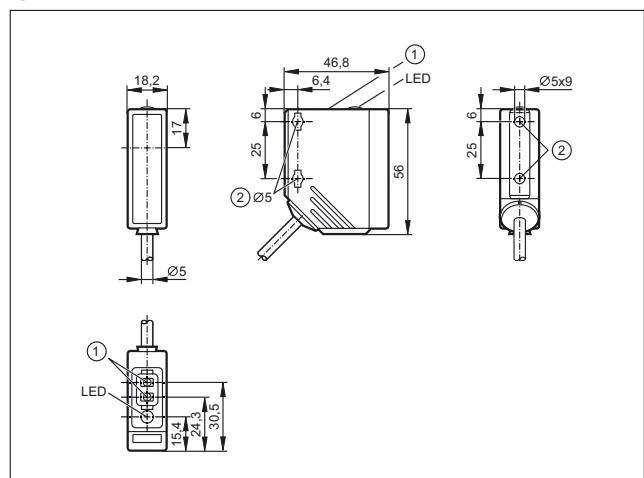
1: potentiometer, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

60



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

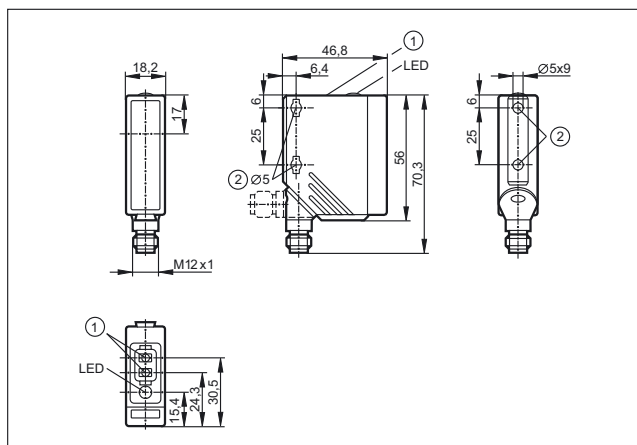
61



1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

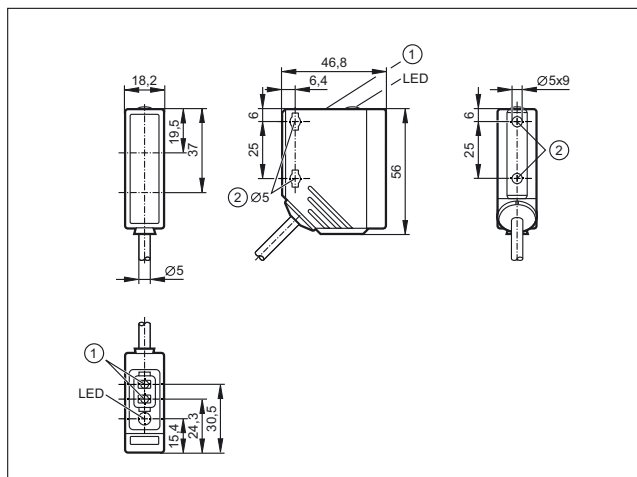
Scale drawings / drawing no. – CAD download: www.ifm.com

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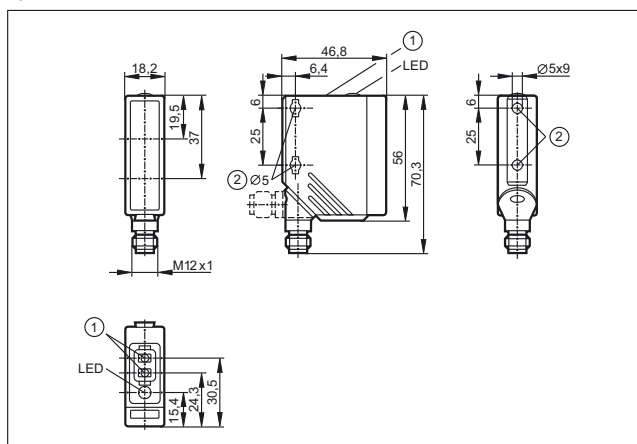
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

63



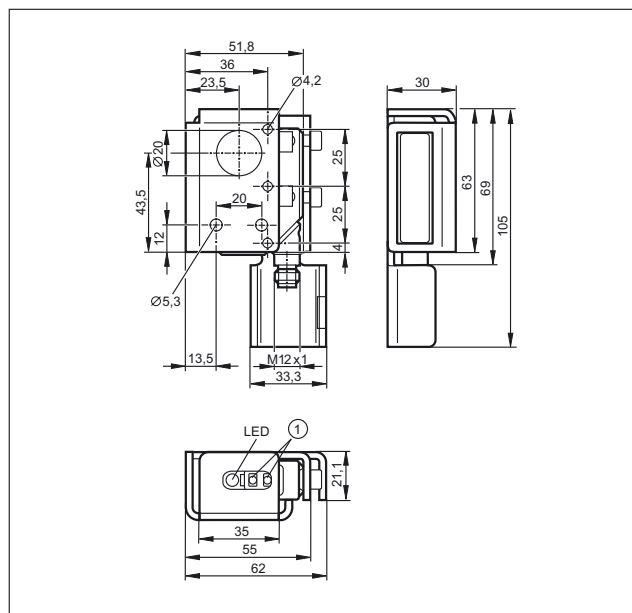
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

64



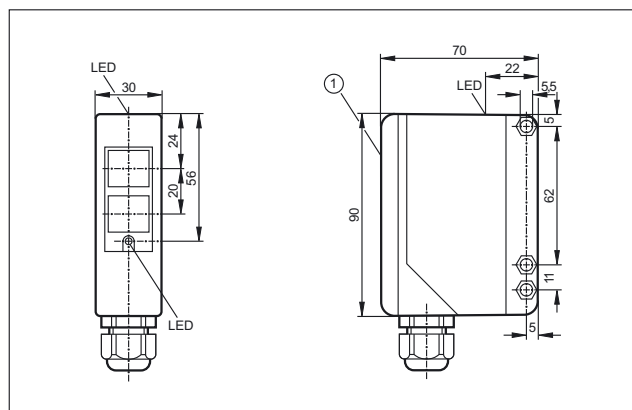
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

65



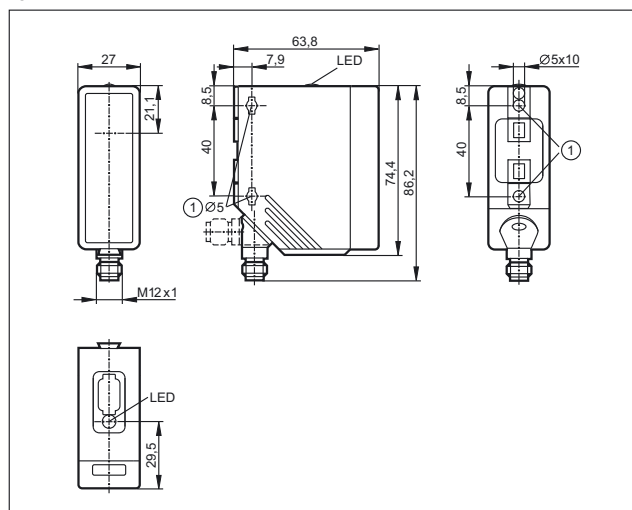
1: Programming buttons

66



1: selection switch, pot's (under cover)

67



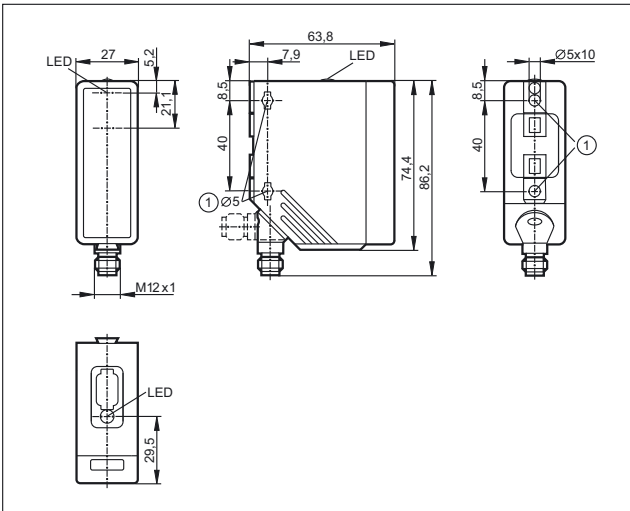
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.



Position sensors

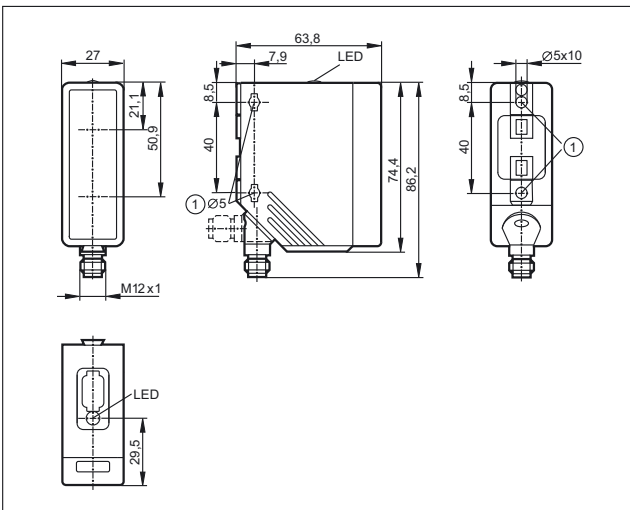
Scale drawings / drawing no. – CAD download: www.ifm.com

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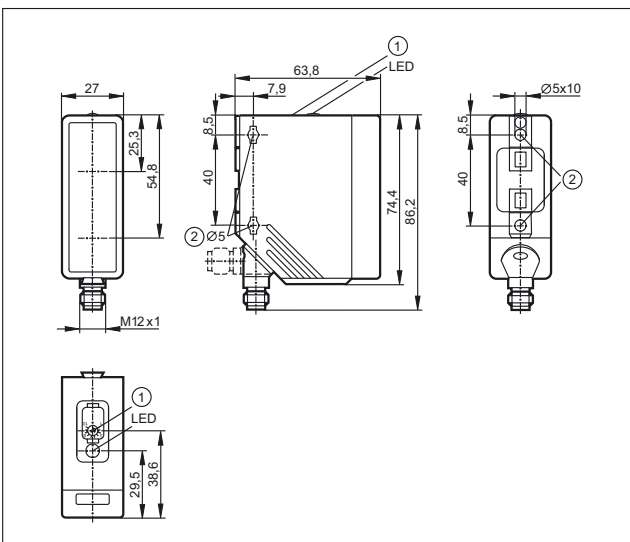
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

69



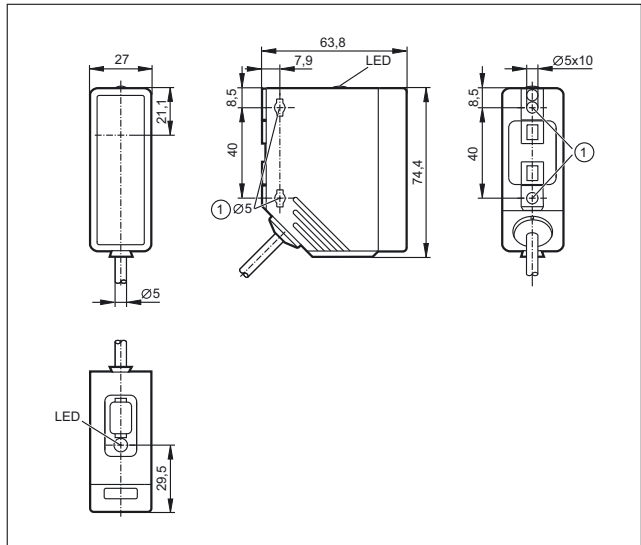
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

70



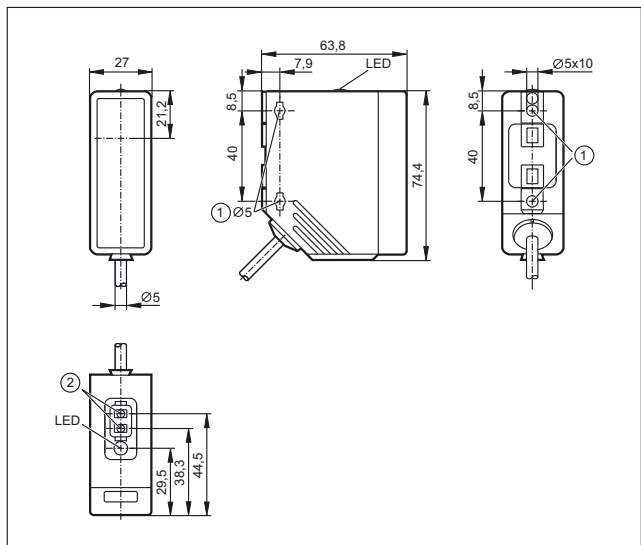
1: potentiometer, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

71



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

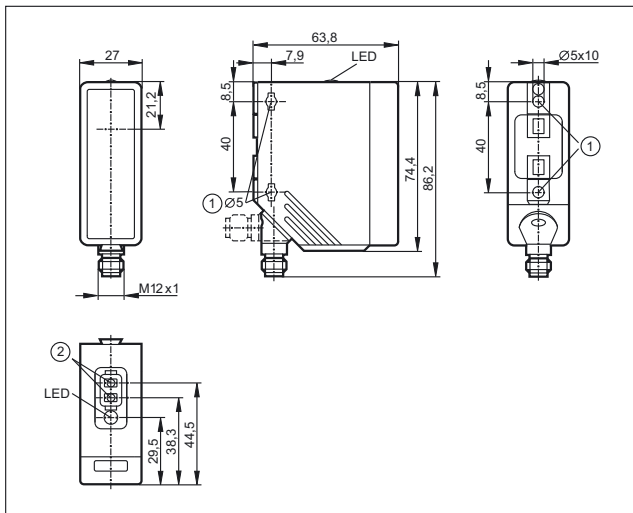
72



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

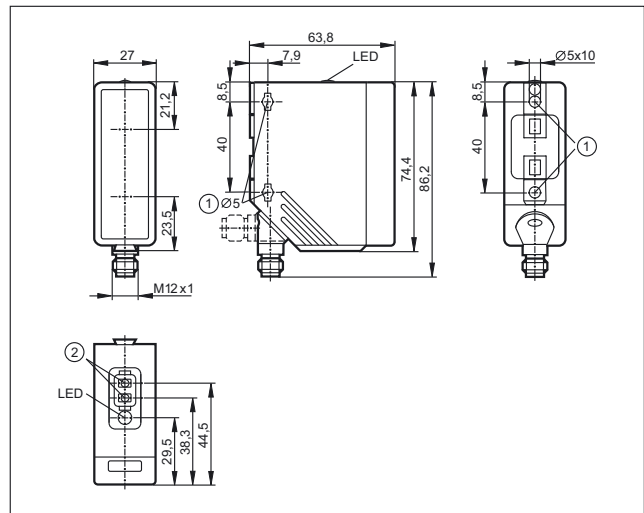
Scale drawings / drawing no. – CAD download: www.ifm.com

73



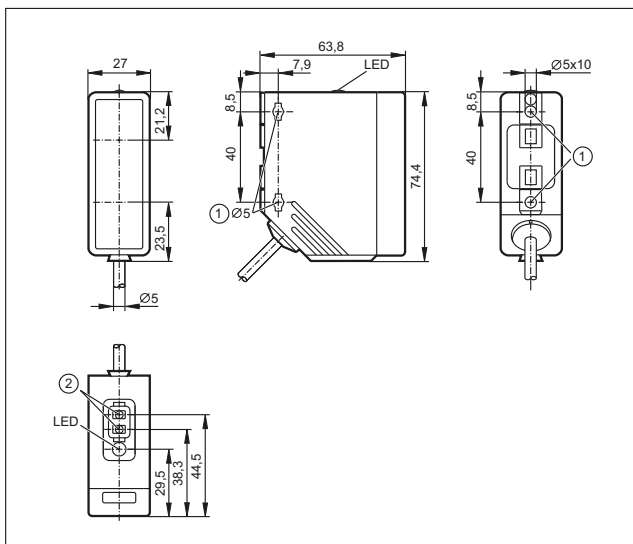
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

75



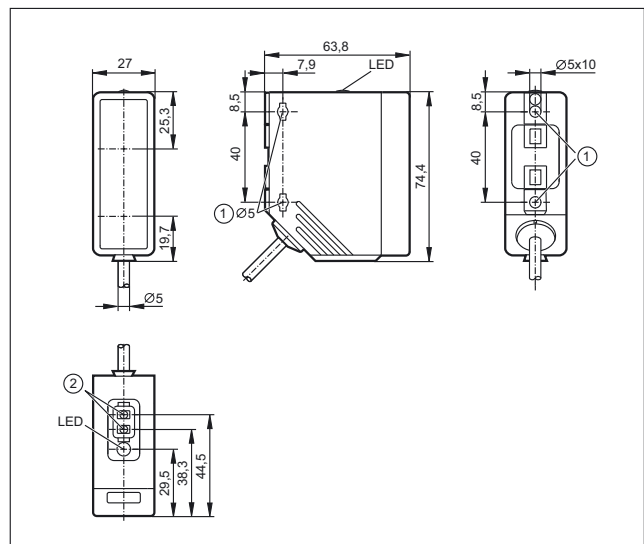
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

74



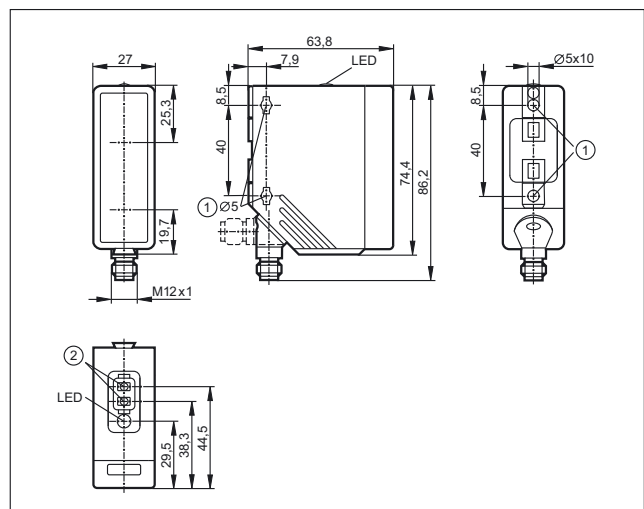
1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

76



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons

77



1: When a M5 mounting screw is used, the max. tightening torque is 2 Nm., 2: Programming buttons



Photoelectric fork and angle sensors for tiny objects



Photoelectric fork sensors /
angle sensors



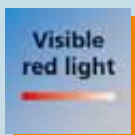
Quick set-up: no need to align transmitter and receiver

Fine and precise light beam across the whole fork width

Metal housing reduces distortion

Light-on / dark-on mode selectable via rotary switch

Easy sensitivity setting via potentiometer



Optical fork and angle sensors

The photoelectric fork and angle sensors are made from distortion-resistant diecast zinc and feature a high switching frequency. Possible applications are in particular part monitoring in feeding technology and handling systems. Further application examples are belt edge and double feed monitoring.

Easy to use

Sensitivity setting using the potentiometer and setting of light-on / dark-on mode using the rotary switch are simple and time-saving. No complex adjustment is required because transmitter and receiver are already aligned towards each other. Due to the fine and precise red light beam which is constant across the entire fork width, out-of-balance monitoring of shafts can also be carried out.

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Laser fork sensors, laser class 2	277
Optical angle sensors	277
Wiring diagrams	277 - 278
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Position sensors

Optical fork sensors

Type	Fork width (w) [mm]	Fork depth (d) [mm]	Smallest detectable object Ø [mm]	Switching frequency [Hz]	Output H = light-on D = dark-on	U _b [V]	Draw- ing no.	Order no.

Optical fork sensor · Type OPU · M8 connector · metal · DC · Wiring diagram no. 3 · Connector groups 1, 2, 3, 78, 84, 145, 146

	10	17	0.3	10000	H/D PNP/NPN	10...35	1	OPU200

Optical fork sensor · Type OPU · M8 connector · metal · DC · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146

	20	25	0.4	4000	H/D PNP	10...35	2	OPU201
	30	35	0.5	4000	H/D PNP	10...35	3	OPU202
	50	55	0.5	4000	H/D PNP	10...35	4	OPU203
	80	55	0.5	4000	H/D PNP	10...35	5	OPU204
	120	60	0.8	2000	H/D PNP	10...35	6	OPU205

Optical fork sensor · Type OPU · M8 connector · metal · DC · Wiring diagram no. 2 · Connector groups 1, 3, 78, 84, 145

	20	25	0.4	4000	H/D NPN	10...35	2	OPU207
	30	35	0.5	4000	H/D NPN	10...35	3	OPU208
	50	55	0.5	4000	H/D NPN	10...35	4	OPU209
	80	55	0.5	4000	H/D NPN	10...35	5	OPU210
	120	60	0.8	2000	H/D NPN	10...35	6	OPU211

Laser fork sensors, laser class 2

Type	Fork width (w) [mm]	Fork depth (d) [mm]	Smallest detectable object Ø [mm]	Switching frequency [Hz]	Output H = light-on D = dark-on	U _b [V]	Draw- ing no.	Order no.

Optical fork sensor · Type OPU · M8 connector · metal · DC · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146

	30	35	0.05	3000	H/D PNP	10...30	7	OPU700
	50	55	0.05	3000	H/D PNP	10...30	8	OPU701
	80	55	0.05	3000	H/D PNP	10...30	9	OPU702

Optical angle sensors

Type	Side length (x, y) [mm]	Sensor width (z) [mm]	Smallest detectable object Ø [mm]	Switching frequency [Hz]	Output H = light-on D = dark-on	U _b [V]	Draw- ing no.	Order no.

Optical angle sensor · Type OPL · M8 connector · metal · DC · Wiring diagram no. 1 · Connector groups 1, 2, 3, 78, 84, 145, 146

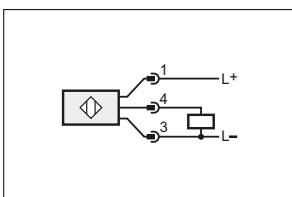
	50	60	0.5	4000	H/D PNP	10...35	10	OPL200
	80	100	0.7	4000	H/D PNP	10...35	11	OPL201

Optical angle sensor · Type OPL · M8 connector · metal · DC · Wiring diagram no. 2 · Connector groups 1, 3, 78, 84, 145

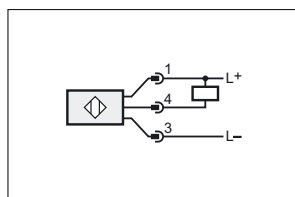
	50	60	0.5	4000	H/D NPN	10...35	10	OPL202
	80	100	0.7	4000	H/D NPN	10...35	11	OPL203

Wiring diagrams

1

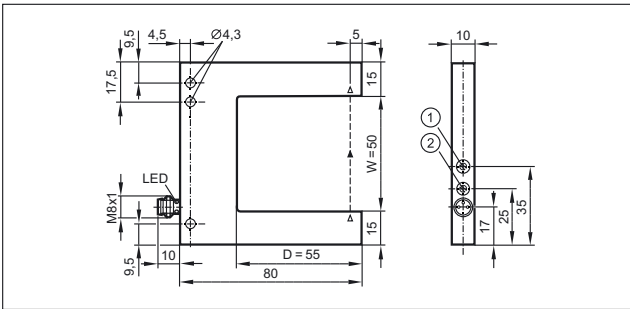


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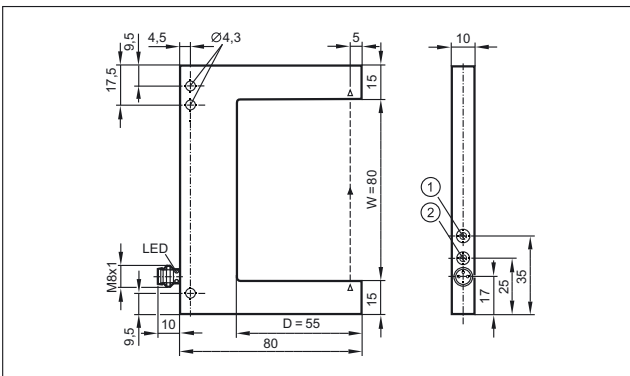
Scale drawings / drawing no. – CAD download: www.ifm.com

8



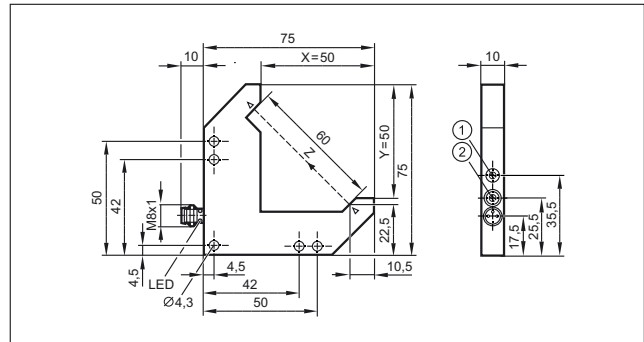
1: potentiometer sensitivity, 2: output function switch

9



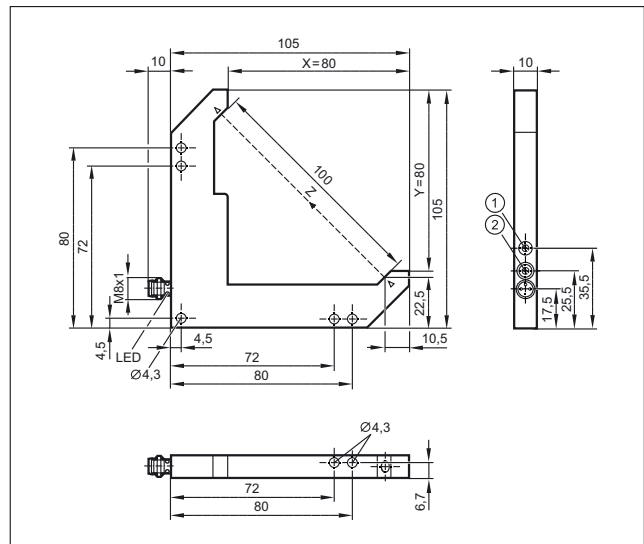
1: potentiometer sensitivity, 2: output function switch

10



1: potentiometer sensitivity, 2: output function switch

11



1: potentiometer sensitivity, 2: output function switch



Position sensors

Laser and distance sensors for precise object detection



**Laser sensors /
distance measurement sensors**



Detection of tiny objects

Clearly visible red light for easy adjustment to the object.

Automatic switch point setting by pressing a pushbutton

Application sensors for special application areas

System components for fine adjustment



Laser sensors

Laser sensors are used where small objects or precise positions are to be detected. They are designed as through-beam sensors, retro-reflective sensors or diffuse reflection sensors.

Laser light consists of light waves of the same wave length with a fixed phase ratio (coherence). This characteristic constitutes an important feature of laser sensors: their almost perfectly parallel light beam. The result: Long ranges can be achieved thanks to the small angle of divergence. The laser spot which is even in daylight clearly visible makes it easier to align the system.

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Rectangular housing OJ Laser PerformanceLine, front sensing face, laser class 1	283
Rectangular housing O5 laser class 1	283 - 284
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Cylindrical OI housing (M30) for optical distance measurement, laser class 2	288 - 289
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Rectangular housing O1 for optical distance measurement, laser class 1	290
Rectangular housing O1 for optical distance measurement, laser class 2	290
Rectangular housing O1 Laser PerformanceLine with background suppression, laser class 2	290 - 291
Rectangular housing O1 for optical level measurement, laser class 2	291
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Position sensors

Cylindrical OG housing (M18) Laser PerformanceLine, laser class 1

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP65 / IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Transmitter	2 m	Red	5	–	1	1	OGS701
	Transmitter	60 m	Red	312	–	1	1	OGS700

Through-beam sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Receiver	2 m	Red	–	H/D PNP	2	2	OGE701
	Receiver	60 m	Red	–	H/D PNP	2	2	OGE700

Retro-reflective sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Polarisation filter	0.2...2 m	Red	5	H/D PNP	2	2	OGP701
	Polarisation filter	0.2...15 m	Red	78	H/D PNP	2	2	OGP700

Diffuse reflection sensor · M12 connector · 10...36 DC · high-grade stainless steel · IP65 / IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Background suppression	20...200 mm	Red	1.2	H/D PNP	2	2	OGH700

Rectangular housing OJ Laser PerformanceLine, lateral sensing face, laser class 1

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147

	Transmitter	1 m	Red	< 4	–	1	3	OJ5141
	Receiver	1 m	Red	–	H/D PNP	3	3	OJ5142
	Transmitter	15 m	Red	< 24	–	1	3	OJ5138
	Receiver	15 m	Red	–	H/D PNP	3	3	OJ5139

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147



Polarisation filter	8 m	Red	< 12	H/D PNP	3	3	OJ5136

Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147



Background suppression	7...150 mm	Red	0.8	H/D PNP	3	4	OJ5158

Background suppression	15...200 mm	Red	2 x 1	H/D PNP	3	5	OJ5154

Rectangular housing OJ Laser PerformanceLine, front sensing face, laser class 1

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147



Transmitter	15 m	Red	< 24	–	1	6	OJ5116

Receiver	15 m	Red	–	H/D PNP	3	6	OJ5117

Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147



Polarisation filter	8 m	Red	< 12	H/D PNP	3	7	OJ5014



Polarisation filter	8 m	Red	< 12	H/D PNP	3	6	OJ5114

Diffuse reflection sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147



Background suppression	15...200 mm	Red	2 x 1	H/D PNP	3	8	OJ5152

Rectangular housing O5 laser class 1

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Transmitter	60 m	Red	150	–	1	9	O5S700



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Through-beam sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Receiver	60 m	Red	–	H/D PNP	2	10	O5E700
Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Polarisation filter	15 m	Red	40	H/D PNP	2	11	O5P700
Diffuse reflection sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	20...200 mm	Red	1.2	H/D PNP	2	12	O5H700

Rectangular housing O1 Laser PerformanceLine with background suppression, laser class 2

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	Background suppression	0.2...10 m	–	< 15 x 15	normally open / closed programmable PNP	2	13	O1D101
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.2...10 m	–	< 15 x 15	normally open / closed programmable NPN	4	13	O1D104

Prismatic reflector

Type	Description	Order no.
	Prismatic reflector · Ø 10 mm · round · fixing by screw · M3 · for retro-reflective laser sensors · Housing materials: screw: stainless steel 316 / 1.4401 / spring washer: stainless steel 316 / 1.4401 / nut: stainless steel 316 / 1.4401 / front plate: PMMA / base: ABS	E20990
	Prismatic reflector · Ø 15 mm · round · fixing by screw · M3 · for retro-reflective laser sensors · Housing materials: screw: stainless steel 316 / 1.4401 / spring washer: stainless steel 316 / 1.4401 / nut: stainless steel 316 / 1.4401 / front plate: PMMA / base: ABS	E20992
	Prismatic reflector · Ø 19 mm · round · fixing by screw · M3 · for retro-reflective laser sensors · Housing materials: screw: stainless steel 316 / 1.4401 / spring washer: stainless steel 316 / 1.4401 / nut: stainless steel 316 / 1.4401 / front plate: PMMA / base: ABS	E20993
	Prismatic reflector · 11 x 11 mm · rectangular · fixing by screw · M3 · for retro-reflective laser sensors · Housing materials: screw: stainless steel 316 / 1.4401 / spring washer: stainless steel 316 / 1.4401 / nut: stainless steel 316 / 1.4401 / front plate: PMMA / base: ABS	E20991

Type	Description	Order no.
	Prismatic reflector · 14 x 23 mm · rectangular · for retro-reflective laser sensors · Housing materials: front plate: PMMA / base: ABS	E20989
	Prismatic reflector · 30 x 20 mm · rectangular · for retro-reflective laser sensors · Housing materials: front plate: PMMA / base: ABS	E20994
	Prismatic reflector · 50 x 10 mm · rectangular · for retro-reflective laser sensors · Housing materials: front plate: PMMA / base: ABS	E20988
	Prismatic reflector · 48 x 48 mm · rectangular · for retro-reflective laser sensors and glass and film detection · Housing materials: plastics	E20722

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0011
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0012

Accessories OG housing

Type	Description	Order no.
	Mounting and fine adjustment bracket for laser units · Ø 18.5 mm · Clamp mounting · rod or free-standing depending on the clamp · for type OG · Housing materials: stainless steel 316Ti / 1.4571	E20737
	Mounting and fine adjustment bracket for laser units · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	E21220
	Mounting and fine adjustment bracket for laser units · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21219
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20720
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: diecast zinc / fixture: steel	E20721



Position sensors

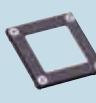
Type	Description	Order no.
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	E21206
	Mounting set · Ø 18.5 mm · Clamp mounting · rod mounting Ø 12 mm · for type OG, IG, KG · Housing materials: clamp: high-grade stainless steel / fixture: high-grade stainless steel	E21207

Accessories O5 housing

Type	Description	Order no.
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21087
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21085
	Angle bracket · O5, O4 · for mounting O5, O4 sensors instead of OL sensors · Dovetail clamp · Housing materials: Dovetail clamp: AlMgSi0.5 / fixture: AlMg3	E21122
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	E21088
	Mounting brackets Mounting on the back of the unit · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21086
	Mounting sleeve · O5 · for mounting O5 sensors instead of OC sensors · Housing materials: AlZnMgCu1.5 F51/52	E21114
	Mounting and fine adjustment bracket for laser units · Clamp mounting · rod or free-standing depending on the clamp · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E20794
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	E21223
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21210
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21211
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	E21212

Type	Description	Order no.
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 14 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21142
	Mounting set · Clamp mounting · With protective cover · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21084
	Mounting set · Clamp mounting · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21083
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	E30398

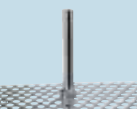
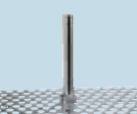
Accessories O1 housing

Type	Description	Order no.
	Prismatic reflector · 226 x 262 mm · rectangular · Housing materials: plastics	E21159
	Mounting adapter · O1D · for optical distance sensors · for type O1D · Housing materials: flange: stainless steel 316L / 1.4404 / sealing: FKM / Protective cover: PMMA transparent / screws: high-grade stainless steel / washers: high-grade stainless steel	E21224
	Mounting and fine adjustment bracket for laser units · O1D · Clamp mounting · rod or free-standing depending on the clamp · Housing materials: fixture: aluminium transparent anodised / plastics: POM / screws: stainless steel	E1D100
	Mounting set · E2D101 + E20938 + E20951	E21079
	Angle bracket · O1D, O4 · for type O1D, O4 · Housing materials: stainless steel 316L / 1.4404	E21120
	Protective bracket · O1D · for type O1D · Housing materials: Angle bracket: stainless steel 316 / 1.4401 / screws: stainless steel / housing: polyamide	E21236
	Protective cover · O1D · Housing materials: bezel: ZnAl4Cu1 finish black / window: PMMA transparent and colourless / sealing: FPM 75+/-5 Shore A black / screws: stainless steel	E21133
	Protective cover · O1D · Housing materials: bezel: ZnAl4Cu1 finish black / window: glass transparent and colourless / sealing: FPM 75+/-5 Shore A black / screws: stainless steel	E21171



Position sensors

Accessories for system components

Type	Description	Order no.
	mounting rod · Ø 10 / M8 · Length: 150 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21081
	mounting rod · Ø 10 / M8 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E80310
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20938
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E20940
	Head cap screw · M8 x 40 mm · ISO 4762 (DIN 912) · free-standing M8 · Housing materials: screw: steel galvanised	E21204
	Head cap screw · M10 x 45 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: steel galvanised	E21208
	Head cap screw · M10 x 45 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: high-grade stainless steel	E21209
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	E20951

Cylindrical OI housing (M30) for optical distance measurement, laser class 2

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm, inch · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	14	OID200
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	14	OID201
Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm, inch · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary NPN	6	14	OID202

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 / IP68 / IP69K · Display unit: cm · Connector groups 12, 13, 22, 24, 150, 152, 154, 155, 186, 190, 192, 194, 205



Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	7	15	OID204

Cylindrical OI housing (M30) for optical distance measurement, laser class 1

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm, inch · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	14	OID250

Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	14	OID251

Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 / IP68 / IP69K · Display unit: cm · Connector groups 12, 13, 22, 24, 150, 152, 154, 155, 186, 190, 192, 194, 205



Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	7	15	OID254

Rectangular housing O5 for optical distance measurement, laser class 2

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	16	O5D100

Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: inch · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	16	O5D101

Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: cm · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary NPN	6	16	O5D102



Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	16	O5D150



Position sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP65 / IP67 · Display unit: inch · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	5	16	O5D151

Rectangular housing O1 for optical distance measurement, laser class 1

Type	Operating principle	Range	Sampling rate [Hz]	Spot Ø at max. range [mm]	U _b [V]	Wiring diagr. no.	Draw- ing no.	Order no.

Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Photoelectric distance sensor	0.3...6 m	1...33	< 8 x 8	18...30	8	13	O1D155

Rectangular housing O1 for optical distance measurement, laser class 2

Type	Operating principle	Range	Sampling rate [Hz]	Spot Ø at max. range [mm]	U _b [V]	Wiring diagr. no.	Draw- ing no.	Order no.

Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Photoelectric distance sensor	1...75 m on reflector E21159	1...33	< 150 x 150	18...30	8	13	O1D106
	Photoelectric distance sensor	0.2...10 m	1...33	< 15 x 15	18...30	8	13	O1D105

Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 9 · Connector groups 12, 13, 22, 24, 150, 152, 154, 155, 186, 190, 192, 194, 205

	Background suppression	0.2...10 m	1...50	< 15 x 15	18...30	9	13	O1D100

Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 10 · Connector groups 12, 13, 22, 24, 152, 155, 186, 192, 194, 205

	Photoelectric distance sensor	0.2...10 m	1...50	< 15 x 15	18...30	10	13	O1D103

Rectangular housing O1 Laser PerformanceLine with background suppression, laser class 2

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Background suppression	0.2...10 m	–	< 15 x 15	normally open / closed programmable PNP	2	13	O1D101

Product selectors and further information can be found at: www.ifm.com

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Photoelectric distance sensor · M12 connector · 10...30 DC · metal · IP67 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Background suppression	0.2...10 m	–	< 15 x 15	normally open / closed programmable NPN	4	13	O1D104

Photoelectric distance sensor · M12 connector · 18...30 DC · metal · IP67 · Connector groups 12, 13, 22, 24, 150, 152, 154, 155, 186, 190, 192, 194, 205

	Background suppression	0.2...10 m	–	< 15 x 15	OUT1: normally open/closed progr. OUT2: normally open/closed progr. or analogue (4...20 mA / 0...10 V, scalable) PNP	9	13	O1D120

Rectangular housing O1 for optical level measurement, laser class 2

Type	Operating principle	Range	Sampling rate [Hz]	Spot Ø at max. range [mm]	U _b [V]	Wiring diagr. no.	Draw- ing no.	Order no.

Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Optical level sensor	0.2...10 m	1...33	< 15 x 15	18...30	8	13	O1D300

Accessories OI design (M30)

Type	Description	Order no.

	Mounting set · Clamp mounting · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21083

	Mounting set · Clamp mounting · With protective cover · Free-standing M10 · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21084

	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20938

	Cube · M10 · aluminium profile · Housing materials: diecast zinc	E20951

	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21085

	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21087

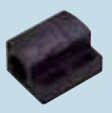
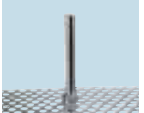
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	E21088



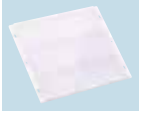
Position sensors

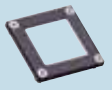
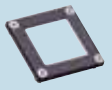
Type	Description	Order no.
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	E30398

Accessories O5 housing

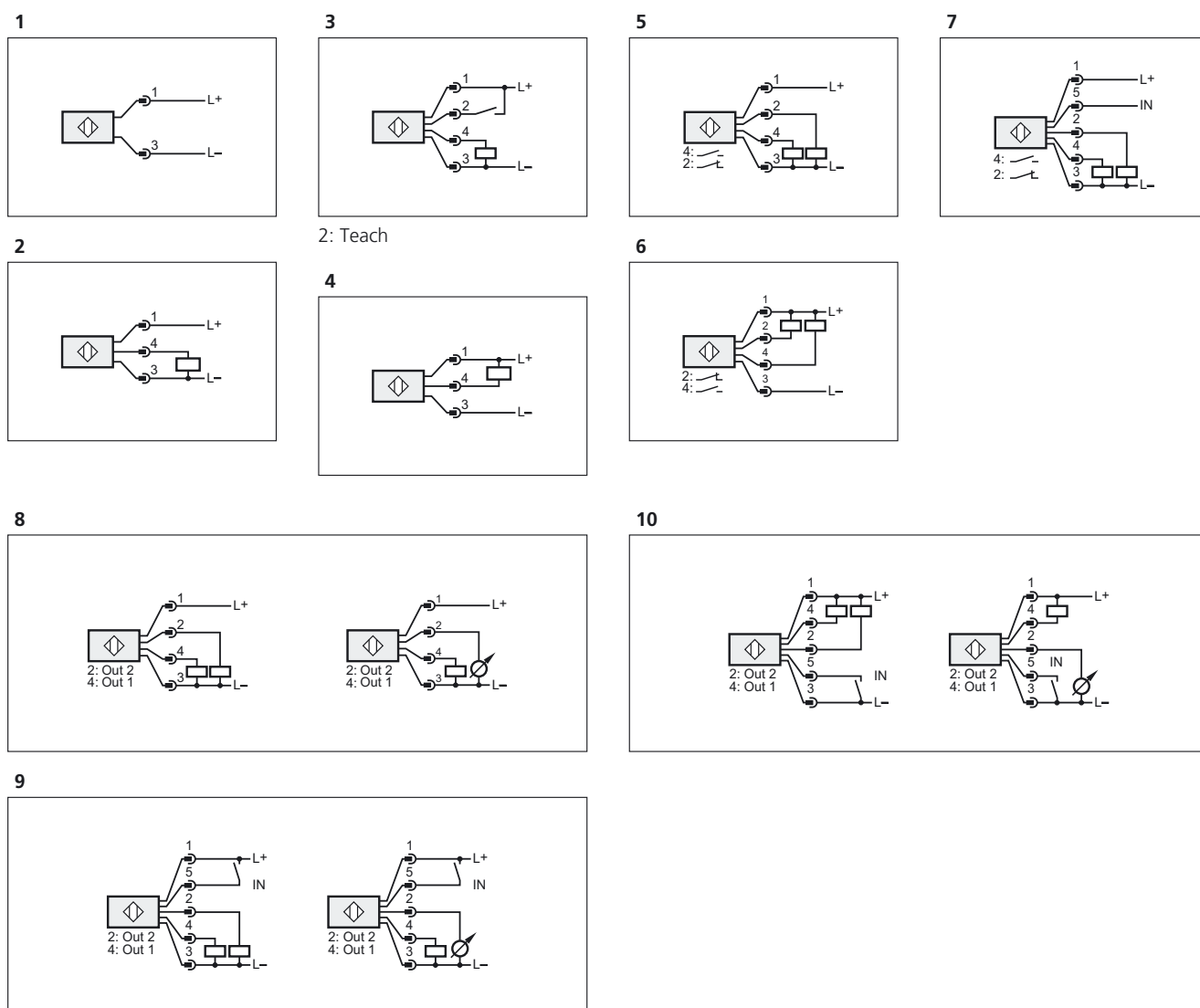
Type	Description	Order no.
	Angle bracket · for type M30 · Housing materials: stainless steel	E10737
	Mounting clamp · Ø 30 mm · with end stop · for type M30 · Housing materials: PC	E11049
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	E10077
	Mounting set · Ø 30.2 mm · Clamp mounting · aluminium profile · for type II, KI, OID, OI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20875
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20873
	Mounting set · Ø 30.2 mm · Clamp mounting · free-standing M12 · for type OI, II, KI · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20874
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20938
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	E20951
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	E30398

Accessories O1 housing

Type	Description	Order no.
	Prismatic reflector · 226 x 262 mm · rectangular · Housing materials: plastics	E21159
	Mounting and fine adjustment bracket for laser units · O1D · Clamp mounting · rod or free-standing depending on the clamp · Housing materials: fixture: aluminium transparent anodised / plastics: POM / screws: stainless steel	E1D100

Type	Description	Order no.
	Mounting set · E2D101 + E20938 + E20951	E21079
	Protective cover · O1D · Housing materials: bezel: ZnAl4Cu1 finish black / window: PMMA transparent and colourless / sealing: FPM 75+/-5 Shore A black / screws: stainless steel	E21133
	Protective cover · O1D · Housing materials: bezel: ZnAl4Cu1 finish black / window: glass transparent and colourless / sealing: FPM 75+/-5 Shore A black / screws: stainless steel	E21171
	Cooling box · Protective housing with an active cooling system for the O1D design · for type O1D · Housing materials: housing: aluminium transparent anodised / cover: aluminium black anodised / bezel: aluminium black anodised / window: float glass / cable gland: Brass nickel-plated / nozzle: Brass nickel-plated / sealing: FPM	E21248
	Cable · 10 m	E12274

Wiring diagrams

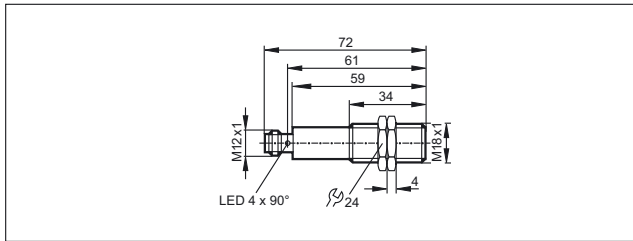




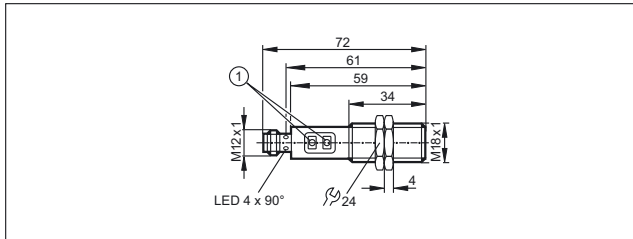
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

1

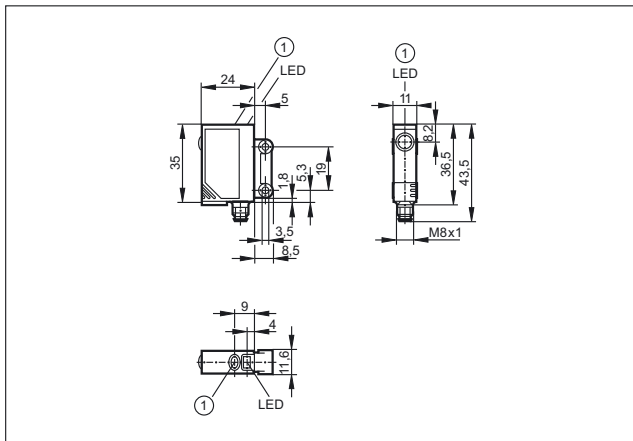


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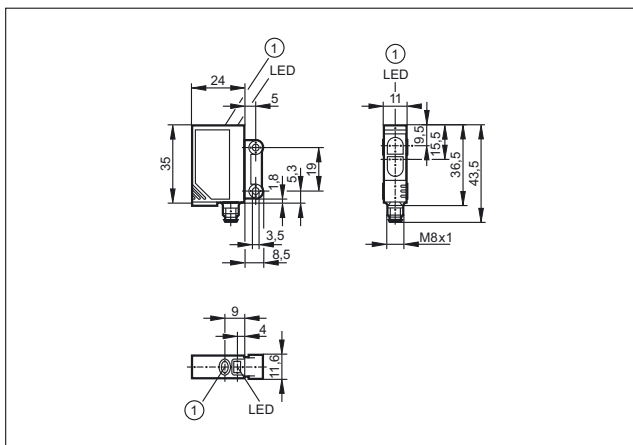
1: Programming buttons

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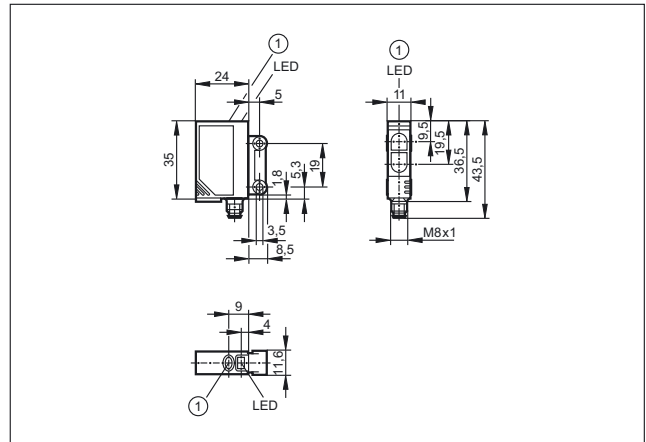
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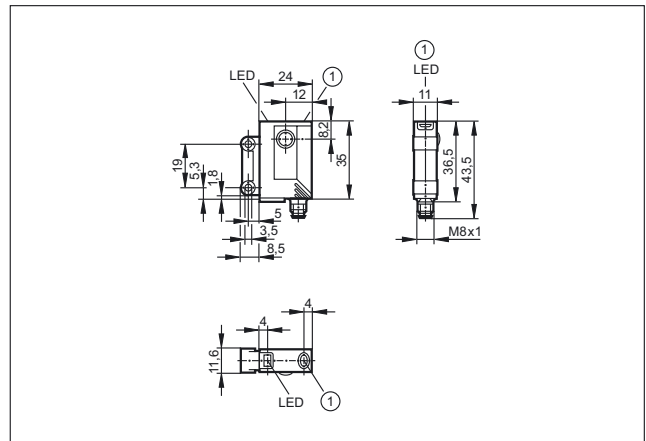
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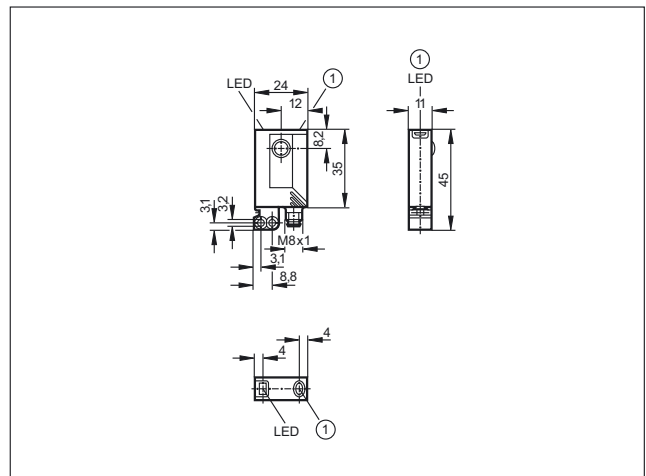
1: pushbutton

6



1: pushbutton

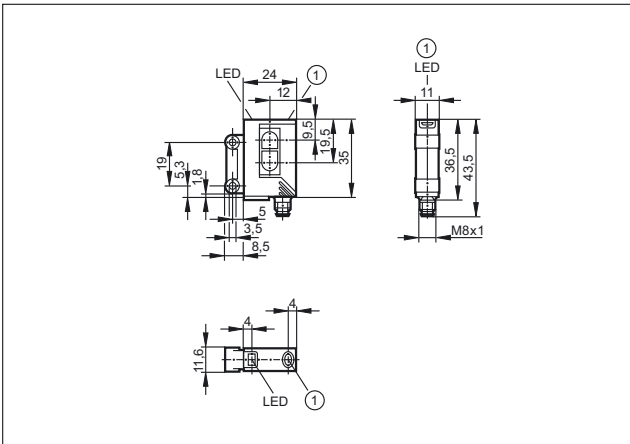
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1: pushbutton

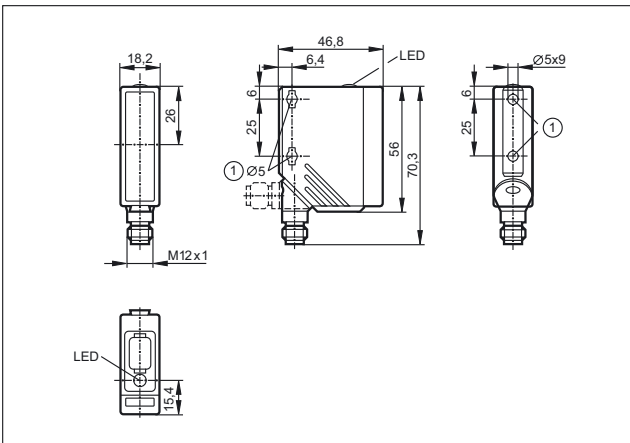
Scale drawings / drawing no. – CAD download: www.ifm.com

8

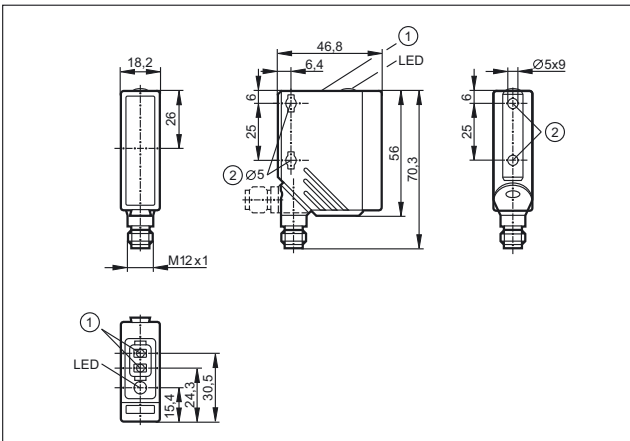


1: pushbutton

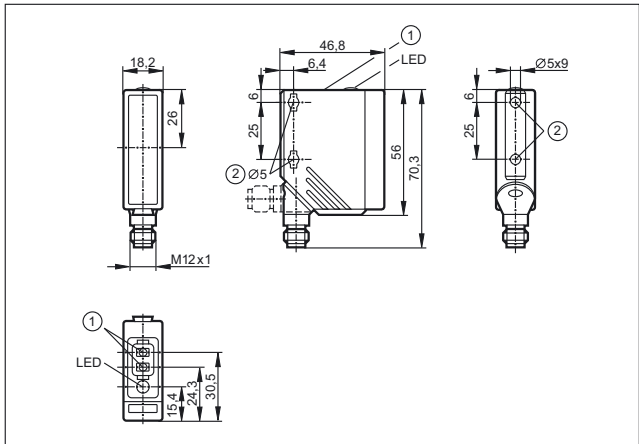
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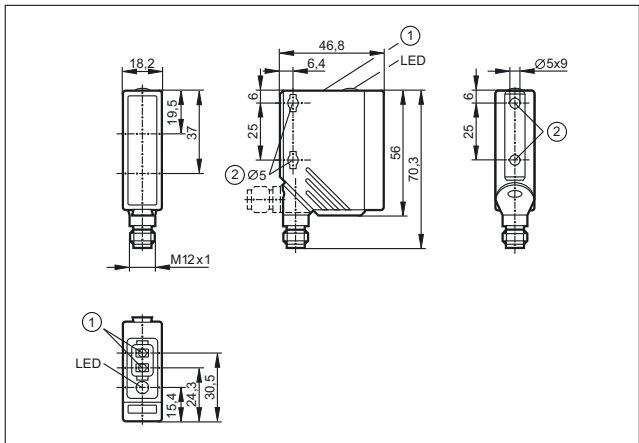


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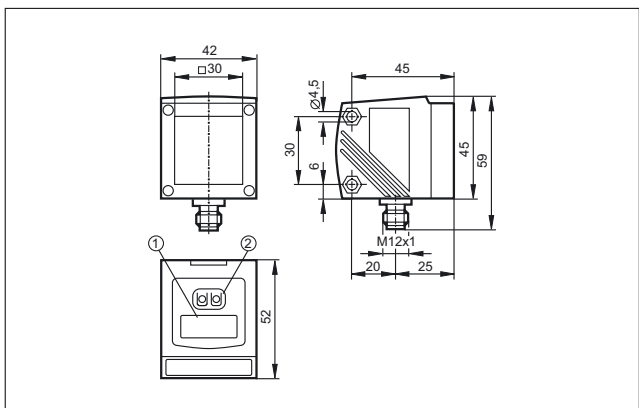
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

12



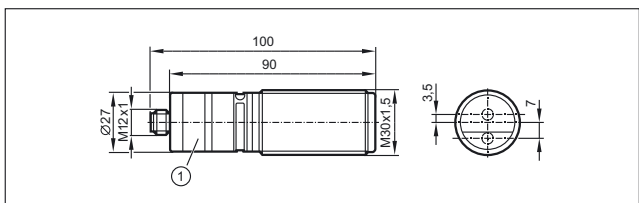
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

13



1: 4-digit alphanumeric display, 2: Programming buttons

14

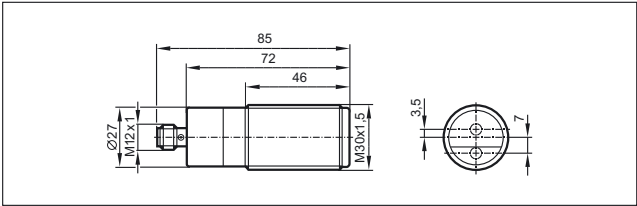




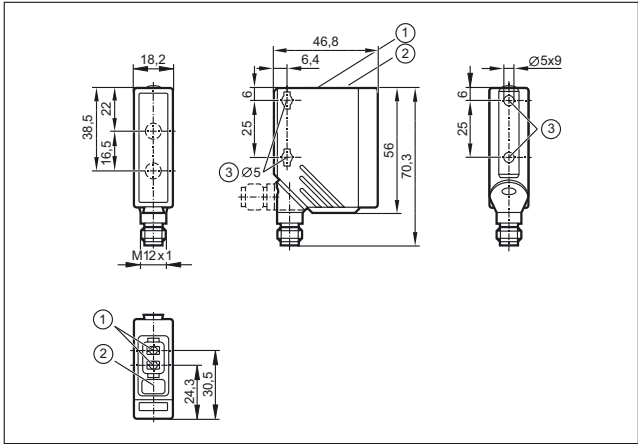
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

15



16







Position sensors

Fibre optics and amplifiers for the smallest of spaces



Fibre optic sensors



Easy connection of different fibre optics

Manual or automatic setting via pushbutton

LED display to check operation, switching status and function

Various fibre materials for different applications

Easy mounting on DIN rail possible



Fibre optics systems

If there is only little mounting space for standard photoelectric sensors, fibre optics can be used. They are connected via fibre optic amplifiers which contain the control monitor and photoelectric components. Both the through-beam and the sensing principle are applied.

Fibre-optics materials

Fibre optics made of silicate glass are particularly resistant to heat and ageing, their optical response does not change when they are bent. They cannot be cut to length by the user.

Acrylic fibre optics are suited for standard applications, they can be cut to length and are less expensive than glass fibre optics.

High-flex fibre optics allow extremely small bending radii.

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Position sensors

OOF amplifiers for acrylic fibre optics

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U _b [V]	Drawing no.	Order no.

Type OOF · M12 connector · plastics · DC · Wiring diagram no. 1 · Connector groups 14, 16, 17

	2	FE/FT-11	Red	3.8 m	0...300 mm	H/D PNP	12...36	1	OO5000

Type OOF · M12 connector · plastics · DC · Wiring diagram no. 6 · Connector groups 16, 17

	4	FE/FT-11	Red	3.8 m	0...300 mm	H/D PNP	12...36	2	OO5001

Type OOF · M16 connector · plastics · DC · Wiring diagram no. 7 · Connector group 27

	6	FE/FT-11	Red	3.8 m	0...300 mm	H/D PNP	12...36	3	OO5002

Type OOF · M16 connector · plastics · DC · Wiring diagram no. 8 · Connector group 27

	8	FE/FT-11	Red	3.8 m	0...300 mm	H/D PNP	12...36	4	OO5003

OBF amplifiers for acrylic fibre optics

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U _b [V]	Drawing no.	Order no.

Type OBF · M12 connector · plastics · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	1	FE/FT-11	Red	0...2 m	0...100 mm	H/D PNP/NPN	10...30	5	OBF500

Type OBF · M8 connector · plastics · DC · Wiring diagram no. 9 · Connector groups 4, 5, 80, 86, 147

	1	FE/FT-11	Red	0...2 m	0...100 mm	H/D PNP/NPN	10...30	6	OBF501

Type OBF · Cable 2 m · plastics · DC · Wiring diagram no. 10

	1	FE/FT-11	Red	0...2 m	0...100 mm	H/D PNP/NPN	10...30	7	OBF502

Type OBF · M8 connector · plastics · DC · Wiring diagram no. 11 · Connector groups 1, 3, 145

	1	FE/FT-11	Red	0...2 m	0...100 mm	H/D PNP/NPN	10...30	6	OBF503

Acrylic fibre optics for OBF / OOF housings, through-beam system

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Drawing no.	Order no.
	FE-11	PMMA	60 / 130 / 160	aluminium	-40...70	PE (polyethylene)	8	E20609
	FE-11	PMMA	60 / 130 / 160	aluminium	-40...70	PE (polyethylene)	9	E20612
	FE-11	PMMA	150 / 210 / 800	aluminium	-40...70	PE (polyethylene)	9	E20615
	FE-11	PMMA	150 / 300 / 700	aluminium	-40...70	PE (polyethylene)	10	E20757
	FE-11	PMMA	200 / 350 / 800	aluminium	-40...70	PE (polyethylene)	11	E20603
	FE-11	PMMA	200 / 450 / 800	aluminium	-40...70	PE (polyethylene)	9	E20606
	FE-11	PMMA	400 / 900 / 1600	aluminium	-40...70	PE (polyethylene)	12	E20753
	FE-11	PMMA	1200 / 2000 / 3800	aluminium	-40...70	PE (polyethylene)	13	E20752
	FE-11	PMMA	140 / 230 / 400	stainless steel	-40...70	PE (polyethylene)	14	E20714
	FE-11	PMMA	200 / 450 / 800	stainless steel 316L / 1.4404	-40...70	PE (polyethylene)	15	E20750

Acrylic fibre optics for OBF / OOF housings, through-beam system, highly flexible

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Drawing no.	Order no.
	FE-11	PMMA	50 / 56 / 120	aluminium	-40...60	PE (polyethylene)	8	E21103
	FE-11	PMMA	50 / 56 / 120	aluminium	-40...60	PE (polyethylene)	9	E21104
	FE-11	PMMA	250 / 350 / 750	aluminium	-40...60	PE (polyethylene)	9	E21102

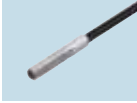


Position sensors

Acrylic fibre optics for OBF / OOF housings, diffuse reflection system

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Drawing no.	Order no.
	FT-11	PMMA	6 / 10 /	aluminium	-40...70	PE (polyethylene)	16	E20756
	FT-11	PMMA	20 / 25 / 60	aluminium	-40...70	PE (polyethylene)	17	E20639
	FT-11	PMMA	20 / 25 / 60	aluminium	-40...70	PE (polyethylene)	11	E20712
	FT-11	PMMA	60 / 70 / 300	aluminium	-40...70	PE (polyethylene)	18	E20645
	FT-11	PMMA	60 / 90 / 300	aluminium	-40...70	PE (polyethylene)	18	E20651
	FT-11	PMMA	60 / 70 / 300	aluminium	-40...70	PE (polyethylene)	19	E20648
	FT-11	PMMA	60 / 90 / 300	aluminium	-40...70	PE (polyethylene)	19	E20654
	FT-11	PMMA	70 / 100 / 300	aluminium	-40...70	PE (polyethylene)	19	E20633
	FT-11	PMMA	15 / 25 / 60	stainless steel	-40...70	PE (polyethylene)	20	E20748
	FT-11	PMMA	20 / 25 / 60	stainless steel	-40...70	PE (polyethylene)	21	E20711
	FT-11	PMMA	40 / 60 / 150	stainless steel	-40...70	PE (polyethylene)	22	E20715
	FT-11	PMMA	70 / 100 / 300	stainless steel	-40...70	PE (polyethylene)	23	E20749
	FE-11	PMMA	—	—	-30...70	PE (polyethylene)	24	E20772

Acrylic fibre optics for OBF / OOF housings, diffuse reflection system, highly flexible

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw- ing no.	Order no.
	FT-11	PMMA	10 / 10 / 30	aluminium	-40...60	PE (polyethylene)	25	E21106
	FT-11	PMMA	10 / 10 / 30	aluminium	-40...60	PE (polyethylene)	26	E21107
	FT-11	PMMA	70 / 104 / 180	aluminium	-40...60	PE (polyethylene)	27	E21105

Acrylic fibre optics for OBF / OOF housings, through-beam system, can be cut to length

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw- ing no.	Order no.
	FE-11	PMMA	175 / 370 / 700	aluminium	-40...70	–	28	E20767

Acrylic fibre optics for OBF / OOF housings, diffuse reflection system, can be cut to length

Type	System	Fibre optic material	Range OB50.. / OBF5.. / OO50.. [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw- ing no.	Order no.
	FT-11	PMMA	55 / 110 / 235	aluminium	-40...70	–	29	E20765

Acrylic fibres on a reel for OBF housing

Type	Description	Order no.
	acrylic fibres on a reel · 20 m · for type OBF, OOF · Housing materials: PE (polyethylene), Fibre optic: PMMA, can be cut to length	E20773
	acrylic fibres on a reel · 50 m · for type OBF, OOF · Housing materials: PE (polyethylene), Fibre optic: PMMA, can be cut to length	E20774



Position sensors

OOF amplifiers for glass fibre optics

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U _b [V]	Drawing no.	Order no.

Type OOF · M12 connector · plastics · DC · Wiring diagram no. 1 · Connector groups 14, 16, 17

	2	FE/FT-00	Red	0.4 m	0...200 mm	H/D PNP	12...36	30	OO5004

Type OOF · M12 connector · plastics · DC · Wiring diagram no. 6 · Connector groups 16, 17

	4	FE/FT-00	Red	0.4 m	0...200 mm	H/D PNP	12...36	31	OO5005

Type OOF · M16 connector · plastics · DC · Wiring diagram no. 7 · Connector group 27

	6	FE/FT-00	Red	0.4 m	0...200 mm	H/D PNP	12...36	32	OO5006

Type OOF · M16 connector · plastics · DC · Wiring diagram no. 8 · Connector group 27

	8	FE/FT-00	Red	0.4 m	0...200 mm	H/D PNP	12...36	33	OO5007

OKF amplifiers for glass fibre optics

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U _b [V]	Drawing no.	Order no.

Type OKF · Cable 2 m · plastics · DC · Wiring diagram no. 12

	1	FE/FT-00	Red	0...0.12 m	0...40 mm	H/D PNP	10...36	34	OK5001

Type OKF · M12 connector · plastics · DC · Wiring diagram no. 13 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	1	FE/FT-00	Red	0...0.12 m	0...40 mm	H/D PNP	10...36	35	OK5008

OUF amplifiers for glass fibre optics

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U _b [V]	Drawing no.	Order no.

Type OUF · Cable 2 m · plastics · DC · Wiring diagram no. 2

	1	FE/FT-00	Infrared	0.12 m	40 mm	H PNP	10...36	36	OU5001

Type	Number of input channels	For fibre optics	Type of light	Sensing range through beam	Sensing range diffuse	Output H = light-on D = dark-on	U _b [V]	Draw- ing no.	Order no.

Type OUF · Cable 2 m · plastics · DC · Wiring diagram no. 3

	1	FE/FT-00	Infrared	0.12 m	40 mm	D PNP	10...36	36	OU5002

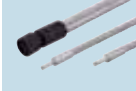
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	1	FE/FT-00	Infrared	0...0.12 m	0...40 mm	H PNP	10...36	37	OU5043

Type OUF · M12 connector · plastics · DC · Wiring diagram no. 5 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	1	FE/FT-00	Infrared	0...0.12 m	0...40 mm	D PNP	10...36	37	OU5044

Glass fibre optics for OOF / OKF and OUF housings, through-beam system

Type	System	Fibre optic material	Range OOF / OKF / OUF [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw- ing no.	Order no.
	FE-00	glass	400 / 120 / 120	aluminium	-20...80	PVC	38	E20059
	FE-00	glass	400 / 120 / 120	aluminium	-20...80	PVC	39	E20060
	FE-00	glass	400 / 120 / 120	aluminium	-20...80	PVC	40	E20062
	FE-00	glass	400 / 120 / 120	aluminium	-20...80	PVC	41	E20228
	FE-00	glass	160 / 50 / 50	stainless steel	-20...80	PVC	42	E20061
	FE-00	glass	400 / 120 / 120	aluminium	-40...290	aluminium	43	E20128
	FE-00	glass	400 / 120 / 120	aluminium	-40...290	aluminium	44	E20130
	FE-00	glass	400 / 120 / 120	aluminium	-40...290	aluminium	45	E20129
	FE-00	glass	160 / 50 / 50	stainless steel	-40...290	aluminium	46	E20127

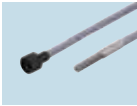


Position sensors

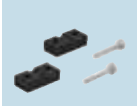
Type	System	Fibre optic material	Range OOF / OKF / OUF [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw- ing no.	Order no.
	FE-00	glass	160 / 50 / 50	stainless steel	-20...150	metal silicone	47	E20506
	FE-00	glass	400 / 120 / 120	stainless steel	-20...150	metal silicone	48	E20505
	FE-00	glass	400 / 120 / 120	stainless steel	-20...150	metal silicone	49	E20492
	FE-00	glass	400 / 120 / 120	stainless steel	-20...150	metal silicone	50	E20493

Glass fibre optics for OOF / OKF and OUF housings, diffuse reflection system

Type	System	Fibre optic material	Range OOF / OKF / OUF [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw- ing no.	Order no.
	FT-00	glass	200 / 40 / 40	aluminium	-20...80	PVC	51	E20051
	FT-00	glass	200 / 40 / 40	aluminium	-20...80	PVC	52	E20052
	FT-00	glass	200 / 40 / 40	aluminium	-20...80	PVC	53	E20054
	FT-00	glass	200 / 40 / 40	Brass	-20...80	PVC	54	E20249
	FT-00	glass	24 / 6 / 6	stainless steel	-20...80	PVC	55	E20230
	FT-00	glass	24 / 8 / 8	stainless steel	-20...80	PVC	42	E20053
	FT-00	glass	200 / 40 / 40	aluminium	-40...290	aluminium	56	E20055
	FT-00	glass	200 / 40 / 40	aluminium	-40...290	aluminium	57	E20056
	FT-00	glass	200 / 40 / 40	aluminium	-40...290	aluminium	58	E20058
	FT-00	glass	24 / 8 / 8	stainless steel	-40...290	aluminium	46	E20057

Type	System	Fibre optic material	Range OOF / OKF / OUF [mm]	Sensing head material	Ambient temperature [°C]	Sheathing material	Draw- ing no.	Order no.
	FT-00	glass	24 / 8 / 8	stainless steel	-20...150	metal silicone	47	E20507
	FT-00	glass	200 / 40 / 40	stainless steel	-20...150	metal silicone	59	E20489
	FT-00	glass	200 / 40 / 40	stainless steel	-20...150	metal silicone	60	E20494
	FT-00	glass	200 / 40 / 40	stainless steel	-20...150	metal silicone	53	E20495
	FT-00	glass	- / 40 / 40	Brass	-20...80	–	61	E20078

Accessories

Type	Description	Order no.
	Lens attachment · Ø 5 mm / M3 · for through-beam fibre optics · Housing materials: aluminium black anodised / glass	E20679
	Lens attachment · Ø 6 mm / M4 · for through-beam fibre optics · Housing materials: aluminium black anodised / glass	E20680
	Lens attachment · D5x10-M3-ALU · for through-beam fibre optics · M3 · Housing materials: aluminium black anodised	E20754
	Lens attachment · D5x10-M4-ALU · for through-beam fibre optics · M4 · Housing materials: aluminium black anodised	E20755
	Diaphragm attachment · D5x10-M3-ALU/D0.4 · for through-beam fibre optics · M3 · Housing materials: aluminium black anodised	E20762
	Angle bracket · for type OBF · Housing materials: steel galvanised	E20593
	Angle bracket · OU · with mounting material · Housing materials: galvanised steel	E20211
	Mounting clamp · Ø 3 mm · for fibre optics · Housing materials: aluminium black anodised	E20107
	Mounting clamp · Ø 3.5 mm · for fibre optics · Housing materials: aluminium black anodised	E20106



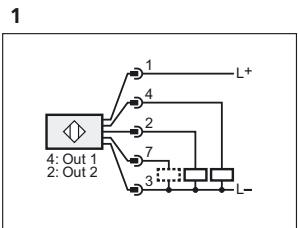
Position sensors

Type	Description	Order no.
	Mounting clamp · Ø 4.5 mm · for fibre optics · Housing materials: aluminium black anodised	E20105
	Mounting clamp · Ø 5 mm · for fibre optics · Housing materials: aluminium black anodised	E20104
	Mounting clamp · Ø 6 mm · for fibre optics · Housing materials: aluminium black anodised	E20103
	Mounting clamp · Ø 7 mm · for fibre optics · Housing materials: aluminium black anodised	E20102
	Mounting clamp · Ø 8 mm · Housing materials: aluminium black anodised	E10221
	Mounting clamp · Ø 10 mm · for fibre optics · Housing materials: PBT	E20353
	cutter for fibre optics · for type FE/FT-11 · Housing materials: plastics	E20600

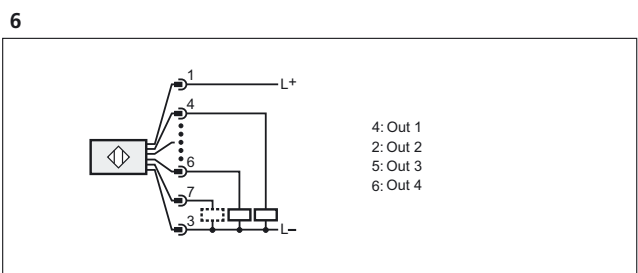
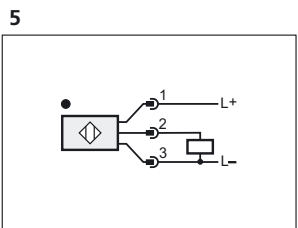
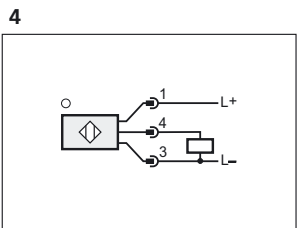
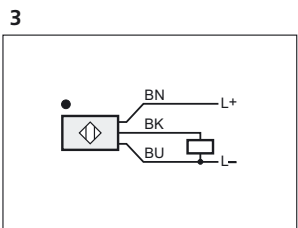
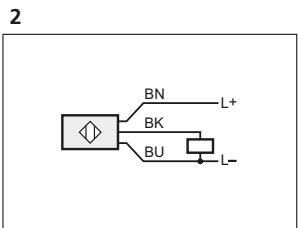
Wiring diagrams

Core colours

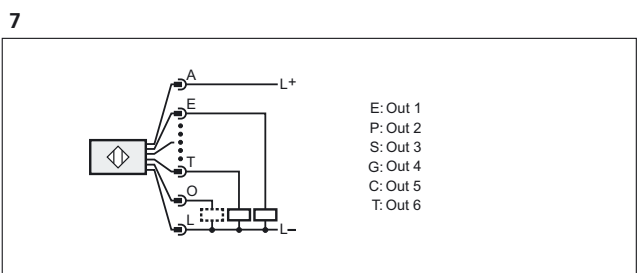
BK	black
BN	brown
BU	blue
VT	purple
WH	white



7: function check

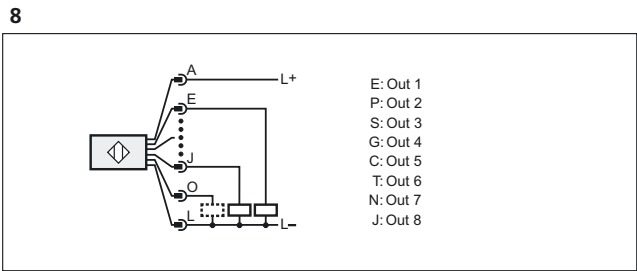


7: function check

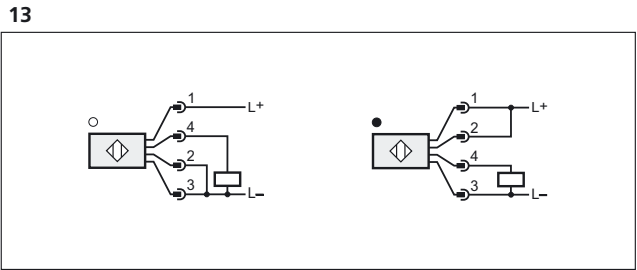
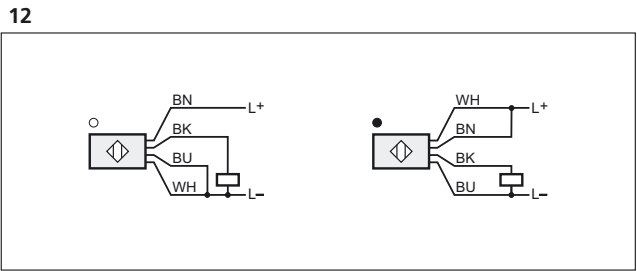
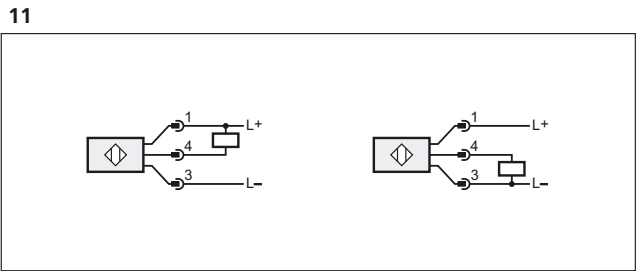
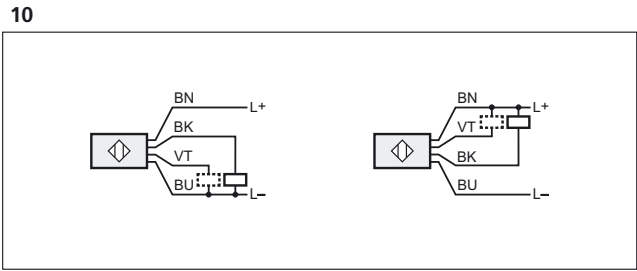
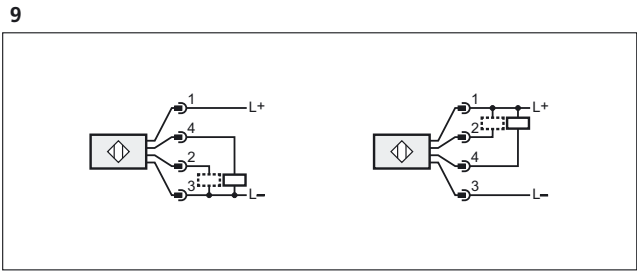


O: function check

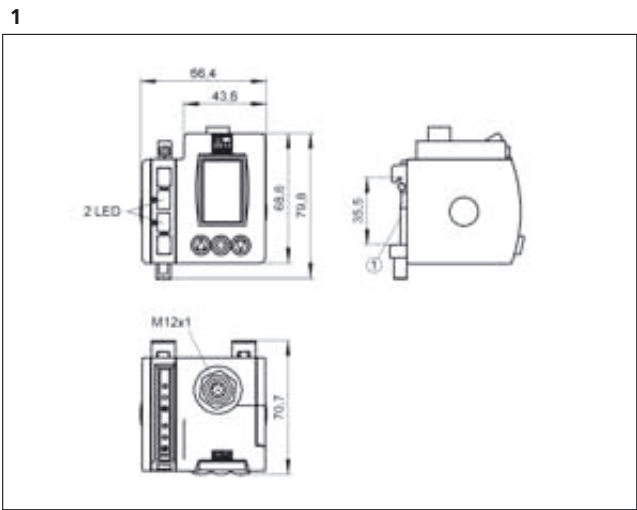
Wiring diagrams



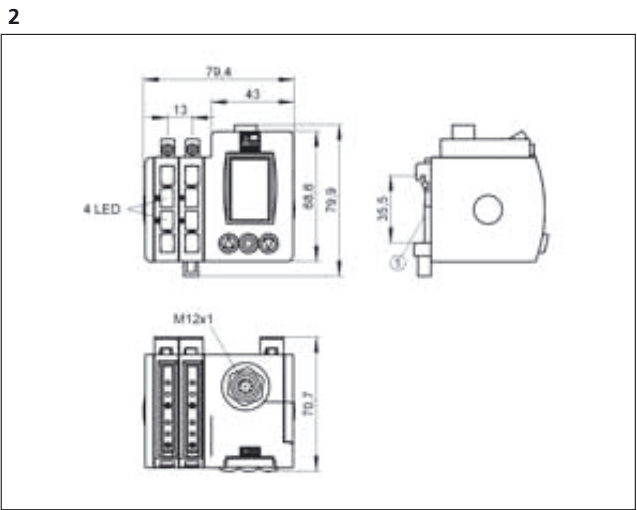
O: function check



Scale drawings / drawing no. – CAD download: www.ifm.com



1: Mounting on DIN rail



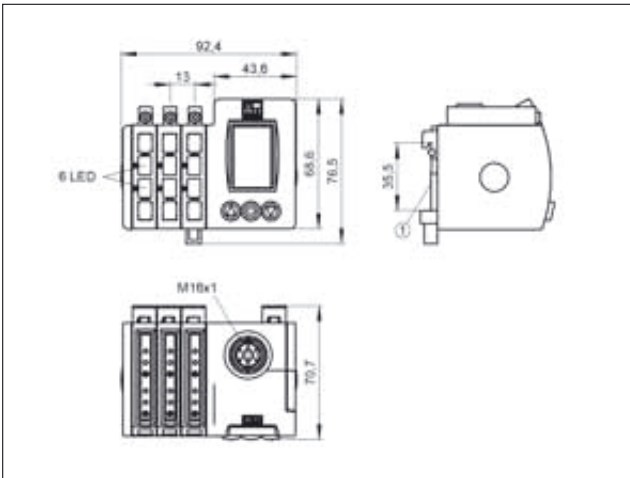
1: Mounting on DIN rail



Position sensors

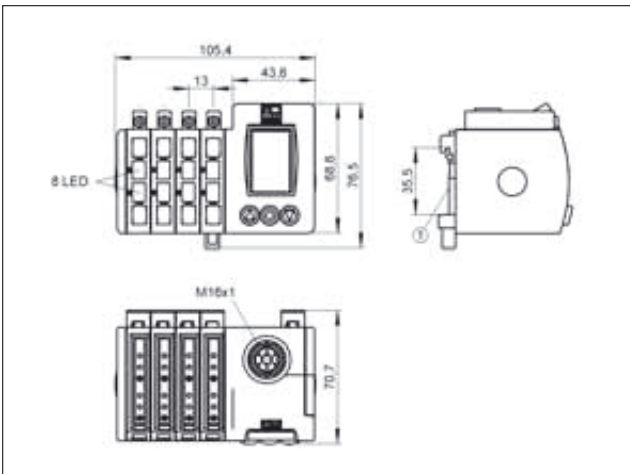
Scale drawings / drawing no. – CAD download: www.ifm.com

3



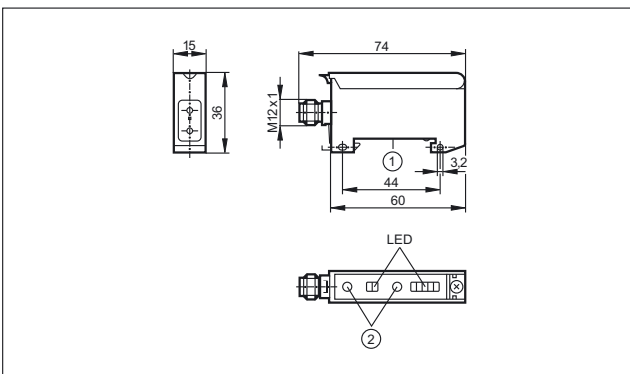
1: Mounting on DIN rail

4



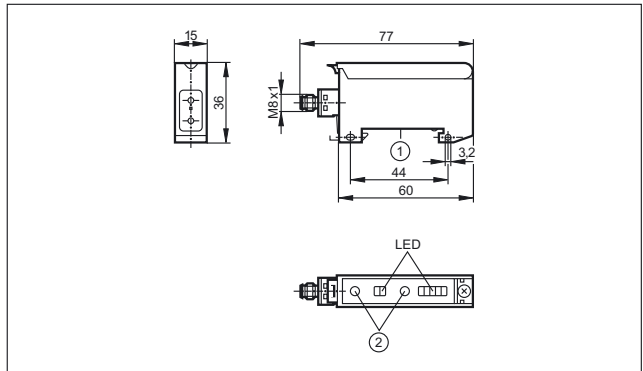
1: Mounting on DIN rail

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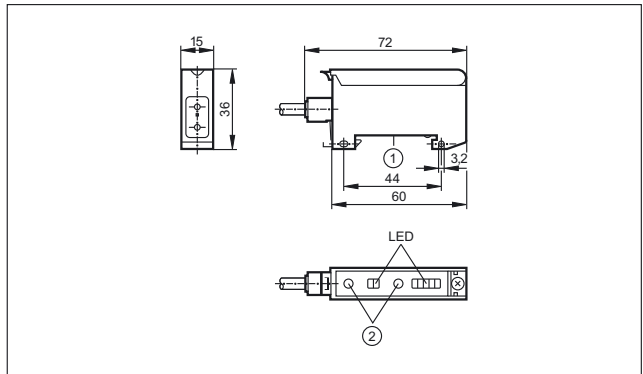
1: Mounting on DIN rail, 2: setting pushbuttons

6



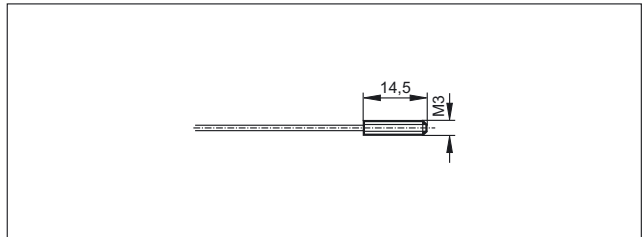
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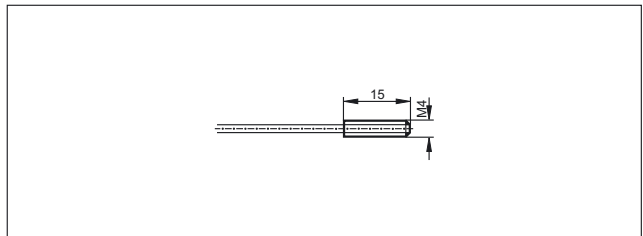


1: Mounting on DIN rail, 2: setting pushbuttons

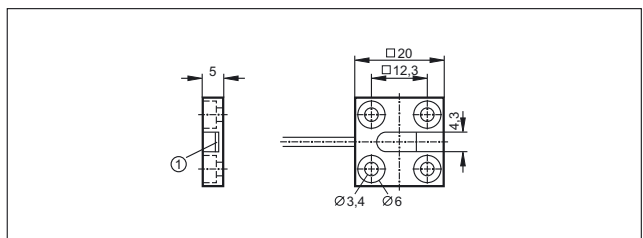
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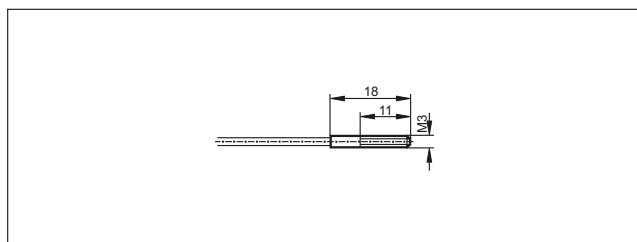
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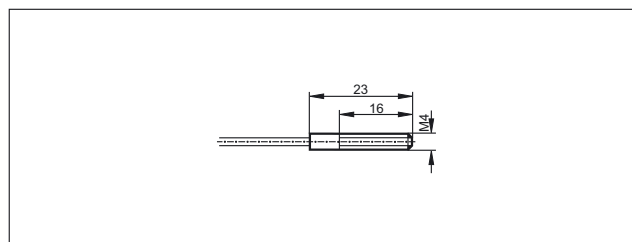
1: Sensing surface

Scale drawings / drawing no. – CAD download: www.ifm.com

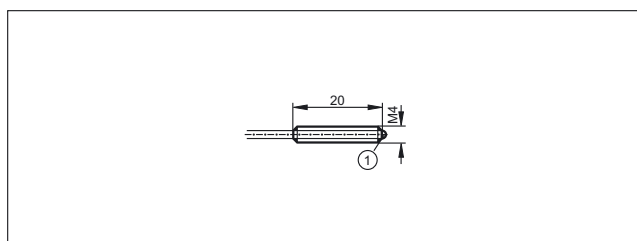
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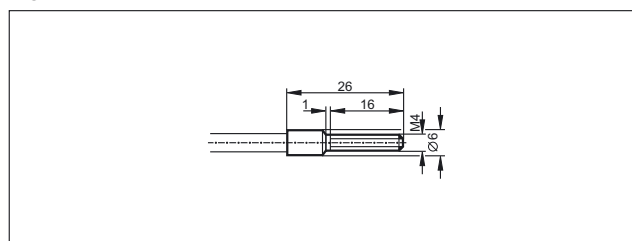
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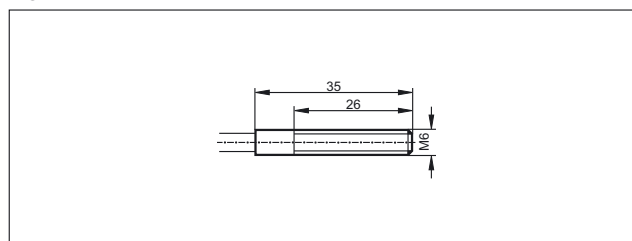


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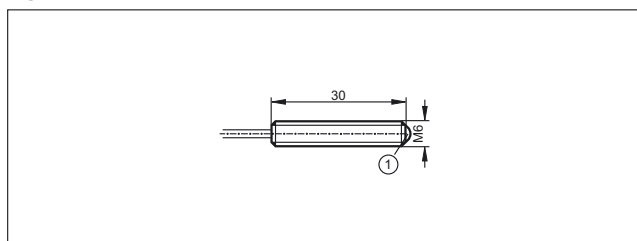


1: glass lens

19

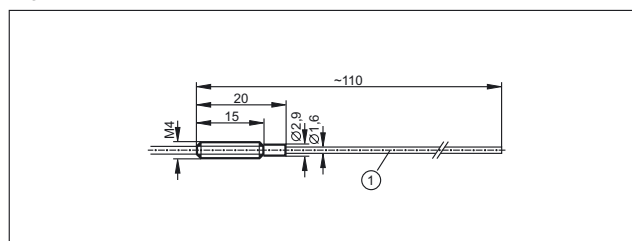


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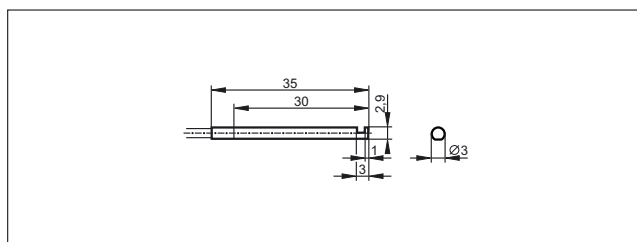
1: glass lens

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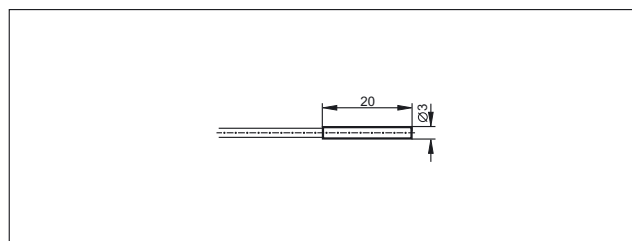


1: bendable

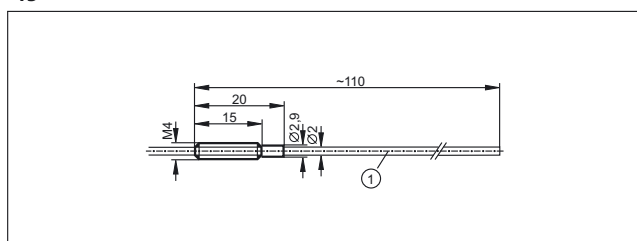
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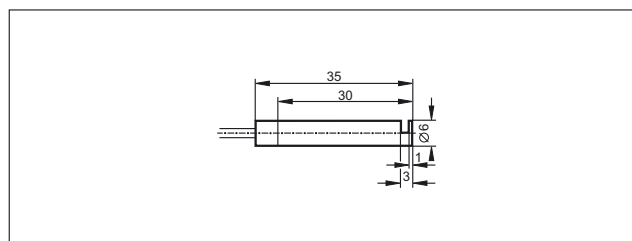


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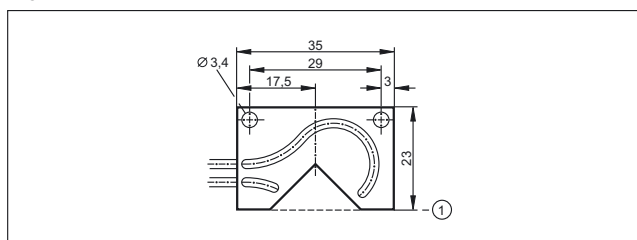


1: bendable

22



16



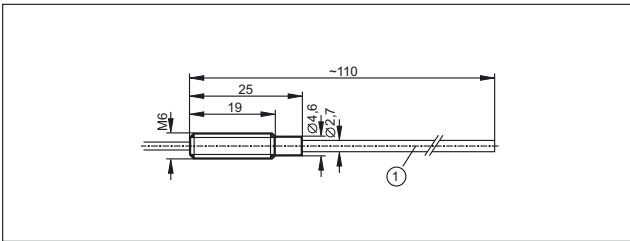
1: Reference edge



Position sensors

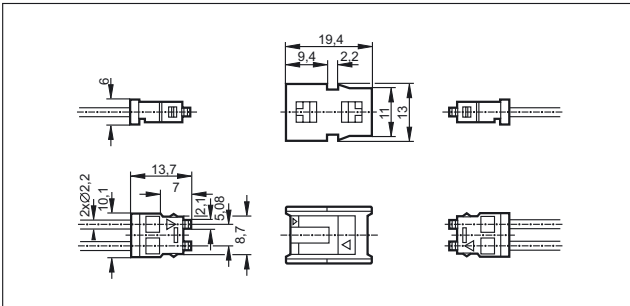
Scale drawings / drawing no. – CAD download: www.ifm.com

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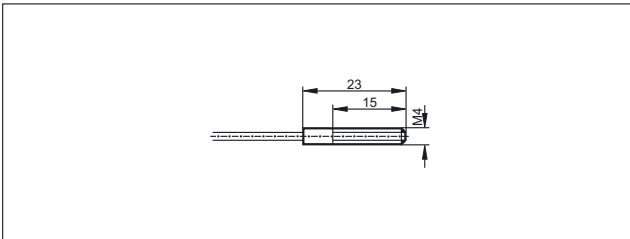


1: bendable

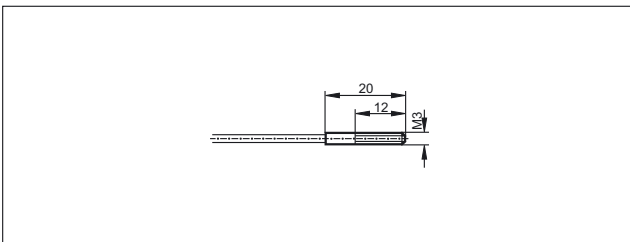
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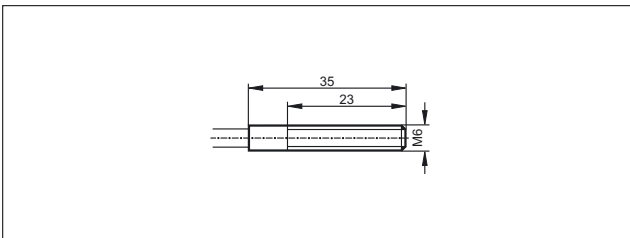
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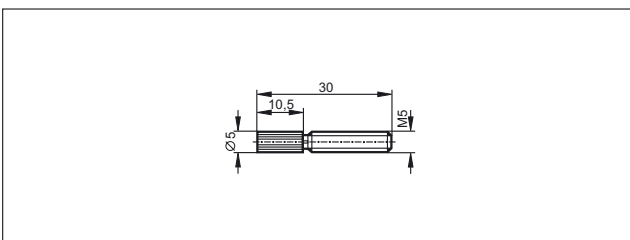
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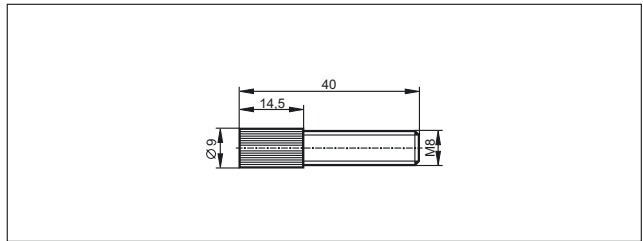
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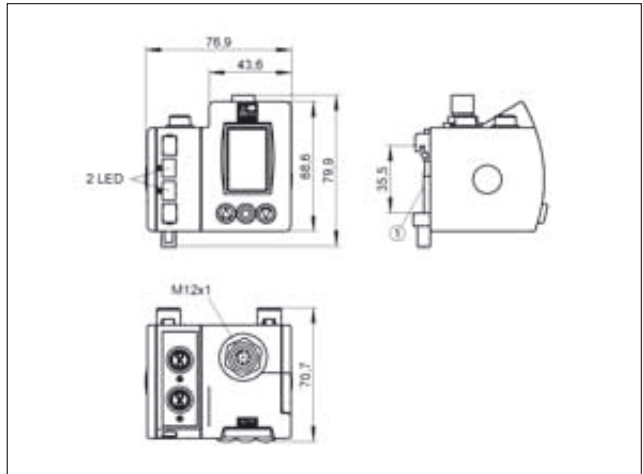
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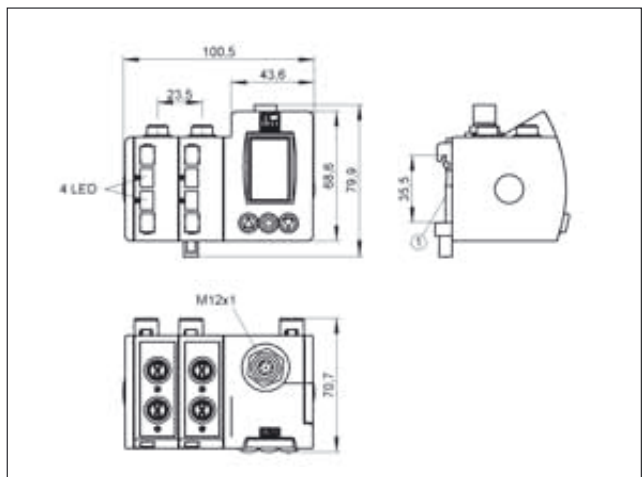


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1: Mounting on DIN rail

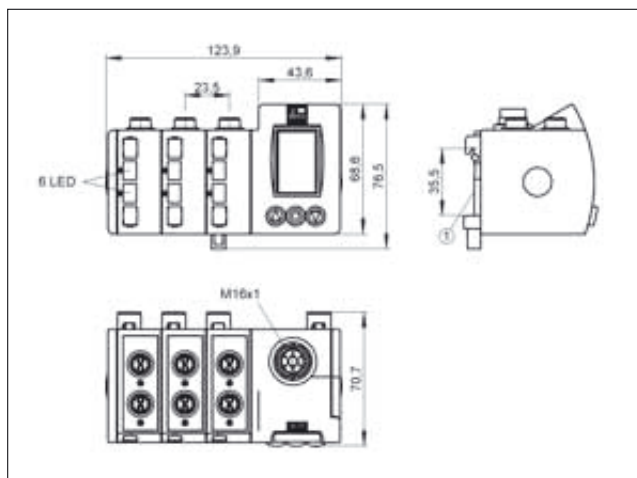
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1: Mounting on DIN rail

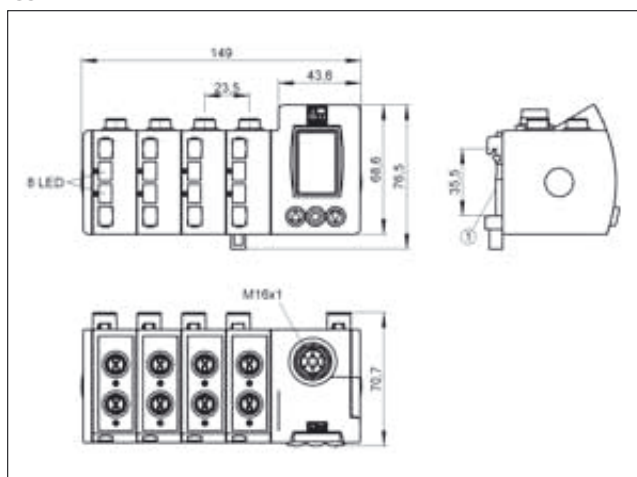
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32



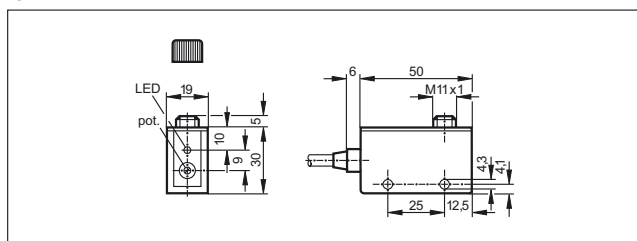
1: Mounting on DIN rail

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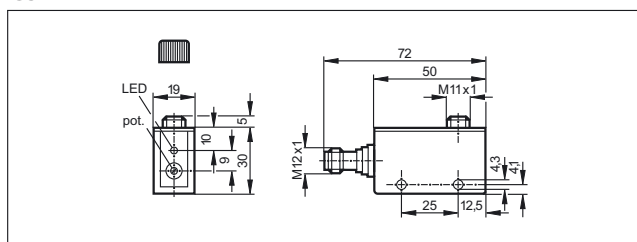


1: Mounting on DIN rail

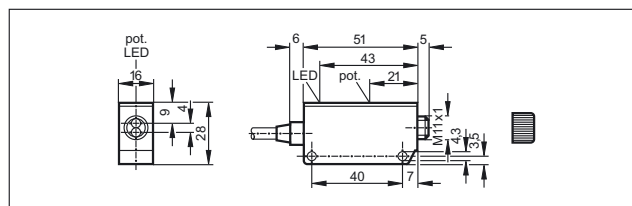
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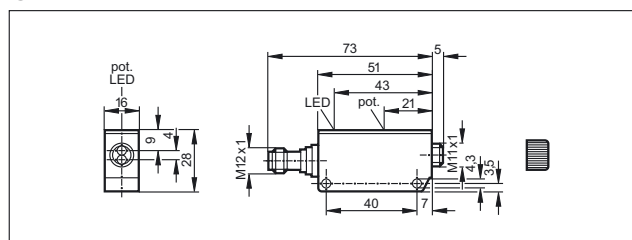
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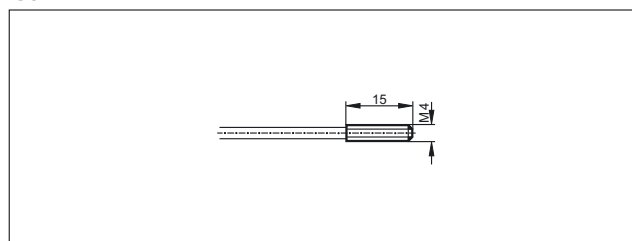
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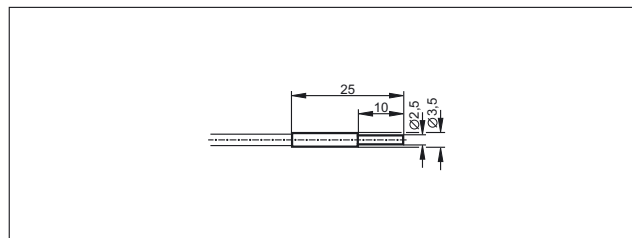
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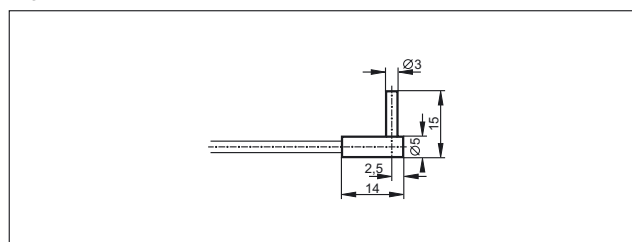
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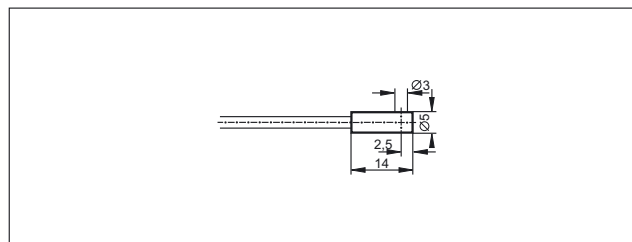
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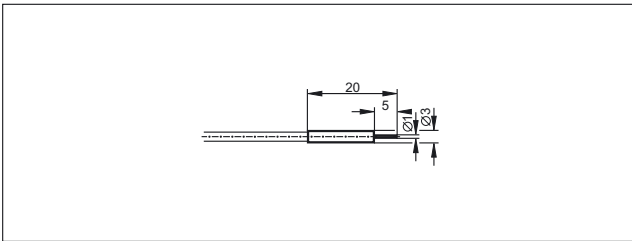




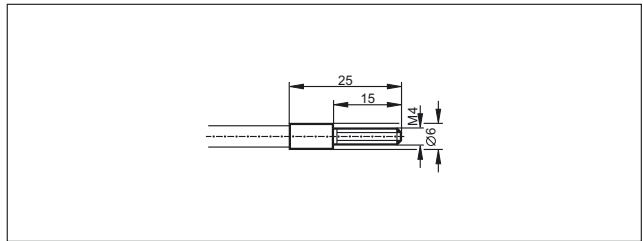
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

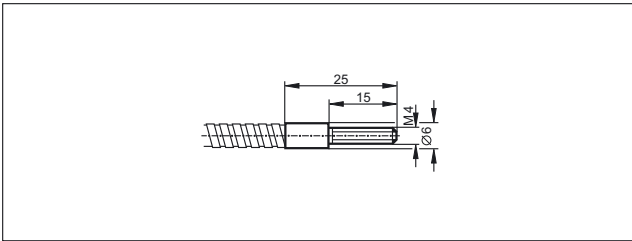
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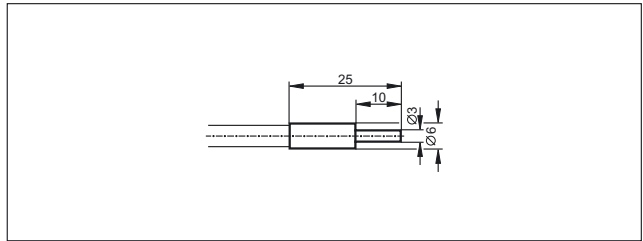
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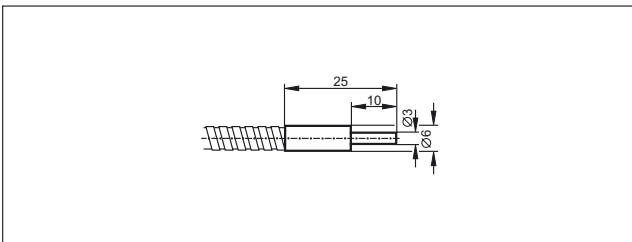
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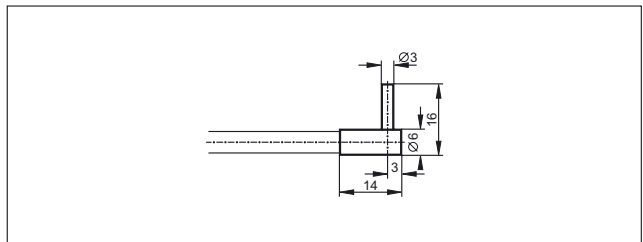
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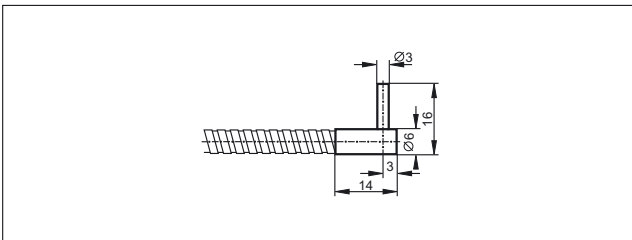
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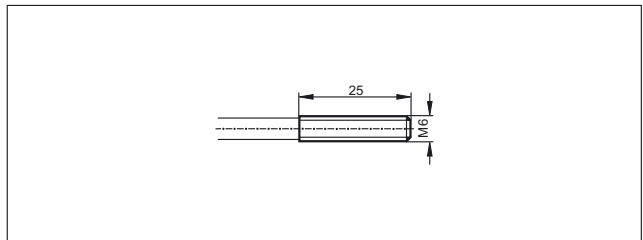
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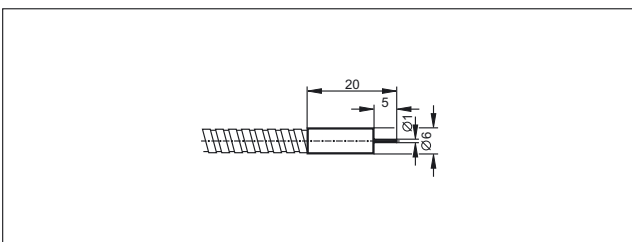
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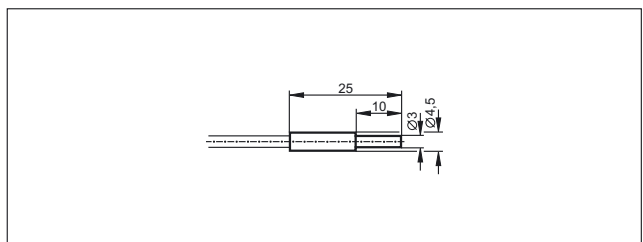
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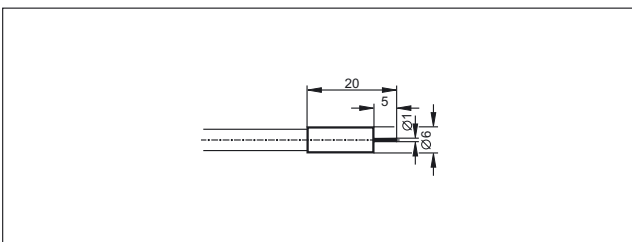
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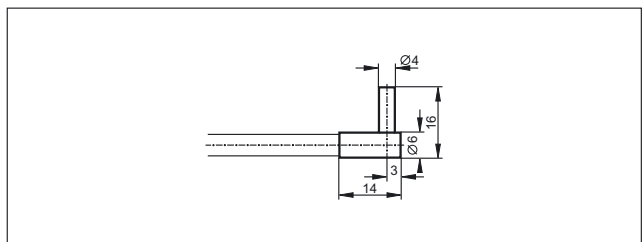
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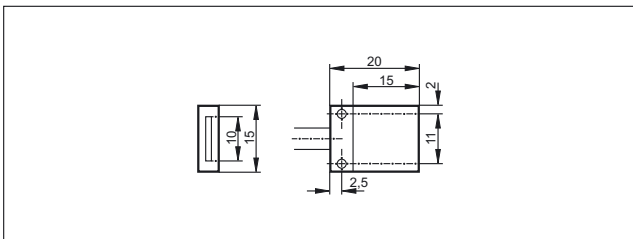


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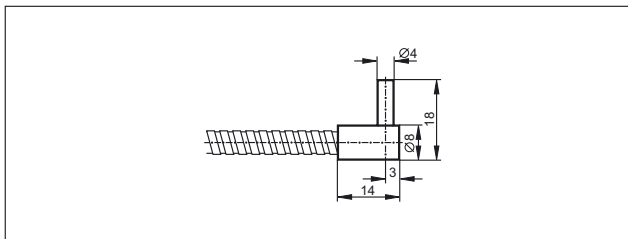


Scale drawings / drawing no. – CAD download: www.ifm.com

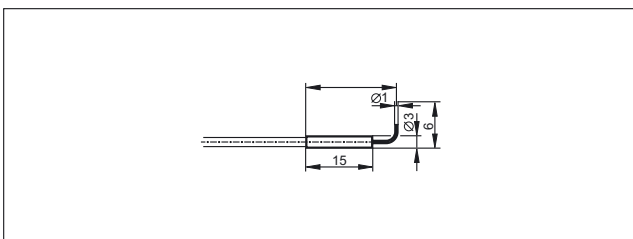
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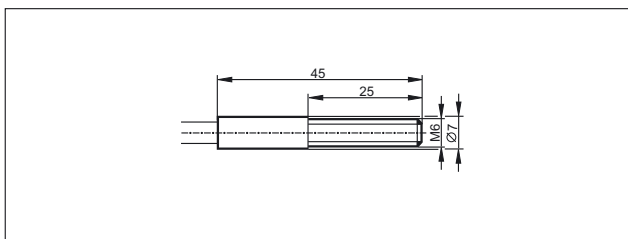
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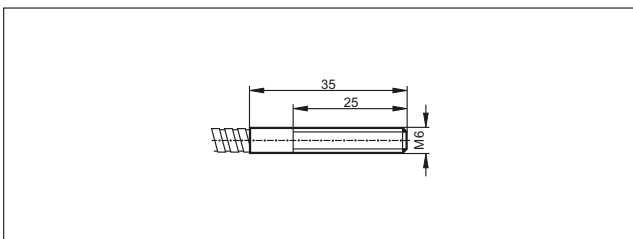
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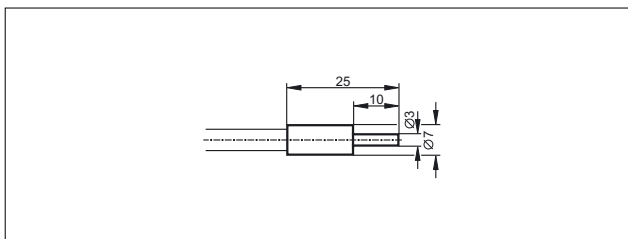
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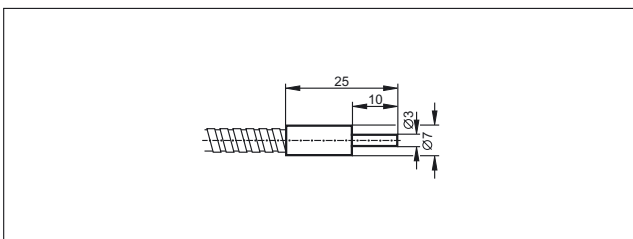
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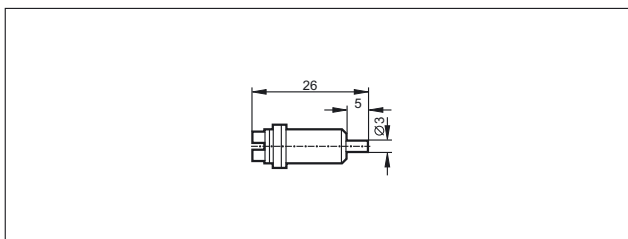
60



57



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First-class photo-electric systems for flexible use



Photoelectric sensors
for specific applications



High-quality photoelectric sensors for different applications

Excellent price / performance ratio

Easy adjustment via teach buttons or potentiometer

Wide range of system components for easy and secure mounting



Detection of transparent objects

ifm offers a retro-reflective sensor with a small switching hysteresis, in particular for the detection of transparent objects.

Contrast sensor

The O5 contrast sensor is particularly suited to detect print marks and very flat objects. With its RGB transmitter LED, the sensor detects even very small differences in contrast.

High-resolution colour sensor

With the five selectable tolerance steps, the colour sensor perfectly differentiates even the finest shades of colour from the background or other objects.

Photoelectric level measurement

Using the time of flight measurement principle, the O1 determines the distance to an object to the nearest millimetre. Installed in the top of a tank, it can detect the level without contact.

System overview	Page
Sensors for the detection of transparent objects	318
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Sensors for colour detection	318
Rectangular housing O1 for optical level measurement, laser class 2	319
Prismatic reflector	319
Accessories OJ housing	319 - 320
Accessories O5 housing	320
Accessories for system components	320 - 321
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Position sensors

Sensors for the detection of transparent objects

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

Retro-reflective sensor · PVC cable 0.15 m · with M12 connector · 10...30 DC · plastics · IP67 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	Polarisation filter	0.2...1.5 m	Red	64	H/D PNP	1	1	OJ5191
	Polarisation filter	0.2...1.5 m	Red	64	H/D PNP	1	2	OJ5190

Retro-reflective sensor · M8 connector · 10...30 DC · plastics · IP67 · Connector groups 4, 5, 80, 86, 147

	Polarisation filter	0.2...1.5 m	Red	64	H/D PNP	2	3	OJ5186
	Polarisation filter	0.2...1.5 m	Red	64	H/D NPN	3	3	OJ5189
	Polarisation filter	0.2...1.5 m	Red	64	H/D PNP	2	4	OJ5185

Retro-reflective sensor · M12 connector · 10...36 DC · plastics · IP67 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205

	Polarisation filter	0...3 m	Red	80	H/D PNP/NPN	5	5	O5G500

Contrast sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Wiring diagr. no.	Draw- ing no.	Order no.

M12 connector · 10...36 DC · plastics · IP67 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 203, 204, 205

	Diffuse contrast sensor	18...22 mm	RGB	1.5 x 5	H/D PNP/NPN	6	6	O5K500

Sensors for colour detection

Type	Operating principle	Measuring range	Light spot diameter [mm]	U _b [V]	Current consumption [mA]	Sampling rate / switching frequency [Hz]	Draw- ing no.	Order no.

M12 connector · Output function light-on / dark-on programmable · DC PNP/NPN · Wiring diagram no. 4 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205

	Colour sensor	15...19 mm	2.5 x 6	10...36	50	2000	6	O5C500

Rectangular housing O1 for optical level measurement, laser class 2

Type	Operating principle	Range	Sampling rate [Hz]	Spot Ø at max. range [mm]	U _b [V]	Wiring diagr. no.	Drawing no.	Order no.

Output function OUT1: normally open / closed programmable OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scalable) · Wiring diagram no. 7 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Optical level sensor	0.2...10 m	1...33	< 15 x 15	18...30	7	7	O1D300

Prismatic reflector

Type	Description	Order no.

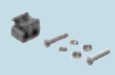
	Prismatic reflector · 48 x 48 mm · rectangular · for retro-reflective laser sensors and glass and film detection · Housing materials: plastics	E20722

Accessories OJ housing

Type	Description	Order no.

	Angle bracket · for type OJ · Housing materials: high-grade stainless steel	E20984

	Basic clip · OJ · Housing materials: high-grade stainless steel	E20965

	Basic clip · OJ · Housing materials: diecast zinc	E20964

	Swivel-mount clip · for type OJ · Housing materials: diecast zinc	E20974

	Mounting set · OJ · for side lens · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E20968

	Mounting set · OJ · for side lens · Clamp mounting · free-standing M8 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E20969

	Mounting set · OJ · for side lens · rod mounting Ø 10 mm · Housing materials: clamp: diecast zinc / fixture: stainless steel 316Ti / 1.4571	E21095

	Mounting set · OJ · for side lens · Clamp mounting · rod mounting Ø 10 mm · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21222



Position sensors

Type	Description	Order no.
	Mounting set · OJ · for front lens · Clamp mounting · free-standing M8 · Housing materials: clamp: diecast zinc / fixture: stainless steel 316Ti / 1.4571	E20966
	Mounting set · OJ · for front lens · Clamp mounting · rod mounting · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: stainless steel	E21221

Accessories O5 housing

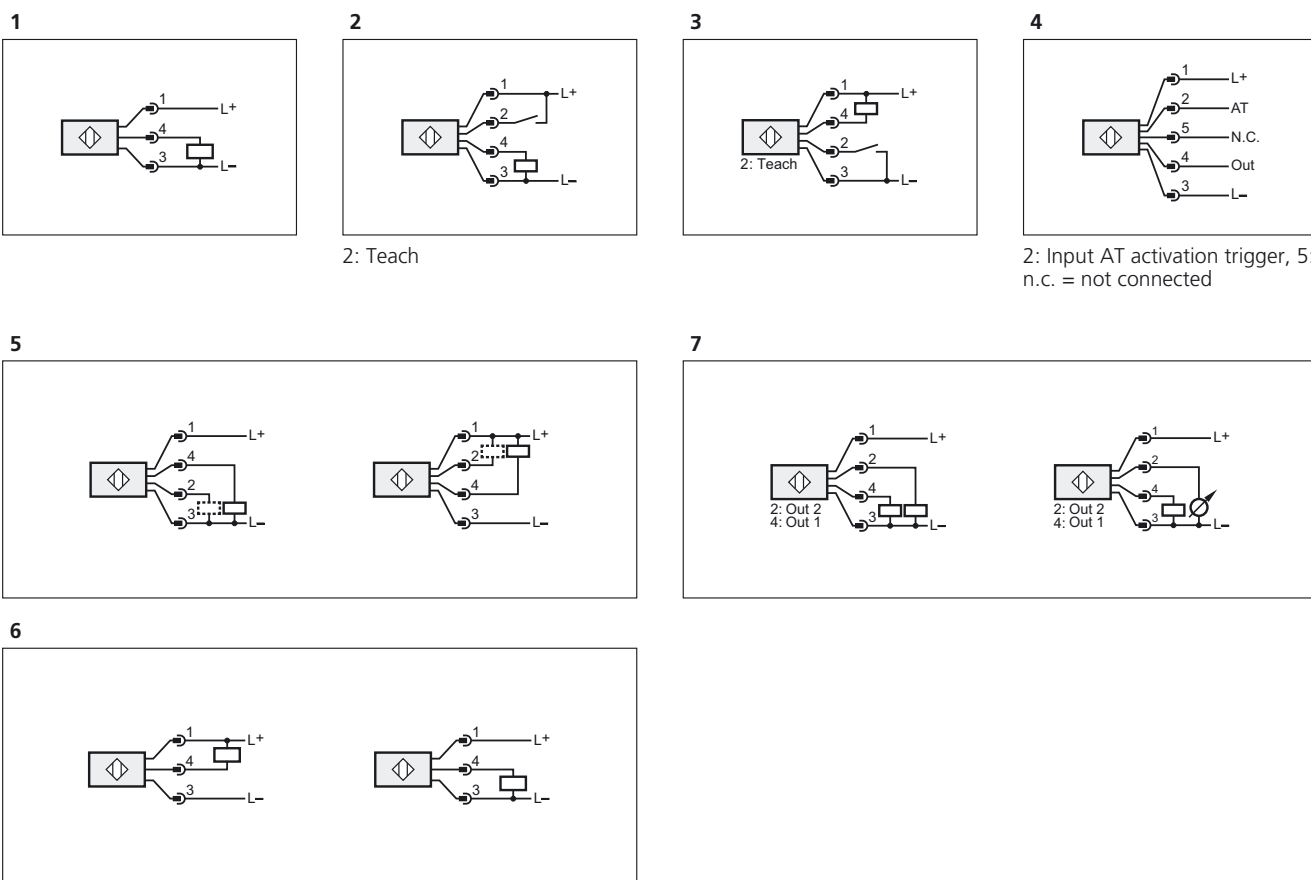
Type	Description	Order no.
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21085
	Angle bracket · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21087
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	E21223
	Mounting set · Clamp mounting · With protective cover · rod mounting Ø 12 mm · for type O5 · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21210
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: diecast zinc	E21211
	Mounting set · Clamp mounting · rod mounting Ø 12 mm · for type O5, O5D · Housing materials: stainless steel 316Ti / 1.4571 / clamp: high-grade stainless steel	E21212
	Mounting brackets Mounting on the back of the unit · for type O5 · Housing materials: stainless steel 316Ti / 1.4571	E21086
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	E21088

Accessories for system components

Type	Description	Order no.
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20938
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E20940

Type	Description	Order no.
	Head cap screw · M10 x 120 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: steel galvanised	E21213
	Head cap screw · M10 x 120 mm · ISO 4762 (DIN 912) · Free-standing M10 · Housing materials: screw: high-grade stainless steel	E21214
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	E20951

Wiring diagrams

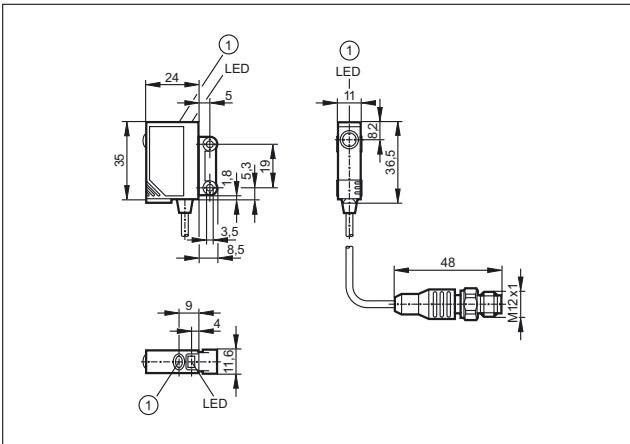




Position sensors

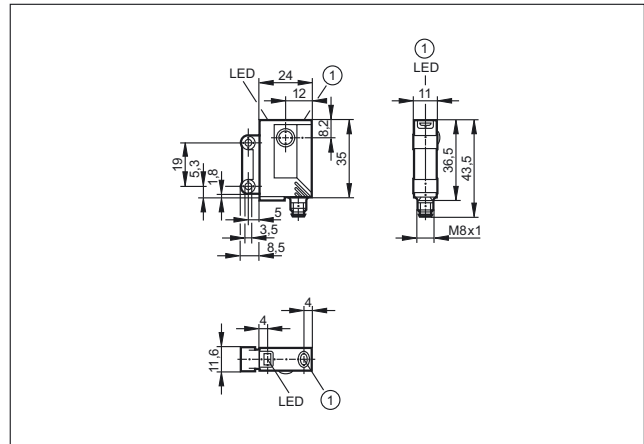
Scale drawings / drawing no. – CAD download: www.ifm.com

1



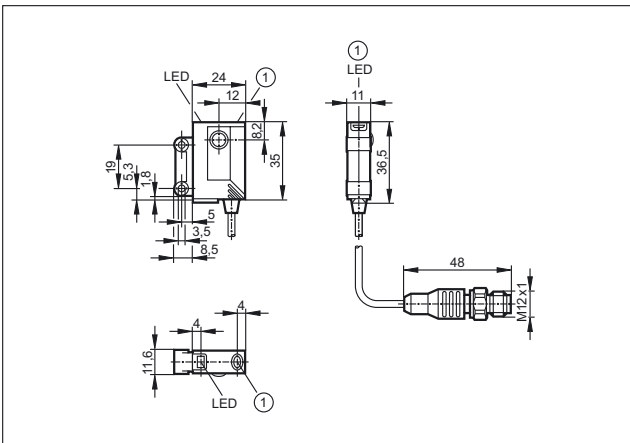
1: pushbutton

4



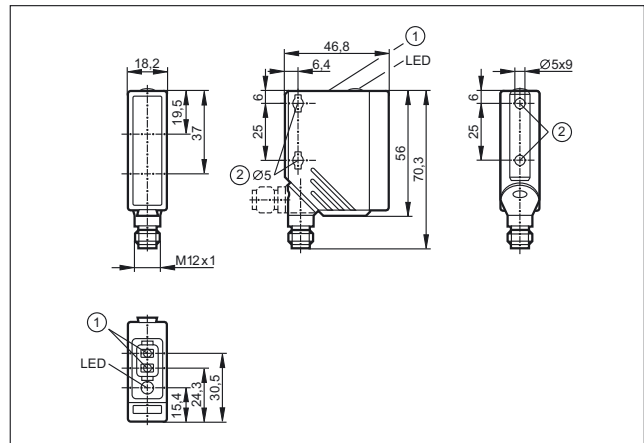
1: pushbutton

2



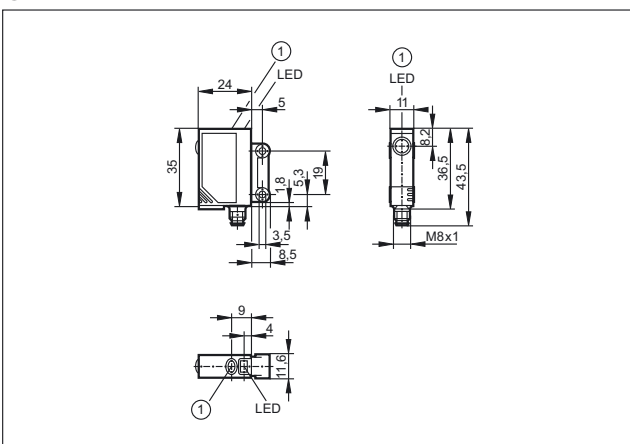
1: pushbutton

5



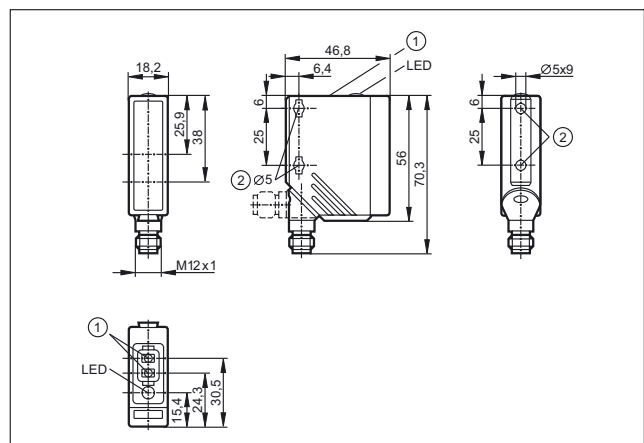
1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

3



1: pushbutton

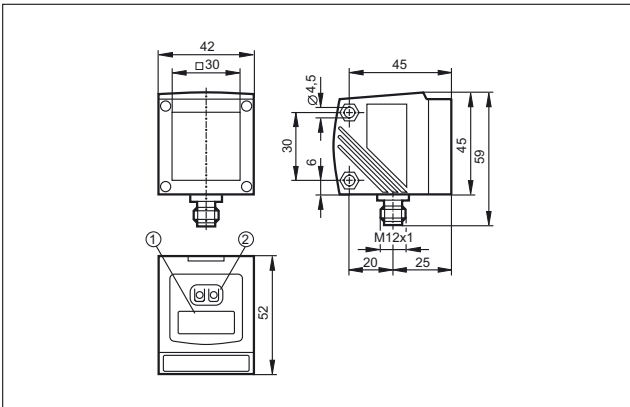
6



1: Programming buttons, 2: When a M5 mounting screw is used, the max. tightening torque is 2 Nm.

Scale drawings / drawing no. – CAD download: www.ifm.com

7



1: 4-digit alphanumeric display, 2: Programming buttons



Position sensors

Reliable valve position monitoring



Feedback systems for valves and valve actuators



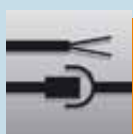
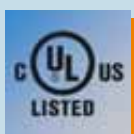
Dual inductive feedback sensors for pneumatic actuators and valves

Designed for simple fit to common actuators based on VDI / VDE 3845

AS-i valve sensor for quick and safe „plug & play“ installation

Position feedback for rising stem valves up to 80 mm

Permanent valve monitoring for condition-based maintenance



Dual sensor for quarter-turn actuators

A round switching cam, also called "puck", that has at least two metal screws positioned at 90° to each other or a version that is freely adjustable to any angle is mounted to the actuator shaft. The screws are located at a different height. Two inductive sensors detect the upper or lower metal screw depending on the valve position and thus the two switch positions of the actuator. This system operates reliably with no wear at all. It is resistant to external influence and insensitive to mechanical stress such as vibration and shock.

Sensor for rising stem valves

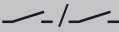
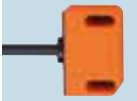
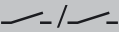
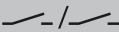
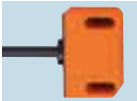
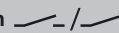
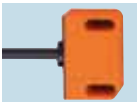
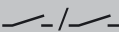
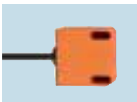
Two or three switch points can be set via pushbuttons over a stroke of 80 mm. Thanks to a resolution of 0.2 mm, the sensor detects even very small changes in the position of the valve. The inductive measuring principle guarantees wear-free non-contact operation.

System overview	Page
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Position sensors

Sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.
Cable 2 m · Output function  · DC PNP · Wiring diagram no. 1									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	1	IN5251
Terminals · Output function  · AC/DC · Wiring diagram no. 13									
	33 x 60 x 92	4 nf	PA (polyamide)	20...250	IP 67	25 / 50	350 / 100	2	IN0131*
Cable 6 m · Output function  · DC PNP · Wiring diagram no. 1									
	40 x 26 x 26	4 nf	PC (polycarbonate)	10...36	IP 67	1300	250	1	IN5304
Cable 10 m · Output function  · DC PNP · Wiring diagram no. 1									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	1	IN5323
Cable 2 m · Output function  · AC/DC · Wiring diagram no. 2									
	40 x 26 x 40	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	3	IN0110*
M12 connector · Output function  · DC PNP/NPN · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	4	IN5224
M12 connector · Output function  · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	40 x 26 x 47	4 nf	PBT	10...36	IP 67	250	250	5	IN5331
M12 connector · Output function  · DC PNP · Wiring diagram no. 4 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	4	IN5225
	40 x 26 x 47	4 nf	PBT	10...36	IP 67	1300	250	5	IN5327
M18 connector · Output function  · DC PNP · Wiring diagram no. 4 · Connector group 28									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	6	IN5285

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

M18 connector · Output function   · AC/DC · Wiring diagram no. 5 · Connector group 28

	40 x 26 x 40	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	7	IN0108*

Rd 24 x 1/8 connector 6 pins · Output function   · DC PNP · Connector groups 38, 44, 159, 160

	40 x 26 x 60	4 nf	PBT	10...36	IP 67	1300	250	8	IN5334

Terminals · Output function   · DC PNP · Wiring diagram no. 15

	33 x 60 x 92	4 nf	PA (polyamide)	10...30	IP 67	500	100	2	IN5409

f = flush / nf = non flush / qf = quasi-flush

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Sensors for industrial applications, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

M12 connector · AS-i · Wiring diagram no. 6 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 152, 153, 155, 184, 186, 188, 192, 193, 194, 202, 205

	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	–	9	AC2315

M12 connector · Output function transistor PNP · AS-i · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202

	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	100	10	AC2316

M12 connector · Output function transistor PNP · 2 inputs / 2 outputs · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202

	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	–	10	AC2317

f = flush / nf = non flush / qf = quasi-flush



Position sensors

Sensors with ATEX approval 1G / 2G and 1D

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 KΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 7 · Connector group 195

	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	11	NN5008

Cable 2 m · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 8

	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	1	NN5009

Cable 10 m · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 8

	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	140	1800	1	NN5011

M18 connector · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 9 · Connector group 28

	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	6	NN5013

Terminals · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 16

	33 x 60 x 92	4 nf	PA (polyamide)	8.2 DC	7.5...15 DC	–	–	500	2	NN504A

Terminals · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 17 · Connector group --

	33 x 60 x 92	4 nf	PA (polyamide)	8.2 DC	7.5...15 DC	–	–	500	12	NN505A

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 3D and / or 3G

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

M12 connector · Output function transistor PNP · 2 inputs / 2 outputs · Connector groups 196, 198

	55 x 60 x 35	4	PBT	26.5...31.6	IP 5x	–	–	13	AC327A

M12 connector · Output function transistor PNP · 2 inputs / 1 output · Connector groups 196, 198

	55 x 60 x 35	4	PBT	26.5...31.6	IP 5x	–	–	13	AC336A

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

M12 connector · Output function transistor PNP · 2 inputs / 1 output · Connector groups 196, 198

	55 x 60 x 35	4	PBT (Pocan)	26.5...31.6	IP 67	–	–	13	AC326A

M12 connector · Output function  /  · DC PNP · Wiring diagram no. 4 · Connector groups 196, 198

	40 x 26 x 47	4	PBT	10...30	IP 67	1300	100	14	IN507A

Cable 2 m · Output function  /  · DC PNP · Wiring diagram no. 1

	40 x 26 x 26	4	PBT	10...30	IP 67	1300	100	15	IN512A

Sensors for rising stem valves

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

Cable 2 m · Output function 1...5 V analogue · DC · Wiring diagram no. 10

	67.5 x 43 x 110	–	PA	18...36	IP 65 / IP 67	–	–	16	IX5002

Cable 2 m · Output function 3 x normally open · DC PNP · Wiring diagram no. 11

	67.5 x 43 x 110	–	PA	18...36	IP 65 / IP 67	–	100	17	IX5006

Cable with connector 0.3 m · Output function 3 x normally open · DC PNP · Wiring diagram no. 12 · Connector groups 152, 155, 186, 192, 194, 205

	65 x 52 x 110	–	PA	18...36	IP 65 / IP 67	–	100	18	IX5010
	65 x 43 x 110	0.2	PA	18...36	IP 65 / IP 67	–	100	19	ZZ0214

Sensors for rising stem valves, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

Cable with connector 0.15 m · AS-i · Wiring diagram no. 6 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 152, 153, 155, 184, 186, 188, 192, 193, 194, 202, 205

	65 x 52 x 110	–	PA	26.5...31.6	IP 65 / IP 67	–	–	18	IX5030



Position sensors

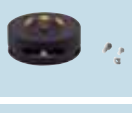
Added value packages with Bürkert solenoid valve

Type	Description	Order no.
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 20 mm · Hole spacing 80 mm · Connector	AC0017
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 80 mm · Connector	AC0019
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 130 mm · Connector	AC0020

Added value packages with Norgren Herion solenoid valve

Type	Description	Order no.
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 20 mm · Hole spacing 80 mm · Connector	AC0021
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 80 mm · Connector	AC0022
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 130 mm · Connector	AC0023

Switching cams for sensors with quarter-turn actuators

Type	Description	Order no.
	Target puck · Ø 53 mm · adjustable · Housing materials: Target puck: PA 6 black / Metal parts: stainless steel	E12516
	Target puck · Ø 53 mm · Housing materials: Target puck: PA 6 black / Metal parts: stainless steel	E12517
	Target puck · Ø 55 mm · Inverted function · Housing colour: black · Housing materials: Target puck: PVC / screws: high-grade stainless steel / Metal ring: stainless steel	E17205
	Target puck · Ø 102 mm · adjustable target screws · Housing colour: black · Housing materials: Target puck: PVC / screws: stainless steel 316Ti / 1.4571	E17119
	Target puck · Ø 102 mm · 3 possible switching flag positions · Housing colour: black · Housing materials: Target puck: PA 6 / screws: stainless steel	E17328

Type	Description	Order no.
	Target puck · Ø 102 mm · Housing colour: black · 8 possible switching flag positions · Housing materials: Target puck: PA 6 / screws: stainless steel	E17329
	direction indicator black · 12 x 4.8 · For target puck · Housing materials: POM	E17295
	direction indicator yellow · 12 x 4.8 · For target puck · Housing materials: POM	E17296
	Spacer · Housing materials: PA 6 black / screw: stainless steel	E12526

Accessories for quarter-turn actuator sensors

Type	Description	Order no.
	Spacer · 10 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	E10579
	Spacer · 3 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	E10584
	Spacer · 5 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	E10585
	Cable gland · M20 x 1.5 · Housing materials: PA 6.6	E12208
	Protective cap · M20 x 1.5 · Housing materials: PA 6.6	E12209
	Plug for covering the oblong holes · Housing materials: EPDM	E12212
	reinforcement bracket · for type IND · Housing materials: stainless steel 316Ti / 1.4571	E11310
	protective housing · Accessory for valve sensors · for type IND · Housing materials: stainless steel	E11984
	Mounting kit · MS-MEC-KU-RA--F04A · for ball valve Mecafrance ISO5211/F04 DN25 PN40 · Detection of the "ON/OFF" position by means of the IND dual sensor	E10597



Position sensors

Accessories for rising stem valve sensors

Type	Description	Order no.
	Mounting adapter · for Alfa Laval valves type SSV (Single Seat Valves) · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / target: stainless steel 316L / 1.4404 / screws: stainless steel / clamping device: stainless steel	E12470
	Mounting adapter · for Alfa Laval valves type LKLA-T (Butterfly Valves) · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / clamping device: stainless steel / target: stainless steel 316L / 1.4404 / screw: stainless steel / sealing: EPDM	E12476
	Mounting adapter · for SPX/APV valves type single seat valves · accessory for IX5010, IX5030 · Housing materials: flange: high-grade stainless steel / spacer: POM / target: stainless steel 316L / 1.4404	E12515
	Mounting adapter · for SPX/APV valves type butterfly valves · accessory for IX5010, IX5030 · Housing materials: flange: high-grade stainless steel / spacer: POM / target: stainless steel 316L / 1.4404 / sealing: FPM Shore hardness A 80° C	E12501
	Mounting adapter · for GEA single-seat valves · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / target: stainless steel 316L / 1.4404	E12478
	Mounting adapter · for Bardiani valves · accessory for IX5010, IX5030 · Housing materials: adapter: PA / target: stainless steel 316L / 1.4404	E12170

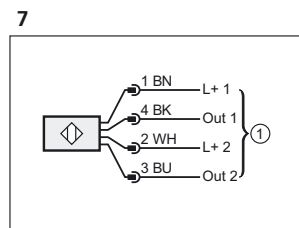
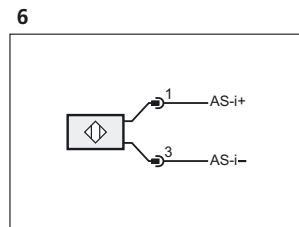
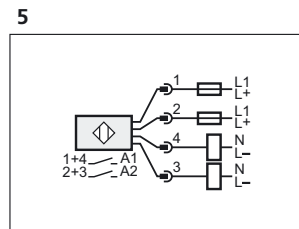
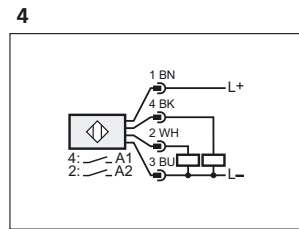
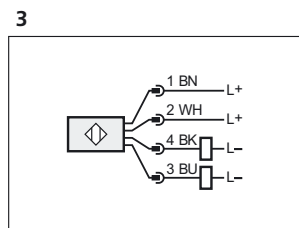
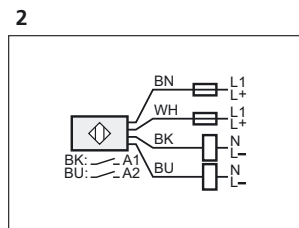
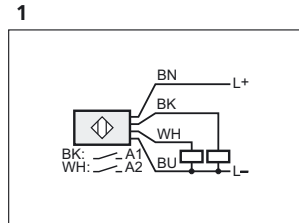
Accessories mounting sets

Type	Description	Order no.
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	E12519
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	E12520
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	E12521
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	E12522
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	E12523
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	E12524

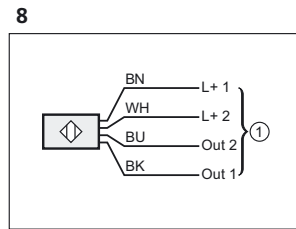
Wiring diagrams

Core colours

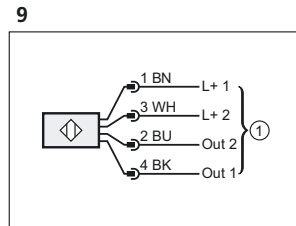
BN	brown
BU	blue
BK	black
WH	white
GY	grey



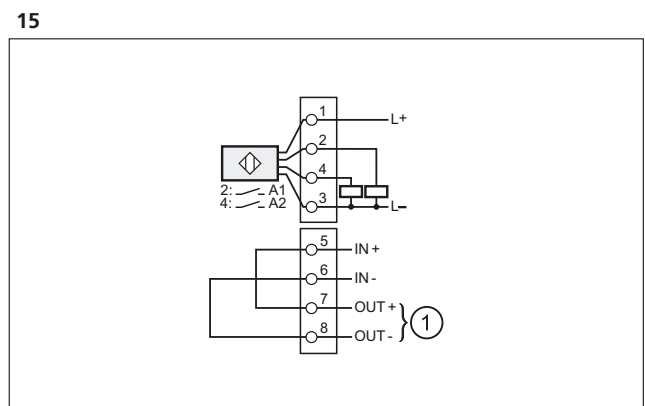
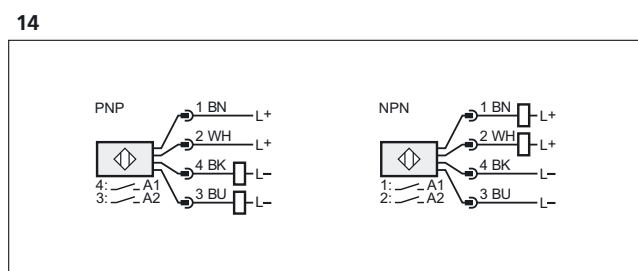
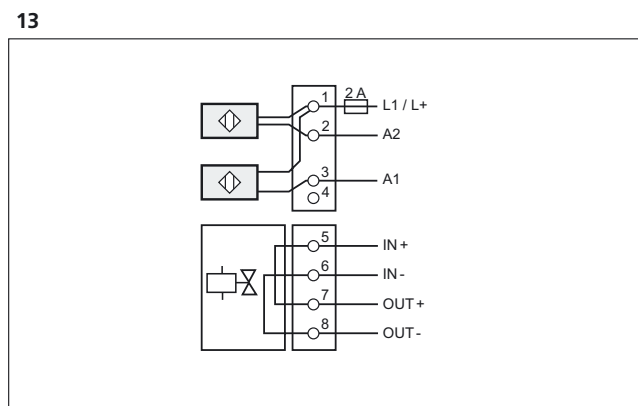
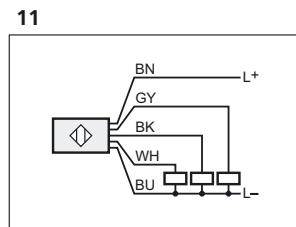
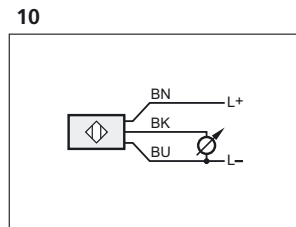
1: connection to NAMUR-amplifier



1: connection to NAMUR-amplifier



1: connection to NAMUR-amplifier



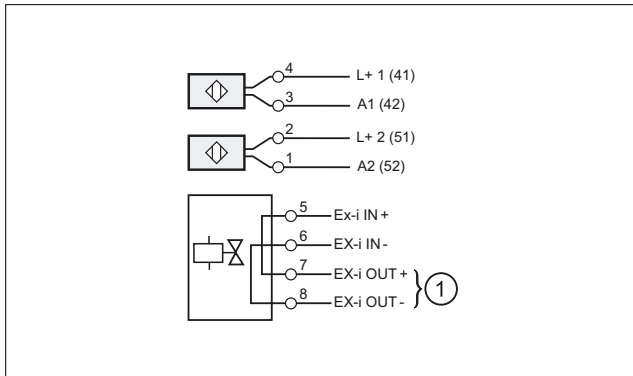
1: solenoid valve



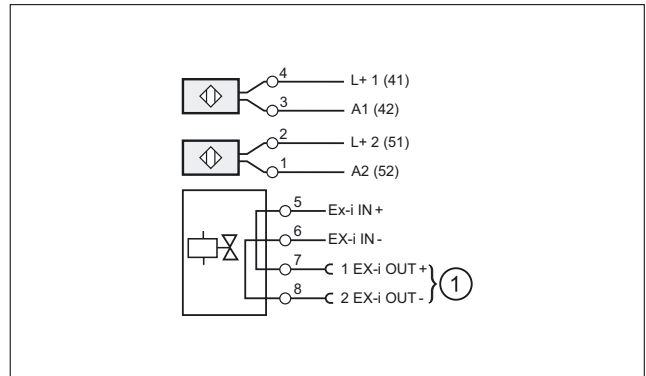
Position sensors

Wiring diagrams

16

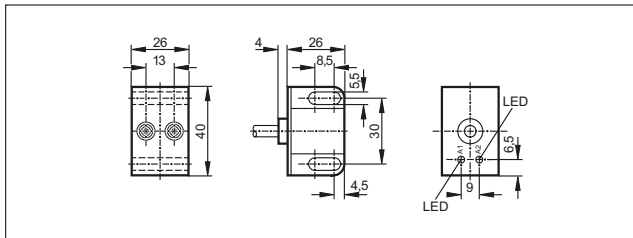


17

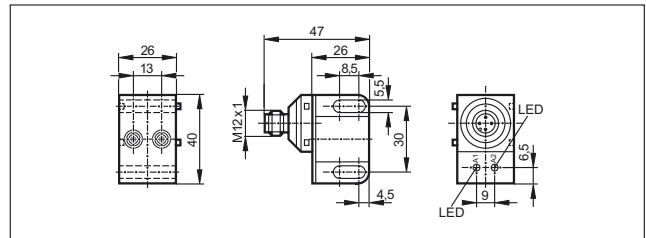


Scale drawings / drawing no. – CAD download: www.ifm.com

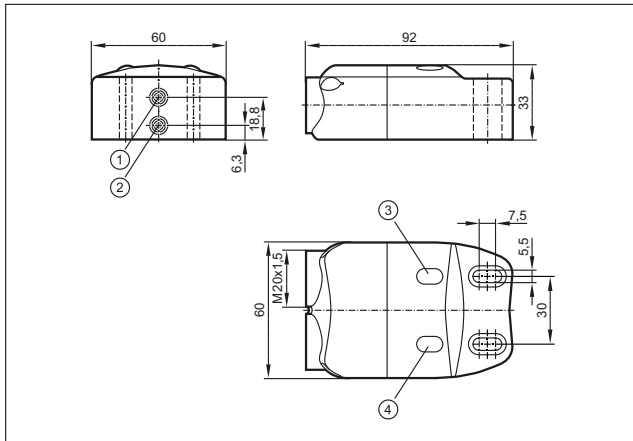
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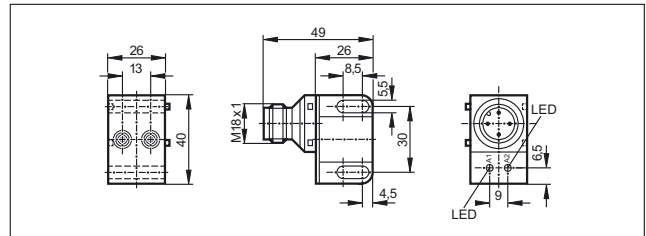
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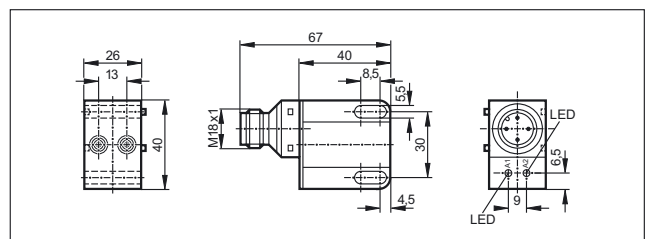
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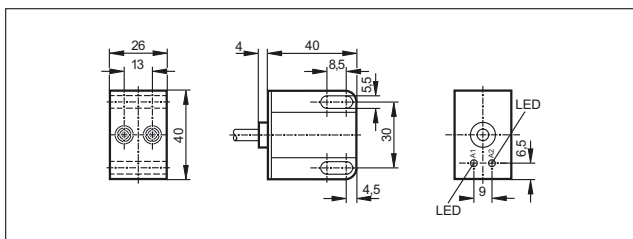


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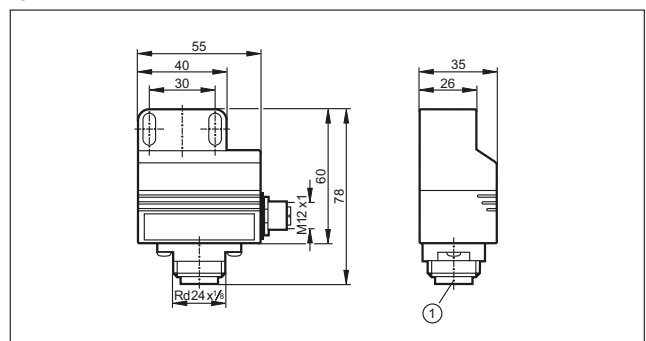


1: sensor 1, 2: sensor 2, 3: LED OUT 2, 4: LED OUT 1

3

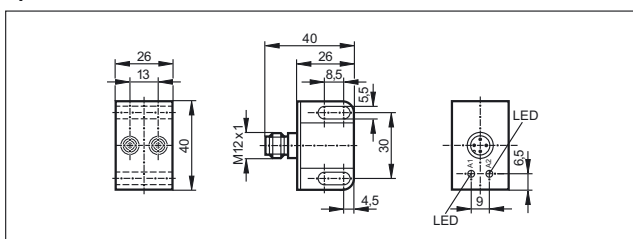


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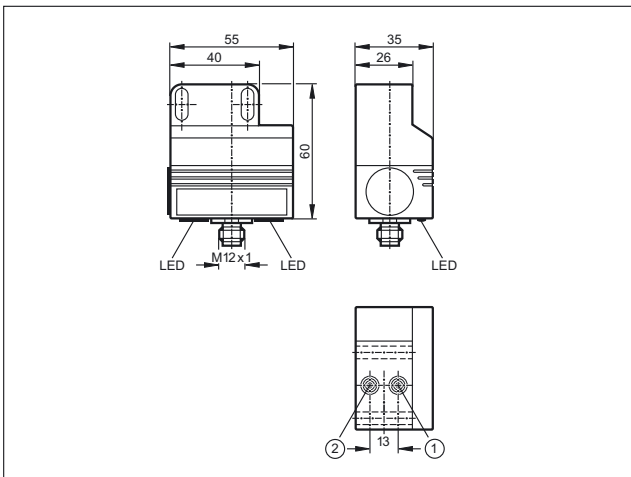
1: field connection

4



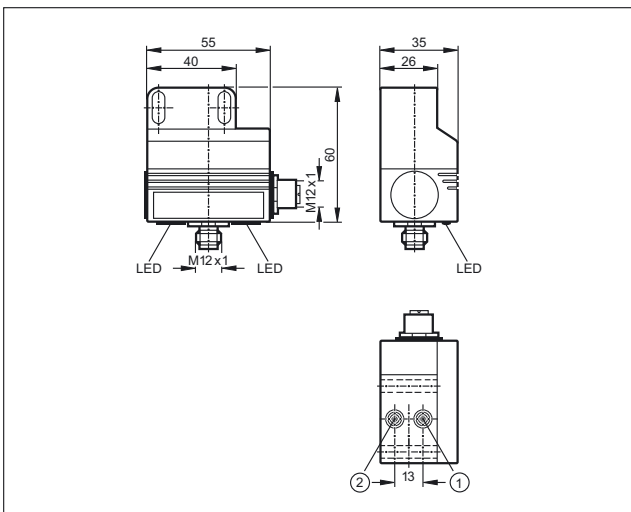
Scale drawings / drawing no. – CAD download: www.ifm.com

9



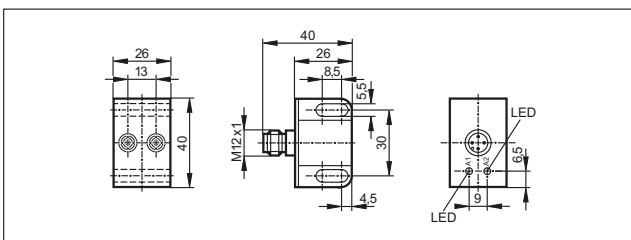
1: sensor 1, 2: sensor 2

10

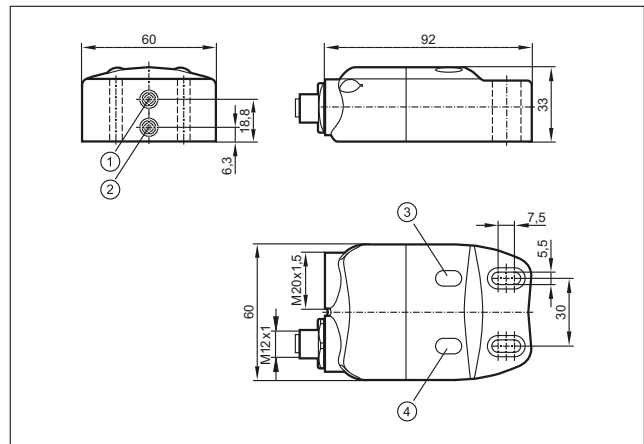


1: sensor 1, 2: sensor 2

11

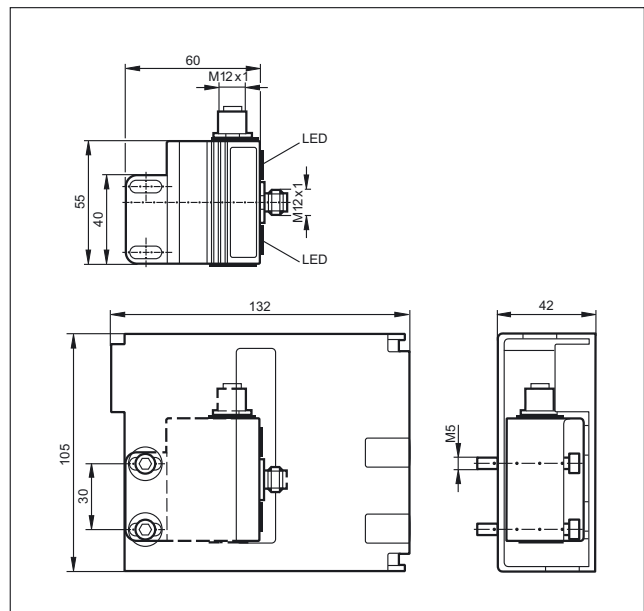


12

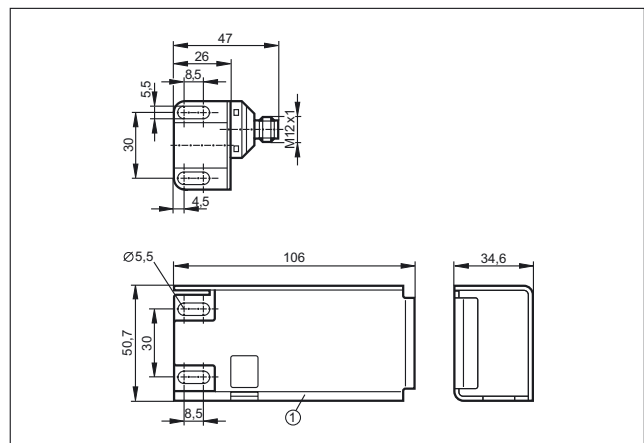


1: sensor 1, 2: sensor 2, 3: LED OUT 2, 4: LED OUT 1

13



14



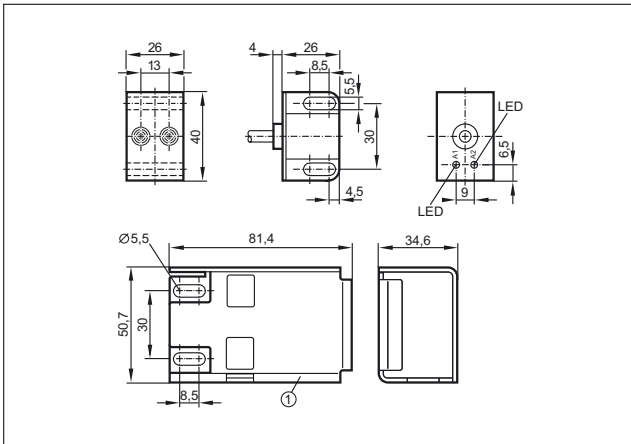
1: protective housing



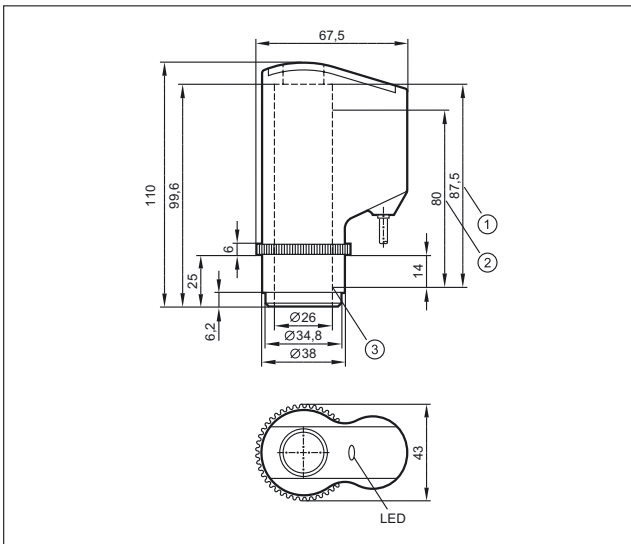
Position sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

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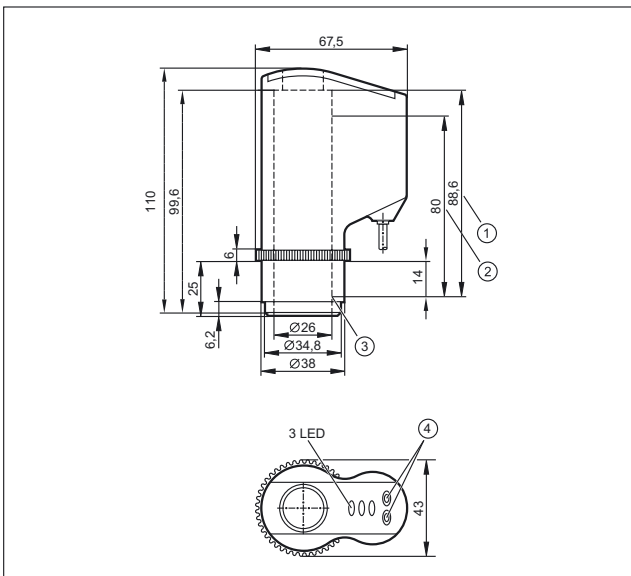


16



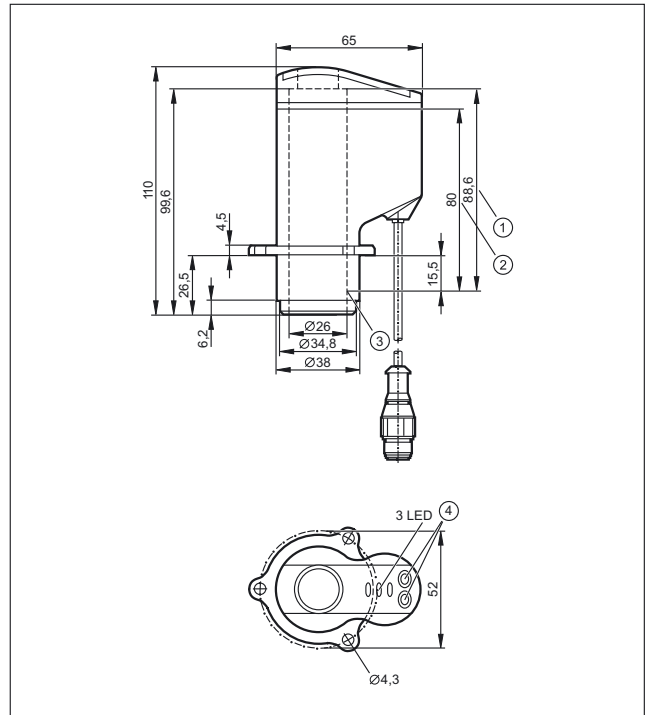
1: Max. spindle stroke, 2: Measuring range, 3: Initial value of the measuring range (zero point)

17



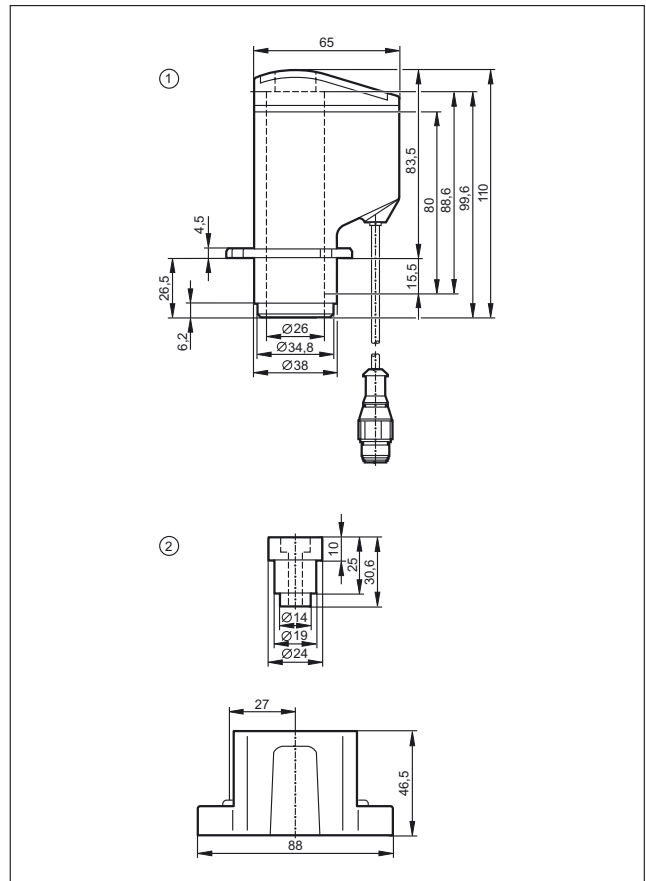
1: Max. spindle stroke, 2: Measuring distance, 3: Initial value of the measuring range (zero point), 4: Programming buttons

18



1: Max. spindle stroke, 2: Measuring distance, 3: Initial value of the measuring range (zero point), 4: Programming buttons

19



1: Valve sensor IX5010, 2: Mounting adapter E11900





Position sensors

Switching amplifier for converting sensor signals in AC networks



Switching amplifiers



Integrated wide-range power supply for the sensor supply

Small design requiring only very little space

Plug-in screw terminals simplify installation

PNP or NPN control selectable

One or two-channel design



Relay for high load currents

The transistor outputs of conventional sensors are designed for small load currents. If the user wants to switch higher currents or even alternating currents, he must use a switching amplifier.

It uses the sensor signal to control an output relay.

Flexible and space-saving

ifm offers switching amplifiers in one and two-channel design. They have an integrated wide-range power supply (110...240 V AC) to supply the connected sensors with voltage (24 V DC). The new switching amplifiers are distinguished by their slim design so that they only need little space in the control cabinet.

<i>System overview</i>	<i>Page</i>
Switching amplifiers with ATEX approval	340
Scale drawings / drawing no. – CAD download: www.ifm.com	340



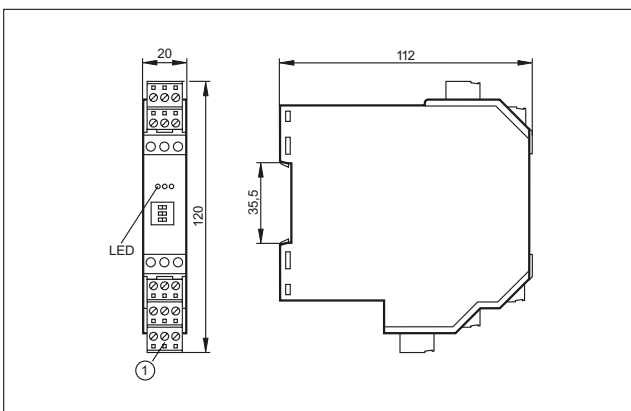
Position sensors

Switching amplifiers with ATEX approval

Type	U _b [V]	Power / current consumption [VA] / [mA]	f [Hz]	T _a [°C]	Output	Protection	Draw- ing no.	Order no.
	115	1.0 /	10	-20...60	relay (1 changeover contact)	IP 20	1	N0030A
	230	1.0 /	10	-20...60	relay (1 changeover contact)	IP 20	1	N0031A
	115	1.3 /	10	-20...60	relay (1 changeover contact per channel)	IP 20	1	N0032A
	230	1.3 /	10	-20...60	relay (1 changeover contact per channel)	IP 20	1	N0033A
	24	/ < 23	10	-20...60	relay (1 changeover contact)	IP 20	1	N0530A
	24	/ < 50	5000	-20...60	2 transistor outputs PNP (100 mA, short-circuit protection)	IP 20	1	N0531A
	24	/ < 50	5000	-20...60	2 outputs (optocoupler, bipolar, 100 mA, short-circuit protection)	IP 20	1	N0532A
	24	/ < 50	10	-20...60	relay (1 changeover contact per channel)	IP 20	1	N0533A
	24	/ < 50	5000	-20...60	2 transistor outputs PNP (100 mA, short-circuit protection)	IP 20	1	N0534A

Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: Combicon plug with screw terminals (optional)





Accurate linear, angle and rotational speed measurement



Encoders

Encoders convert rotary motion into digital signals. This rotary motion is the result of linear measurements, for example on conveyor belts, or of angle measurements such as those taken by solar tracking systems to optimally align the solar panels towards the sun.

Inclination sensors

Inclination sensors are also used for angle measurement. They are smaller than encoders and easier to install. The core element is a measuring cell for example based on MEMS technology (Micro Electro Mechanical Systems). This measuring method allows evaluation of two axes in one unit. Inclination sensors are therefore a valuable supplement to encoders. They are frequently used in mobile machines (levelling of cranes or fire engines) or in the field of renewable energies.

Speed sensors

Inductive speed sensors with integrated evaluation electronics do not only measure revolutions, but also monitor overspeed and underspeed. Once the sensor has been taught the desired speed, it works completely independently. It relieves users from the additional burden of programming their PLC: they only need to connect the sensor, teach the rotational speed and start the system. If the speed drops below the set value or exceeds it, the sensor sets a binary switching output as a warning.

Systems for pulse evaluation

By using the matching evaluation systems, sensor pulses can be detected, evaluated, compared and converted into different output signals. The user can choose between binary, analogue (4...20 mA and 0...10 V) and PWM output signals.

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	<i>Speed sensors</i>	358 - 364
	<i>Inclination sensors</i>	366 - 369
	<i>Pulse evaluation systems</i>	370 - 379



Robust incremental and absolute encoders



Encoders



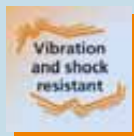
Robust designs

Industrial standard housings

Cable entry for axial and radial use

Designs with integrated bus interface

Hollow shaft encoders for direct mounting on actuators



Incremental encoder

They generate a precisely defined number of pulses per revolution. They are a measure of the angular or linear distance moved. The phase difference between the A signal and the B signal, which are shifted by 90 degrees, enables evaluation of the rotational direction.

Absolute encoders

They provide an absolute numerical value for each angular position. Even in the event of a power failure the present position is quickly and reliably detected.

Singleturn and multiturn

Singleturn encoders divide a mechanical revolution into a certain number of measuring steps. The measuring values are repeated after one complete revolution. Multiturn encoders additionally count revolutions.

System overview	Page
Solid shaft encoders, programmable via IO-Link	346
Hollow shaft encoders, programmable via IO-Link	346 - 347
Encoders with display, programmable via IO-Link or pushbuttons	347 - 348
Absolute multiturn encoders (SSI)	348
Absolute singleturn-encoders (Profibus)	348
Absolute multiturn encoders (Profibus)	349
Absolute multiturn encoders (ProfiNet)	349
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Sensors for motion control

Solid shaft encoders, programmable via IO-Link

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.

M12 connector · 5-pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA

	1...10000	4.75...30	1000	50	6	-40...85	radial / axially	1	RB3100

Cable 2 m · Output function HTL 50 mA (preset at the factory) / TTL 50 mA

	1...10000	4.75...30	1000	50	6	-40...80	radial / axially	2	RB3500

M12 connector · 5-pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA

	1...10000	4.75...30	1000	50	6	-40...85	radial / axially	3	RU3100

Cable 2 m · Output function HTL 50 mA (preset at the factory) / TTL 50 mA

	1...10000	4.75...30	1000	50	6	-40...80	radial / axially	4	RU3500

M12 connector · 5-pole · Output function HTL, TTL 50 mA

	1...10000	4.75...30	1000	50	10	-40...85	radial / axially	5	RV3100

Cable 2 m · Output function HTL, TTL 50 mA

	1...10000	4.75...30	1000	50	10	-40...80	radial / axially	6	RV3500

Hollow shaft encoders, programmable via IO-Link

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.

M12 connector · 5-pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA

	1...10000	4.75...30	1000	50	6 H7	-40...85	radial / axially	7	RA3100

	1...10000	4.75...30	1000	50	6 H7	-40...85	radial / axially	8	RA3101

M12 connector · 8 pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA · Connector groups 16, 17

	1...10000	4.75...30	1000	50	12 H7	-40...85	radial / axially	9	RA3102

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.

Cable 2 m · Output function HTL 50 mA (preset at the factory) / TTL 50 mA

	1...10000	4.75...30	1000	50	6 H7	-40...80	radial / axially	10	RA3500
	1...10000	4.75...30	1000	50	6 H7	-40...80	radial / axially	11	RA3501

M12 connector · 5-pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA

	1...10000	4.75...30	1000	50	12 F7	-40...85	radial / axially	12	RO3100
	1...10000	4.75...30	1000	50	12 F7	-40...85	radial / axially	13	RO3101
	1...10000	4.75...30	1000	50	15 F7	-40...85	radial / axially	14	RO3102
	1...10000	4.75...30	1000	50	9.525 F7	-40...85	radial / axially	15	RO3103
	1...10000	4.75...30	1000	50	15.875 F7	-40...85	radial / axially	16	RO3104

Cable 2 m · Output function HTL 50 mA (preset at the factory) / TTL 50 mA

	1...10000	4.75...30	1000	50	12 F7	-40...80	radial / axially	17	RO3500
	1...10000	4.75...30	1000	50	12 F7	-40...80	radial / axially	18	RO3501

Encoders with display, programmable via IO-Link or pushbuttons

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.

M12 connector · 8 pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA · Connector groups 16, 17

	1...10000	4.75...30	1000	50	6	-40...85	radial / axially	19	RUP500
	1...10000	4.75...30	1000	50	10	-40...85	radial / axially	20	RVP510
	1...10000	4.75...30	1000	50	12 F7	-40...85	radial / axially	21	ROP520



Sensors for motion control

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.

M12 connector · 8 pole · Output function HTL 50 mA (preset at the factory) / TTL 50 mA · Connector groups 16, 17

	1...10000	4.75...30	1000	50	12 F7	-40...85	radial / axially	22	ROP521
	1...10000	4.75...30	1000	50	15 F7	-40...85	radial / axially	23	ROP522
	1...10000	4.75...30	1000	50	9.525 F7	-40...85	radial / axially	24	ROP523
	1...10000	4.75...30	1000	50	15.875 F7	-40...85	radial / axially	25	ROP524

Absolute multiturn encoders (SSI)

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.

Cable 2 m · Output function SSI data interface

	4096	4.5...30	–	–	6	-40...85	axial	26	RM8001
	4096	4.5...30	–	–	10	-40...85	axial	27	RM8002
	4096	4.5...30	–	–	12	-40...85	axial	28	RM8003

M12 connector · Output function CANopen interface · Connector group 205

	24 bits	9...30	–	–	12	-40...85	axial	29	RM8004

Absolute singleturn-encoders (Profibus)

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.

Terminals · Output function Profibus data interface

	13 bits	10...30	–	–	10	-40...85	–	30	RN3001

Absolute multiturn encoders (Profibus)

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.

Terminals · Output function Profibus data interface

	25 bits	10...30	–	–	6	-40...85	–	31	RM3006
	25 bits	10...30	–	–	10	-40...85	–	32	RM3007
	25 bits	10...30	–	–	12	-40...85	–	33	RM3008

Absolute multiturn encoders (ProfiNet)

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.

M12 connector · Output function Profinet IO data interface · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	25 bits	10...30	–	–	10	-40...85	–	34	RM3011
	25 bits	10...30	–	–	12	-40...85	–	35	RM3010

Absolute singleturn-encoders (CANopen)

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.

Terminals · Output function CANopen interface

	13 bits	10...30	–	–	6	-40...85	–	36	RN7011
	13 bits	10...30	–	–	10	-40...85	–	30	RN7012



Sensors for motion control

Absolute multiturn-encoders (CANopen)

Type	Resolution	U _b	f	I _{load}	Shaft	Ambient temperature	Cable entry	Drawing no.	Order no.
		[V]	[kHz]	[mA]	[mm]	[°C]			

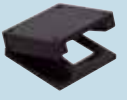
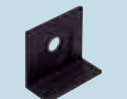
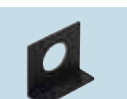
Terminals · Output function CANopen interface

	25 bits	10...30	–	–	6	-40...85	–	31	RM7011
	25 bits	10...30	–	–	10	-40...85	–	32	RM7012

M12 connector · Output function CANopen interface · Connector group 205

	4096	9...30	–	–	10	-40...85	axial	37	RM9010

Fixing accessories for encoders

Type	Description	Order no.
	Resilient base for angle flanges · Housing materials: aluminium black anodised	E60036
	Angle bracket · for encoders · for type RB, RC, RM, RN, RU · Housing materials: aluminium black anodised	E60033
	Angle bracket · for encoders · for type RM, RMU, RN, RU · Housing materials: aluminium black anodised	E60034
	Angle bracket · for encoders · for type RMV, RV · Housing materials: aluminium black anodised	E60035
	Angle bracket · for encoders · for type RM · Housing materials: aluminium black anodised	E60302
	Fastening clamp · for solid shaft encoders · Housing materials: steel	E60041

Couplings for encoders

Type	Description	Order no.
	Flexible coupling with clamp connection [KV] · Ø 6 mm / 1/4" / 1/4 inch / [6.35 mm] · Housing materials: aluminium	E60206

Type	Description	Order no.
	Flexible coupling with clamp connection [KV] · Ø 6 mm / Ø 3/8" / 3/8 inch / [9.525 mm] · Housing materials: aluminium	E60207
	Flexible coupling with clamp connection [KV] · Ø 10 mm / Ø 1/2" / 1/2 inch / [12.7 mm] · Housing materials: aluminium	E60208
	Flexible coupling with clamp connection [KV] · Ø 10 mm / Ø 3/8" / 3/8 inch / [9.525 mm] · Housing materials: aluminium	E60209
	Flexible coupling with clamp connection [KV] · Ø 4 mm / Ø 6 mm · Housing materials: aluminium	E60119
	Flexible coupling with clamp connection [KV] · Ø 6 mm / Ø 6 mm · Housing materials: aluminium	E60064
	Flexible coupling with clamp connection [KV] · Ø 6 mm / Ø 6 mm · Housing materials: aluminium	E60065
	Flexible coupling with clamp connection [KV] · Ø 6 mm / Ø 8 mm · Housing materials: aluminium	E60120
	Flexible coupling with clamp connection [KV] · Ø 6 mm / Ø 10 mm · Housing materials: aluminium	E60066
	Flexible coupling with clamp connection [KV] · Ø 10 mm / Ø 10 mm · Housing materials: aluminium	E60067
	Flexible coupling with adjusting screw connection [SV] · Ø 4 mm / Ø 6 mm · Housing materials: aluminium	E60062
	Flexible coupling with adjusting screw connection [SV] · Ø 6 mm / Ø 6 mm · Housing materials: aluminium	E60063
	Flexible coupling with adjusting screw connection [SV] · Ø 6 mm / Ø 8 mm · Housing materials: aluminium	E60027
	Flexible coupling with adjusting screw connection [SV] · Ø 6 mm / Ø 10 mm · Housing materials: aluminium	E60028
	Flexible coupling with adjusting screw connection [SV] · Ø 10 mm / Ø 10 mm · Housing materials: aluminium	E60022
	Spring disc coupling electrically isolating · Ø 6 mm / Ø 6 mm · Housing materials: diecast zinc / PA	E60121
	Spring disc coupling electrically isolating · Ø 6 mm / Ø 10 mm · Housing materials: diecast zinc / PA	E60117



Sensors for motion control

Type	Description	Order no.
	Spring disc coupling electrically isolating · Ø 10 mm / Ø 10 mm · Housing materials: diecast zinc / PA	E60118
	Plastic beam coupling with stainless steel hub · Ø 10 mm / Ø 10 mm · Housing materials: PA 6.6 / stainless steel 316L / 1.4404	E60193

Measuring wheels for encoders

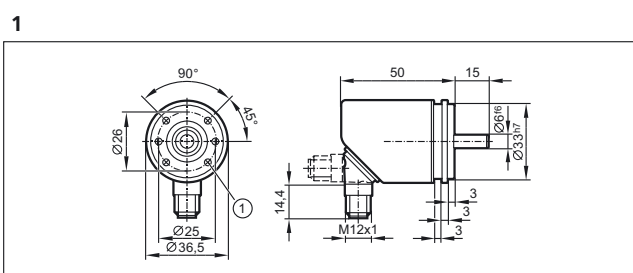
Type	Description	Order no.
	Measuring wheel · Ø 63.6 mm / Ø 6 mm · cross-knurl · Housing materials: wheel: aluminium / surface characteristics: aluminium	E60006
	Measuring wheel · Ø 63.6 mm / Ø 10 mm · cross-knurl · Housing materials: wheel: aluminium / surface characteristics: aluminium	E60095
	Measuring wheel · Ø 63.66 ±0.1 mm / Ø 6 mm · smooth plastic · Housing materials: wheel: aluminium / surface characteristics: PU	E60111
	Measuring wheel · Ø 63.66 ±0.1 mm / Ø 10 mm · smooth plastic · Housing materials: wheel: aluminium / surface characteristics: PU	E60112
	Measuring wheel · Ø 63.66 ±0.1 mm / Ø 6 mm · grooved plastic · Housing materials: wheel: aluminium / surface characteristics: PU	E60137
	Measuring wheel · Ø 63.66 ±0.1 mm / Ø 10 mm · grooved plastic · Housing materials: wheel: aluminium / surface characteristics: PU	E60138
	Measuring wheel · Ø 159.15 mm / Ø 10 mm · cross-knurl · Housing materials: wheel: aluminium / surface characteristics: aluminium	E60098
	Measuring wheel · Ø 159.16 mm / Ø 10 mm · rubber · Housing materials: wheel: aluminium / surface characteristics: PU	E60076
	Measuring wheel · Ø 159.15 mm / Ø 10 mm · smooth plastic · Housing materials: wheel: aluminium / surface characteristics: PU	E60110

Connectors for encoders

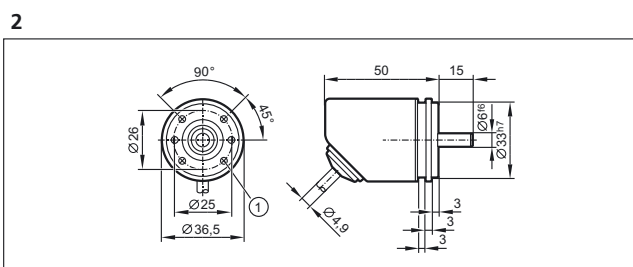
Type	Description	Order no.
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · For applications in particularly harsh environments · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVM039

Type	Description	Order no.
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector with integrated CAN terminating resistor (120 ohm) · 5 m · Housing materials: housing: TPU black / sealing: FKM	EVC492
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · For applications in particularly harsh environments · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVM036
	Socket · straight · M12 connector · 2 m · Housing materials: TPU	E12402
	Jumper · straight / straight · Free from halogen · 0.3 m · Housing materials: PUR	E12432

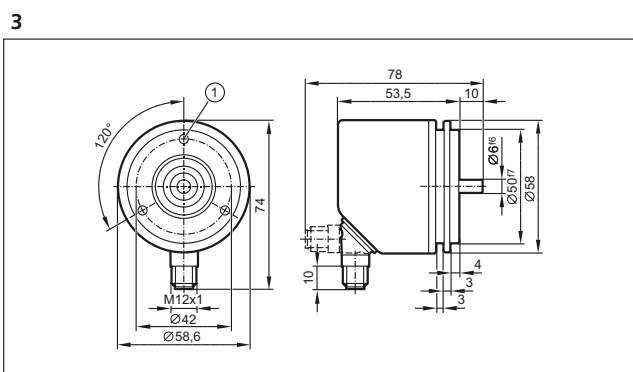
Scale drawings / drawing no. – CAD download: www.ifm.com



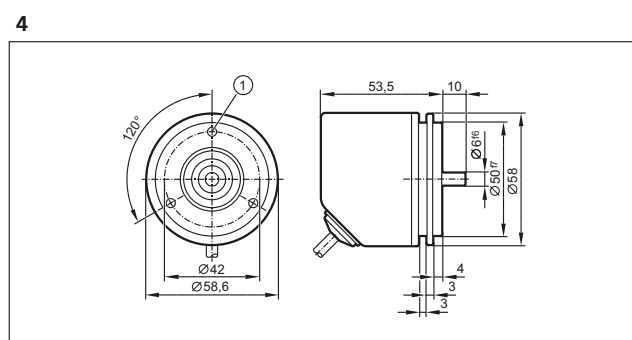
1: M3 x 0.5 6 mm deep



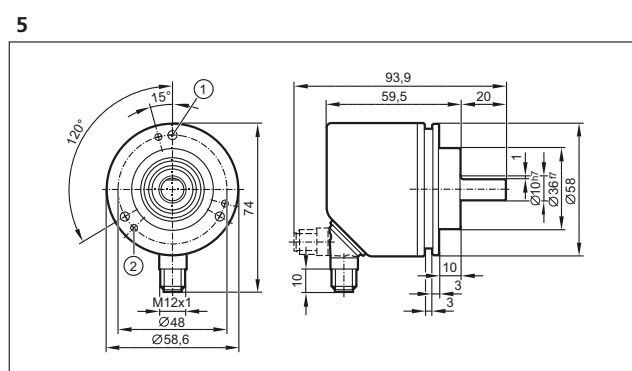
1: M3 x 0.5 6 mm deep



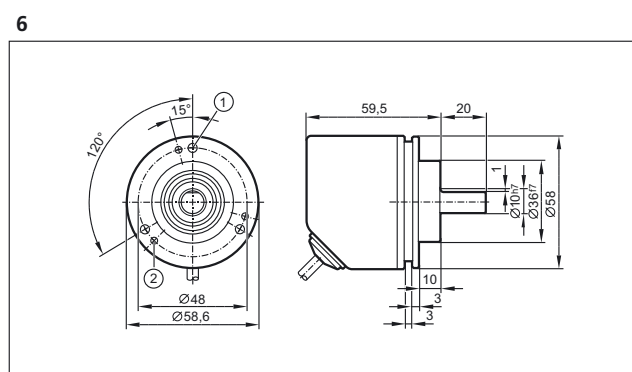
1: M4 x 0.7 6 mm deep



1: M4 x 0.7 6 mm deep



1: M4 x 0.7 6 mm deep, 2: M3 x 0.5 6 mm deep



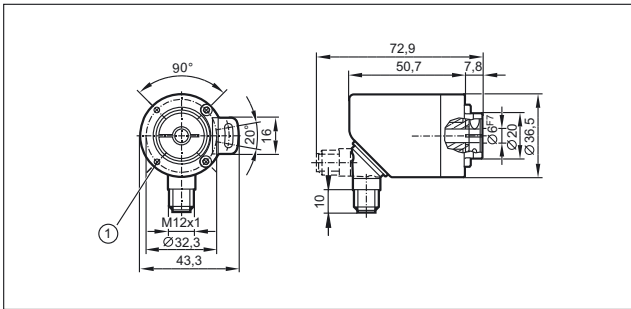
1: M4 x 0.7 6 mm deep, 2: M3 x 0.5 6 mm deep



Sensors for motion control

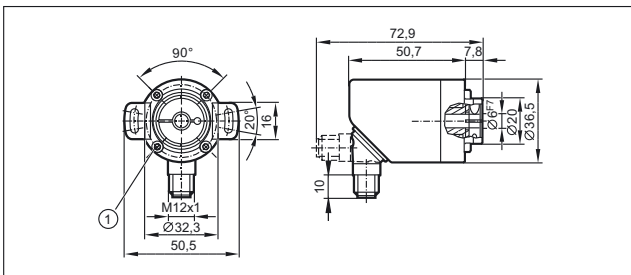
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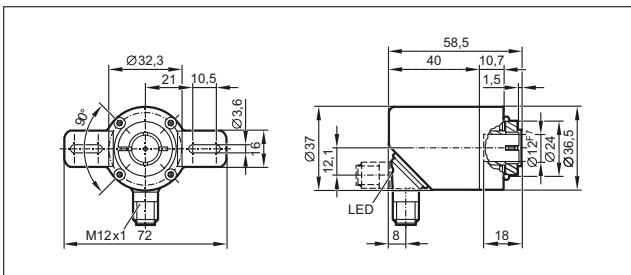
M2.5 x 0.45 6mm deep

8

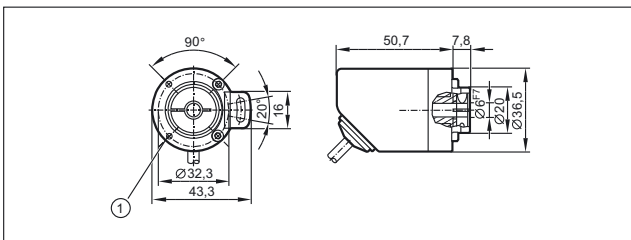


1: M3 x 0.5 6 mm deep

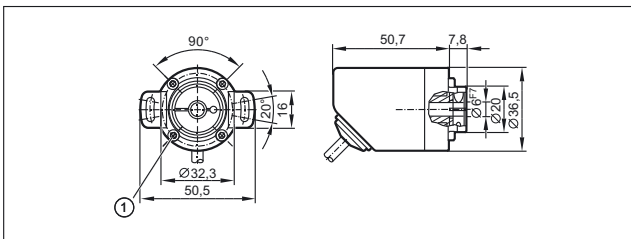
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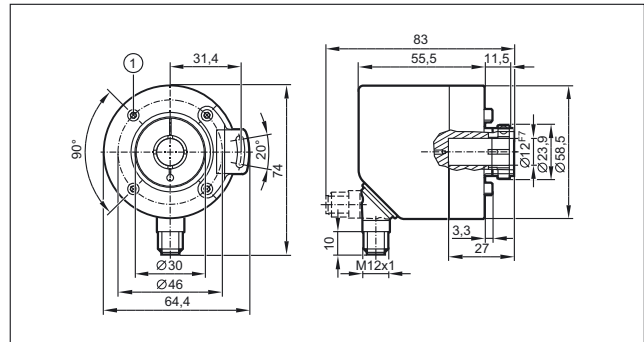
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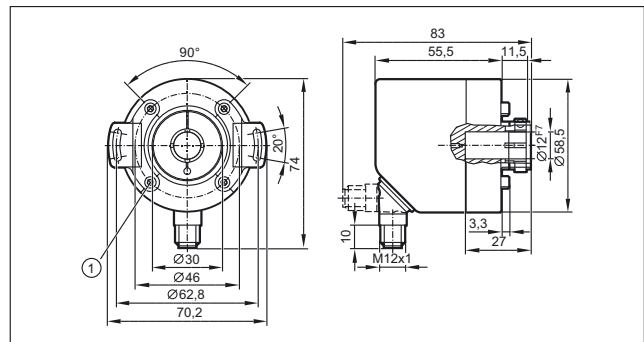


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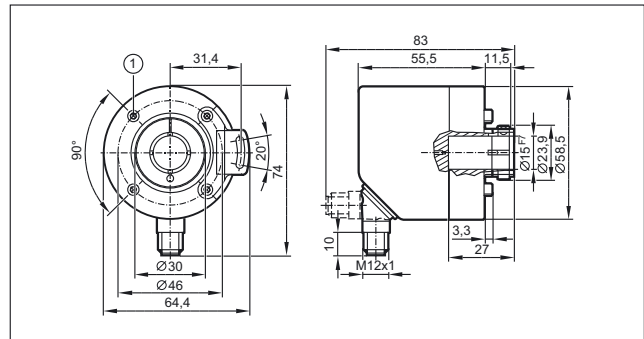


1: M3 x 0.5 6 mm deep

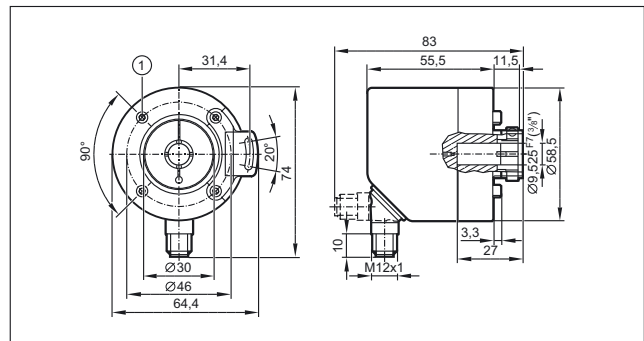
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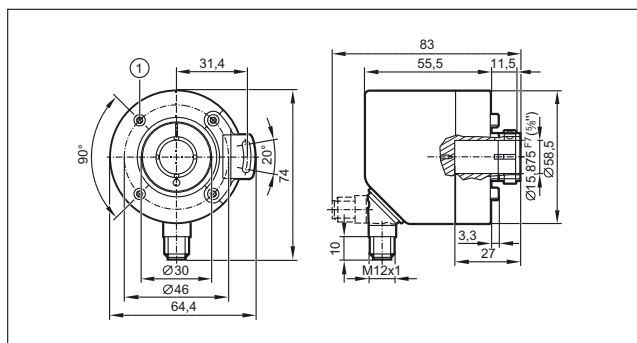


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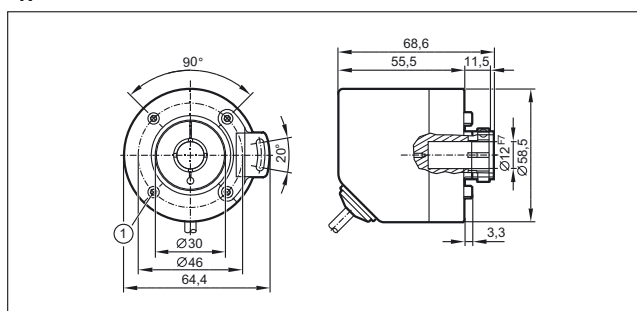


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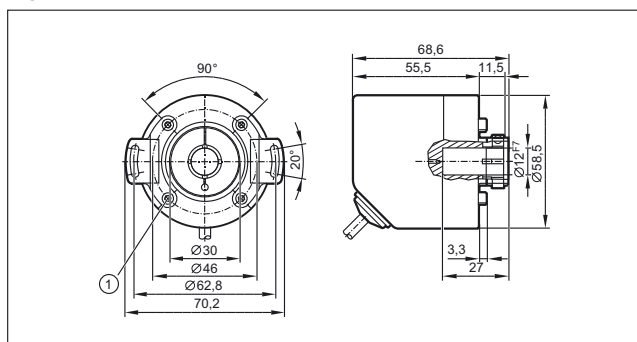
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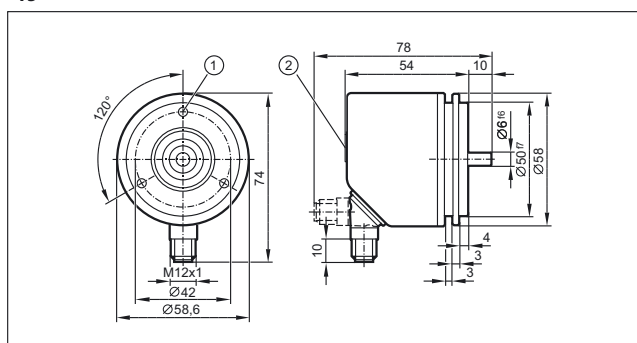
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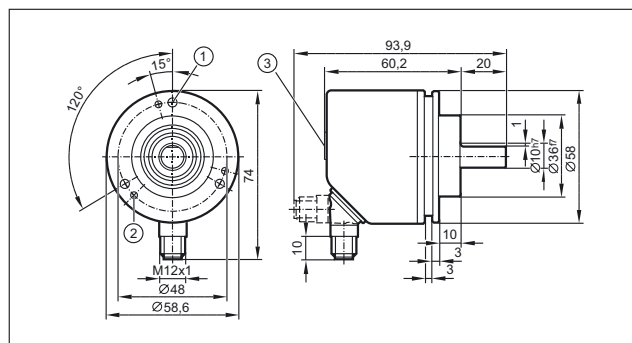


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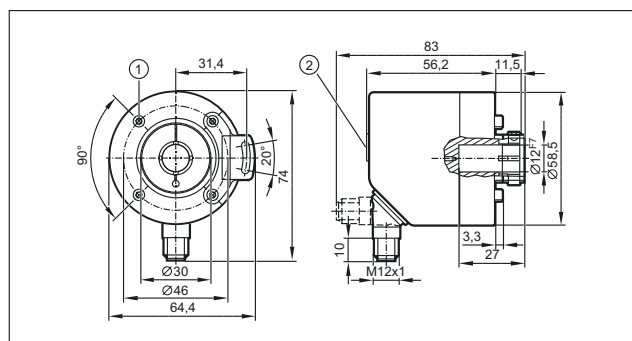
1: M4 x 0.7 6 mm deep, 2: display

20

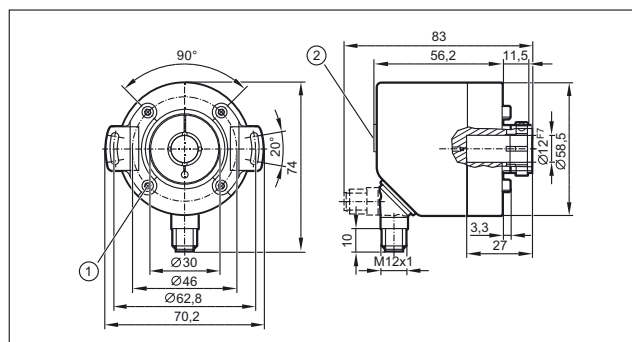


1: M4 x 0.7 6 mm deep, 2: M3 x 0.5 6 mm deep, 3: display

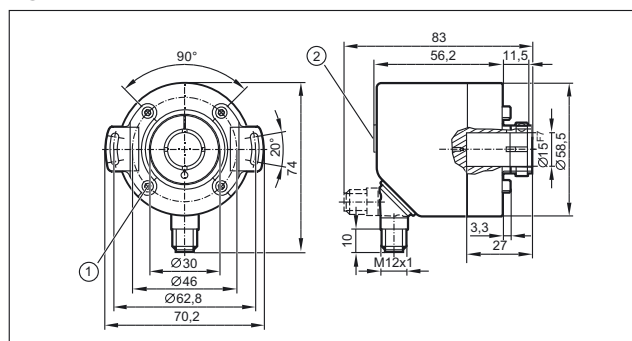
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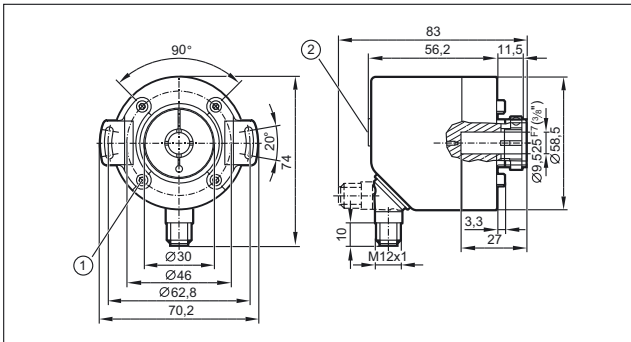




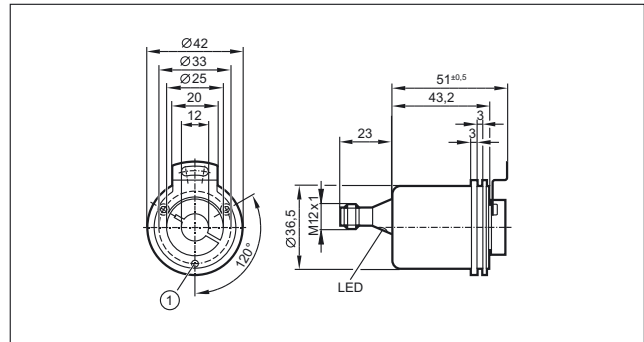
Sensors for motion control

Scale drawings / drawing no. – CAD download: www.ifm.com

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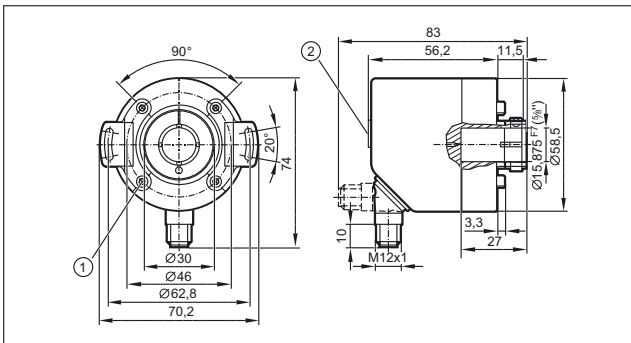


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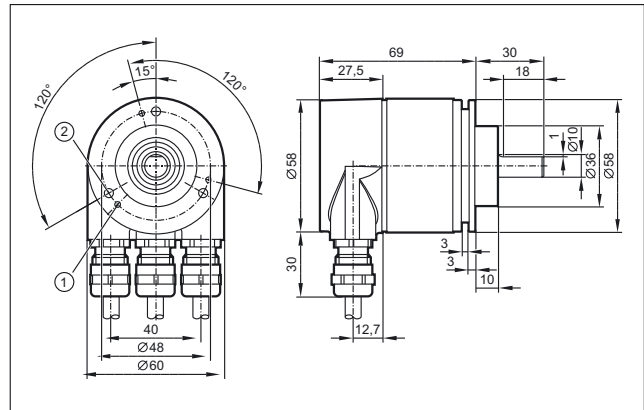


1: M3 x 6

25

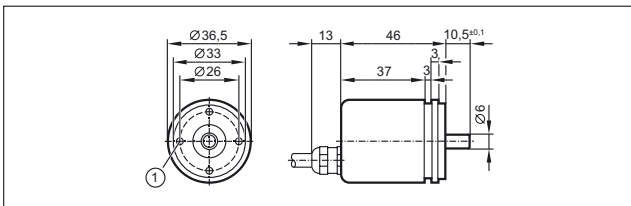


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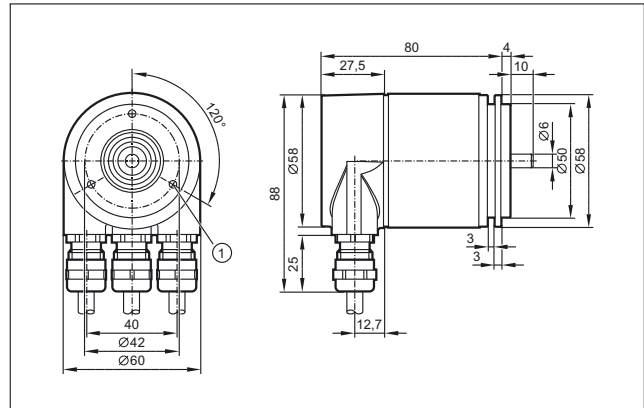
1: M3 6 mm deep, 2: M4 6 mm deep

26

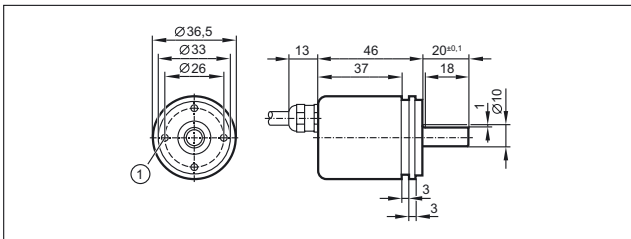


M3 6 mm deep

31

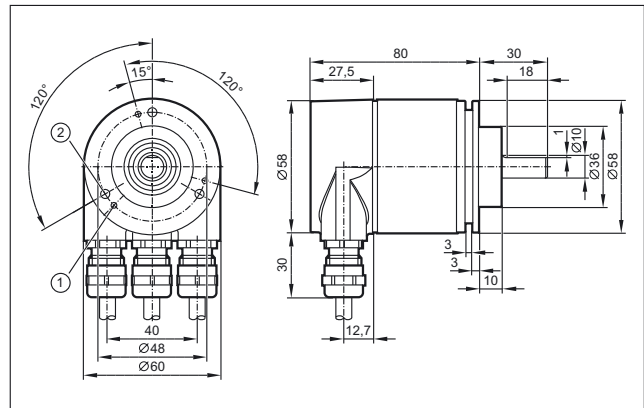


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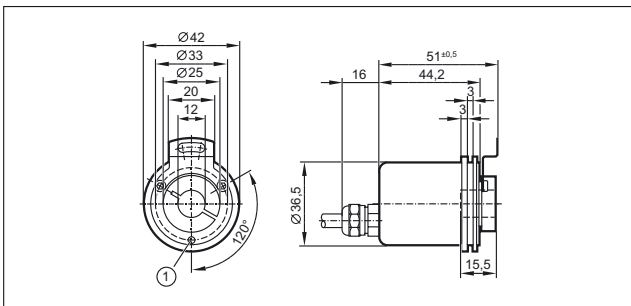
M3 6 mm deep

32



1: M3 6 mm deep, 2: M4 6 mm deep

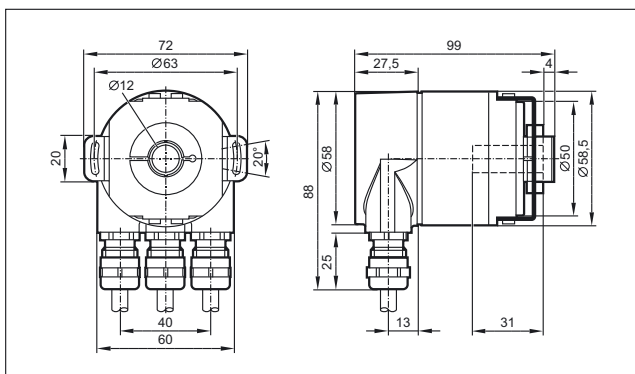
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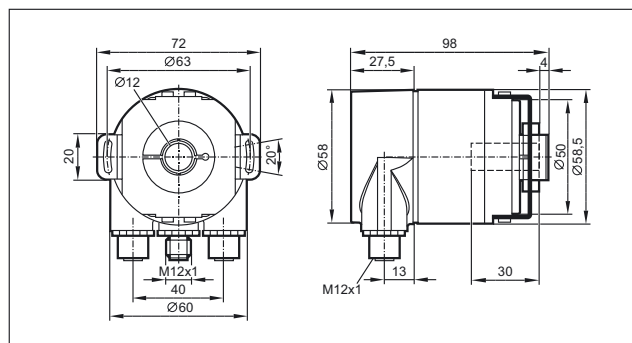
1: M3 x 6

Scale drawings / drawing no. – CAD download: www.ifm.com

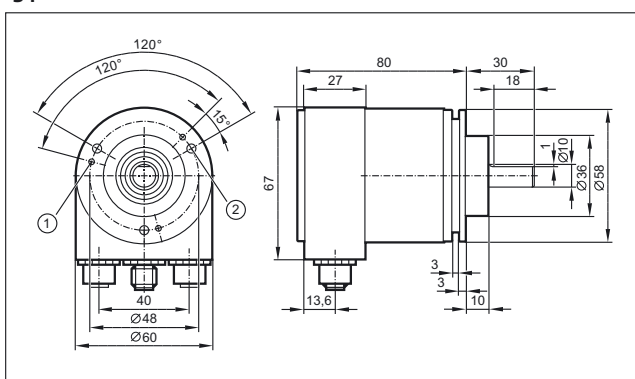
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35

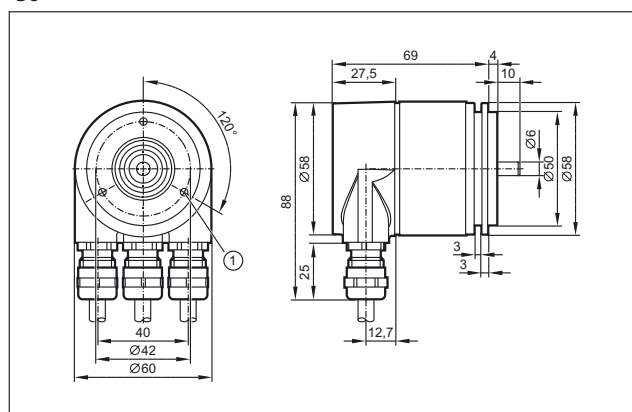


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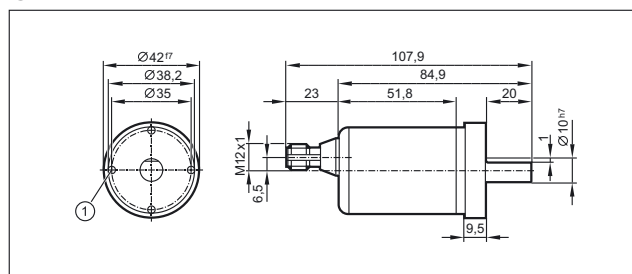


1: M3 6 mm deep, 2: M4 6 mm deep

36



37



1: M4 8 mm deep



Sensor with integrated speed evaluation



Speed sensors



2 in 1: speed sensor and evaluation in one compact housing

Space-saving design

Easy to fit

Easy parameter setting by potentiometer or pushbutton



Inductive sensor with integrated speed evaluation

In many industrial applications drives need to be monitored for rotational speed or standstill. A typical application in building automation is V-belt monitoring on fans. In conveying, standstill monitoring is used to detect belt break on conveyors. A similar principle is applied in agricultural engineering to monitor elevator drives or detect failure of screw conveyors.

The compact DI series speed monitor offers a specially low-cost and reliable solution. In principle it is an inductive sensor with integrated speed evaluation. Advantage: the condition information of the drive is directly transferred to the control system.

The nominal speed is easily set by potentiometer or pushbutton.

System overview	Page
Speed monitor with integrated sensor	360
Speed monitors with integrated sensor, ATEX category 3D	361
Speed sensors with magnetic measuring principle	361 - 362
Accessories	362
Wiring diagrams	362 - 363
Scale drawings / drawing no. – CAD download: www.ifm.com	363 - 364



Sensors for motion control

Speed monitor with integrated sensor

Type	Dimensions [mm]	Sensing range [mm]	Electrical design	U _b [V]	Setting range [puls. / min.]	Start-up delay [s]	Draw- ing no.	Order no.

Output function  · Wiring diagram no. 1 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M18 / L = 68	12 nf	DC PNP	10...36 DC	3...6000	0...15	1	DI6001

Output function  · Wiring diagram no. 2

	M30 / L = 80	10 f	AC/DC	20...250 AC/DC	5...3600	< 0.5	2	DI0104*

	M30 / L = 80	10 f	AC/DC	20...250 AC/DC	5...3600	12	2	DI0101*

Output function  · Wiring diagram no. 3 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M30 / L = 82	10 f	DC PNP	10...36 DC	5...300	15	3	DI5009

Output function  · Wiring diagram no. 4

	M30 / L = 80	10 f	DC PNP	10...36 DC	5...3600	0	2	DI5022

	M30 / L = 80	10 f	DC PNP	10...36 DC	5...3600	15	2	DI5020

Output function  · Wiring diagram no. 5

	M30 / L = 80	10 f	DC PNP	10...36 DC	5...3600	5	2	DI5021

Output function  · Wiring diagram no. 4

	M30 / L = 80	10 f	DC PNP	10...36 DC	5...3600	15	2	DI520A

Output function  · Wiring diagram no. 6

	M30 / L = 80	10 f	DC PNP/NPN	10...36 DC	5...3600	0...30	2	DI5026

	M30 / L = 80	10 f	DC PNP/NPN	10...36 DC	5...3600	0...30	2	DI523A

f = flush / nf = non flush / qf = quasi-flush

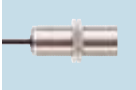
* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Speed monitors with integrated sensor, ATEX category 3D

Type	Dimensions [mm]	Sensing range [mm]	Electrical design	U _b [V]	Setting range [puls. / min.]	Start-up delay [s]	Draw- ing no.	Order no.

Output function · Wiring diagram no. 2

	M30 / L = 80	10 f	AC/DC	20...250 AC/DC	5...3600	12	2	DI103A*

Output function · Wiring diagram no. 3 · Connector group --

	M30 / L = 82	10 f	DC PNP	10...36 DC	5...300	15	4	DI505A
	M30 / L = 82	10 f	DC PNP	10...36 DC	5...300	5	4	DI506A

Output function / · Wiring diagram no. 1 · Connector group --

	M18 / L = 68	8 nf	DC PNP	10...36 DC	3...6000	0...15	5	DI602A

f = flush / nf = non flush / qf = quasi-flush

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Speed sensors with magnetic measuring principle

Type	Dimensions [mm]	Sensing range [mm]	Electrical design	U _b [V]	Connection	Ambient temperature sensor [°C]	Draw- ing no.	Order no.

Wiring diagram no. 7

	Ø 15 / L = 49.5	1.7	DC NPN	15	PUR cable	-32...140	6	MX5015
	Ø 15 / L = 50	1.7	DC NPN	15	PUR cable	-32...140	7	MX5017

Output function · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Ø 15 / L = 60	1.7	DC PNP	10...30 DC	PUR cable	-32...85	8	MX5050

Wiring diagram no. 9

	—	1.7	DC NPN	7...30 DC	AMP Junior Timer connector (282 1921)	-32...140	9	MX5004



Sensors for motion control

Type	Dimensions [mm]	Sensing range [mm]	Electrical design	U _b [V]	Connection	Ambient temperature sensor [°C]	Draw- ing no.	Order no.

Wiring diagram no. 9

	–	1.7	DC NPN	7...30 DC	AMP Junior Timer connector (282 1921)	-32...140	10	MX5000

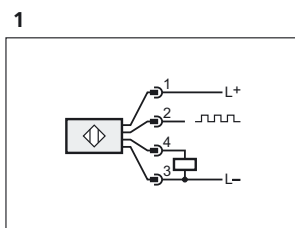
Accessories

Type	Description	Order no.
	Angle bracket · for type M18 · Housing materials: stainless steel	E10736
	Angle bracket · for type M30 · Housing materials: stainless steel	E10737
	Mounting clamp · Ø 20 mm · Ø 18 mm · with reducing bush · for type M18 · Housing materials: PBT	E10076
	Mounting clamp · Ø 34 mm · Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	E10077
	Target wheel · Plastic disk with 8 screws as "target" · Centered drill holes	E89010
	Target for pulse pickups · Strap dimensions 7 x 145 mm	E89013
	Cable plug · straight · 10 m	E60303
	Amplifier · 1-channel · selectable for pnp and npn switching sensors · Output 24 V DC / 300 mA · short-circuit and overload protection · Housing materials: plastics: PC GF20	DN0210

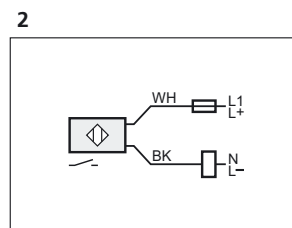
Wiring diagrams

Core colours

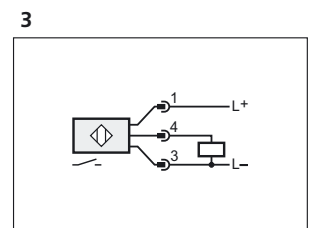
BK	black
WH	white
BN	brown
BU	blue



2: pulse output (the pulse sequence corresponds to the damping frequency),
4: switching output (adjustable)

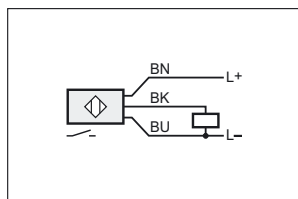


Note: miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting)

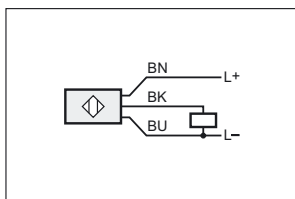


Wiring diagrams

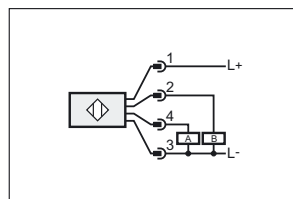
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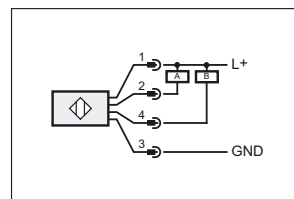


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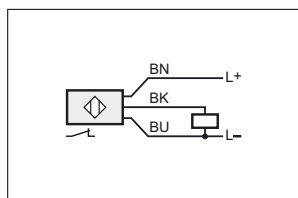
A: Pulse output, B: pulse output
(the pulse sequence corresponds to the damping frequency)

9

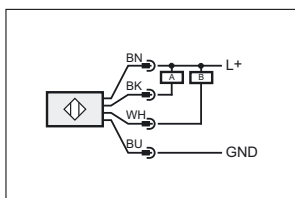


A: Pulse output, B: pulse output
(the pulse sequence
corresponds to the damping
frequency)

5



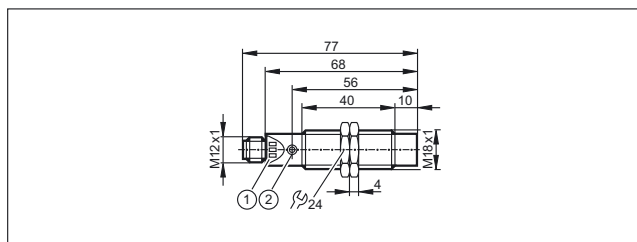
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A: Pulse output, B: pulse output
(the pulse sequence
corresponds to the damping
frequency)

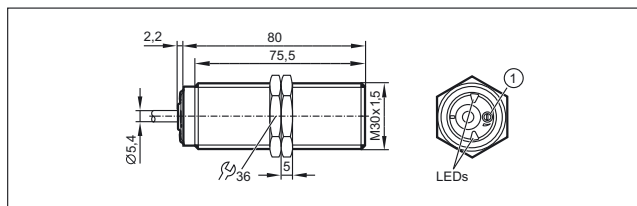
Scale drawings / drawing no. – CAD download: www.ifm.com

1



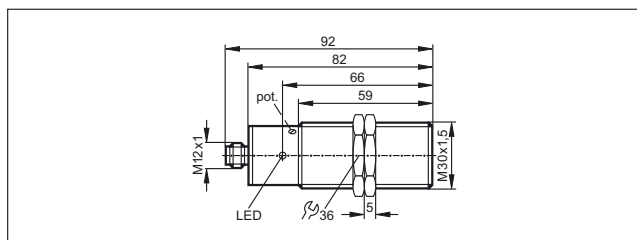
1: 3 LED, 2: setting pushbutton

2

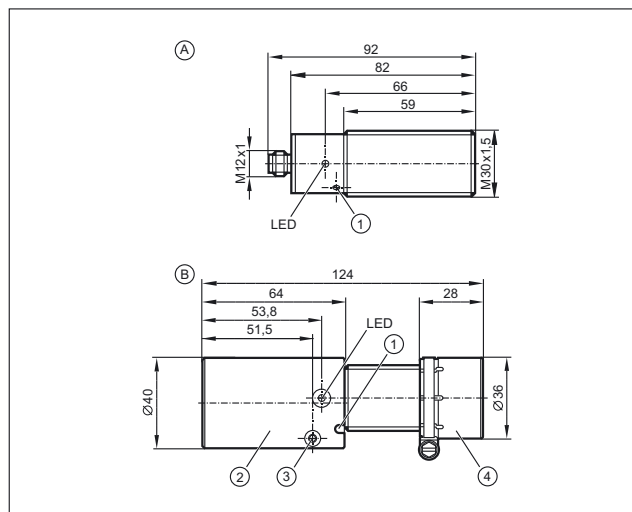


1: potentiometer

3

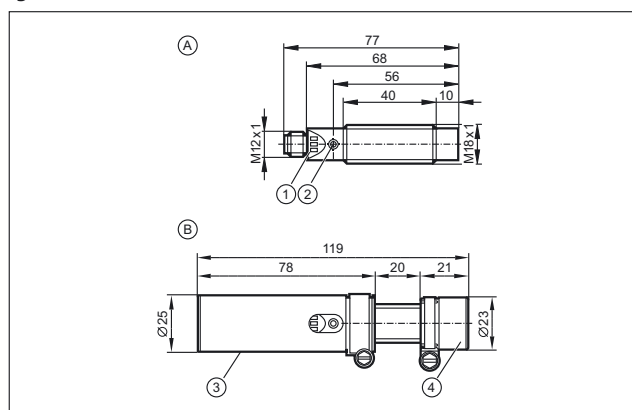


4



A: Sensor, B: sensor with impact protection housing,
1: potentiometer, 2: impact protection housing for the connector,
3: clamping screw, 4: impact protection housing for the sensor

5



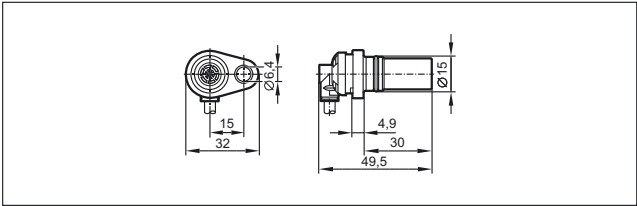
A: Sensor, B: sensor with impact protection housing, 1: 3 LED, 2: setting pushbutton, 3: impact protection housing for the connector, 4: impact protection housing for the sensor



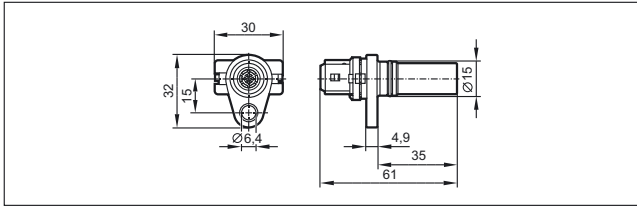
Sensors for motion control

Scale drawings / drawing no. – CAD download: www.ifm.com

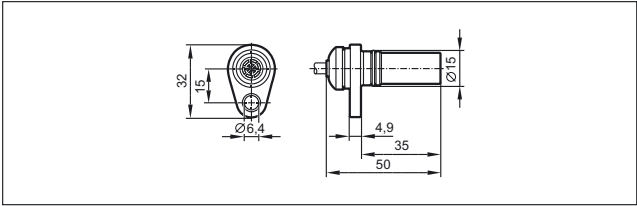
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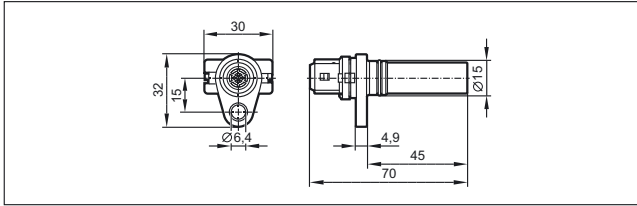
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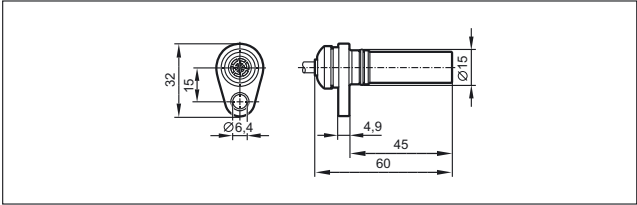
7



10



8







Inclination sensors measure each angle with precision



Inclination sensors



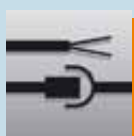
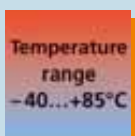
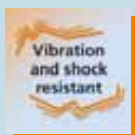
Compact and robust design

Wide angle range and high accuracy

Sensor types for signal output via CANbus, IO-Link as digital or analogue signal

High protection rating IP 65 to IP 69K

CAN and IO-Link sensors are freely configurable



Inclination detection

Often the horizontal alignment of machines or machine parts is an important requirement for reliable operation.

Typical applications are cranes, access platforms or outriggers.

ifm inclination sensors differ by their signal outputs, number of measurement axes, the measuring range and the connection type. Depending on the sensor type, signal output is via CANbus, IO-Link, analogue or digital.

If only a switch point is to be detected, the mercury-free tilt sensor is used. Due to its design, it has the same good switching characteristics as a conventional mercury switch. Due to the harmless filling of the switching element with alcohol it has considerable ecological advantages in case of damage or disposal.

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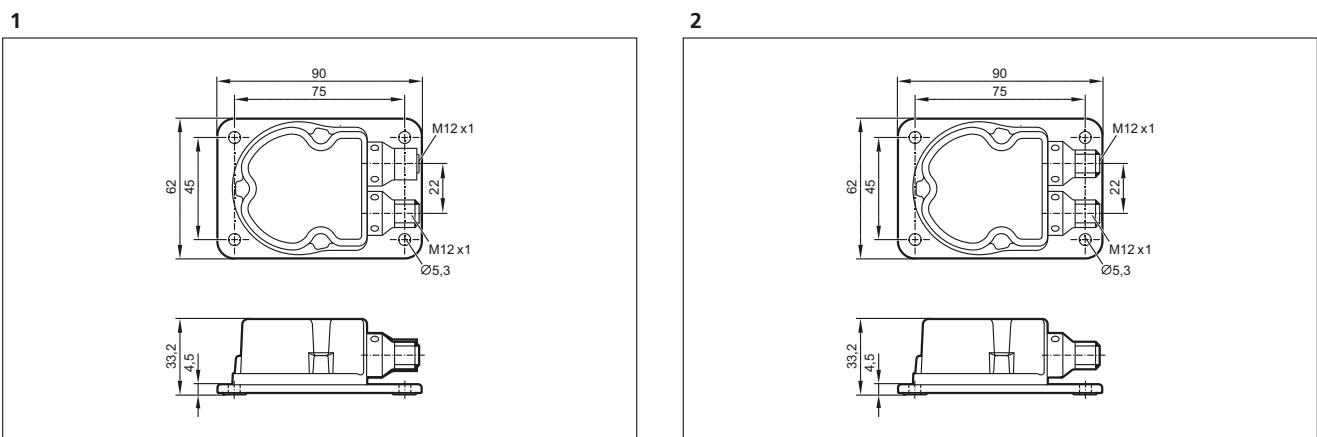


Sensors for motion control

Inclination sensors

Type	Description	Draw- ing no.	Order no.
	Inclination sensor · 0...360° / ± 180° · CANopen interface · Self-test function · Heartbeat · Emergency messages available · housing: diecast zinc nickel-plated	1	JN2100
	Inclination sensor · ± 180° · Self-test function · IO-Link interface · Analogue interfaces (voltage / current) · Analogue / binary outputs · housing: diecast zinc nickel-plated	2	JN2200
	Inclination sensor · 0...360° / ± 180° · SAE J1939 interface · Self-test function · Diagnostic Trouble Code (DTC) available · housing: diecast zinc nickel-plated	1	JN2300
	Inclination sensor · ± 45° · CANopen interface · Self-test function · Heartbeat · Emergency messages available · housing: diecast zinc nickel-plated	1	JN2101
	Inclination sensor · ± 45° · Self-test function · IO-Link interface · Analogue interfaces (voltage / current) · Analogue / binary outputs · housing: diecast zinc nickel-plated	2	JN2201
	Inclination sensor · ± 45° · SAE J1939 interface · Self-test function · Diagnostic Trouble Code (DTC) available · housing: diecast zinc nickel-plated	1	JN2301
	Inclination sensor · ± 90° · 15...30 V DC · Output 0...10 V · Cable	3	EC2019
	Inclination sensor · ± 90° · Input 8...30 V DC · Output 0.5...4.5 V · Cable	3	EC2045
	Inclination sensor · ± 20° · Analogue output · 4...20 mA	3	EC2060
	Inclination sensor · ± 90° · Analogue output · 4...20 mA · Cable with connector	3	EC2082
	Tilt sensor · free from mercury · semi-conductor output · 10...30 V DC · Cable	4	EC2061

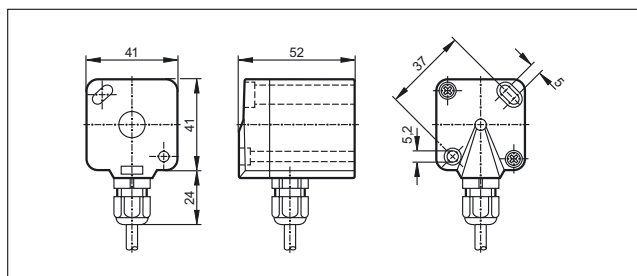
Scale drawings / drawing no. – CAD download: www.ifm.com



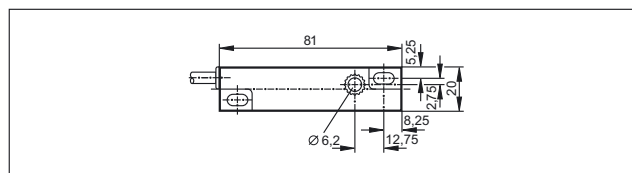
Product selectors and further information can be found at: www.ifm.com

Scale drawings / drawing no. – CAD download: www.ifm.com

3



4





Sensors for motion control

Versatile pulse evaluation systems



Pulse evaluation systems



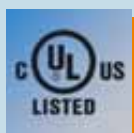
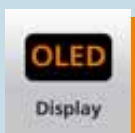
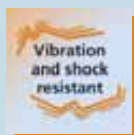
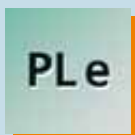
Easy parameter setting

Primary voltage 24V DC or 110 / 230V AC, wide-range input

Programmable switching characteristics

Standstill, overspeed, direction, slip and frequency conversion, counter

Switching relays and transistor outputs, scalable analogue output



Evaluation systems

Although PLC applications in industrial automation are becoming more and more versatile, there are still numerous processes which require decentralised monitoring.

For this purpose, ifm offers various pulse evaluation systems:

- speed monitors
- standstill monitor
- slip / synchronous monitors
- direction monitor
- frequency-to-current converter
- threshold relay
- displays with frequency and analogue input
- counter
- processing of analogue standard signals

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Sensors for motion control

Universal speed monitors

Type	U _b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.

FR-1 · 2 switch points for monitoring overspeed/underspeed and acceptable range

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	1...60000	0.1...1000	1	2	2	1	DD2503

Universal speed monitors with sensor wire monitoring

Type	U _b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.

FR-1N · 2 switch points for monitoring overspeed/underspeed and acceptable range

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	Namur 8.2 V	1...60000	0.1...1000	1	2	4	1	DD2603

Dual speed monitors

Type	U _b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.

FR-2 · 1 switch point each for monitoring overspeed/underspeed and acceptable range

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	2	PNP / NPN / Namur	1...60000	0.1...1000	–	2	2	1	DD2505

Dual speed monitors with sensor wire monitoring

Type	U _b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw-ing no.	Order no.

FR-2N · 1 switch point each for monitoring overspeed/underspeed and acceptable range

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	2	Namur 8.2 V	1...60000	0.1...1000	–	2	4	1	DD2605

Standard speed monitors / standstill monitor

Type	U _b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw- ing no.	Order no.

D200 · evaluation of pulse sequences with regard to overspeed and underspeed; rotational speed monitoring

	110...240 AC / 27 (24) DC	1	PNP	0.1...10 / 10...1000	–	–	1	–	2	DD0203
	110...240 AC / 27 (24) DC	1	PNP	0.2...20 / 20...2000	–	–	1	–	2	DD0296

Level monitoring relays

Type	U _b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw- ing no.	Order no.

L200 · protection of a tank against overflow or running dry

	110...240 AC / 27 (24) DC	1	PNP	–	–	–	1	–	3	DL0201

Level control relays

Type	U _b [V]	In-puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out-puts analogue	Out-puts relays	Out-puts transist.	Draw- ing no.	Order no.

L200 · two point level control

	110...240 AC / 27 (24) DC	1	PNP	–	–	–	1	–	4	DL0203

Slip monitors

Type	U _b [V]	In-puts	Input function	Setting range	Out-puts relays	Out-puts transist.	Draw- ing no.	Order no.

FS-1 · 1 switching output for slip monitoring; 1 switching output for overspeed/underspeed and acceptable range

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	slip: 0.1...99.9 % rotational speed (frequency): 1...60000 pulses/min (0.1...1000)	2	2	1	DS2503



Sensors for motion control

Slip monitors with sensor wire monitoring

Type	U _b [V]	In- puts	Input function	Setting range	Out- puts relays	Out- puts transist.	Draw- ing no.	Order no.

FS-1N · 1 switching output for slip monitoring; 1 switching output for overspeed/underspeed and acceptable range

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	Namur 8.2 V	slip: 0.1...99.9 % rotational speed (frequency): 1...60000 pulses/min (0.1...1000)	2	2	1	DS2603

Slip / synchronous monitors

Type	U _b [V]	In- puts	Input function	Setting range	Out- puts relays	Out- puts transist.	Draw- ing no.	Order no.

FS-2 · 2 switch points for slip/synchronous monitoring

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	pulse differences: 1...999 reset time: 0.0...1000.0 s	2	2	1	DS2505

FS-3 · 2 switch points for synchronous monitoring

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	pulse differences: 1...999 hysteresis: 1...999	2	2	1	DS2506

Slip / synchronous monitors with sensor wire monitoring

Type	U _b [V]	In- puts	Input function	Setting range	Out- puts relays	Out- puts transist.	Draw- ing no.	Order no.

FS-2N · 2 switch points for slip/synchronous monitoring

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	Namur 8.2 V	pulse differences: 1...999 reset time: 0.0...1000.0 s	2	2	1	DS2605

Combined direction and speed monitors

Type	U _b [V]	In- puts	Input function	Setting range	Out- puts relays	Out- puts transist.	Draw- ing no.	Order no.

FD-1 · 1 switching output for indication of direction; 1 switching output for overspeed/underspeed and acceptable range

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	cycle time: 0.0...1000 s rotational speed (frequency): 1...60000 pulses/min (1...1000)	2	2	1	DR2503

FD-2 · 2 switching outputs for separate indication of direction; adjustable reset times for standstill monitoring

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	reset time: 0.0...1000 s	2	2	1	DR2505

Frequency-to-current converters

Type	U _b [V]	In- puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out- puts analogue	Out- puts relays	Out- puts transist.	Draw- ing no.	Order no.

FA-1 · Conversion of pulse sequences into analogue standard signals

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	1	PNP / NPN / Namur	0...600000	0...10000	2	1	1	1	DW2503

2-channel threshold relay for analogue standard signals

Type	U _b [V]	In- puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out- puts analogue	Out- puts relays	Out- puts transist.	Draw- ing no.	Order no.

AL-3 · 2-channel analogue threshold relay for analogue standard signals

	110...240 AC (50...60 Hz)/ 27 DC (typ. 24 DC)	2	2 x 0/4...20 mA	–	–	1	1	1	1	DL2503

Safety standstill monitors, SIL 3, PL e

Type	U _b [V]	In- puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out- puts analogue	Out- puts relays	Out- puts transist.	Draw- ing no.	Order no.

Monitoring rotational or linear movements for minimum switch point not reached (standstill)

	24 DC	1	PNP	–	0.2 / 0.5 / 1.0 / 2.0	–	2	1	5	DA102S

Safety speed monitor, SIL 3, PL e

Type	U _b [V]	In- puts	Input function	Setting range [puls. / min.]	Setting range [Hz]	Out- puts analogue	Out- puts relays	Out- puts transist.	Draw- ing no.	Order no.

Monitoring of rotational or linear movements for adherence to a maximum setpoint (overspeed)

	24 DC	1	PNP	–	–40...70	–	2	1	6	DD110S
	24 DC	1	PNP	–	–40...70	–	2	1	6	DD111S

Monitoring of rotational or linear movements for underspeed (minimum switch point not reached)

	24 DC	1	PNP	–	–40...70	–	2	1	6	DU110S



Sensors for motion control

Multifunctional displays for digital signals / frequency input

Type	Inputs / outputs	Description	Drawing no.	Order no.
AX460 · universal unit for displaying and monitoring analogue signals (e.g. pressure sensors, temperature sensors or flow sensors)				
	2 x analogue in	Digital display · Multi-functional display and evaluation system · for analogue standard signals · Ambient temperature -20...60 °C · screw terminals · Operating voltage 115...230 AC (50...60 Hz) / 18...30 V DC · IP 65	7	DX2041
	2 x analogue in 4 x digital out	Digital display · Multi-functional display and evaluation system · for analogue standard signals · Ambient temperature -20...60 °C · screw terminals · Operating voltage 115...230 AC (50...60 Hz) / 18...30 V DC · IP 65	7	DX2042
	2 x analogue in	Digital display · Multi-functional display and evaluation system · for analogue standard signals · Ambient temperature -20...60 °C · screw terminals · Operating voltage 18...30 V DC · IP 65	7	DX2051
	2 x analogue in 4 x digital out	Digital display · Multi-functional display and evaluation system · for analogue standard signals · Ambient temperature -20...60 °C · screw terminals · Operating voltage 18...30 V DC · IP 65	7	DX2052

Multifunctional displays for analogue standard signals

Type	Inputs / outputs	Description	Drawing no.	Order no.
FX460 · universal evaluation and display for all physical units which can be derived from pulse sequences				
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Ambient temperature -20...60 °C · screw terminals · Operating voltage 115...230 AC (50...60 Hz) / 18...30 V DC · IP 65	7	DX2021
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Analogue output · Ambient temperature -20...60 °C · screw terminals · Operating voltage 115...230 AC (50...60 Hz) / 18...30 V DC · IP 65	7	DX2022
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Ambient temperature -20...60 °C · screw terminals · Operating voltage 115...230 AC (50...60 Hz) / 18...30 V DC · IP 65	7	DX2023
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Ambient temperature -20...60 °C · screw terminals · Operating voltage 18...30 V DC · IP 65	7	DX2031
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Analogue output · Ambient temperature -20...60 °C · screw terminals · Operating voltage 18...30 V DC · IP 65	7	DX2032
	–	Digital display · Multi-functional display and evaluation system · Can be used for example as: · frequency meter/tachometer · processing time/baking time display · industrial timer · position and event counter · display of speed measured from elapsed time · Ambient temperature -20...60 °C · screw terminals · Operating voltage 18...30 V DC · IP 65	7	DX2033

Decentralised display, preprocessing and conversion of 4...20 mA analogue signals

	normally open / closed programmable	Threshold display · 4...20 mA analogue input · transistor output · IO-Link interface · 4-digit alphanumeric display / alternating indication of red and green · Conversion of analogue measured values to an IO-Link communication · Analogue input 4...20 mA · Ambient temperature -25...60 °C · Operating voltage 18...30 V DC · IP 67	8	DP2200

Type	Inputs / outputs	Description	Draw- ing no.	Order no.

scaleable display for sensors with analogue output (e.g. pressure sensors, flow sensors)

	–	LC display · LCD 3½ digits; 15 mm high · Supply from the current loop · Input 4...20 mA · Ambient temperature 0...60 °C · terminals up to 2.5 mm² · IP 65	9	E89150

Universal counters

Type	U _b [V]	In- puts	Input function	Setting range	Out- puts relays	Out- puts transist.	Draw- ing no.	Order no.

preset counter with 2 presets

	90...260 AC	1	PNP / NPN	–	2	–	10	E89005

Accessories pulse divider / pulse stretcher

Type	Description	Draw- ing no.	Order no.

	Pulse divider · Ratio input/output pulse 10:1 · Housing for DIN rail mounting · Terminals · Housing materials: plastics	11	E80100
	Pulse stretcher · Pulse length · IN (min): > 0.2 ms / OUT: 25 ms · Housing for DIN rail mounting · Terminals · Housing materials: plastics	11	E80110
	Pulse divider · Division 1...255	12	E80102

Accessories

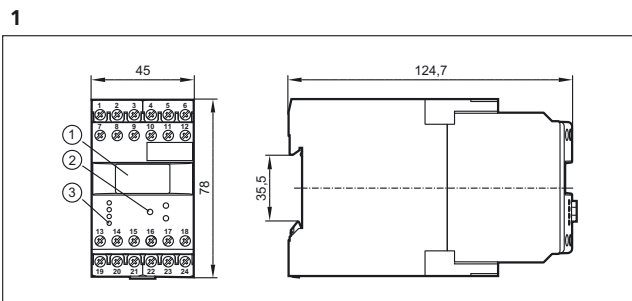
Type	Description	Order no.
	Angle bracket · for type M18 · Housing materials: stainless steel	E10736
	Angle bracket · for type M30 · Housing materials: stainless steel	E10737
	Mounting clamp · Ø 20 mm - Ø 18 mm · with reducing bush · for type M18 · Housing materials: PBT	E10076
	Mounting clamp · Ø 34 mm - Ø 30 mm · with reducing bush · for type M30 · Housing materials: PBT	E10077



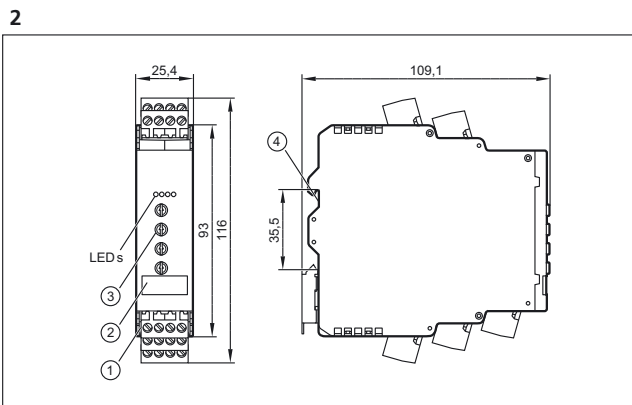
Sensors for motion control

Type	Description	Order no.
	mounting clip · Housing materials: 2.1247	E89208
	Target wheel · Plastic disk with 8 screws as "target" · Centered drill holes	E89010
	Target for pulse pickups · Strap dimensions 7 x 145 mm	E89013

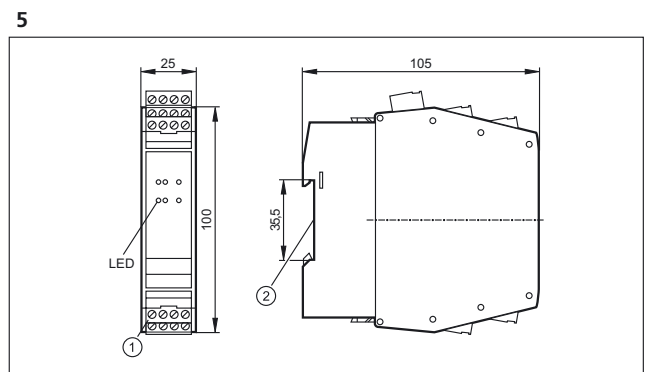
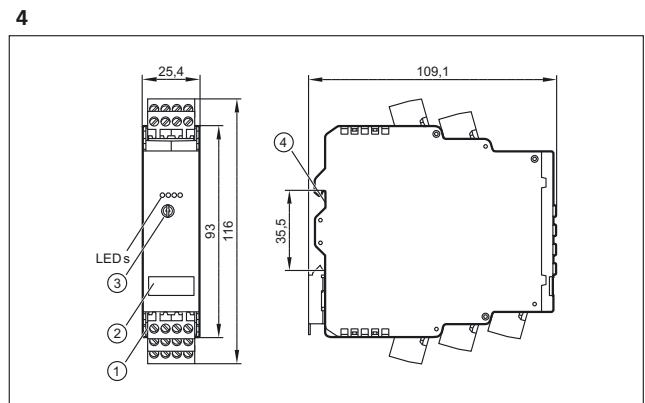
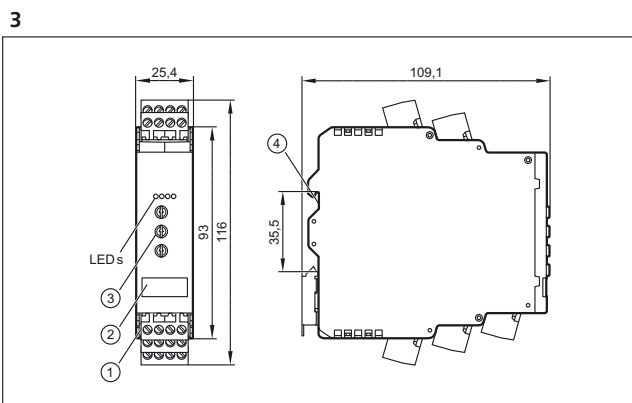
Scale drawings / drawing no. – CAD download: www.ifm.com



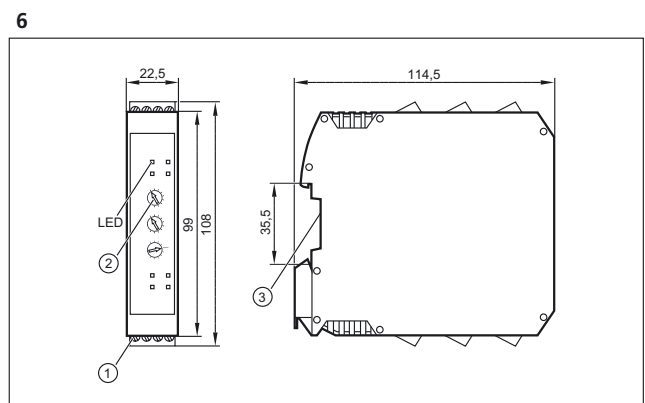
1: OLED display, 2: Programming buttons, 3: LEDs



1: plug-in screw terminals, 2: label, 3: potentiometer, 4: Mounting on DIN rail



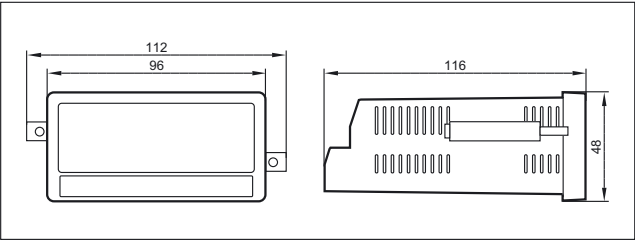
1: Combicon connector with screw terminals, 2: Mounting on DIN rail



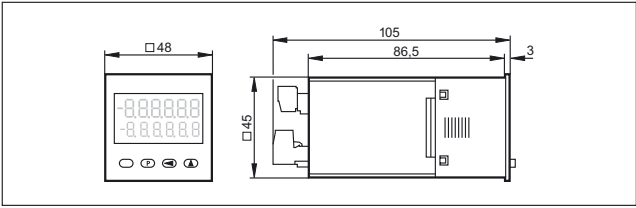
1: screw terminals, 2: Rotary switch, 3: Mounting on DIN rail

Scale drawings / drawing no. – CAD download: www.ifm.com

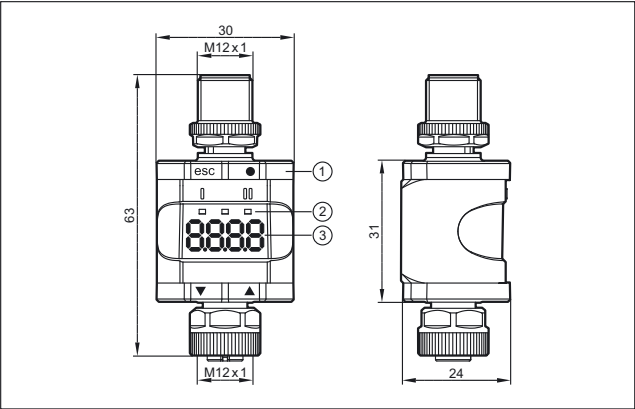
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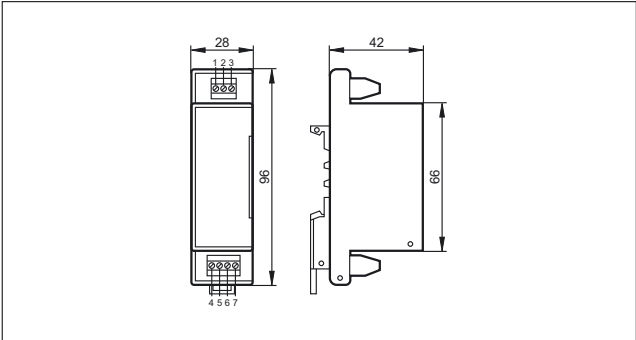


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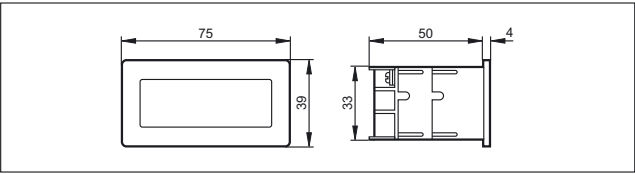


1: Push ring, 2: LEDs, 3: Display

11

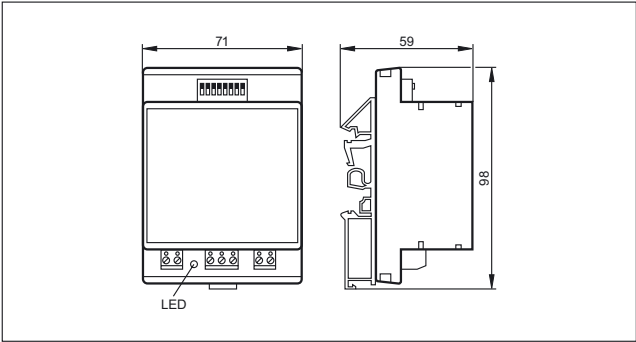


9



control panel cutout: 68 x 33 mm (according to DIN)

12





Vision sensors recognise everything at a glance



The power of a camera system with the simplicity of a sensor

In automation technology, vision sensors are nowadays not only an integral part of assembly, production and quality control, but also a means to increase efficiency. Vision sensors are cameras with application-specific evaluation, i.e. reliable electronic eyes at a low cost and a high degree of integration.

A few years ago, high-price camera systems were needed. Due to technical developments and continuously falling prices for components, ever more intelligent functions could be implemented at low cost in an ever smaller space. Not only do compact vision sensors replace camera systems, but they also offer additional application options. They are, for example, used to detect objects that have variable positions or shapes, replacing complex proximity sensors or multiple sensor solutions such as sensor bridges used for completeness checks of pallets or crates.

Easy to integrate

One of the distinguishing features of vision sensors is their simplicity. This means that they can be used without any specific prior knowledge. All units have switching outputs to confirm pass/fail conditions. So vision sensors offer the same ease of use as binary sensors. Ready-to-use function blocks support the integration into the PLC. An Ethernet process interface is used for data transmission, parameter setting and remote maintenance.

Robust and compact

Another advantage: the high protection ratings and wide temperature ranges of ifm vision sensors make it possible to install them close to the objects to be monitored. In contrast to complex camera solutions, all necessary components such as lighting, optics, evaluation electronics and output logic are integrated in the industrial housing.

With ifm vision sensors, tasks such as quality and completeness checks can now be solved easily and at a low cost.

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	<i>3D cameras</i>	392 - 395
	<i>Illumination</i>	396 - 400



Industrial imaging



Vision sensors

Stand-alone unit with integrated lighting and evaluation in a robust, industrially compatible housing.

The electronic eye for monitoring presence, completeness, position, quality control as well as sorting tasks.

System overview	Page
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Sensors for object recognition

Type	Operating principle	Max. field of view size [mm]	Resolution [mm]	Detection rate [Hz]	Type of light	Ambient temperature [°C]	Drawing no.	Order no.

Type O2V · M12 plug, 8 poles · M12 socket, 4 poles · metal · DC · PNP · Connector groups 16, 17, 157, 183

	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	White light	-10...60	1	O2V100
	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	Infrared	-10...60	1	O2V120
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	White light	-10...60	1	O2V102
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	Infrared	-10...60	1	O2V122
	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	White light	-10...60	2	O2V104
	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	Infrared	-10...60	2	O2V124

Type O2V · M12 plug, 8 poles · M12 socket, 4 poles · metal · DC · NPN · Connector groups 16, 17, 157, 183

	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	White light	-10...60	1	O2V101

Product selectors and further information can be found at: www.ifm.com

Type	Operating principle	Max. field of view size [mm]	Resolution [mm]	Detection rate [Hz]	Type of light	Ambient temperature [°C]	Drawing no.	Order no.

Type O2V · M12 plug, 8 poles · M12 socket, 4 poles · metal · DC · NPN · Connector groups 16, 17, 157, 183

	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	Infrared	-10...60	1	O2V121
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	White light	-10...60	1	O2V103
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	Infrared	-10...60	1	O2V123
	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	White light	-10...60	2	O2V105
	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	Infrared	-10...60	2	O2V125

Type O2D2 · M12 plug, 8 poles · M12 socket, 4 poles · metal · DC · PNP · Connector groups 16, 17, 157, 183

	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	Infrared	-10...60	2	O2D224
	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	Infrared	-10...60	1	O2D220
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	Infrared	-10...60	1	O2D222

Type O2D2 · M12 plug, 8 poles · M12 socket, 4 poles · metal · DC · NPN · Connector groups 16, 17, 157, 183

	CMOS image sensor B/W, VGA resolution 640 x 480	400 x 300	0.633	10	Infrared	-10...60	2	O2D225
	CMOS image sensor B/W, VGA resolution 640 x 480	640 x 480	1.0	10	Infrared	-10...60	1	O2D227
	CMOS image sensor B/W, VGA resolution 640 x 480	1320 x 945	2.0	10	Infrared	-10...60	1	O2D229

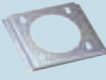
Software for vision sensors

Type	Description	Order no.
	Operating software · O2D	E2D200
	Operating software · O2V	E2V100



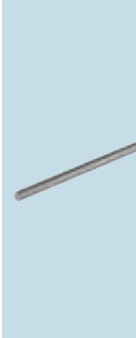
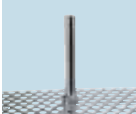
Industrial imaging

Panel PC for vision sensors

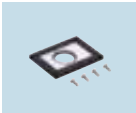
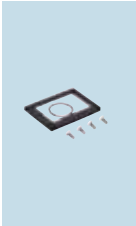
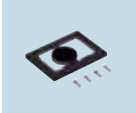
Type	Description	Order no.
	Touch Panel PC · 12.1" colour display · Intel Atom CPU 1.6 GHz · 2 GByte RAM · Windows Embedded Standard 7 SP1 (32 bits)	E2D400
	Mounting bracket · for Touch Panel PC · for wall mounting · VESA standard 100 x 100 mm · Housing materials: fixture: metal	E2D401
	Mounting set · for Touch Panel PC · for control cabinet mounting · Housing materials: fixture: metal / End cap: plastics	E2D402

Fixing components for vision sensors

Type	Description	Order no.
	Mounting set · O2D, O2M, O2I, O2V · Clamp mounting · rod mounting Ø 12 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E2D110
	Mounting set · O2D, O2M, O2I, O2V · Clamp mounting · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E2D112
	Mounting set · Backlight 50 x 50 mm · Clamp mounting · Housing materials: Mounting plate: stainless steel / clamp: high-grade stainless steel	E2D108
	Mounting set · Backlight 100 x 100 mm · Clamp mounting · Housing materials: Mounting plate: stainless steel / clamp: high-grade stainless steel	E2D109
	clamp · Ø 12 mm · rod mounting Ø 12 mm · Housing materials: clamp: stainless steel	E21110
	clamp · Ø 14 mm · rod mounting Ø 14 mm · Housing materials: clamp: stainless steel	E21109
	clamp · Ø 12 mm; M10 · Free-standing M10 · Housing materials: clamp: stainless steel	E20946
	clamp · Ø 14 mm; M12 · free-standing M12 · Housing materials: clamp: stainless steel	E20948
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20938
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E20940

Type	Description	Order no.
	mounting rod · Ø 12 · Length: 150 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21111
	mounting rod · Ø 12 · Length: 200 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21112
	mounting rod · Ø 12 · Length: 300 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21113
	mounting rod · Ø 14 / M12 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20939
	mounting rod · Ø 14 / M12 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E20941
	Connection piece · Ø 20 mm · for the connection of two clamps with Ø 20 mm · Housing materials: stainless steel 316L / 1.4404	E21076
	Cube · M10 · aluminium profile · Housing materials: diecast zinc	E20951
	Cube · M12 · aluminium profile · Housing materials: diecast zinc	E20952

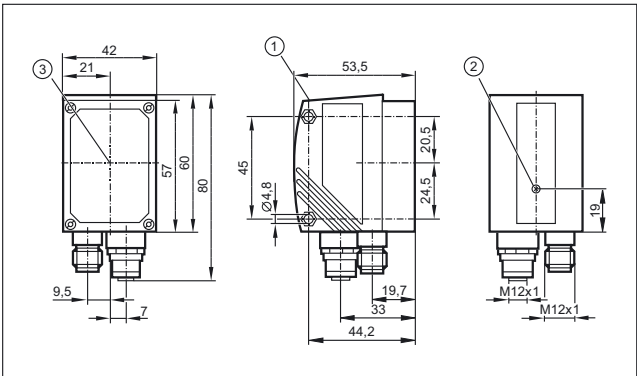
Reflective tapes, diffusers and protective panes for vision sensors

Type	Description	Order no.
	Reflective tape · TS-00 · 50 x 1000 mm · for redlight and infrared light retro-reflective sensors without polarisation filter · Housing materials: plastics	E20401
	Reflective tape · TS-02 · 50 x 1000 mm · For red light and infrared light retro-reflective sensors · Housing materials: plastics / acrylic	E21015
	Plastic diffuser · O2D / O2I · Housing materials: housing: diecast zinc black / lens: PMMA	E21165
	Plastic protective pane for the food industry · O2D / O2I · Housing materials: housing: diecast zinc black / lens: PMMA	E21166
	Glass protective pane · O2D / O2I · Housing materials: housing: diecast zinc black / lens: float glass	E21168
	Daylight filter · O2D · Housing materials: housing: diecast zinc black / lens: PMMA / Metal ring: aluminium black anodised / sealing: FPM 75+/-5 Shore A black	E21172



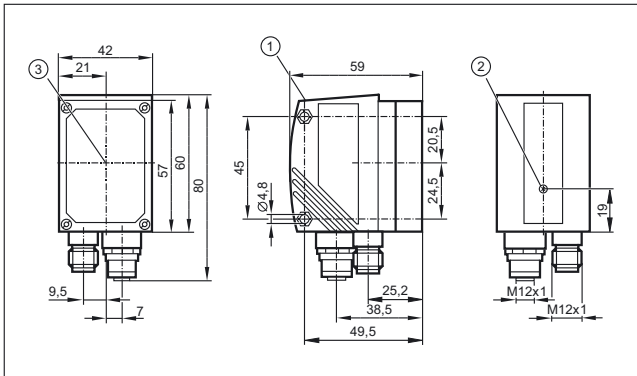
Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: display, 2: Focus adjustment screw, 3: Centre of the lens axes

2



1: display, 2: Focus adjustment screw, 3: Centre of the lens axes





Industrial imaging



3D sensors

Photoelectric 3D sensors are suited for many different applications, such as volume, distance and level detection. They measure the distance between the sensor and the nearest surface point by point using the time-of-flight principle. The sensors illuminate the scene with an internal or external infrared light source and calculate the distance by means of the light reflected from the surface.

These sensors for industrial applications can be used for completeness checks, volume determination or sorting tasks. Sensors for applications in mobile machines have an outstanding shock and vibration resistance.

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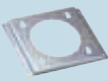
Sensors for 3D object recognition

Type	Operating principle	Resolution (pixels)	Angle of aperture (horizontal x vertical) [°]	Lighting	Max. sampling rate [Hz]	Ambient temperature [°C]	Drawing no.	Order no.
PMD 3D sensor · Type O3D · M12 connector · metal · DC · Connector groups 16, 17, 157, 183								
	3D ToF sensor	64 x 48	30 x 40	Infrared LED	20	-10...50	1	O3D200
	3D ToF sensor	64 x 48	64 x 48	Infrared LED	20	-10...50	2	O3D222
3D sensor · Type O3D · M12 connector · metal · DC · Connector groups 16, 17								
	3D ToF sensor	176 x 132	40 x 30	Infrared LED	25	-10...50	3	O3D300
	3D ToF sensor	176 x 132	60 x 45	Infrared LED	25	-10...50	4	O3D302
3D sensor · Type O3D · M12 connector · metal · DC · Connector groups 16, 17, 157, 183								
	3D ToF sensor	176 x 132	40 x 30	Infrared LED	25	-10...50	3	O3D310
	3D ToF sensor	176 x 132	60 x 45	Infrared LED	25	-10...50	4	O3D312

Software for 3D sensors

Type	Description	Order no.
	Operating software · O3D2xx	E3D200
	Operating software · O3Mxxx · O3D3xx	E3D300

Panel PC for vision sensors

Type	Description	Order no.
	Touch Panel PC · 12.1" colour display · Intel Atom CPU 1.6 GHz · 2 GByte RAM · Windows Embedded Standard 7 SP1 (32 bits)	E2D400
	Mounting bracket · for Touch Panel PC · for wall mounting · VESA standard 100 x 100 mm · Housing materials: fixture: metal	E2D401
	Mounting set · for Touch Panel PC · for control cabinet mounting · Housing materials: fixture: metal / End cap: plastics	E2D402

Fixing components for 3D sensors

Type	Description	Order no.
	Mounting set · O3D · Clamp mounting · Type O3D · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E3D103
	Mounting set · O3D · Clamp mounting · Type Smart Camera · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E3D301
	mounting rod · Ø 14 / M12 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20939
	mounting rod · Ø 14 · Length: 200 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21228
	mounting rod · Ø 14 · Length: 300 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21229
	mounting rod · Ø 14 · Length: 500 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21232



Technical drawings of the M12x1 LED light module showing front, side, and detail views with dimensions.

Front View: Dimensions include a width of 75 mm, a mounting hole diameter of 16 mm, a central cutout width of 18 mm, a total height of 137 mm, and a mounting hole offset of 120 mm.

Side View: Dimensions include a width of 95 mm, a total height of 63.8 mm, a mounting hole offset of 45 mm, a base width of 40 mm, and a base offset of 60.5 mm.

Detail View: Dimensions include a mounting hole diameter of 3 mm, a mounting hole offset of 21.5 mm, a total height of 94 mm, and a base width of 12 mm.

Technical drawings of the M12x1 LED strip light showing front, side, and end views with dimensions:

- Front View:** Shows a width of 75 mm. The mounting holes are spaced 16 mm and 18 mm from the edges. The total height is 137 mm, with a mounting tab height of 120 mm. The internal LED array is 123.5 mm high. The angle between the mounting tabs is 43°.
- Side View:** Shows a depth of 95 mm. The mounting tab height is 45 mm. The bottom mounting hole is 40 mm from the edge and 60.5 mm from the bottom. The LED array height is 63.3 mm. A 64° angle is indicated for the side profile.
- End View:** Shows a width of 21.5 mm. The mounting holes are M12x1. The total height is 34 mm. The LED array is 21.5 mm wide.

[illegible]

Technical drawing of the M12x1 lock cylinder, showing front and side views with dimensions in millimeters.

Front View Dimensions:

- Overall width: 65
- Inner width: 32,5
- Overall height: 72
- Inner height: 33

Side View Dimensions:

- Overall width: 95
- Width to center of bolt: 82,6
- Width to center of cylinder: 73,3
- Height to top of cylinder: 40
- Height to center of cylinder: 33
- Height to bottom of cylinder: 14
- Bolt diameter: Ø5,7
- Cylinder diameter: M12x1
- Overall height: 71,6

Product selectors and further information can be found at: www.ifm.com





Industrial imaging



3D cameras

The pmd 3d camera detects scenes and objects in their spatial dimensions at a glance. In contrast to laser scanners it does not require moving components and is thus robust and wear-free. The operating principle is the same as for the 3D sensor. Besides the 3D distance image the camera provides a grey image of the scene. The combination of these images offers the possibility to freely program application-specific tasks by means of a software development kit.

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Cameras for 3D object recognition

Type	Operating principle	Resolution (pixels)	Angle of aperture (horizontal x vertical) [°]	Lighting	Max. sampling rate [Hz]	Ambient temperature [°C]	Drawing no.	Order no.
PMD 3D camera · Type O3D · M12 connector · metal · DC · Connector groups 16, 17, 157, 183								
	3D ToF camera	64 x 48	40 x 30	Infrared LED	20	-10...50	1	O3D201
	3D ToF Kamera	64 x 48	64 x 48	Infrared LED	20	-10...50	2	O3D223
3D camera · Type O3D · M12 connector · metal · DC · Connector groups 12, 13, 22, 24, 152, 155, 186, 192, 194, 205								
	3D ToF Kamera	176 x 132	40 x 30	Infrared LED	25	-10...50	3	O3D301
	3D ToF Kamera	176 x 132	60 x 45	Infrared LED	25	-10...50	4	O3D303
3D camera · Type O3D · M12 connector · metal · DC · Connector groups 152, 155, 157, 183, 186, 192								
	3D ToF Kamera	176 x 132	40 x 30	Infrared LED	25	-10...50	3	O3D311
	3D ToF Kamera	176 x 132	60 x 45	Infrared LED	25	-10...50	4	O3D313

Software for 3D cameras

Type	Description	Order no.
	Operating software · O3D2xx	E3D201
	Operating software · O3Mxxx · O3D3xx	E3D300

Accessories

Type	Description	Order no.
	Cooling element · O3D · Cooling element · Heat conductor · Type Smart Camera · panel/surf. · Housing materials: Cooling element: AlMgSi1MgMn / Heat conductor: AlMg3	E3D302
	Cooling element · O3D · Double cooling element · Heat conductor · Type Smart Camera · panel/surf. · Housing materials: Cooling element: AlMgSi1MgMn / Heat conductor: AlMg3	E3D304
	Heat conductor · O3D · Heat conductor · Type Smart Camera · panel/surf. · Housing materials: Heat conductor: AlMg3	E3D303

Fixing components for 3D cameras

Type	Description	Order no.
	Mounting set · O3D · Clamp mounting · Type O3D · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E3D103
	Mounting set · O3D · Clamp mounting · Type Smart Camera · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E3D301
	mounting rod · Ø 14 / M12 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20939
	mounting rod · Ø 14 · Length: 200 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21228
	mounting rod · Ø 14 · Length: 300 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21229
	mounting rod · Ø 14 · Length: 500 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21232



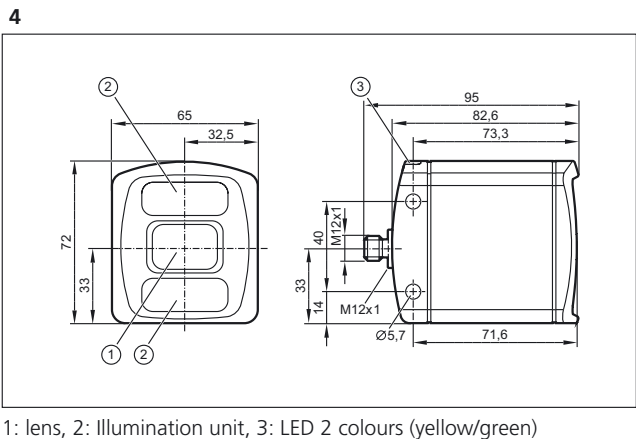
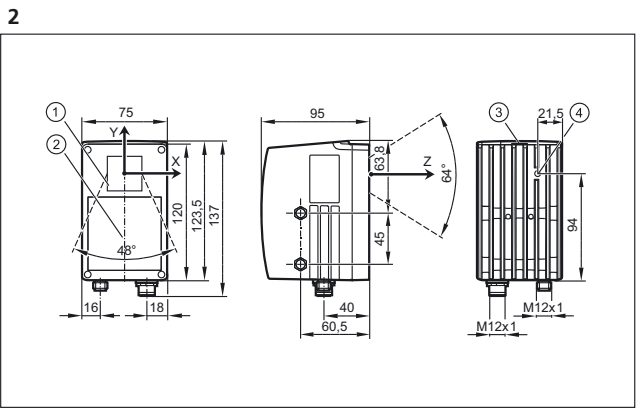
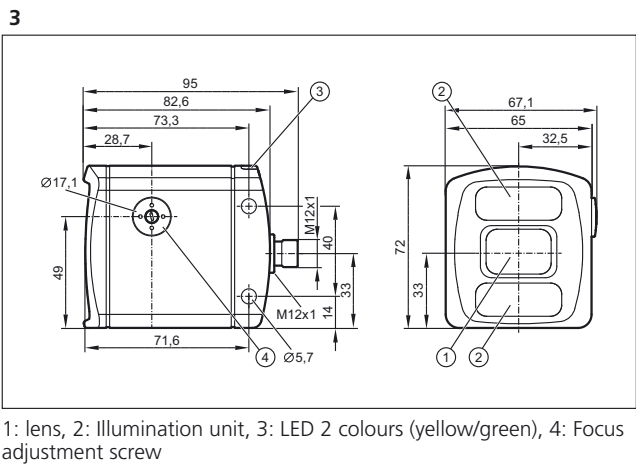
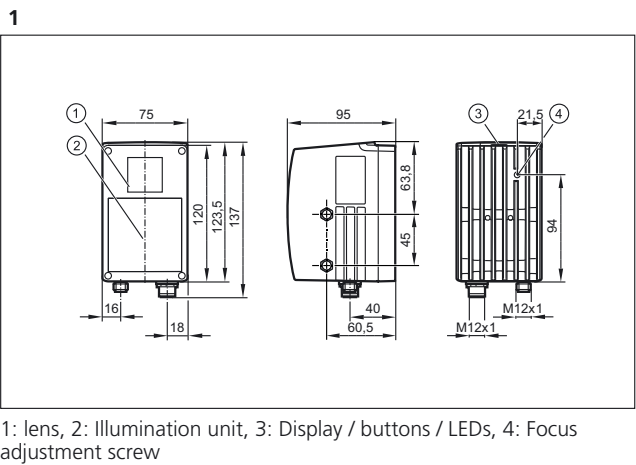
Industrial imaging

Connection cables for industrial imaging

Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	E11898
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: TPU / PA	E12090
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 2 m · Housing materials: TPU	E21138
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 5 m · Housing materials: TPU	E21139
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 10 m · Housing materials: TPU	E21137
	Jumper · straight / straight · Ethernet · 10 m · Housing materials: PUR / PC	E12204
	Jumper · straight / straight · Ethernet · 20 m · Housing materials: PUR / PC	E12205
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: PUR	E11231
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: PUR	E11232
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: PUR	E12260
	Socket · straight · Free from halogen · M12 connector · 5 m · Housing materials: PUR	E11807
	Socket · straight · Free from halogen · M12 connector · 10 m · Housing materials: PUR	E11311
	Socket · straight · Free from halogen · M12 connector · 2 m · Housing materials: PUR	E11950
	Adapter · angled · Connector	E21140

Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR	EC2080
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 5 m · Housing materials: PUR	E30112

Scale drawings / drawing no. – CAD download: www.ifm.com





Industrial imaging



Illumination

The lighting units generate a homogeneous light field with visible red or invisible infrared light and are available in three different sizes. They are most often used in combination with object recognition and object inspection sensors for contour and position verification. The high-quality LED illumination creates homogeneous light - either for virtually shadow-free object illumination or for emphasising surface characteristics such as dot-peened codes, scratches or nicks.

The optional angle bracket and the tried-and-tested ifm mounting system facilitate the alignment of the different types of additional illumination.

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Illumination units, spotlight	398
Accessories for illumination units	398 - 399
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Illumination units, ring

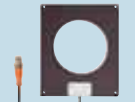
Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I ₀ normal light intensity [mA]	I ₀ high light intensity [mA]	Trigger	Draw- ing no.	Order no.
	Ø 122 / L = 20.5	Red	Ø 66 / 106	800	1300	external; 24 V PNP	1	O2D915
	Ø 122 / L = 20.5	Infrared	Ø 66 / 106	800	1400	external; 24 V PNP	1	O2D917
	Ø 122 / L = 20.5	White light	Ø 66 / 106	800	1200	external; 24 V PNP	1	O2D919

PUR cable with M12 connector 0.3 m · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

Illumination units, bar

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I ₀ normal light intensity [mA]	I ₀ high light intensity [mA]	Trigger	Draw- ing no.	Order no.
PUR cable with M12 connector 0.3 m · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	116 x 13 x 18	White light	10 x 75	165	275	external; 24 V PNP	2	O2D923
	200 x 13 x 18	White light	10 x 150	265	475	external; 24 V PNP	4	O2D926
	116 x 13 x 18	Red	10 x 75	225	375	external; 24 V PNP	2	O2D921
	200 x 13 x 18	Red	10 x 150	460	700	external; 24 V PNP	4	O2D924
	116 x 13 x 18	Infrared	10 x 75	185	325	external; 24 V PNP	2	O2D922
	200 x 13 x 18	Infrared	10 x 150	415	640	external; 24 V PNP	4	O2D925

Illumination units, dark field

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I ₀ normal light intensity [mA]	I ₀ high light intensity [mA]	Trigger	Draw- ing no.	Order no.
PUR cable with M12 connector 0.3 m · metal · DC · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	155 x 130 x 9.8	Red	Ø 90	–	–	external; 24 V PNP	3	O2D920

Illumination units, backlight

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I ₀ normal light intensity [mA]	I ₀ high light intensity [mA]	Trigger	Draw- ing no.	Order no.
PUR cable 2 m · metal · DC · Wiring diagram no. 3								
	108 x 9.8 x 81	Red	50 x 50	200	100	External; 24 V PNP to IEC61131-1	5	O2D902
	108 x 9.8 x 81	Infrared	50 x 50	200	100	External; 24 V PNP to IEC61131-1	5	O2D903
	161.2 x 9.8 x 133	Red	100 x 100	450	250	External; 24 V PNP to IEC61131-1	6	O2D904

You can find wiring diagrams and scale drawings from page 399



Industrial imaging

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I ₀ normal light intensity [mA]	I ₀ high light intensity [mA]	Trigger	Draw- ing no.	Order no.

PUR cable 2 m · metal · DC · Wiring diagram no. 3

	161.2 x 9.8 x 133	Infrared	100 x 100	450	250	External; 24 V PNP to IEC61131-1	6	O2D905

PUR cable 0.15 m · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	108 x 9.8 x 81	Red	50 x 50	200	100	External; 24 V PNP to IEC61131-1	5	O2D911
	108 x 9.8 x 81	Infrared	50 x 50	200	100	External; 24 V PNP to IEC61131-1	5	O2D907
	161.2 x 9.8 x 133	Red	100 x 100	450	250	External; 24 V PNP to IEC61131-1	6	O2D912
	161.2 x 9.8 x 133	Infrared	100 x 100	450	250	External; 24 V PNP to IEC61131-1	6	O2D908

Illumination units, spotlight

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I ₀ normal light intensity [mA]	I ₀ high light intensity [mA]	Trigger	Draw- ing no.	Order no.

M12 connector · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	42 x 42 x 31	Red	Diffuser no	180	90	External; 24 V PNP to IEC61131-1	7	O2D909
	42 x 42 x 32.2	Red	Diffuser yes	180	90	External; 24 V PNP to IEC61131-1	8	O2D913

Accessories for illumination units

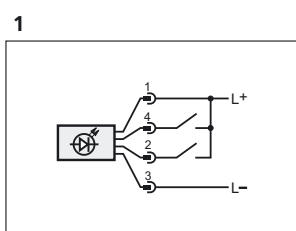
Type	Description	Order no.
	Glass diffuser · Ring light · Housing materials: housing: aluminium black anodised / lens: glass	E2D202
	Mounting set · Ring light · Clamp mounting · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	E2D201
	Mounting set · Dark field light · Clamp mounting · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	E2D115

Type	Description	Order no.
	Mounting set · Clamp mounting · for 4 bar lights 10x75 mm · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	E2D116
	Mounting set · Clamp mounting · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	E2D114

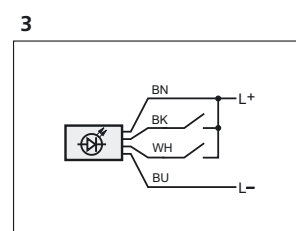
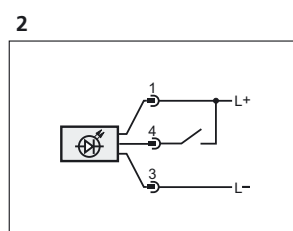
Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white

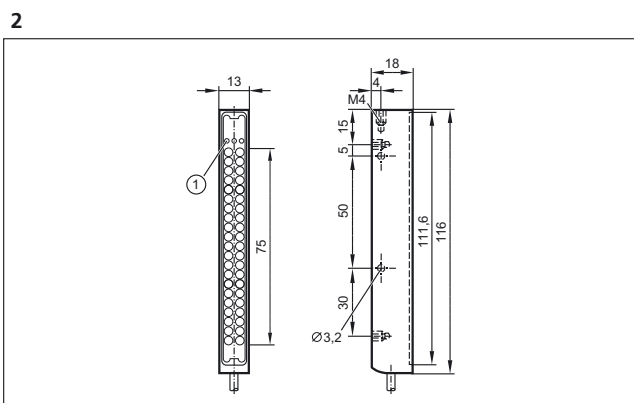
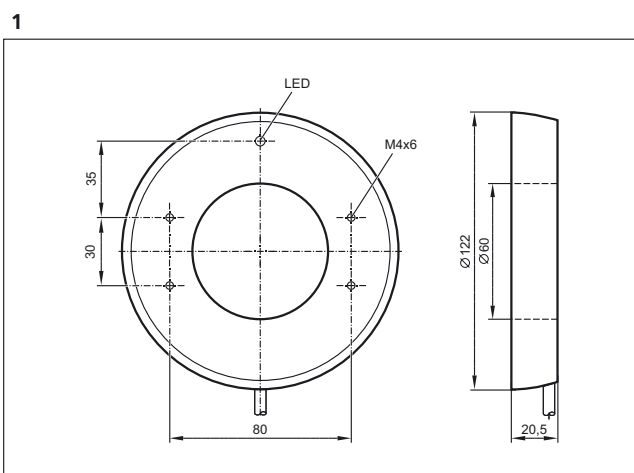


1: Trigger, 2: Operating mode "high light intensity"

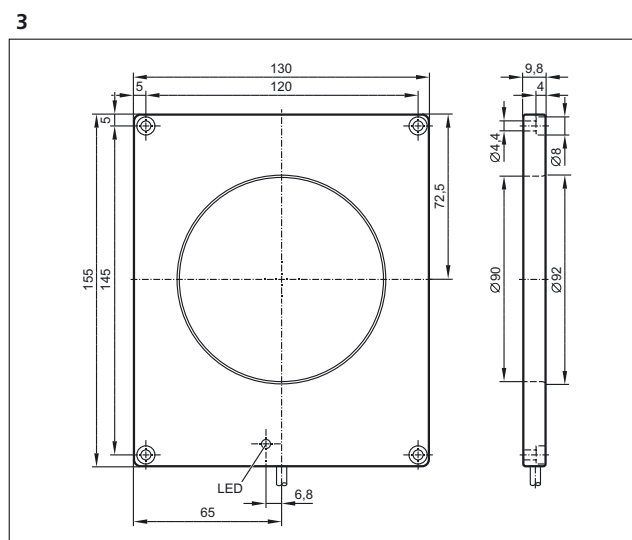


black: Trigger, white: Operating mode "high light intensity"

Scale drawings / drawing no. – CAD download: www.ifm.com



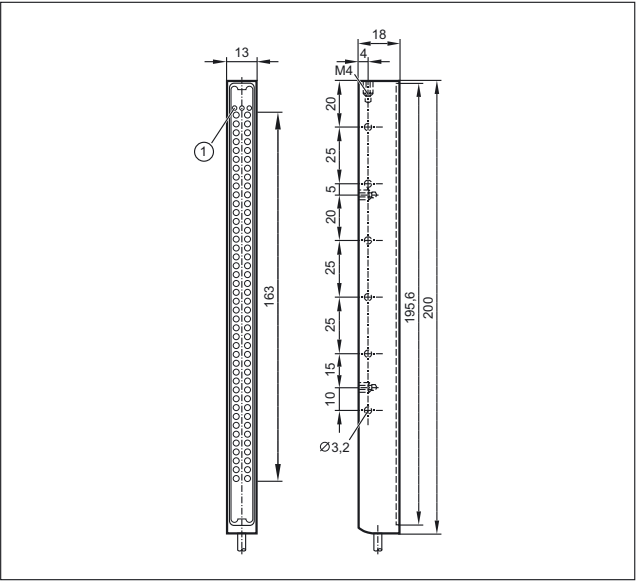
1: LED





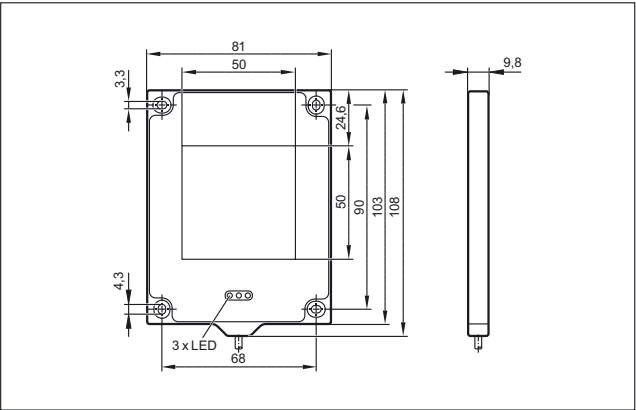
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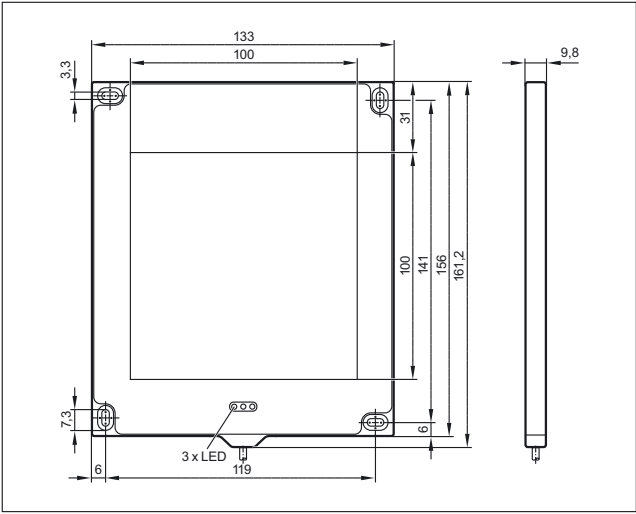


1: LED

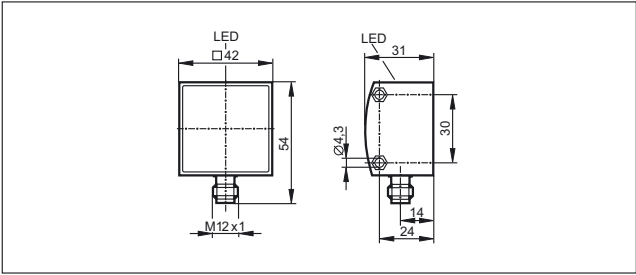
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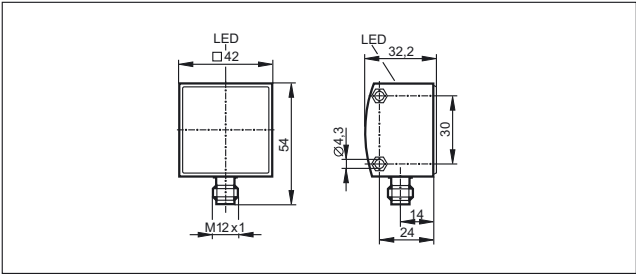
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7



8







Reliable operator, process and machine protection



Applications

Today, automation technology can no longer be imagined without Functional Safety – not least because of the new EC Machinery Directive (2006/42/EC).

Its primary objective is to protect operators as stipulated by the Machinery Directive, whereby machinery should not present a risk. Moreover, safety technology is an important guarantor of process protection and, in particular, of machine protection.

Approvals

A series of standards relates to the subject of Functional Safety. They specify different Safety Integrity Levels.

- IEC 61508: This standard is regarded as the basic safety standard and classifies safety products for automation by „Safety Integrity Levels“ (SIL 1 – SIL 3).
- IEC 62061: This standard is based on IEC 61508 and determines „Safety Integrity Level Claim Limits“ (SIL CL1 – SIL CL 3). These are comparable to the Safety Integrity Levels of IEC 61508. This standard specifies the design of control systems.
- ISO 13849-1: This standard is the successor to the previously applicable standard EN 954-1. In this standard „Performance Levels“ (PL a to PL e) can be achieved. PL b-c correspond to SIL 1, PL d corresponds to SIL 2 and PL e corresponds to SIL 3. This standard covers the machinery sector.
- IEC 61496: This standard specifies general requirements for Electro-Sensitive Protective Equipment (ESPE) such as safety light grids. Variants are types 2 to 4.

Output versions

Output options include safe output stages such as OSSD outputs (Output Signal Switching Devices), outputs with a safe clock cycle that can be connected in series as well as relay outputs.

OSSD and pulsed outputs are the ideal choice for local safety-related tasks associated with controllers. Relay outputs are used to switch contactors. Moreover safe bus systems such as AS-i Safety at Work or CANopen Safety are available.

	<i>Fail-safe inductive sensors</i>	404 - 407
	<i>Safety light curtains</i>	408 - 427
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	<i>AS-Interface Safety at Work</i>	440 - 445

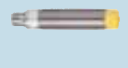


Fail-safe inductive sensors

Here you will find the first electronic fail-safe sensors which do not require a special counterpart but switch directly on the door or a stainless steel or mild steel target. They are wear-free and largely independent from mounting tolerances after a longer use of the doors.

System overview	Page
Inductive sensors for safety-related applications SIL 3 and PL e with the possibility of connection in series	404
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Inductive sensors for safety-related applications SIL 3 and PL e with the possibility of connection in series

Type	Length [mm]	Enable zone [mm]	Housing material	U _b DC [V]	Protection	Response time in case of a safety request / enable time [ms]	Drawing no.	Order no.
M12 connector · Wiring diagram no. 1 · Connector groups 148, 149, 153, 184, 188, 193, 202								
	M18 / L = 71.5	0...6.5 nf	High-grade st. steel	24	IP 65 / IP 67 / IP 69K	≤ 1 / ≤ 1	1	GG714S
M12 connector · Wiring diagram no. 3 · Connector groups 148, 149, 153, 184, 188, 193, 202								
	M18 / L = 90	3...6 nf	High-grade st. steel	24	IP 68 / IP 69K	≤ 20 / ≤ 200	2	GG505S
	M18 / L = 90.5	1...4 f	Brass	24	IP 68 / IP 69K	≤ 20 / ≤ 200	3	GG507S
	M30 / L = 80	6...12 nf	High-grade st. steel	24	IP 68 / IP 69K	≤ 20 / ≤ 200	4	GI505S
	40 x 40 x 66	10...15 nf	PPE	24	IP 65 / IP 67	≤ 20 / ≤ 200	5	GM504S
	40 x 40 x 66	10...20 nf	PPE	24	IP 65 / IP 67	≤ 20 / ≤ 200	5	GM505S

f = flush / nf = non flush / qf = quasi-flush

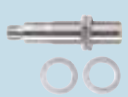
Inductive sensors for safety-related applications, 2 x OSSD, SIL 2, PL d

Type	Length [mm]	Enable zone [mm]	Housing material	U _b DC [V]	Protection	Response time in case of a safety request / enable time [ms]	Drawing no.	Order no.

M12 connector · Wiring diagram no. 1 · Connector groups 148, 149, 153, 184, 188, 193, 202

	M12 / L = 70	0.5...4 nf	High-grade st. steel	24	IP 65 / IP 67	≤ 1 / ≤ 1	6	GF711S
	M18 / L = 70.5	1...8 nf	High-grade st. steel	24	IP 65 / IP 67	≤ 1 / ≤ 1	7	GG711S
	M18 / L = 70	1...5 f	Brass	24	IP 65 / IP 67	≤ 1 / ≤ 1	8	GG712S

M12 connector · Wiring diagram no. 2 · Connector groups 148, 149, 153, 184, 188, 193, 202

	M18 / L = 86.5	> 10 f	Brass	24	IP 65 / IP 67	≤ 5 / ≤ 5	9	GG851S

M12 connector · Wiring diagram no. 1 · Connector groups 148, 149, 153, 184, 188, 193, 202

	M30 / L = 70	1...15 nf	High-grade st. steel	24	IP 65 / IP 67	≤ 10 / ≤ 1	10	GI711S
	M30 / L = 70	1...10 f	High-grade st. steel	24	IP 65 / IP 67	≤ 10 / ≤ 1	11	GI712S

f = flush / nf = non flush / qf = quasi-flush

Inductive sensors for safety-related applications, 2 x OSSD, SIL 3, PL e

Type	Length [mm]	Enable zone [mm]	Housing material	U _b DC [V]	Protection	Response time in case of a safety request / enable time [ms]	Drawing no.	Order no.

M12 connector · Wiring diagram no. 1 · Connector groups 148, 149, 153, 184, 188, 193, 202

	M30 / L = 80	6...12 nf	High-grade st. steel	24	IP 68 / IP 69K	≤ 50 / ≤ 200	4	GI701S
	40 x 40 x 66	10...15 nf	PPE	24	IP 65 / IP 67	≤ 50 / ≤ 200	5	GM701S
	40 x 40 x 66	4...20 nf	PPE	24	IP 65 / IP 67	≤ 50 / ≤ 200	5	GM705S

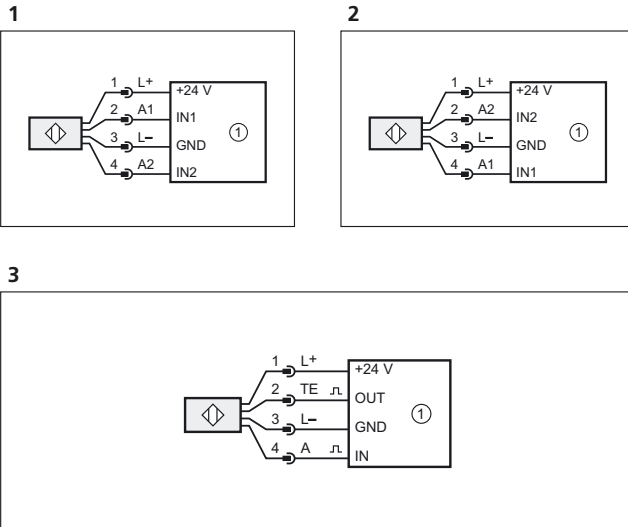
f = flush / nf = non flush / qf = quasi-flush



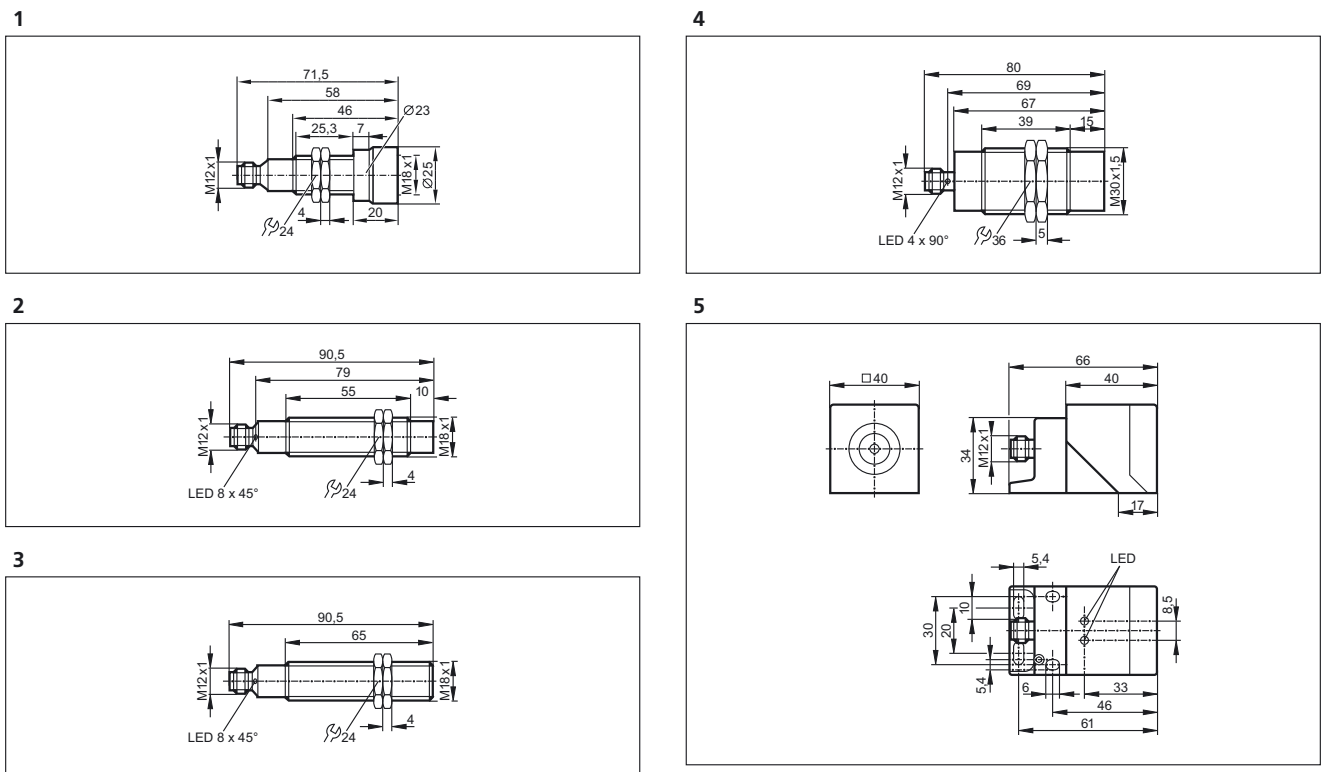
Accessories

Type	Description	Order no.
	Safety T-splitter · M12 socket - 1 M12 connector / 1 M12 socket · T-piece for the pseudo-serial connection of fail-safe sensors · Housing materials: PUR	E11569

Wiring diagrams

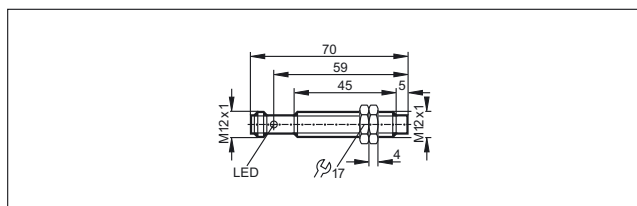


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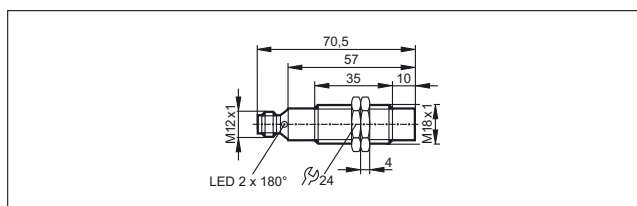


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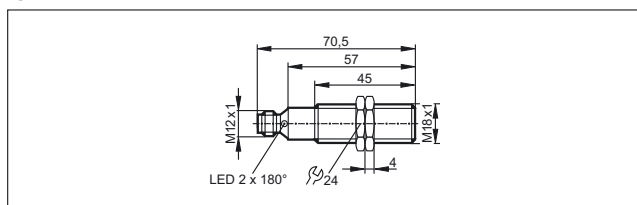
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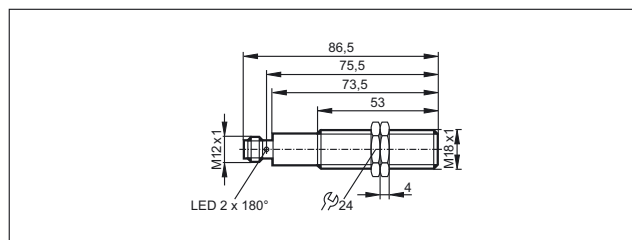
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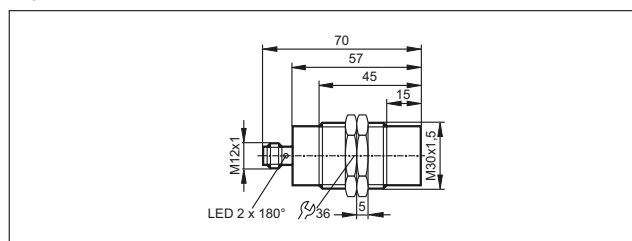
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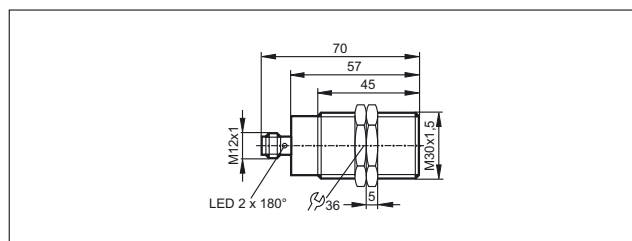
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11





Safety technology



Safety light curtains

Wherever motion of machine parts presents a danger to people or goods, safety light curtains or safety light grids are used.

The protective equipment ensures that the outputs are switched off which results in a machine halt.

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Safety light curtains type 4, SIL 3, PL e, resolution 14 mm, protected area width up to 6 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	213	14	160	0...3 / 1...6	4	24	1	OY001S
	363	14	310	0...3 / 1...6	5.5	24	1	OY002S
	513	14	460	0...3 / 1...6	7.5	24	1	OY003S
	663	14	610	0...3 / 1...6	9	24	1	OY004S
	813	14	760	0...3 / 1...6	11	24	1	OY005S
	963	14	910	0...3 / 1...6	13	24	1	OY006S
	1113	14	1060	0...3 / 1...6	14.5	24	1	OY007S
	1263	14	1210	0...3 / 1...6	16.5	24	1	OY008S
	1413	14	1360	0...3 / 1...6	18	24	1	OY009S
	1563	14	1510	0...3 / 1...6	20	24	1	OY010S
	1863	14	1810	0...3 / 1...6	20	24	1	OY011S



Safety technology

Safety light curtains type 4, SIL 3, PL e, resolution 20 mm, protected area width up to 20 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	213	20	160	0...10 / 3...20	4	24	1	OY221S
	363	20	310	0...10 / 3...20	5.5	24	1	OY222S
	513	20	460	0...10 / 3...20	7.5	24	1	OY223S
	663	20	610	0...10 / 3...20	9	24	1	OY224S
	813	20	760	0...10 / 3...20	11	24	1	OY225S
	963	20	910	0...10 / 3...20	13	24	1	OY226S
	1113	20	1060	0...10 / 3...20	14.5	24	1	OY227S
	1263	20	1210	0...10 / 3...20	16.5	24	1	OY228S
	1413	20	1360	0...10 / 3...20	18	24	1	OY229S
	1563	20	1510	0...10 / 3...20	20	24	1	OY230S

Safety light curtains type 4, SIL 3, PL e, resolution 30 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	213	30	160	0...4 / 3...12	4	24	2	OY041S
	363	30	310	0...4 / 3...12	5.5	24	2	OY042S
	513	30	460	0...4 / 3...12	7.5	24	2	OY043S

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	663	30	610	0...4 / 3...12	8.5	24	2	OY044S
	813	30	760	0...4 / 3...12	10.5	24	2	OY045S
	963	30	910	0...4 / 3...12	12	24	2	OY046S
	1113	30	1060	0...4 / 3...12	14	24	2	OY047S
	1263	30	1210	0...4 / 3...12	15.5	24	2	OY048S
	1413	30	1360	0...4 / 3...12	17	24	2	OY049S
	1563	30	1510	0...4 / 3...12	18.5	24	2	OY050S

Safety light curtains type 4, SIL 3, PL e, resolution 30 mm, protected area width up to 20 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	213	30	160	0...10 / 3...20	3	24	1	OY241S
	363	30	310	0...10 / 3...20	4	24	1	OY242S
	513	30	460	0...10 / 3...20	5	24	1	OY243S
	663	30	610	0...10 / 3...20	6	24	1	OY244S
	813	30	760	0...10 / 3...20	6.5	24	1	OY245S
	963	30	910	0...10 / 3...20	7.5	24	1	OY246S
	1113	30	1060	0...10 / 3...20	8.5	24	1	OY247S



Safety technology

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	1263	30	1210	0...10 / 3...20	9.5	24	1	OY248S
	1413	30	1360	0...10 / 3...20	10	24	1	OY249S
	1563	30	1510	0...10 / 3...20	11	24	1	OY250S

Safety light curtains type 4, SIL 3, PL e, resolution 40 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	213	40	160	0...4 / 3...12	3.5	24	2	OY061S
	363	40	310	0...4 / 3...12	4.5	24	2	OY062S
	513	40	460	0...4 / 3...12	5.5	24	2	OY063S
	663	40	610	0...4 / 3...12	6.5	24	2	OY064S
	813	40	760	0...4 / 3...12	7.5	24	2	OY065S
	963	40	910	0...4 / 3...12	9	24	2	OY066S
	1113	40	1060	0...4 / 3...12	10	24	2	OY067S
	1263	40	1210	0...4 / 3...12	11	24	2	OY068S
	1413	40	1360	0...4 / 3...12	12	24	2	OY069S
	1563	40	1510	0...4 / 3...12	13	24	2	OY070S

Safety light curtains type 4, SIL 3, PL e, resolution 40 mm, protected area width up to 20 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	213	40	160	0...10 / 3...20	3	24	1	OY261S
	363	40	310	0...10 / 3...20	3.5	24	1	OY262S
	513	40	460	0...10 / 3...20	4	24	1	OY263S
	663	40	610	0...10 / 3...20	4.5	24	1	OY264S
	813	40	760	0...10 / 3...20	5	24	1	OY265S
	963	40	910	0...10 / 3...20	6	24	1	OY266S
	1113	40	1060	0...10 / 3...20	6.5	24	1	OY267S
	1263	40	1210	0...10 / 3...20	7	24	1	OY268S
	1413	40	1360	0...10 / 3...20	7.5	24	1	OY269S
	1563	40	1510	0...10 / 3...20	8	24	1	OY270S

Safety light curtains type 4, SIL 3, PL e, resolution 50 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	363	50	310	0...4 / 3...12	4	24	2	OY082S
	513	50	460	0...4 / 3...12	4.5	24	2	OY083S
	663	50	610	0...4 / 3...12	5.5	24	2	OY084S



Safety technology

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	813	50	760	0...4 / 3...12	6.5	24	2	OY0855
	963	50	910	0...4 / 3...12	7.5	24	2	OY0865
	1113	50	1060	0...4 / 3...12	8.5	24	2	OY0875
	1263	50	1210	0...4 / 3...12	9	24	2	OY0885
	1413	50	1360	0...4 / 3...12	10	24	2	OY0895
	1563	50	1510	0...4 / 3...12	11	24	2	OY0905

Safety light curtains type 4, SIL 3, PL e, resolution 50 mm, protected area width up to 20 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	363	50	310	0...10 / 3...20	3	24	1	OY2825
	513	50	460	0...10 / 3...20	3.5	24	1	OY2835
	663	50	610	0...10 / 3...20	4	24	1	OY2845
	813	50	760	0...10 / 3...20	4.5	24	1	OY2855
	963	50	910	0...10 / 3...20	5	24	1	OY2865
	1113	50	1060	0...10 / 3...20	5.5	24	1	OY2875
	1263	50	1210	0...10 / 3...20	6	24	1	OY2885
	1413	50	1360	0...10 / 3...20	6.5	24	1	OY2895

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17



1563	50	1510	0...10 / 3...20	7	24	1	OY290S

Safety light curtains type 4, SIL 3, PL e, resolution 90 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17



663	90	610	0...4 / 3...12	4	24	2	OY104S

813	90	760	0...4 / 3...12	4.5	24	2	OY105S

963	90	910	0...4 / 3...12	5	24	2	OY106S

1113	90	1060	0...4 / 3...12	5.5	24	2	OY107S

1263	90	1210	0...4 / 3...12	5.5	24	2	OY108S

1413	90	1360	0...4 / 3...12	6	24	2	OY109S

1563	90	1510	0...4 / 3...12	6.5	24	2	OY110S

Safety light curtains type 4, SIL 3, PL e, resolution 90 mm, protected area width up to 20 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17



663	90	610	0...10 / 3...20	3	24	1	OY204S

813	90	760	0...10 / 3...20	3.5	24	1	OY205S

963	90	910	0...10 / 3...20	3.5	24	1	OY206S



Safety technology

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	1113	90	1060	0...10 / 3...20	3.5	24	1	OY207S
	1263	90	1210	0...10 / 3...20	4	24	1	OY208S
	1413	90	1360	0...10 / 3...20	4	24	1	OY209S
	1563	90	1510	0...10 / 3...20	4.5	24	1	OY210S

Safety light curtains type 2, SIL 1, PL c, resolution 30 mm, protected area width up to 12 m

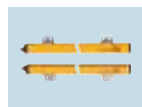
Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	213	30	160	0...4 / 3...12	4.5	24	2	OY031S
	363	30	310	0...4 / 3...12	6	24	2	OY032S
	513	30	460	0...4 / 3...12	8	24	2	OY033S
	663	30	610	0...4 / 3...12	9.5	24	2	OY034S
	813	30	760	0...4 / 3...12	11	24	2	OY035S
	963	30	910	0...4 / 3...12	12.5	24	2	OY036S
	1113	30	1060	0...4 / 3...12	14.5	24	2	OY037S
	1263	30	1210	0...4 / 3...12	16	24	2	OY038S
	1413	30	1360	0...4 / 3...12	17.5	24	2	OY039S
	1563	30	1510	0...4 / 3...12	19.5	24	2	OY040S

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17



1863	30	1810	0...4 / 3...12	19.5	24	2	OY300S

Safety light curtains type 2, SIL 1, PL c, resolution 40 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17



213	40	160	0...4 / 3...12	4	24	2	OY051S

363	40	310	0...4 / 3...12	5	24	2	OY052S

513	40	460	0...4 / 3...12	6	24	2	OY053S

663	40	610	0...4 / 3...12	7	24	2	OY054S

813	40	760	0...4 / 3...12	8	24	2	OY055S

963	40	910	0...4 / 3...12	9.5	24	2	OY056S

1113	40	1060	0...4 / 3...12	10.5	24	2	OY057S

1263	40	1210	0...4 / 3...12	11.5	24	2	OY058S

1413	40	1360	0...4 / 3...12	12.5	24	2	OY059S

1563	40	1510	0...4 / 3...12	13.5	24	2	OY060S



Safety technology

Safety light curtains type 2, SIL 1, PL c, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	363	50	310	0...4 / 3...12	4.5	24	2	OY072S
	513	50	460	0...4 / 3...12	5.5	24	2	OY073S
	663	50	610	0...4 / 3...12	6	24	2	OY074S
	813	50	760	0...4 / 3...12	7	24	2	OY075S
	963	50	910	0...4 / 3...12	8	24	2	OY076S
	1113	50	1060	0...4 / 3...12	9	24	2	OY077S
	1263	50	1210	0...4 / 3...12	10	24	2	OY078S
	1413	50	1360	0...4 / 3...12	10.5	24	2	OY079S
	1563	50	1510	0...4 / 3...12	11.5	24	2	OY080S

Safety light curtains type 2, SIL 1, PL c, resolution 90 mm, protected area width up to 12 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	663	90	610	0...4 / 3...12	4	24	2	OY094S
	813	90	760	0...4 / 3...12	4.5	24	2	OY095S
	963	90	910	0...4 / 3...12	5	24	2	OY096S
	1113	90	1060	0...4 / 3...12	5.5	24	2	OY097S

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	1263	90	1210	0...4 / 3...12	6	24	2	OY098S
	1413	90	1360	0...4 / 3...12	6.5	24	2	OY099S
	1563	90	1510	0...4 / 3...12	7	24	2	OY100S

Safety light curtains for hygienic and wet areas, IP 69K, type 4, SIL 3, PL e,
resolution 14 mm, protected area width up to 5 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

Cable 15 m · Wiring diagram no. 4, 5

	637	14	460	0...2 / 1...5	7.5	24	3	OY403S
	937	14	760	0...2 / 1...5	11	24	3	OY405S
	1237	14	1060	0...2 / 1...5	14.5	24	3	OY407S

Safety light curtains for hygienic and wet areas, IP 69K, type 4, SIL 3, PL e,
resolution 30 mm, protected area width up to 15 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

Cable 15 m · Wiring diagram no. 4, 5

	337	30	160	0...7 / 3...15	3	24	3	OY441S
	487	30	310	0...7 / 3...15	4	24	3	OY442S
	637	30	460	0...7 / 3...15	5	24	3	OY443S
	787	30	610	0...7 / 3...15	6	24	3	OY444S
	937	30	760	0...7 / 3...15	6.5	24	3	OY445S



Safety technology

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

Cable 15 m · Wiring diagram no. 4, 5

1087	30	910	0...7 / 3...15	7.5	24	3	OY446S
1237	30	1060	0...7 / 3...15	8.5	24	3	OY447S
1387	30	1210	0...7 / 3...15	9.5	24	3	OY448S
1537	30	1360	0...7 / 3...15	10	24	3	OY449S
1687	30	1510	0...7 / 3...15	11	24	3	OY450S
1987	30	1810	0...7 / 3...15	11	24	3	OY453S

Safety light curtains for hygienic and wet areas, IP 69K, type 2, SIL 1, PL c, resolution 30 mm, protected area width up to 10 m

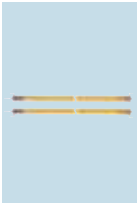
Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

Cable 15 m · Wiring diagram no. 4, 5

337	30	160	0...3 / 2...10	4.5	24	4	OY431S
487	30	310	0...3 / 2...10	6	24	4	OY432S
637	30	460	0...3 / 2...10	8	24	4	OY433S
787	30	610	0...3 / 2...10	9.5	24	4	OY434S
937	30	760	0...3 / 2...10	11	24	4	OY435S
1087	30	910	0...3 / 2...10	12.5	24	4	OY436S
1237	30	1060	0...3 / 2...10	14.5	24	4	OY437S
1387	30	1210	0...3 / 2...10	16	24	4	OY438S

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

Cable 15 m · Wiring diagram no. 4, 5

	1537	30	1360	0...3 / 2...10	17.5	24	4	OY439S
	1687	30	1510	0...3 / 2...10	19.5	24	4	OY440S

Safety light curtains with floating blanking type 4, SIL 3, PL e, resolution 14 mm, protected area width up to 5 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 3 · Connector groups 16, 17

	261	14	160	0...3 / 0...5	6	24	5	OY801S
	711	14	610	0...3 / 0...5	11.5	24	5	OY804S
	861	14	760	0...3 / 0...5	13.5	24	5	OY805S
	1011	14	910	0...3 / 0...5	15.5	24	5	OY806S
	1161	14	1060	0...3 / 0...5	17	24	5	OY807S
	1311	14	1210	0...3 / 0...5	19	24	5	OY808S

Safety light curtains with floating blanking type 4, SIL 3, PL e, resolution 20 mm, protected area width up to 18 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 3 · Connector groups 16, 17

	711	20	610	0...6 / 3...18	11.5	24	5	OY815S
	861	20	760	0...6 / 3...18	13.5	24	5	OY816S
	1011	20	910	0...6 / 3...18	15.5	24	5	OY817S



Safety technology

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 3 · Connector groups 16, 17

	1161	20	1060	0...6 / 3...18	17	24	5	OY818S
	1311	20	1210	0...6 / 3...18	19	24	5	OY819S

Safety light curtains with floating blanking type 4, SIL 3, PL e, resolution 40 mm, protected area width up to 18 m

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 3 · Connector groups 16, 17

	711	40	610	0...6 / 3...18	8.5	24	5	OY825S
	861	40	760	0...6 / 3...18	9.5	24	5	OY826S
	1011	40	910	0...6 / 3...18	10.5	24	5	OY827S
	1161	40	1060	0...6 / 3...18	11.5	24	5	OY828S
	1311	40	1210	0...6 / 3...18	12.5	24	5	OY829S

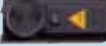
Accessories for safety light curtains

Type	Description	Order no.
	Corner mirror · Length: 250 mm · for safety light curtains · Protected area height · 160 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1001
	Corner mirror · Length: 400 mm · for safety light curtains · Protected area height · 310 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1002
	Corner mirror · Length: 540 mm · for safety light curtains · Protected area height · 460 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1003
	Corner mirror · Length: 715 mm · for safety light curtains · Protected area height · 610 mm · for safety light grids · 2 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1004

Type	Description	Order no.
	Corner mirror · Length: 885 mm · for safety light curtains · Protected area height · 760 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1005
	Corner mirror · Length: 1060 mm · for safety light curtains · Protected area height · 910 mm · for safety light grids · 3 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1006
	Corner mirror · Length: 1230 mm · for safety light curtains · Protected area height · 1060 mm · for safety light grids · 4 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1007
	Corner mirror · Length: 1400 mm · for safety light curtains · Protected area height · 1210 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1008
	Corner mirror · Length: 1450 mm · for safety light curtains · Protected area height · 1360 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1009
	Corner mirror · Length: 1600 mm · for safety light curtains · Protected area height · 1510 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1010
	Vibration damper · for type OY · Housing materials: rubber / metal galvanised	EY3001
	Vibration damper · for type OY · Housing materials: rubber / metal galvanised	EY3002
	Rotatable brackets · axial $\pm 90^\circ$ · for type OY · Housing materials: Angle bracket: steel black	EY3011
	Adjustable brackets · axial $\pm 7^\circ$ · for type OY · Housing materials: metal galvanised	EY3004
	Adjustable brackets · axial $\pm 7^\circ$ · for type OY · Housing materials: metal galvanised	EY3005
	Test rod · $\varnothing$ 14 mm · Probe length: 150 mm · for safety light curtains · for type OY · Housing materials: aluminium	EY3006
	Test rod · $\varnothing$ 20 mm · Probe length: 150 mm · for safety light curtains · for type OY · Housing materials: aluminium	EY3007
	Test rod · $\varnothing$ 30 mm · Probe length: 150 mm · for safety light curtains · for type OY · Housing materials: aluminium	EY3008
	Test rod · $\varnothing$ 40 mm · Probe length: 150 mm · for safety light curtains · for type OY · Housing materials: aluminium	EY3009
	Test rod · $\varnothing$ 50 mm · Probe length: 150 mm · for safety light curtains · for type OY · Housing materials: aluminium	EY3010



Safety technology

Type	Description	Order no.
	Mounting and fine adjustment bracket · for type OY · Housing materials: PA66 reinforced glass-fibre	EY3013
	Laser adjustment aid · for type OY9xxS · for safety light grids · for type OY9 · Housing materials: plastics	EY3098
	Laser adjustment aid · for safety light curtains · for type OY · Housing materials: plastics	EY3099

Bases for safety light curtains

Type	Description	Order no.
	Base · Length: 1010 mm · for safety light grids · 2 beams · for safety light curtains · ≤ 760 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY2001
	Base · Length: 1340 mm · for safety light grids · 3 beams · 4 beams · for safety light curtains · ≤ 1060 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY2002
	Base · Length: 1710 mm · for safety light curtains · ≤ 1360 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY2003
	Base · Length: 1980 mm · for safety light curtains · ≤ 1510 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY2004

Bases for safety light curtains with corner mirror

Type	Description	Order no.
	Corner mirror with base · Length: 1010 mm · for safety light grids · 2 beams · for safety light curtains · ≤ 760 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1011
	Corner mirror with base · Length: 1340 mm · for safety light grids · 3 beams · 4 beams · for safety light curtains · ≤ 1060 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1013
	Corner mirror with base · Length: 1710 mm · for safety light curtains · ≤ 1360 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1014
	Corner mirror with base · Length: 1980 mm · for safety light curtains · ≤ 1510 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1015

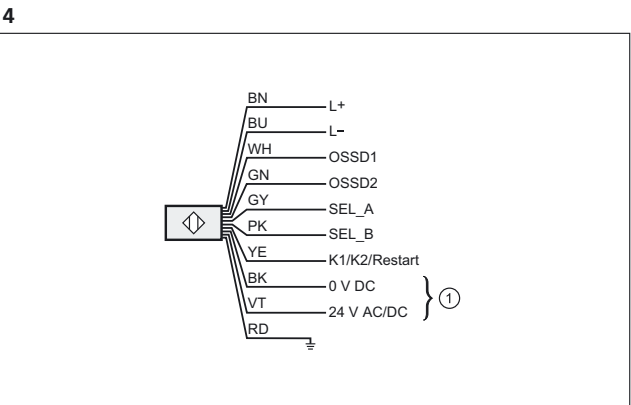
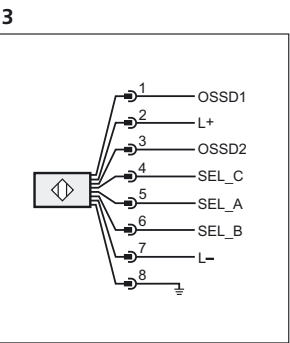
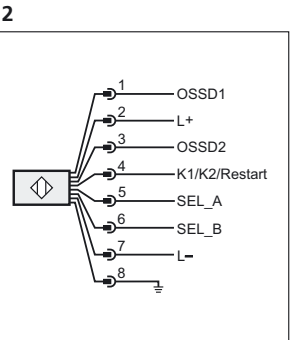
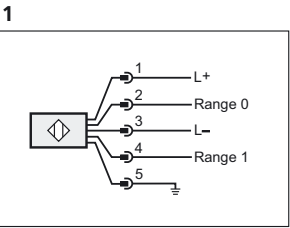
Accessories necessary for bases

Type	Description	Order no.
	Mounting base · for type OY	EY2005

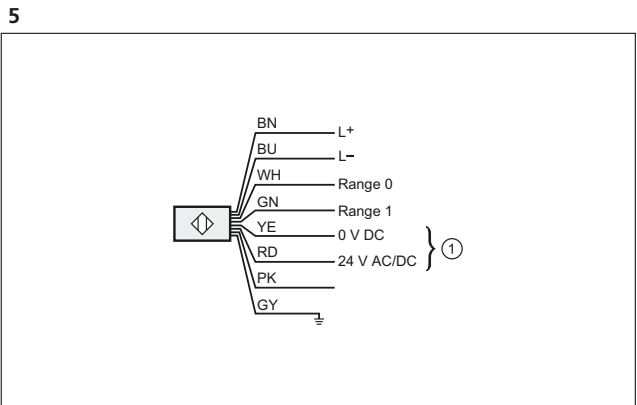
Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
GN	green
GY	grey
PK	pink
RD	red
VT	purple
WH	white
YE	yellow



1: Heating



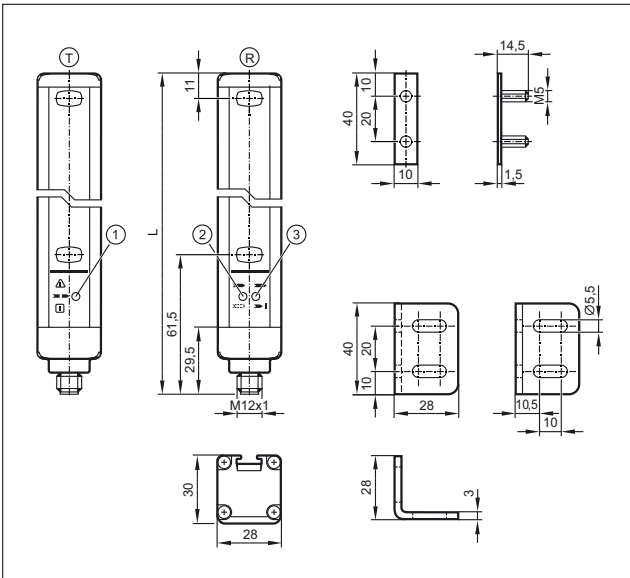
1: Heating, pink: not used



Safety technology

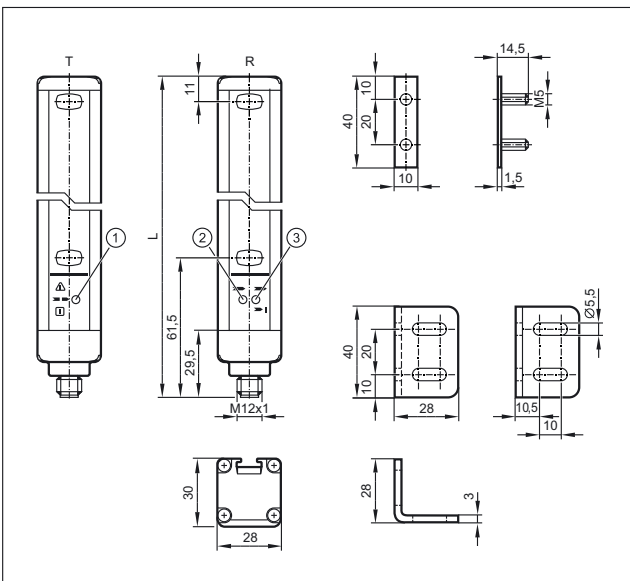
Scale drawings / drawing no. – CAD download: www.ifm.com

1



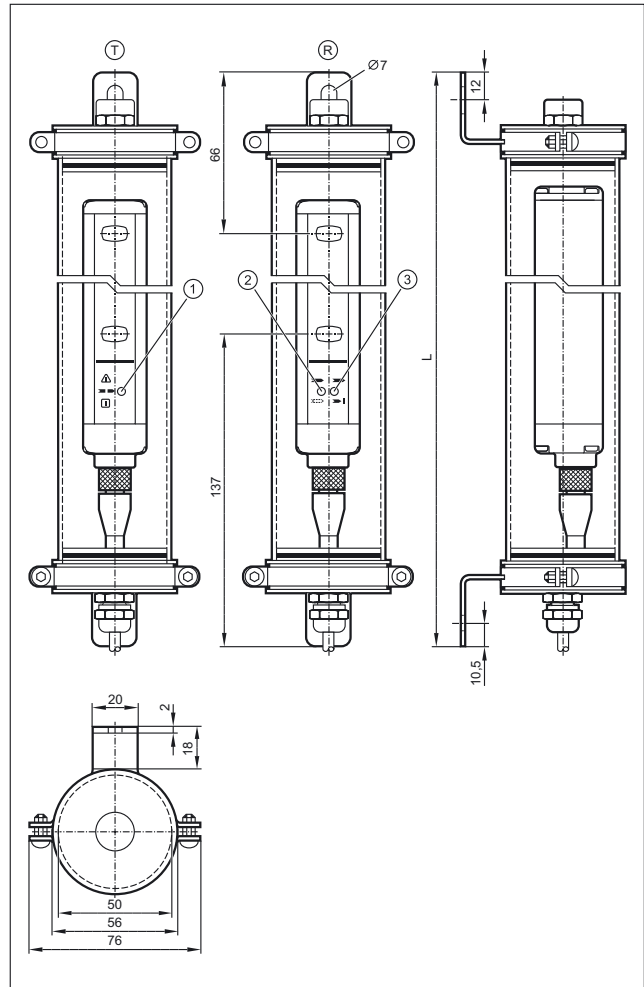
T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange),
2: LED 2 colours (yellow/blue), 3: LED 2 colours (red/green)

2



T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange),
2: LED (yellow), 3: LED 2 colours (red/green)

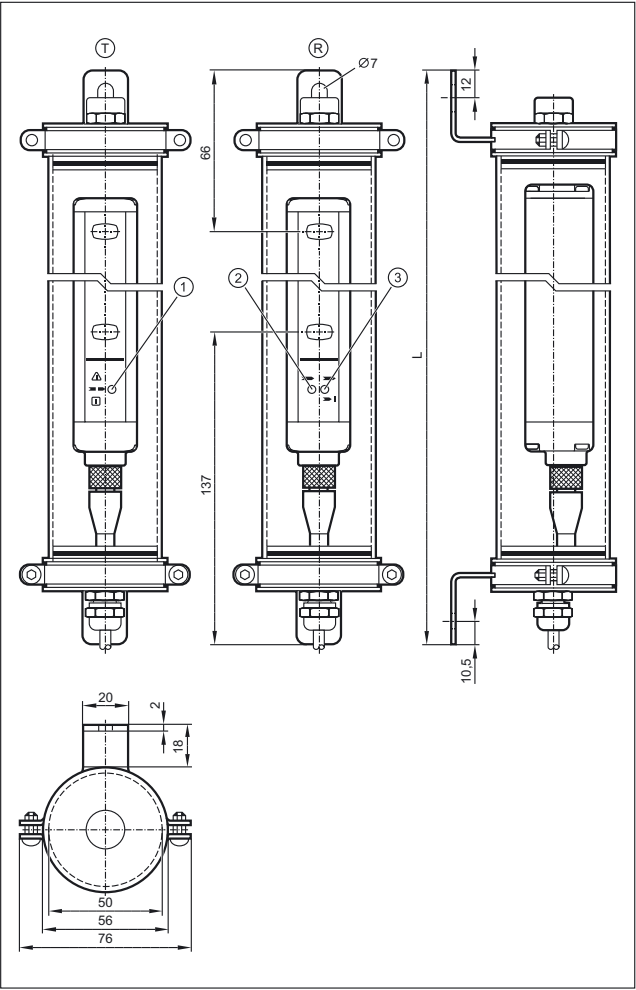
3



T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange),
2: LED 2 colours (yellow/blue), 3: LED 2 colours (red/green)

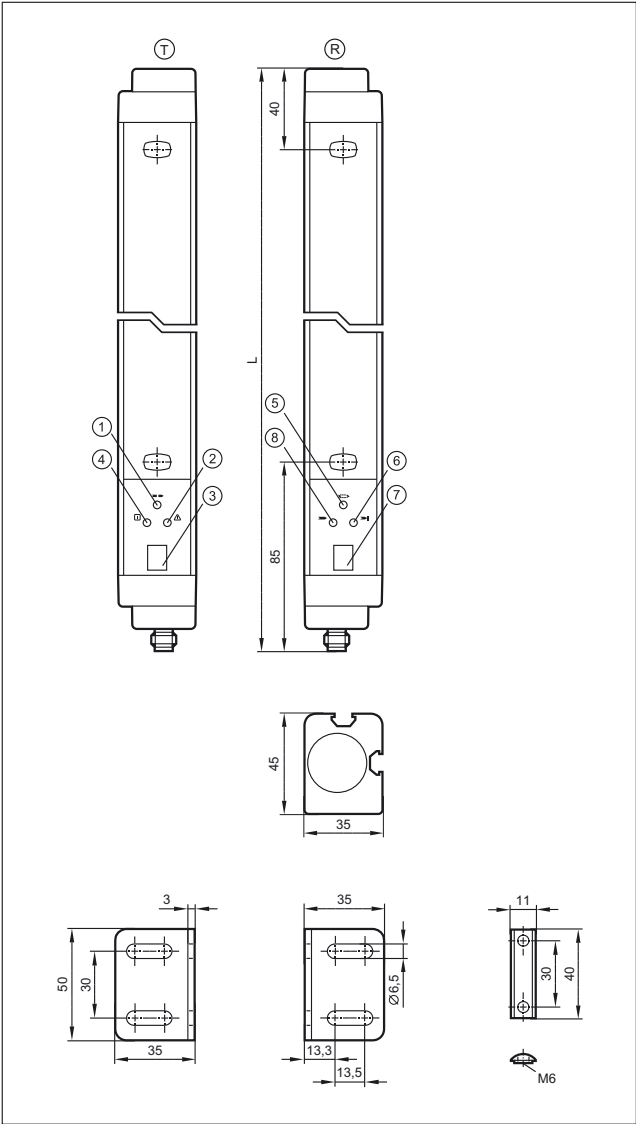
Scale drawings / drawing no. – CAD download: www.ifm.com

4



T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange),
2: LED 2 colours (yellow/blue), 3: LED 2 colours (red/green)

5



T: Transmitter, R: Receiver, 1: LED yellow, 2: LED red, 3: 7-segment
LED display, 4: LED green, 5: LED yellow, 6: LED red, 7: 7-segment
LCD display, 8: LED green



Safety technology



Safety light grids

Wherever motion of machine parts presents a danger to people or goods, safety light curtains or safety light grids are used.

The protective equipment ensures that the outputs are switched off which results in a machine halt.

System overview	Page
Safety light grids type 2, SIL 1, PL c, 2, 3, 4 beams, protected area width up to 10 m	428
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Scale drawings / drawing no. – CAD download: www.ifm.com	433 - 434

Safety light grids type 2, SIL 1, PL c, 2, 3, 4 beams, protected area width up to 10 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.
M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17								
	L x 28 x 30	2	510	0...4 / 3...12	3	24	1	OY111S
	L x 28 x 30	3	810	0...4 / 3...12	3.5	24	1	OY112S
	L x 28 x 30	4	910	0...4 / 3...12	3.5	24	1	OY113S

Safety light grids type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 12 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Drawing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	L x 28 x 30	2	510	0...4 / 3...12	2.5	24	1	OY114S
	L x 28 x 30	3	810	0...4 / 3...12	3	24	1	OY115S
	L x 28 x 30	4	910	0...4 / 3...12	3	24	1	OY116S

Safety light grids type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 20 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Drawing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	L x 28 x 30	2	510	0...10 / 3...20	2.5	24	1	OY120S
	L x 28 x 30	3	810	0...10 / 3...20	2.5	24	1	OY121S
	L x 28 x 30	4	910	0...10 / 3...20	2.5	24	1	OY122S

Safety light grids for hygienic and wet areas type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 15 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Drawing no.	Order no.

Cable 15 m · Wiring diagram no. 3, 4

	L x 76 x 74	2	510	0...7 / 3...15	2.5	24	2	OY421S
	L x 76 x 74	3	810	0...7 / 3...15	2.5	24	2	OY422S
	L x 76 x 74	4	910	0...7 / 3...15	2.5	24	2	OY423S



Safety light grids type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 60 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 1, 2 · Connector groups 16, 17

	L x 50 x 60	2	510	8...30 / 18...60	7	24	3	OY951S
	L x 50 x 60	3	810	8...30 / 18...60	7	24	3	OY952S
	L x 50 x 60	4	910	8...30 / 18...60	7	24	3	OY953S

Safety light grids with active / passive system type 4, SIL 3, PL e, 2, 3, 4 beams, protected area width up to 6 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 2 · Connector groups 16, 17

	L x 50 x 60	2	510	0...6 / 0...6	10	24	4	OY901S
	L x 50 x 60	3	810	0...6 / 0...6	10.5	24	4	OY902S
	L x 50 x 60	4	910	0...6 / 0...6	10.5	24	4	OY903S

Safety light grids for hygienic and wet areas type 2, SIL 1, PL c, 2, 3, 4 beams, protected area width up to 10 m

Type	Dimensions [mm]	Number of beams	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Draw- ing no.	Order no.

Cable 15 m · Wiring diagram no. 3, 4

	L x 76 x 74	2	510	0...3 / 2...10	3	24	5	OY411S
	L x 76 x 74	3	810	0...3 / 2...10	3.5	24	5	OY412S
	L x 76 x 74	4	910	0...3 / 2...10	3.5	24	5	OY413S

Accessories for safety light grids

Type	Description	Order no.
	Corner mirror · Length: 715 mm · for safety light curtains · Protected area height · 610 mm · for safety light grids · 2 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1004
	Corner mirror · Length: 1060 mm · for safety light curtains · Protected area height · 910 mm · for safety light grids · 3 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1006
	Corner mirror · Length: 1230 mm · for safety light curtains · Protected area height · 1060 mm · for safety light grids · 4 beams · for type OY · Housing materials: aluminium epoxy-powder coated / plastics / Accessories: steel galvanised	EY1007
	Vibration damper · for type OY · Housing materials: rubber / metal galvanised	EY3001
	Vibration damper · for type OY · Housing materials: rubber / metal galvanised	EY3002
	Rotatable brackets · axial $\pm 90^\circ$ · for type OY · Housing materials: Angle bracket: steel black	EY3011
	Adjustable brackets · axial $\pm 7^\circ$ · for type OY · Housing materials: metal galvanised	EY3004
	Adjustable brackets · axial $\pm 7^\circ$ · for type OY · Housing materials: metal galvanised	EY3005
	Laser adjustment aid · for type OY9xxS · for safety light grids · for type OY9 · Housing materials: plastics	EY3098
	Laser adjustment aid · for safety light curtains · for type OY · Housing materials: plastics	EY3099

Bases for safety light grids

Type	Description	Order no.
	Base · Length: 1010 mm · for safety light grids · 2 beams · for safety light curtains · ≤ 760 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY2001
	Base · Length: 1340 mm · for safety light grids · 3 beams · 4 beams · for safety light curtains · ≤ 1060 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY2002



Safety technology

Bases for safety light grids with corner mirror

Type	Description	Order no.
	Corner mirror with base · Length: 1010 mm · for safety light grids · 2 beams · for safety light curtains · ≤ 760 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1011
	Corner mirror with base · Length: 1340 mm · for safety light grids · 3 beams · 4 beams · for safety light curtains · ≤ 1060 mm · for type OY · Housing materials: aluminium epoxy-powder coated / plastics	EY1013

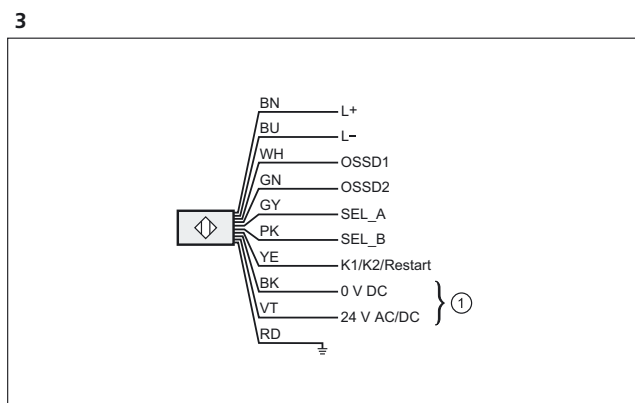
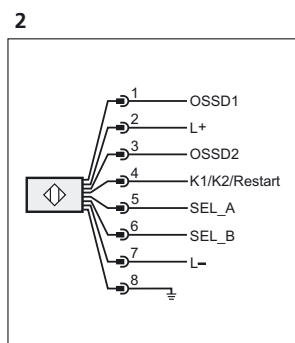
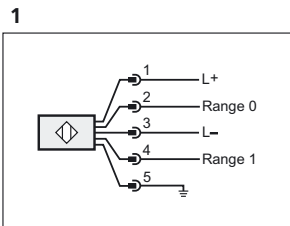
Accessories necessary for bases

Type	Description	Order no.
	Mounting base · for type OY	EY2005

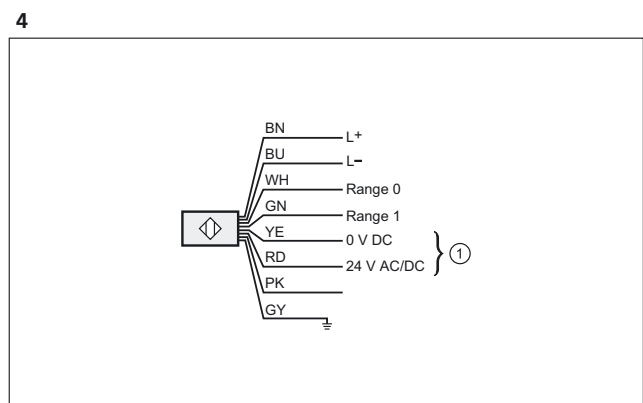
Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
GN	green
GY	grey
PK	pink
RD	red
VT	purple
WH	white
YE	yellow

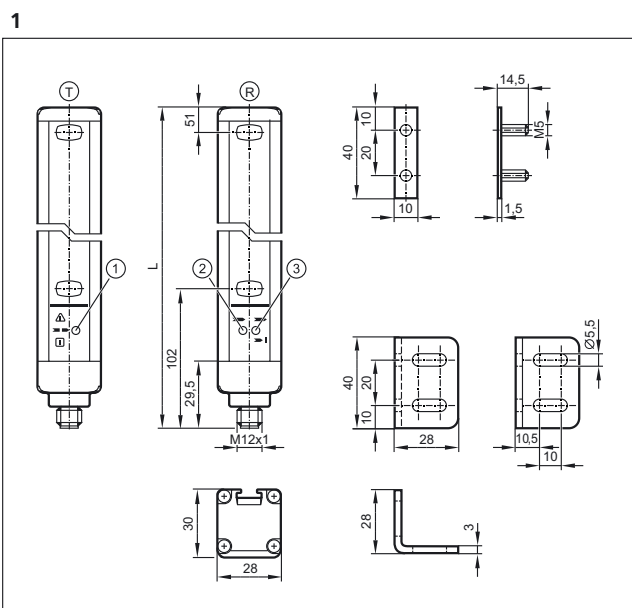


1: Heating

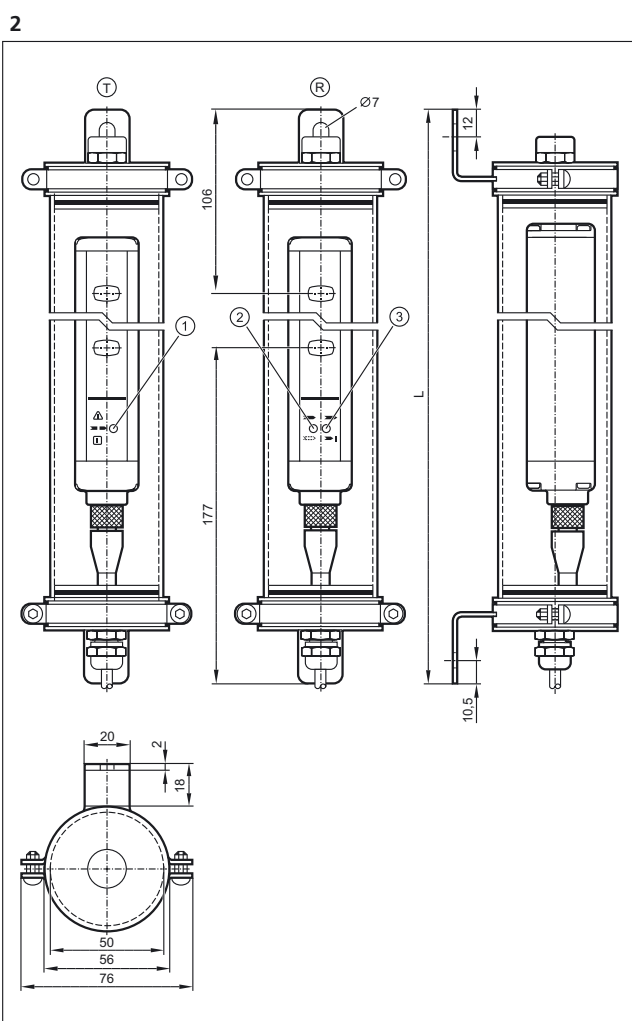


1: Heating, pink: not used

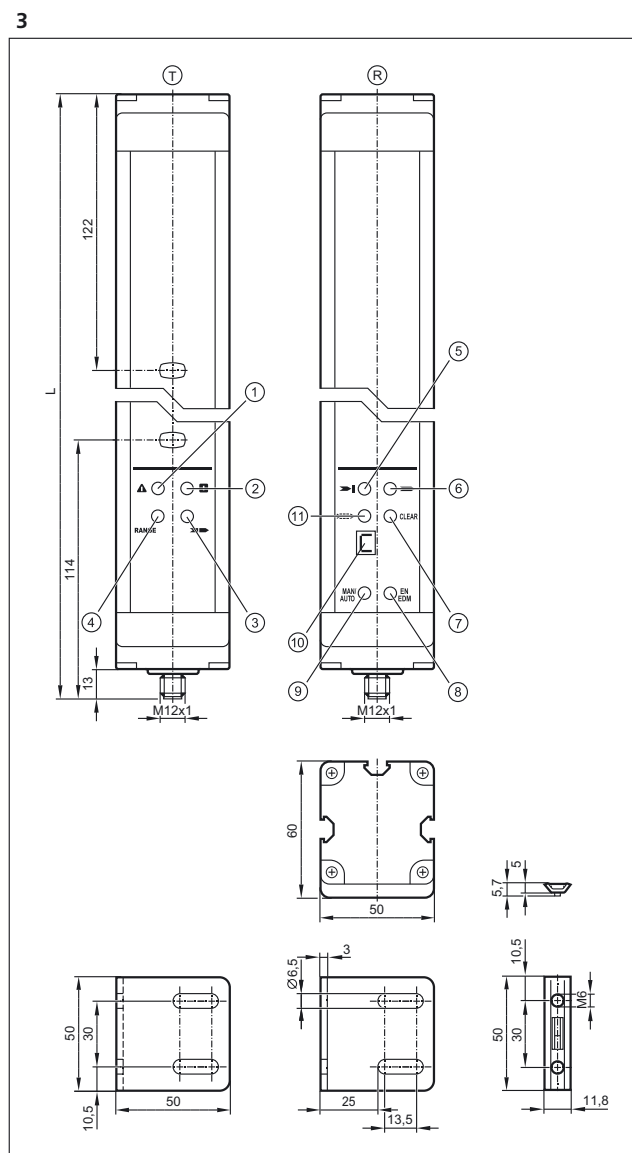
Scale drawings / drawing no. – CAD download: www.ifm.com



T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange), 2: LED yellow, 3: LED 2 colours (red/green)



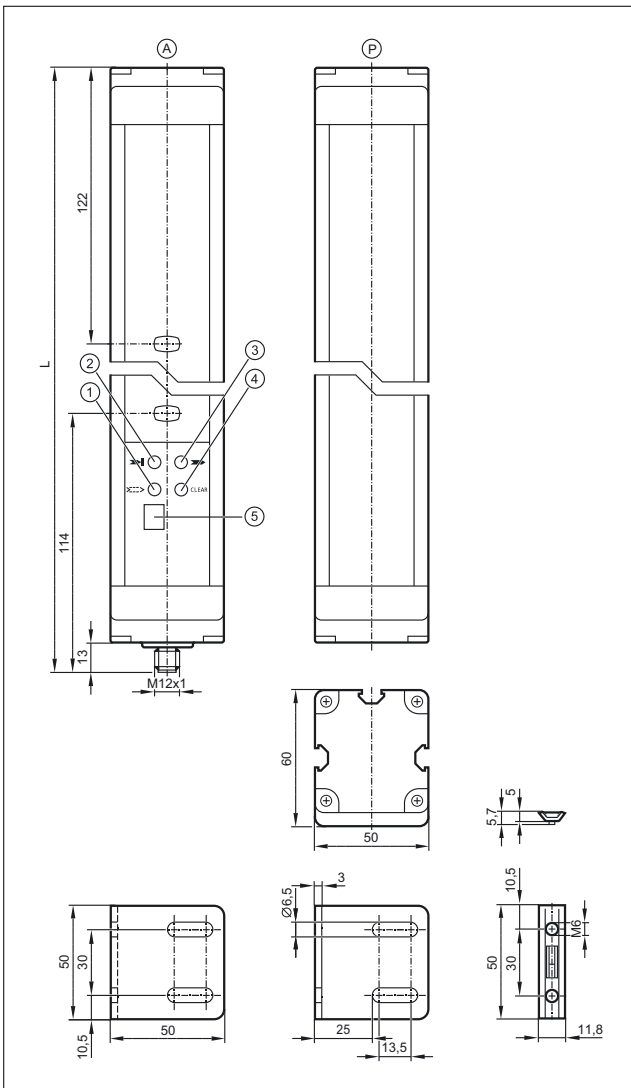
T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange), 2: LED 2 colours (yellow/blue), 3: LED 2 colours (red/green)



T: Transmitter, R: Receiver, 1: LED (red), 2: LED (green), 3: LED (yellow), 4: LED (orange), 5: LED (red), 6: LED (green), 7: LED (yellow), 8: LED (yellow), 9: LED (yellow), 10: display, 11: LED (orange)

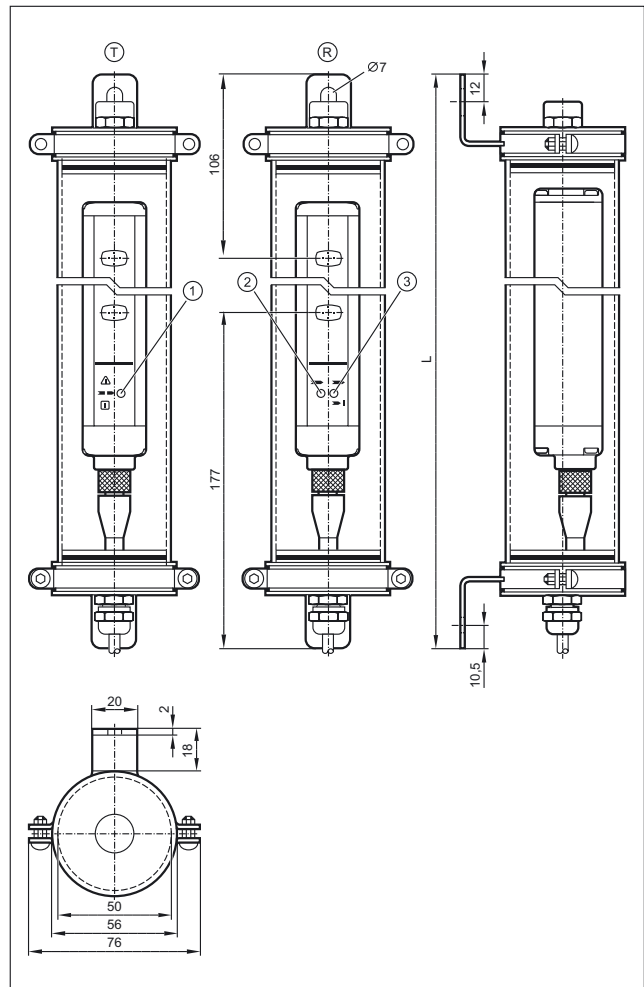


4



A: active element, P: passive element, 1: LED (orange), 2: LED (red), 3: LED (green), 4: LED (yellow), 5: display

5



T: Transmitter, R: Receiver, 1: LED 3 colours (red/green/orange), 2: LED 2 colours (yellow/blue), 3: LED 2 colours (red/green)





Safety technology



Safety relays

Multifunctional with the advantage on your side: The safety relays provide various connection options for safety light curtains, fail-safe inductive sensors or other non-contact guards. They meet the highest requirement with SIL 3 (IEC 61508). "Monitored" or "automatic start" as well as external muting are only some of numerous functions.

System overview	Page
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Safety relays with solid state outputs for fail-safe sensors	436
Safety relays for safety light curtains	436
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Safety relays with relay outputs for fail-safe sensors

Type	U _b [V]	Electrical design	ISO 13849-1: Category / performance level	IEC 61508: SIL	Draw- ing no.	Order no.
	24	Relay	4 / e	3	1	G1501S
	24	Relay	4 / e	3	2	G1502S

Safety relays with solid state outputs for fail-safe sensors

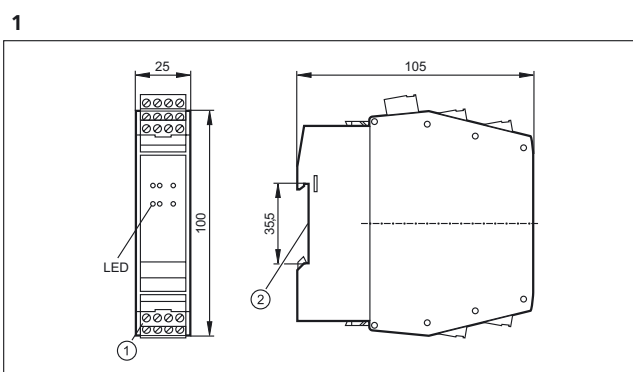
Type	U _b [V]	Electrical design	ISO 13849-1: Category / performance level	IEC 61508: SIL	Draw- ing no.	Order no.
	24	Semi-conductor outputs	4 / e	3	3	G1503S

Safety relays for safety light curtains

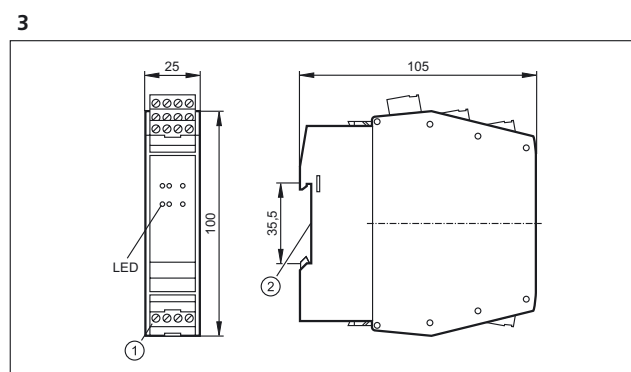
Type	U _b [V]	Electrical design	ISO 13849-1: Category / performance level	IEC 61508: SIL	Draw- ing no.	Order no.
	24	Relay	4 / e	3	4	G2001S

Accessories

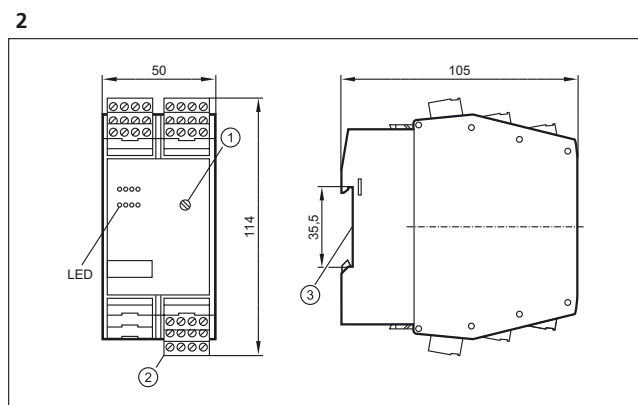
Type	Description	Order no.
	Combicon connector · with cage clamps 4 poles · Housing materials: PA / current carrying parts: copper alloy tin-plated	E11930

Scale drawings / drawing no. – CAD download: www.ifm.com

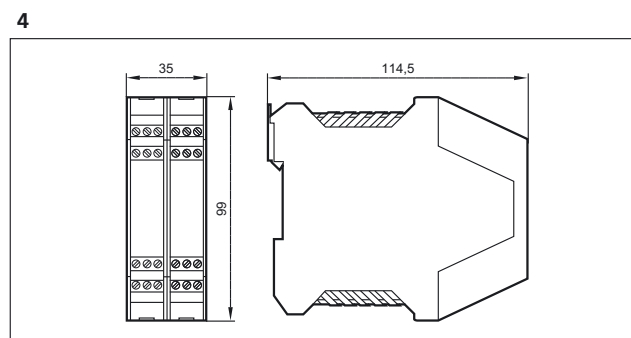
1: Combicon connector with screw terminals, 2: Mounting on DIN rail



1: Combicon connector with screw terminals, 2: Mounting on DIN rail



1: Rotary switch for switch-off delay, 2: Combicon connector with screw terminals, 3: Mounting on DIN rail





Safety technology



Safety controllers

Controllers for safety-related applications up to safety category 3 (EN 954-1) are called "safety controllers". Special test routines for hardware and software monitoring are implemented in the devices. Due to the certification of the hardware, operating system software and programming tools it is easy for the project engineer to get the approval for the machine.

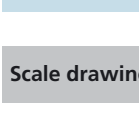
System overview	Page
SafetyController 32 bits	438
Accessories and software	438 - 439
Scale drawings / drawing no. – CAD download: www.ifm.com	439

SafetyController 32 bits

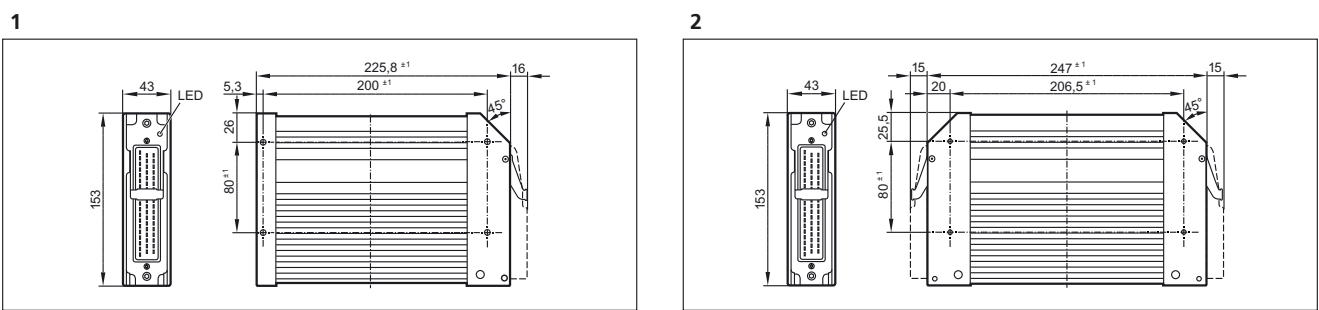
Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.
SILCl 2 (IEC 62061), PL d (EN ISO 13849-1), Configurable input / output functions, Programming according to IEC 61131-3						
	32	16 x Digital 16 x analogue (U/I) 16 x frequency	16 x Digital 16 x PWM-I 16 x PWM 2 x H bridge	4 x CAN 1 x RS-232 1 x USB	1	CR7032
	80	32 x Digital 32 x analogue (U/I) 32 x frequency	48 x Digital 32 x PWM-I 32 x PWM 4 x H bridge	4 x CAN 1 x RS-232 1 x USB	2	CR7132

Accessories and software

Type	Description	Order no.
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · German version · incl. the DVD "Software, tools and documentation"	CP9006
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · English version · incl. the DVD "Software, tools and documentation"	CP9008
	Connector AMP 55-pole · wirable · with contacts (Junior Power Timer)	EC2013
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Cores sealed individually · Core cross-section 1 mm ²	EC2084

Type	Description	Order no.
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Cores sealed individually · Core cross-section 1 mm ²	EC2097
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC2086
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Core cross-section 1 mm ²	EC2046

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Safety technology



AS-Interface Safety at Work

The sophisticated AS-i technology and the extended diagnostic possibilities provide high reliability and machine uptime. "Safety at Work" is the extension of the AS-interface by safety-related components. Safety components up to the highest control category 4 to EN 954-1, SIL 3 to IEC 61508 and EN ISO 13849 - 1 / PL e can be connected to AS-i.

System overview	Page
Safety at Work	440 - 441
Accessories Safety at Work	442
AS-i manuals	442
Scale drawings / drawing no. – CAD download: www.ifm.com	443 - 445

Safety at Work

Type	Description	Draw- ing no.	Order no.
	AS-i safety monitor · Basic version · 1-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	AC001S
	AS-i safety monitor · Basic version · 2-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	AC002S
	AS-i safety monitor · Extended functionality · 1-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	AC003S
	AS-i safety monitor · Extended functionality · 2-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	AC004S
	AS-i safety monitor · Extended functionality and integrated safe slave for triggering a safe AS-i output · 2-channel · Configuration and setup by configuration software ASIMON V3.0 · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	2	AC032S
	AS-i safety monitor · 2 safe semi-conductor outputs · SIL 3 to EN 62061, IEC 61508 / SIL 3 and EN ISO 13849 - 1 / PL e · Chip card to save the configuration data · Configuration and setup by configuration software ASIMON V3 G2 · USB 2.0 interface · Chip card and Combicon screw terminals supplied with the device · Screw terminal	3	AC041S
	Safe active AS-i module · Performance Level e to EN ISO 13849-1 et IEC 61508 / SIL 3 for the connection of mechanical contacts · Combicon connection · PA · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	4	AC009S
	Safe active AS-i output module · SIL 3 to EN 62061, IEC 61508 / SIL 3 and EN ISO 13849 - 1 / PL e · for the safe triggering of actuators · Combicon connection · PA · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	5	AC030S
	AS-i Safety at Work · Safe AS-i input module 2SI · 2LO · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 62061: SILcl 3	6	AC505S

Type	Description	Draw- ing no.	Order no.
	AS-i Safety at Work · Safe AS-i input module 4SI / 2DO T / 2LO · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 3 · ISO 13849-1: PL d · IEC 62061: SILcl 2	6	AC506S
	AS-i Safety at Work · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3 · IEC 62061: SILcl 3	6	AC507S
	AS-i Safety at Work · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 3 · ISO 13849-1: PL d · IEC 62061: SILcl 2	6	AC509S
	Illuminated E-STOP · front mounting · reset by turning · 2 NC contacts / 1 red LED · fool-proof E-STOP to EN ISO 13850	7	E7007S
	Illuminated E-STOP with integrated AS-i connection · fool-proof E-STOP to EN ISO 13850 · Pull to reset · AS-i interface via AS-i flat cable IP 67 · PC GF20 · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	8	AC010S
	Key-release E-STOP with integrated AS-i connection · Connector M12 x 1 · AS-i interface via AS-i flat cable IP 67 · fool-proof E-STOP to EN ISO 13850 · Reset by key operation · PC GF20 · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	9	AC011S
	Safe AS-i e-stop operating unit with integrated AS-i connection · AS-i interface via M12 x 1 connector · fool-proof E-STOP to EN ISO 13850 · Pull to reset · interchangeable button inserts · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	10	AC012S
	AS-i safety PCB · Connection of mechanical contact and LED components · Certification to ISO 13849-1: PL e and IEC 61508 / SIL 3 · Complies with the requirements: · IEC 61508: SIL 3	11	AC015S
	Fail-safe inductive sensor · M12 connector, Gold-plated contacts · PPE / diecast zinc · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	12	GM504S
	Fail-safe inductive sensor · M12 connector, Gold-plated contacts · PPE / diecast zinc · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	12	GM505S
	Fail-safe inductive sensor · M18 x 1 · M12 connector, Gold-plated contacts · high-grade stainless steel / PBT · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	13	GG505S
	Fail-safe inductive sensor · M30 x 1.5 · M12 connector, Gold-plated contacts · PEEK / high-grade stainless steel / O-ring: EPDM · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	14	GI505S
	Safety switch with guard locking · Normally closed principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply ext. from 24 V DC · M12 connector · thermoplastic reinforced glass-fibre	15	AC901S
	Safety switch with guard locking · Normally open principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply ext. from 24 V DC · M12 connector · thermoplastic reinforced glass-fibre	15	AC902S
	Safety switch with guard locking · Normally closed principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply from AS-i · M12 connector · thermoplastic reinforced glass-fibre	16	AC903S
	Safety switch with guard locking · Normally open principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply from AS-i · M12 connector · thermoplastic reinforced glass-fibre	16	AC904S



Safety technology

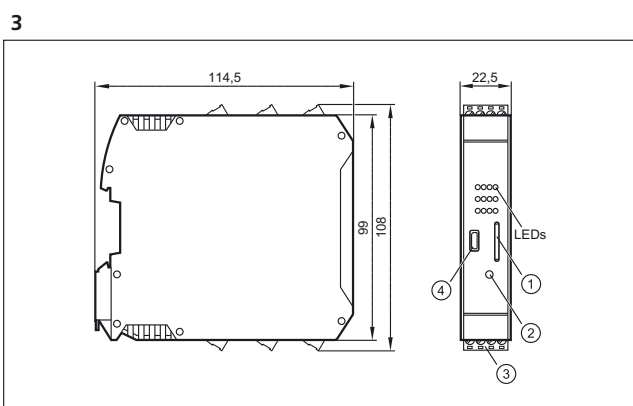
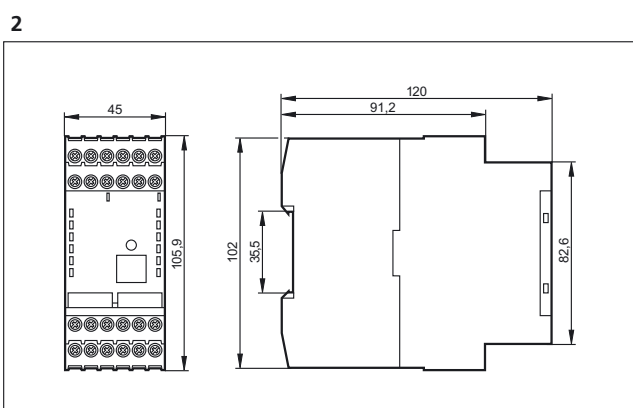
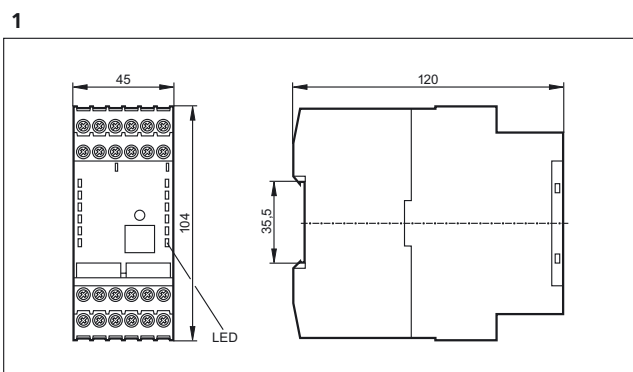
Accessories Safety at Work

Type	Description	Order no.
	AS-i Safety at Work · Programming software for AS-i safety monitor AC001S / AC002S / AC003S / AC004S / AC032S · Version 3.0 · Configuration, set-up and diagnostics of the AS-i safety monitor	E7040S
	Software ASIMON V3 G2 · Configuration, set-up and diagnostics of the AS-i safety monitor · AC041S	E7050S
	USB interface cable for the connection of the safety monitor AC041S to the PC · cable length 1.8 m · 1.8 m	E7051S
	Chip card to save the configuration data of the AS-i safety monitor AC041S · 256 K	E7052S
	Safe contact expander without delay · 2 independent channels · 4 contact blocks (NO) per channel · 1 feedback circuit (NC) per channel · Mounting on DIN rail · Screw terminal	E7053S
	Connection cable PC / AS-i safety monitor · Parameter setting cable PC / AS-i safety monitor · Western connector RJ 45 8 poles / D-Sub socket 9 poles · 2.5 m	E7001S
	Connection cable AS-i safety monitor / AS-i safety monitor · Download cable AS-i safety monitor / AS-i safety monitor · Western connector RJ 45 8 poles · 0.3 m	E7002S
	EMERGENCY STOP label IP66 4 languages DE, UK, FR, IT · EMERGENCY STOP label 4 languages for a safe illuminated EMERGENCY STOP button with integrated AS-i interface AC010S / AC011S / AC012S · 50 x 50 mm	E7003S
	EMERGENCY STOP protective collar · EMERGENCY STOP protective collar for safe E-STOP AC010S / AC011S / AC012S · Housing materials: PC GF20 RAL 1004	E7004S
	bridging plug for safety modules · Housing materials: PUR	E7005S
	Bulkhead connector · straight · M20 · M12 · M12 connector · 0.07 m · Housing materials: polyamide	E7006S

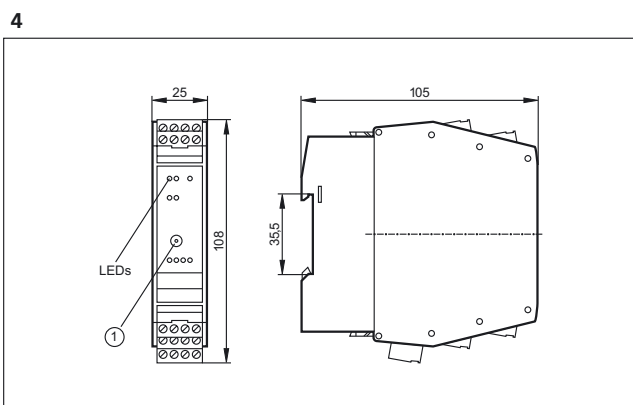
AS-i manuals

Type	Description	Order no.
	ecolog asi system · AS-Interface Manual (German)	AC011S
	ecolog asi system · AS-Interface Manual (English)	AC0116

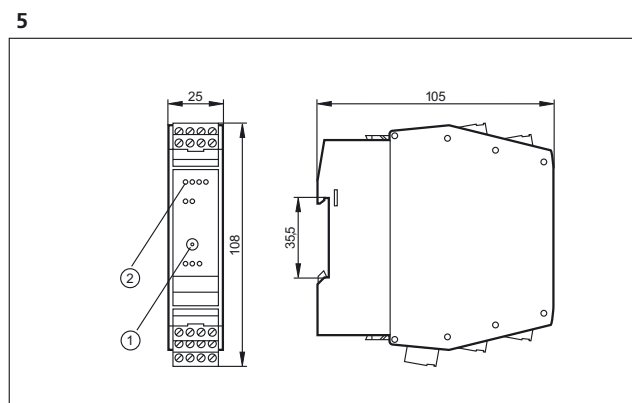
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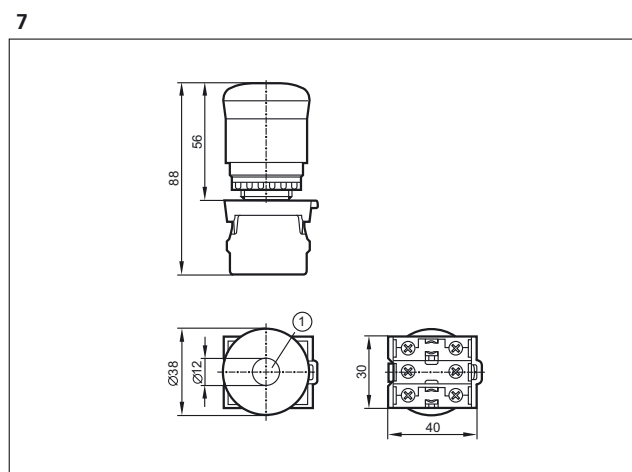
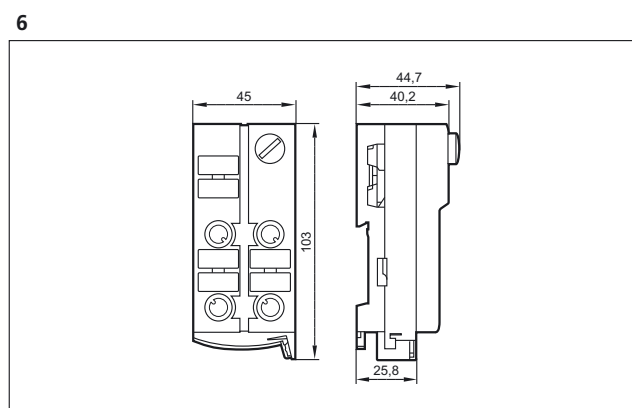
1: Chip card, 2: service button, 3: Combicon connector with screw terminals, 4: Micro USB interface



1: Addressing socket



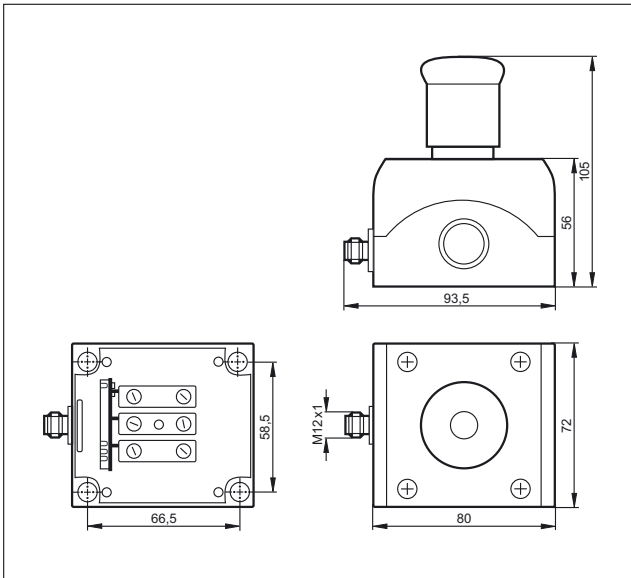
1: Addressing socket, 2: LED



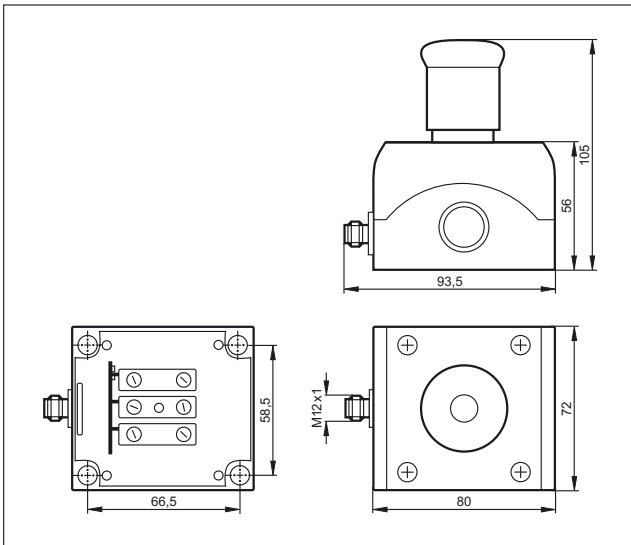


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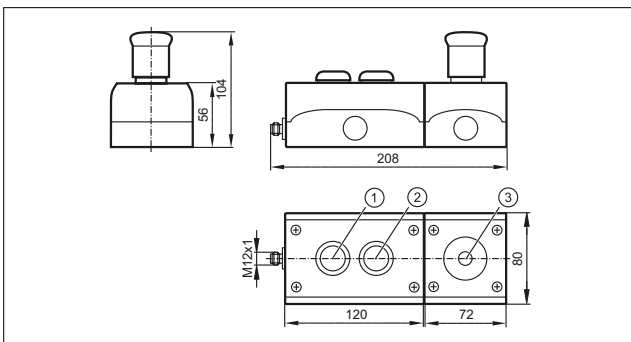
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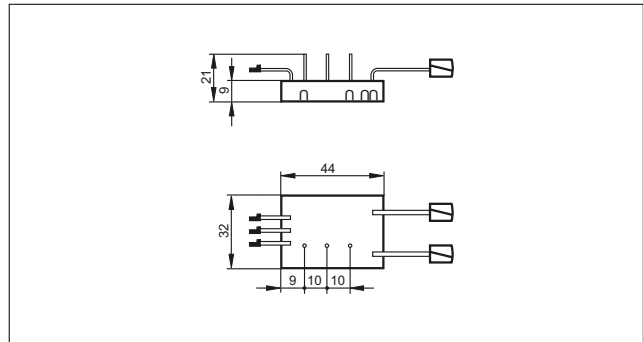
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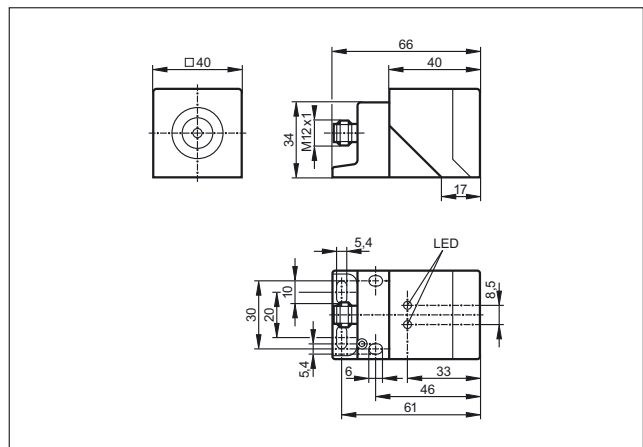
10



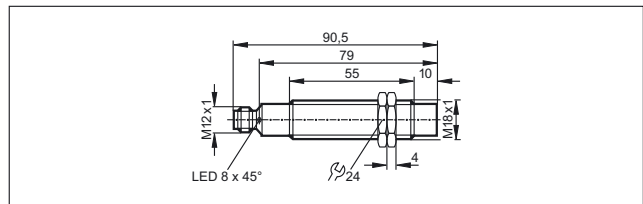
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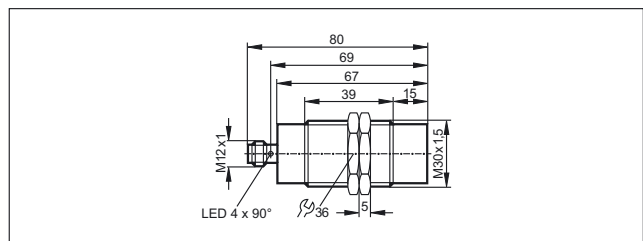
12



13

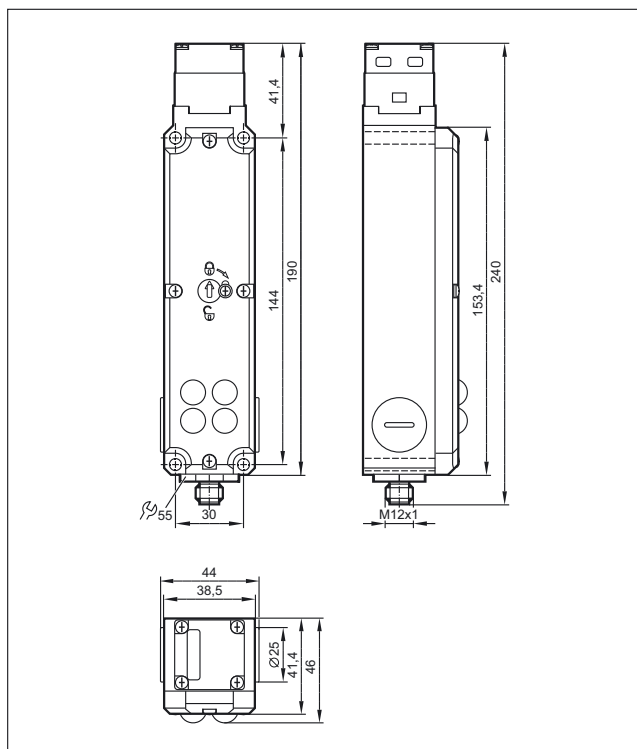


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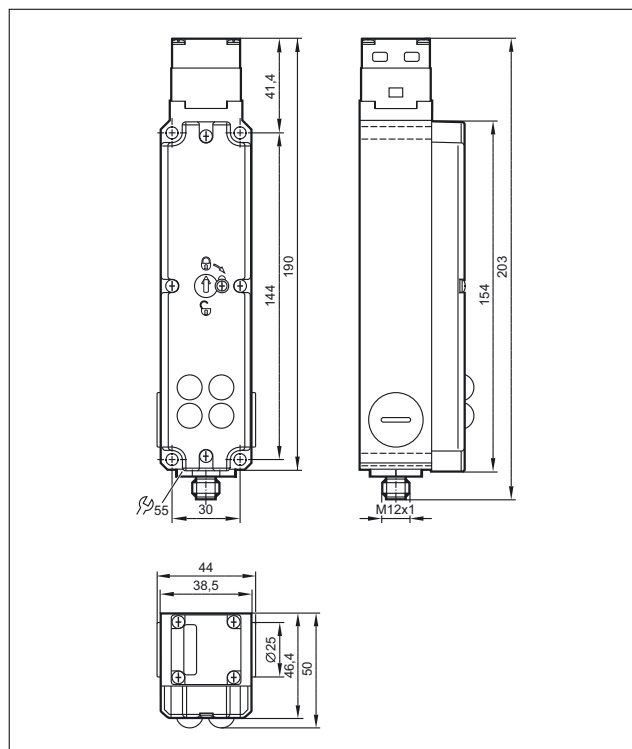


Scale drawings / drawing no. – CAD download: www.ifm.com

15



16





Process sensors

Measuring and monitoring fluids – now also with IO-Link



Multiple features

ifm process sensors can be used for control and measurement of the most important parameters of fluids –no matter whether it is pressure, level, flow, temperature or valve position. The range of applications spans from simple monitoring tasks and presence detection of media to accurate and highly repeatable measurements.

The applied microprocessor technology allows for a selection of key parameter settings. In addition to local parameter setting, IO-Link compatible sensors provide an easy way of communication while their parameters can be set directly from the controller. For further data processing, switching and analogue outputs are available. The transmission of data to the controller can also be achieved via bus systems (AS-i). Process and set parameters are indicated locally by a 4-digit alphanumeric display.

As the sensors are mostly in direct contact with the medium, the design of the units and the selection of the materials were driven by the high requirements in the applications.

These include in particular resistance to pressure, vibration, shock, media and temperature as well as electromagnetic compatibility and a high protection rating.

Multiple applications

The broad range of ifm sensors can be used across many different applications. The main areas of application are machine building, hygienic applications (e.g. in the food industry), mobile machines and industrial or chemical process plants.

An extensive range of process adapters and mounting accessories guarantees easy integration of the sensors into the application.

Moreover, the units comply with required approvals such as EHEDG, 3A, FDA, KTW, ATEX and e1 for safe use in the application.

Regular examinations in production and high test requirements at the development stage ensure a consistently high quality.

	<i>Pressure sensors</i>	448 - 483
	<i>Flow sensors / flow meters</i>	484 - 517
	<i>Level sensors</i>	518 - 543
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Process sensors

Robust pressure sensors and transmitters for flexible use



Pressure sensors



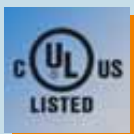
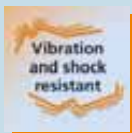
Sensors and transmitters with integrated evaluation

Units with special design for hygienic applications

Overload-protected measuring principles with a good long-term stability

Measuring ranges of -1...600 bar

Variable process connection and sealing technology via adapters



Pressure sensors

All units have robust housings and do not require moving parts such as pistons or springs. The result: the sensors are extremely shock and vibration resistant and operate without any wear and tear or maintenance.

The tried and tested ceramic-capacitive measuring cell is corrosion-resistant and long-term stable. This ensures consistent and long-term accuracy of the measured values. The sensors are resistant to dynamic pressure peaks and have a high overload protection.

The units featuring a stainless steel measuring cell are distinguished by their very compact and robust design. The welded stainless steel measuring cell without any seals ensures a high degree of safety, in particular for applications with gas pressures of up to 600 bar as well as in air-conditioning and refrigerating technology where aggressive coolants (freons) are used.

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Process sensors

Sensors with switching and analogue outputs, display and IO-Link

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally open / closed progr. or 1 x normally open / closed progr. + 1 x analogue (4...20 mA / 0...10 V; scalable 1:5) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ I	Display unit	0...600	800	2500	18...30	1	PN2160
	G ¼ I	Display unit	0...400	800	1700	18...30	1	PN2070
	G ¼ I	Display unit	0...250	500	1200	18...30	1	PN2071
	G ¼ I	Display unit	0...100	300	650	18...30	1	PN2092
	G ¼ I	Display unit	-1...25	150	350	18...30	1	PN2093
	G ¼ I	Display unit	-1...10	75	150	18...30	1	PN2094
	G ¼ I	Display unit	-0.125...2.5	20	50	18...30	1	PN2096
	G ¼ I	Display unit	-0.05...1	10	30	18...30	1	PN2097
	G ¼ I	Display unit	-0.0125...25	10	30	18...30	1	PN2098
	G ¼ I	Display unit	-1...1	20	50	18...30	1	PN2099
	G ¼ I	Display unit	-0.5...0.5	10	30	18...30	1	PN2169
	G ¼ A / M5 I	Display unit	0...600	800	2500	18...30	2	PN2560
	G ¼ A / M5 I	Display unit	0...400	800	1700	18...30	2	PN2570
	G ¼ A / M5 I	Display unit	0...250	500	1200	18...30	2	PN2571
	G ¼ A / M5 I	Display unit	0...100	300	650	18...30	2	PN2592
	G ¼ A / M5 I	Display unit	-1...25	150	350	18...30	2	PN2593

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally open / closed progr. or 1 x normally open / closed progr. + 1 x analogue (4...20 mA / 0...10 V; scaleable 1:5) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ A / M5 I	Display unit	-1...10	75	150	18...30	2	PN2594
	G ¼ A / M5 I	Display unit	-0.125...2.5	20	50	18...30	2	PN2596
	G ¼ A / M5 I	Display unit	-0.05...1	10	30	18...30	2	PN2597
	G ¼ A / M5 I	Display unit	-0.0125...0.25	10	30	18...30	2	PN2598
	G ¼ A / M5 I	Display unit	-1...1	20	50	18...30	2	PN2599
	G ¼ A / M5 I	Display unit	-0.5...0.5	10	30	18...30	2	PN2569

M12 connector · Output function normally open / closed programmable; 4...20 mA or 0...10 V · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ I	Display unit	0...600	800	2500	18...30	1	PN3160
	G ¼ I	Display unit	0...400	800	1700	18...30	1	PN3070
	G ¼ I	Display unit	0...250	500	1200	18...30	1	PN3071
	G ¼ I	Display unit	0...100	300	650	18...30	1	PN3092
	G ¼ I	Display unit	0...25	150	350	18...30	1	PN3093
	G ¼ I	Display unit	-1...10	75	150	18...30	1	PN3094
	G ¼ I	Display unit	0...2.5	20	50	18...30	1	PN3096
	G ¼ I	Display unit	0...1	10	30	18...30	1	PN3097
	G ¼ I	Display unit	-1...0	20	50	18...30	1	PN3129
	G ¼ A / M5 I	Display unit	0...600	800	2500	18...30	2	PN3560



Process sensors

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function normally open / closed programmable; 4...20 mA or 0...10 V · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ A / M5 I	Display unit	0...400	800	1700	18...30	2	PN3570
	G ¼ A / M5 I	Display unit	0...250	500	1200	18...30	2	PN3571
	G ¼ A / M5 I	Display unit	0...100	300	650	18...30	2	PN3592
	G ¼ A / M5 I	Display unit	0...25	150	350	18...30	2	PN3593
	G ¼ A / M5 I	Display unit	0...10	75	150	18...30	2	PN3594
	G ¼ A / M5 I	Display unit	0...2.5	20	50	18...30	2	PN3596
	G ¼ A / M5 I	Display unit	0...1	10	30	18...30	2	PN3597
	G ¼ A / M5 I	Display unit	-1...0	20	50	18...30	2	PN3529

Sensors with switching outputs and display with IO-Link

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ¼ I	Display unit	0...600	800	2500	18...30	1	PN7160
	G ¼ I	Display unit	0...400	800	1700	18...30	1	PN7070
	G ¼ I	Display unit	0...250	500	1100	18...30	1	PN7071
	G ¼ I	Display unit	0...100	300	650	18...30	1	PN7092
	G ¼ I	Display unit	0...25	150	350	18...30	1	PN7093
	G ¼ I	Display unit	-1...10	75	150	18...30	1	PN7094

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ¼ I	Display unit	0...2.5	20	50	18...30	1	PN7096
	G ¼ I	Display unit	0...1	10	30	18...30	1	PN7097
	G ¼ I	Display unit	-1...1	20	50	18...30	1	PN7099
	G ¼ A / M5 I	Display unit	0...600	800	2500	18...30	2	PN7560
	G ¼ A / M5 I	Display unit	0...400	800	1700	18...30	2	PN7570
	G ¼ A / M5 I	Display unit	0...250	500	1100	18...30	2	PN7571
	G ¼ A / M5 I	Display unit	0...100	300	650	18...30	2	PN7592
	G ¼ A / M5 I	Display unit	0...25	150	350	18...30	2	PN7593
	G ¼ A / M5 I	Display unit	-1...10	75	150	18...30	2	PN7594
	G ¼ A / M5 I	Display unit	0...2.5	20	50	18...30	2	PN7596
	G ¼ A / M5 I	Display unit	0...1	10	30	18...30	2	PN7597
	G ¼ A / M5 I	Display unit	-1...1	20	50	18...30	2	PN7599

Electronic contact manometers with switching output and analogue output

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · DC PNP/NPN · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

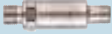
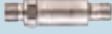
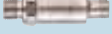
	G ½ A	Display unit	0...400	800	1200	18...32	3	PG2450
	G ½ A	Display unit	0...250	600	1000	18...32	3	PG2451



Process sensors

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · DC PNP/NPN · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ½ A	Display unit	0...100	300	700	18...32	3	PG2452
	G ½ A	Display unit	-1...25	100	300	18...32	3	PG2453
	G ½ A	Display unit	-1...10	50	150	18...32	3	PG2454
	G ½ A	Display unit	-1...4	30	100	18...32	3	PG2455
	G ½ A	Display unit	-0.125...2.5	20	50	18...32	3	PG2456
	G ½ A	Display unit	-0.05...1	10	30	18...32	3	PG2457
	G ½ A	Display unit	-0.0125...0.25	10	30	18...32	3	PG2458
	G ½ A	Display unit	-0.005...0.1	4	30	18...32	3	PG2489
	G ½ A	Display unit	-1...1	10	30	18...32	3	PG2409

PV sensors with switching outputs, IO-Link

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.
M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ A / M5 I	–	0...400	1000	1700	18...30	4	PV7000
	G ¼ A / M5 I	–	0...250	625	1200	18...30	4	PV7001
	G ¼ A / M5 I	–	0...100	250	1000	18...30	4	PV7002
	G ¼ A / M5 I	–	0...60	150	900	18...30	4	PV7023
	G ¼ A / M5 I	–	-1...25	65	600	18...30	4	PV7003

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ A / M5 I	—	-1...10	25	300	18...30	4	PV7004

PK sensors with mechanical setting and switching outputs

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function  · DC PNP · Wiring diagram no. 2 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ¼ A / M5 I	Operation	0...400	600	1600	9.6...32	5	PK5520
	G ¼ A / M5 I	Operation	0...250	400	1000	9.6...32	5	PK5521
	G ¼ A / M5 I	Operation	0...100	200	1000	9.6...32	5	PK5522
	G ¼ A / M5 I	Operation	0...25	60	500	9.6...32	5	PK5523
	G ¼ A / M5 I	Operation	0...10	25	300	9.6...32	5	PK5524

M12 connector · Output function  · DC PNP · Wiring diagram no. 3 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ¼ A / M5 I	Operation	0...400	600	1600	9.6...32	5	PK6520
	G ¼ A / M5 I	Operation	0...250	400	1000	9.6...32	5	PK6521
	G ¼ A / M5 I	Operation	0...100	200	1000	9.6...32	5	PK6522
	G ¼ A / M5 I	Operation	0...25	60	500	9.6...32	5	PK6523
	G ¼ A / M5 I	Operation	0...10	25	300	9.6...32	5	PK6524

M12 connector · Output function  · DC PNP · Wiring diagram no. 4 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ¼ A / M5 I	Switching status	0...400	600	1600	9.6...32	5	PK7520



Process sensors

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function  · DC PNP · Wiring diagram no. 4 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ¼ A / M5 I	Switching status	0...250	400	1000	9.6...32	5	PK7521
	G ¼ A / M5 I	Switching status	0...100	200	1000	9.6...32	5	PK7522
	G ¼ A / M5 I	Switching status	0...25	60	500	9.6...32	5	PK7523
	G ¼ A / M5 I	Switching status	0...10	25	300	9.6...32	5	PK7524

PP sensors for mobile and industrial applications with switching outputs, IO-Link

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC PNP · Wiring diagram no. 5 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ¼ A / M5 I	Operation	0...400	600	1000	9.6...36	6	PP7550
	G ¼ A / M5 I	Operation	0...250	400	850	9.6...36	6	PP7551
	G ¼ A / M5 I	Operation	0...100	300	650	9.6...36	7	PP7552
	G ¼ A / M5 I	Operation	0...25	150	350	9.6...36	8	PP7553
	G ¼ A / M5 I	Operation	-1...10	75	150	9.6...36	8	PP7554
	G ¼ A / M5 I	Operation	0...2.5	20	50	9.6...36	8	PP7556

M12 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC NPN · Wiring diagram no. 5 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ¼ A / M5 I	Operation	0...400	600	1000	9.6...36	6	PP0520
	G ¼ A / M5 I	Operation	0...250	400	850	9.6...36	6	PP0521
	G ¼ A / M5 I	Operation	0...100	300	650	9.6...36	7	PP0522

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC NPN · Wiring diagram no. 5 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ¼ A / M5 I	Operation	0...25	150	350	9.6...36	8	PP0523
	G ¼ A / M5 I	Operation	-1...10	75	150	9.6...36	8	PP0524

Sensors for pneumatic applications

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC PNP/NPN · Wiring diagram no. 18 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G 1/8 I	Display unit	-1...1	20	30	18...36	9	PN7809
	G 1/8 I	Display unit	-1...10	20	30	18...36	9	PN7834

M8 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC PNP · Wiring diagram no. 4 · Connector groups 4, 5, 80, 86, 147

	G 1/8 I	Display unit	-1...1	20	30	18...32	10	PQ7809
	G 1/8 I	Display unit	-1...10	20	30	18...32	10	PQ7834

M8 connector · Output function 2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x normally closed (diagnostic function) · DC NPN · Wiring diagram no. 6 · Connector groups 4, 5, 80, 86, 147

	G 1/8 I	Display unit	-1...1	20	30	18...32	10	PQ0809
	G 1/8 I	Display unit	-1...10	20	30	18...32	10	PQ0834

M8 connector · Output function 1 x NO / NC programmable + 1 x current output · DC PNP · Wiring diagram no. 7 · Connector groups 4, 5, 80, 86, 147

	G 1/8 I / M5 I	Display unit	-1...1	20	30	18...32	11	PQ3809
	G 1/8 I / M5 I	Display unit	-1...10	20	30	18...32	11	PQ3834



Process sensors

Absolute pressure sensors with analogue outputs for industrial applications

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

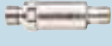
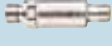
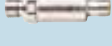
M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ A	–	0...10	20	50	8...30	12	PT0504
	G ¼ A	–	0...4	8	25	8...30	12	PT0505
	G ¼ A	–	0...1.6	3.2	10	8...30	12	PT0517
	G ¼ A	–	0...1	2	5	8...30	12	PT0507

PT sensors for industrial applications with analogue outputs

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

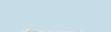
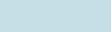
	G ¼ A	–	0...600	1500	2500	8.5...36	4	PT5460
	G ¼ A	–	0...400	1000	1700	8.5...36	4	PT5400
	G ¼ A	–	0...250	625	1200	8.5...36	4	PT5401
	G ¼ A	–	0...160	400	1100	8.5...36	4	PT5412
	G ¼ A	–	0...100	250	1000	8.5...36	4	PT5402
	G ¼ A	–	0...60	150	900	8.5...36	4	PT5423
	G ¼ A	–	0...40	100	800	8.5...36	4	PT5443
	G ¼ A	–	0...25	65	600	8.5...36	4	PT5403

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ A	–	0...16	40	450	8.5...36	4	PT5414
	G ¼ A	–	0...10	25	300	8.5...36	4	PT5404
	G ¼ A	–	-1...10	25	300	8.5...36	4	PT5494
	G ¼ A	–	0...6	15	200	8.5...36	4	PT5415

M12 connector · Output function 0...10 V analogue · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ A	–	0...600	1500	2500	16...36	4	PU5460
	G ¼ A	–	0...400	1000	1700	16...36	4	PU5400
	G ¼ A	–	0...250	625	1200	16...36	4	PU5401
	G ¼ A	–	0...160	400	1100	16...36	4	PU5412
	G ¼ A	–	0...100	250	1000	16...36	4	PU5402
	G ¼ A	–	0...60	150	900	16...36	4	PU5423
	G ¼ A	–	0...40	100	800	16...36	4	PU5443
	G ¼ A	–	0...25	65	600	16...36	4	PU5403
	G ¼ A	–	0...16	40	450	16...36	4	PU5414
	G ¼ A	–	0...10	25	300	16...36	4	PU5404
	G ¼ A	–	0...6	15	200	16...36	4	PU5415



Process sensors

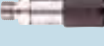
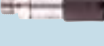
PT / PU sensors for mobile applications with analogue outputs

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 0...10 V analogue · DC · Wiring diagram no. 10 · Connector group 202

	G ¼ A	–	0...400	600	1600	16...36	13	PT9550
	G ¼ A	–	0...250	400	1000	16...36	13	PT9551
	G ¼ A	–	0...100	200	1000	16...36	13	PT9552
	G ¼ A	–	0...25	60	600	16...36	13	PT9553
	G ¼ A	–	0...10	25	300	16...36	13	PT9554

DEUTSCH connector DT04-3P · Output function 0...10 V analogue · DC · Wiring diagram no. 11

	G ¼ A	–	0...600	1500	2500	16...32	14	PU5760
	G ¼ A	–	0...400	1000	1700	16...32	14	PU5700
	G ¼ A	–	0...250	625	1200	16...32	14	PU5701
	G ¼ A	–	0...100	250	1000	16...32	14	PU5702
	G ¼ A	–	0...25	65	600	16...32	14	PU5703
	G ¼ A	–	0...10	25	300	16...32	14	PU5704

DEUTSCH connector DT04-3P · DC · Wiring diagram no. 11

	G ¼	–	0...400	1000	1700	8...32	14	PU8700
	G ¼	–	0...250	625	1200	8...32	14	PU8701
	G ¼	–	0...100	250	1000	8...32	14	PU8702

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

DEUTSCH connector DT04-3P · DC · Wiring diagram no. 11

	G ¼	–	0...25	65	600	8...32	14	PU8703
	G ¼	–	0...10	25	300	8...32	14	PU8704
	G ¼	–	0...160	400	1100	8...32	14	PU8712
	G ¼	–	0...40	100	800	8...32	14	PU8743
	G ¼	–	0...600	1500	2500	8...32	14	PU8760

M12 connector · Output function 0.5...4.5 V · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ A	–	0...400	1000	1700	8...32	4	PU8500
	G ¼ A	–	0...250	625	1200	8...32	4	PU8501
	G ¼ A	–	0...100	250	1000	8...32	4	PU8502
	G ¼ A	–	0...60	65	600	8...32	4	PU8503
	G ¼ A	–	0...10	25	300	8...32	4	PU8504
	G ¼ A	–	0...60	150	900	8...32	4	PU8523
	G ¼ A	–	0...600	1500	2500	8...32	4	PU8560

AMP Superseal · Output function 0...10 V analogue · DC · Wiring diagram no. 12

	G ¼ A	–	0...600	1500	2500	16...32	15	PU5660
	G ¼ A	–	0...400	1000	1700	16...32	15	PU5600
	G ¼ A	–	0...250	625	1200	16...32	15	PU5601

You can find wiring diagrams and scale drawings from page 477



Process sensors

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

AMP Superseal · Output function 0...10 V analogue · DC · Wiring diagram no. 12

	G ¼ A	–	0...100	250	1000	16...32	15	PU5602
	G ¼ A	–	0...25	65	600	16...32	15	PU5603
	G ¼ A	–	0...10	25	300	16...32	15	PU5604

M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ A	–	0...600	1500	2500	8...32	4	PT5560
	G ¼ A	–	0...400	1000	1700	8...32	4	PT5500
	G ¼ A	–	0...250	625	1200	8...32	4	PT5501
	G ¼ A	–	0...100	250	1000	8...32	4	PT5502
	G ¼ A	–	0...25	65	600	8...32	4	PT5503
	G ¼ A	–	0...10	25	300	8...32	4	PT5504

AMP Superseal · Output function 0...10 V analogue · DC · Wiring diagram no. 12

	G ¼ A	–	0...400	1000	1700	16...32	15	PU5600
	G ¼ A	–	0...250	625	1200	16...32	15	PU5601
	G ¼ A	–	0...100	250	1000	16...32	15	PU5602
	G ¼ A	–	0...25	65	600	16...32	15	PU5603
	G ¼ A	–	0...10	25	300	16...32	15	PU5604
	G ¼ A	–	0...600	1500	2500	16...32	15	PU5660

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.
DEUTSCH connector DT04-3P · Output function 4...20 mA analogue · DC · Wiring diagram no. 13								
	G ¼ A	–	0...400	1000	1700	8...32	14	PT5700
	G ¼ A	–	0...250	625	1200	8...32	14	PT5701
	G ¼ A	–	0...100	250	1000	8...32	14	PT5702
	G ¼ A	–	0...25	65	600	8...32	14	PT5703
	G ¼ A	–	0...10	25	300	8...32	14	PT5704
	G ¼ A	–	0...600	1500	2500	8...32	14	PT5760

PA sensors with analogue outputs

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.
M12 connector · Output function 4...20 mA · DC · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G ¼ I	–	0...600	800	1200	9.6...32	16	PA3060
	G ¼ I	–	0...400	600	1000	9.6...32	17	PA3020
	G ¼ I	–	0...250	400	850	9.6...32	17	PA3021
	G ¼ I	–	0...100	300	650	9.6...32	18	PA3022
	G ¼ I	–	0...25	150	350	9.6...32	18	PA3023
	G ¼ I	–	0...10	75	150	9.6...32	18	PA3024
	G ¼ I	–	0...2.5	20	50	9.6...32	18	PA3026



Process sensors

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 4...20 mA · DC · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G 1/4 I	–	0...1	10	30	9.6...32	18	PA3027
	G 1/4 I	–	0...0.25	10	30	9.6...32	18	PA3028
	G 1/4 I	–	-1...0	10	30	9.6...32	18	PA3029

M12 connector · Output function 4...20 mA · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G 1/4 A / M5 I	–	0...250	400	850	9.6...32	19	PA3521
	G 1/4 A / M5 I	–	0...100	300	650	9.6...32	19	PA3522

M12 connector · Output function 4...20 mA · DC · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G 1/4 A / M5 I	–	0...25	150	350	9.6...32	19	PA3523
	G 1/4 A / M5 I	–	0...10	75	150	9.6...32	19	PA3524
	G 1/4 A / M5 I	–	0...2.5	20	50	9.6...32	19	PA3526
	G 1/4 A / M5 I	–	0...0.25	10	30	9.6...32	19	PA3528

M12 connector · Output function 4...20 mA · DC · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G 1/4 A / M5 I	–	0...0.1	4	30	9.6...32	19	PA3589

M12 connector · Output function 0...10 V · DC · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G 1/4 I	–	0...600	800	1200	16...32	16	PA9060
	G 1/4 I	–	0...400	600	1000	16...32	17	PA9020
	G 1/4 I	–	0...250	400	850	16...32	18	PA9021
	G 1/4 I	–	0...100	300	650	16...32	18	PA9022

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 0...10 V · DC · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ I	–	0...25	150	350	16...32	18	PA9023
	G ¼ I	–	0...10	75	150	16...32	18	PA9024
	G ¼ I	–	0...2.5	20	50	16...32	18	PA9026
	G ¼ I	–	0...1	10	30	16...32	18	PA9027
	G ¼ I	–	0...0.25	10	30	16...32	18	PA9028
	G ¼ I	–	-1...0	10	30	16...32	18	PA9029

Part seat monitoring

Type	Description	Order no.
	Control unit for part seat monitoring · Setting by adjustment of the pneumatic bridge · Integrated pressure sensor with 2 switching outputs · and 4-digit alphanumerical display for trend display or display of current pressure · Cable	PS5750

Sensors for hydrostatic level monitoring

Type	Measuring range [bar]	Cable length / material	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

Output function 4...20 mA analogue · Wiring diagram no. 15

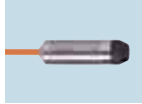
	0...0.25	5 m PUR cable	2	2.4	10...30	20	PS3208
	0...0.6	10 m PUR cable	4	4.8	10...30	20	PS3407
	0...0.6	15 m PUR cable	4	4.8	10...30	20	PS3427
	0...0.6	30 m PUR cable	4	4.8	10...30	20	PS3607
	0...1	15 m PUR cable	5	6	10...30	20	PS3417



Process sensors

Type	Measuring range [bar]	Cable length / material	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

Output function 4...20 mA analogue · Wiring diagram no. 15

	0...1	30 m PUR cable	5	6	10...30	20	PS3617

Output function 4...20 mA analogue · Wiring diagram no. 16

	0...0.25	5 m FEP cable	2	2.4	10...30	21	PS4208
	0...0.25	10 m FEP cable	2	2.4	10...30	21	PS4408
	0...0.6	10 m FEP cable	3	4	10...30	21	PS4407
	0...0.6	20 m FEP cable	3	4	10...30	21	PS4506

· Wiring diagram no. 16

	0...1	15 m FEP cable	5	6	10...30	21	PS4417
	0...1	30 m FEP cable	5	6	10...30	21	PS4607

Sensors for hydrostatic level monitoring ATEX category 1G/1D

Type	Measuring range [bar]	Cable length / material	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

Output function 4...20 mA analogue · Wiring diagram no. 16

	0...0.25	5 m FEP cable	2	2.4	10...30	21	PS308A
	0...0.6	10 m FEP cable	4	4.8	10...30	21	PS307A
	0...1	15 m FEP cable	5	6	10...30	21	PS317A

Sensors with ATEX approval 3D/3G

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Drawing no.	Order no.

M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (I / U, scaleable 1:4) · DC PNP/NPN · Wiring diagram no. 17 · Connector groups 196, 198

	Sealing cone G1 male	Display unit	-1...25	100	350	18...32	22	PI003A
	Sealing cone G1 male	Display unit	-0.0124...0.25	10	30	18...32	22	PI008A
	Sealing cone G1 male	Display unit	-1...1	10	30	18...32	22	PI009A

Full metal sensors for hygienic and wet areas with switching and analogue outputs, IO-Link

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Drawing no.	Order no.

M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 19 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Aseptoflex Vario	Display unit	-1...25	100	350	20...32	23	PI2793
	Aseptoflex Vario	Display unit	-1...10	50	150	20...32	23	PI2794
	Aseptoflex Vario	Display unit	-1...4	30	100	20...32	23	PI2795
	Aseptoflex Vario	Display unit	-0.124...2.5	20	50	20...32	23	PI2796
	Aseptoflex Vario	Display unit	-0.05...1	10	30	20...32	23	PI2797
	Aseptoflex Vario	Display unit	-0.0124...0.25	10	30	20...32	23	PI2798
	Aseptoflex Vario	Display unit	-0.005...0.1	4	30	20...32	23	PI2789
	Aseptoflex Vario	Display unit	-1...1	10	30	20...32	23	PI2799
	Sealing cone G1 male	Display unit	-1...25	100	350	20...32	24	PI2893*



Process sensors

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 19 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Sealing cone G1 male	Display unit	-1...10	50	150	20...32	24	PI2894*
	Sealing cone G1 male	Display unit	-1...4	30	100	20...32	24	PI2895*
	Sealing cone G1 male	Display unit	-0.124...2.5	20	50	20...32	24	PI2896*
	Sealing cone G1 male	Display unit	-0.05...1	10	30	20...32	24	PI2897*
	Sealing cone G1 male	Display unit	-0.0124...0.25	10	30	20...32	24	PI2898*
	Sealing cone G1 male	Display unit	-0.005...0.1	4	30	20...32	24	PI2889*
	Sealing cone G1 male	Display unit	-1...1	10	30	20...32	24	PI2899*

* Attention: The unit must only be installed in a process connection for G1 sealing cone! The G1 male sealing cone of the unit is only suited for adapters with metal end stop!

Full-metal high-temperature sensors up to 200 °C for hygienic and wet areas with switching output and analogue output, IO-Link

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 20 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Clamp DN 38 / 1½"	Display unit	-1...25	80	150	20...32	25	PI2203
	Clamp DN 38 / 1½"	Display unit	-1...10	50	100	20...32	25	PI2204
	Clamp DN 38 / 1½"	Display unit	-1...4	30	50	20...32	25	PI2205
	Clamp DN 38 / 1½"	Display unit	-0.124...2.5	20	50	20...32	25	PI2206
	Clamp DN 38 / 1½"	Display unit	-0.05...1	10	30	20...32	25	PI2207
	Clamp DN 38 / 1½"	Display unit	-1...1	10	30	20...32	25	PI2209
	Clamp DN 38 / 1½"	Display unit	-1...1	10	30	20...32	25	PI2209

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 20 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Clamp DN 51 / 2"	Display unit	-1...25	80	150	20...32	26	PI2303
	Clamp DN 51 / 2"	Display unit	-1...10	50	100	20...32	26	PI2304
	Clamp DN 51 / 2"	Display unit	-1...4	30	50	20...32	26	PI2305
	Clamp DN 51 / 2"	Display unit	-0.124...2.5	20	50	20...32	26	PI2306
	Clamp DN 51 / 2"	Display unit	-0.05...1	10	30	20...32	26	PI2307
	Clamp DN 51 / 2"	Display unit	-1...1	10	30	20...32	26	PI2309

Electronic contact manometers for hygienic and wet areas with switching and analogue outputs

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · DC PNP/NPN · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Aseptoflex Vario	Display unit	-1...25	100	350	18...32	27	PG2793
	Aseptoflex Vario	Display unit	-1...10	50	150	18...32	27	PG2794
	Aseptoflex Vario	Display unit	-1...4	30	100	18...32	27	PG2795
	Aseptoflex Vario	Display unit	-0.124...2.5	20	50	18...32	27	PG2796
	Aseptoflex Vario	Display unit	-0.05...1	10	30	18...32	27	PG2797
	Aseptoflex Vario	Display unit	-0.0124...0.25	10	30	18...32	27	PG2798
	Aseptoflex Vario	Display unit	-0.005...0.1	4	30	18...32	27	PG2789
	Aseptoflex Vario	Display unit	-1...1	10	30	18...32	27	PG2799



Process sensors

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · DC PNP/NPN · Wiring diagram no. 17 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Sealing cone G1 male	Display unit	-1...25	100	350	18...32	28	PG2893*
	Sealing cone G1 male	Display unit	-1...10	50	150	18...32	28	PG2894*
	Sealing cone G1 male	Display unit	-1...4	30	100	18...32	28	PG2895*
	Sealing cone G1 male	Display unit	-0.124...2.5	20	50	18...32	28	PG2896*
	Sealing cone G1 male	Display unit	-0.05...1	10	30	18...32	28	PG2897*
	Sealing cone G1 male	Display unit	-0.0124...0.25	10	30	18...32	28	PG2898*
	Sealing cone G1 male	Display unit	-0.005...0.1	4	30	18...32	28	PG2899*
	Sealing cone G1 male	Display unit	-1...1	10	30	18...32	28	PG2899*

* Attention: The unit must only be installed in a process connection for G1 sealing cone! The G1 male sealing cone of the unit is only suited for adapters with metal end stop!

PF sensors for hygienic and wet areas with switching and analogue outputs

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally open / closed progr. or 1 x normally open / closed progr. + 1 x analogue (4...20 mA / 0...10 V; scaleable 1:4) · Wiring diagram no. 21 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G 3/4 A	Switching status	-1...25	100	200	20...30	29	PF2953
	G 3/4 A	Switching status	-0.5...10	50	150	20...30	29	PF2954
	G 3/4 A	Switching status	-0.13...2.5	20	50	20...30	29	PF2956
	G 3/4 A	Switching status	-0.05...1	10	30	20...30	29	PF2957

Fixing components for pressure sensors

Type	Description	Order no.
	Angle bracket · Housing materials: PA66-	E30421
	Mounting clamp · Ø 34 mm · Housing materials: PBT	E10017
	Mounting clamp · Ø 34 mm · Housing materials: PA	E10193

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0011
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0012

Certificates

Description	Order no.
Factory calibration certificate for pressure sensors and flow sensors · Measurement points, pressure sensors: 6 measurement points in 20% steps of the final value of the measuring range (acc. to ISO 9001) · Measurement points, flow sensors: 3 or 4 measurement points, distances defined depending on the measuring range (acc. to ISO 9001)	ZC0004
DAkkS calibration certificate for pressure sensors · Number of measuring points: 11-point DAkkS calibration · Measurement points: in 10 % steps of the measuring range (according to directive DAkkS-DKD-R 6-1) · Minimum measurement uncertainty [bar]: 20 µbar...140 mbar (depending on the reference pressure)	ZC0005

Accessories for pressure sensors

Type	Description	Order no.
	Protective cover · for fluid sensors with M12 connector · Housing materials: Polypropylene homopolymer	E30420
	Damping screw · for pressure sensors with M5 internal thread	E30057

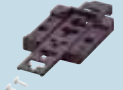


Process sensors

Type	Description	Order no.
	Damping screw · Housing materials: 1.4404	E30419
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	E30398
	Teach button · for sensors PP0xE, PP052x, PP755x · for memory plug (E30398) · 0.9 m · Housing materials: stainless steel / PA / PMMA	E30405
	Protective cover · with lead seal option · for pressure sensors type PK · for temperature sensors type TK · for vibration sensors type VK · Housing materials: PP transparent	E30094
	USB IO-Link master · for parameter setting and analysis of units · Supported communication protocols: IO-Link (4.8, 38.4 and 230 Kbits/s) · for operation with FDT framework software "ifm Container" or software "LINERECORDER SENSOR"	E30390
	Syphon · G ¼ · Housing materials: steel	E30140
	Syphon · G ½ · Housing materials: steel	E30141
	Cable clamp fastener · for submersible pressure transmitter PS3 · Housing materials: steel / plastics	E30399
	Filter element · for submersible pressure transmitter PS3 · for fixing on the capillary tube	E30400
	Splitter box · with ventilation and terminal block · for submersible pressure transmitter PS3 · Housing materials: plastics	E30401
	Additional weight · for submersible pressure transmitter PS3 · Housing materials: stainless steel 316Ti / 1.4571	E30402
	DIN rail clip · Housing materials: stainless steel	E37340
	label tag · for fluid sensors · Housing materials: PA	E30422
	Connector · QS-G 1/8-6 · with hexagonal socket 4 mm a/f · for tube with Ø 6 mm · Housing materials: steel / PBT / Brass / aluminium	E30076
	Connector · QS-G 1/8-8 · with hexagonal socket 5 mm a/f · for tube with Ø 8 mm · Housing materials: steel / PBT / Brass / aluminium	E30077

Type	Description	Order no.
	Programming/ display unit · for EPS and IO-Link sensors · Connector · Housing materials: stainless steel 316L / 1.4404 / PC copolymer / PBT / FPM	PP2001
	Accessory cover for filter system · Housing materials: stainless steel	E30142
	Accessory cover for filter system · Housing materials: stainless steel	E30139

Accessories

Type	Description	Order no.
	IO-Link display unit · Connector · Housing materials: stainless steel / PC / PBT-GF 30 / PPS / FKM / PA66 GF30	E30391
	IO-Link display unit · IO-Link inline display for visualising process data of a connected IO-Link sensor; plug & play for ifm devices; internal updatable ifm device catalogue · Connector · Housing materials: stainless steel / PC / PBT-GF 30 / PPS / FKM	E30430
	DIN rail clip · for IO-Link display unit · Housing materials: PA / stainless steel	E30429

Adapters and accessories for adapters

Type	Description	Order no.
	Adapter · R1/8 - R1/8 · rotatable · Housing materials: Brass nickel-plated	E37350
	Flange adapter · G 1/4 · Hole spacing · 31.1 mm · Housing materials: sealing: NBR, acrylonitrile-butadiene-rubber / flange: aluminium / hollow screw: Brass	E30003
	Adapter · G 1/4 - G 1/2 · Housing materials: stainless steel / sealing: FPM	E30000
	Adapter · G 1/4 A - G 1/4 A · Housing materials: 1.4404	E30143
	Adapter · G 1/4 A - R 1/4 · Housing materials: Steel 12L13 / 1.0718 / Process connection sealing: FKM	E30427
	Adapter · G 1/4 - M20 x 1.5 · Housing materials: stainless steel / FPM	E30010



Process sensors

Type	Description	Order no.
	Adapter · G 1/4 · G 1/2 · Housing materials: stainless steel / sealing: FPM	E30050
	Adapter · 1/4" NPT · G 1/4 · Housing materials: stainless steel 316Ti / 1.4571	E30058
	Adapter · G 1 · G 1/2 · Housing materials: stainless steel 316L / 1.4404 / sealing: FPM	E30116
	Adapter · G 1/4 · G 1/2 · Housing materials: stainless steel 316Ti / 1.4571 / sealing: FPM	E30135
	O-ring · Ø 24 mm / Ø 28 mm · Housing materials: FKM FDA compliant	E30123
	Sealing ring · Ø 25.9 mm / Ø 29 mm · for Aseptoflex Vario adapter · Housing materials: PEEK FDA compliant	E30124
	Welding mandrel · G 1 · carries away heat during welding · Housing materials: CW614N	E30435

Flange adapters

Type	Description	Order no.
Clamp adapter · 1-1.5" · Aseptoflex Vario		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33201
	Clamp adapter · with leakage port · Clamp · 1-1.5" · with sealing ring · ISO 2852 · for units with Aseptoflex Vario adapter · Housing materials: stainless steel 316L / 1.4435	E33208
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33701
Clamp adapter · 2" · Aseptoflex Vario		
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33202
	Aseptoflex Vario adapter · with leakage port · Clamp · 2" · with sealing ring · ISO 2852 · for units with Aseptoflex Vario adapter · Housing materials: stainless steel 316L / 1.4435	E33209

Type	Description	Order no.
Clamp adapter · 2" · Aseptoflex Vario		
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33702
Aseptic clamp connection (clamp DN32) · Aseptoflex Vario		
	Aseptic clamp ferrule with groove · Aseptic clamp connection (clamp DN32) · DIN 11864-NKS-A-35x1.5-1.4435-H4 · for DN32 pipes (according to DIN 11866, type A) · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: High-grade stainless steel 316L / 1.4435	E33243
Varivent Adapter · Type F, DN25 (1"), D = 50 · Aseptoflex Vario		
	Clamp adapter · Varivent Adapter · Varivent type F · DN25 (1"), D = 50 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33221
	Clamp adapter · Varivent Adapter · with leakage port · Varivent type F · DN25 (1"), D = 50 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33228
	Clamp adapter · Varivent Adapter · Varivent type F · DN25 (1"), D = 50 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33721
Varivent Adapter · Type N, DN40...DN150 (1.5...6"), D = 68 · Aseptoflex Vario		
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33222
	Clamp adapter · Varivent Adapter · with leakage port · Varivent type N · DN40 (1.5"), D = 68 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33229
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33722
Hygienic pipe fitting · DN32 (1.25") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN32 (1.25") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33211
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN32 (1.25") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33711
Hygienic pipe fitting · DN40 (1.5") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33212
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33712



Process sensors

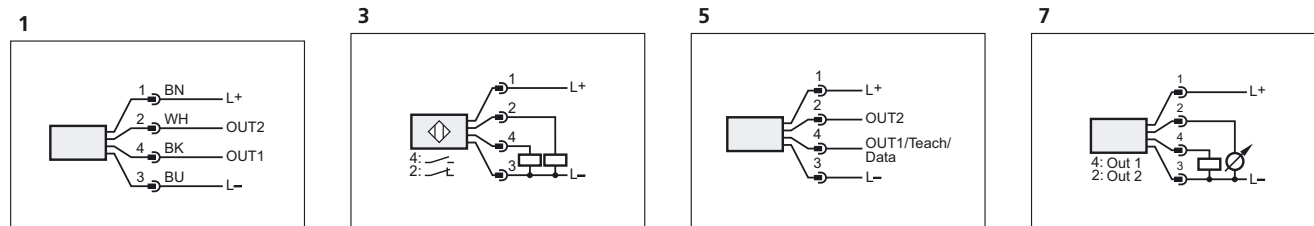
Type	Description	Order no.
Hygienic pipe fitting · DN50 (2") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33213
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33713
Pipe fitting · DN/OD33.7 · Aseptoflex Vario		
	Pipe fitting · Pipe fitting · DIN 11864-1-A-BS · for ISO pipes (series B) · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33304
SMS pipe fitting · DN40 (1.5") · Aseptoflex Vario		
	Pipe fitting · SMS pipe fitting · DN40 (1.5") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33731
SMS pipe fitting · DN50 (2") · Aseptoflex Vario		
	Pipe fitting · SMS pipe fitting · DN50 (2") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33732
DRD adapter · D65 · Aseptoflex Vario		
	Flange adapter · DRD adapter · flange · DRD · D = 65 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33242
universal process adapter · Rd52 · Aseptoflex Vario		
	Pipe fitting · universal process adapter · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33340
Welding adapter · D50 · Aseptoflex Vario		
	Welding adapter · Ø 50 mm · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E30122
	Welding adapter · Ø 50 mm · with leakage port · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E30130
Aseptoflex Vario · Aseptoflex Vario		
	sealing plug · Aseptoflex Vario · Housing materials: adapter: stainless steel 316L / 1.4435 / sealing ring: FKM	E30128

Type	Description	Order no.
Clamp adapter · 1-1.5" · G 1		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with G 1 adaptation · Housing materials: stainless steel 316L / 1.4435	E33601
Clamp adapter · 1-1.5" · G 1		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with G 1 adaptation · Housing materials: High-grade stainless steel 316L / 1.4435	E33602
Hygienic pipe fitting · DN40 (1.5") · G 1		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with G 1 adaptation · Housing materials: stainless steel 316L / 1.4435	E33612
Welding adapter · D50 · G 1		
	Welding adapter · G 1 - Ø 50 mm · Housing materials: stainless steel 316L / 1.4404	E30013
	Welding adapter · G 1 - Ø 50 mm · Housing materials: stainless steel 316L / 1.4404 / O-ring: FKM / O-ring: EPDM	E30072
G 1		
	sealing plug · G 1 · Housing materials: high-grade stainless steel	E30070
Welding adapter · D50 · G ¾		
	Welding adapter · G ¾ - Ø 50 mm · Housing materials: stainless steel 316L / 1.4404	E30009

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white
GY	grey
GN	green

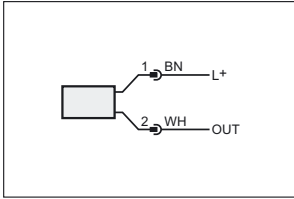




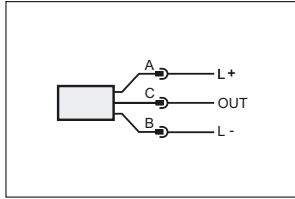
Process sensors

Wiring diagrams

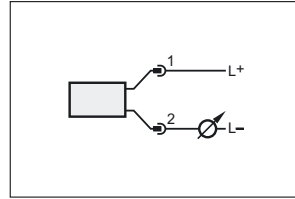
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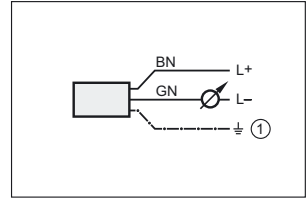
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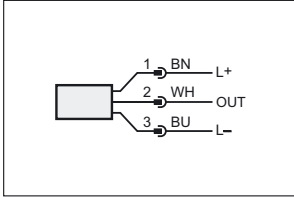
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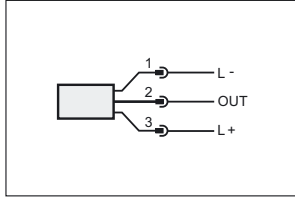
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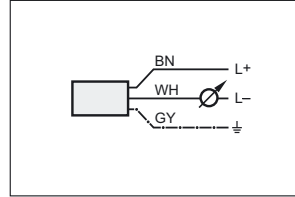
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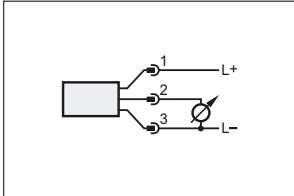


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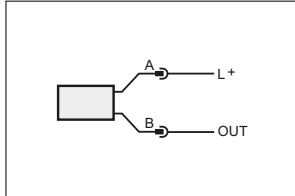


1: screen (connected to the housing)

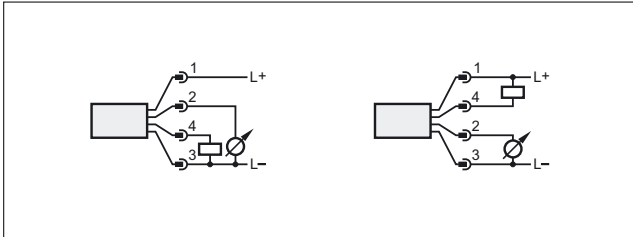
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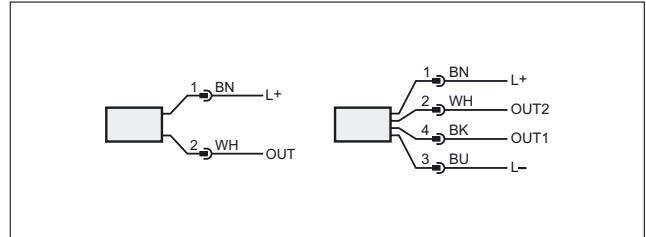
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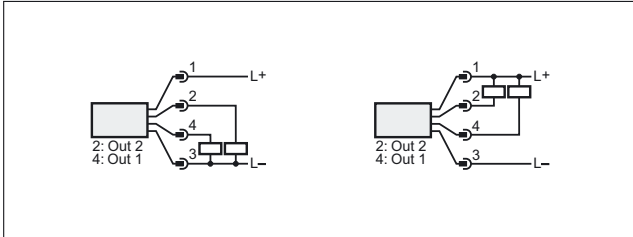
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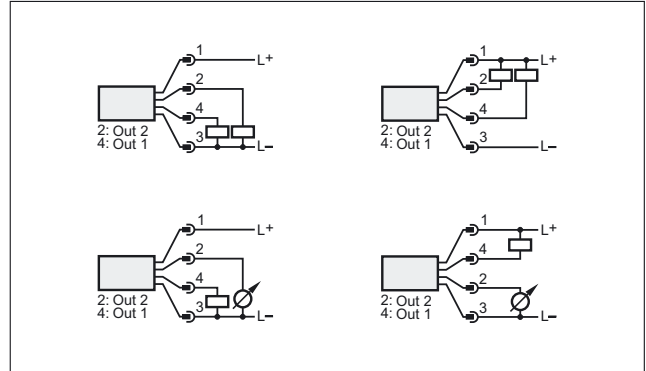
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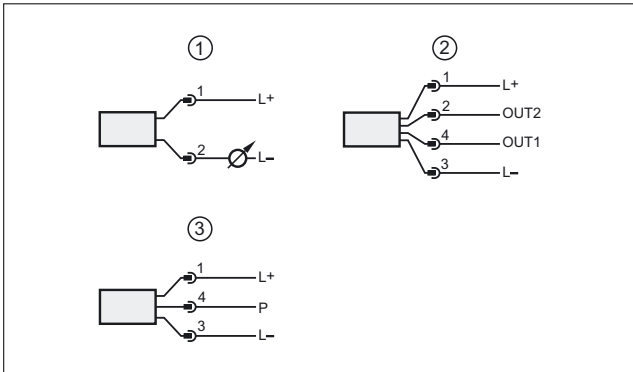
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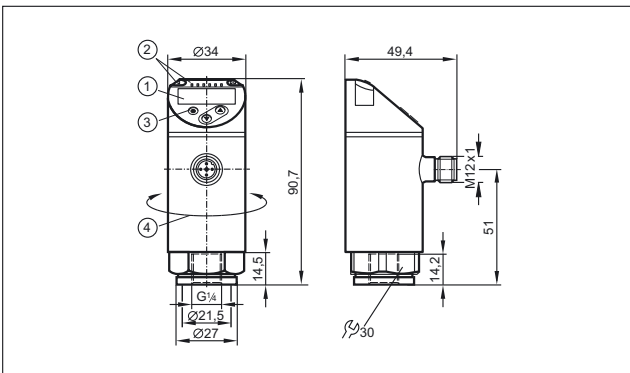
19



1: connection for 2-wire operation, 2: connection for 3-wire operation, 3: connection for IO-Link parameter setting (P = communication via IO-Link)

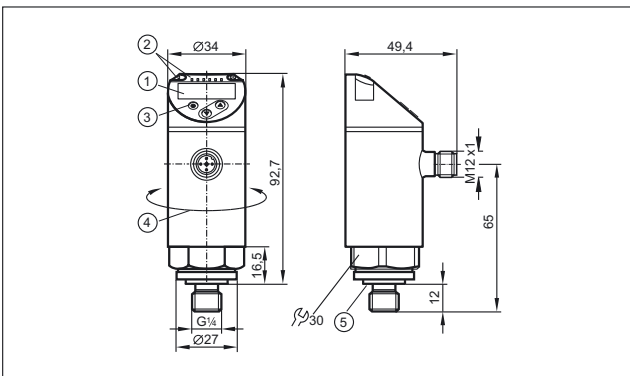
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1



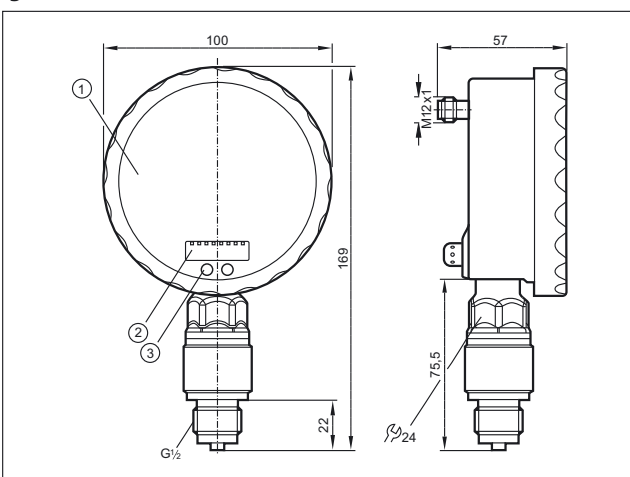
1: 4-digit alphanumeric display / alternating indication of red and green, 2: LEDs (display unit / switching status), 3: Programming button, 4: Upper part of the housing can be rotated by 345°

2



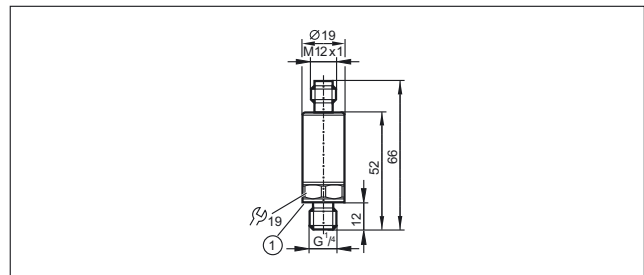
1: 4-digit alphanumeric display / alternating indication of red and green, 2: LEDs (display unit / switching status), 3: Programming button, 4: Upper part of the housing can be rotated by 345°, 5: sealing FKM / DIN 3869

3



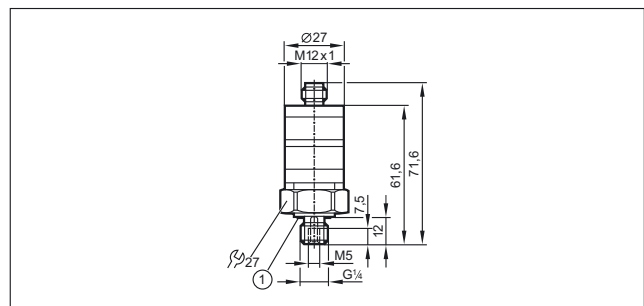
1: Analogue display, 2: 4-digit alphanumeric display, 3: Touch button (programming button)

4

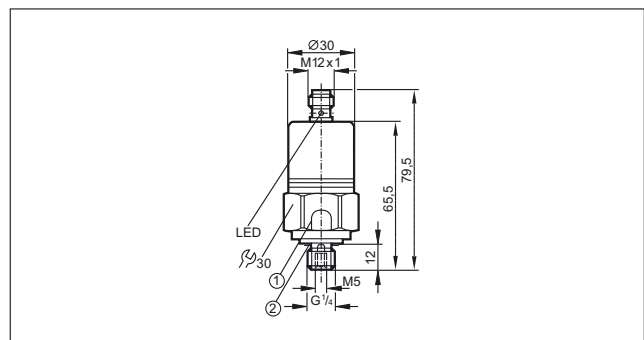


1: sealing

5

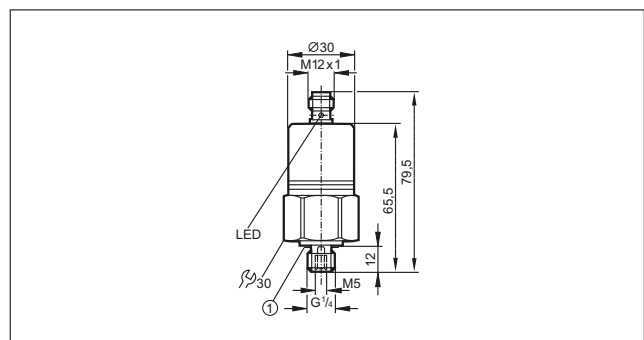


6



1: Pressure relief mechanism, No mechanical force must be exerted on the pressure relief mechanism., 2: sealing FPM / DIN 3869-14

7



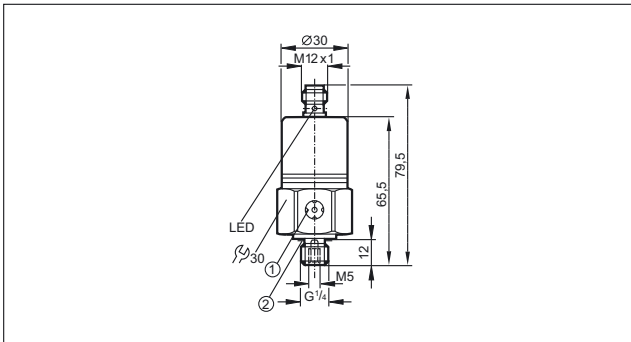
1: sealing FPM / DIN 3869-14



Process sensors

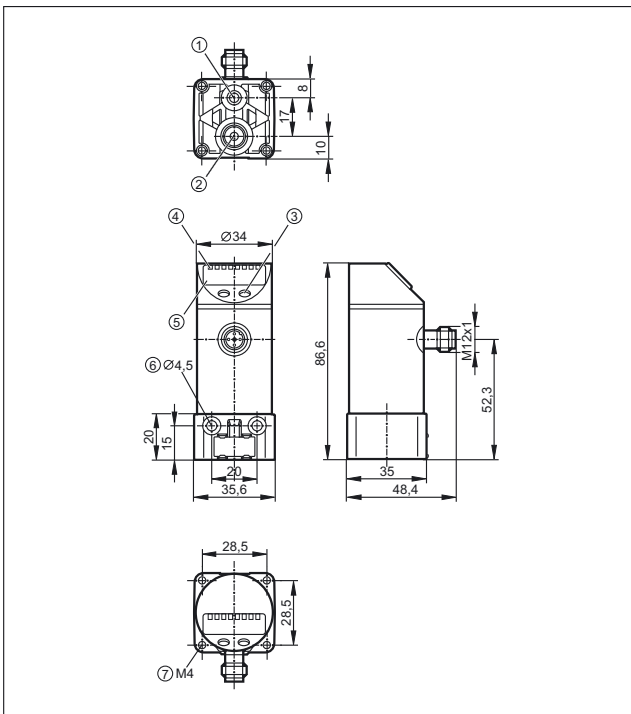
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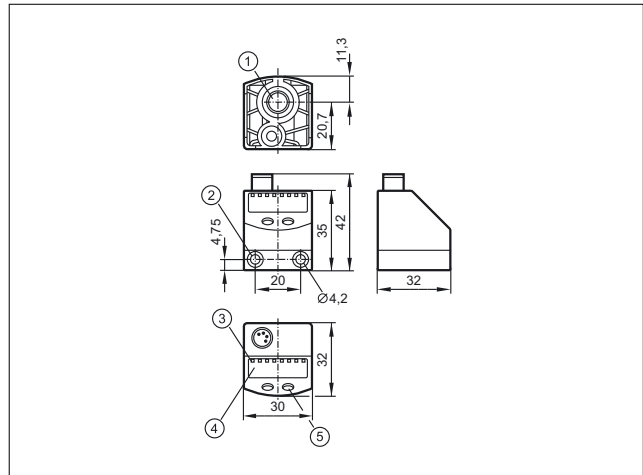
1: ventilation, 2: sealing FPM / DIN 3869-14

9



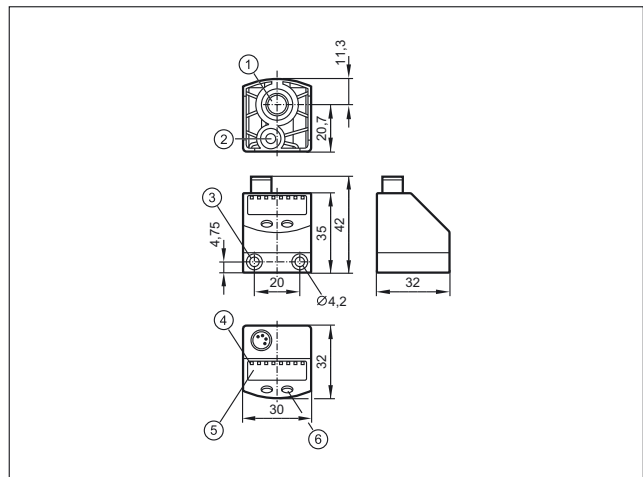
1: ventilation connection M5; max. tightening torque 2.5 Nm, 2: main pressure connection G 1/8; tightening torque max. 8 Nm, 3: Programming button, 4: LEDs (display unit / switching status), 5: 4-digit alphanumeric display, 6: for mounting screw M4; max. tightening torque 2.5 Nm, 7: for mounting screw M4; max. tightening torque 2.5 Nm

10



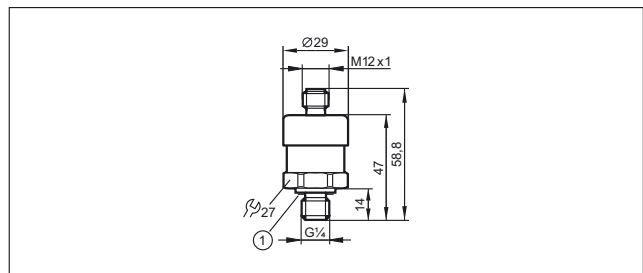
1: main pressure connection G 1/8; tightening torque max. 8 Nm, thread length max: 7.5 mm, 2: for mounting screw M4; max. tightening torque 2.5 Nm, 3: LEDs (display unit / switching status), 4: 4-digit alphanumeric display, 5: Programming button

11



1: Main pressure connection G 1/8; Tightening torque max. 8 Nm, insertion depth max. 7.5 mm, 2: Auxiliary pressure connection M5; Tightening torque max. 2.5 Nm, insertion depth max. 7.5 mm, 3: for mounting screw M4; max. tightening torque 2.5 Nm, 4: LEDs (display unit / switching status), 5: 4-digit alphanumeric display, 6: Programming button

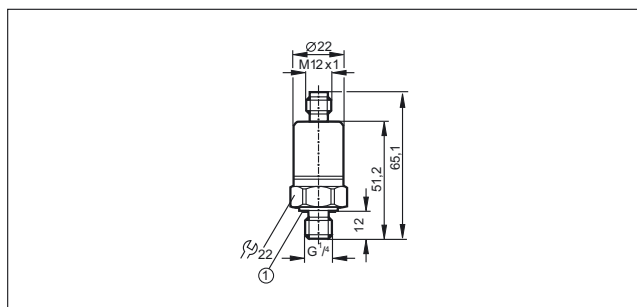
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sealing

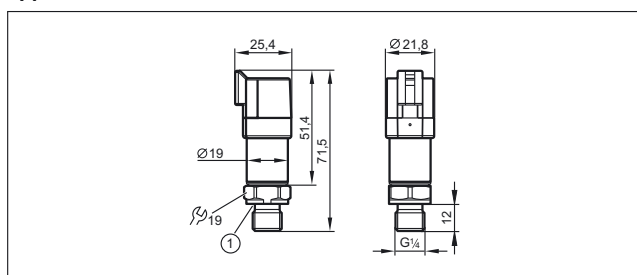
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13



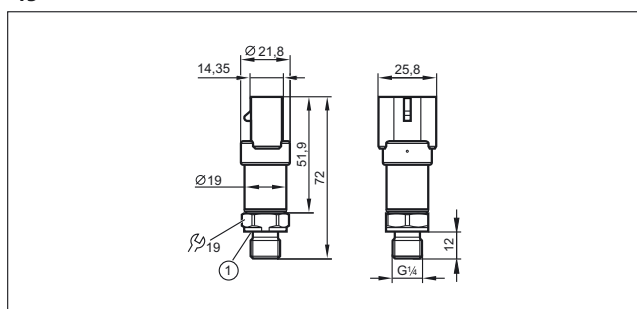
1: FKM seal / DIN 3869-14, tightening torque 25 Nm

14



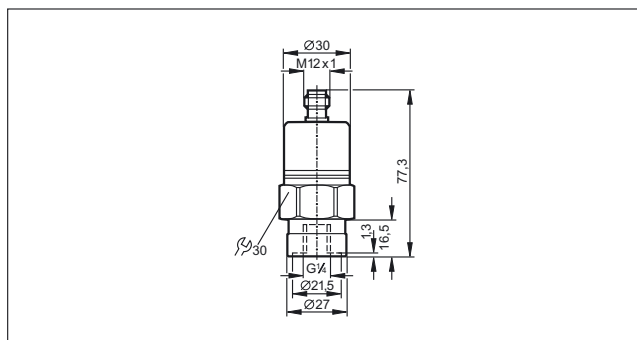
1: sealing FKM / DIN 3869

15

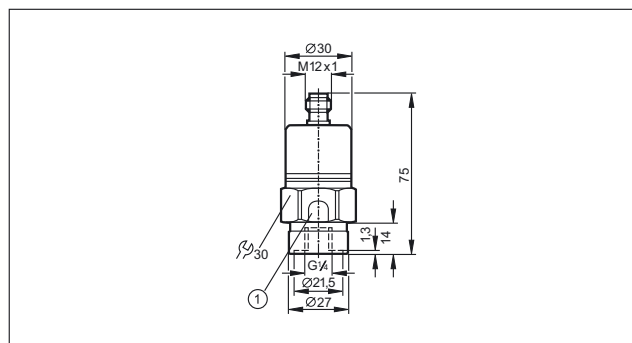


1: sealing FKM / DIN 3869

16

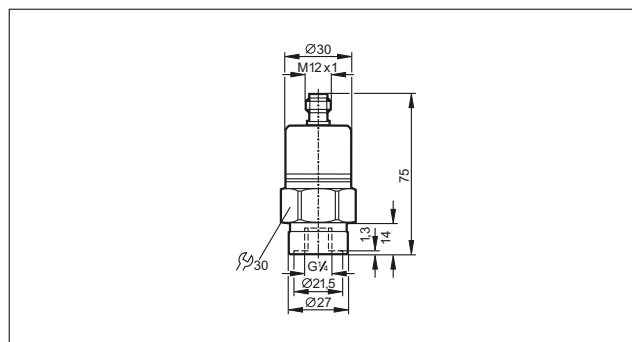


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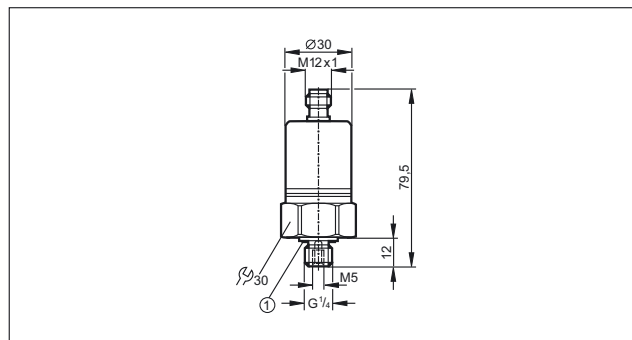


1: Pressure relief mechanism, No mechanical force must be exerted on the pressure relief mechanism.

18

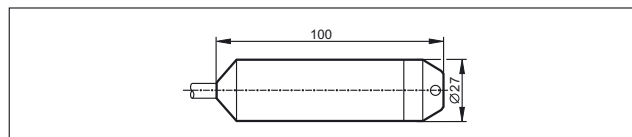


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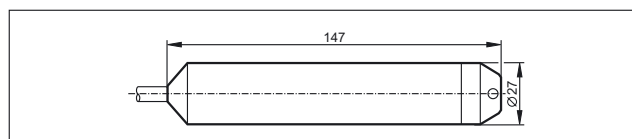


1: sealing FPM / DIN 3869-14

20



21

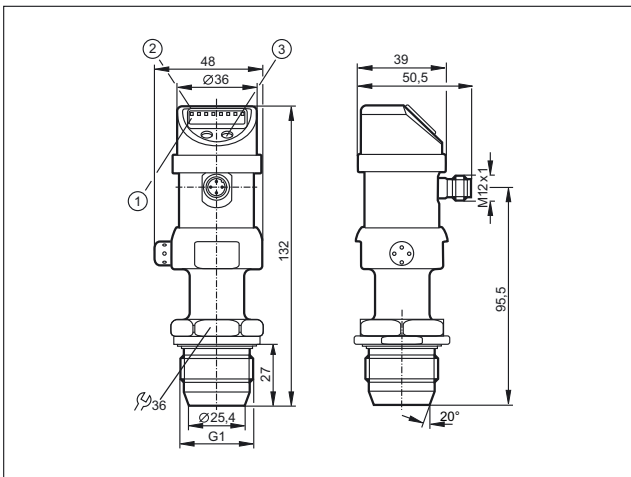




Process sensors

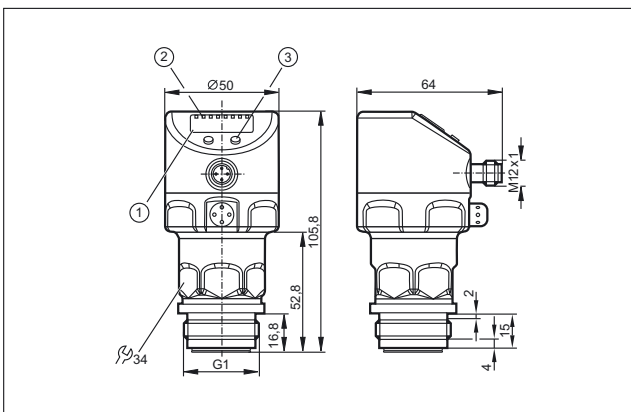
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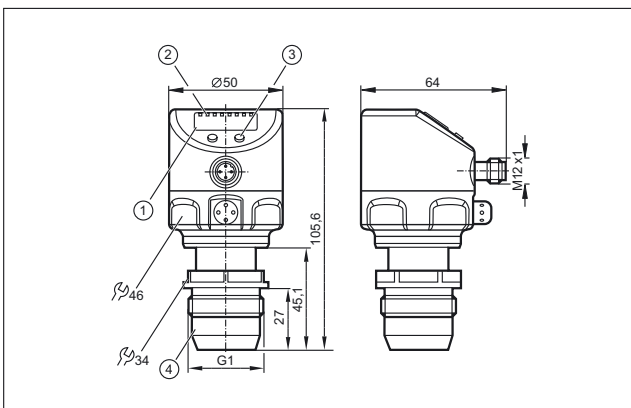
1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming button

23

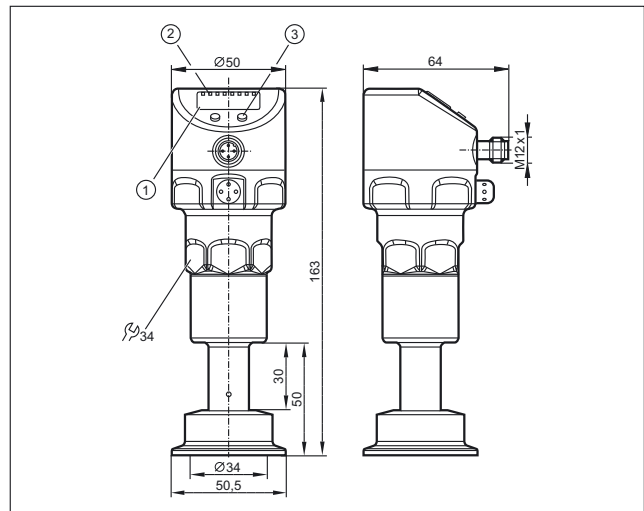


1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming button

24

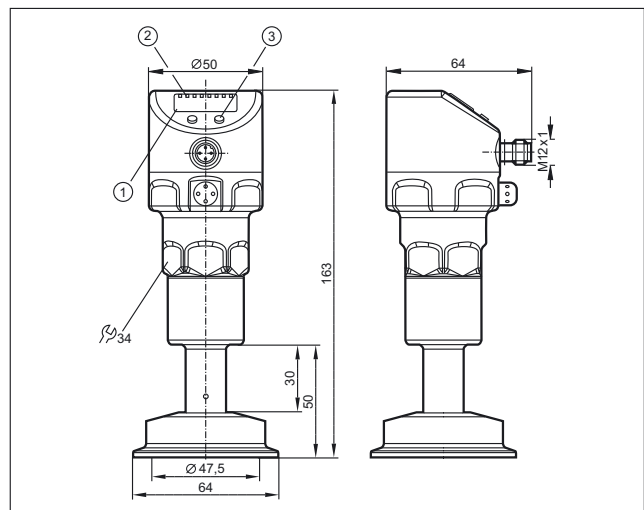


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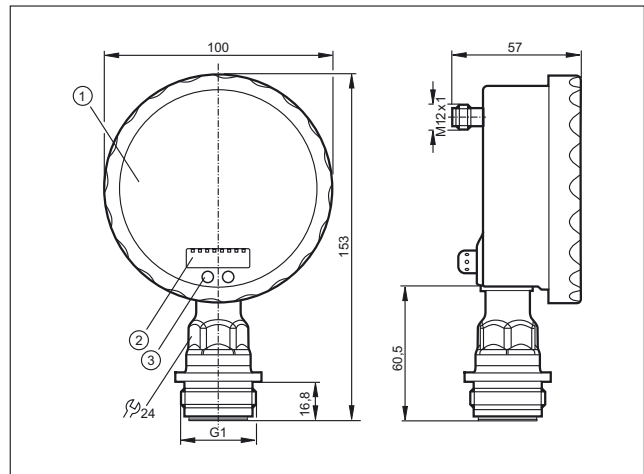


1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming button

26



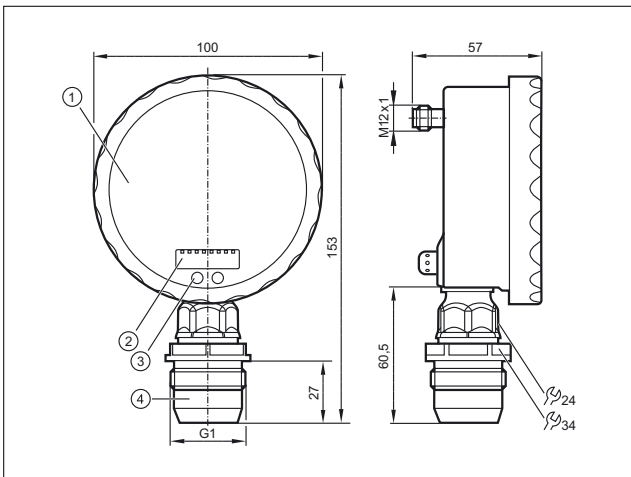
27



1: Analogue display, 2: 4-digit alphanumeric display, 3: Programming button

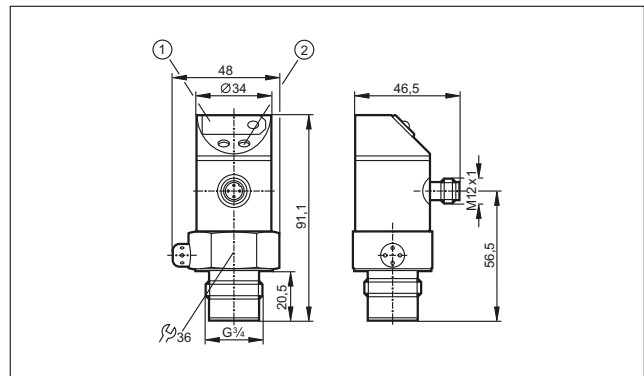
Scale drawings / drawing no. – CAD download: www.ifm.com

28



1: Analogue display, 2: 4-digit alphanumeric display, 3: Touch button (programming button), 4: Sealing cone G1 male, Attention: The unit must only be installed in a process connection for G1 sealing cone! The G1 male sealing cone of the unit is only suited for adapters with metal end stop!

29



1: 7-segment LED display, 2: Programming button



Process sensors

Flow sensors and flow meters in all versions



Flow sensors / flow meters

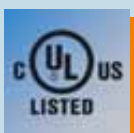
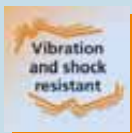


For liquids and gases

Special versions for food applications and hazardous areas

Optional fittings for variable process connection

Flow monitoring also for aggressive media



Flow sensors

In almost all fields of process and plant engineering, liquids or gases are used. For coolant and lubricant supply of plant and machinery, ventilation of installations and buildings and product processing. If the flow of these media stops, considerable damage and downtime may result. Therefore it is important to monitor these media. In modern installations, electronic flow monitors are used for this purpose. They work without wear and tear and without mechanical components. This guarantees reliable monitoring even in case of difficult media over a long period.

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Process sensors

<i>System overview</i>	<i>Page</i>

Scale drawings / drawing no. – CAD download: www.ifm.com

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Flow meters with integrated temperature measurement

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

Output function OUT1: normally open / normally closed programmable or frequency or IO-Link OUT2: normally open / normally closed programmable or frequency · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ½	1...20	-10...90	12	< 1	18...30	1	SV4200
	Rc ½	1...20	-10...90	12	< 1	18...30	1	SV4500
	G ½	2...40	-10...90	12	< 1	18...30	1	SV5200
	Rc ½	2...40	-10...90	12	< 1	18...30	1	SV5500
	G ¾	5...100	-10...90	12	< 1	18...30	2	SV7200
	Rc ¾	5...100	-10...90	12	< 1	18...30	2	SV7500

Output function OUT1 = analogue signal temperature OUT2 = analogue signal flow · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ½	1...20	-10...90	12	< 1	18...30	3	SV4204
	Rc ½	1...20	-10...90	12	< 1	18...30	3	SV4504
	G ½	2...40	-10...90	12	< 1	18...30	3	SV5204
	Rc ½	2...40	-10...90	12	< 1	18...30	3	SV5504
	G ¾	5...100	-10...90	12	< 1	18...30	4	SV7204
	Rc ¾	5...100	-10...90	12	< 1	18...30	4	SV7504

Output function analogue · Wiring diagram no. 2 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ½	0.5...10	-40...100	12	< 0.5	8...33	5	SV3050
	G ½	0.5...10	-40...100	12	< 0.5	8...33	5	SV3150



Process sensors

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

Output function analogue · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ½	0.9...15	-40...100	12	< 0.5	8...33	6	SV4050
	G ½	0.9...15	-40...100	12	< 0.5	8...33	6	SV4150
	G ¾	1.8...32	-40...100	12	< 0.5	8...33	7	SV5050
	G ¾	1.8...32	-40...100	12	< 0.5	8...33	7	SV5150
	G ¾	3.5...50	-40...100	12	< 0.5	8...33	8	SV6050
	G ¾	3.5...50	-40...100	12	< 0.5	8...33	8	SV6150
	G1	5.0...85	-40...100	12	< 0.5	8...33	9	SV7050
	G1	5.0...85	-40...100	12	< 0.5	8...33	9	SV7150
	G 1¼	9...150	-40...100	12	< 0.5	8...33	10	SV8050
	G 1¼	9...150	-40...100	12	< 0.5	8...33	10	SV8150

Magnetic-inductive flow meters with integrated temperature measurement (sealing material FKM)

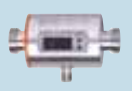
Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G½	0.10...25.00	-10...70	16	< 0.150	18...30	11	SM6000
	G¾	0.2...50.0	-10...70	16	< 0.150	18...30	12	SM7000
	G1	0.2...100.0	-10...70	16	< 0.150	18...30	13	SM8000

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

Output function 2 x analogue (4...20 mA scalable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G½	0.1...25.00	-10...70	16	< 0.150	20...30	11	SM6004
	G¾	0.2...50.0	-10...70	16	< 0.150	20...30	12	SM7004
	G1	0.2...100.0	-10...70	16	< 0.150	20...30	13	SM8004

Output function OUT1: normally open / normally closed progr. or pulse or frequency or empty pipe detection or IO-Link OUT2: normally open / normally closed progr. or analogue (4...20 mA; 0...10 V, scalable) or empty pipe detection · Wiring diagram no. 1 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205

	G2 flat seal	5...600	-10...70	16	< 0.35	18...32	14	SM2000
	G2 flat seal	5...300	-10...70	16	< 0.35	18...32	14	SM9000

Output function OUT1: analogue (4...20 mA scalable) OUT2: Analogue (4...20 mA scalable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G2 flat seal	5...600	-10...70 / 14...158	16	< 0.35	18...32	14	SM2004
	G2 flat seal	5...300	-10...70 / 14...158	16	< 0.35	18...32	14	SM9004

Output function OUT1: normally open / normally closed progr. or pulse or frequency or empty pipe detection or IO-Link OUT2: normally open / normally closed progr. or analogue (4...20 mA; 0...10 V, scalable) or empty pipe detection · Wiring diagram no. 1 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205

	G2 flat seal	5...900	-10...70	16	< 0.35	18...32	14	SM0510

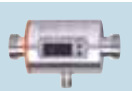
Magnetic-inductive flow meters with integrated temperature measurement (sealing material EPDM)

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

Output function OUT1: normally open / normally closed progr. or pulse or frequency or empty pipe detection or IO-Link OUT2: normally open / normally closed progr. or analogue (4...20 mA; 0...10 V, scalable) or empty pipe detection · Wiring diagram no. 1 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205

	G2 flat seal	5...600	-10...70	16	< 0.35	18...32	14	SM2100

Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G½	0.10...25.00	-10...70	16	< 0.150	18...30	11	SM6100
	G¾	0.2...50.0	-10...70	16	< 0.150	18...30	12	SM7100



Process sensors

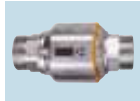
Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



G1	0.2...100.0	-10...70	16	< 0.150	18...30	13	SM8100

Output function OUT1: normally open / normally closed progr. or pulse or frequency or empty pipe detection or IO-Link OUT2: normally open / normally closed progr. or analogue (4...20 mA; 0...10 V, scalable) or empty pipe detection · Wiring diagram no. 1 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205

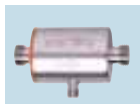


G2 flat seal	5...300	-10...70	16	< 0.35	18...32	14	SM9100

Magnetic-inductive flow meters (sealing material FKM)

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 4 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



G½	0...25	-10...70	16	< 0.150	18...30	15	SM6050



G¾	0...50	-10...70	16	< 0.150	18...30	16	SM7050

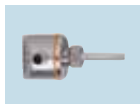


G1	0...100	-10...70	16	< 0.150	18...30	17	SM8050

Compact housings for adapters for flow monitoring

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Output function  /  · Wiring diagram no. 5 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



3...300 / 200...3000	stainless steel 316L / 1.4404	-25...80	30	1...10	19...36	18	SI5000

M12 connector · Output function 2 x normally open / closed programmable · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



3...300 / 200...3000	stainless steel 316L / 1.4404	-25...80	300	1...10	18...36	19	SI5002

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

1/2" UNF-Connector · Output function  · Wiring diagram no. 7 · Connector group 34

	3...300 / 200...3000	stainless steel 316L / 1.4404	-25...80	300	1...10	85...265	20	SI5006*

M12 connector · Output function 4...20 mA analogue · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	3...300 / -	stainless steel 316L / 1.4404	-25...80	300	1...10	19...36	19	SI5004

M12 connector · Output function  · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	3...300 / 200...3000	stainless steel 316L / 1.4404	-25...80	300	1...2 / 1...10	18...36	19	SI5010

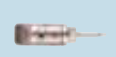
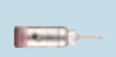
* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Compact housings can be configured for T-pieces for flow monitoring

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

Setting range for relative mode: 0...6 m/s (liquids) and 0...200 m/s (gases) · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205

	M18 x 1.5	0.04...3	-20...90	100	0.5	18...30	21	SA5000
	M18 x 1.5	0.04...3	-20...90	100	0.5	18...30	21	SA5040
	G 1/2	0.04...3	-20...90	100	0.5	18...30	22	SA2000
	Ø 8 mm	0.04...3	-20...100	50	0.5	18...30	23	SA4100
	Ø 8 mm	0.04...3	-20...100	50	0.5	18...30	23	SA4300

Setting range for relative mode: 0...6 m/s (liquids) and 0...200 m/s (gases) · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G 1/2	0.04...3	-20...90	100	0.5	18...30	22	SA2004
	M18 x 1.5	0.04...3	-20...90	100	0.5	18...30	21	SA5004



Process sensors

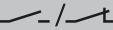
Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

Setting range for relative mode: 0...6 m/s (liquids) and 0...200 m/s (gases) · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Ø 8 mm	0.04...3	-20...100	100	0.5	18...30	23	SA4104
	Ø 8 mm	0.04...3	-20...100	100	0.5	18...30	23	SA4304

Compact housings for adapters for flow monitoring, Hastelloy sensor tip

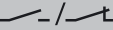
Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Output function  · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	3...300 / 200...3000	Hastelloy C-4 (2.4610)	-25...80	300	1...2 / 1...10	19...36	19	SI0553

Compact housings for adapters for flow monitoring, titanium sensor tip

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Output function  · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	3...300 / 200...3000	titanium (3.7035)	-25...80	100	1...2 / 1...10	19...36	19	SI5100

Compact designs for adapter with flow and temperature monitoring

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

M12 connector · Output function 2 x normally open / closed programmable · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	3...300 / 200...3000	stainless steel 316L / 1.4404	-25...80	300	1...10	18...36	19	SI5007

Compact housings for adapters with ATEX approval group II, category 3D / 3G

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

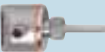
M12 connector · Output function  /  · Wiring diagram no. 5 · Connector groups 196, 198

	3...300 / 200...3000	stainless steel 316L / 1.4404	-25...60	30	1...10	19...36	18	SI500A

Compact housings for adapters with Germanischer Lloyd (GL) approval

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

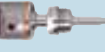
M12 connector · Output function 2 x normally open / closed programmable · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	3...300	stainless steel 316L / 1.4404	-15...70	–	1...10	24	19	SI0521

Compact housings for adapters for hygienic and wet areas

Type	Setting range liquids / gases [cm/s]	Material sensor tip	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

M12 connector · Output function  /  · Wiring diagram no. 5 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	3...300 / 200...3000	stainless steel 316L / 1.4435	-25...95	30	1...10	19...36	24	SI6600
	3...300 / 200...3000	High-grade stainless steel 316L / 1.4435	-25...95	30	1...10	19...36	25	SI6700
	3...300 / 200...3000	High-grade stainless steel 316L / 1.4435	-25...95	30	1...10	19...36	26	SI6800

Mechatronic flow sensors for machine tools

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

M12 connector · Output function  · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ½	0.3...25	0...60	200	< 0.01	10...30	27	SBU323
	G ½	0.3...50	0...60	200	< 0.01	10...30	27	SBU324



Process sensors

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

M12 connector · Output function analogue · DC · Wiring diagram no. 12 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ½	0.3...25	0...60	200	< 0.01	24	28	SBU623
	G ½	0.3...50	0...60	200	< 0.01	24	28	SBU624
	G ½	0.3...75	0...60	200	< 0.01	24	28	SBU625
	G ½	0.3...75	0...60	200	< 0.01	24	28	SBU625

Mechatronic flow sensors with display

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

M12 connector · Output function OUT1: NO / NC programmable or frequency or IO-Link OUT2: NO / NC programmable or analogue · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Rp ¾	0.3...15	-10...100	40	0.01	18...30	29	SBY232
	Rp ¾	0.5...25	-10...100	40	0.01	18...30	29	SBY233
	Rp ¾	1...50	-10...100	40	0.01	18...30	29	SBY234
	Rp 1	2...100	-10...100	25	0.01	18...30	30	SBY246
	Rp 1½	4...200	-10...100	25	0.01	18...30	31	SBY257
	G ½	0.3...15	-10...100	40	0.01	18...30	32	SBG232
	G ½	0.5...25	-10...100	40	0.01	18...30	32	SBG233
	G ½	1...50	-10...100	40	0.01	18...30	32	SBG234
	G ¾	2...100	-10...100	25	0.01	18...30	33	SBG246

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

M12 connector · Output function OUT1: NO / NC programmable or frequency or IO-Link OUT2: NO / NC programmable or analogue · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



G 1¼ 4...200 -10...100 25 0.01 18...30 34 **SBG257**

Mechatronic flow sensors for liquids

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

M12 connector · Output function  · DC PNP · Wiring diagram no. 11 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



Rp ½ 0.2...4 0...85 80 < 0.01 10...30 35 **SBY321**



Rp ¾ 1...15 0...85 40 < 0.01 10...30 36 **SBY332**



Rp ½ 2...20 0...85 25 < 0.01 10...30 37 **SBY323**



Rp ¾ 1...25 0...85 40 < 0.01 10...30 36 **SBY333**



Rp ¾ 2...50 0...85 40 < 0.01 10...30 36 **SBY334**



Rp 1 5...100 0...85 25 < 0.01 10...30 38 **SBY346**



Rp 1½ 20...200 0...85 25 < 0.01 10...30 39 **SBY357**



G ½ 1...15 0...85 40 < 0.01 10...30 40 **SBG332**



G ½ 1...25 0...85 40 < 0.01 10...30 40 **SBG333**



G ½ 2...50 0...85 40 < 0.01 10...30 40 **SBG334**



G ¾ 5...100 0...85 25 < 0.01 10...30 41 **SBG346**



G 1¼ 20...200 0...85 25 < 0.01 10...30 42 **SBG357**



Process sensors

Mechatronic flow sensors for high temperatures

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

M12 connector · Output function analogue · DC · Wiring diagram no. 12 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Rp 3/4	1...25	-10...100	40	< 0.01	18...32	43	SBY433
	Rp 3/4	2...50	-10...100	40	< 0.01	18...32	43	SBY434
	Rp 1	4...100	-10...100	25	< 0.01	18...32	44	SBY446
	Rp 1 1/2	8...200	-10...100	25	< 0.01	18...32	45	SBY457

Cable with connector 0.3 m · Output function analogue · DC · Wiring diagram no. 12 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Rp 3/4	0.3...25	10...180	15	< 0.01	24	46	SBT633
	Rp 3/4	0.3...50	10...180	15	< 0.01	24	46	SBT634

Flow sensors for connection to control monitors, industrial applications

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T ₀ gradient [K/min]	Pressure rating [bar]	Drawing no.	Order no.

M12 connector · Wiring diagram no. 13 · Connector groups 12, 13, 22, 24, 152, 155, 186, 192, 194, 205

	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	30	30	47	SF6200
	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	30	30	48	SF6201

M12 connector · Wiring diagram no. 13 · Connector groups 152, 155, 186, 192, 194, 205

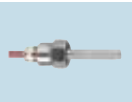
	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	300	300	49	SF5200
	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	300	30	50	SF5201

Cable 6 m · Wiring diagram no. 14

	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	300	300	51	SF5350

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T ₀ gradient [K/min]	Pressure rating [bar]	Draw- ing no.	Order no.

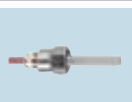
Cable 6 m · Wiring diagram no. 14

	3...300 / 200...3000	3...60 / 200...800	0...120 / 0...100	1...10	300	300	51	SF5300

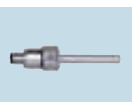
Flow sensors for connection to control monitors, industrial applications, titanium housing

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T ₀ gradient [K/min]	Pressure rating [bar]	Draw- ing no.	Order no.

Cable 6 m · Wiring diagram no. 14

	3...300 / 200...3000	3...60 / 200...800	0...120 / 0...100	1...10	300	100	51	SF5800

M12 connector · Wiring diagram no. 13 · Connector groups 152, 155, 186, 192, 194, 205

	3...300 / 200...3000	3...60 / 200...800	-25...80	1...10	300	100	49	SF5700

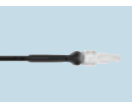
Flow sensors for connection to control monitors for aggressive media, ceramic housing

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T ₀ gradient [K/min]	Pressure rating [bar]	Draw- ing no.	Order no.

M12 connector · Wiring diagram no. 13 · Connector groups 12, 13, 22, 24, 152, 155, 186, 192, 194, 205

	3...60 / -	3...40 / -	5...70	2...20	7	30	52	SF2405
	3...60 / -	3...40 / -	5...70	2...20	7	30	53	SF3405

Cable 6 m · Wiring diagram no. 14

	3...60 / -	3...40 / -	5...70	2...20	7	30	54	SF2410
	3...60 / -	3...40 / -	5...70	2...20	7	30	55	SF3410

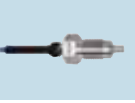


Process sensors

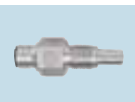
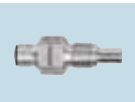
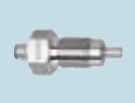
Flow sensors for connection to control monitors with ATEX approval

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T ₀ gradient [K/min]	Pressure rating [bar]	Draw- ing no.	Order no.

Cable 6 m · Wiring diagram no. 15

	3...300 / 200...2000	3...60 / 200...800	-20...60	1...10	15	300	56	SF111A
	3...300 / 200...2000	3...60 / 200...800	-20...60	1...10	15	300	57	SF211A
	3...300 / 200...2000	3...60 / 200...800	-20...60	1...10	15	300	58	SF311A
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	59	SF121A
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	60	SF221A
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	61	SF321A

M12 connector · Wiring diagram no. 16 · Connector group 197

	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	62	SF120A
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	63	SF220A
	3...300 / 200...2000	3...60 / 200...800	-20...70	1...10	15	30	64	SF320A
	3...300 / 200...3000	3...60 / 200...800	-20...70	1...10	15	30	47	SF620A

Flow sensors for connection to control monitors with ATEX approval, ceramic housing

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T ₀ gradient [K/min]	Pressure rating [bar]	Draw- ing no.	Order no.

Cable 6 m · Wiring diagram no. 15

	3...60 / -	3...40 / -	5...70	2...20	7	30	55	SF323A

Flow sensors for connection to control monitors with ATEX approval 2G

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	Max. T ₀ gradient [K/min]	Pressure rating [bar]	Drawing no.	Order no.

Cable 6 m · Wiring diagram no. 17

	3...300 / 100...15000	3...100 / 100...7500	-20...70	1...10	30	30	65	SP321A

Air flow monitors

Type	Setting range liquids / gases [cm/s]	Greatest sensitivity [cm/s]	Medium temperature [°C]	Response time [s]	U _b / tolerance [V] / [%]	Drawing no.	Order no.

Cable 2 m · Wiring diagram no. 18

	100...1000	100...400	-10...50	3...60	80...250 AC	66	SL0101*

Cable 2 m · Wiring diagram no. 19

	100...1000	100...400	-10...50	3...60	24 AC ± 10 %	66	SL0201*

Cable 2 m · Wiring diagram no. 20

	100...1000	100...400	-10...50	3...60	24 DC ± 25 %	66	SL5101

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Compressed air meters

Type	Process connection	Setting range [Nm ³ /h]	Pressure rating [bar]	Response time [s]	U _b [V]	Drawing no.	Order no.

Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA scaleable) · Wiring diagram no. 21 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ (DN8)	0.12...15.00	16	< 0.1	18...30	67	SD5000
	R ½ (DN15)	0.6...75.0	16	< 0.1	18...30	68	SD6000
	G ½ (DN15)	0.6...75	16	< 0.1	18...30	69	SD6050



Process sensors

Type	Process connection	Setting range [Nm³/h]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA scaleable) · Wiring diagram no. 21 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	R1 (DN25)	1.8...225.0	16	< 0.1	18...30	70	SD8000
	R1½ (DN40)	3.5...410.0	16	< 0.1	18...30	71	SD9000
	R2 (DN50)	5...700	16	< 0.1	18...30	72	SD2000

Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA scaleable) · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G 1 I	18...2110	16	< 0.1	18...30	73	SD0523

Compressed air meter for special gases

Type	Process connection	Setting range [Nm³/h]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA scaleable) · Wiring diagram no. 24 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ (DN8)	N ₂ : 0.04...15.00 Ar: 0.08...24.04 CO ₂ : 0.04...14.36	0...60	16	< 0.1	18...30	67	SD5100
	R½ (DN15)	N ₂ : 0.2...75.0 Ar: 0.4...122.0 CO ₂ : 0.2...74.7	0...60	16	< 0.1	18...30	68	SD6100

Ultrasonic flow meters for liquids (water, glycol solutions, oils)

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.

Output function 2 x normally open / closed programmable · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

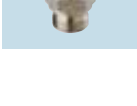
	G¾	0.1...50.0	-10...80	16	< 0.250	19...30	74	SU7200
	G1	0.2...100.0	-10...80	16	< 0.250	19...30	75	SU8200

Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable) · Wiring diagram no. 22 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G¾	0.1...50.0	-10...80	16	< 0.250	19...30	74	SU7000

Type	Process connection	Measuring range [l/min]	Medium temperature [°C]	Pressure rating [bar]	Response time [s]	U _b [V]	Draw- ing no.	Order no.
Output function OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable) · Wiring diagram no. 22 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G1	0.2...100.0	-10...80	16	< 0.250	19...30	75	SU8000
	G1 1/4	0.4...200.0	-10...80	16	< 0.250	19...30	76	SU9000
Output function 2 x analogue (4...20 mA scalable) · Wiring diagram no. 23 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	G1 1/4	0.0...200.0	-10...80	16	< 0.250	19...30	76	SU9004

Accessories for flow sensors and control monitors

Type	Description	Order no.
	T-piece · R 1/2 · M26 x 1.5 · R 1/2 · for sensors and adapters with process connection M26 x 1.5 · Flow rate: 0...10 l/min · Housing materials: stainless steel 316L / 1.4404	E40136
	Progressive ring T-piece DIN 2353 · QL 18-18-18 · for sensors and adapters with process connection M26 x 1.5 · Recommendation: precision steel pipes 18 x 1.5 to DIN 2391/ISO 3304 · Housing materials: stainless steel 316Ti / 1.4571	E40078
	Progressive ring T-piece DIN 2353 · QL 22-18-22 · for sensors and adapters with process connection M26 x 1.5 · Recommendation: precision steel pipes 22 x 1.5 to DIN 2391/ISO 3304 · Housing materials: stainless steel 316Ti / 1.4571	E40079
	Progressive ring T-piece DIN 2353 · QL 28-18-28 · for sensors and adapters with process connection M26 x 1.5 · Recommendation: precision steel pipes 28 x 1.5 to DIN 2391/ISO 3304 · Housing materials: CW614N	E40083
	Progressive ring fitting · Ø 8 mm · G 1/2 · Housing materials: stainless steel	E40258
	Progressive ring fitting · Ø 8 mm · G 1/4 · Housing materials: stainless steel	E40259
	Progressive ring fitting · Ø 8 mm · G 3/4 · Housing materials: stainless steel	E40260
	Progressive ring fitting · Ø 8 mm · G 1/2 · Housing materials: stainless steel	E40267
	Progressive ring fitting · Ø 8 mm · G 3/4 · Housing materials: stainless steel	E40268



Process sensors

Type	Description	Order no.
	Progressive ring fitting · Ø 8 mm - 1/2" NPT · Housing materials: stainless steel	E40261
	Progressive ring fitting · Ø 8 mm - 1/4" NPT · Housing materials: stainless steel	E40262
	Progressive ring fitting · Ø 8 mm - R1/2 · Housing materials: stainless steel	E40263
	Progressive ring fitting · Ø 8 mm - R 1/4 · Housing materials: stainless steel	E40264
	Adapter block · D10 / G 1/4 · for flow sensors type SID, SF5 · Optimised for the following volumetric flow quantities (factory setting with water): · 0.2...2 l/min (SI1xxx) 0.2...3 l/min (SI5xxx) · Housing materials: stainless steel 316L / 1.4404	E40161
	Adapter block · D16 / G 1/2 · for flow sensors type SID, SF5 · Optimised for the following volumetric flow quantities (factory setting with water): · 0.5...5 l/min (SI1xxx) 0.5...7 l/min (SI5xxx) · Housing materials: stainless steel 316L / 1.4404	E40162
	Adapter block · D22 / G 3/4 · for flow sensors type SID, SF5 · Optimised for the following volumetric flow quantities (factory setting with water): · 1...12 l/min (SI1xxx) 1...16 l/min (SI5xxx) · Housing materials: stainless steel 316L / 1.4404	E40163
	Adapter block · D27 / G 1 · for flow sensors type SID, SF5 · Optimised for the following volumetric flow quantities (factory setting with water): · 2...20 l/min (SI1xxx) 2...25 l/min (SI5xxx) · Housing materials: stainless steel 316L / 1.4404	E40164
	Adapter · M18 x 1.5 - G 1/2 · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: titanium	E40114
	Adapter · M18 x 1.5 - G 1/4 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: titanium	E40115
	Adapter · M18 x 1.5 - L18 · for mounting in T-pieces · Insertion depth of the probe of SID, SFD, TN: · 28.5 mm · Housing materials: nut: stainless steel 316Ti / 1.4571 / adapter: stainless steel 316L / 1.4404 / O-ring: FKM 16 x 1.5 gr 70° Shore A	E40104
	Adapter · M18 x 1.5 - M12 x 1 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: stainless steel 316L / 1.4404	E40101
	Adapter · M18 x 1.5 - M12 x 1 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: CW614N	E40100
	Adapter · M18 x 1.5 - 1/4" NPT · Insertion depth of the probe of SID, SFD, TN: · 13.9 mm · Housing materials: stainless steel 316L / 1.4404	E40106
	Adapter · M18 x 1.5 - G 1/4 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: stainless steel 316L / 1.4404	E40099

Type	Description	Order no.
	Adapter · M18 x 1.5 - G 1/4 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: CW614N	E40098
	Adapter · M18 x 1.5 - G 1/2 · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: stainless steel 316L / 1.4404	E40096
	Adapter · M18 x 1.5 - G 1/2 · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: CW614N	E40097
	Mounting adapter · M18 x 1.5 - Ø 23 mm · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: PE-100	E40138
	Welding adapter · M18 x 1.5 - Ø 24 mm · Insertion depth of the probe of SID, SFD, TN: · 15 mm · Housing materials: stainless steel 316L / 1.4404	E40124
	Welding adapter · Welding adapter · for compressed air meter type SD · Housing materials: stainless steel 316L / 1.4404	E40195
	Welding adapter · Ø 8 mm - Ø 13.7 mm · Progressive ring fitting · Housing materials: stainless steel	E40265
	Flow adapter (for low flow rates) · M12 x 1 - G 1/8 · for flow sensors and compact flow monitors with adapter · Housing materials: stainless steel 316L / 1.4404	E40129
	Flow adapter (for low flow rates) · M12 x 1 - G 1/8 · for type SA5 · Housing materials: stainless steel 316L / 1.4404	E40434
	Combicon connector · with cage clamps 4 poles · Housing materials: current carrying parts: copper alloy tin-plated	E40171
	Protective cover · for flow sensors type SI5xxx, SI6xxx, SR59xx · Housing materials: PP uncoloured	E40203

Flange adapters for flow sensors

Type	Description	Order no.
	Mounting plate · Housing materials: stainless steel 316L / 1.4404	E40249
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33201



Process sensors

Type	Description	Order no.
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33202
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33701
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33702
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN32 (1.25") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33211
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33212
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33213
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN32 (1.25") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33711
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33712
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33713
	Clamp adapter · Varivent Adapter · Varivent type F · DN25 (1"), D = 50 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33221
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33222
	Clamp adapter · Varivent Adapter · Varivent type F · DN25 (1"), D = 50 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33721
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33722
	Pipe fitting · SMS pipe fitting · DN40 (1.5") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33731
	Pipe fitting · SMS pipe fitting · DN50 (2") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33732

Type	Description	Order no.
	Flange adapter · DRD adapter · flange · DRD · D = 65 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33242
	Welding adapter · Ø 50 mm · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E30122
	Adapter · G 1 - 2" TRICLAMP · for flow monitor type SM8 · Housing materials: stainless steel 316L / 1.4404	E40252
	Adapter · G 1 - 1.5" TRICLAMP · for flow monitor type SM8 · Housing materials: stainless steel 316L / 1.4404	E40253
	Adapter · G 2 - 2" TRICLAMP · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316L / 1.4404	E40254

Accessories for airflow monitors

Type	Description	Order no.
	Mounting clamp · Ø 23 mm · for air flow monitor SLG · Housing materials: PBT	E40048
	Adapter for E40048 · Ø 8 mm - Ø 23 mm · Housing materials: stainless steel	E40269

Accessories for flow meters

Type	Description	Order no.
	Adapter · G 1/2 - R 1/2 · for flow monitor type SM6 · flat seal · Housing materials: stainless steel 316Ti / 1.4571	E40199
	Adapter · G 1/2 - G 3/4 · for flow monitor type SM6 · flat seal · Housing materials: stainless steel 316L / 1.4404	E40189
	Adapter · G 3/4 - R 1/2 · for flow monitor type SM7 / SU7 · Housing materials: stainless steel 316L / 1.4404	E40178
	Adapter · G 1 - R 1/2 · for flow monitor type SM8 / SU8 · Housing materials: stainless steel 316L / 1.4404	E40179
	Adapter · G 1 - R 3/4 · for flow monitor type SM8 / SU8 · Housing materials: stainless steel 316L / 1.4404	E40180



Process sensors

Type	Description	Order no.
	Adapter · G ¾ I - R ½ · for flow monitor type SM7 / SU7 · Housing materials: Brass	E40151
	Adapter · G 1 - R ¾ · for flow monitor type SM8 / SU8 · Housing materials: Brass	E40153
	Adapter · G 1¼ - R 1 · for flow monitor type SU9 · Housing materials: stainless steel 316L / 1.4404	E40205
	Adapter · G ½ - G ½ · for flow monitor type SM6 · Housing materials: stainless steel 316L / 1.4404	E40213
	Adapter · G ¾ - G ½ · for flow monitor type SM7 / SU7 · Housing materials: stainless steel 316L / 1.4404	E40214
	Adapter · G 1 - G ¾ · for flow monitor type SM8 / SU8 · Housing materials: stainless steel 316L / 1.4404	E40215
	Adapter · G ¾ - G ¾ · for flow monitor type SM7 / SU7 · Housing materials: stainless steel 316L / 1.4404	E40216
	Adapter · G 1 - G 1 · for flow monitor type SM8 / SU8 · Housing materials: stainless steel 316L / 1.4404	E40217
	Adapter · Victaulic · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316Ti / 1.4571	E40227
	Adapter · 2" NPT · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316Ti / 1.4571	E40228
	Adapter · 1½" NPT · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316Ti / 1.4571	E40229
	Adapter · G 1½ · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316Ti / 1.4571	E40230
	Adapter · R 2" A · for flow sensors type SM2, SM9 · Housing materials: stainless steel 316Ti / 1.4571	E40231
	Flange adapter · Flange adapter · Adapter · rotatable · for type SM2, SM9 · Housing materials: flange: stainless steel / adapter: stainless steel 316Ti / 1.4571 / O-ring: EPDM	E40240
	Regulating valve · G ½ - G ½ · lockable · Housing materials: Brass nickel-plated / EPDM	E40250

Type	Description	Order no.
	Regulating valve · G ¾ - G ¾ · lockable · Housing materials: Brass nickel-plated / EPDM	E40251

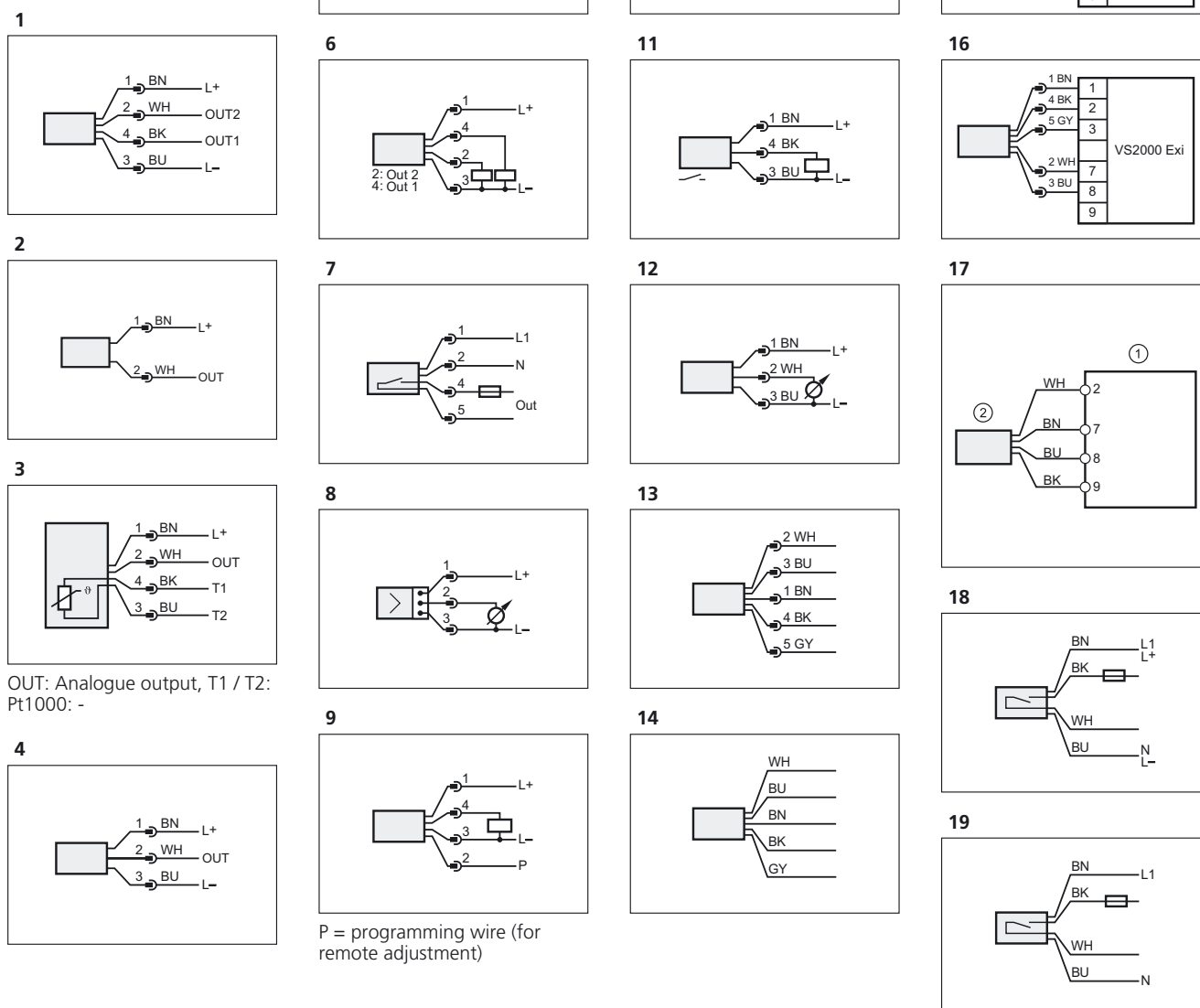
Grounding clamps for magnetic-inductive flow meters

Type	Description	Order no.
	Grounding clamp · Housing materials: stainless steel 316L / 1.4404	E40234

Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white
GY	grey

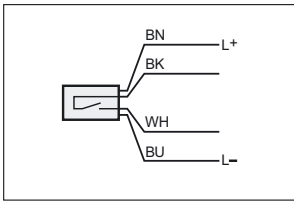




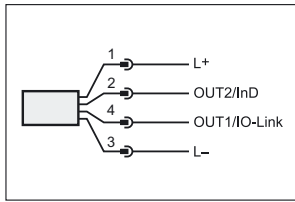
Process sensors

Wiring diagrams

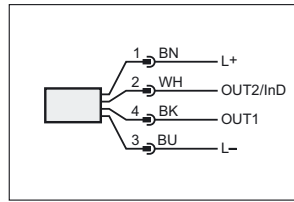
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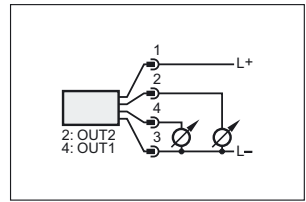
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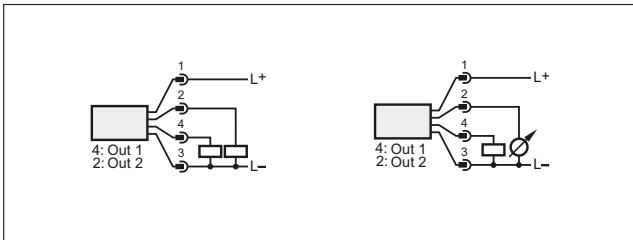
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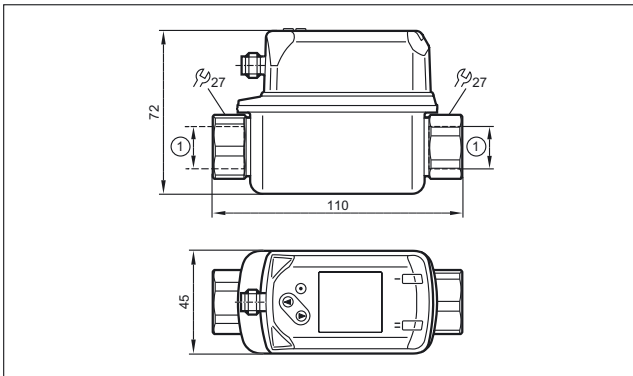


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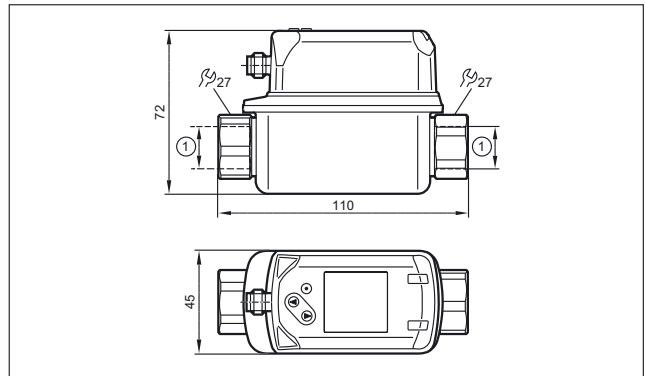
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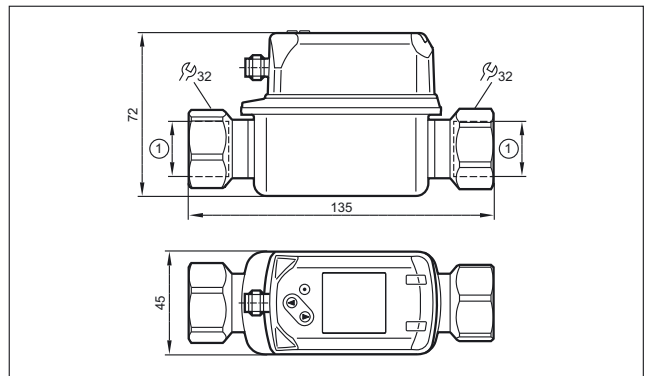


1: Process connection, see data sheet

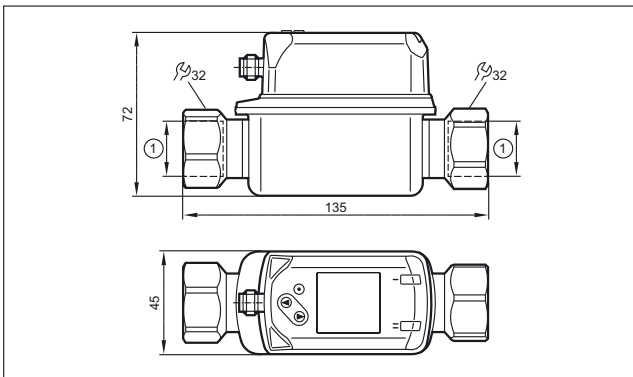
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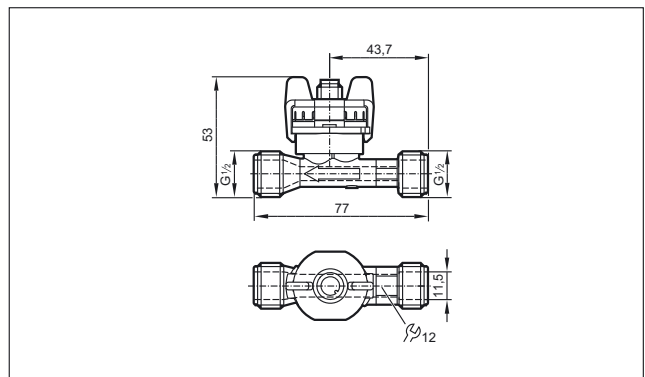


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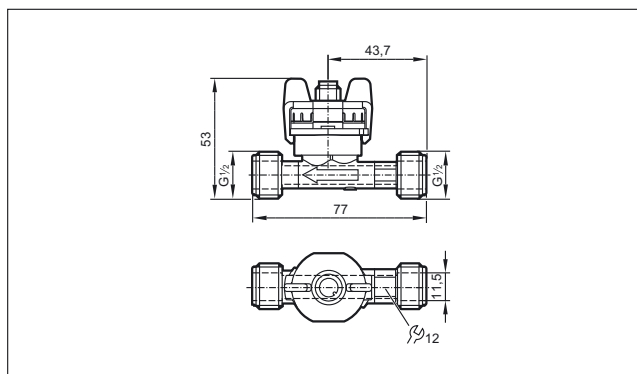
1: Process connection, see data sheet

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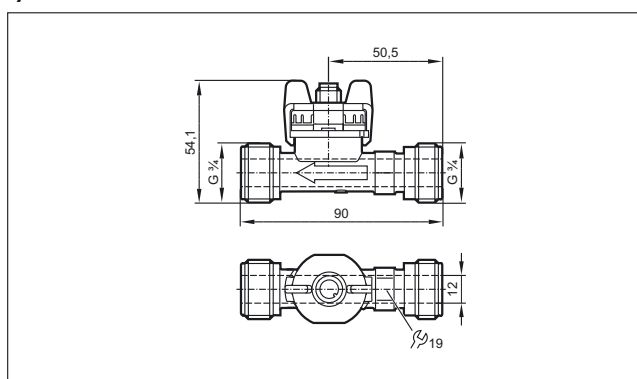


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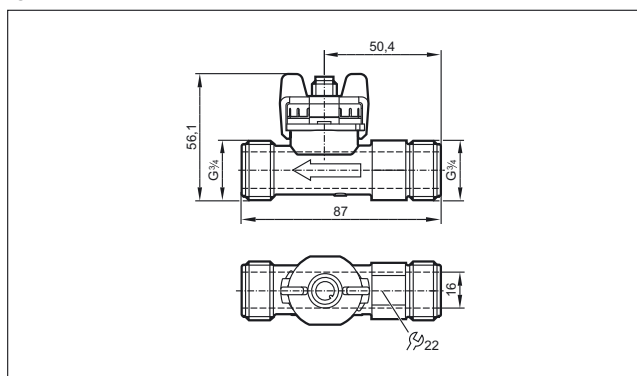
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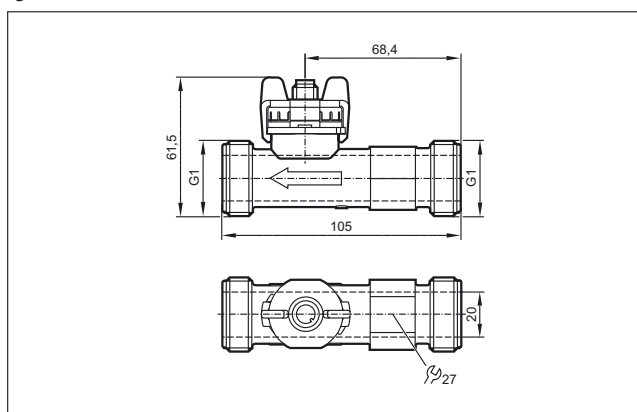
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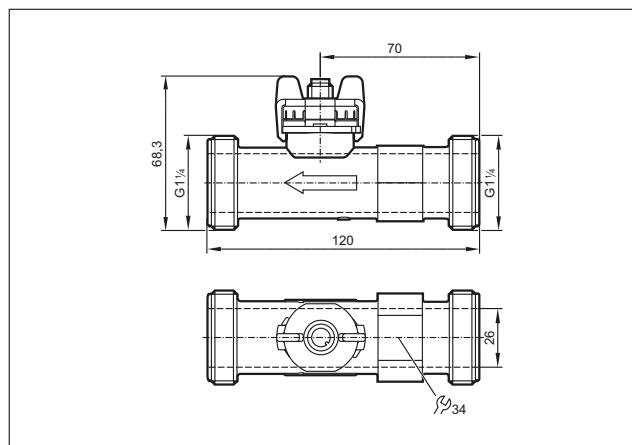
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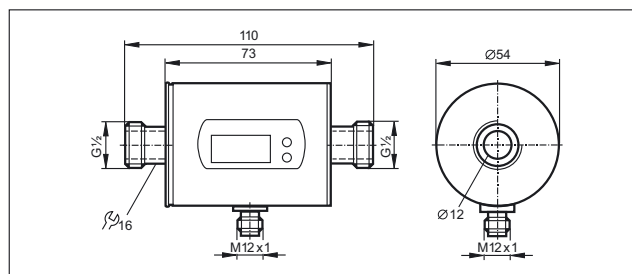
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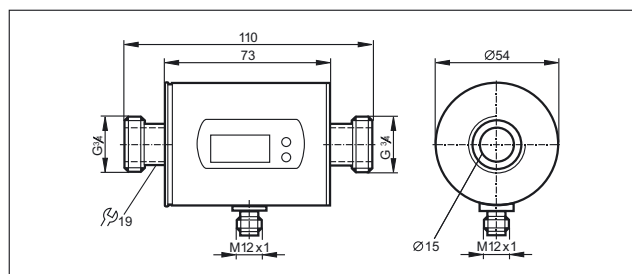
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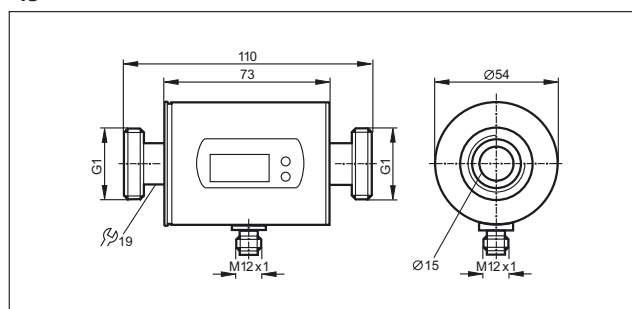
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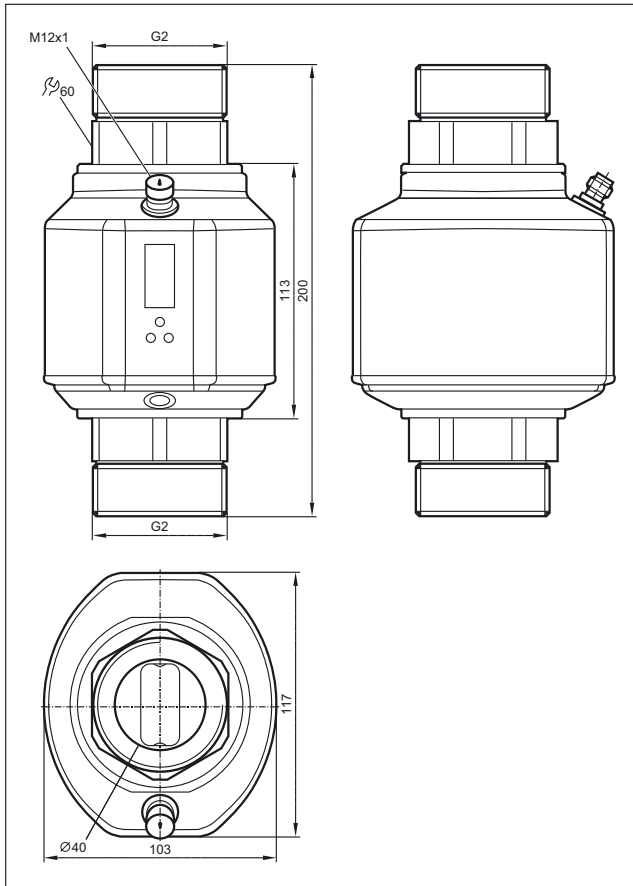




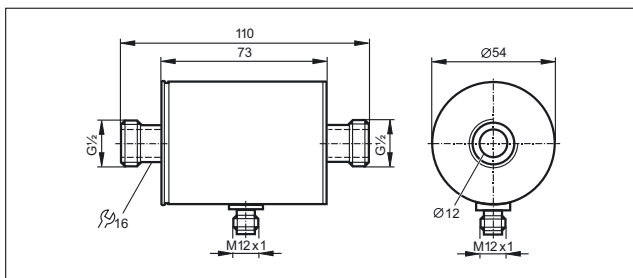
Process sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

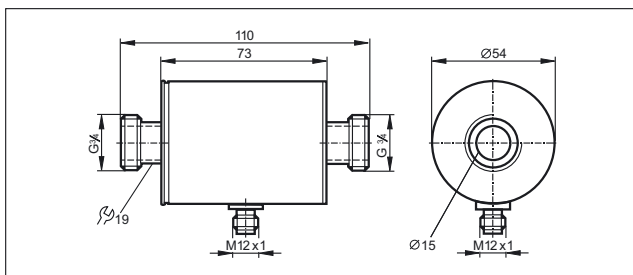
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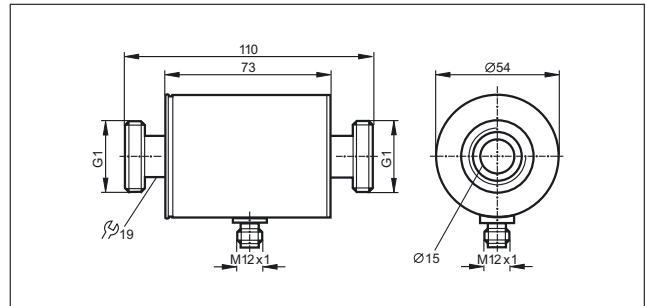
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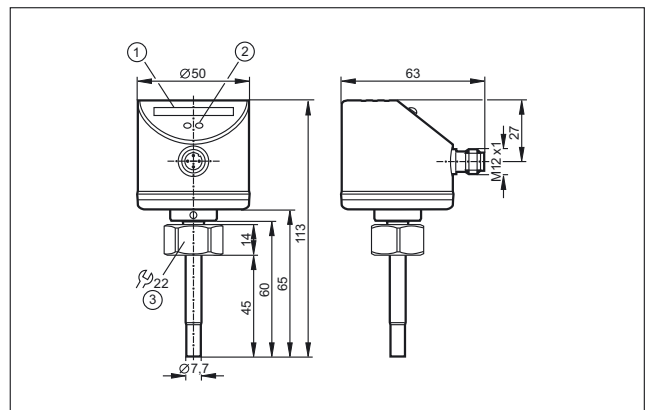
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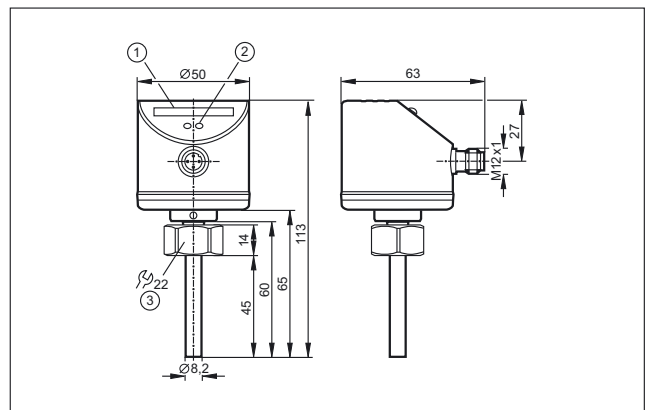


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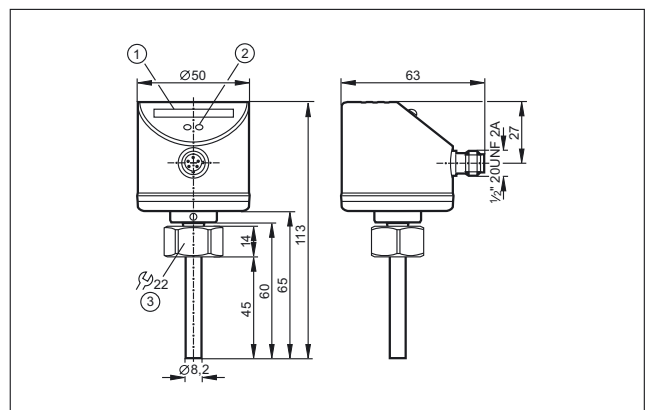
1: LED display, 2: setting pushbutton, 3: tightening torque 25 Nm

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1: LED display, 2: setting pushbutton, 3: tightening torque 25 Nm

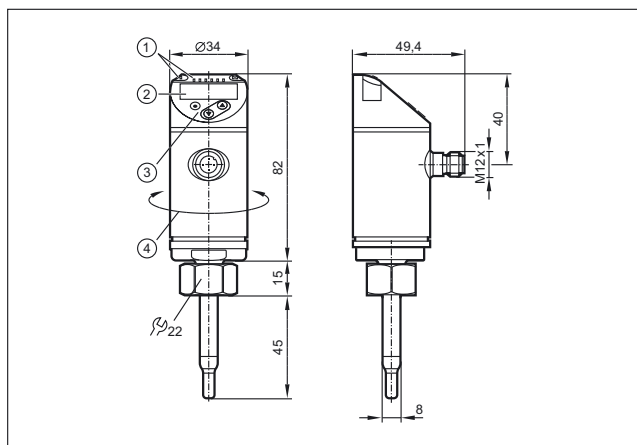
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1: LED display, 2: setting pushbutton, 3: tightening torque 25 Nm

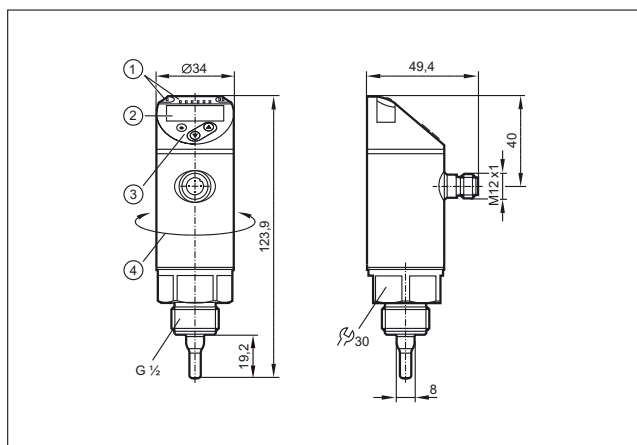
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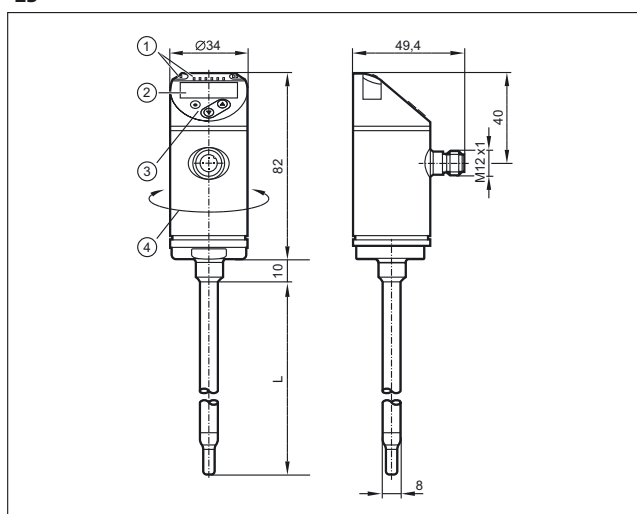


1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

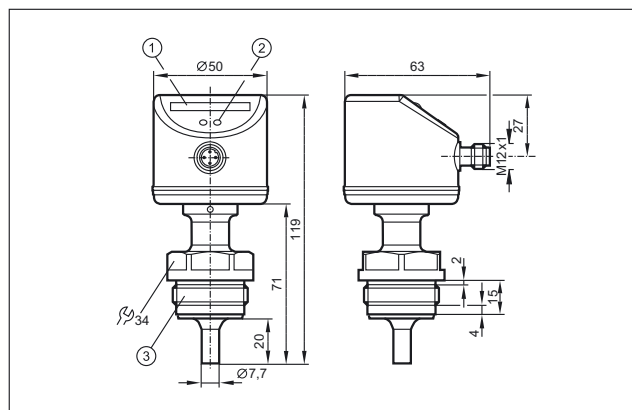
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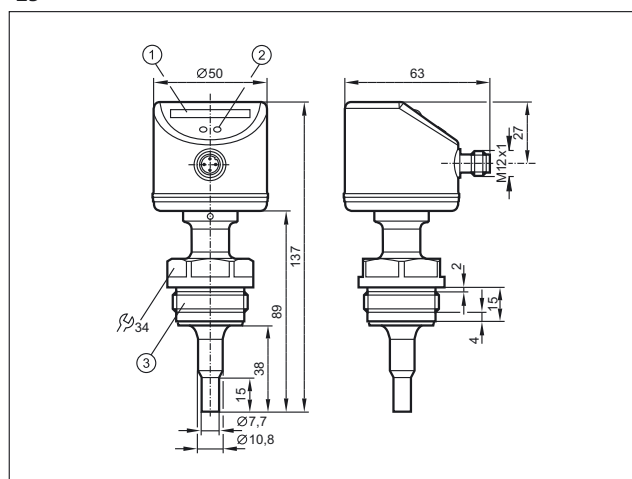


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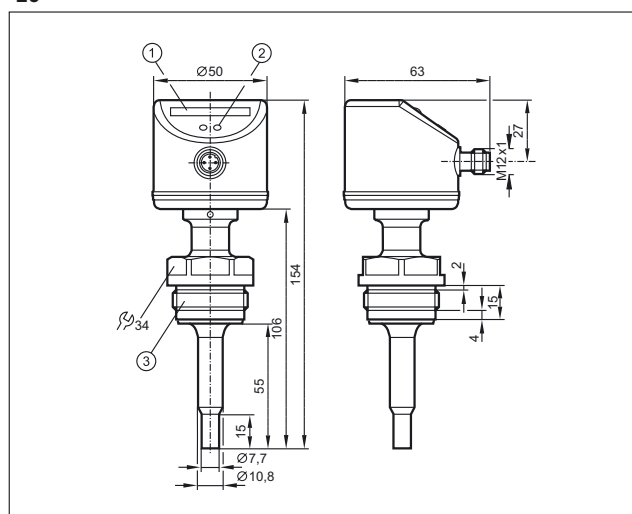
1: LED display, 2: setting pushbutton, 3: G1/Aseptoflex Vario thread

25



1: LED display, 2: setting pushbutton, 3: G1/Aseptoflex Vario thread

26



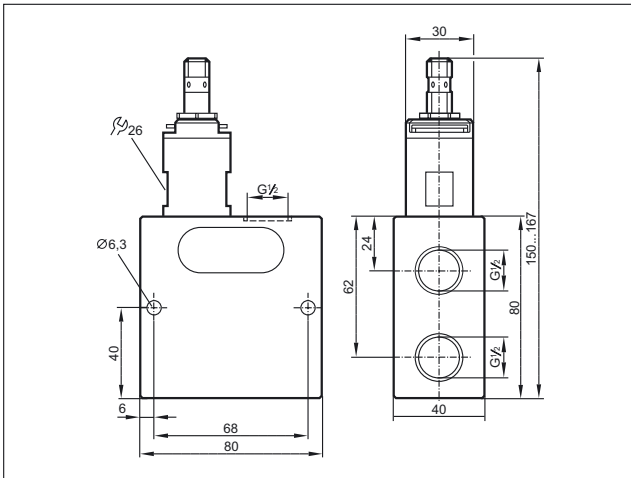
1: LED display, 2: setting pushbutton, 3: G1/Aseptoflex Vario thread



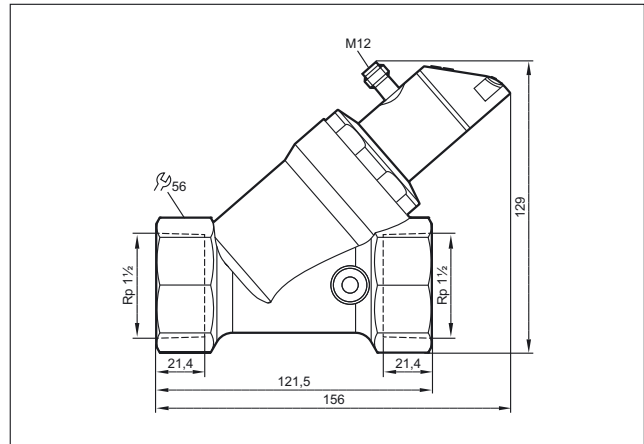
Process sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

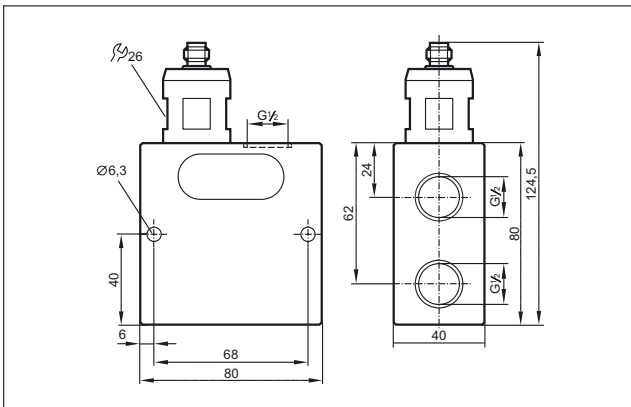
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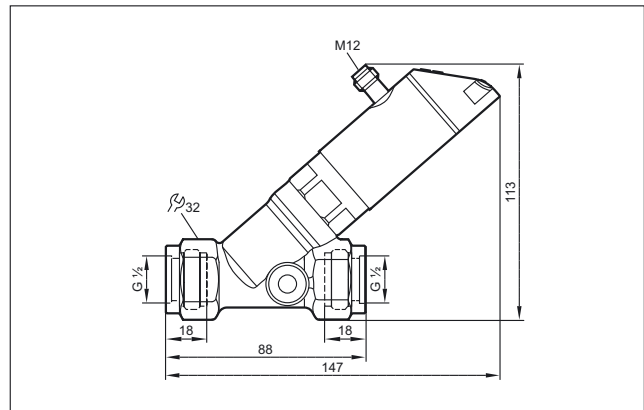
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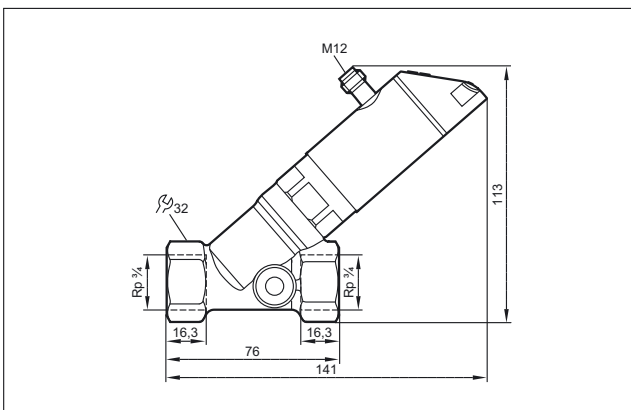
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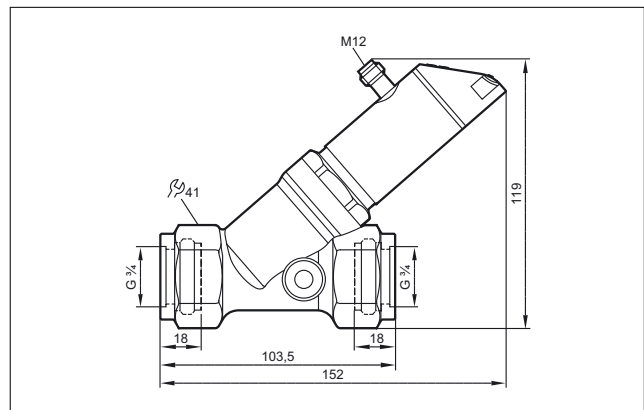
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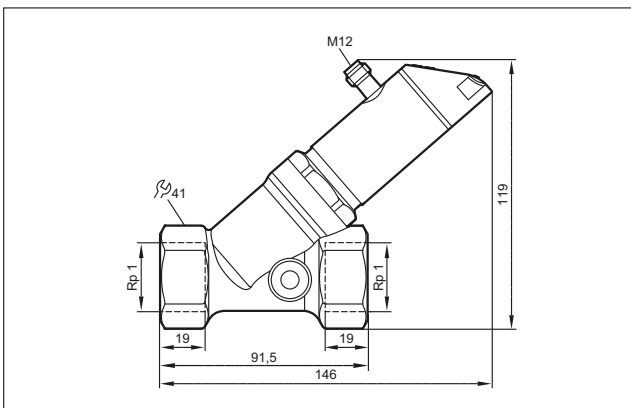
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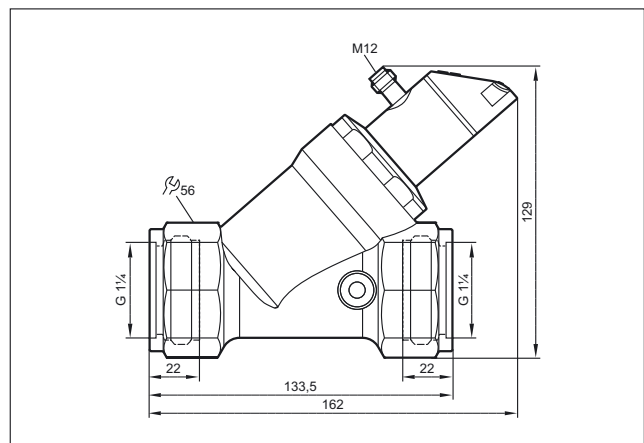
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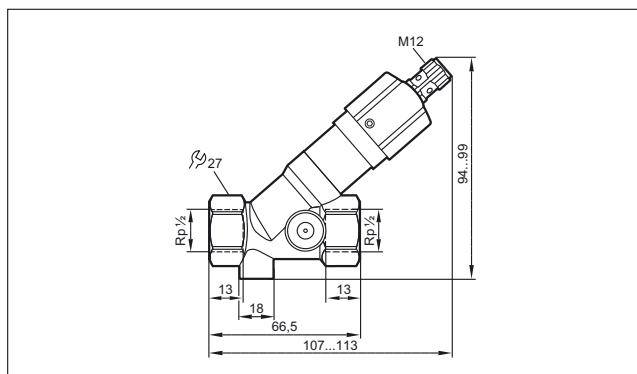


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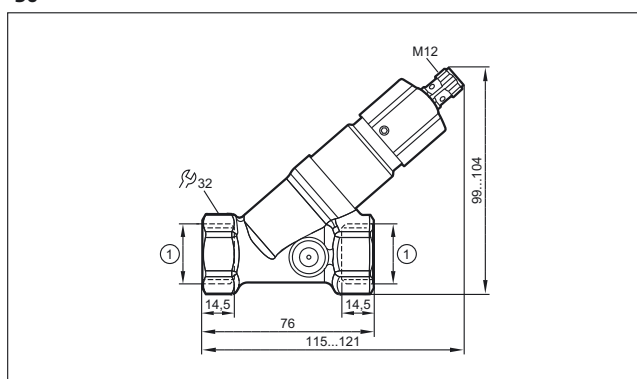


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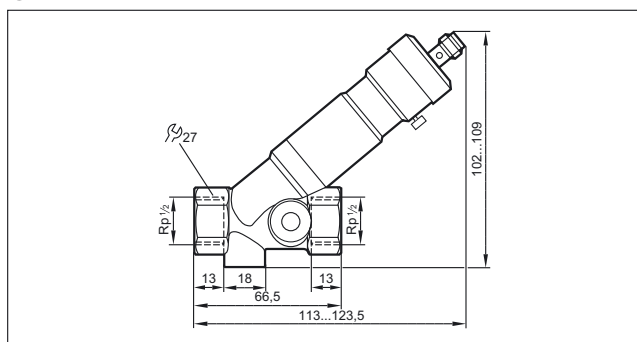
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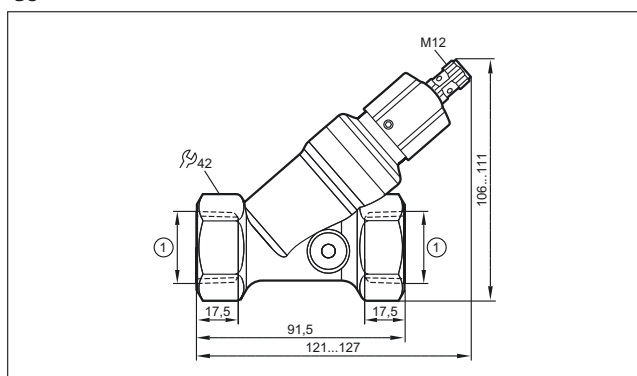
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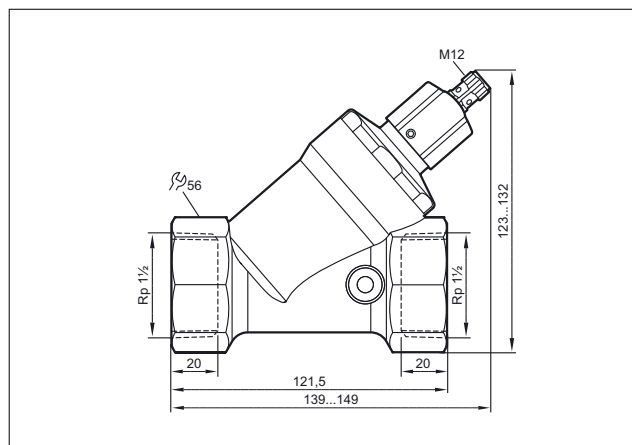
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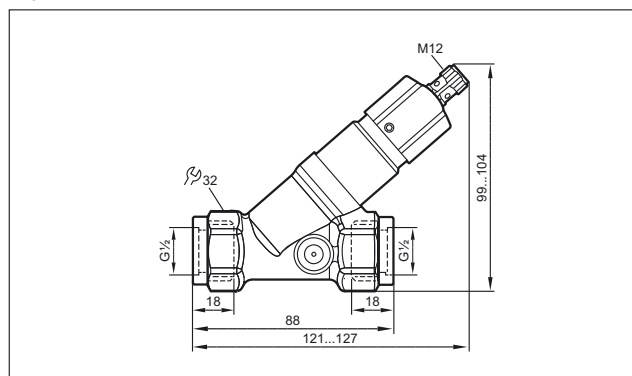
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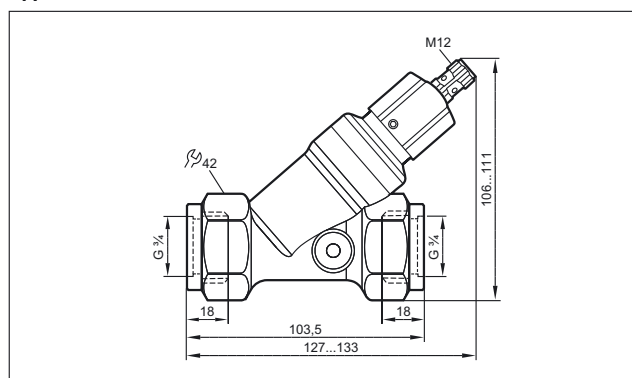
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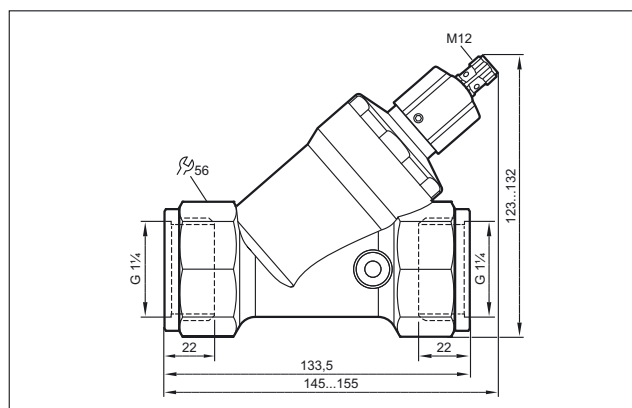
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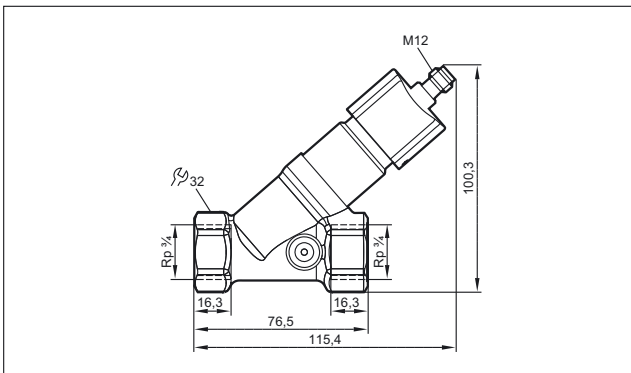




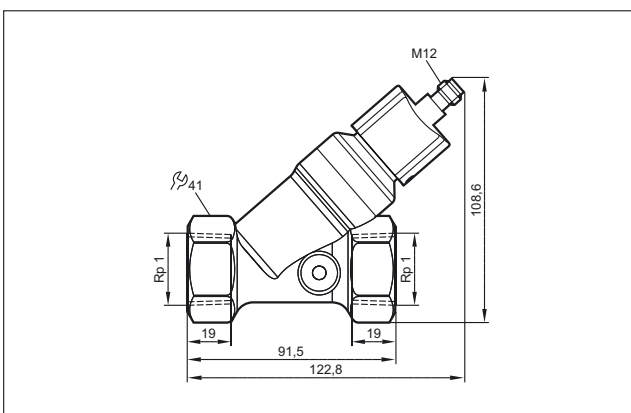
Process sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

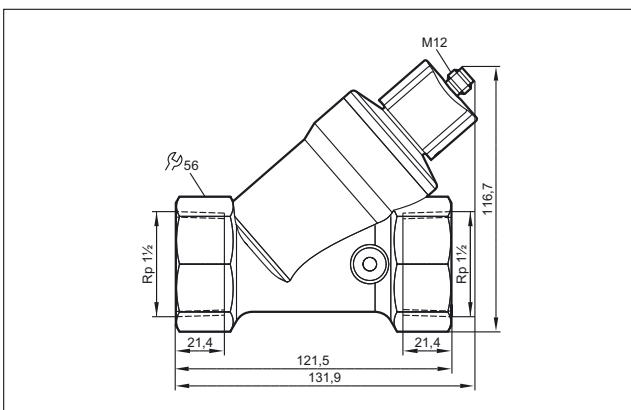
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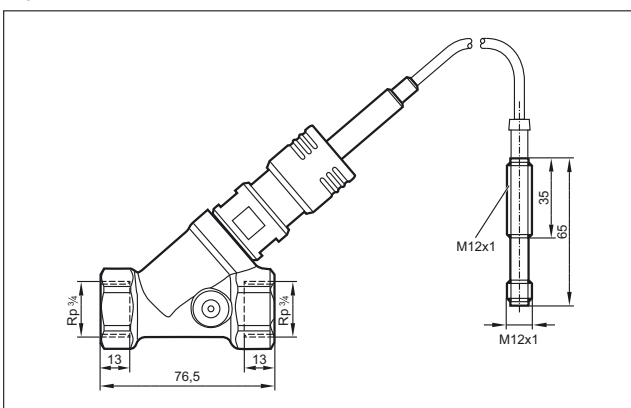
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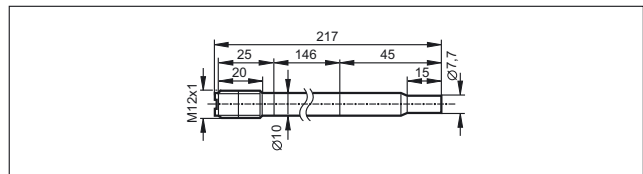
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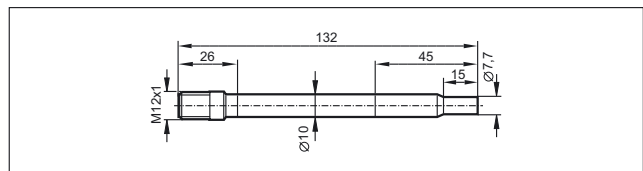
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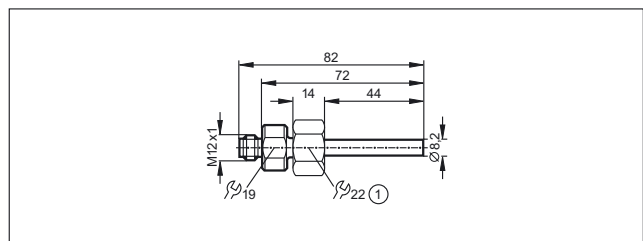
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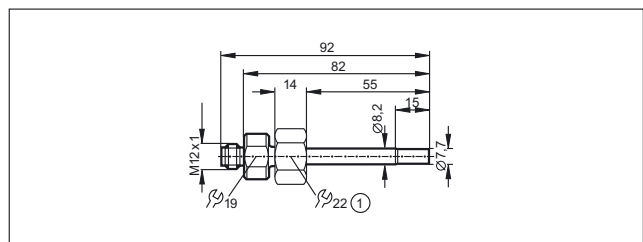


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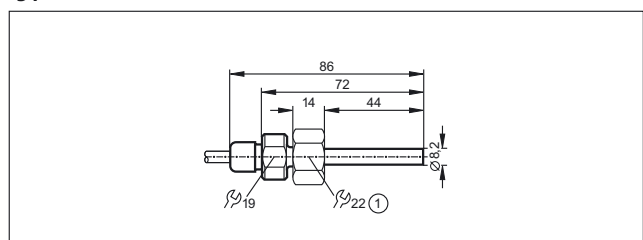
1: internal thread M18 x 1.5

50



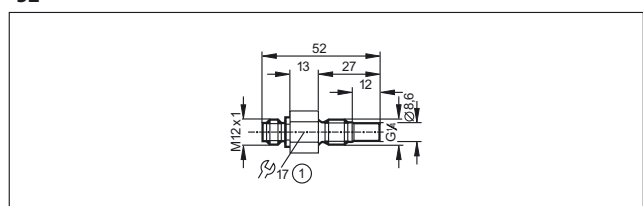
internal thread M18 x 1.5

51



1: internal thread M18 x 1.5

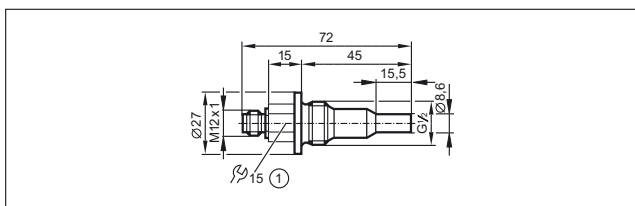
52



1: tightening torque max. 8 Nm

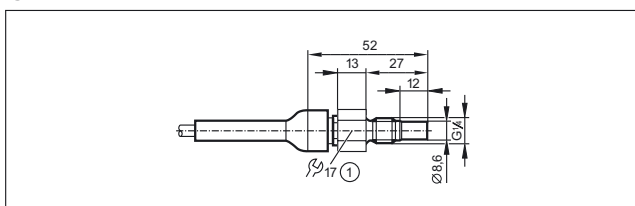
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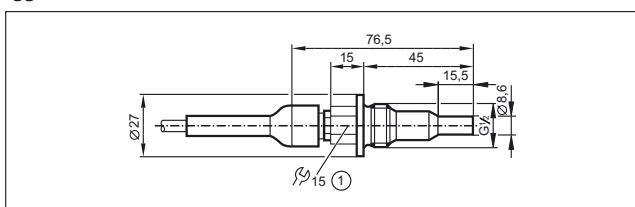
1: tightening torque max. 30 Nm

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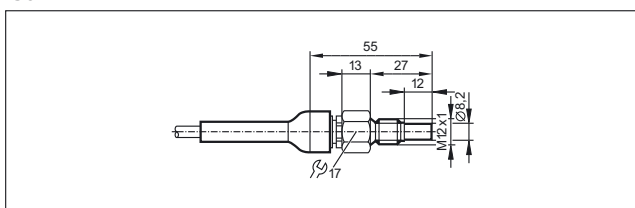
1: tightening torque max. 8 Nm

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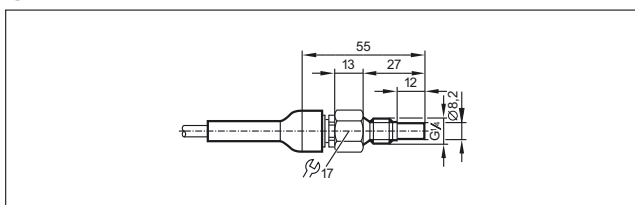


1: tightening torque max. 30 Nm

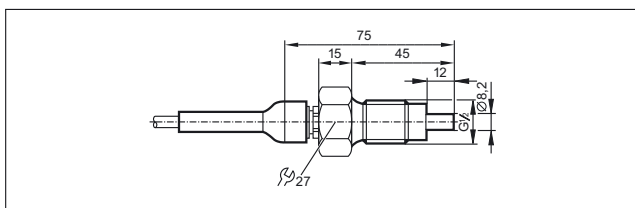
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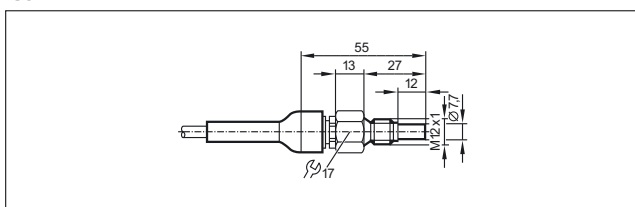
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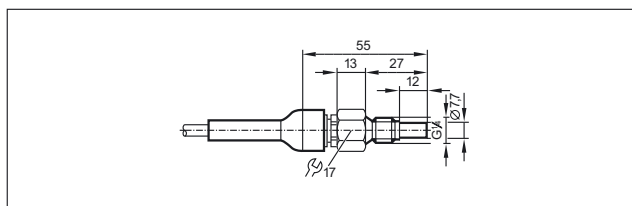
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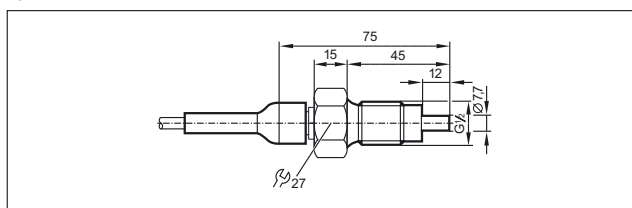
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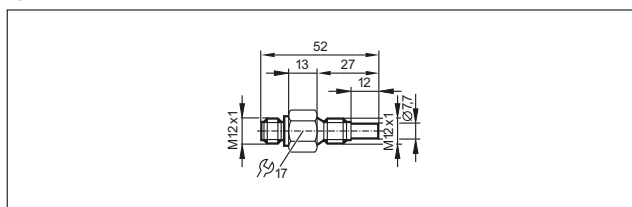
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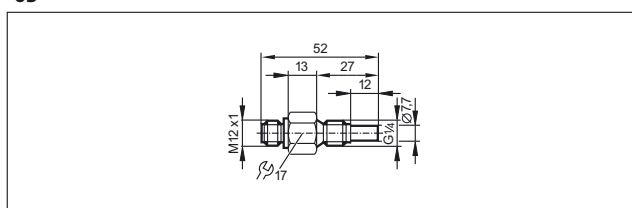
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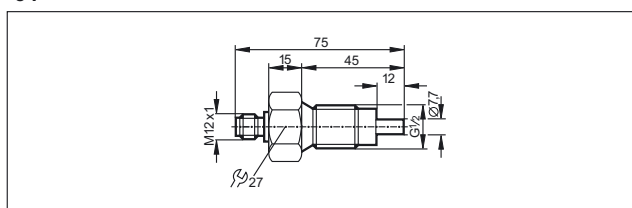
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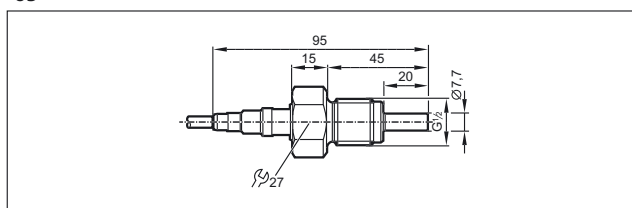
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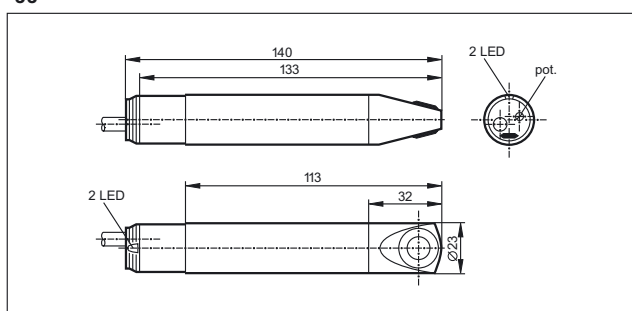
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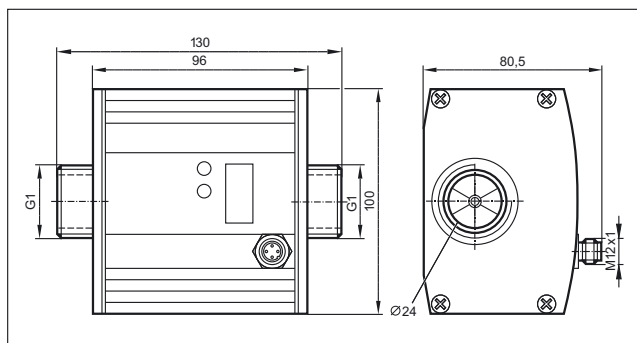


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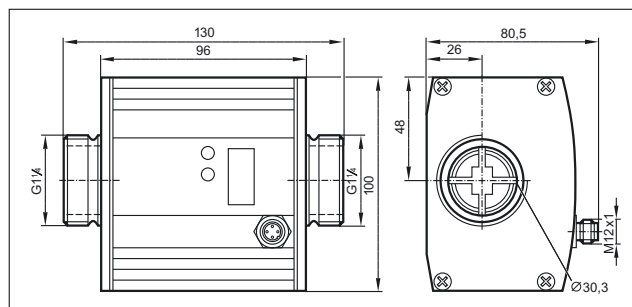
Scale drawings / drawing no. – CAD download: www.ifm.com

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installation length with pipe adapter E40152 / E40155: 205 mm,
installation length with pipe adapter E40153 / E40156: 215 mm

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Process sensors

Solid and reliable level sensors without any mechanical parts



Level sensors



High reliability due to the absence of mechanical components

Measurement technique: guided wave radar, capacitive and hydrostatic

Outputs for continuous or point level measurement

Integrated LED display for local indication of the current level

Suitable for common industrial and process fluids



Level sensors

In industrial applications where fluids or bulk material are used, storage tanks or silos are used for processing or storing media. Sensors are used to detect levels. Even critical process conditions such as emptying a hydraulic tank or the unintentional overspill of a tank are monitored using level sensors.

Advantages of electronic sensors

Deposits and wear and tear often lead to failures in particular if mechanical switches are in contact with the medium. The electronic ifm sensors can do without any mechanical parts. This makes the sensors especially robust and reliable. Another advantage of electronic sensors is the local indication of the level or the easy setting of the switching threshold simply by pressing a button.

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Process sensors

Point level sensors for oils and lubricants

Type	Process connection	Output	U _b [V]	Medium temperature [°C]	I _{load} [mA]	Drawing no.	Order no.

M12 connector · Application water, water-based media · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G 1/2 A	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	1	LMC100
	G 1/2 A	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	2	LMC400
	1/2" NPT	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	3	LMC500

M12 connector · Application oils, oil-based media · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G 1/2 A	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	1	LMC110
	G 1/2 A	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	2	LMC410
	1/2" NPT	OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable PNP / NPN	18...30	-25...100	50	3	LMC510

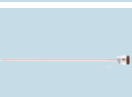
M12 connector · Application liquids, viscous media and powders · Wiring diagram no. 11 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	1/2" NPT	2 x normally open / closed programmable PNP / NPN	18...30	–	100	4	LMC502

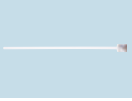
Electronic level sensors for oils and coolants, approval to the German Federal Water Act (WHG), section 19

Type	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U _b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I _{load} [mA]	Drawing no.	Order no.

M12 connector · Output function 1 x normally open / closed progr. (OUT1) 1 x normally closed (OUT-OP, overflow output) · DC PNP · Wiring diagram no. 2 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	264	195	53 / 15	12...30	0...35	0...65	200	5	LK1222
	472	390	53 / 30	12...30	0...35	0...65	200	5	LK1223
	728	585	102 / 40	12...30	0...35	0...65	200	5	LK1224

Electronic level sensors for oils and coolants

Type	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U _b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I _{load} [mA]	Drawing no.	Order no.
M12 connector (according to EN 61076-2-101) · Output function OUT1: NO / NC progr. / IO-Link OUT2: analogue 4...20 mA / 0...10 V (invertible) · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	264	195	53 / 16	18...30	0...35 / 35...65 ¹⁾	0...70	200	6	LK3122
	472	390	60 / 22	18...30	0...35 / 35...60 ¹⁾	0...70	200	6	LK3123
	728	585	104 / 39	18...30	0...35 / 35...55 ¹⁾	0...70	200	6	LK3124
M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	264	195	53 / 16	18...30	0...35 / 35...65 ¹⁾	0...70	200	6	LK1022
M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed progr. / IO-Link OUT2: normally open / closed progr. · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	472	390	60 / 22	18...30	0...35 / 35...60 ¹⁾	0...70	200	6	LK1023
M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	728	585	104 / 39	18...30	0...35 / 35...55 ¹⁾	0...70	200	6	LK1024
M12 connector · Output function 2 x normally open / closed programmable · DC PNP · Wiring diagram no. 3 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	264	195	53 / 15	12...30	–	0...65	200	5	LK7022
	472	390	53 / 30	12...30	0...60	0...65	200	5	LK7023
	728	585	102 / 40	12...30	0...55	0...65	200	5	LK7024
M12 connector (according to EN 61076-2-101) · Output function OUT1: NO / NC programmable / IO-Link OUT2...4: NO/NC programmable · DC PNP/NPN · Connector groups 16, 17									
	264	195	53 / 16	18...30	0...35 / 35...65 ¹⁾	0...70	200	6	LK8122
	472	390	60 / 22	18...30	0...3 / 35...60 ¹⁾	0...70	200	6	LK8123
	728	585	104 / 39	18...30	0...35 / 35...55 ¹⁾	0...70	200	6	LK8124



Process sensors

Point level sensors for oils and coolants, approval to the German Federal Water Act (WHG), section 19

Type	Probe length [mm]	Output	U _b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	132	Normally closed	10...36	0...35	0...65	200	7	LI2141
	273	Normally closed	10...36	0...35	0...65	200	7	LI2142
	481	Normally closed	10...36	0...35	0...65	200	7	LI2143
	132	Normally closed	10...36	0...35	0...65	200	7	LI2241
	273	Normally closed	10...36	0...35	0...65	200	7	LI2242
	481	Normally closed	10...36	0...35	0...65	200	7	LI2243

Point level sensors for oils and lubricants

Type	Probe length [mm]	Output	U _b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I _{load} [mA]	Draw- ing no.	Order no.

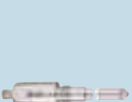
M12 connector · Output function  /  · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	132	normally open / closed programmable	10...36	0...35 (LI5141 + E43103: 0...65)	0...65	200	7	LI5141
	273	normally open / closed programmable	10...36	0...35 (LI5142 + E43100: 0...65)	0...65	200	7	LI5142
	481	normally open / closed programmable	10...36	0...35 (LI5143 + E43101: 0...60)	0...65	200	7	LI5143
	737	normally open / closed programmable	10...36	0...35 (LI5144 + E43102: 0...55)	0...65	200	7	LI5144

Point level sensors for oils and coolants, approval to the German Federal Water Act (WHG), section 19

Type	Process connection	Output	U _b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I _{load} [mA]	Drawing no.	Order no.
M12 connector · Application liquids · Wiring diagram no. 5 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204								
	G ½ A	1 x NO / 1 x NC (WHG) PNP	18...30	-40...85 / 0...85	-40...100 / 0...100	100	8	LMT191
	G ½ A	1 x NO / 1 x NC (WHG) PNP	18...30	-25...85 / 0...85	-25...100 / 0...100	100	9	LMT192
	G ½ A	1 x NO / 1 x NC (WHG) PNP	18...30	-25...85 / 0...85	-25...100 / 0...100	100	10	LMT194
	G ½ A	1 x NO / 1 x NC (WHG) PNP	18...30	-25...85 / 0...85	-25...100 / 0...100	100	11	LMT195
	G ¾ A	1 x NO / 1 x NC (WHG) PNP	18...30	-25...85 / 0...85	-25...100 / 0...100	100	12	LMT292
	G 1 A	1 x NO / 1 x NC (WHG) PNP	18...30	-25...85 / 0...85	-25...100 / 0...100	100	13	LMT392

Point level sensors for hygienic areas

Type	Process connection	Output	U _b [V]	Medium temperature [°C]	I _{load} [mA]	Drawing no.	Order no.
M12 connector · Application water-based media · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204							
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-40...100	100	8	LMT100
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...100	100	9	LMT102
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...100	100	10	LMT104
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...100	100	11	LMT105
	G ¾ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...100	100	12	LMT202
	G 1 A	2 x normally open / closed programmable PNP/NPN	18...30	-20...100	100	13	LMT302



Process sensors

Type	Process connection	Output	U _b [V]	Medium temperature [°C]	I _{load} [mA]	Drawing no.	Order no.

M12 connector · Application oils, oil-based media · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-40...100	100	8	LMT110

M12 connector · Application Media with low water content · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-40...100	100	8	LMT121

Point level sensors for the hazardous areas

Type	Process connection	Output	U _b [V]	Medium temperature [°C]	I _{load} [mA]	Drawing no.	Order no.

M12 connector · Application oils, oil-based media, powders · Wiring diagram no. 1 · Connector groups 196, 198

	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...85	100	8	LMT01A
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...85	100	10	LMT03A
	G ½ A	2 x normally open / closed programmable PNP/NPN	18...30	-20...85	100	11	LMT04A

Variable level sensors, guided wave radar, hygienic areas

Type	Process connection	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U _b [V]	Medium temperature [°C]	I _{load} [mA]	Drawing no.	Order no.

M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable or analogue (4...20 mA scaleable, invertable) · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Aseptoflex Vario	150...2000	L-40	30 / 10	18...30	-40...150	150	14	LR2750

Variable level sensors, guided wave radar, industrial applications

Type	Process connection	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U _b [V]	Medium temperature [°C]	I _{load} [mA]	Drawing no.	Order no.

M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable or analogue (4...20 mA scaleable, invertable) · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¾ A	150...2000	L-40 / (L-60)	30 / 10 (30)	18...30	-20...100	150	15	LR2050

Type	Process connection	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U _b [V]	Medium temperature [°C]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: normally open / closed programmable or analogue (4...20 mA scalable, invertable) · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



3/4" NPT 150...2000 L-40 30 / 10 18...30 -20...100 150 16 LR2350

M12 connector (according to EN 61076-2-101) · Output function normally open / closed programmable; 4...20 mA or 0...10 V · DC PNP · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



G 3/4 A 100...1600 L-40 (L-60) 30 / 10 (30) 18...30 0...80 200 17 LR3000



3/4" NPT 100...1600 L-40 30 / 10 18...30 0...80 200 18 LR3300

M12 connector (according to EN 61076-2-101) · Output function 2 x normally open / closed programmable · DC PNP · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



G 3/4 A 100...1600 L-40 (L-60) 30 / 10 (30) 18...30 0...80 200 17 LR7000



3/4" NPT 100...1600 L-40 30 / 10 18...30 0...80 200 18 LR7300

M12 connector (according to EN 61076-2-101) · Output function 4 x normally open / closed programmable · DC PNP · Connector groups 16, 17



G 3/4 A 100...1600 L-40 (L-60) 30 / 10 (30) 18...30 0...80 200 19 LR8000



3/4" NPT 100...1600 L-40 30 / 10 18...30 0...80 200 20 LR8300

M12 connector (according to EN 61076-2-101) · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

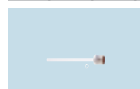


G 3/4 A 100...1600 L-40 (L-60) 30 / 10 (30) 18...30 0...80 – 21 LR9020

Compact sensors for level and temperature monitoring

Type	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U _b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector (according to EN 61076-2-101) · Output function OUT1: normally open / closed programmable / IO-Link OUT2: analog 0...20 mA / 0...10 V (invertable; scaleable analogue signal for temperature) · DC PNP/NPN · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202



264 195 53 / 16 18...30 0...35 / 35...65 1) 0...70 200 22 LT3022



472 390 60 / 22 18...30 0...35 / 35...60 1) 0...70 200 22 LT3023



728 585 104 / 39 18...30 0...35 / 35...55 1) 0...70 200 22 LT3024



Process sensors

Type	Probe length [mm]	Active zone [mm]	Inactive zone [mm]	U _b [V]	Medium temperature water [°C]	Medium temperature oil [°C]	I _{load} [mA]	Drawing no.	Order no.
M12 connector (according to EN 61076-2-101) · Output function OUT1: NO / NC programmable / IO-Link OUT2...4: NO/NC programmable · DC PNP/NPN · Connector groups 16, 17									
	264	195	53 / 16	18...30	0...35 / 35...65 ¹⁾	0...70	200	22	LT8022
	472	390	60 / 22	18...30	0...35 / 35...60 ¹⁾	0...70	200	22	LT8023
	728	585	104 / 39	18...30	0...35 / 35...55 ¹⁾	0...70	200	22	LT8024

Sensors for hydrostatic level monitoring

Type	Measuring range [bar]	Cable length / material	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Drawing no.	Order no.
Output function 4...20 mA analogue · Wiring diagram no. 7							
	0...0.25	5 m PUR cable	2	2.4	10...30	23	PS3208
	0...0.6	10 m PUR cable	4	4.8	10...30	23	PS3407
	0...0.6	15 m PUR cable	4	4.8	10...30	23	PS3427
	0...1	15 m PUR cable	5	6	10...30	23	PS3417
	0...0.6	30 m PUR cable	4	4.8	10...30	23	PS3607
	0...1	30 m PUR cable	5	6	10...30	23	PS3617

Output function 4...20 mA analogue · Wiring diagram no. 8

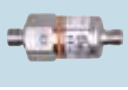
	0...0.25	5 m FEP cable	2	2.4	10...30	24	PS4208
	0...0.6	10 m FEP cable	3	4	10...30	24	PS4407

Wiring diagram no. 8

	0...1	15 m FEP cable	5	6	10...30	24	PS4417

Type	Measuring range [bar]	Cable length / material	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

Output function 4...20 mA · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	0...0.25	M12 connector	10	30	9.6...32	25	PA3028
	0...0.25	M12 connector	10	30	9.6...32	26	PA3528

Output function 4...20 mA · Wiring diagram no. 10 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	0...0.1	M12 connector	4	30	9.6...32	26	PA3589

Sensors for hydrostatic level monitoring ATEX category 1G/1D

Type	Measuring range [bar]	Cable length / material	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

Output function 4...20 mA analogue · Wiring diagram no. 8

	0...0.25	5 m FEP cable	2	2.4	10...30	24	PS308A
	0...0.6	10 m FEP cable	4	4.8	10...30	24	PS307A
	0...1	15 m FEP cable	5	6	10...30	24	PS317A

Sensors for hydrostatic level monitoring in hygienic and wet areas

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 12 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Aseptoflex Vario	Display unit	-0.005...0.1	4	30	20...32	27	PI2789
	Aseptoflex Vario	Display unit	-0.0124...0.25	10	30	20...32	27	PI2798
	Aseptoflex Vario	Display unit	-1...1	10	30	20...32	27	PI2799
	Aseptoflex Vario	Display unit	-0.05...1	10	30	20...32	27	PI2797



Process sensors

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.
M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 12 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Aseptoflex Vario	Display unit	-0.124...2.5	20	50	20...32	27	PI2796
	Sealing cone G1 male	Display unit	-0.005...0.1	4	30	20...32	28	PI2889*
	Sealing cone G1 male	Display unit	-0.124...2.5	20	50	20...32	28	PI2896*
	Sealing cone G1 male	Display unit	-0.05...1	10	30	20...32	28	PI2897*
	Sealing cone G1 male	Display unit	-0.0124...0.25	10	30	20...32	28	PI2898*
	Sealing cone G1 male	Display unit	-1...1	10	30	20...32	28	PI2899*
M12 connector · Output function 1 x normally open / normally closed progr. + 1 x normally open / normally closed progr. or 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 13 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Clamp DN 38 / 1 1/2"	Display unit	-0.124...2.5	20	50	20...32	29	PI2206
	Clamp DN 38 / 1 1/2"	Display unit	-0.05...1	10	30	20...32	29	PI2207
	Clamp DN 38 / 1 1/2"	Display unit	-1...1	10	30	20...32	29	PI2209
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	Aseptoflex Vario	Display unit	-0.005...0.1	4	30	18...32	30	PG2789
	Aseptoflex Vario	Display unit	-0.0124...0.25	10	30	18...32	30	PG2798
	Aseptoflex Vario	Display unit	-0.05...1	10	30	18...32	30	PG2797
	Aseptoflex Vario	Display unit	-1...1	10	30	18...32	30	PG2799
	Aseptoflex Vario	Display unit	-0.124...2.5	20	50	18...32	30	PG2796

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 / 20...4 mA, scalable) · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Sealing cone G1 male	Display unit	-0.124...2.5	20	50	18...32	31	PG2896*
	Sealing cone G1 male	Display unit	-0.05...1	10	30	18...32	31	PG2897*
	Sealing cone G1 male	Display unit	-0.0124...0.25	10	30	18...32	31	PG2898*
	Sealing cone G1 male	Display unit	-1...1	10	30	18...32	31	PG2899*
	Sealing cone G1 male	Display unit	-0.005...0.1	4	30	18...32	31	PG2889*

* Attention: The unit must only be installed in a process connection for G1 sealing cone! The G1 male sealing cone of the unit is only suited for adapters with metal end stop!

Accessories for level sensors LK, LT, LL, LI

Type	Description	Order no.
	Flange plate · 54-52X52 D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: aluminium anodised / nut: stainless steel / Spacer: Brass / rubber ring: FPM / sealing: Tesnit	E43007
	Flange plate · 65-80 D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: aluminium anodised / nut: stainless steel / Spacer: Brass / rubber ring: FPM	E43006
	Flange plate · 73-90 D16 · for capacitive level sensors LK, LI, LT, LL · according to DIN 24557 · Housing materials: aluminium anodised / nut: stainless steel / Spacer: Brass / rubber ring: FPM / sealing: NBR	E43001
	Mounting adapter · G ¾ D16 · D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: stainless steel / nut: stainless steel / Spacer: Brass / rubber ring: FPM / sealing: Tesnit	E43003
	Mounting adapter · G ¾ D16 · D16 · for capacitive level sensors LI · Housing materials: Brass nickel-plated / TPE / sealing: FKM	E43019
	Mounting adapter · G ¾ D22 · D22 · for climatic tube LK / LI · Housing materials: stainless steel / NBR / Tesnit / Brass	E43008
	Mounting adapter · ¾" NPT D16 · D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: stainless steel / nut: stainless steel / Spacer: Brass / rubber ring: FPM	E43012
	Mounting adapter · ¾" NPT D22 · D22 · for climatic tube LK / LI · Housing materials: stainless steel / NBR / Brass	E43014

You can find wiring diagrams and scale drawings from page 538



Process sensors

Type	Description	Order no.
	Mounting adapter · G 1 D16 · D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: stainless steel / nut: stainless steel / Spacer: Brass / rubber ring: FPM / sealing: Tesnit	E43004
	Mounting adapter · G 1 D22 · D22 · for climatic tube LK / LI · Housing materials: stainless steel / NBR / Tesnit / Brass	E43009
	Mounting adapter · 1" NPT D16 · D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: stainless steel / nut: stainless steel / Spacer: Brass / rubber ring: FPM	E43013
	Climatic tube · Length: 132 mm · for capacitive level sensors LK, LI · Housing materials: PPH / NBR	E43103
	Climatic tube · Length: 264 mm · for capacitive level sensors LK, LI · Housing materials: PPH / NBR	E43100
	Climatic tube · Length: 472 mm · for capacitive level sensors LK, LI · Housing materials: PPH / NBR	E43101
	Climatic tube · Length: 728 mm · for capacitive level sensors LK, LI · Housing materials: PPH / NBR	E43102
	Mounting clamp · Ø 16 mm · for capacitive level sensors LK, LI, LT, LL · Housing materials: PP	E43000
	Mounting set · Ø 16 mm · for capacitive level sensors LK, LI, LT, LL · Housing materials: PP / Metal parts: steel galvanised	E43016
	Welding adapter · Ø 50 D16 · D16 · for capacitive level sensors LK, LI, LT, LL · Housing materials: flange: stainless steel / nut: stainless steel / Spacer: Brass / rubber ring: FPM	E43002
	Protective cover · for LK / LL / LR / LT sensors · Housing materials: PP	E43910

Parameter-setting system

Type	Description	Order no.
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	E30398
	USB IO-Link master · for parameter setting and analysis of units · Supported communication protocols: IO-Link (4.8, 38.4 and 230 Kbits/s) · for operation with FDT framework software "ifm Container" or software "LINERECORDER SENSOR"	E30390

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0011
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0012

Certificates

Description	Order no.
Factory calibration certificate for pressure sensors and flow sensors · Measurement points, pressure sensors: 6 measurement points in 20% steps of the final value of the measuring range (acc. to ISO 9001) · Measurement points, flow sensors: 3 or 4 measurement points, distances defined depending on the measuring range (acc. to ISO 9001)	ZC0004
DAkKS calibration certificate for pressure sensors · Number of measuring points: 11-point DAkKS calibration · Measurement points: in 10 % steps of the measuring range (according to directive DAkKS-DKD-R 6-1) · Minimum measurement uncertainty [bar]: 20 µbar...140 mbar (depending on the reference pressure)	ZC0005
Recalibration for LDP oil particle monitor · LDP100	ZC0069

Accessories for LMT level sensors

Type	Description	Order no.
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 / DIN 32676 · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	E33401
	Clamp adapter · Clamp · 2" · ISO 2852 / DIN 32676 · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	E33402
	Welding adapter · G ½ - Ø 26.4 mm · Housing materials: High-grade stainless steel 316Ti / 1.4571	E43375
	Welding adapter · G ½ - Ø 29 mm · for pipes · Housing materials: stainless steel 316L / 1.4435	E43301
	Welding adapter · G ½ - Ø 30 mm · for tanks · Housing materials: stainless steel 316L / 1.4435	E43300
	Welding adapter · G ½ - Ø 35 mm · Housing materials: stainless steel 316L / 1.4404	E30055



Process sensors

Type	Description	Order no.
	Welding adapter · G ½ · Ø 45 mm · Housing materials: stainless steel 316L / 1.4404	E30056
	Adapter · G ¾ · Housing materials: stainless steel 316L / 1.4435	E43302
	Adapter · G 1 · Housing materials: stainless steel 316L / 1.4435	E43303
	Adapter · ¾" NPT · Housing materials: stainless steel 316L / 1.4404	E43313
	Pipe fitting · G ½ · Hygienic pipe fitting · DN25 (1") · DIN 11851 · Housing materials: stainless steel 316L / 1.4435	E43304
	Pipe fitting · G ½ · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · Housing materials: stainless steel 316L / 1.4435	E43305
	Clamp adapter · G ½ · Varivent type F · DN25 (1"), D = 50 · Housing materials: stainless steel 316L / 1.4435	E43306
	Clamp adapter · G ½ · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · Housing materials: stainless steel 316L / 1.4435	E43307
	Welding mandrel · G ½ · carries away heat during welding · Housing materials: CW614N	E43314
	T-piece · G ½ I · DN25 · for sensors and adapters with process connection G ½ A · Housing materials: stainless steel	E43316
	T-piece · G ½ I · DN40 · for sensors and adapters with process connection G ½ A · Housing materials: stainless steel	E43317
	T-piece · G ½ I · DN50 · for sensors and adapters with process connection G ½ A · Housing materials: stainless steel	E43318
	Sealing ring · Ø 26.5 mm x Ø 21.3 mm x 1.5 mm · Housing materials: NBR fibre-reinforced	E43376
	Pipe fitting · SMS pipe fitting · DN25 · SMS · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	E33430
	sealing plug · G ½ · Housing materials: stainless steel 316L / 1.4435	E43308

Type	Description	Order no.
	Welding adapter · G ½ · Ø 30 mm · for tanks · with leakage port · with leakage port · Housing materials: stainless steel 316L / 1.4435	E43309
	Welding adapter · G ½ · Ø 29 mm · for pipes · with leakage port · with leakage port · Housing materials: stainless steel 316L / 1.4435	E43310
	Welding adapter · G ½ · with leakage port · Housing materials: stainless steel 316L / 1.4404	E43315
	Clamp adapter · G ½ · with leakage port · Clamp · 1-1.5" · ISO 2852 / DIN 32676 · with leakage port · Housing materials: stainless steel 316L / 1.4435	E43311
	Clamp adapter · G ½ · with leakage port · Clamp · 2" · ISO 2852 / DIN 32676 · with leakage port · Housing materials: stainless steel 316L / 1.4435	E43312

Accessories for LMC level sensors

Type	Description	Order no.
	Welding mandrel · G ½ male · for G ½ adapter · carries away heat during welding · For installation via back thread · for non-hygienic adapters only · Alignment aid for welding an adapter · Housing materials: CW614N	E43382
	Mounting set · Ø 26.9 mm · for type LMC4x0 · Housing materials: PP / Metal parts: steel galvanised	E43384
	cover · Ø 28 mm x 50 mm · Housing materials: PVC	E43385
	Adapter · G1 male · Suited for installation in existing tuning fork adapters · Housing materials: adapter: stainless steel / cover: PVC	E43383

Accessories for level sensors LR

Type	Description	Order no.
	Flange plate · 65-80 / G ¾ · for level sensors LR · Housing materials: flange: stainless steel	E43202
	Flange plate · 73-90 / G ¾ · for level sensors LR · according to DIN 24557 · Housing materials: flange: stainless steel / sealing: NBR	E43201
	Flange plate · 73-90 / ¾" NPT · for level sensors LR · according to DIN 24557 · Housing materials: flange: stainless steel / sealing: NBR	E43206



Process sensors

Type	Description	Order no.
	Welding adapter · G ¾ · Ø 31.8 mm · Housing materials: High-grade stainless steel 316Ti / 1.4571	E43379
	Launching plate · G ¾ · for level sensors LR · Housing materials: High-grade stainless steel 316Ti / 1.4571	E43380
	Launching plate · ¾" NPT · for level sensors LR · Housing materials: base plate: High-grade stainless steel 316Ti / 1.4571 / adapter: stainless steel	E43381

LR probes for standard applications

Type	Description	Order no.
	Probe · Probe length: 150 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	E43225
	Probe · Probe length: 210 mm · for level sensors LR · Housing materials: stainless steel	E43351
	Probe · Probe length: 240 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	E43203
	Probe · Probe length: 265 mm · for level sensors LR · Housing materials: stainless steel	E43352
	Probe · Probe length: 300 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	E43226
	Probe · Probe length: 450 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	E43204
	Probe · Probe length: 500 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	E43227
	Probe · Probe length: 700 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	E43205
	Probe · Probe length: 800 mm · for level sensors LR · Housing materials: stainless steel	E43337
	Probe · Probe length: 1000 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	E43207
	Probe · Probe length: 1200 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	E43208

Type	Description	Order no.
	Probe · Probe length: 1400 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	E43209
	Probe · Probe length: 1600 mm · for level sensors LR · Housing materials: stainless steel 316L / 1.4404	E43210
	Probe · Probe length: 2000 mm · for level sensors LR · Housing materials: stainless steel	E43353

LR probes for hygienic areas

Type	Description	Order no.
	Probe · Probe length: 150 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	E43345
	Probe · Probe length: 300 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	E43346
	Probe · Probe length: 500 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	E43340
	Probe · Probe length: 700 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	E43347
	Probe · Probe length: 1000 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	E43341
	Probe · Probe length: 1500 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	E43348
	Probe · Probe length: 2000 mm · hygienic, for LR level sensors · hygienic systems · Housing materials: stainless steel	E43342

LR coaxial pipes

Type	Description	Order no.
	Coaxial pipe · Length: 150 mm · G ¾ · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit	E43230
	Coaxial pipe · Length: 210 mm · G ¾ · for level sensors LR · Housing materials: Coaxial pipe: 304 / 1.4301 / fixing bracket: 301 / 1.4310 / centring piece: PP GF30 / Seal: aramid 20 / NBR80:	E43354



Process sensors

Type	Description	Order no.
	Coaxial pipe · Length: 240 mm · G 3/4 · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	E43211
	Coaxial pipe · Length: 265 mm · G 3/4 · for level sensors LR · Housing materials: Coaxial pipe: 304 / 1.4301 / fixing bracket: 301 / 1.4310 / centring piece: PP GF30 / Seal: aramid 20 / NBR80:	E43355
	Coaxial pipe · Length: 300 mm · G 3/4 · for level sensors LR · Housing materials: stainless steel / sealing: NBR / centring piece: PP / fixing bracket: stainless steel	E43228
	Coaxial pipe · Length: 450 mm · G 3/4 · for level sensors LR · Housing materials: 304 / 1.4301 / sealing: Tesnit / centring piece: PPS reinforced glass-fibre / fixing bracket: 301 / 1.4310	E43212
	Coaxial pipe · Length: 500 mm · G 3/4 · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	E43229
	Coaxial pipe · Length: 700 mm · G 3/4 · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	E43213
	Coaxial pipe · Length: 800 mm · G 3/4 · for level sensors LR · Housing materials: Coaxial pipe: 304 / 1.4301 / fixing bracket: 301 / 1.4310 / centring piece: PP GF30 / Seal: aramid 20 / NBR80:	E43336
	Coaxial pipe · Length: 1000 mm · G 3/4 · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	E43214
	Coaxial pipe · Length: 1200 mm · G 3/4 · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	E43215
	Coaxial pipe · Length: 1400 mm · G 3/4 · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	E43216
	Coaxial pipe · Length: 1600 mm · G 3/4 · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	E43217
	Coaxial pipe · Length: 2000 mm · G 3/4 · for level sensors LR205X · Housing materials: Coaxial pipe: 304 / 1.4301 / fixing bracket: 301 / 1.4310 / centring piece: PP GF30 / Seal: aramid 20 / NBR80:	E43356
	Coaxial pipe · Length: 240 mm · 3/4" NPT · for level sensors LR · Housing materials: 304 / 1.4301 / centring piece: PPS fibre-reinforced / fixing bracket: 301 / 1.4310	E43377
	Coaxial pipe · Length: 450 mm · 3/4" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	E43218
	Coaxial pipe · Length: 700 mm · 3/4" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	E43219
	Coaxial pipe · Length: 1000 mm · 3/4" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	E43220

Type	Description	Order no.
	Coaxial pipe · Length: 1200 mm · ¾" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	E43223
	Coaxial pipe · Length: 1400 mm · ¾" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	E43224
	Coaxial pipe · Length: 1600 mm · ¾" NPT · for level sensors LR · Housing materials: stainless steel / centring piece: PP / fixing bracket: stainless steel	E43221
	Coaxial pipe · Length: 2000 mm · ¾" NPT · for level sensors LR · Housing materials: 304 / 1.4301 / centring piece: PPS fibre-reinforced / fixing bracket: 301 / 1.4310	E43378
	Coaxial pipe · Length: 700 mm · G ¾" · for level sensors LR · Housing materials: stainless steel / sealing: NBR / centring piece: PP / fixing bracket: stainless steel	E43333
	Coaxial pipe · Length: 1200 mm · G ¾" · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	E43334
	Coaxial pipe · Length: 450 mm · for level sensors LR · Housing materials: stainless steel / sealing: Tesnit / centring piece: PP / fixing bracket: stainless steel	E43320

Hygienic adapters

Type	Description	Order no.
	Welding adapter · Ø 50 mm · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E30122
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33212
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33213
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33712
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33713
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33201
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33701

You can find wiring diagrams and scale drawings from page 538



Process sensors

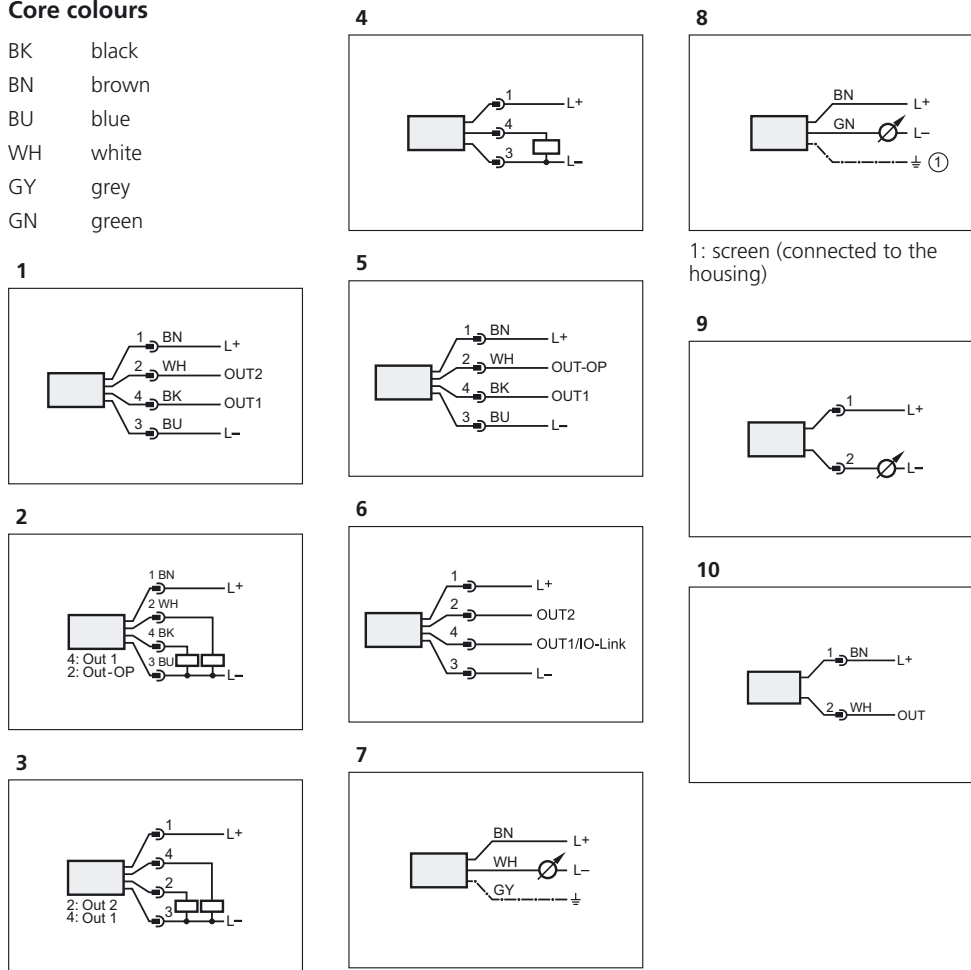
Accessories for level sensors PA, PG, PI, PN, PS, PY

Type	Description	Order no.
	Cable clamp fastener · for submersible pressure transmitter PS3 · Housing materials: steel / plastics	E30399
	Filter element · for submersible pressure transmitter PS3 · for fixing on the capillary tube	E30400
	Splitter box · with ventilation and terminal block · for submersible pressure transmitter PS3 · Housing materials: plastics	E30401
	Additional weight · for submersible pressure transmitter PS3 · Housing materials: stainless steel 316Ti / 1.4571	E30402

Wiring diagrams

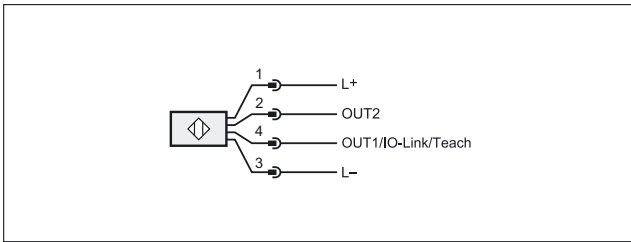
Core colours

BK	black
BN	brown
BU	blue
WH	white
GY	grey
GN	green

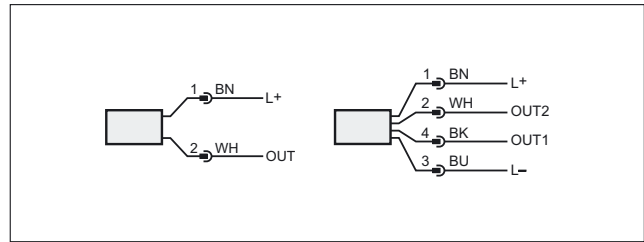


Wiring diagrams

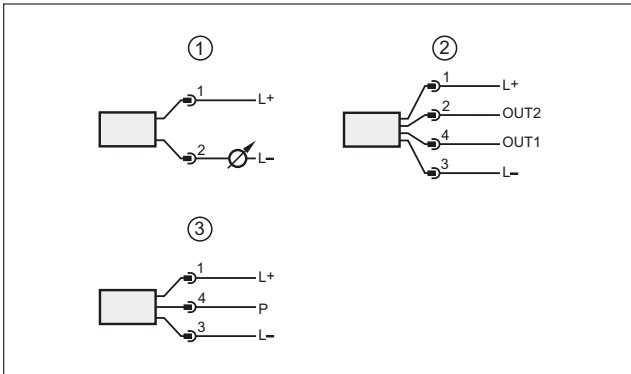
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13

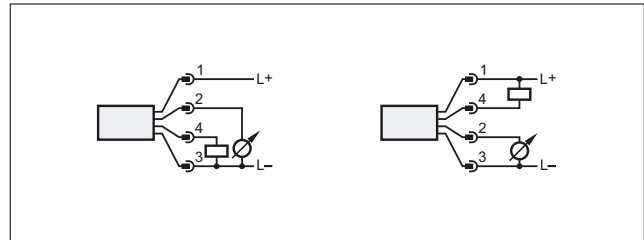


12



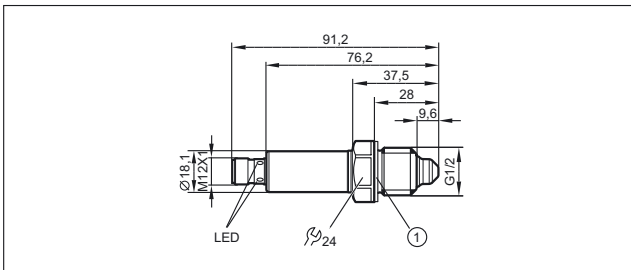
1: connection for 2-wire operation, 2: connection for 3-wire operation, 3: connection for IO-Link parameter setting (P = communication via IO-Link)

14

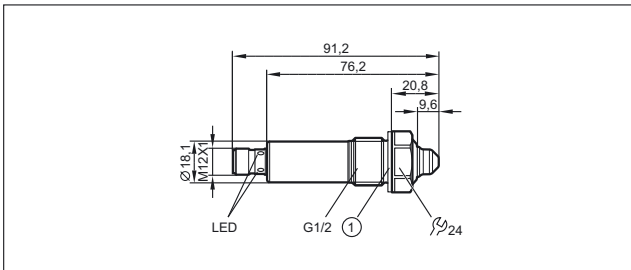


Scale drawings / drawing no. – CAD download: www.ifm.com

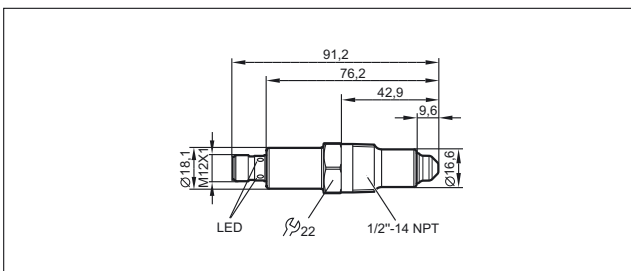
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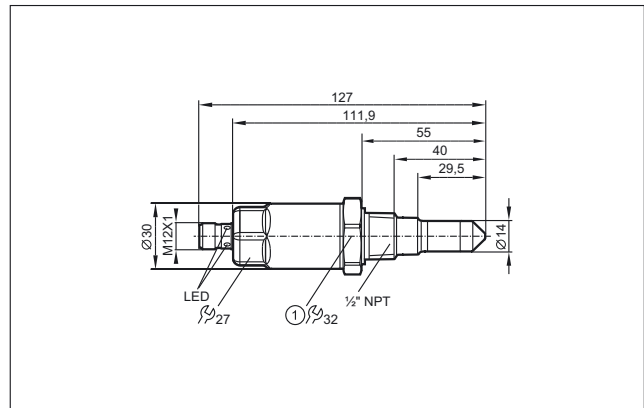
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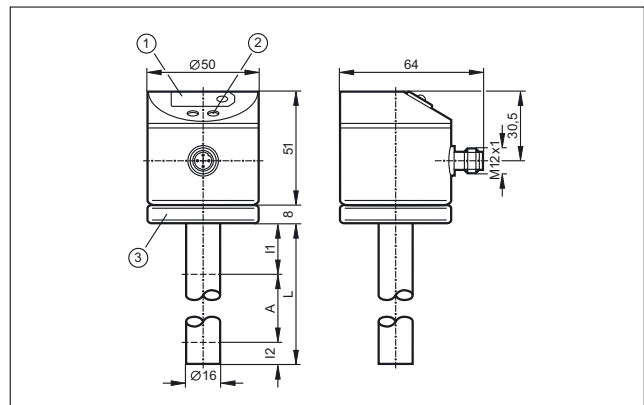
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4



5



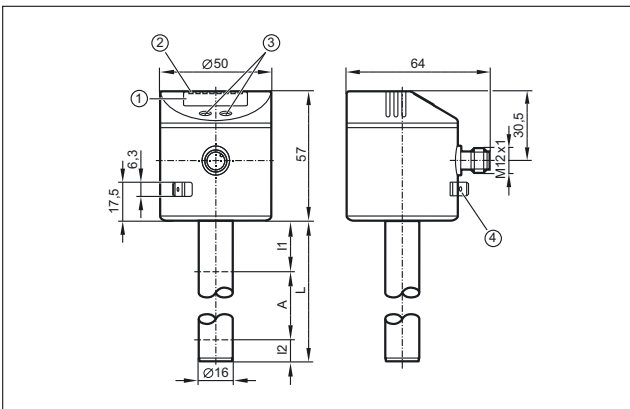
1: 7-segment LED display, 2: Programming buttons, 3: Housing connection with cable lug for cable 1.5 - 2.5 mm²



Process sensors

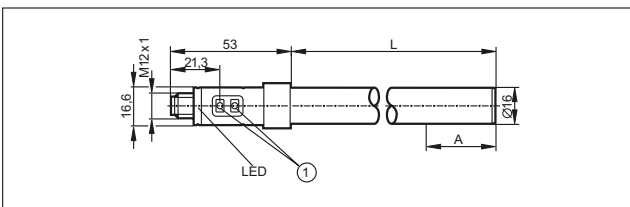
Scale drawings / drawing no. – CAD download: www.ifm.com

6



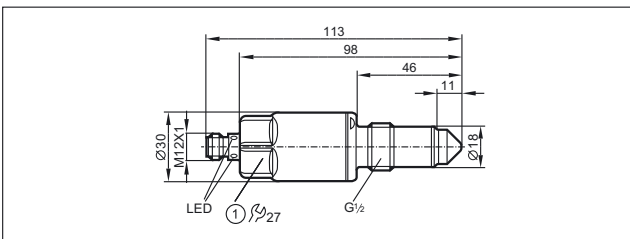
1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming buttons, 4: Housing connection (flat-pin connector 6.3 mm following DIN 46244)

7



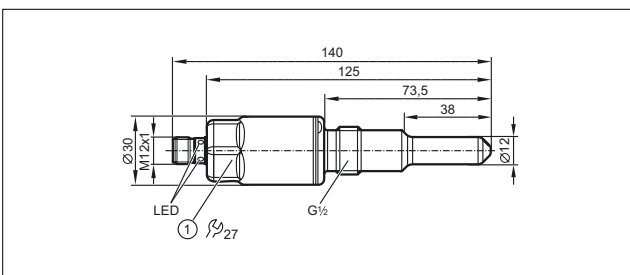
1: Programming buttons

8



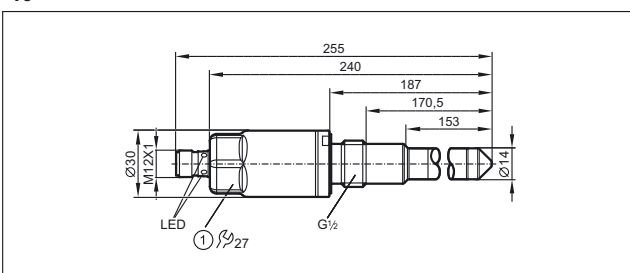
1: tightening torque 20...25 Nm

9



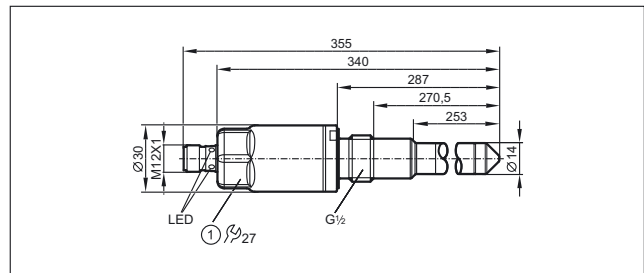
1: tightening torque 20...25 Nm

10



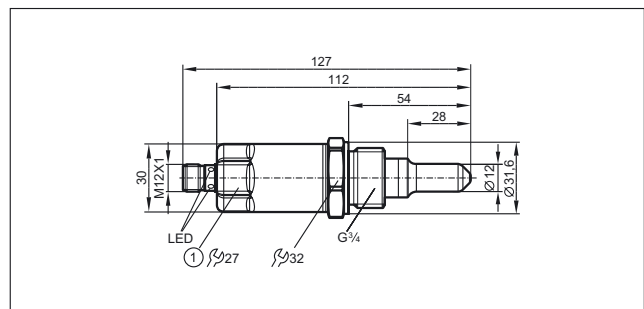
1: tightening torque 20...25 Nm

11



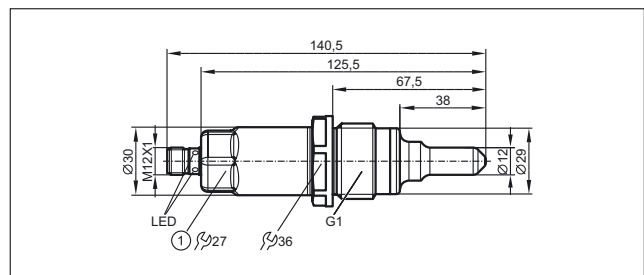
1: tightening torque 20...25 Nm

12



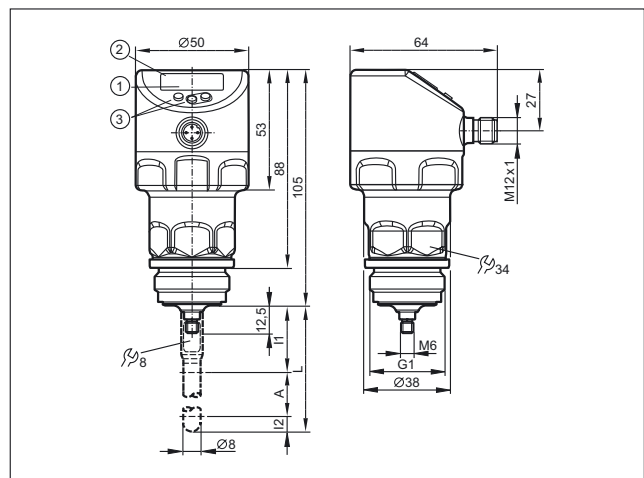
1: tightening torque 35 Nm

13



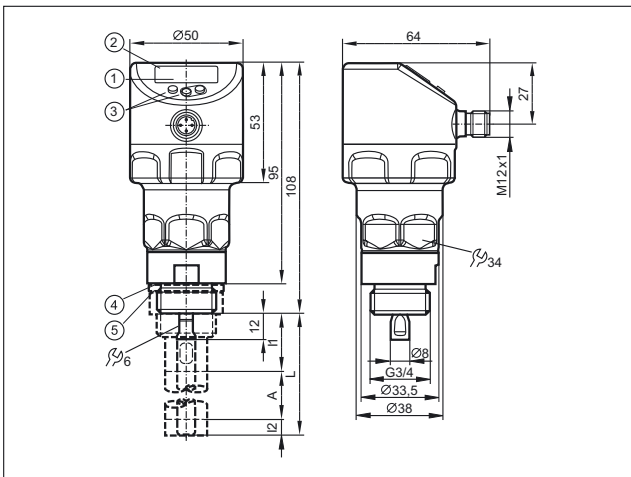
1: tightening torque 35 Nm

14

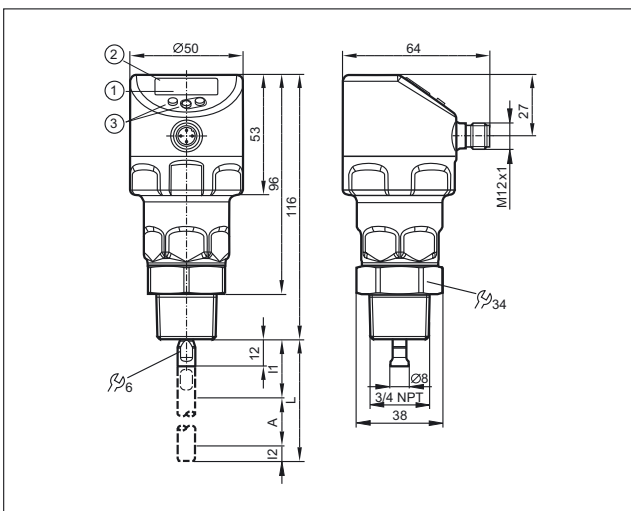


Scale drawings / drawing no. – CAD download: www.ifm.com

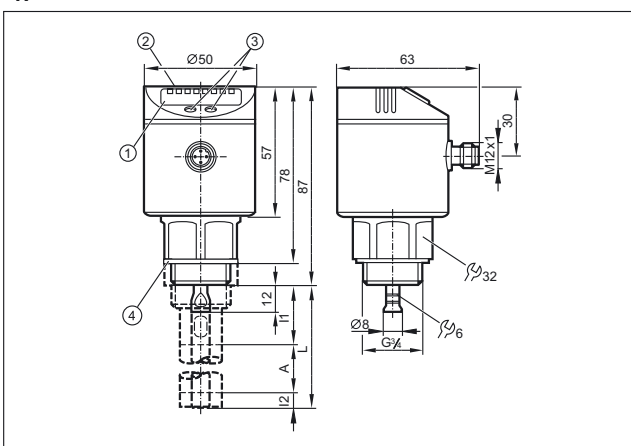
15



16

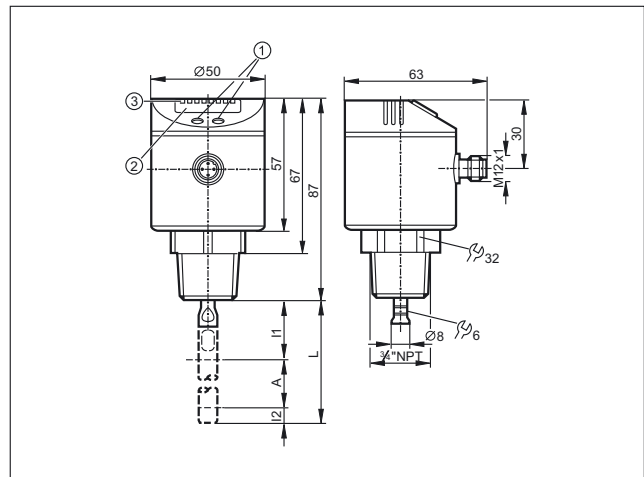


17



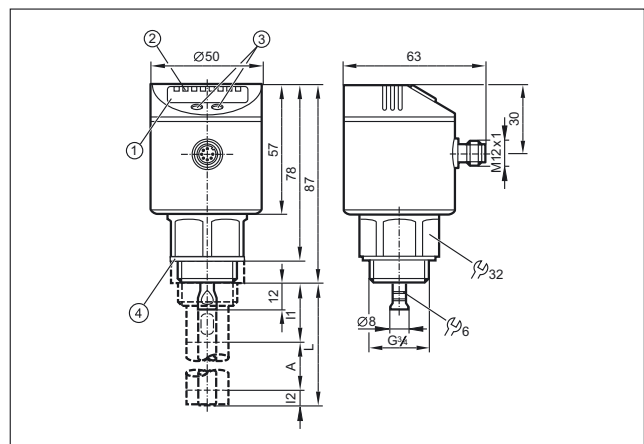
1: 4-digit alphanumeric display, 2: LEDs (display unit / switching status), 3: Programming buttons, 4: sealing, A: Active range, I1 / I2: Inactive ranges

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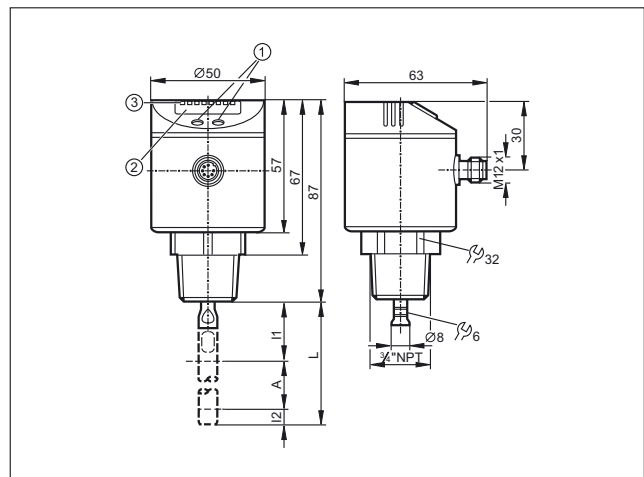
1: 4-digit alphanumeric display, 2: LEDs (display unit / switching status), 3: Programming buttons, A: Active range, I1 / I2: Inactive ranges

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1: 4-digit alphanumeric display, 2: LEDs (display unit / switching status), 3: Programming buttons, 4: sealing, A: Active range, I1 / I2: Inactive ranges

20

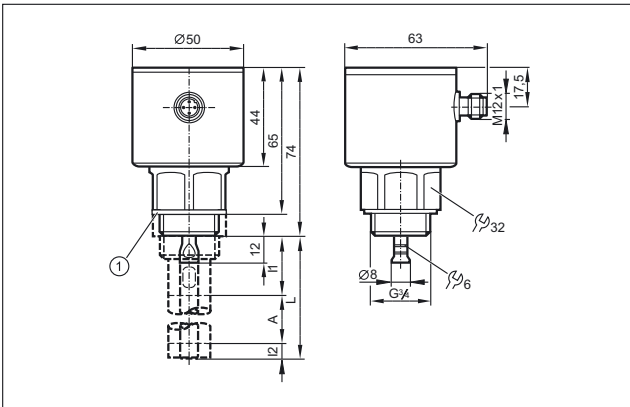




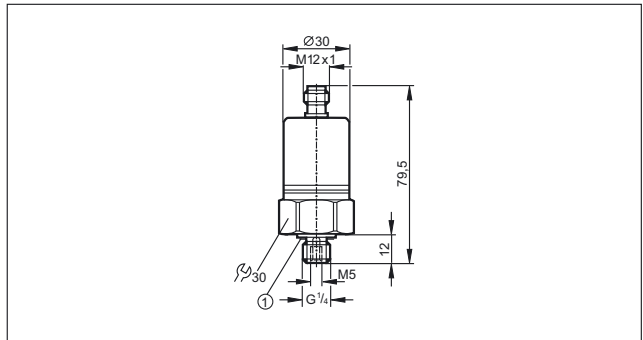
Process sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

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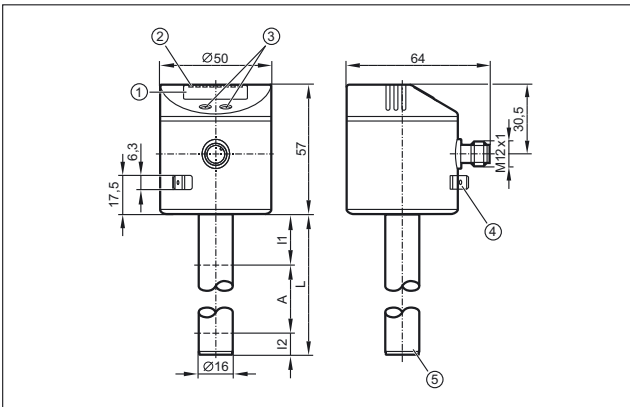


26



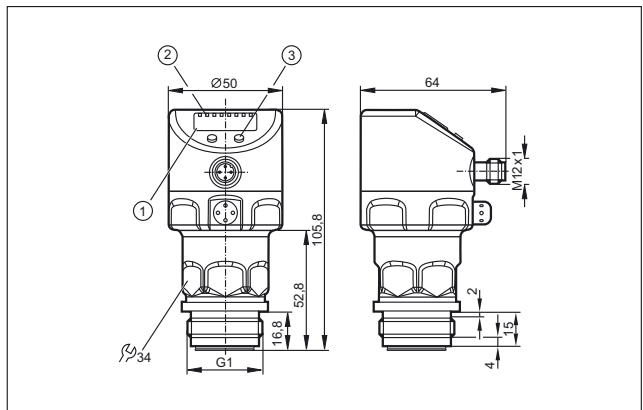
1: sealing FPM / DIN 3869-14

22



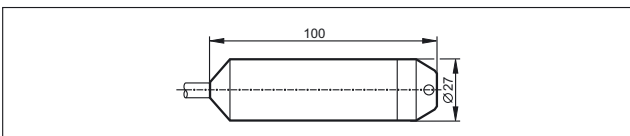
1: 4-digit alphanumeric display, 2: LEDs, 3: Programming buttons, 4: Housing connection (flat-pin connector 6.3 mm following DIN 46244), 5: Position of the temperature measuring element

27

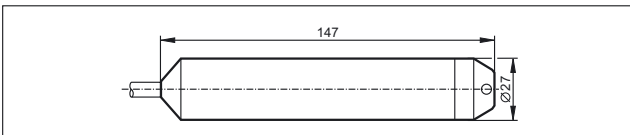


1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming button

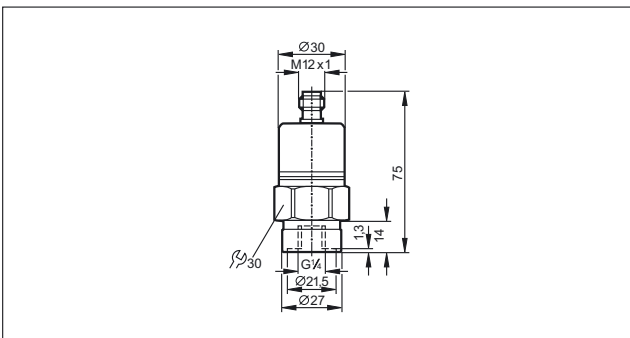
23



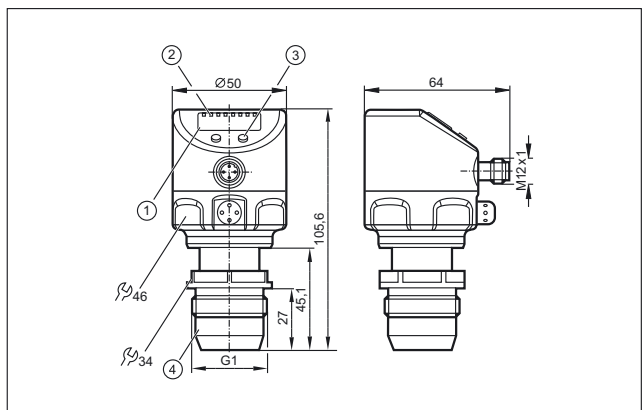
24



25

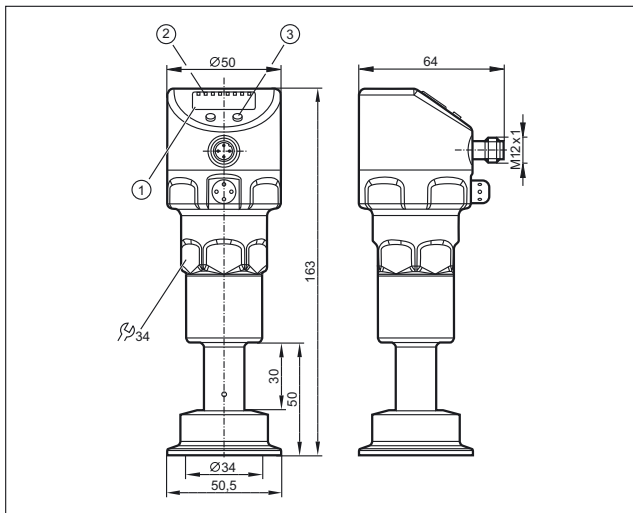


28



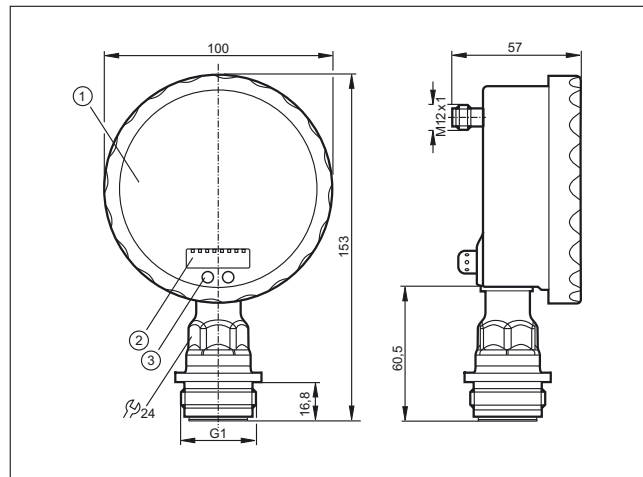
Scale drawings / drawing no. – CAD download: www.ifm.com

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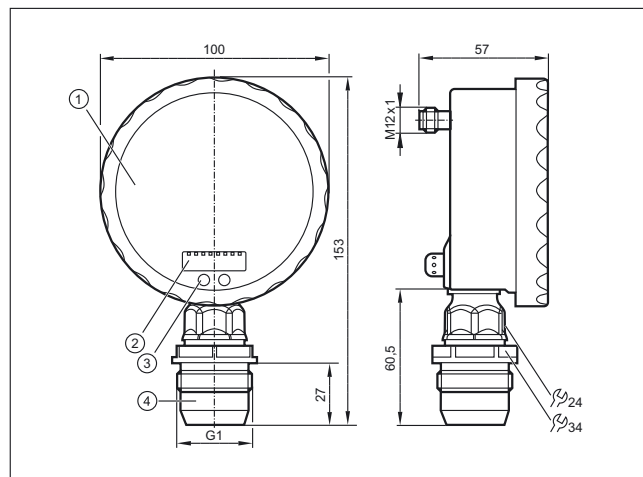
1: 4-digit alphanumeric display, 2: status LEDs, 3: Programming button

30



1: Analogue display, 2: 4-digit alphanumeric display, 3: Programming button

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1: Analogue display, 2: 4-digit alphanumeric display, 3: Touch button (programming button), 4: Sealing cone G1 male, Attention: The unit must only be installed in a process connection for G1 sealing cone! The G1 male sealing cone of the unit is only suited for adapters with metal end stop!



Process sensors

Versatile temperature sensors – for all kinds of applications



Temperature sensors



Temperature sensors in contact with the medium for industrial and hygienic applications

Modular concept – tailor-made for all kinds of applications

Various fittings available for process connections

Robust mechanics with high vibration and shock resistance

Non-contact infrared temperature sensors for hot objects



Direct temperature sensors

The temperature sensors of ifm are based on a PT100 or PT1000 resistor. The measured temperature value corresponds to a change in resistance and is converted into an electrical analogue signal. A microprocessor controls the evaluation of the electrical signal. Depending on the product version, the current system temperature is indicated via LED display and provided as a switching signal, analogue signal or via IO-Link.

Indirect temperature measurement

In most cases the infrared temperature measurement is used where temperatures can only be measured indirectly, that means without contact. The reason for this can, for example, a high object temperature. The sensors detect the infrared radiation emitted by the objects and convert them into an output signal.

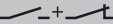
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Process sensors

TK sensors with mechanical setting and switching outputs

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · Output function  · DC PNP · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	-20...140 / -4...284	G 1/4	50	9.6...32	1 / 3	1	TK6110
	-20...140 / -4...284	1/4" NPT	50	9.6...32	1 / 3	2	TK6310

M12 connector · Output function  · DC PNP · Wiring diagram no. 2 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	-25...140 / -13...284	G 1/4	50	9.6...32	1 / 3	1	TK7110

M12 connector · Output function 1 x normally open / 1 x normally closed · DC PNP · Wiring diagram no. 1 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204

	-25...140 / -13...284	G 1/2	250	9.6...32	1 / 3	3	TK7460

Compact temperature sensors with display, IO-Link

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 mA / 0...10 V, scaleable) · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...150 / -58...302	M18 x 1.5	45	18...32	1 / 3	4	TN2511

M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...150 / -58...302	M18 x 1.5	45	18...32	1 / 3	4	TN7511

M12 connector · Output function 2 x normally open / closed progr. or 1 x normally open / closed progr. + 1 x analogue (4...20 mA / 0...10 V) · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...150 / -58...302	G 1/2	30	18...32	1 / 3	5	TN2405
	-50...150 / -58...302	G 1/2	50	18...32	1 / 3	6	TN2415
	-50...150 / -58...302	G 1/2	100	18...32	1 / 3	7	TN2435
	-50...150 / -58...302	G 1/2	150	18...32	1 / 3	7	TN2445

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · Output function 2 x normally open / closed progr. or 1 x normally open / closed progr. + 1 x analogue (4...20 mA / 0...10 V) · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	G 1/4	25	18...32	1 / 3	8	TN2105
	-50...150 / -58...302	G 1/4	50	18...32	1 / 3	9	TN2115

Control monitors for temperature sensors, IO-Link

Type	Measuring range [°C]	Process connection	Display	U _b [V]	Current consumption [mA]	I _{load} [mA]	Drawing no.	Order no.
M12 connector · Output function 1 x normally open / closed programmable + 1 x analogue (4...20 mA / 0...10 V, scalable) · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	-100...600 / -148...1112	G ½ A	Display unit	18...32	50	250	10	TR2439
M12 connector · Output function 2 x normally open / closed programmable · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	-100...600 / -148...1112	G ½ A	Display unit	18...32	50	250	10	TR7439

Modular temperature transmitters

Type	Factory setting [°C / °F]	Process connection	U _b [V]	Ambient temperature [°C]	Measuring element	Drawing no.	Order no.
M12 connector · Output function 4...20 mA analogue · DC · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...300 / -58...572	M12	20...32	-25...70	for Pt100 and Pt1000 measuring elements	11	TP3232
	-50...300 / -58...572	M12	20...32	-25...70	for Pt100 and Pt1000 measuring elements	11	TP3237
	-50...300 / -58...572	M12	20...32	-25...70	for Pt100 and Pt1000 measuring elements	11	TP3231
M12 connector · Output function 0...10 V analogue · DC · Wiring diagram no. 7 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...300 / -58...572	M12	18...32	-25...70	for Pt100 and Pt1000 measuring elements	11	TP9237



Process sensors

Pt1000 probe sensors for industrial applications

Type	Measuring range [°C]	Diameter [mm]	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
	-40...150	6	160	1 x Pt 1000	1 / 3	12	TT1250
	-40...150	6	260	1 x Pt 1000	1 / 3	12	TT2250
	-40...150	6	360	1 x Pt 1000	1 / 3	12	TT3250
	-40...150	10	160	1 x Pt 1000	1 / 3	13	TT1050
	-40...150	10	260	1 x Pt 1000	1 / 3	13	TT2050
	-40...150	10	360	1 x Pt 1000	1 / 3	13	TT3050
	-40...150	10	560	1 x Pt 1000	1 / 3	13	TT5050

Pt100 probe sensors for industrial applications

Type	Measuring range [°C]	Diameter [mm]	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
	-40...150	6	70	1 x Pt 100	1 / 3	14	TT7281
	-40...150	6	100	1 x Pt 100	1 / 3	14	TT0281
	-40...150	6	150	1 x Pt 100	1 / 3	14	TT1281
	-40...150	6	250	1 x Pt 100	1 / 3	14	TT2281
	-40...150	6	200	1 x Pt 100	1 / 3	14	TT4281
	-40...150	6	300	1 x Pt 100	1 / 3	14	TT6281

M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

Type	Measuring range [°C]	Diameter [mm]	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150	6	350	1 x Pt 100	1 / 3	14	TT3281
	-40...150	6	50	1 x Pt 100	1 / 3	14	TT9281
	-40...150	10	160	1 x Pt 100	1 / 3	13	TT1081
	-40...150	10	260	1 x Pt 100	1 / 3	13	TT2081
	-40...150	10	360	1 x Pt 100	1 / 3	13	TT3081
	-40...150	10	560	1 x Pt 100	1 / 3	13	TT5081
	-40...125	8.2	60	1 x Pt 100	1 / 3	15	TM9950

Screw-in sensors for industrial applications

Type	Measuring range [°C]	Process connection	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150	G ¼	25	1 x Pt 100	1 / 3	16	TM4101
	-40...150	G ¼	25	1 x Pt 1000	1 / 3	16	TM5101
	-40...150	G ½	50	1 x Pt 100	1 / 3	17	TM4411
	-40...150	G ½	50	1 x Pt 1000	1 / 3	17	TM5411
	-40...150	G ½	100	1 x Pt 100	1 / 3	17	TM4431
	-40...150	G ½	150	1 x Pt 100	1 / 3	17	TM4441
	-40...150	G ½	250	1 x Pt 100	1 / 3	17	TM4461
	-40...150	G ½	250	1 x Pt 100	1 / 3	17	TM4461

You can find wiring diagrams and scale drawings from page 571



Process sensors

Cable sensors for industrial applications

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

Cable 4 m · high-grade stainless steel

	-30...180	M5	silicone cable	1 x Pt 100	3 / 8	18	TS4759

Cable with connector 0.15 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...250	Ø 6 mm	PTFE cable	1 x Pt 1000	11 / 37	19	TS9256

Cable with connector 0.5 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-40...90	M5 / L = 26	PUR cable	1 x Pt 100	3 / 8	20	TS9789

Cable with connector 2 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-40...90	Ø 6 mm / L = 45 mm	PUR cable	1 x Pt 100	3 / 10	21	TS2289
	-40...90	Ø 6 mm / L = 45 mm	PUR cable	1 x Pt 1000	3 / 10	21	TS2269
	-40...90	Ø 10 mm	PUR cable	1 x Pt 100	6 / 25	22	TS2089
	-40...90	Ø 10 mm	PUR cable	1 x Pt 1000	6 / 25	22	TS2069
	-50...250	Ø 6 mm	PTFE cable	1 x Pt 100	11 / 37	19	TS2256
	-50...250	Ø 10 mm	PTFE cable	1 x Pt 100	12 / 39	23	TS2056
	-40...90	M5 / L = 26	PUR cable	1 x Pt 100	3 / 8	20	TS2789
	-40...90	M6 / L = 26	PUR cable	1 x Pt 100	3 / 9	24	TS2689
	-30...180	M5 / L = 25.7	silicone cable	1 x Pt 100	3 / 8	25	TS2759
	-30...180	M6	silicone cable	1 x Pt 100	3 / 8	26	TS2659

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

Cable with connector 2.5 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-40...90	Ø 6 mm / L = 45 mm	PUR cable	1 x Pt 100	3 / 10	21	TS9289

Cable with connector 5 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-40...90	Ø 10 mm	PUR cable	1 x Pt 100	6 / 25	22	TS5089

	-40...90	Ø 6 mm / L = 45 mm	PUR cable	1 x Pt 100	3 / 10	21	TS5289

Cable with connector 10 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-30...180	M5 / L = 25.7	silicone cable	1 x Pt 100	3 / 8	25	TS0759

Cable with connector 2 m · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-100...600	Ø 6 mm	PTFE cable	1 x Pt 100	12 / 34	27	TS2451
	-100...600	Ø 6 mm	PTFE cable	1 x Pt 100	12 / 34	27	TS2452
	-100...600	Ø 6 mm	PTFE cable	1 x Pt 100	12 / 34	27	TS2453
	-100...600	Ø 6 mm	PTFE cable	1 x Pt 100	12 / 34	27	TS2454

Cable sensors with bolt-on sensor for industrial applications

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

Cable with connector 2 m · stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-40...90	12	PUR cable	1 x Pt 100	9 / 15	28	TS2229

Cable 2 m · stainless steel

	-40...90	12	PUR cable	1 x Pt 100	12 / 39	29	TS2239



Process sensors

Screw-in sensor with ATEX approval 3D/3G

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

Cable 2 m · high-grade stainless steel · DC

	-20...115	M5	silicone cable	1 x Pt 100	8 / 20	30	TS285A

Cable sensors with ATEX approval 3D / 3G

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

Cable 3 m · high-grade stainless steel

	-20...80	Ø 5 mm / L = 40	silicone cable	1 x Pt 100	4 / 10	31	TS325A

Cable sensors with bolt-on sensors with ATEX approval 3D / 3G

Type	Measuring range [°C]	Diameter [mm]	Cable material	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

Cable 5 m · high-grade stainless steel

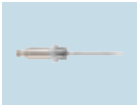
	-20...80	10	silicone cable	1 x Pt 100	13 / 39	32	TS522A
	-20...80	18	silicone cable	1 x Pt 1000	18 / 42	33	TS502A

Temperature transmitters for standard applications, IO-Link

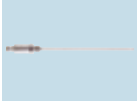
Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...150 / -	G ½	30	18...32	1 / 3	34	TA2405
	-50...150 / -	G ½	50	18...32	1 / 3	34	TA2415
	0...100 / -	G ½	50	18...32	1 / 3	34	TA2417

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -	G ½	100	18...32	1 / 3	34	TA2435
	0...100 / -	G ½	100	18...32	1 / 3	34	TA2437
	-50...150 / -	G ½	150	18...32	1 / 3	34	TA2445
	0...100 / -	G ½	150	18...32	1 / 3	34	TA2447
	-50...150 / -	G ¼	25	18...32	1 / 3	35	TA2105
	-50...150 / -	G ¼	50	18...32	1 / 3	35	TA2115
	-50...150 / -	G ¼	100	18...32	1 / 3	35	TA2135
	-50...150 / -	G ¼	150	18...32	1 / 3	35	TA2145

IO-Link temperature transmitters

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	36	TA3105
	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	36	TA3115
	-50...150 / -58...302	G ¼ A	200	10...30	1 / 3	36	TA3155
DEUTSCH connector · high-grade stainless steel · DC							
	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	37	TA4105



Process sensors

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

DEUTSCH connector · high-grade stainless steel · DC

	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	37	TA4115

AMP plug · high-grade stainless steel · DC

	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	38	TA5105

	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	38	TA5115

M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	36	TU3105

DEUTSCH connector · high-grade stainless steel · DC

	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	37	TU4105

AMP plug · high-grade stainless steel · DC

	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	38	TU5105

M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-40...150 / -40...302	G ¼	25	–	1 / 3	16	TM5101

DEUTSCH connector · high-grade stainless steel

	-40...150 / -40...302	G 1/4	25	–	1 / 3	39	TM6101

Probe sensors for hygienic and wet areas

Type	Measuring range [°C]	Diameter [mm]	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-40...150	6	50	1 x Pt 100	1 / 3	14	TT9291
	-40...150	6	100	1 x Pt 100	1 / 3	14	TT0291

Type	Measuring range [°C]	Diameter [mm]	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-40...150	6	150	1 x Pt 100	1 / 3	14	TT1291
	-40...150	6	250	1 x Pt 100	1 / 3	14	TT2291
	-40...150	6	350	1 x Pt 100	1 / 3	14	TT3291

Sensors with process connection for hygienic and wet areas

Type	Measuring range [°C]	Process connection	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

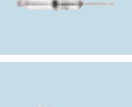
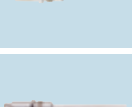
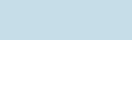
	-40...150	Clamp 1-1.5" ISO 2852	30	1 x Pt 100	1 / 3	40	TM4801
	-40...150	Clamp 1-1.5" ISO 2852	50	1 x Pt 100	1 / 3	40	TM4811
	-40...150	Clamp 1-1.5" ISO 2852	100	1 x Pt 100	1 / 3	40	TM4831
	-40...150	Clamp 1-1.5" ISO 2852	150	1 x Pt 100	1 / 3	40	TM4841
	-40...150	Clamp 2"	30	1 x Pt 100	1 / 3	41	TM4901
	-40...150	Clamp 2"	50	1 x Pt 100	1 / 3	41	TM4911
	-40...150	Clamp 2"	100	1 x Pt 100	1 / 3	41	TM4931
	-40...150	Clamp 2"	150	1 x Pt 100	1 / 3	41	TM4941
	-40...150	G½ with sealing cone	20	1 x Pt 100	1 / 3	42	TM4591
	-40...150	G½ with sealing cone	30	1 x Pt 100	1 / 3	42	TM4501
	-40...150	G½ with sealing cone	50	1 x Pt 100	1 / 3	42	TM4511



Process sensors

Type	Measuring range [°C]	Process connection	Installation length [mm]	Sensor element	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202							
	-40...150	G½ with sealing cone	100	1 x Pt 100	1 / 3	42	TM4531
	-40...150	G½ with sealing cone	150	1 x Pt 100	1 / 3	42	TM4541
	-50...140	G½ with sealing cone	–	1 x Pt 100	10 / 40	43	TM4599

Temperature transmitters for hygienic and wet areas, IO-Link

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.
M12 connector · high-grade stainless steel · DC · Connector groups 148, 153, 184, 188, 193							
	-50...200 / -	3/4" clamp (ISO 2852)	25	18...32	< 0.5 / < 2.0	44	TA2002
	-50...200 / -	3/4" clamp (ISO 2852)	60	18...32	< 0.5 / < 2.0	44	TA2012
	-50...200 / -	1.5" clamp (ISO 2852)	30	18...32	< 0.5 / < 2	45	TA2802
	-50...200 / -	1.5" clamp (ISO 2852)	50	18...32	< 0.5 / < 2	45	TA2812
	-50...200 / -	1.5" clamp (ISO 2852)	100	18...32	< 0.5 / < 2	45	TA2832
	-50...200 / -	1.5" clamp (ISO 2852)	150	18...32	< 0.5 / < 2	45	TA2842
	-50...200 / -	G½ with sealing cone	30	18...32	< 0.5 / < 2	46	TA2502
	-50...200 / -	G½ with sealing cone	50	18...32	< 0.5 / < 2	46	TA2512
	-50...200 / -	G½ with sealing cone	100	18...32	< 0.5 / < 2	46	TA2532
	-50...200 / -	G½ with sealing cone	150	18...32	< 0.5 / < 2	46	TA2542

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · high-grade stainless steel · DC

	0...100 / -	G½ with sealing cone	–	18...32	10 / 40	47	TA3597

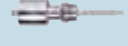
M12 connector · high-grade stainless steel · DC · Connector groups 148, 153, 184, 188, 193

	-50...200 / -	Ø 6 mm	50	18...32	< 0.5 / < 2	48	TA2212
	-50...200 / -	Ø 6 mm	100	18...32	< 0.5 / < 2	48	TA2232
	-50...200 / -	Ø 6 mm	150	18...32	< 0.5 / < 2	48	TA2242

Self-monitoring temperature transmitters for hygienic and wet areas, IO-Link

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · Output function normally open / normally closed / heartbeat programmable, 4...20 mA analogue · DC PNP/NPN · Wiring diagram no. 8 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	0...150 / 32...302	Aseptoflex Vario	50	18...32	3 / 6	49	TAD081
	0...150 / 32...302	Aseptoflex Vario	87.5	18...32	3 / 6	50	TAD181
	0...150 / 32...302	Aseptoflex Vario	33	18...32	3 / 6	51	TAD981
	0...150 / 32...302	G ½ A	50	18...32	3 / 6	52	TAD091
	0...150 / 32...302	G ½ A	87.5	18...32	3 / 6	53	TAD191
	0...150 / 32...302	G ½ A	33	18...32	3 / 6	54	TAD991



Process sensors

Temperature transmitter with display for hygienic and wet areas, IO-Link

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...150 / -58...302	G½ with sealing cone	30	18...32	1 / 3	55	TD2507
	-50...150 / -58...302	G½ with sealing cone	50	18...32	1 / 3	55	TD2517
	-50...150 / -58...302	G½ with sealing cone	100	18...32	1 / 3	55	TD2537
	-50...150 / -58...302	G½ with sealing cone	150	18...32	1 / 3	55	TD2547
	-50...150 / -58...302	G½ with sealing cone	30	18...32	1 / 3	55	TD2501
	-50...150 / -58...302	G½ with sealing cone	50	18...32	1 / 3	55	TD2511
	-50...150 / -58...302	G½ with sealing cone	100	18...32	1 / 3	55	TD2531
	-50...150 / -58...302	G½ with sealing cone	150	18...32	1 / 3	55	TD2541
	-50...150 / -58...302	1.5" clamp (ISO 2852)	30	18...32	1 / 3	56	TD2807
	-50...150 / -58...302	1.5" clamp (ISO 2852)	50	18...32	1 / 3	56	TD2817
	-50...150 / -58...302	1.5" clamp (ISO 2852)	100	18...32	1 / 3	56	TD2837
	-50...150 / -58...302	1.5" clamp (ISO 2852)	150	18...32	1 / 3	56	TD2847
	-50...150 / -58...302	1.5" clamp (ISO 2852)	30	18...32	1 / 3	56	TD2801
	-50...150 / -58...302	1.5" clamp (ISO 2852)	50	18...32	1 / 3	56	TD2811
	-50...150 / -58...302	1.5" clamp (ISO 2852)	100	18...32	1 / 3	56	TD2831
	-50...150 / -58...302	1.5" clamp (ISO 2852)	150	18...32	1 / 3	56	TD2841

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...150 / -58...302	2" clamp (ISO 2852)	30	18...32	1 / 3	57	TD2907
	-50...150 / -58...302	2" clamp (ISO 2852)	50	18...32	1 / 3	57	TD2917
	-50...150 / -58...302	2" clamp (ISO 2852)	100	18...32	1 / 3	57	TD2937
	-50...150 / -58...302	2" clamp (ISO 2852)	150	18...32	1 / 3	57	TD2947
	-50...150 / -58...302	2" clamp (ISO 2852)	30	18...32	1 / 3	57	TD2901
	-50...150 / -58...302	2" clamp (ISO 2852)	50	18...32	1 / 3	57	TD2911
	-50...150 / -58...302	2" clamp (ISO 2852)	100	18...32	1 / 3	57	TD2931
	-50...150 / -58...302	2" clamp (ISO 2852)	150	18...32	1 / 3	57	TD2941
	-50...150 / -58...302	Ø 6 mm	50	18...32	1 / 3	58	TD2217
	-50...150 / -58...302	Ø 6 mm	100	18...32	1 / 3	58	TD2237
	-50...150 / -58...302	Ø 6 mm	150	18...32	1 / 3	58	TD2247
	-50...150 / -58...302	Ø 6 mm	250	18...32	1 / 3	58	TD2267
	-50...150 / -58...302	Ø 6 mm	50	18...32	1 / 3	58	TD2211
	-50...150 / -58...302	Ø 6 mm	100	18...32	1 / 3	58	TD2231
	-50...150 / -58...302	Ø 6 mm	150	18...32	1 / 3	58	TD2241
	-50...150 / -58...302	Ø 6 mm	200	18...32	1 / 3	58	TD2251
	-50...150 / -58...302	Ø 6 mm	250	18...32	1 / 3	58	TD2261



Process sensors

Type	Factory setting [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · DC · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...150 / -58...302	Ø 6 mm	200	18...32	1 / 3	58	TD2257
	-50...150 / -58...302	Ø 6 mm	300	18...32	1 / 3	58	TD2271
	-50...150 / -58...302	Ø 6 mm	300	18...32	1 / 3	58	TD2277
	-50...150 / -58...302	Ø 6 mm	350	18...32	1 / 3	58	TD2291
	-50...150 / -58...302	Ø 6 mm	350	18...32	1 / 3	58	TD2297

TV sensors with switching outputs, IO-Link

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · Output function 2 x normally open / closed progr. · 2 switching outputs · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 12, 13, 19, 21, 22, 23, 24, 25, 148, 149, 150, 152, 153, 154, 155, 184, 186, 188, 190, 192, 193, 194, 202, 205

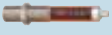
	-50...150 / -	G 1/4	25	18...32	1 / 3	59	TV7105
	-50...150 / -	G 1/2	30	18...32	1 / 3	60	TV7405

Infrared temperature sensors

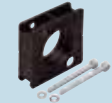
Type	Temperature range [°C]	Wave length range [μm]	Material lens	Response time [ms]	Drawing no.	Order no.

M12 connector · Output function · Switching output, Analogue output · DC PNP · Wiring diagram no. 5

	0...999.5	8...14	Infrared transparent crystal lens with anti-reflex coating	< 100	61	TW2000
	250...1600	1.0...1.7	tempered optical glass	< 2	62	TW2001
	500...2500	0.78...1.06	tempered optical glass	< 2	62	TW2002
	300...1600	1.0...1.7	tempered optical glass	< 2	63	TW2011

Type	Temperature range [°C]	Wave length range [μm]	Material lens	Response time [ms]	Drawing no.	Order no.
M12 connector · Output function  · 2 switching outputs · DC PNP · Wiring diagram no. 5						
	50...500	8...14	Infrared transparent crystal lens with anti-reflex coating	< 100	64	TW7000
	250...1250	1.0...1.7	tempered optical glass	≤ 2	65	TW7001
	350...1350	1.0...1.7	tempered optical glass	≤ 2	66	TW7011

Accessories for temperature sensors TN / TR

Type	Description	Order no.
	Angle bracket · Housing materials: PA66-	E30421
	Mounting clamp · Ø 34 mm · Housing materials: PBT	E10017
	Mounting clamp · Ø 34 mm · Housing materials: PA	E10193

Accessories for infrared temperature sensors

Type	Description	Order no.
	Measuring head · for infrared temperature sensors TWxx11, M30 design · Housing materials: AlMg3 black anodised / 303 / 1.4305 / lock nuts: 304 / 1.4301 / O-ring: FPM	E35060
	Fibre optics with stainless steel sheathing · straight · Connection to infrared temperature sensors TWxx11 · ¼"-36UNS-2A · Housing materials: stainless steel, Fibre optic: Quartz/Quartz fibre (VIS/IR)	E35061
	Fibre optics with stainless steel sheathing · straight · Connection to infrared temperature sensors TWxx11 · ¼"-36UNS-2A · Housing materials: stainless steel, Fibre optic: Quartz/Quartz fibre (VIS/IR)	E35062
	Air purge · for infrared temperature sensors TWxxxx, M30 design · for type TW · Housing materials: stainless steel / Brass / sealing ring: aluminium	E35063
	Cooling jacket · for infrared temperature sensors TWxxxx, M30 design · for type TW · Housing materials: 304 / 1.4301	E35068



Process sensors

Type	Description	Order no.
	Mounting bracket · Ø 30 mm · for types M30 · Housing materials: Steel galvanised	E35065
	Protective tube · for infrared temperature sensors TWxxxx, M30 design · for type TW · Housing materials: stainless steel	E35066
	Insulating tube · for infrared temperature sensors TWxxxx, M30 design · for type TW · Housing materials: POM	E35067

Accessories

Type	Description	Order no.
	Memory plug · Parameter memory for IO-Link sensors · Storage capacity: 2 Kbytes · Housing materials: PA PACM 12 / PET / sealing: FPM / nut: stainless steel 316L / 1.4404 / connector: TPU	E30398
	Teach button · for sensors PP0xE, PP052x, PP755x · for memory plug (E30398) · 0.9 m · Housing materials: stainless steel / PA / PMMA	E30405
	USB IO-Link master · for parameter setting and analysis of units · Supported communication protocols: IO-Link (4.8, 38.4 and 230 Kbits/s) · for operation with FDT framework software "ifm Container" or software "LINERECORDER SENSOR"	E30390

Software

Type	Description	Order no.
	LR DEVICE (USB stick) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0011
	LR DEVICE (download) · Parameter setting of the units via the network · Software for clear online and offline parameter setting of IO-Link sensors via USB adapter · Use via USB connection cable (drivers are supplied): E30396 IO-Link interface or E30390 IO-Link master (note the respective data sheet) · IODD import and update from ifm's homepage · Reading of IODDs via storage media · Automatic sensor identification · Graphic representation of the process values and history incl. export function · Documentation and archiving · Transferable parameter sets · Full memory plug support for IO-Link 1.1	QA0012

Certificates

Description	Order no.
DAkKS calibration certificate for temperature sensors · Number of measuring points: 3-point DAkKS calibration · Measurement points [°C]: 65, 85, 123 (to directive DAkKS-DKD-R 5-1) · Minimum measurement uncertainty [K]: 0.1	ZC0013
DAkKS calibration certificate for temperature sensors · Number of measuring points: 5-point DAkKS calibration · Measurement points [°C]: 20, 65, 85, 100, 123 (to directive DAkKS-DKD-R 5-1) · Minimum measurement uncertainty [K]: 0.1	ZC0014

Description	Order no.
DAkKS calibration certificate for temperature sensors · Number of measuring points: n-point DAkKS calibration · Measurement points [°C]: number and positions as requested by the customer, maximum 4 points in the range from -20...150 °C (to directive DAkKS-DKD-R 5-1) · Minimum measurement uncertainty [K]: 0.1	ZC0015
Factory calibration certificate for temperature sensors · Number of measuring points: 3-point factory calibration · Measurement points [°C]: 65, 85, 123 (to ISO 9001) · Minimum measurement uncertainty [K]: 0.1	ZC0016
Factory calibration certificate for temperature sensors · Number of measuring points: 5-point factory calibration · Measurement points [°C]: 20, 65, 85, 100, 123 (to ISO 9001) · Minimum measurement uncertainty [K]: 0.1	ZC0017
Factory calibration certificate for temperature sensors · Number of measuring points: n-point factory calibration · Measurement points [°C]: number and positions as requested by the customer, maximum 4 points in the range from -20...150 °C (to ISO 9001) · Minimum measurement uncertainty [K]: 0.1	ZC0018
Factory calibration sheet for first delivery of infrared temperature sensors · TW2000 / TW2001 / TW2002 / TW2011 · Minimum measurement uncertainty [K]: ± 4	ZC0061
Recalibration for infrared temperature sensors · TW2000 / TW2001 / TW2011 · Minimum measurement uncertainty [K]: ± 4	ZC0062
Recalibration for infrared temperature sensors · TW2002 · Minimum measurement uncertainty [K]: ± 4	ZC0063

Thermowells for temperature sensors

Type	Description	Order no.
	Welding thermowell · Ø 35 mm · for type TA343x, TAA431, TAD191 · stainless steel 316L / 1.4404	E30403
	Thermowell for temperature sensors · G ½ · for type TA34xx, TAA431, TAD191 · stainless steel 316L / 1.4404	E30393
	Thermowell for temperature sensors · G ½ · ½" NPT · for type TA34xx, TAA4xx · stainless steel 316L / 1.4404	E30397
	Thermowell for temperature sensors · Ø 10 mm · G ½ · stainless steel 316L / 1.4404	E35010
	Thermowell for temperature sensors · Ø 10 mm · G ½ · stainless steel 316L / 1.4404	E35020
	Thermowell for temperature sensors · Ø 10 mm · G ½ · stainless steel 316L / 1.4404	E35030
	Thermowell for temperature sensors · Ø 10 mm · G ½ · stainless steel 316L / 1.4404	E35050



Process sensors

Type	Description	Order no.
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316L / 1.4404	E37211
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316L / 1.4404	E37221
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316L / 1.4404	E37810
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316L / 1.4404	E37820
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 300 mm · stainless steel 316L / 1.4404	E37830
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 350 mm · stainless steel 316L / 1.4404	E37850
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316L / 1.4404	E37910
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316L / 1.4404	E37920
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 300 mm · stainless steel 316L / 1.4404	E37930
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 350 mm · stainless steel 316L / 1.4404	E37950
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 50 mm · stainless steel 316Ti / 1.4571	E37603
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316Ti / 1.4571	E37613
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316Ti / 1.4571	E37623
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 250 mm · stainless steel 316Ti / 1.4571	E37643
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 350 mm · stainless steel 316Ti / 1.4571	E37663
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316L / 1.4404	E37511

Product selectors and further information can be found at: www.ifm.com

Type	Description	Order no.
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316L / 1.4404	E37521
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 50 mm · stainless steel 316Ti / 1.4571	E37600
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316Ti / 1.4571	E37610
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316Ti / 1.4571	E37620
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 250 mm · stainless steel 316Ti / 1.4571	E37640
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 50 mm · stainless steel 316Ti / 1.4571	E37700
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316Ti / 1.4571	E37710
	Thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316Ti / 1.4571	E37720
	Welding thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 50 mm · stainless steel 316L / 1.4404	E37411
	Welding thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 100 mm · stainless steel 316L / 1.4404	E37421
	Welding thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 150 mm · stainless steel 316L / 1.4404	E37431
	Welding thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 300 mm · stainless steel 316L / 1.4404	E37430
	Welding thermowell for temperature sensors · Ø 6 mm · for temperature sensors with installation length EL = 350 mm · stainless steel 316L / 1.4404	E37450

Adapters

Type	Description	Order no.
	Thread cover · Ø 24 mm - G 1/2 · Ø 24 mm · to cover the G1/2 thread for installation in hygienic areas · for type TR · Housing materials: stainless steel	E30091



Process sensors

Type	Description	Order no.
	Mounting set · for direct connection of temperature sensors TT to control monitors TR · Housing materials: stainless steel	E30017
	Clamp fitting · Ø 6/8/10 mm · G ½ · for temperature sensors · Housing materials: stainless steel / FPM	E30018
	Clamp fitting · Ø 6/8/10 mm · ½" NPT · for temperature sensors · Housing materials: stainless steel / FPM	E30025
	Mounting adapter · M18 x 1.5 - Ø 23 mm · PVC adapter to be glued into the pipe · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: PVC	E40148
	Sealing ring · Ø 18 mm / Ø 23 mm · for G ½ sealing cone · Housing materials: sealing ring on sensor side: FKM / sealing ring on process side: PEEK	E43911
	Adapter · M18 x 1.5 - G ½ · Housing materials: stainless steel 316L / 1.4404 / O-ring: FPM (fitted)	E30073
	Clamp adapter · Ø 6 mm · G ½ · no dead space · Housing materials: stainless steel 316L / 1.4404 / rubber ring: PEEK	E30144
	Welding adapter · M18 x 1.5 - Ø 24 mm · Insertion depth of the probe of SID, SFD, TN: · 15 mm · Housing materials: stainless steel 316L / 1.4404	E40124
	Welding adapter · Ø 24.7 mm · for temperature sensors Ø 6 mm · Clamp fitting · Housing materials: stainless steel 316L / 1.4404	E30108
	Welding adapter · Ø 25 mm · for temperature sensors Ø 6 mm · Clamp fitting · Housing materials: stainless steel 316L / 1.4404 / rubber ring: PEEK	E30407
	Progressive ring fitting for temperature sensors · Ø 10 mm · G ½ · Housing materials: stainless steel 316Ti / 1.4571	E30016
	Progressive ring fitting for temperature sensors · Ø 10 mm · ½" NPT · Housing materials: stainless steel 316Ti / 1.4571	E30024
	Progressive ring fitting for temperature sensors · Ø 6 mm · G ½ · Housing materials: stainless steel 316Ti / 1.4571	E30047
	Progressive ring fitting for temperature sensors · Ø 6 mm · ¼" NPT · Housing materials: stainless steel 316Ti / 1.4571	E30049
	Progressive ring fitting for temperature sensors · Ø 6 mm · G ¼ · Housing materials: stainless steel 316Ti / 1.4571	E33431

Type	Description	Order no.
	Adapter · M18 x 1.5 - G 1/2 · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: titanium	E40114
	Adapter · M18 x 1.5 - M12 x 1 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: titanium	E40128
	Adapter · M18 x 1.5 - L18 · for mounting in T-pieces · Insertion depth of the probe of SID, SFD, TN: · 28.5 mm · Housing materials: nut: stainless steel 316Ti / 1.4571 / adapter: stainless steel 316L / 1.4404 / O-ring: FKM 16 x 1.5 gr 70° Shore A	E40104
	Adapter · M18 x 1.5 - M12 x 1 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: stainless steel 316L / 1.4404	E40101
	Adapter · M18 x 1.5 - M12 x 1 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: CW614N	E40100
	Adapter · M18 x 1.5 - G 1/4 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: stainless steel 316L / 1.4404	E40099
	Adapter · M18 x 1.5 - G 1/4 · Insertion depth of the probe of SID, SFD, TN: · 13.5 mm · Housing materials: CW614N	E40098
	Adapter · M18 x 1.5 - G 1/2 · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: stainless steel 316L / 1.4404	E40096
	Adapter · M18 x 1.5 - G 1/2 · Insertion depth of the probe of SID, SFD, TN: · 21 mm · Housing materials: CW614N	E40097
	Adapter · M18 x 1.5 - 1/2" NPT · Insertion depth of the probe of SID, SFD, TN: · 23 mm · Housing materials: stainless steel 316L / 1.4404	E40107
	Adapter · M18 x 1.5 - G 1/2 · Housing materials: stainless steel 316L / 1.4404 / O-ring: FPM (fitted)	E30073
	Protective cover · with lead seal option · for pressure sensors type PK · for temperature sensors type TK · for vibration sensors type VK · Housing materials: PP transparent	E30094

Hygienic adapters

Type	Description	Order no.
Clamp adapter · 1-1.5" · Aseptoflex Vario		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33201



Process sensors

Type	Description	Order no.
Clamp adapter · 2" · Aseptoflex Vario		
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33202
Clamp adapter · 1-1.5" · Aseptoflex Vario		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33701
Clamp adapter · 2" · Aseptoflex Vario		
	Clamp adapter · Clamp · 2" · ISO 2852 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33702
Hygienic pipe fitting · DN40 (1.5") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33212
Hygienic pipe fitting · DN50 (2") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33213
Hygienic pipe fitting · DN40 (1.5") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33712
Hygienic pipe fitting · DN50 (2") · Aseptoflex Vario		
	Pipe fitting · Hygienic pipe fitting · Hygienic pipe fitting · DN50 (2") · DIN 11851 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33713
Varivent Adapter · Type N, DN40...DN150 (1.5...6"), D = 68 · Aseptoflex Vario		
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E33222
	Clamp adapter · Varivent Adapter · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33722
SMS pipe fitting · DN40 (1.5") · Aseptoflex Vario		
	Pipe fitting · SMS pipe fitting · DN40 (1.5") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33731

Type	Description	Order no.
SMS pipe fitting · DN50 (2") · Aseptoflex Vario		
	Pipe fitting · SMS pipe fitting · DN50 (2") · SMS · for units with Aseptoflex Vario adapter · Metal to metal seal · Housing materials: stainless steel 316L / 1.4435	E33732
Welding adapter · D50 · Aseptoflex Vario		
	Welding adapter · Ø 50 mm · for units with Aseptoflex Vario adapter · Sealing by sealing ring · Housing materials: stainless steel 316L / 1.4435	E30122
Aseptoflex Vario · Aseptoflex Vario		
	sealing plug · Aseptoflex Vario · Housing materials: adapter: stainless steel 316L / 1.4435 / sealing ring: FKM	E30128
Clamp adapter · 1-1.5" · G ½		
	Clamp adapter · Clamp · 1-1.5" · ISO 2852 / DIN 32676 · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	E33401
Clamp adapter · 2" · G ½		
	Clamp adapter · Clamp · 2" · ISO 2852 / DIN 32676 · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	E33402
SMS pipe fitting · DN25 · G ½		
	Pipe fitting · SMS pipe fitting · DN25 · SMS · for units with G ½ adaptation · Housing materials: stainless steel 316L / 1.4404	E33430
Welding adapter · D30 · G ½		
	Welding adapter · G ½ · Ø 30 mm · for tanks · Housing materials: stainless steel 316L / 1.4435	E43300
Welding adapter · D29 · G ½		
	Welding adapter · G ½ · Ø 29 mm · for pipes · Housing materials: stainless steel 316L / 1.4435	E43301
Hygienic pipe fitting · DN25 (1") · G ½		
	Pipe fitting · G ½ · Hygienic pipe fitting · DN25 (1") · DIN 11851 · Housing materials: stainless steel 316L / 1.4435	E43304
Hygienic pipe fitting · DN40 (1.5") · G ½		
	Pipe fitting · G ½ · Hygienic pipe fitting · DN40 (1.5") · DIN 11851 · Housing materials: stainless steel 316L / 1.4435	E43305

You can find wiring diagrams and scale drawings from page 571



Process sensors

Type	Description	Order no.
Varivent Adapter · Type F, DN25 (1"), D = 50 · G ½		
	Clamp adapter · G ½ · Varivent type F · DN25 (1"), D = 50 · Housing materials: stainless steel 316L / 1.4435	E43306
Varivent Adapter · Type N, DN40...DN150 (1.5...6"), D = 68 · G ½		
	Clamp adapter · G ½ · Varivent type N · DN40...DN150 (1.5...6"), D = 68 · Housing materials: stainless steel 316L / 1.4435	E43307
sealing plug · G ½		
	sealing plug · G ½ · Housing materials: stainless steel 316L / 1.4435	E43308
Welding adapter ball · D35 · G ½		
	Welding adapter · G ½ · Ø 35 mm · Housing materials: stainless steel 316L / 1.4404	E30055
Welding adapter collar · D45 · G ½		
	Welding adapter · G ½ · Ø 45 mm · Housing materials: stainless steel 316L / 1.4404	E30056
Welding adapter · D30 · G ½		
	Welding adapter · G ½ · Ø 30 mm · for tanks · with leakage port · with leakage port · Housing materials: stainless steel 316L / 1.4435	E43309
Welding adapter · D29 · G ½		
	Welding adapter · G ½ · Ø 29 mm · for pipes · with leakage port · with leakage port · Housing materials: stainless steel 316L / 1.4435	E43310
Clamp adapter · 1-1.5" · G ½		
	Clamp adapter · G ½ · with leakage port · Clamp · 1-1.5" · ISO 2852 / DIN 32676 · with leakage port · Housing materials: stainless steel 316L / 1.4435	E43311
Clamp adapter · 2" · G ½		
	Clamp adapter · G ½ · with leakage port · Clamp · 2" · ISO 2852 / DIN 32676 · with leakage port · Housing materials: stainless steel 316L / 1.4435	E43312
	Welding mandrel · G ½ · carries away heat during welding · Housing materials: CW614N	E43314

Product selectors and further information can be found at: www.ifm.com

Type	Description	Order no.

Welding adapter collar · D45 · G ½



Welding adapter · G ½ · with leakage port · Housing materials: stainless steel 316L / 1.4404

E43315

Welding adapter · D50 · G ½



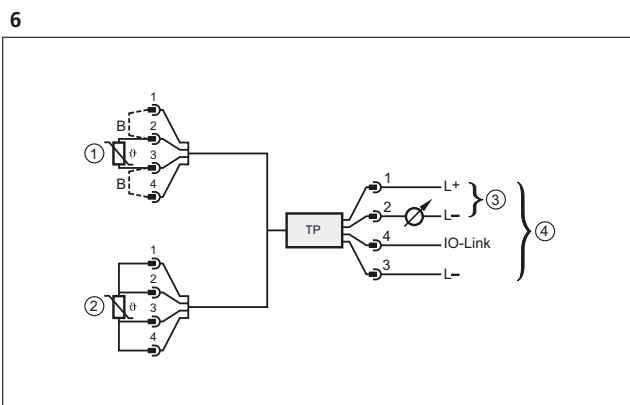
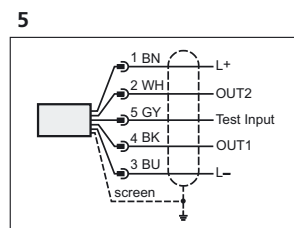
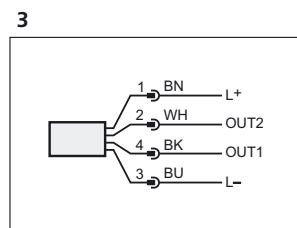
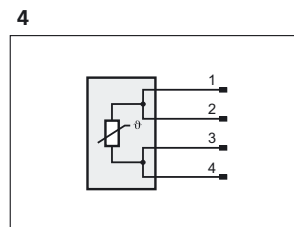
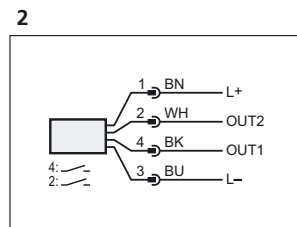
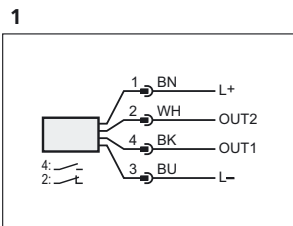
Welding adapter · G ½ · long design for deeper installation · long design for deeper installation · Housing materials: stainless steel 316L / 1.4435

E43319

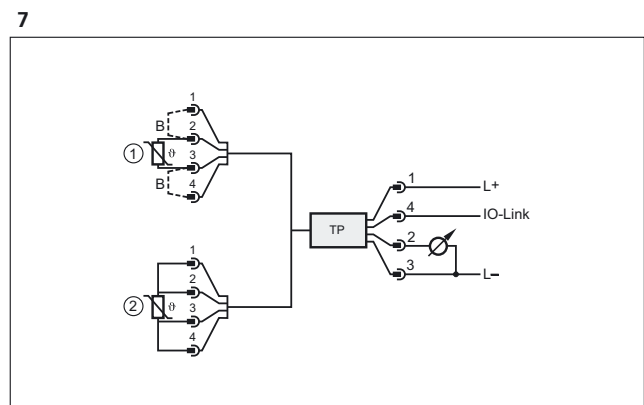
Wiring diagrams

Core colours

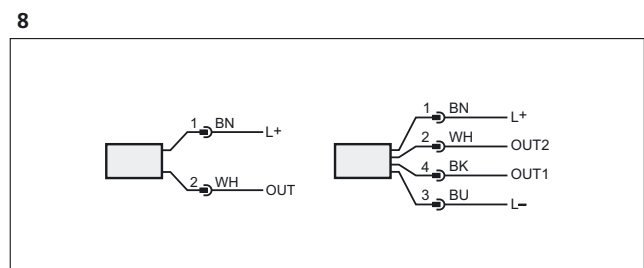
BK black
BN brown
BU blue
WH white
GY grey



1: Two-wire sensor, 2: Four-wire sensor, 3: Operation as 2-wire temperature transmitter, 4: Operation as 3-wire unit, IO-Link communication possible, B: link



2: Two-wire sensor, 2: Four-wire sensor, B: link

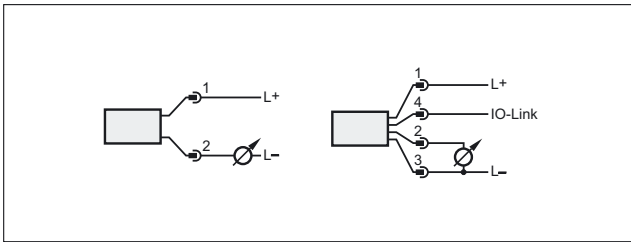




Process sensors

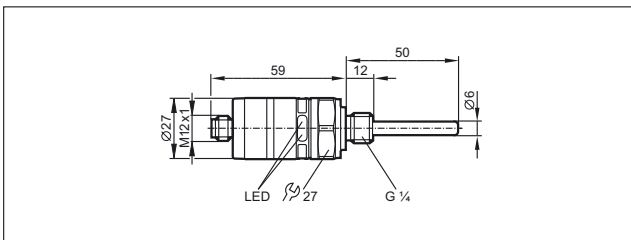
Wiring diagrams

9

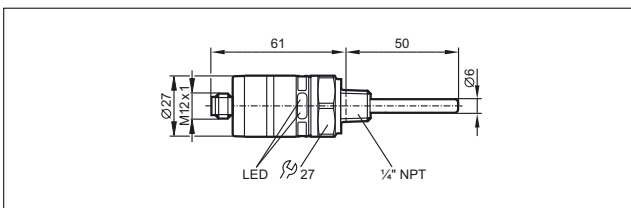


Scale drawings / drawing no. – CAD download: www.ifm.com

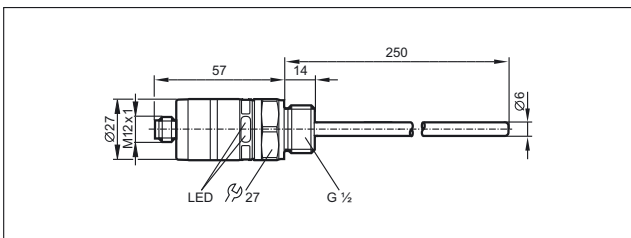
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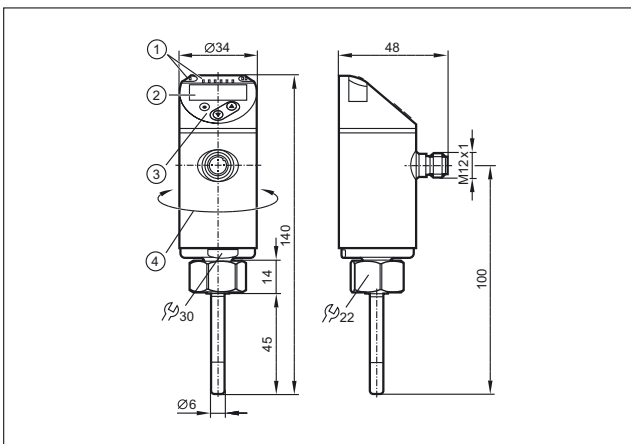
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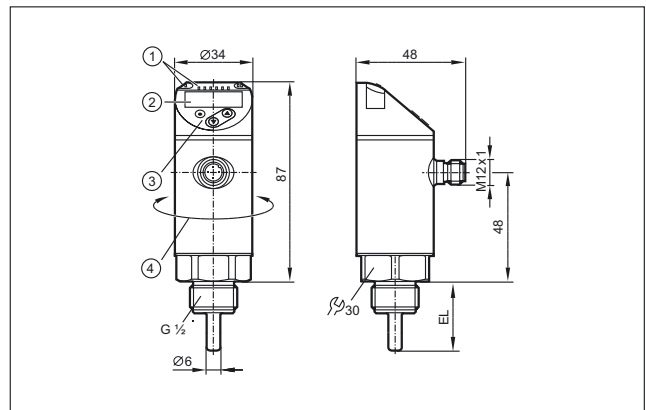


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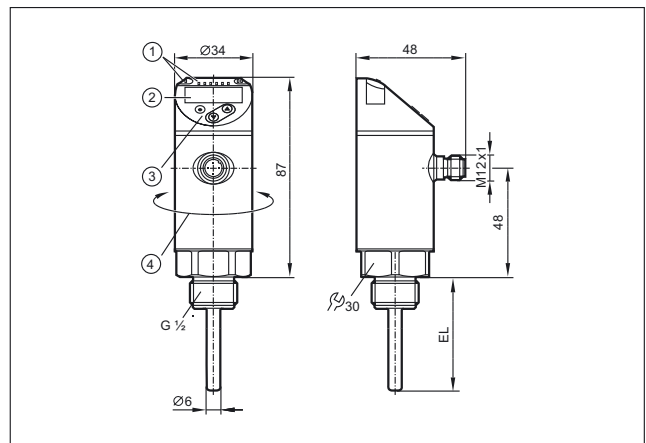
1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

5



1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

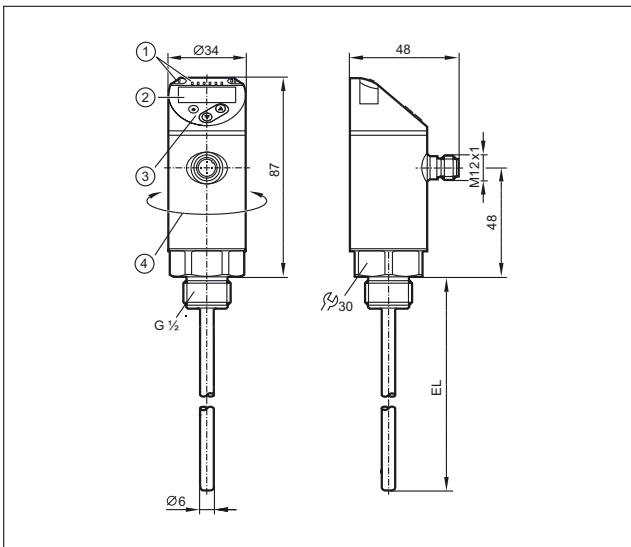
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1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

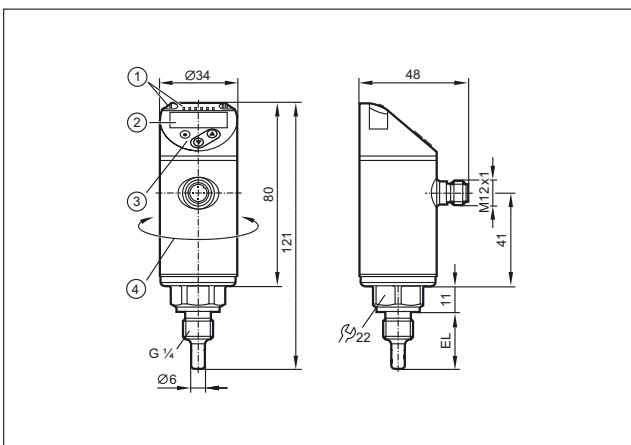
Scale drawings / drawing no. – CAD download: www.ifm.com

7



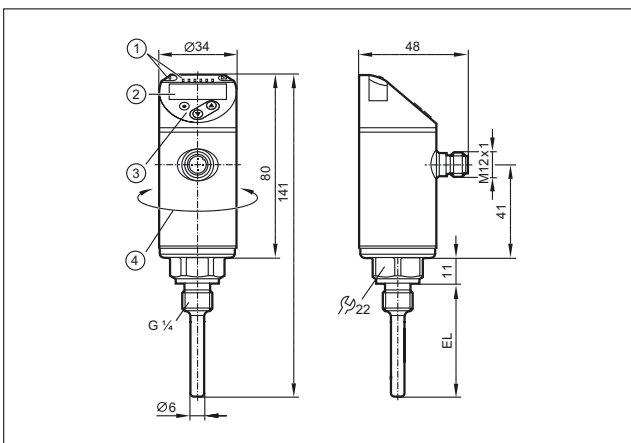
1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

8



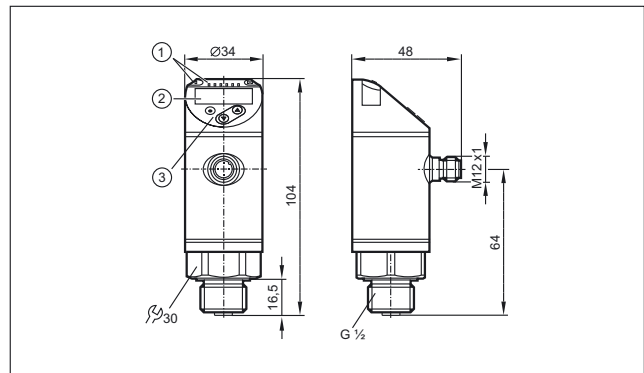
1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

9



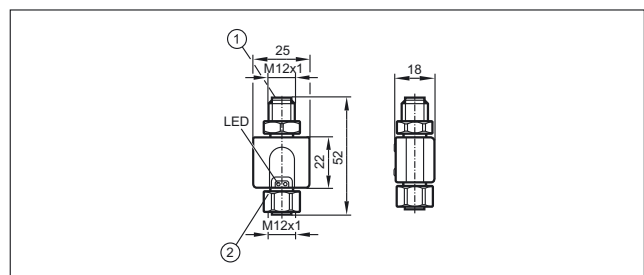
1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons, 4: Upper part of the housing can be rotated by 345°

10



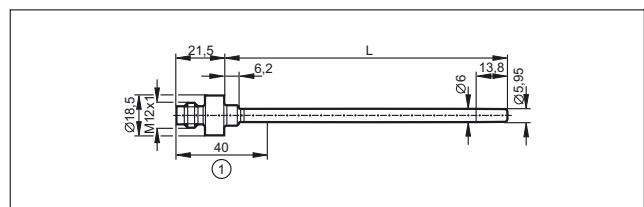
1: LEDs (display unit / switching status), 2: 4-digit alphanumeric display / alternating indication of red and green, 3: Programming buttons

11



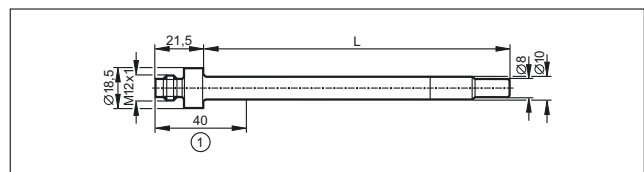
1: connection for voltage supply and output signals, 2: connection for temperature sensor

12



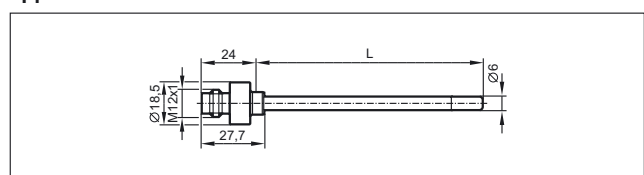
1: plug area, L = probe length (corresponds to installation length EL)

13



1: plug area, L = probe length (corresponds to installation length EL)

14



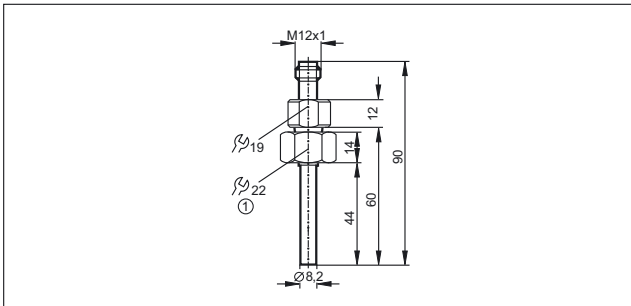
L = probe length (corresponds to installation length EL)



Process sensors

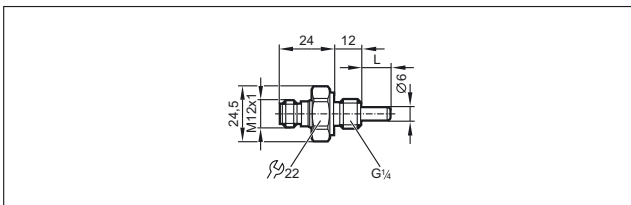
Scale drawings / drawing no. – CAD download: www.ifm.com

15

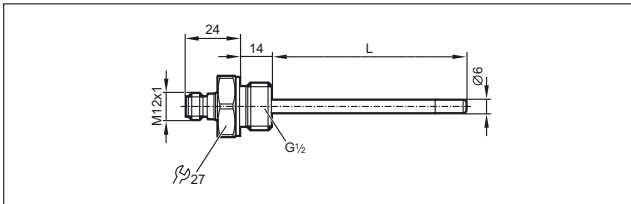


1: internal thread M18 x 1.5

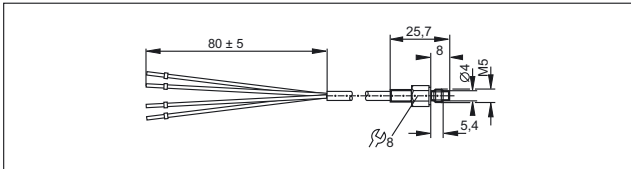
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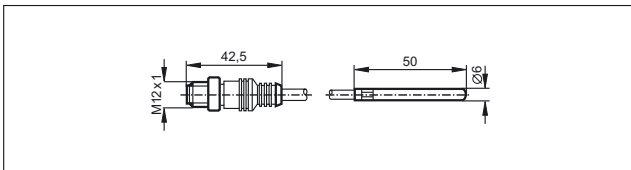
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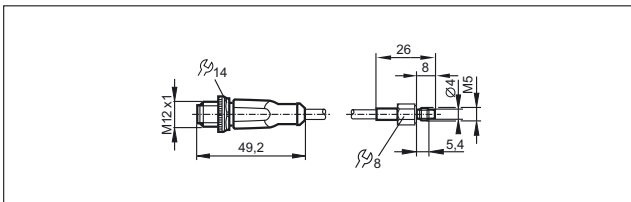
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19

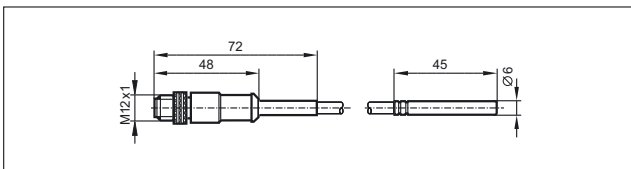


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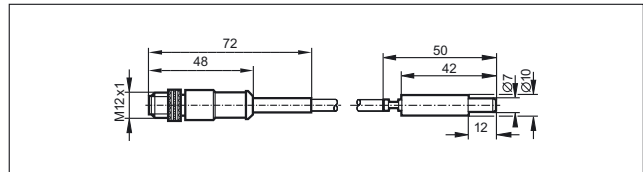


1: tightening torque 1.5 Nm

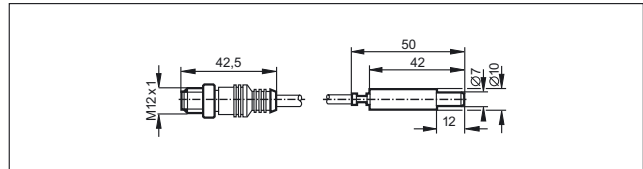
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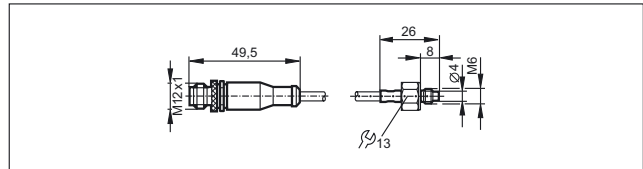
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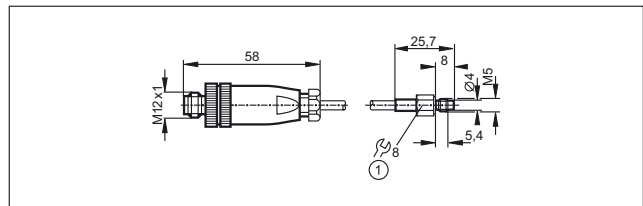
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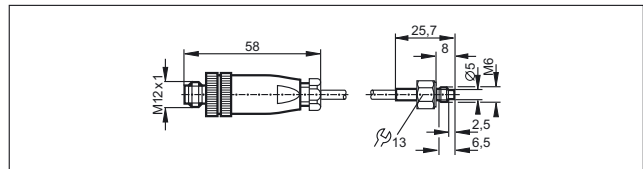


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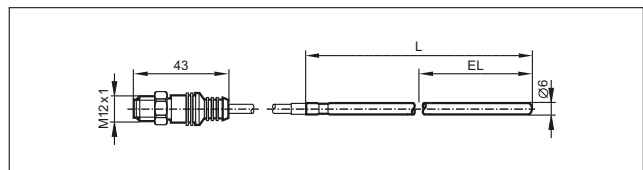


1: tightening torque 1.5 Nm

26

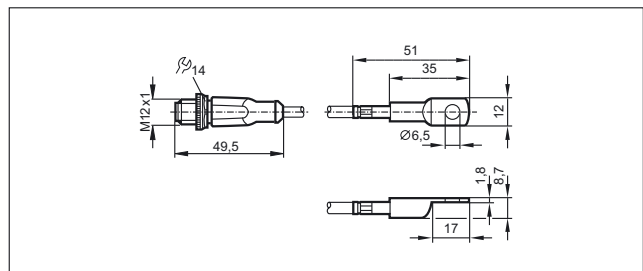


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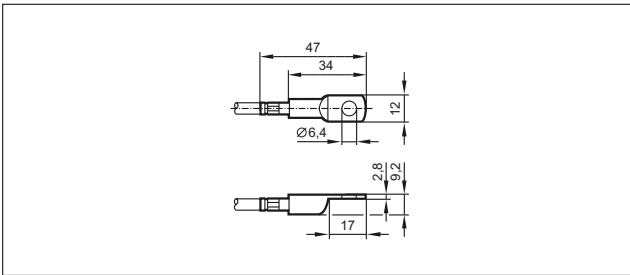
1: connection area, see remark

28

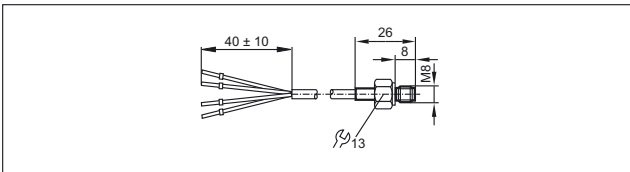


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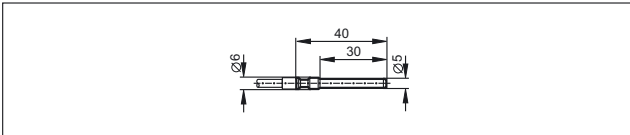
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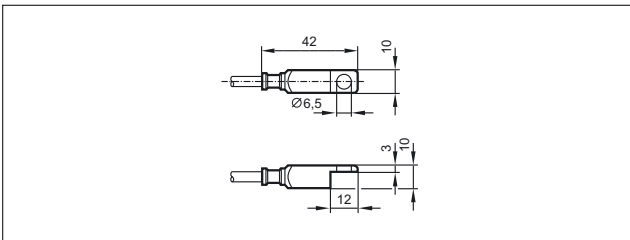
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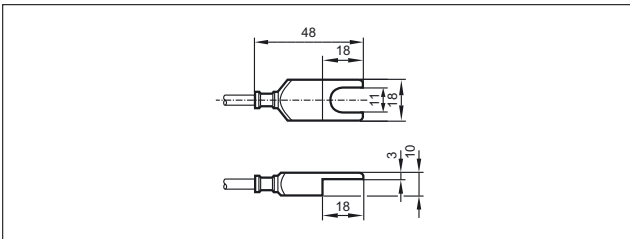
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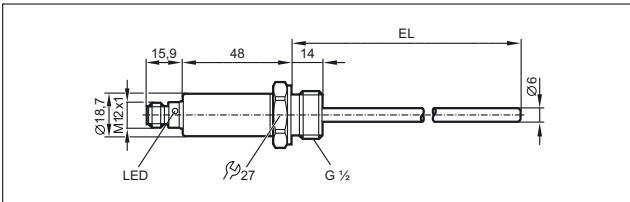
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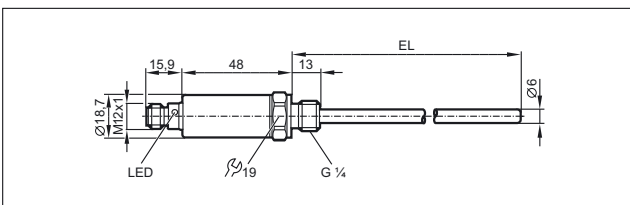
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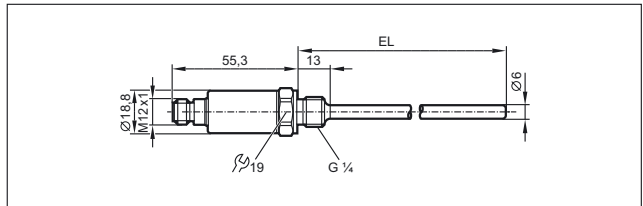
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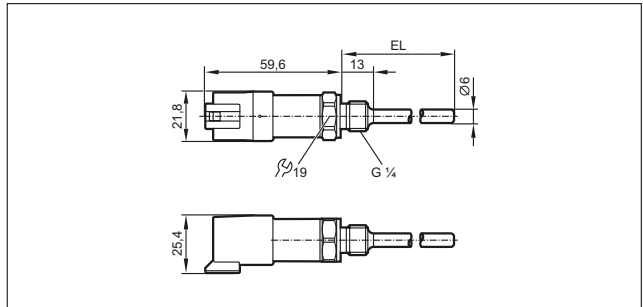
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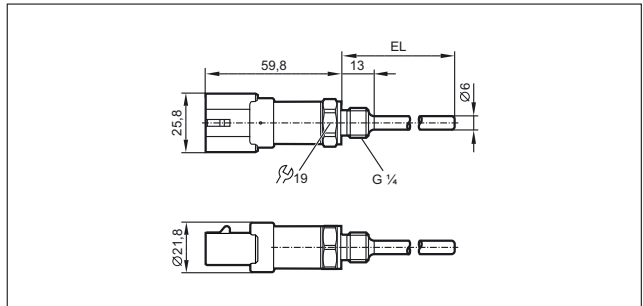
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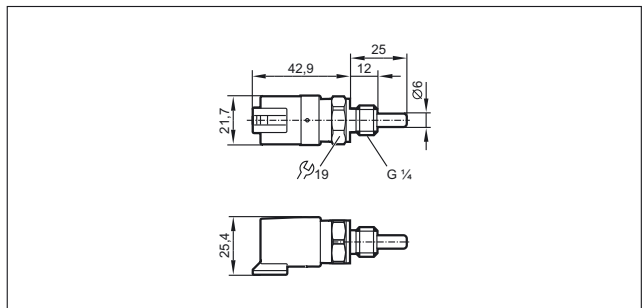
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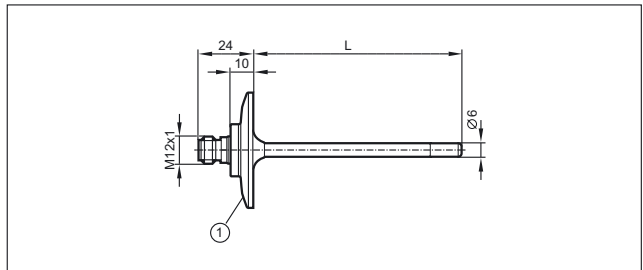
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39



40



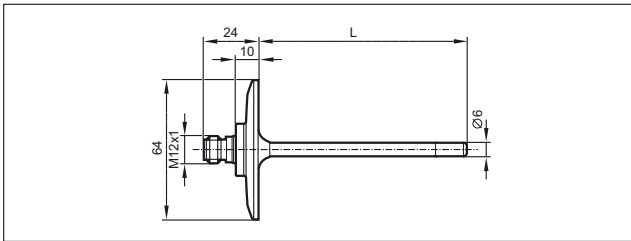
1: 1.5" clamp (ISO 2852), L = probe length (corresponds to installation length EL)



Process sensors

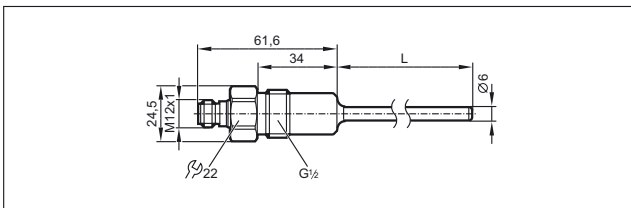
Scale drawings / drawing no. – CAD download: www.ifm.com

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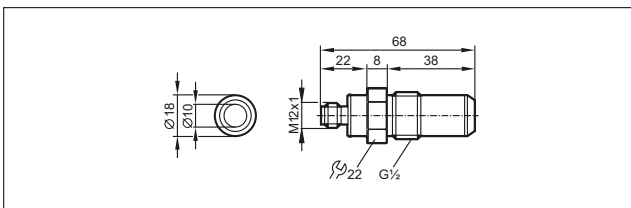
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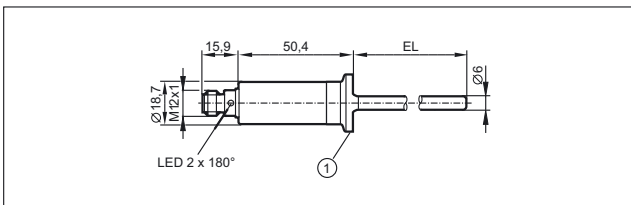


L = probe length (corresponds to installation length EL)

43

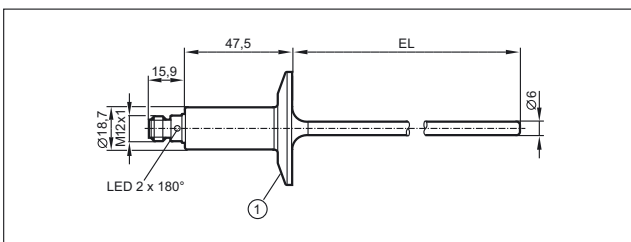


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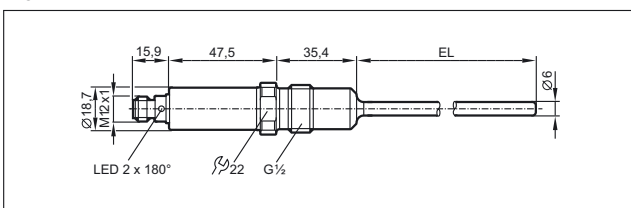


3/4" clamp (ISO 2852)

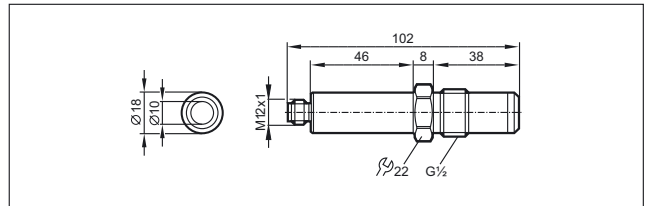
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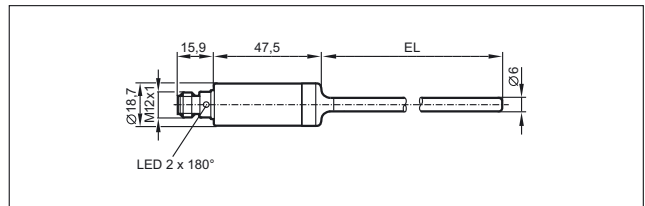
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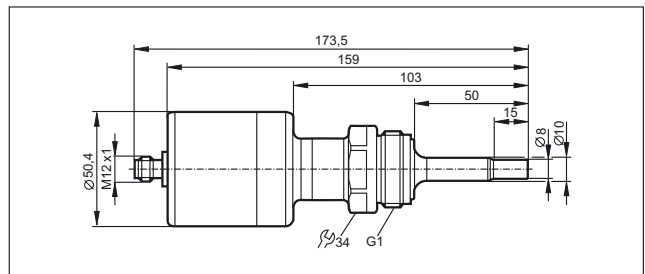
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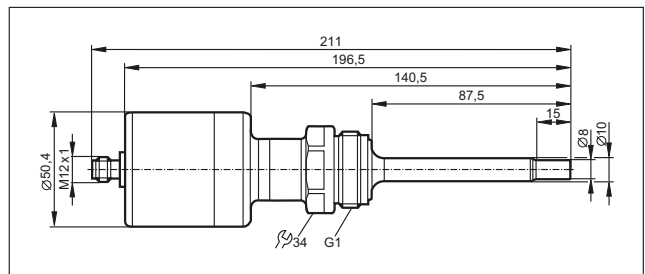
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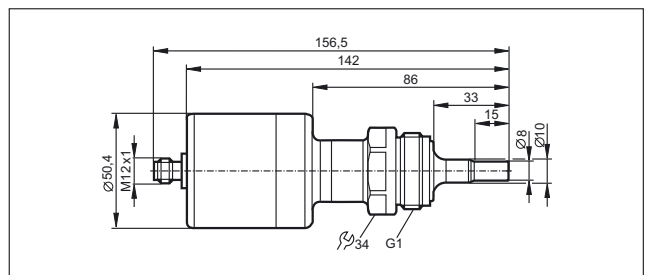
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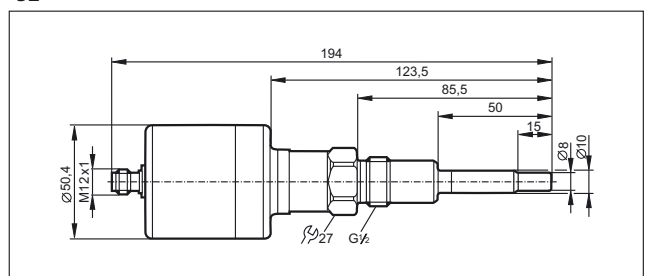
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51

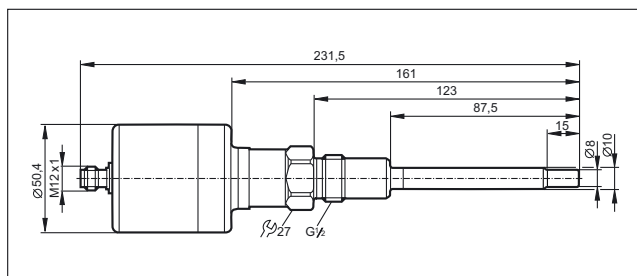


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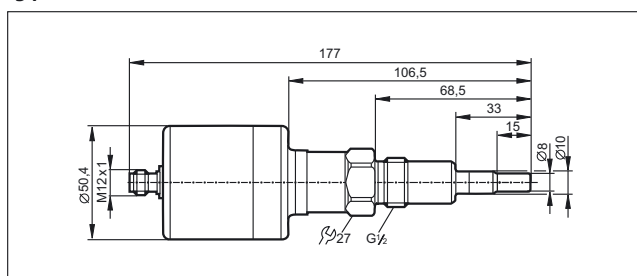


Scale drawings / drawing no. – CAD download: www.ifm.com

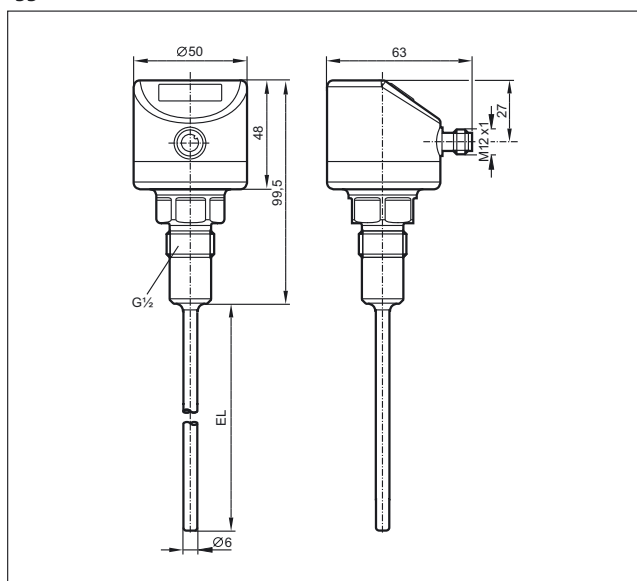
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54

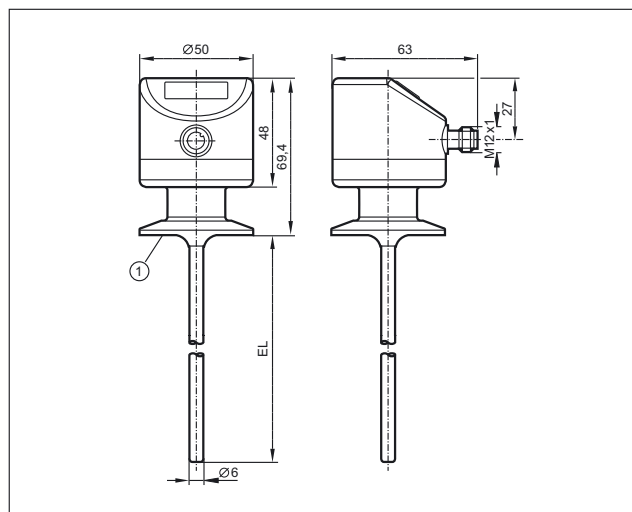


55



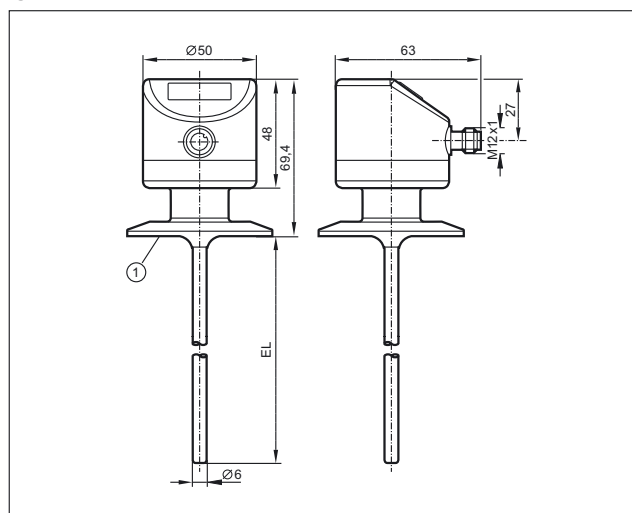
EL = Installation length

56



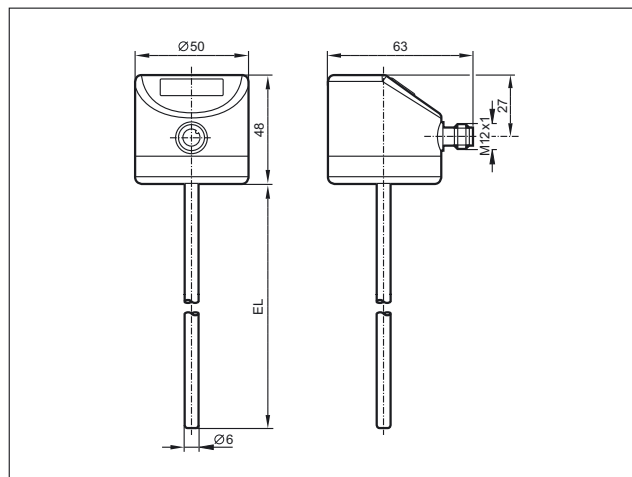
1: 1.5" clamp (ISO 2852), EL = Installation length

57



1: 2" clamp (ISO 2852), EL = Installation length

58



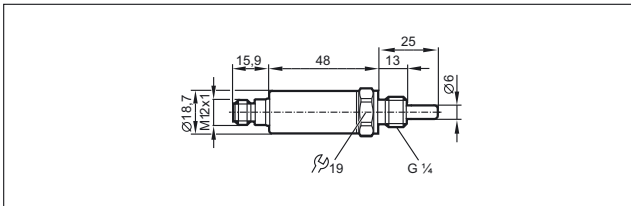
EL = Installation length



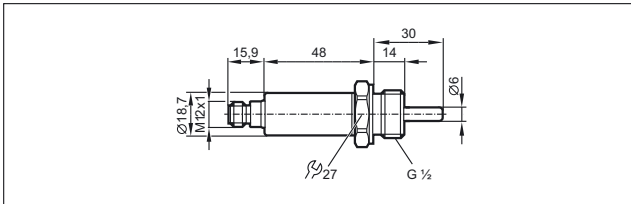
Process sensors

Scale drawings / drawing no. – CAD download: www.ifm.com

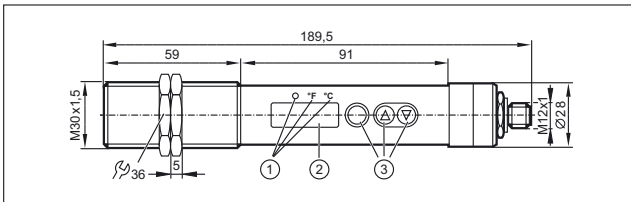
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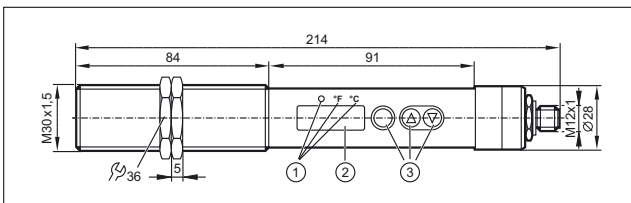
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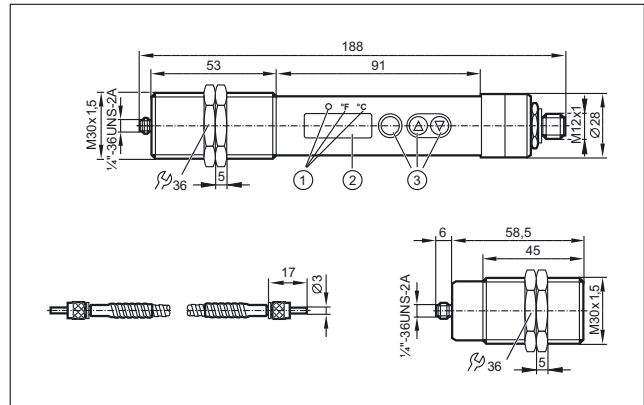
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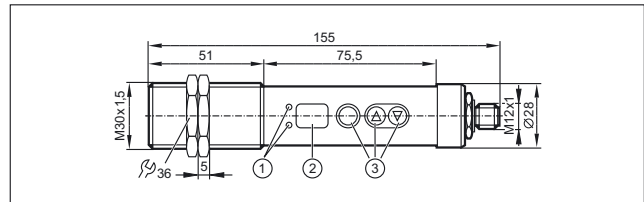
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63

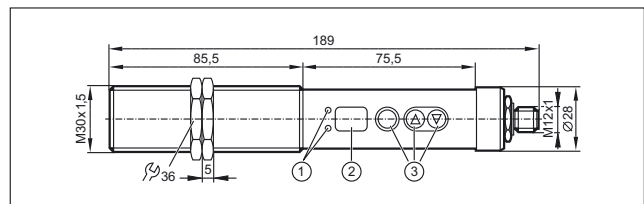


64



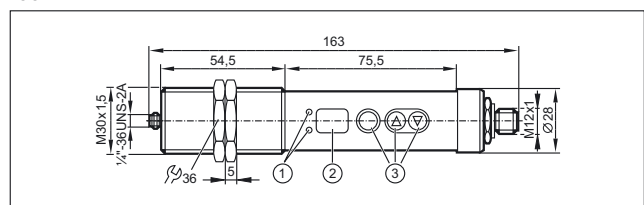
1: Programming buttons, 2: 7-segment LED display

65



1: LEDs (switching status), 2: 7-segment LED display (2 digits),
3: Programming buttons

66



1: LEDs (switching status), 2: 7-segment LED display (2 digits),
3: Programming buttons





Process sensors

User-friendly signal evaluation systems



Signal evaluation systems



Integrated flow, temperature and wire-break monitoring

Adjustable switch points for flow and temperature

Multicolour LED bar graph display for quick setting

Signal output using potential-free relay contacts (changeover contacts)

**Connection options:
Insulation displacement / screw terminals and cage clamps**



Evaluation systems for flow sensors

Various evaluation systems are offered for SF/SP type flow sensors. A multi-coloured LED bar graph indicates the flow. Moreover it is signalled via LEDs and relay outputs when an adjustable medium temperature has been reached or if there is a possible wire break from the sensor to the electronics. The operating elements are on the front. The evaluation systems are available both for AC and for DC supply voltage.

Sensors and control monitors are designed and approved for use in hazardous areas for applications in potentially explosive atmospheres. Wire monitoring between sensor and evaluation system as well as medium-temperature monitoring with optical display and signalling via potential-free relay outputs are also standard.

System overview	Page
Control monitors for industrial applications	582
Control monitors with ATEX approval	582 - 583
Control monitors with ATEX approval 2G	583
Accessories	583
Wiring diagrams	583 - 584
Scale drawings / drawing no. – CAD download: www.ifm.com	585



Process sensors

Control monitors for industrial applications

Type	U _B / Tolerance [V] / [%]	Current consumpt. [mA]	Power consumpt. [VA]	Power-on delay time [s]	Output when flow is present	Output when temperature is exceeded	Output in case of wire break	Draw- ing no.	Order no.

Combicon connector · Wiring diagram no. 3

	90...240 AC / -5 / +10	–	4	10...80	relay energised	relay energised	relay de-energised	1	SN0150*

Combicon connector · Wiring diagram no. 4

	90...240 AC / -5 / +10	–	4	10...80	relay energised	–	relay de-energised	1	SN0151*

Combicon connector · Wiring diagram no. 5

	24 DC / +10 / -20	90	–	10...80	relay energised	relay energised	relay de-energised	1	SR0150*

Combicon connector · Wiring diagram no. 6

	24 DC / +10 / -10	90	–	10...80	relay energised	–	relay de-energised	1	SR0153*

M12 connector · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	19...36 DC	70	–	10	no / nc programmable	–	–	2	SR5900

1/2" UNF-Connector · Wiring diagram no. 2 · Connector group 34

	85...265 AC / -5 / +10	–	< 3.5	10	no / nc programmable	–	–	3	SR5906*

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Control monitors with ATEX approval

Type	U _B / Tolerance [V] / [%]	Current consumpt. [mA]	Power consumpt. [VA]	Power-on delay time [s]	Output when flow is present	Output when temperature is exceeded	Output in case of wire break	Draw- ing no.	Order no.

15 terminals...2.5 mm²

	230 AC / ± 10	–	5	30	relay energised	–	relay de-energised	4	SN2301*
	110 AC / ± 10	–	5	30	relay energised	–	relay de-energised	4	SN2302*

Type	U _b / Tolerance [V] / [%]	Current consumpt. [mA]	Power consumpt. [VA]	Power-on delay time [s]	Output when flow is present	Output when temperature is exceeded	Output in case of wire break	Draw- ing no.	Order no.

15 terminals...2.5 mm²

24 DC / ± 10	125	–	30	relay energised	–	relay de-energised	4	SR2301*

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Control monitors with ATEX approval 2G

Type	U _b / Tolerance [V] / [%]	Current consumpt. [mA]	Power consumpt. [VA]	Power-on delay time [s]	Output when flow is present	Output when temperature is exceeded	Output in case of wire break	Draw- ing no.	Order no.

15 terminals...2.5 mm² · Wiring diagram no. 7

24 DC / ± 15	100	–	10	relay energised	–	–	5	SR307A*

*** Note on use of miniature fuses for electrical connection**

Miniature fuse to IEC60127-2 sheet 1, ≤ 5 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Accessories

Type	Description	Order no.



Combicon connector · with cage clamps 4 poles · Housing materials: current carrying parts: copper alloy tin-plated

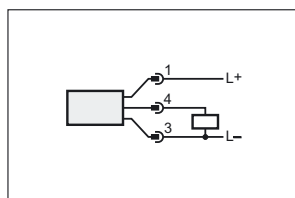
E40171

Wiring diagrams

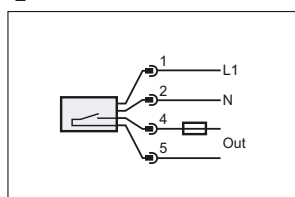
Core colours

BN	brown
BU	blue
BK	black
WH	white
GY	grey

1



2

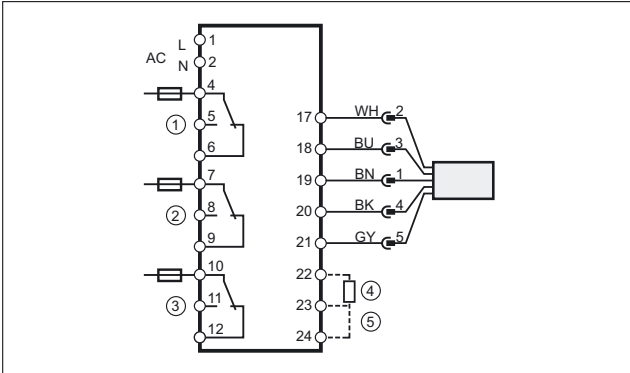




Process sensors

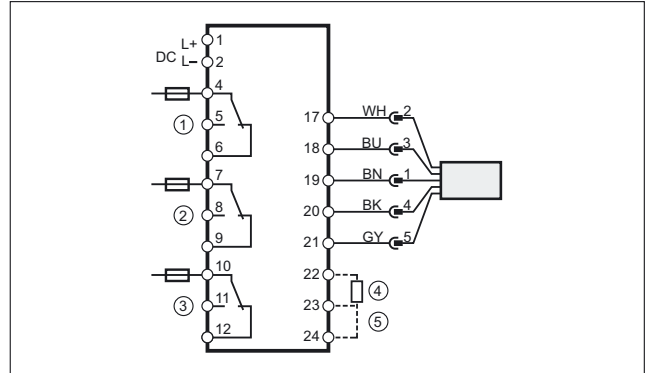
Wiring diagrams

3



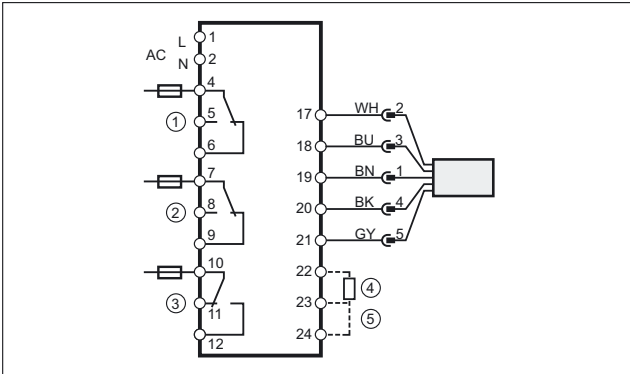
1: Flow monitoring, 2: Wire break monitoring, 3: Temperature monitoring, 4: Power-on delay time, 5: Selection liquid / gas

5



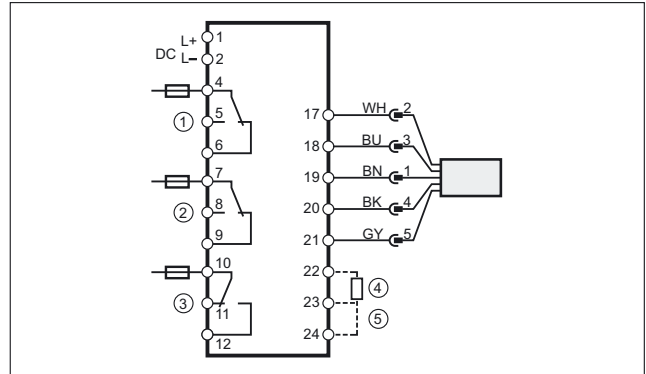
1: Flow monitoring, 2: Wire break monitoring, 3: Temperature monitoring, 4: Power-on delay time, 5: Selection liquid / gas

4



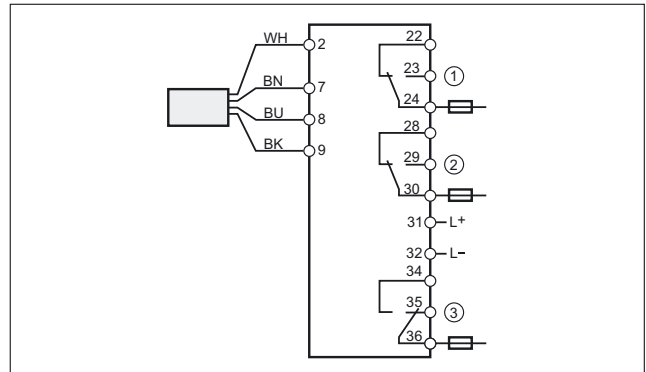
1: Flow monitoring, 2: Wire break monitoring, 3: Temperature monitoring, 4: Power-on delay time, 5: Selection liquid / gas, Note: miniature fuse to IEC60127-2 sheet 1,, ≤ 5 A (fast acting)

6



1: Flow monitoring, 2: Wire break monitoring, 3: Temperature monitoring, 4: Power-on delay time, 5: Selection liquid / gas, Note: miniature fuse to IEC60127-2 sheet 1,, ≤ 5 A (fast acting)

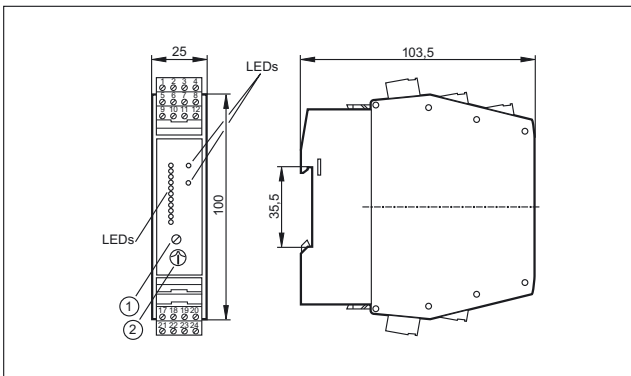
7



1: Flow monitoring, 2: Fault monitoring, 3: Temperature monitoring, Note: miniature fuse to IEC60127-2 sheet 1,, ≤ 5 A (fast acting), Place the fuse outside the hazardous area.

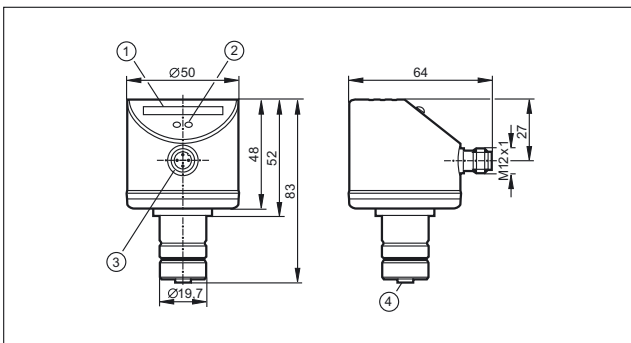
Scale drawings / drawing no. – CAD download: www.ifm.com

1



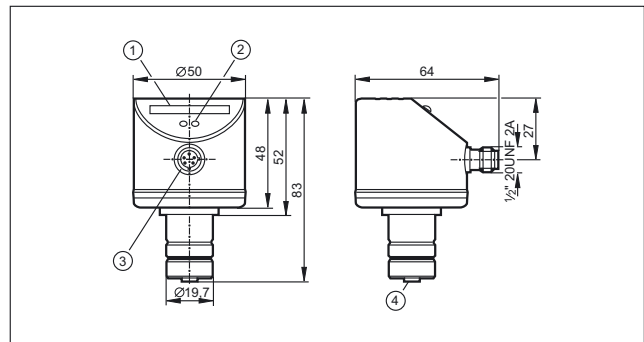
1: Potentiometer (switch point flow), 2: Potentiometer (switch point temperature)

2



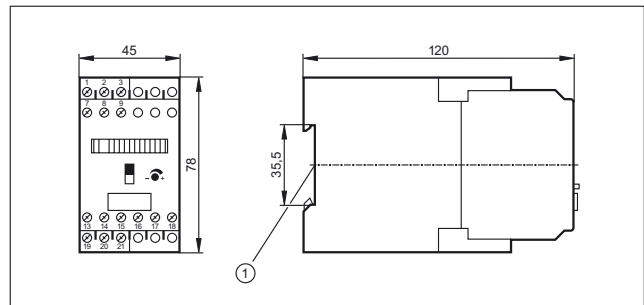
1: LED display, 2: setting pushbutton, 3: connection for voltage supply and output signals, 4: connection for flow sensor

3



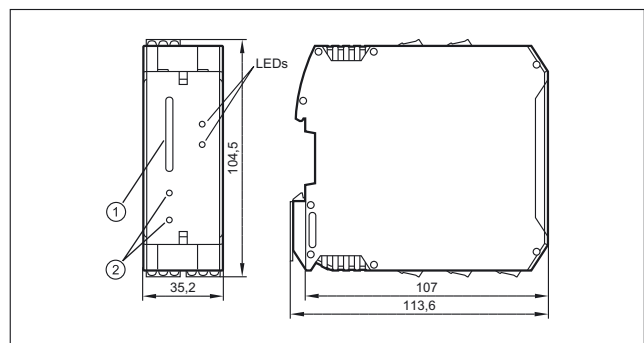
1: LED display, 2: setting pushbutton, 3: connection for voltage supply and output signals, 4: connection for flow sensor

4



1: Mounting on DIN rail

5



1: LED display, 2: setting pushbuttons



Process sensors

Reliable valve position monitoring



Feedback systems for valves and valve actuators



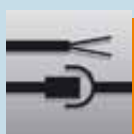
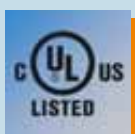
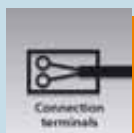
Dual inductive feedback sensors for pneumatic actuators and valves

Designed for simple fit to common actuators based on VDI / VDE 3845

AS-i valve sensor for quick and safe „plug & play“ installation

Position feedback for rising stem valves up to 80 mm

Permanent valve monitoring for condition-based maintenance



Dual sensor for quarter-turn actuators

A round switching cam, also called "puck", that has at least two metal screws positioned at 90° to each other or a version that is freely adjustable to any angle is mounted to the actuator shaft. The screws are located at a different height. Two inductive sensors detect the upper or lower metal screw depending on the valve position and thus the two switch positions of the actuator. This system operates reliably with no wear at all. It is resistant to external influence and insensitive to mechanical stress such as vibration and shock.

Sensor for rising stem valves

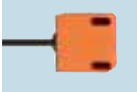
Two or three switch points can be set via pushbuttons over a stroke of 80 mm. Thanks to a resolution of 0.2 mm, the sensor detects even very small changes in the position of the valve. The inductive measuring principle guarantees wear-free non-contact operation.

System overview	Page
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Process sensors

Sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.
Cable 2 m · Output function  · AC/DC · Wiring diagram no. 1									
	40 x 26 x 40	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	1	IN0110*
Terminals · Output function  · AC/DC · Wiring diagram no. 13									
	33 x 60 x 92	4 nf	PA (polyamide)	20...250	IP 67	25 / 50	350 / 100	2	IN0131*
Cable 2 m · Output function  · DC PNP · Wiring diagram no. 2									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	3	IN5251
Cable 6 m · Output function  · DC PNP · Wiring diagram no. 2									
	40 x 26 x 26	4 nf	PC (polycarbonate)	10...36	IP 67	1300	250	3	IN5304
Cable 10 m · Output function  · DC PNP · Wiring diagram no. 2									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	3	IN5323
M12 connector · Output function  · DC PNP/NPN · Wiring diagram no. 14 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	4	IN5224
M12 connector · Output function  · DC PNP/NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	40 x 26 x 47	4 nf	PBT	10...36	IP 67	250	250	5	IN5331
M12 connector · Output function  · DC PNP · Wiring diagram no. 4 · Connector groups 8, 9, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 151, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	4	IN5225
	40 x 26 x 47	4 nf	PBT	10...36	IP 67	1300	250	5	IN5327
M18 connector · Output function  · DC PNP · Wiring diagram no. 4 · Connector group 28									
	40 x 26 x 26	4 nf	PBT	10...36	IP 67	1300	250	6	IN5285

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

M18 connector · Output function   · AC/DC · Wiring diagram no. 5 · Connector group 28

	40 x 26 x 40	4 nf	PBT	20...250	IP 67	25 / 50	250 / 100	7	IN0108*

Rd 24 x 1/8 connector 6 pins · Output function   · DC PNP · Connector groups 38, 44, 159, 160

	40 x 26 x 60	4 nf	PBT	10...36	IP 67	1300	250	8	IN5334

Terminals · Output function   · DC PNP · Wiring diagram no. 15

	33 x 60 x 92	4 nf	PA (polyamide)	10...30	IP 67	500	100	2	IN5409

Terminals · Output function   · DC PNP · Wiring diagram no. 16

	33 x 60 x 92	4 nf	PA (polyamide)	10...30	IP 67	500	100	9	IN5410

f = flush / nf = non flush / qf = quasi-flush

* Note on use of miniature fuses for electrical connection

Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting) Recommendation: check the unit for reliable function after a short circuit.

Sensors for industrial applications, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

M12 connector · AS-i · Wiring diagram no. 6 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 152, 153, 155, 184, 186, 188, 192, 193, 194, 202, 205

	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	–	10	AC2315

M12 connector · Output function transistor PNP · AS-i · Wiring diagram no. 6 · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202

	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	100	11	AC2316

M12 connector · Output function transistor PNP · 2 inputs / 2 outputs · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202

	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	–	11	AC2317

f = flush / nf = non flush / qf = quasi-flush

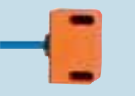


Process sensors

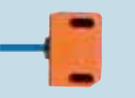
Sensors with ATEX approval 1G / 2G and 1D

Type	Dimensions [mm]	Sensing range [mm]	Material	U _{nom.} at 1 KΩ [V]	U _b [V]	Internal capacit. [nF]	Internal inductance [μH]	f [Hz]	Draw- ing no.	Order no.

Cable 2 m · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 7

	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	3	NN5009

Cable 10 m · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 7

	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	140	1800	3	NN5011

M12 connector · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 8 · Connector group 195

	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	12	NN5008

M18 connector · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 9 · Connector group 28

	40 x 26 x 26	4 nf	PBT	8.2 DC	7.5...15 DC	140	130	1800	6	NN5013

Terminals · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 17

	33 x 60 x 92	4 nf	PA (polyamide)	8.2 DC	7.5...15 DC	—	—	500	2	NN504A

Terminals · Output function 2 x normally closed · Connection to certified intrinsically safe circuits with the max. values U = 15 V / I = 50 mA / P = 120 mW · Wiring diagram no. 18 · Connector group --

	33 x 60 x 92	4 nf	PA (polyamide)	8.2 DC	7.5...15 DC	—	—	500	9	NN505A

f = flush / nf = non flush / qf = quasi-flush

Sensors with ATEX approval 3D and / or 3G

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

M12 connector · Output function transistor PNP · 2 inputs / 1 output · Connector groups 196, 198

	55 x 60 x 35	4	PBT (Pocan)	26.5...31.6	IP 67	—	—	13	AC326A

M12 connector · Output function  /  · DC PNP · Wiring diagram no. 4 · Connector groups 196, 198

	40 x 26 x 47	4	PBT	10...30	IP 67	1300	100	14	IN507A

Sensors for rising stem valves

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

Cable 2 m · Output function 1...5 V analogue · DC · Wiring diagram no. 10

	67.5 x 43 x 110	–	PA	18...36	IP 65 / IP 67	–	–	15	IX5002

Cable 2 m · Output function 3 x normally open · DC PNP · Wiring diagram no. 11

	67.5 x 43 x 110	–	PA	18...36	IP 65 / IP 67	–	100	16	IX5006

Cable with connector 0.3 m · Output function 3 x normally open · DC PNP · Wiring diagram no. 12 · Connector groups 152, 155, 186, 192, 194, 205

	65 x 52 x 110	–	PA	18...36	IP 65 / IP 67	–	100	17	IX5010
	65 x 43 x 110	0.2	PA	18...36	IP 65 / IP 67	–	100	18	ZZ0214

Sensors for rising stem valves, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

Cable with connector 0.15 m · AS-i · Wiring diagram no. 6 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 152, 153, 155, 184, 186, 188, 192, 193, 194, 202, 205

	65 x 52 x 110	–	PA	26.5...31.6	IP 65 / IP 67	–	–	17	IX5030

Added value packages with Bürkert solenoid valve

Type	Description	Order no.
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 20 mm · Hole spacing 80 mm · Connector	AC0017
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 80 mm · Connector	AC0019
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 130 mm · Connector	AC0020



Process sensors

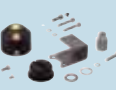
Added value packages with Norgren Herion solenoid valve

Type	Description	Order no.
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 20 mm · Hole spacing 80 mm · Connector	AC0021
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 80 mm · Connector	AC0022
	Added value package AS-i for pneumatic quarter-turn actuators · A/B slave · Shaft height 30 mm · Hole spacing 130 mm · Connector	AC0023

Switching cams for sensors with quarter-turn actuators

Type	Description	Order no.
	Target puck · Ø 53 mm · adjustable · Housing materials: Target puck: PA 6 black / Metal parts: stainless steel	E12516
	Target puck · Ø 53 mm · Housing materials: Target puck: PA 6 black / Metal parts: stainless steel	E12517
	Target puck · Ø 55 mm · Inverted function · Housing colour: black · Housing materials: Target puck: PVC / screws: high-grade stainless steel / Metal ring: stainless steel	E17205
	Target puck · Ø 102 mm · adjustable target screws · Housing colour: black · Housing materials: Target puck: PVC / screws: stainless steel 316Ti / 1.4571	E17119
	Target puck · Ø 102 mm · 3 possible switching flag positions · Housing colour: black · Housing materials: Target puck: PA 6 / screws: V2A	E17328
	Target puck · Ø 102 mm · Housing colour: black · 8 possible switching flag positions · Housing materials: Target puck: PA 6 / screws: V2A	E17329
	direction indicator black · 12 x 4.8 · For target puck · Housing materials: POM	E17295
	direction indicator yellow · 12 x 4.8 · For target puck · Housing materials: POM	E17296
	Spacer · Housing materials: PA 6 black / screw: stainless steel	E12526

Accessories for quarter-turn actuator sensors

Type	Description	Order no.
	Spacer · 10 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	E10579
	Spacer · 3 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	E10584
	Spacer · 5 mm · for compensation between target pucks and dual sensor IND · Housing materials: PBT	E10585
	Cable gland · M20 x 1.5 · Housing materials: PA 6.6	E12208
	Protective cap · M20 x 1.5 · Housing materials: PA 6.6	E12209
	Plug for covering the oblong holes · Housing materials: EPDM	E12212
	reinforcement bracket · for type IND · Housing materials: stainless steel 316Ti / 1.4571	E11310
	protective housing · Accessory for valve sensors · for type IND · Housing materials: stainless steel	E11984
	Mounting kit · MS-MEC-KU-RA--F04A · for ball valve Mecafrance ISO5211/F04 DN25 PN40 · Detection of the "ON/OFF" position by means of the IND dual sensor	E10597

Accessories for rising stem valve sensors

Type	Description	Order no.
	Mounting adapter · for Alfa Laval valves type SSV (Single Seat Valves) · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / target: stainless steel 316L / 1.4404 / screws: stainless steel / clamping device: stainless steel	E12470
	Mounting adapter · for Alfa Laval valves type LKLA-T (Butterfly Valves) · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / clamping device: stainless steel / target: stainless steel 316L / 1.4404 / screw: stainless steel / sealing: EPDM	E12476
	Mounting adapter · for SPX/APV valves type single seat valves · accessory for IX5010, IX5030 · Housing materials: flange: high-grade stainless steel / spacer: POM / target: stainless steel 316L / 1.4404	E12515
	Mounting adapter · for SPX/APV valves type butterfly valves · accessory for IX5010, IX5030 · Housing materials: flange: high-grade stainless steel / spacer: POM / target: stainless steel 316L / 1.4404 / sealing: FPM Shore hardness A 80° C	E12501

You can find wiring diagrams and scale drawings from page 594



Process sensors

Type	Description	Order no.
	Mounting adapter · for GEA single-seat valves · accessory for IX5010, IX5030 · Housing materials: adapter: PA 6 / target: stainless steel 316L / 1.4404	E12478
	Mounting adapter · for Bardiani valves · accessory for IX5010, IX5030 · Housing materials: adapter: PA / target: stainless steel 316L / 1.4404	E12170

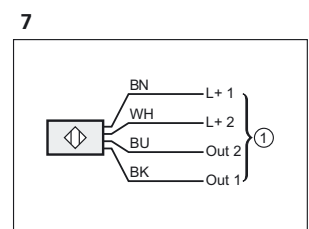
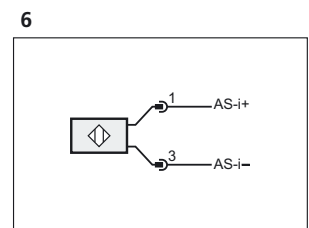
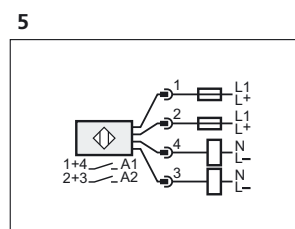
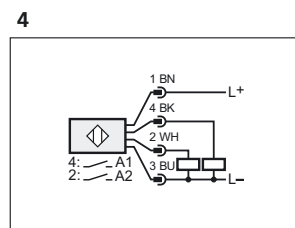
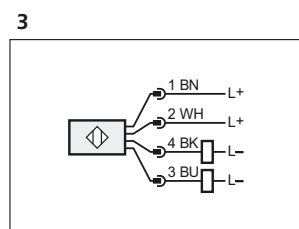
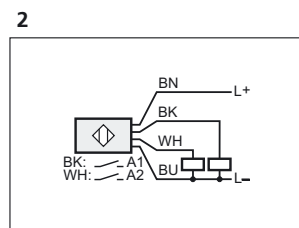
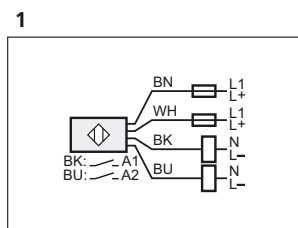
Accessories mounting sets

Type	Description	Draw- ing no.	Order no.
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	19	E12519
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	20	E12520
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	21	E12521
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	22	E12522
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	23	E12523
	Mounting set · for type IND, INE · Housing materials: Mounting plate: plastics / Metal parts: stainless steel	24	E12524

Wiring diagrams

Core colours

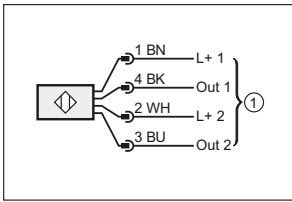
BN	brown
BU	blue
BK	black
WH	white
GY	grey



1: connection to NAMUR-amplifier

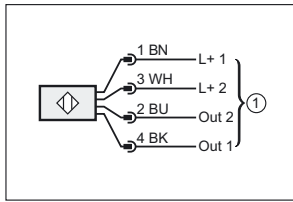
Wiring diagrams

8



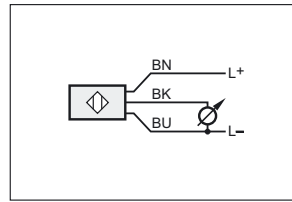
1: connection to NAMUR-amplifier

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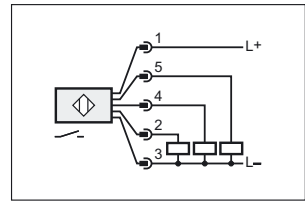


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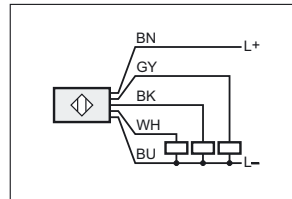
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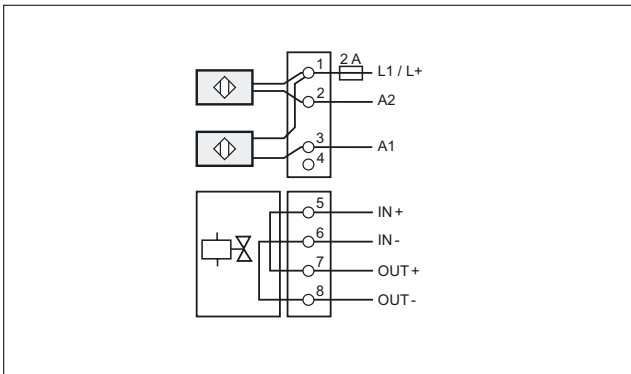
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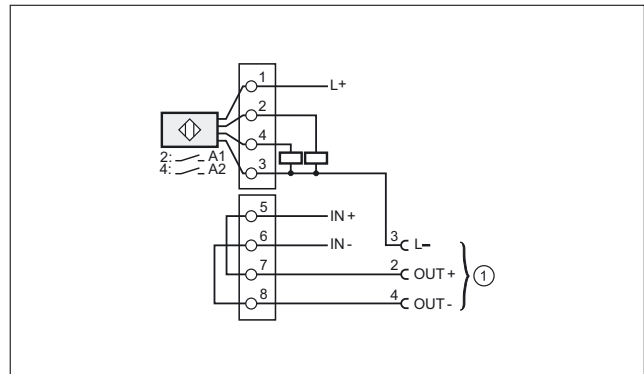
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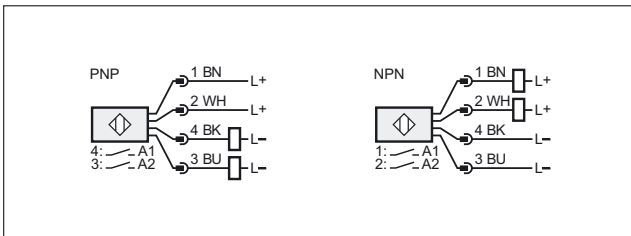
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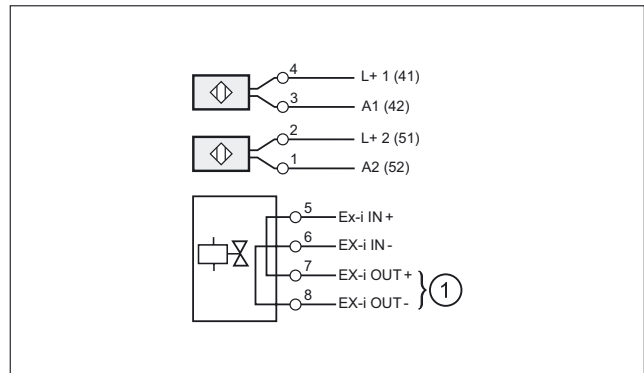
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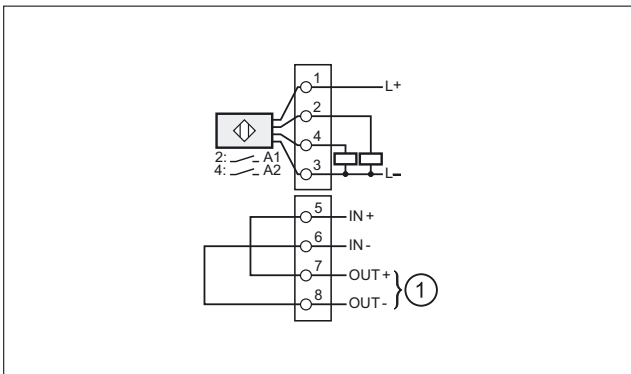
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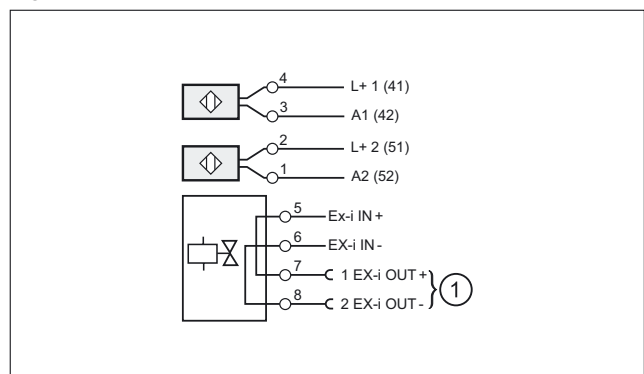


15



1: solenoid valve

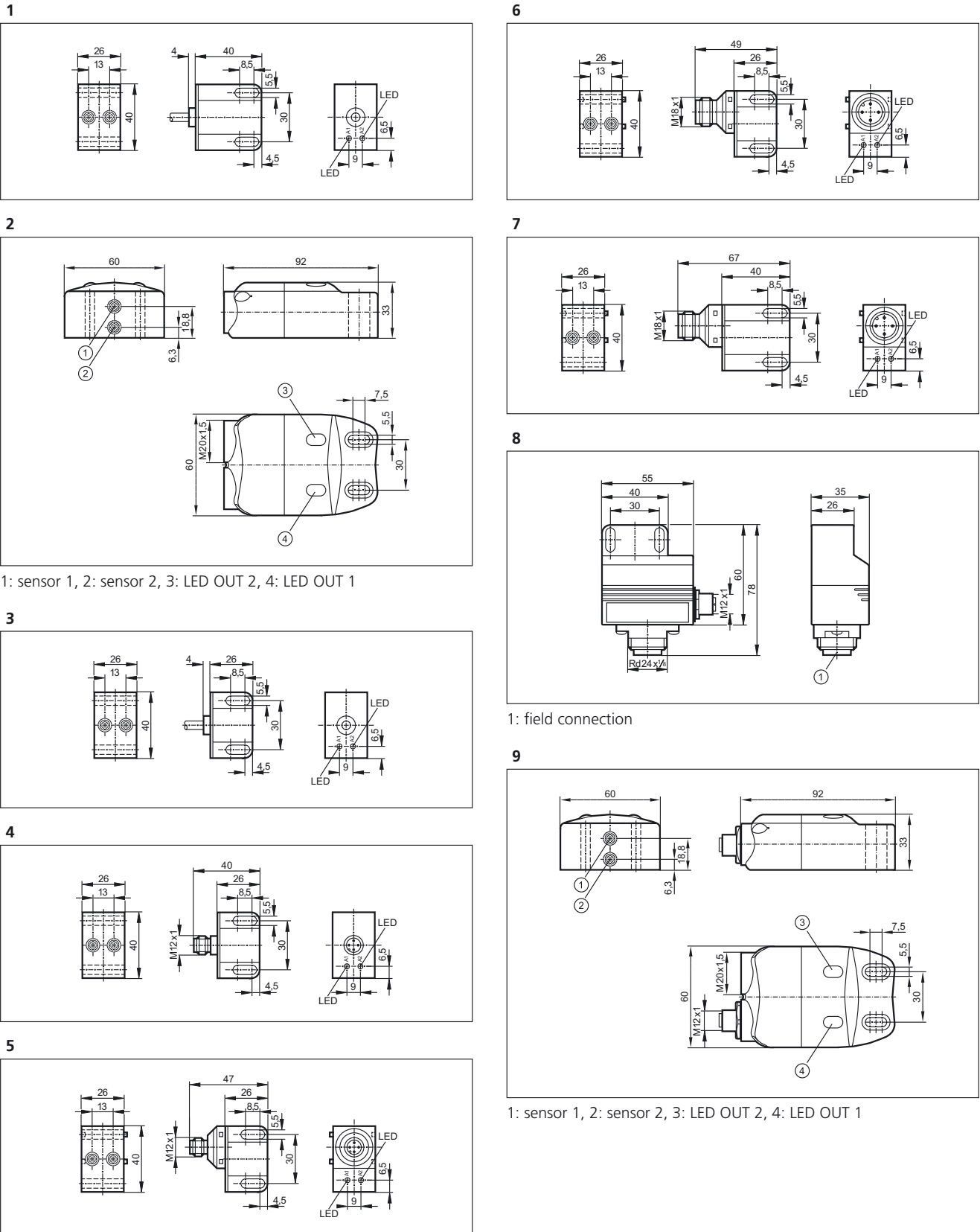
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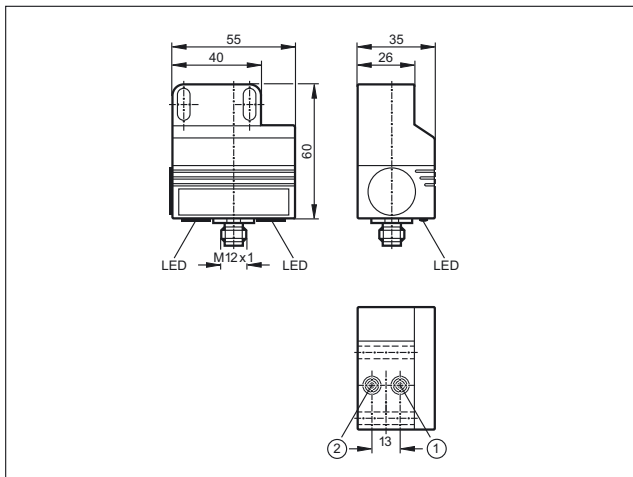
Process sensors

Scale drawings / drawing no. – CAD download: www.ifm.com



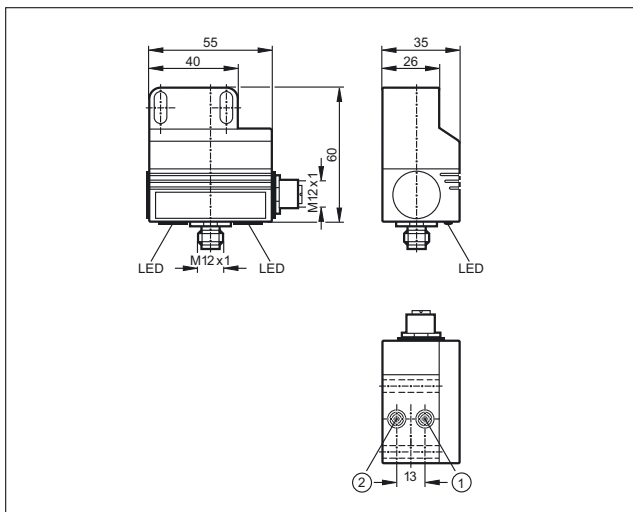
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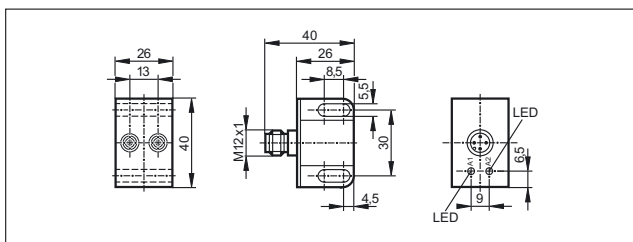
1: sensor 1, 2: sensor 2

11

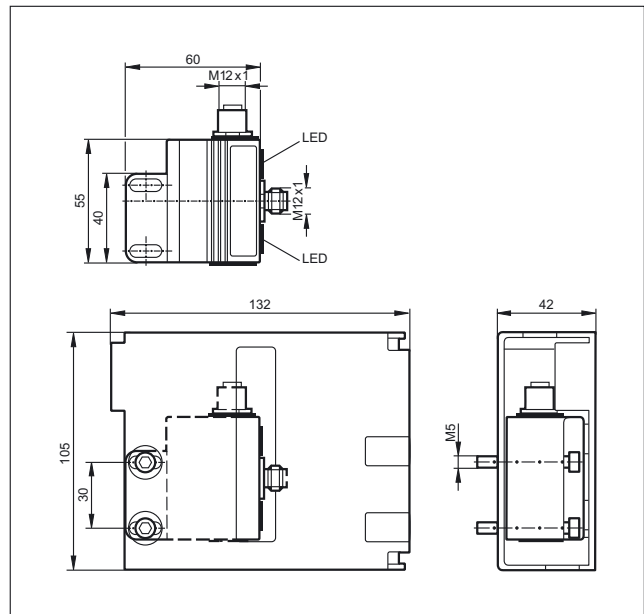


1: sensor 1, 2: sensor 2

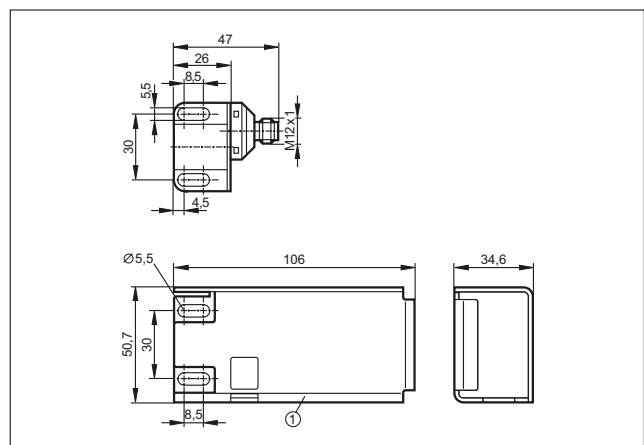
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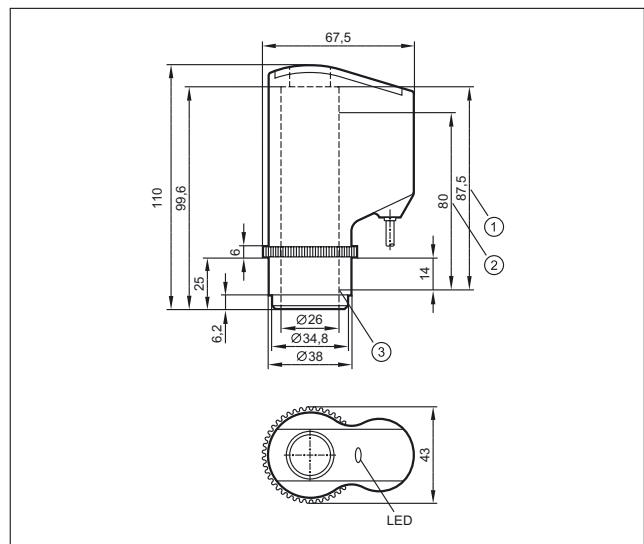


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1: protective housing

15



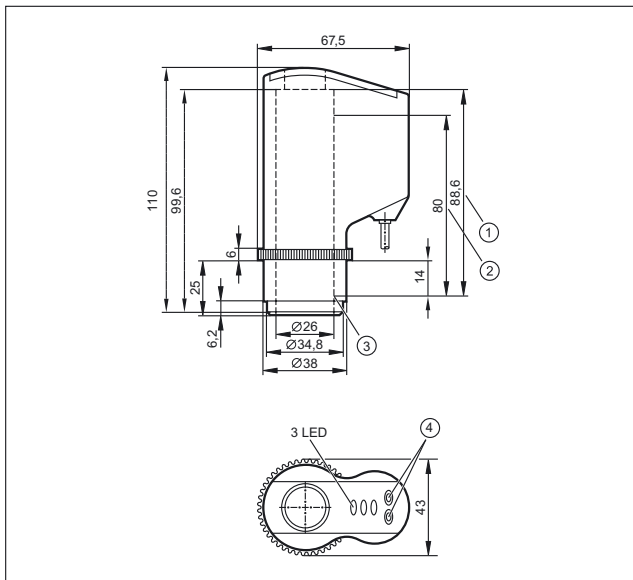
1: Max. spindle stroke, 2: Measuring range, 3: Initial value of the measuring range (zero point)



Process sensors

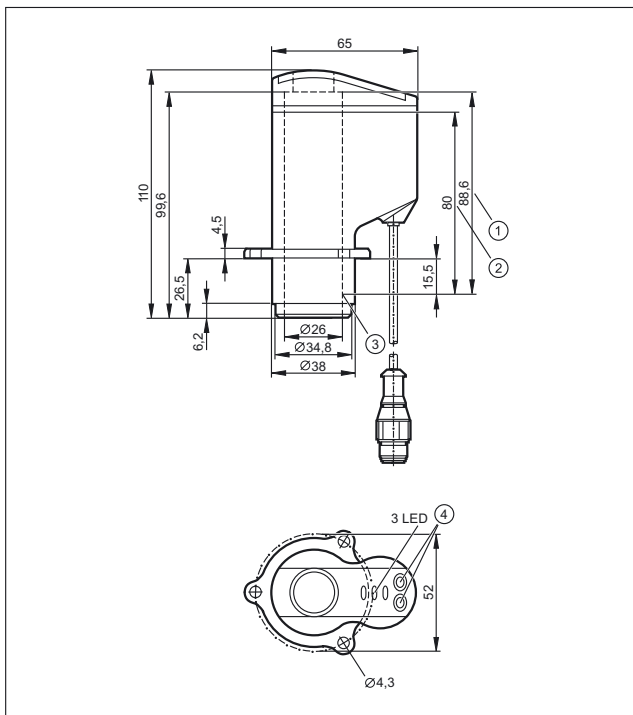
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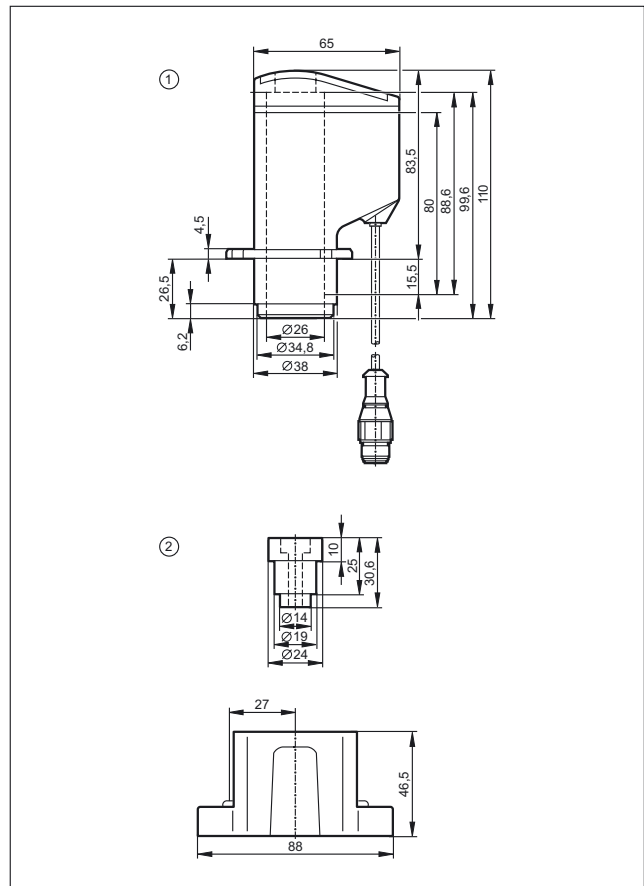
1: Max. spindle stroke, 2: Measuring distance, 3: Initial value of the measuring range (zero point), 4: Programming buttons

17



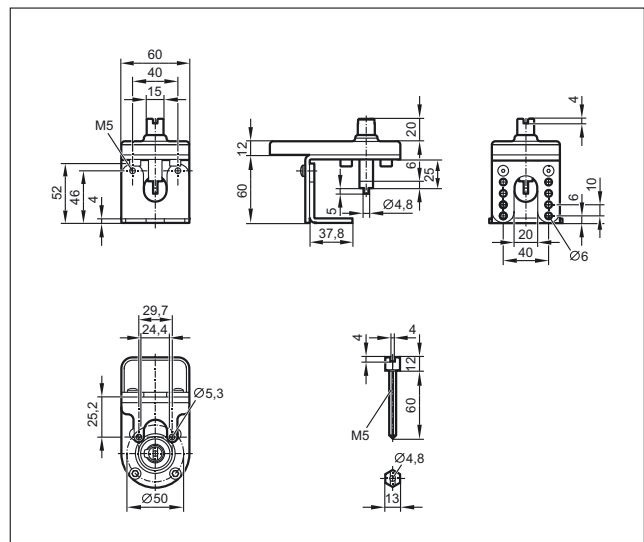
1: Max. spindle stroke, 2: Measuring distance, 3: Initial value of the measuring range (zero point), 4: Programming buttons

18



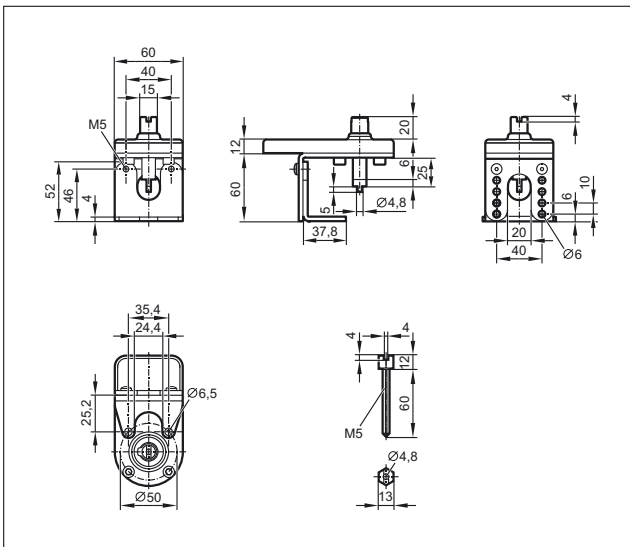
1: Valve sensor IX5010, 2: Mounting adapter E11900

19

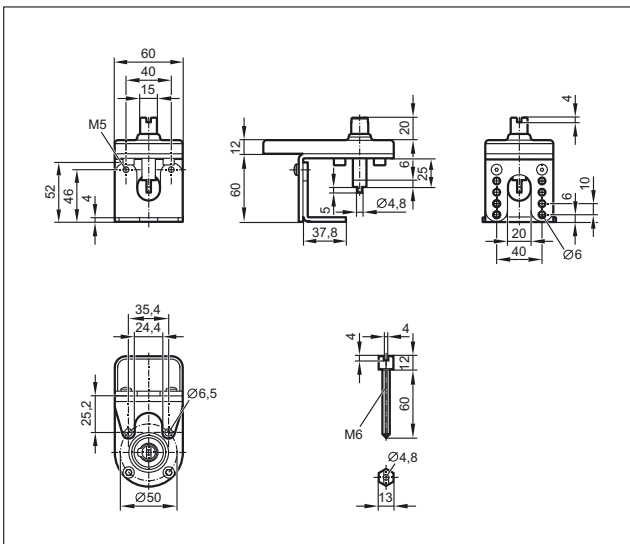


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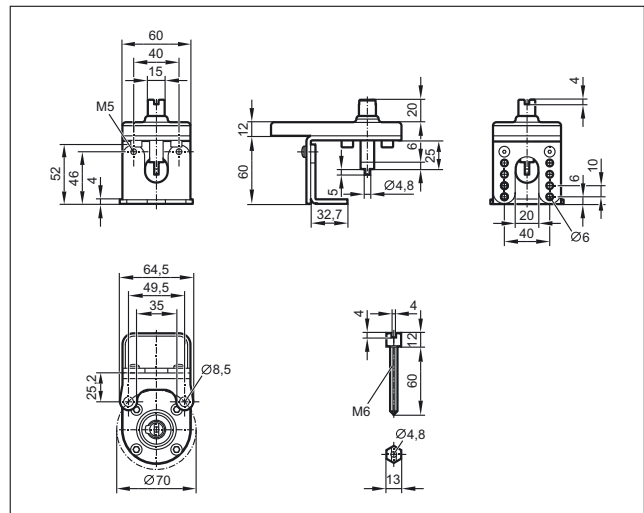
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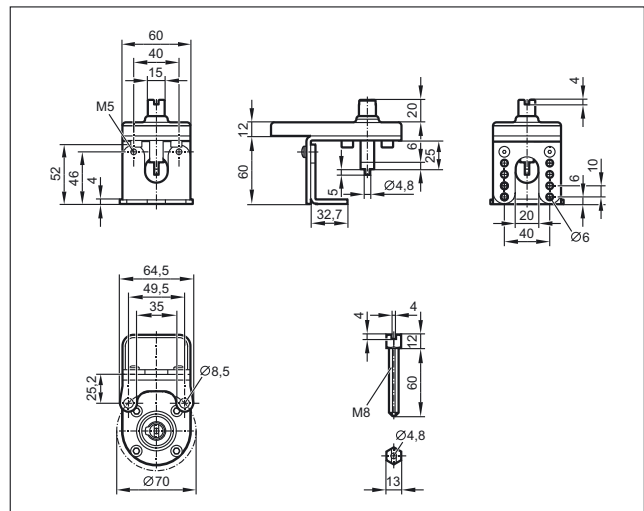
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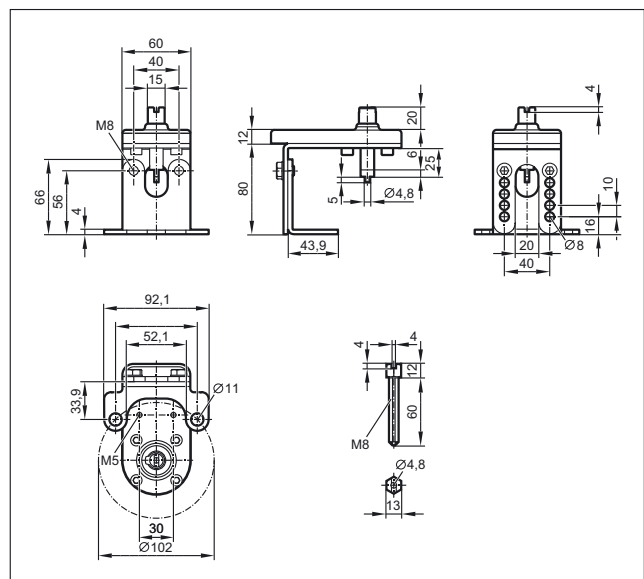
22



23



24





Fast and reliable communication with AS-i



Bus systems

AS-interface (AS-i = actuator sensor interface) is a manufacturer-independent standard for the connection of actuators and sensors of the first field level. It is the only wiring system accepted worldwide. With 20 million slaves installed, AS-i has been tried and tested as a low-cost feeder for all common fieldbuses for many years.

The product portfolio includes AS-i components for different areas: from packaging and conveying via silo applications, machine tools, robotics and automation to the food industry and mobile vehicles.

Safe

The sophisticated AS-i technology and the extended diagnostic possibilities provide high reliability and machine uptime. „Safety at Work“ is the AS-Interface expansion by safety-related components. Safety components up to SIL 3 to IEC 61508 and EN ISO 13849 - 1 / PL e can be connected to AS-i.

Simple

Due to the standardised system, the low wiring complexity and the quick connection technology, AS-i enables simple „Plug & Play“. The reduction of terminals leads to reduced documentation.

Data and energy are jointly transmitted via a two-wire cable. The reverse polarity protected insulation displacement technology helps avoid errors. The modularity and the tree structure smoothly fit to the way the plant is put together.

Cost-optimised

It's the end result that matters: Wiring complexity, documentation and set-up times are significantly reduced. The decentralisation of the AS-i participants leads to smaller and less expensive control cabinets. Simple diagnostics and a clear system design ensure high machine uptime and avoid downtimes.

	<i>AS-Interface controllers / gateways</i>	602 - 606
	<i>AS-Interface power supplies / earth fault monitors</i>	608 - 609
	<i>AS-Interface I/O modules</i>	610 - 629
	<i>AS-Interface AirBoxes for pneumatics</i>	630 - 633
	<i>AS-Interface sensors</i>	634 - 636
	<i>AS-Interface devices for valves and valve actuators</i>	638 - 640
	<i>AS-Interface expansion</i>	642 - 643
	<i>AS-Interface Safety at Work</i>	644 - 650
	<i>IO-Link components</i>	652 - 656



Industrial communication



AS-Interface controllers / gateways

AS-i controller and gateways have AS-i master functionality and are thus an elementary part of AS-i networks. These components are usually in a control cabinet and ensure data communication. A wide product range provides suitability for different applications. An integrated CoDeSys-programmable PLC allows that the AS-i controllers can also be used as supplementary or independent control system.

System overview	Page
Controllers, gateways and software	602 - 603
Controllers / Gateways	603 - 604
AS-i manuals	604
Scale drawings / drawing no. – CAD download: www.ifm.com	605 - 606

Controllers, gateways and software

Type	Number of AS-i masters	Description	Draw-ing no.	Order no.
	1	AS-i DP controller E · AS-i PLC with Profibus-DP interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	1	AC1365
	2	AS-i DP controller E · AS-i PLC with Profibus-DP interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	1	AC1366
	1	AS-i controller E · AS-i controller freely programmable · Profibus DP interface · Ethernet programming interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	1	AC1355
	2	AS-i controller E · AS-i controller freely programmable · Profibus DP interface · Ethernet programming interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	1	AC1356
	1	AS-i DeviceNet controller E · AS-i controller with DeviceNet interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	2	AC1318
	2	AS-i DeviceNet controller E · AS-i controller with DeviceNet interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	2	AC1324
	1	AS-i CANopen Controller E · AS-i controller with CANopen interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	3	AC1331
	2	AS-i CANopen Controller E · AS-i controller with CANopen interface · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	4	AC1332
	1	AS-i controller E · AS-i controller freely programmable · Full master functions · Graphic display · Ethernet programming interface · Housing materials: aluminium / steel sheet galvanised	5	AC1357

Type	Number of AS-i masters	Description	Draw- ing no.	Order no.
	2	AS-i controller E · AS-i controller freely programmable · Full master functions · Graphic display · Ethernet programming interface · Housing materials: aluminium / steel sheet galvanised	6	AC1358

Controllers / Gateways

Type	Number of AS-i masters	Description	Draw- ing no.	Order no.
	1	SmartLink DP · AS-i gateway / Profibus DP · Full master functions · Graphic display · Housing materials: aluminium / steel sheet galvanised	7	AC1375
	–	AS-i data decoupling module · Combicon connection · Housing materials: Makrolon	8	AC1250
	2	AS-i DP gateway · Full master functions · Graphic display · Profibus DP interface · Housing materials: aluminium / steel sheet galvanised	1	AC1376
	1	AS-i Profinet gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profinet RT device class B · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	9	AC1401
	2	AS-i Profinet gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profinet RT device class B · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	9	AC1402
	1	AS-i Profibus gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profibus DP (DPV0 + DPV1) · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	10	AC1411
	2	AS-i Profibus gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profibus DP (DPV0 + DPV1) · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	10	AC1412
	1	AS-i EtherNet/IP gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	9	AC1421
	2	AS-i EtherNet/IP gateway · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	9	AC1422



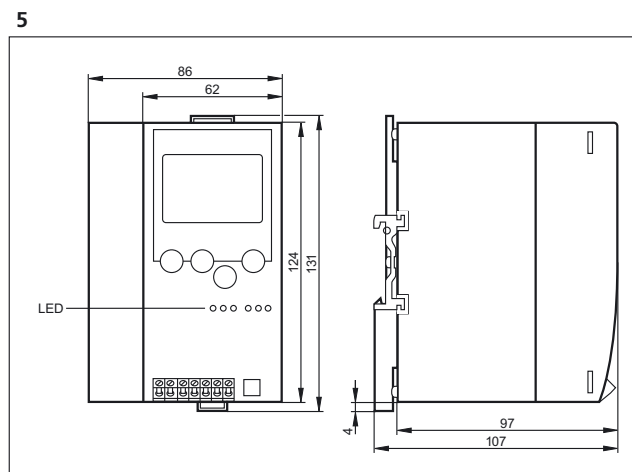
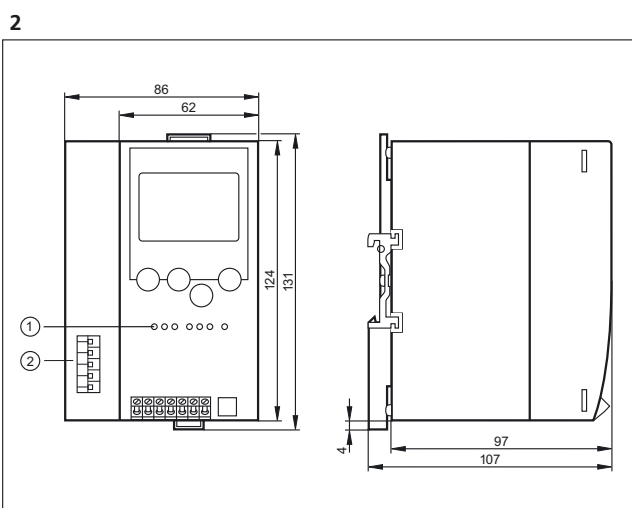
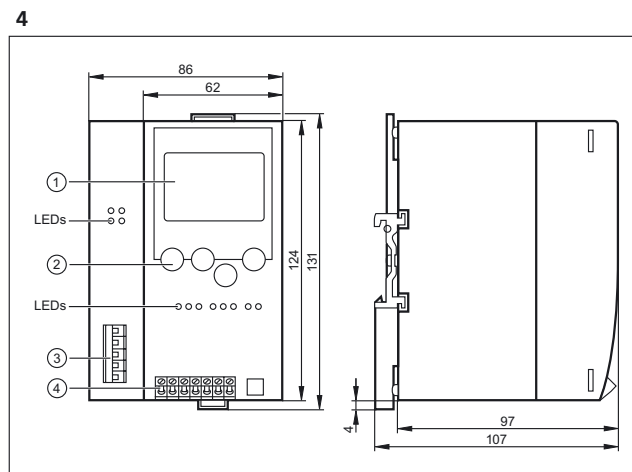
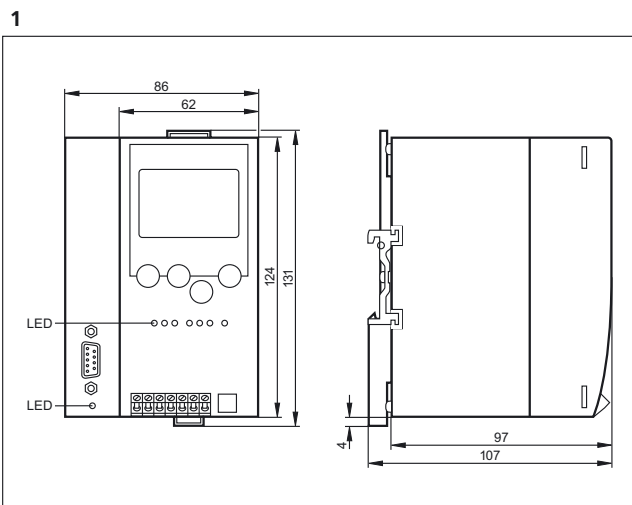
Industrial communication

Type	Number of AS-i masters	Description	Drawing no.	Order no.
	1	SmartPLC DataLine with EtherNet/IP device interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	AC1423
	1	SmartPLC DataLine with Profinet device interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	AC1403
	1	SmartPLC DataLine with EtherCAT slave interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	AC1433
	2	SmartPLC DataLine with Profinet device interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	AC1404
	2	SmartPLC DataLine with EtherNet/IP device interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	AC1424
	2	SmartPLC DataLine with EtherCAT slave interface · AS-i master · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Device supply either via 24 V or AS-i (AS-i bus 1) · Housing materials: aluminium powder-coated / steel sheet galvanised / Makrolon	11	AC1434

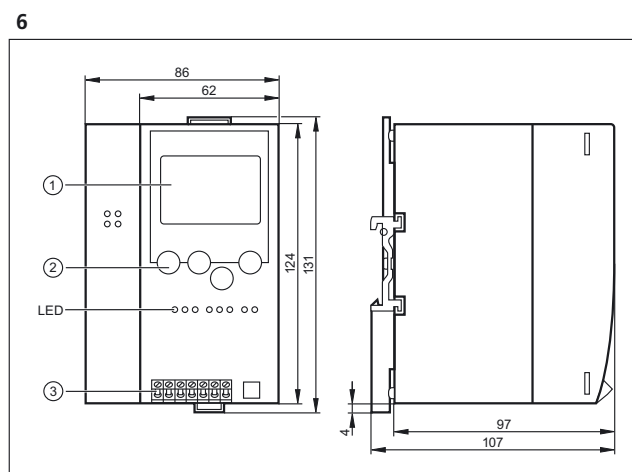
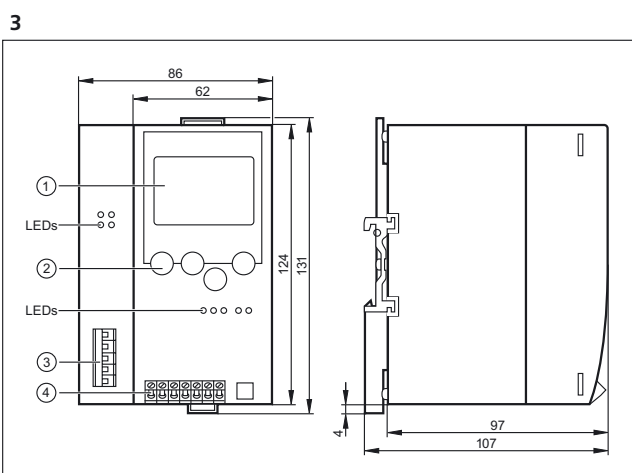
AS-i manuals

Type	Description	Order no.
	ecolog asi system · AS-Interface Manual (German)	AC0115
	ecolog asi system · AS-Interface Manual (English)	AC0116

Scale drawings / drawing no. – CAD download: www.ifm.com



1: LED, 2: DeviceNet interface

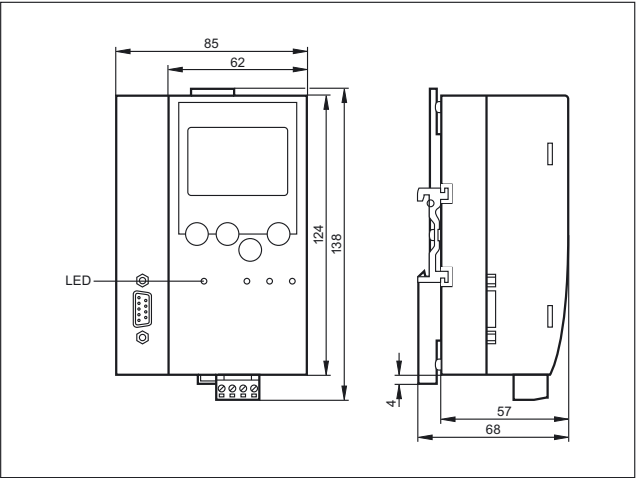


1: display, 2: control keys, 3: Ethernet interface

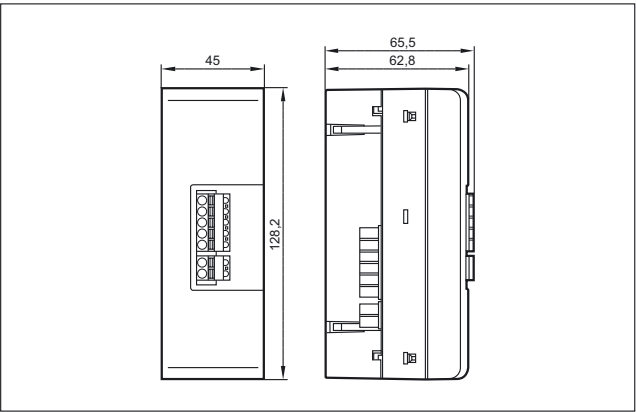


Scale drawings / drawing no. – CAD download: www.ifm.com

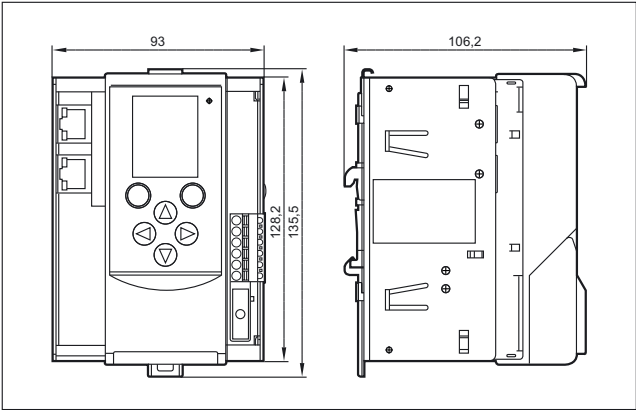
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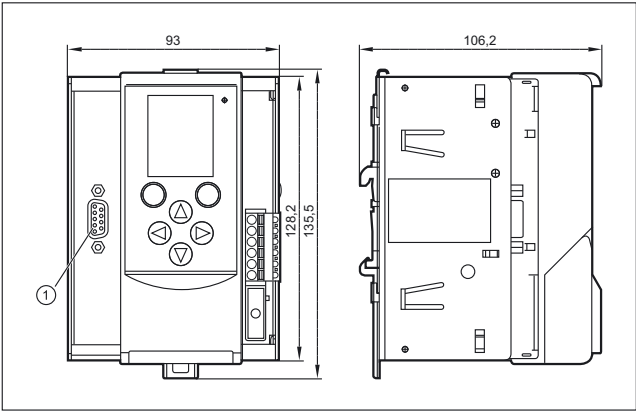
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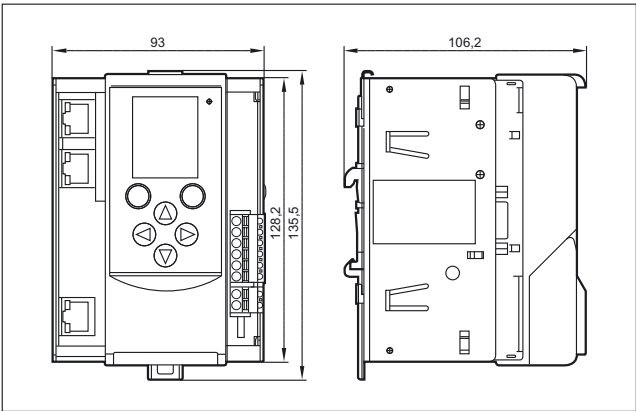


10



Sub-D (9-pole)

11







Industrial communication



AS-Interface power supplies / earth fault monitors

AS-i needs special AS-i power supplies for the communication and the voltage supply of the AS-i modules and the connected inputs and outputs (partly). They supply an unearthed voltage that is in particular suitable for communication insensitive to interference, in particular in industrial environments. By means of earth fault monitors the installation can be monitored for earthing problems.

System overview	Page
AS-i power supplies	608
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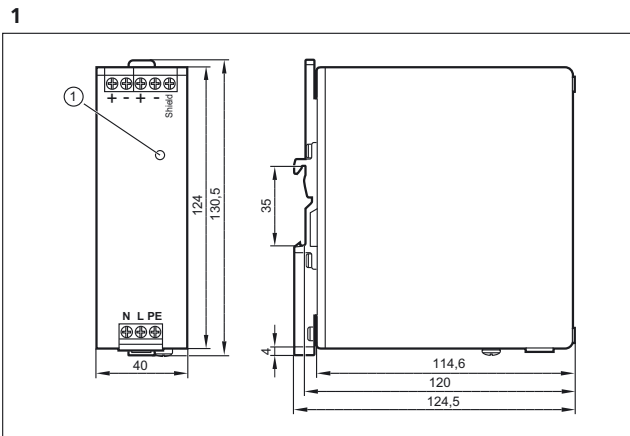
AS-i power supplies

Type	Output current AS-i [A]	Description	Drawing no.	Order no.
	2.8	Power supply · AS-i power supply 115/230 V AC · Integrated data decoupling · NEC Class II Power Source · steel sheet	1	AC1256
	4	Power supply · DC convertor 24 V DC for AS-i system voltage · Integrated data decoupling · steel sheet	2	AC1257
	4	Power supply · AS-i power supply 115/230 V AC · Integrated data decoupling · steel sheet	1	AC1254
	8	Power supply · AS-i power supply 115/230 V AC · Integrated data decoupling · steel sheet	3	AC1258
	8	Power supply · Three-phase AS-i power supply 380...480 V AC · Integrated data decoupling · steel sheet	4	AC1253

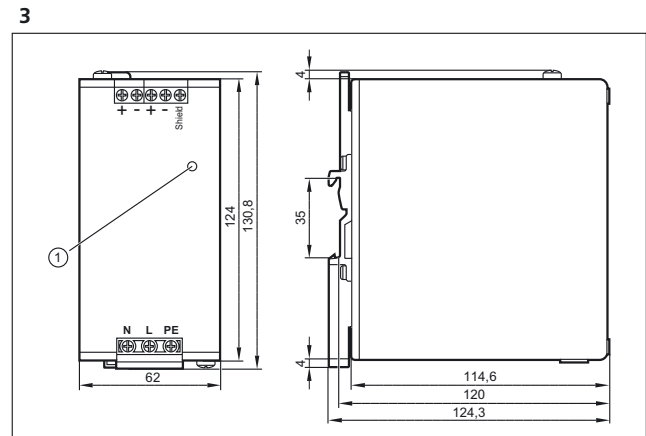
Insulation monitors

Type	Description	Drawing no.	Order no.
	AS-i insulation monitor · Detection of asymmetric insulation faults · Screw terminal	5	AC2211
	AS-i insulation monitor · Detection of symmetric and asymmetric insulation faults · Screw terminal	5	AC2212

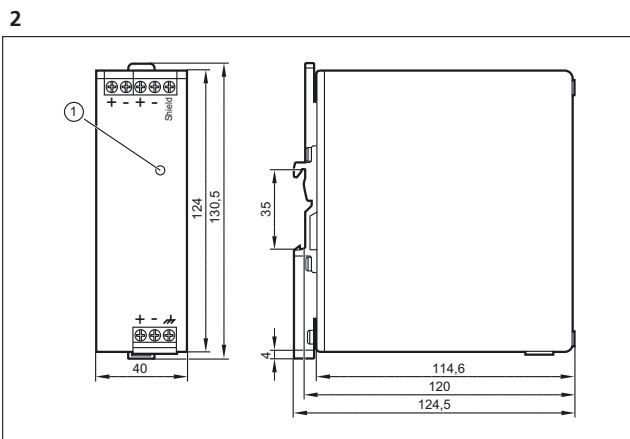
Scale drawings / drawing no. – CAD download: www.ifm.com



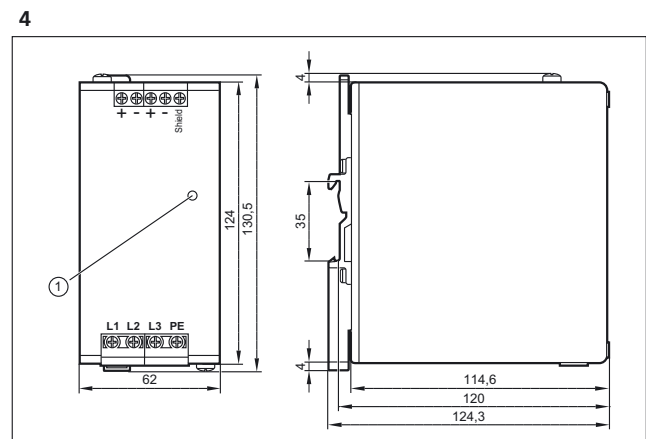
1: LED AS-i ok



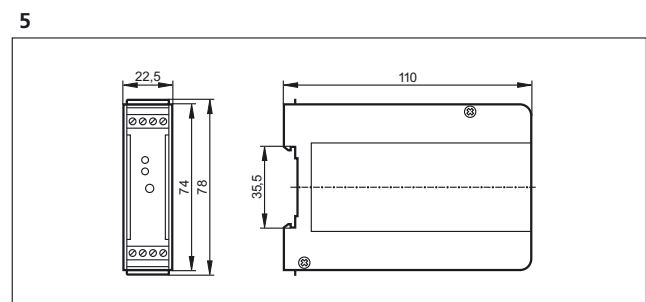
1: LED AS-i ok



1: LED AS-i ok



1: LED AS-i ok





Industrial communication



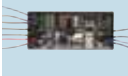
AS-Interface I/O modules

The I/O modules are decentralised input and output modules of the AS-i interface for the connection of your digital and analogue inputs and outputs. Different applications have various requirements on the I/O modules regarding protection rating, resistance and materials used. The product range covers PCB solutions, control cabinet modules and I/O modules with protection rating IP69K.

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I/O modules for control cabinets

Type	Inputs / outputs	Description	Drawing no.	Order no.
	4 inputs	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 with extended addressing mode · Digital inputs · Combicon connection · PA	1	AC2250
	4 inputs	Active AS-i module · String mounting possible · Addressing socket · Input supply from external PELV voltage source · Version 2.1 with extended addressing mode · Digital inputs · Combicon connection · PA	1	AC2254
	4 outputs	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 · Digital outputs · Combicon connection · PA	1	AC2252
	4 inputs / 2 outputs / relay	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 with extended addressing mode · Digital inputs · Combicon connection · PA	1	AC2256
	4 inputs / 2 outputs / relay	Active AS-i module · String mounting possible · Addressing socket · Input supply from external PELV voltage source · Version 2.1 with extended addressing mode · Digital inputs and outputs · Combicon connection · PA	1	AC2255

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	4 inputs / 3 outputs	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 with extended addressing mode · Digital inputs and outputs · Combicon connection · PA	1	AC2264
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 · Digital inputs and outputs · Combicon connection · PA	1	AC2251
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Addressing socket · External sensor supply PELV · Version 2.1 · Digital inputs and outputs · Combicon connection · PA	1	AC2257
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Addressing socket · External sensor supply PELV · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Digital inputs and outputs · Combicon connection · PA	2	AC2267
	4 inputs / 4 outputs / relay	Active AS-i module · String mounting possible · Addressing socket · Version 2.1 · Combicon connection · PA 6.6	3	AC2258
	4 inputs / 4 outputs / relay	Active AS-i module · String mounting possible · Addressing socket · Input supply from external PELV voltage source · Version 2.1 · Combicon connection · PA 6.6	3	AC2259
	4 inputs / 4 outputs	Active AS-i module · PCB size 105 x 45 x 17 mm · Wire length 0.2 m · Digital inputs and outputs	4	AC2709
	4 inputs / 3 outputs	Active AS-i module · AS-i slave with extended addressing mode · PCB size 105 x 45 x 17 mm · Wire length 0.2 m · Digital inputs and outputs	4	AC2739
	2 inputs / 1 LED output	Active AS-i module · Only suited for mechanical contacts · Wire length 0.1 m	5	AC2729
	3 inputs / 3 outputs	Active AS-i module · AS-i version 2.1 with extended addressing mode	6	AC2731
	4 inputs / 4 outputs	Active AS-i module · AS-i slave with extended addressing mode · Only for operation with AS-i masters with the profile M4 · 12 x 0.2 m · housing: PC potted	7	AC2750
	4 inputs / 3 outputs	Active AS-i module · AS-i slave with extended addressing mode · 11 x 0.2 m · housing: PC potted	8	AC2751
	4 inputs / 4 outputs	Active AS-i module · AS-i slave with extended addressing mode · Only for operation with AS-i masters with the profile M4 · housing: PC potted	9	AC2752
	4 inputs / 3 outputs	Active AS-i module · AS-i slave with extended addressing mode · housing: PC potted	10	AC2753
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · plastics / PC GF20	11	AC3200
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · plastics / PC GF20	11	AC3201
	4 inputs	Active AS-i module · String mounting possible · Version 2.11 and 3.0 with extended addressing mode · plastics / PC GF20	12	AC3202



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Type	Inputs / outputs	Description	Drawing no.	Order no.
	4 outputs	Active AS-i module · String mounting possible · Versions 2.11 and 3.0 · plastics / PC GF20	13	AC3203
	4 inputs	Active AS-i module · String mounting possible · Version 2.11 and 3.0 with extended addressing mode · plastics / PC GF20	12	AC3204
	4 analogue inputs 4...20 mA	Active AS-i module · Supply either from AS-i or an external 24 V source · Combicon connector for sensor connection · PC GF20	14	AC3216
	4 analogue inputs 0...10 V	Active AS-i module · Supply either from AS-i or an external 24 V source · Combicon connector for sensor connection · PC GF20	14	AC3217
	4 analogue outputs 0...20 mA	Active AS-i module · Supply either from AS-i or an external 24 V source · Combicon connector for actuator connection · PC GF20	15	AC3218
	4 analogue outputs 0...10 V	Active AS-i module · Supply either from AS-i or an external 24 V source · Combicon connector for actuator connection · PC GF20	15	AC3219
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Addressing socket · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · plastics / PC GF20	16	AC3220
	4 inputs / 4 outputs	Active AS-i module · String mounting possible · Addressing socket · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · plastics / PC GF20	16	AC3221
	4 inputs Pt100	Active AS-i module · Combicon connection · PC GF20	17	AC3222

Field modules IP 67 AS-Interface

Type	Inputs / outputs	Description	Drawing no.	Order no.
	4-way splitter box	ClassicLine splitter box module · Three orientations of the flat cable are possible · AS-i and AUX splitter box for the connection of intelligent sensors/actuators · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5200
	4 inputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5205
	4 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Digital inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5215
	4 analogue inputs 4...20 mA	Active ClassicLine module · 4 analogue inputs 4...20 mA · For the connection of 2-wire and 3-wire sensors · Three orientations of the flat cable are possible · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5216

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	3 outputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Digital outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5203
	4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5208
	4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital outputs 2 A · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5213
	2 outputs / 2 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Digital outputs and inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5214
	2 inputs / 2 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital inputs and outputs (2 A) · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5211
	2 outputs / 2 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Outputs supplied from AS-i · Digital outputs and inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5224
	4 inputs / 3 outputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · inputs externally supplied · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	AC5292
	8 digital inputs (2 slaves)	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Digital inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	AC5210
	4 inputs / 4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital inputs and outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	AC5209
	4 inputs / 4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Digital inputs and outputs (2 A) · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	AC5212
	4 inputs / 3 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Version 2.11 and 3.0 with extended addressing mode · Digital inputs and outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	AC5204
	4 inputs / 4 outputs	Active ClassicLine module · Only for operation with AS-i masters with the profile M4 · Addressing socket · Three orientations of the flat cable are possible · Version 3.0 with extended addressing mode · Digital inputs and outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	AC5235



Industrial communication

Type	Inputs / outputs	Description	Drawing no.	Order no.
	4 inputs / 4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Digital inputs and outputs (2 A) · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	AC5236
	4 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · Digital inputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5245
	4 inputs / 4 outputs	Active ClassicLine module · Only for operation with AS-i masters with the profile M4 · Addressing socket · Three orientations of the flat cable are possible · Version 3.0 with extended addressing mode · Digital inputs and outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	AC5275
	4 inputs / 4 outputs	Active ClassicLine module · Version 3.0 with extended addressing mode · Addressing socket · Only for operation with AS-i masters with the profile M4 · Three orientations of the flat cable are possible · inputs externally supplied · Digital inputs and outputs · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	AC5293
	2 outputs / 2 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Digital inputs and outputs (2 A) · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5234
	2 analogue outputs 4...20 mA	Active ClassicLine module · Electrical isolation · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5218
	2 pushbuttons / 2 LED displays	Active module upper parts AS-i illuminated pushbutton module · Power supply via AS-i cable · A/B slave · Pushbutton functions: normally open / normally closed · PBT	20	AC2088
	2 pushbuttons / 2 LED displays	Active module upper parts AS-i illuminated pushbutton module · Power supply via AS-i cable · Colour inserts changeable · PBT	21	AC2086
	4 inputs 4...20 mA	Active ClassicLine module · AS-i profile S-7.3 · 4 analogue inputs 4...20 mA · IR addressing possible · For the connection of 2-wire, 3-wire or 4-wire sensors · Sockets M12 x 1 · PBT	22	AC2516
	4 inputs 0...10 V	Active ClassicLine module · AS-i profile S-7.3 · 4 analogue inputs 0...10 V · IR addressing possible · For the connection of 2-wire, 3-wire or 4-wire sensors · Sockets M12 x 1 · PBT	22	AC2517
	2 inputs 4...20 mA	Active ClassicLine module · 2 analogue inputs 4...20 mA · For the connection of 2-wire and 3-wire sensors · Addressing socket · Three orientations of the flat cable are possible · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5222
	2 inputs 4...20 mA	Active ClassicLine module · 2 analogue inputs 4...20 mA · For the connection of 2-wire and 4-wire sensors · Electrical isolation · Addressing socket · Three orientations of the flat cable are possible · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5223

Product selectors and further information can be found at: www.ifm.com

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	2 IO-Link ports	Active ClassicLine module · 2 IO-Link ports · For the connection of IO-Link sensors and actuators, binary sensors and binary actuators · Addressing socket · Three orientations of the flat cable are possible · Only for operation with AS-i masters with the profile M4 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5225
	4 analogue inputs 4...20 mA	Active ClassicLine module · 4 analogue inputs 4...20 mA · For the connection of 2-wire, 3-wire or 4-wire sensors · Electrical isolation · Three orientations of the flat cable are possible · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5226
	2 digital inputs / 1 analogue input / 1 analogue output	Active ClassicLine module · Only for operation with AS-i masters with the profile M4 · Electrical isolation · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC5230
	4 inputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC505A
	4 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC515A
	4 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC508A
	2 inputs / 2 outputs	Active ClassicLine module · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Digital inputs and outputs (2 A) · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC507A
	2 outputs / 2 inputs	Active ClassicLine module · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC514A
	2 inputs 4...20 mA	Active ClassicLine module · 2 analogue inputs 4...20 mA · For the connection of 2-wire and 3-wire sensors · Addressing socket · Three orientations of the flat cable are possible · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	18	AC522A
	4 inputs / 4 outputs	Active ClassicLine module · Only for operation with AS-i masters with the profile M4 · Addressing socket · Three orientations of the flat cable are possible · Version 3.0 with extended addressing mode · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated	19	AC535A



Industrial communication

CompactLine modules

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	2 inputs 4...20 mA	Active CompactLine module · 2 analogue inputs 4...20 mA · For the connection of 2-wire and 3-wire sensors · IR addressing possible · high-grade stainless steel · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / screws in the lower part: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated	23	AC2402
	2 inputs 4...20 mA	Active CompactLine module · 2 analogue inputs 4...20 mA · For the connection of 2-wire and 4-wire sensors · Electrical isolation · IR addressing possible · high-grade stainless steel · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / screws in the lower part: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated	23	AC2403
	4-way splitter box	Passive compact module · AS-i splitter box for the connection of intelligent sensors/actuators · Sockets M12 x 1 · PA 6.6 / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	24	AC2413
	4 inputs	Active CompactLine module · fully potted housing · IR addressing possible · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	25	AC2410
	4 inputs	Active CompactLine module · IR addressing possible · Version 2.11 and 3.0 with extended addressing mode · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	25	AC2457
	4 inputs	Active CompactLine module · IR addressing possible · Metal parts from stainless steel · Digital inputs · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / screws: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated / O-Ring : EPDM	25	AC2451
	4 outputs	Active CompactLine module · IR addressing possible · Digital outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	26	AC2417
	2 inputs / 2 outputs	Active CompactLine module · 60 x 118.2 x 27 · IR addressing possible · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	26	AC2411
	2 inputs / 2 outputs	Active CompactLine module · IR addressing possible · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	26	AC2458
	4 inputs / 4 outputs	Active CompactLine module · 60 x 152 x 27 · IR addressing possible · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	27	AC2412
	4 inputs / 4 outputs	Active CompactLine module · IR addressing possible · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	27	AC2459

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	4 inputs / 4 outputs	Active CompactLine module · IR addressing possible · External sensor supply PELV · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	27	AC2466
	4 inputs / 4 outputs	Active CompactLine module · IR addressing possible · Metal parts from stainless steel · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / screws: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated / O-Ring : EPDM	27	AC2452
	4 inputs / 4 outputs	Active CompactLine module · IR addressing possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / threaded inserts in the lower part: Brass nickel-plated / O-Ring : Viton / Piercing contacts: CuSn6 surface nickel and tin-plated	27	AC2471
	4 inputs	Active CompactLine module · AS-i connection via M12 connector · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / O-Ring : Viton	28	AC2464
	4 inputs / 4 outputs	Active CompactLine module · AS-i and AUX connection via M12 connector · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / O-Ring : Viton	29	AC2465
	2 outputs / 2 inputs	Compact M8 AS-i module · 90.5 x 30 x 23.5 · Digital inputs and outputs supplied via AS-i · AS-i connection via M12 connector · Version 2.11 and 3.0 with extended addressing mode · M8 ecolink interface · Sockets M8 x 1 · PBT	30	AC2482
	4 inputs	Compact M8 AS-i module · 90.5 x 30 x 23.5 · Digital inputs · AS-i connection via M12 connector · Version 2.11 and 3.0 with extended addressing mode · M8 ecolink interface · Sockets M8 x 1 · PBT	30	AC2484
	8 inputs	Compact M8 AS-i module · 134.5 x 30 x 23.5 · Digital inputs · AS-i connection via M12 connector · Version 3.0 with extended addressing mode · M8 ecolink interface · Only for operation with AS-i masters with the profile M4 · Sockets M8 x 1 · PBT	31	AC2488
	4-way splitter box	Passive compact module · Metal parts from stainless steel · Sockets M12 x 1 · PA 6.6 / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / Piercing contacts: CuSn6 surface nickel and tin-plated / screws: stainless steel	24	AC2453
	4 inputs / 4 outputs; bidirectional	Active CompactLine module · IR addressing possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Metal parts from stainless steel · Sockets M12 x 1 · PA 6.6 / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / Piercing contacts: CuSn6 surface nickel and tin-plated / screws: stainless steel	27	AC2454
	4 inputs / 4 outputs; bidirectional	Active CompactLine module · IR addressing possible · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Metal parts from stainless steel · Sockets M12 x 1 · PA 6.6 / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / Piercing contacts: CuSn6 surface nickel and tin-plated / screws: stainless steel	27	AC2455
	4 inputs	Active CompactLine module · Metal parts from stainless steel · IR addressing possible · Version 2.11 and 3.0 with extended addressing mode · Sockets M12 x 1 · PA 6.6 / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / Piercing contacts: CuSn6 surface nickel and tin-plated / screws: stainless steel	25	AC2456



Industrial communication

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	2 outputs / 2 inputs	Active CompactLine module · 60 x 118.2 x 27 · IR addressing possible · Metal parts from stainless steel · Version 2.11 and 3.0 with extended addressing mode · Digital inputs and outputs · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / screws: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated	26	AC2485
	4 inputs	Active CompactLine module · IR addressing possible · Version 2.11 and 3.0 with extended addressing mode · Metal parts from stainless steel · Digital inputs · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / screws: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated	25	AC2486
	4 outputs	Active CompactLine module · IR addressing possible · Metal parts from stainless steel · Version 3.0 with extended addressing mode · Only for operation with AS-i masters with the profile M4 · Digital outputs · Sockets M12 x 1 · PA / socket: stainless steel 316L / 1.4404 / threaded inserts in the lower part: stainless steel 316L / 1.4404 / O-Ring : EPDM / screws: stainless steel / Piercing contacts: CuSn6 surface nickel and tin-plated	26	AC2487

Universal modules AS-Interface

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	4 inputs	Active module upper part AS-universal module · Digital inputs · Connection via cage clamps · PA6 GF30 / stainless steel	32	AC2032
	4 inputs / 4 outputs	Universal module · Digital inputs and outputs · Connection via cage clamps · PA6 GF30 / stainless steel	33	AC2035
	2 inputs 4...20 mA	Active AS-i module IP 65 · 2 analogue inputs 4...20 mA · AS-i profile S-7.3 · For the connection of 2-wire, 3-wire or 4-wire sensors · Connection via cage clamps · PBT	34	AC2616
	2 inputs 0...10 V	Active AS-i module IP 65 · 2 analogue inputs 0...10 V · AS-i profile S-7.3 · For the connection of 2-wire, 3-wire or 4-wire sensors · Connection via cage clamps · PBT	34	AC2617
	2 outputs 0...20 mA	Active AS-i module IP 65 · 2 analogue outputs 0...20 mA · AS-i profile S-7.3 · For the connection of 2-wire actuators or 4-wire actuators with separate 24 V supply · Connection via cage clamps · PBT	34	AC2618
	2 outputs 0...10 V	Active AS-i module IP 65 · 2 analogue outputs 0...10 V · AS-i profile S-7.3 · For the connection of 2-wire actuators or 4-wire actuators with separate 24 V supply · Connection via cage clamps · PBT	34	AC2619
	4 inputs Pt100	Active AS-i module IP 65 · 4 analogue inputs temperature Pt100 · AS-i profile S-7.3 · Connection via cage clamps · PBT	33	AC2620

Field modules IP 69K and accessories

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	4 inputs / 3 outputs	Active ProcessLine module · Version 2.1 with extended addressing mode · Protection rating IP 69K · high-grade stainless steel · Digital inputs and outputs · Sockets M12 x 1 · high-grade stainless steel / Makrolon / O-ring: EPDM	35	AC2904

Type	Inputs / outputs	Description	Drawing no.	Order no.
	8 digital inputs (2 slaves)	Active ProcessLine module · Version 2.1 with extended addressing mode · Protection rating IP 69K · high-grade stainless steel · Digital inputs · Sockets M12 x 1 · high-grade stainless steel / Makrolon / O-ring: EPDM	36	AC2910
	8-way splitter box	Passive splitter box AS-i ProcessLine · Protection rating IP 69K · high-grade stainless steel · AS-i and AUX splitter box for the connection of intelligent sensors/actuators · Sockets M12 x 1 · high-grade stainless steel / Makrolon	37	AC2900
	4 inputs 4...20 mA	Active AS-i module · 4 analogue inputs 4...20 mA · For the connection of 2-wire and 3-wire sensors · Threaded bush: stainless steel 316L / 1.4404 / Makrolon / O-ring: EPDM	38	AC2916
	4 inputs 4...20 mA	Active AS-i module · 4 analogue inputs 4...20 mA · For the connection of 2-wire, 3-wire or 4-wire sensors · Electrical isolation · Threaded bush: stainless steel 316L / 1.4404 / Makrolon / O-ring: EPDM	38	AC2923
	AS-i / 24 V	FC splitter · V4A · AS-i voltage and external auxiliary voltage via the M12 socket · Metal parts: stainless steel 316L / 1.4404 / Blanks: FPM / O-ring: EPDM	39	E70354
	AS-i	FC splitter · AS-i voltage via M12 socket · Metal parts: stainless steel 316L / 1.4404 / O-ring: EPDM / socket: PP GF30 / blade seal: TPE	40	E70454
	AS-i / 24 V	FC splitter · Metal parts: stainless steel 316L / 1.4404 / Blanks: FPM / O-ring: EPDM	41	E70377

Module lower parts

Type	Inputs / outputs	Description	Drawing no.	Order no.
	FC coupling module	Module lower part flat cable · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT	42	AC5000
	FC-E coupling module with external power supply	FC-E coupling module · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT	42	AC5003
	FC coupling module	Module lower part flat cable · with addressing plug · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT	43	AC5010
	FC-E coupling module with external power supply	FC-E coupling module · with addressing plug · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT	43	AC5011
	FC coupling module	Module lower part flat cable · stainless steel · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT / stainless steel	42	AC5014
	FC-E coupling module with external power supply	FC-E coupling module · stainless steel · AS-i interface to module upper part · Quick mounting technology for AS-i flat cable · PBT / stainless steel	42	AC5015



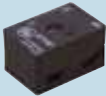
Industrial communication

Combicon connectors

Type	Description	Order no.
	Combicon connector · with screw terminals 4-pole · Housing materials: current carrying parts: copper alloy tin-plated	E70230
	Combicon connector · with screw terminals 4-pole · Housing materials: current carrying parts: copper alloy tin-plated	E70231
	Combicon connector · with cage clamps 4 poles · Housing materials: current carrying parts: copper alloy tin-plated	E70232
	Combicon connector · with cage clamps 4 poles · Housing materials: current carrying parts: copper alloy tin-plated	E70233
	Combicon connector · with insulation displacement terminals 4-pole (0.75...1 mm ²) · Housing materials: current carrying parts: copper alloy tin-plated	E70236

Flat cable splitters and accessories

Type	Description	Order no.
	Quad M12 · AS-i and external voltage via M12 socket · Sockets M12 x 1 · Housing materials: PA66 / socket: stainless steel 316L / 1.4404 / screws: stainless steel 316L / 1.4404 / nut: stainless steel 316L / 1.4404 / O-Ring : NBR / Flat cable seal: NBR	E70588
	Quad splitter · Distribution of the AS-i voltage or the external 24 V supply · Housing materials: PA66 / screws: stainless steel 316L / 1.4404 / nuts: stainless steel 316L / 1.4404 / Flat cable seal: NBR	E70600
	FC splitter · Distribution of the AS-i voltage or the external 24 V supply · Housing materials: PA 6 GF35 Grivory	E70381
	FC splitter · high-grade stainless steel · ATEX approval · Group II, category 3D/3G · AS-i voltage and external auxiliary voltage via the M12 socket · Housing materials: Metal parts: stainless steel 316L / 1.4404 / Blanks: FPM / O-ring: EPDM	E7354A
	FC splitter · ATEX approval · Group II, category 3D/3G · Distribution of the AS-i voltage or the external 24 V supply · Housing materials: Metal parts: stainless steel 316L / 1.4404 / Blanks: FPM / O-ring: EPDM	E7377A
	FC insulation displacement connector · AS-i voltage via M12 socket · Keyway bottom left · Housing materials: PA66 - GF25	E70485
	FC insulation displacement connector · AS-i voltage via M12 socket · Keyway top right · Housing materials: PA66 - GF25	E70486
	FC insulation displacement connector · AS-i and external voltage via M12 socket · Housing materials: PA66 - GF25	E70487

Type	Description	Order no.
	FC splitter · Distribution of the AS-i voltage or the external 24 V supply · Housing materials: PBT / screw: stainless steel / Contact pins: gold-plated	E70581
	FC insulation displacement connector · Distribution of the AS-i voltage and the external 24 V supply to M12 socket · 1 m · Housing materials: housing: PBT PC / cable: PUR / connector housing: PUR	E70582
	FC insulation displacement connector · AS-i voltage via M12 socket · Keyway top right · Housing materials: PBT PC	E70585
	FC insulation displacement connector · AS-i voltage via M12 socket · Keyway bottom left · Housing materials: PBT PC	E70586
	FC insulation displacement connector · Socket M12 - AS-i flat cable · Housing materials: sealing: NBR / housing: PA / O-ring: FPM / screws: stainless steel / nut: Brass nickel-plated / Contact pins: bronze gold-plated	AC5005
	FC insulation displacement connector · Socket M12 - AS-i flat cable · 2 connection directions possible in case of angled connectors · Housing materials: sealing: EPDM / housing: PA / O-ring: EPDM / screws: stainless steel / nut: stainless steel / Contact pins: bronze gold-plated	E70471
	FC insulation displacement connector · Socket M12 - AS-i flat cable · Housing materials: PA	E70096
	FC insulation displacement connector · Distribution of the AS-i voltage and the external 24 V supply to M12 socket · 1 m · Housing materials: housing: PA 6 GF35 Grivory / Socket: PUR	E70481
	FC insulation displacement connector · Distribution of the AS-i voltage to M12 socket · 0.6 m · Housing materials: housing: PA66 - GF25	E70483
	FC insulation displacement connector · Transition from flat cable to round cable · Cable length 2 m · 2 m · Housing materials: PA 6 GF35 Grivory / round cable: PUR / core insulation: PVC	E70498
	FC insulation displacement connector · Transition from flat cable to round cable · Cable length 5 m · 5 m · Housing materials: PA 6 GF35 Grivory / round cable: PUR / core insulation: PVC	E70499
	Flat cable insulation displacement connector	E79995
	FC insulation displacement connector · straight / angled	E79998
	Splitter box · 8 way · Cable · 25 m · Housing materials: high-grade stainless steel	E11847
	Y splitter · M12 plug · 2 M8 sockets · Free from halogen · Free from silicone · Gold-plated contacts · Housing materials: PUR	E10802

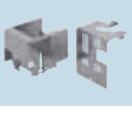


Industrial communication

Type	Description	Order no.
	Passive AS-i bus termination · Improvement of the signal quality · Extension of the cable without additional repeater · Monitoring of the supply voltage by means of LEDs	E70580
	Protective cap · M8 · for CompactM8 modules · Housing materials: ULTRAMID black	E73005
	Protective cap · M12 · for M12 sockets of ClassicLine modules, CompactLine modules and AirBoxes · Housing materials: PA black	E73004
	Protective cap · M12 · for M12 socket to cover the unused inputs and outputs on the module; for unused inputs of splitter boxes · for ProcessLine modules · Housing materials: PP	E70297
	Connector for analogue modules · for AC5222, AC5223, AC2516, AC2566 · Housing materials: PVC	E75222
	Hutschienenhalter · for PCB module AC2750...53 · Housing materials: screws: galvanised / DIN rail adapter: AlMgSi0.5 F22 / mounting clip: C100S+QT galvanised	E70432
	Cable clip for fixing the AS-i flat cable · flat cable · Housing materials: 301 / 1.4310	E70442
	Combicon connector · 1x4-pole twin connector with cage clamp connection · type 1.5/4-ST BK 0.2...1.5 mm² (AWG 24...16) · Double terminal · Housing materials: current carrying parts: copper alloy tin-plated	E70440
	Wall passage · M12 connector · Housing materials: Brass nickel-plated / sealing: FKM	E73008
	Wall passage · M12 connector · Housing materials: stainless steel 303/1.4305 / sealing: EPDM	E73009
	DIN rail adapter · for CompactM8 modules · Housing materials: Mounting plate: stainless steel / DIN rail clip: stainless steel / Threaded bush: high-grade st. steel	E73006
	DIN rail adapter · for CompactM8 modules · Housing materials: Mounting plate: stainless steel / DIN rail clip: stainless steel / Threaded bush: high-grade st. steel	E73007

Accessories lower parts and addressing units

Type	Description	Order no.
	AS-i addressing unit · AS-i version 3.0 with extended addressing mode	AC1154

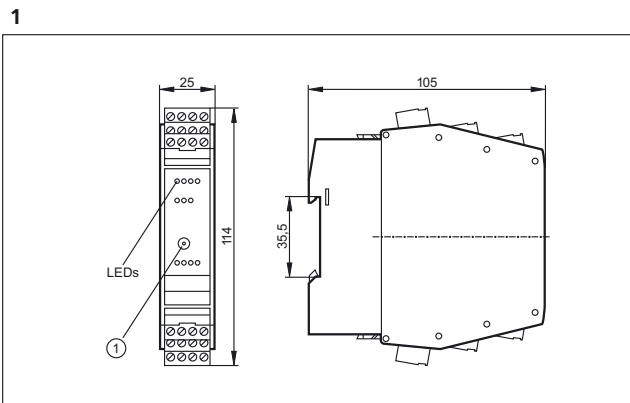
Type	Description	Order no.
	Addressing cable · for AS-i slaves · 1.6 m	E70213
	Addressing cable	E70423
	Addressing cable · 1 m · black	E70211
	Programming cable for controller E · Western connector RJ11 6 poles / D-Sub socket 9 poles · 1.55 m · grey	E70320
	Screw terminal insert for AC5101/AC5031 for additional 24 V supply	AC5007
	impact protection housing · for ATEX ClassicLine modules and ATEX AirBoxes · Housing materials: housing: stainless steel / button head hexagon socket screw: stainless steel	E7000A
	Use of the lower part as branching box · Housing materials: plastics	AC3000
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · PUR, halogen-free · yellow	E74100
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · PUR, halogen-free · black	E74110
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · EPDM, halogen-free · yellow	E74000
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · EPDM, halogen-free · black	E74010
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · TPE · yellow	E74200
	AS-i flat cable · Reverse polarity protection due to special shape · for use of insulation displacement technology · 100 m · TPE · black	E74210
	AS-i flat cable · Reverse polarity protection due to special shape · for the food industry · for use of insulation displacement technology · 100 m · TPE-PVC compound · yellow	E74300
	AS-i flat cable · Reverse polarity protection due to special shape · for the food industry · for use of insulation displacement technology · 100 m · TPE-PVC compound · black	E74310



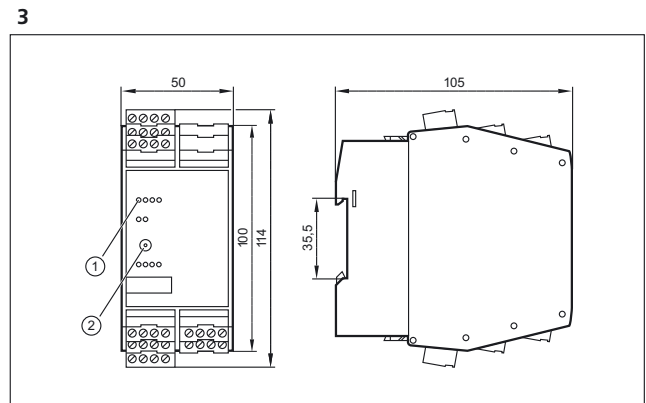
Industrial communication

Type	Description	Order no.
	JOKARI flat cable stripping tool	E70062
	Flat cable blank · Length: 60 mm · to cover the unused cable entry · for FC splitter E70354 · Housing materials: silicone rubber blue	E70299
	Flat cable blank · Length: 60 mm · to cover the unused cable entry · for CompactLine modules (AC24xx), ClassicLine modules (AC52xx) or AirBoxes (AC52xx) · Housing materials: EPDM black	E70399
	Heat-shrink cap · for sealing the flat cable ends · Housing materials: plastics	E70113
	Flat cable seal · Housing materials: ULTRAMID / sealing: NBR	E70413
	Cable clip for fixing the AS-i flat cable · Housing materials: PA 6.6	E70067
	Torque wrench	E70390

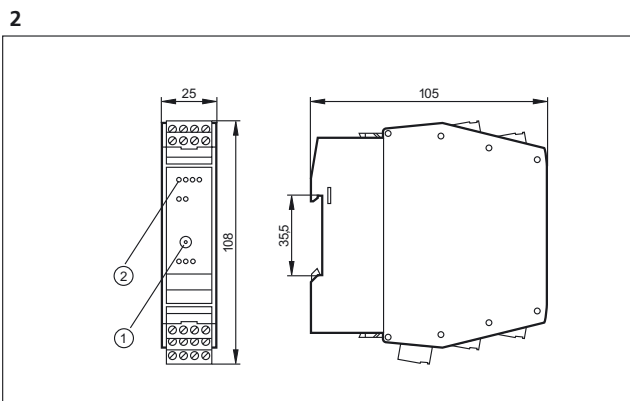
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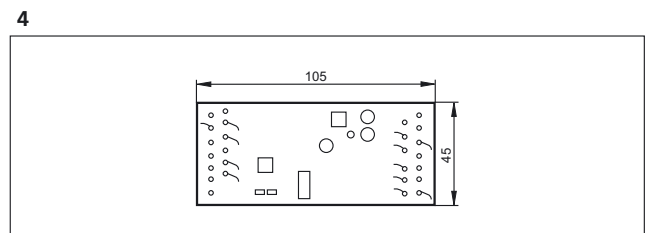
1: Addressing socket



1: LED, 2: Addressing socket

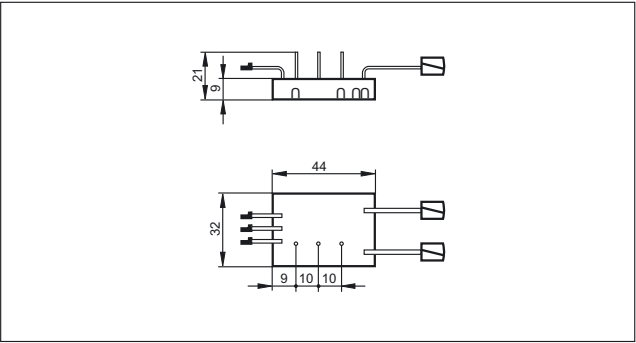


1: Addressing socket, 2: LED

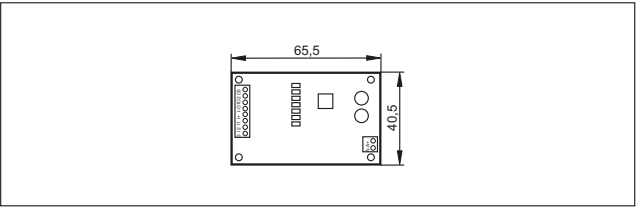


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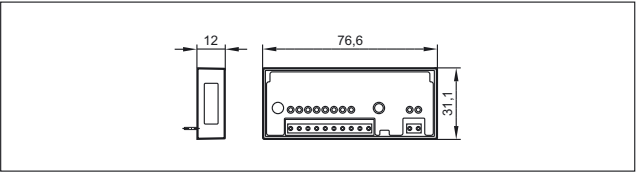
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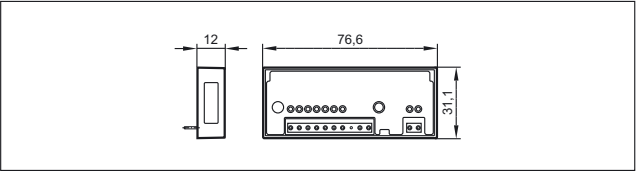
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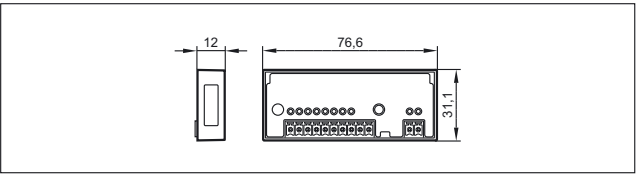
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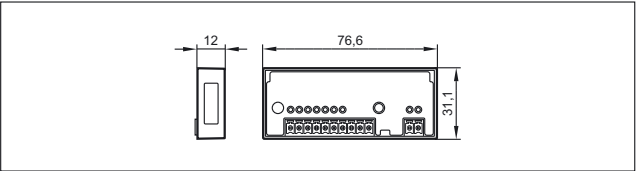
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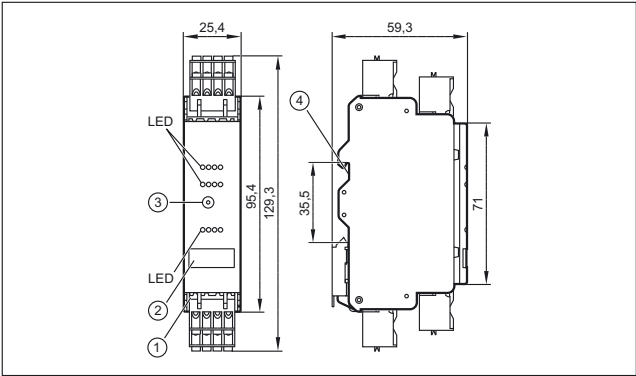
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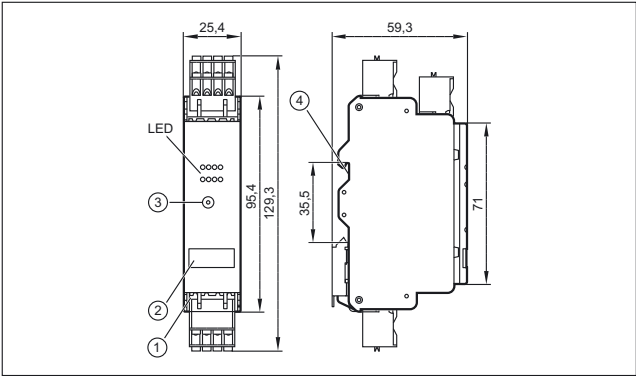


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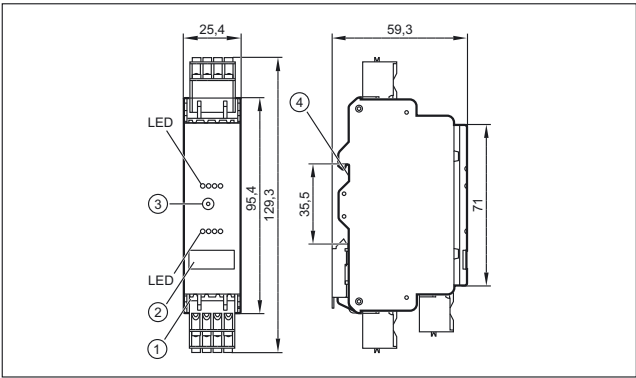


1: Plug with cage clamp connection, 2: label, 3: Addressing socket, 4: DIN rail adapter

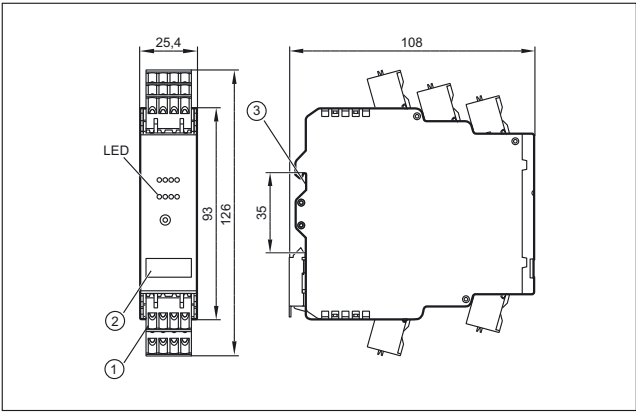
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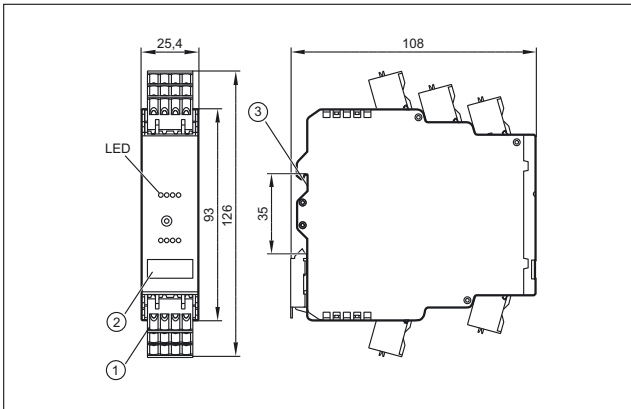
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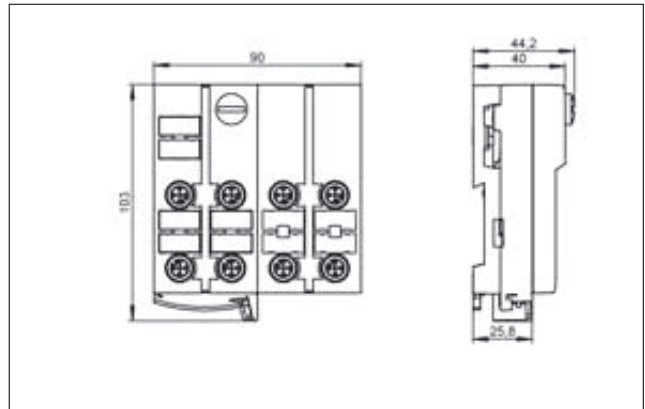


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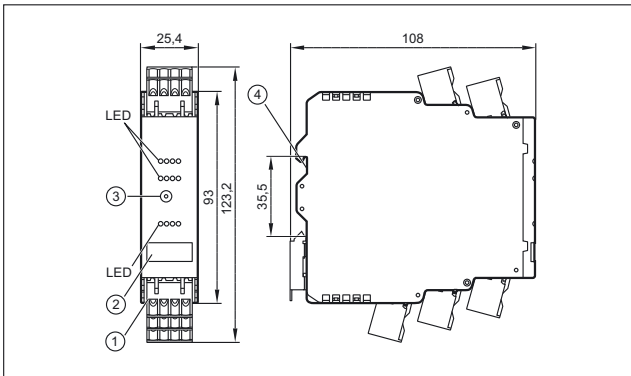
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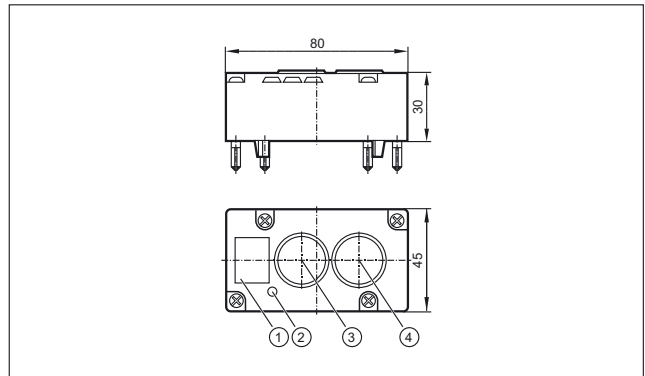


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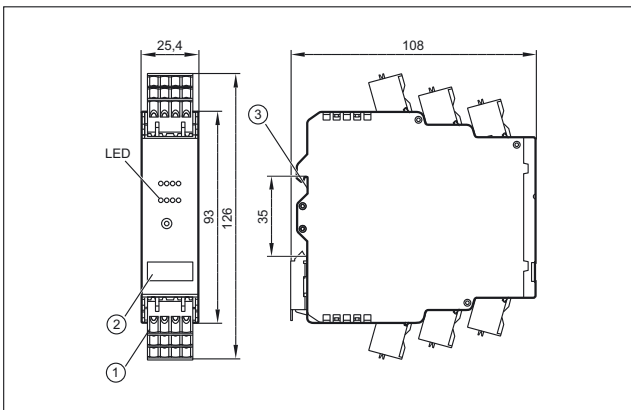


1: Plug with cage clamp connection, 2: label, 3: Addressing socket, 4: Mounting on DIN rail

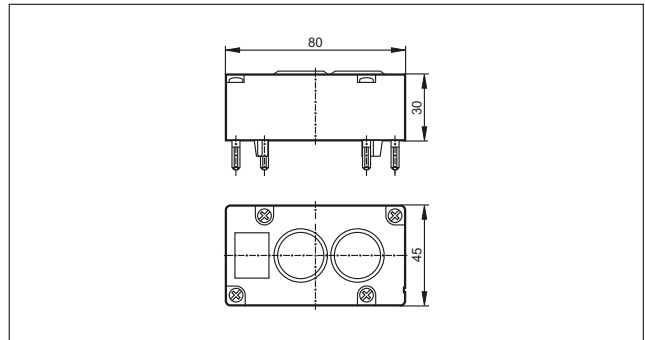
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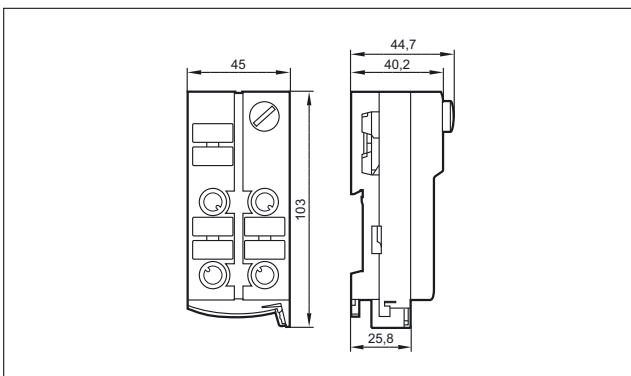
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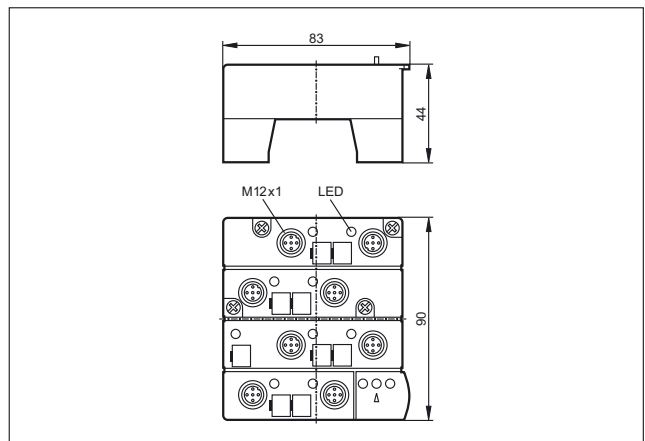
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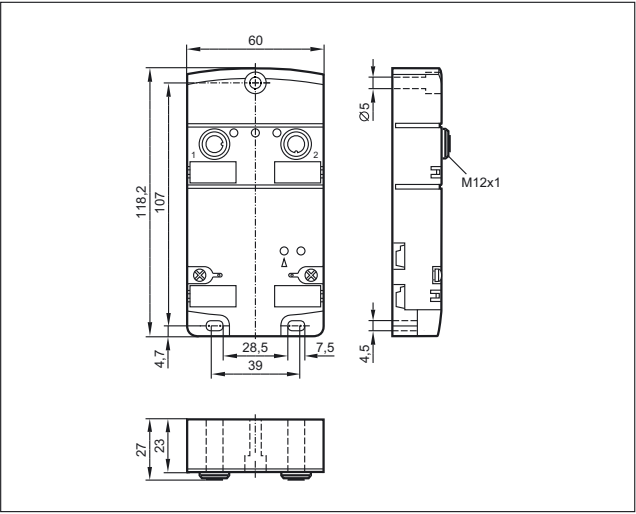


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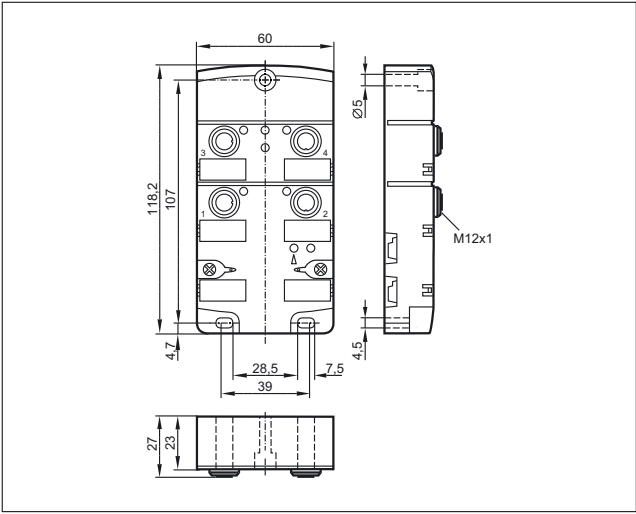


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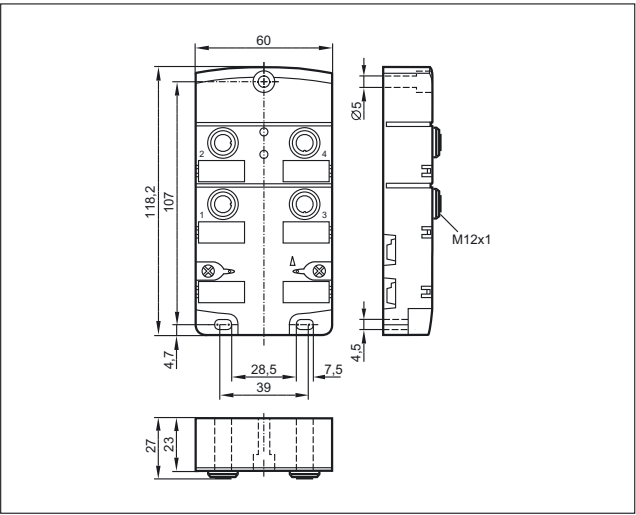
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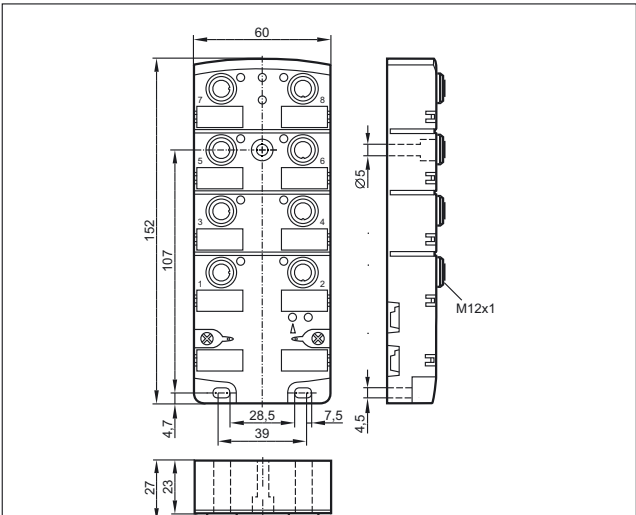
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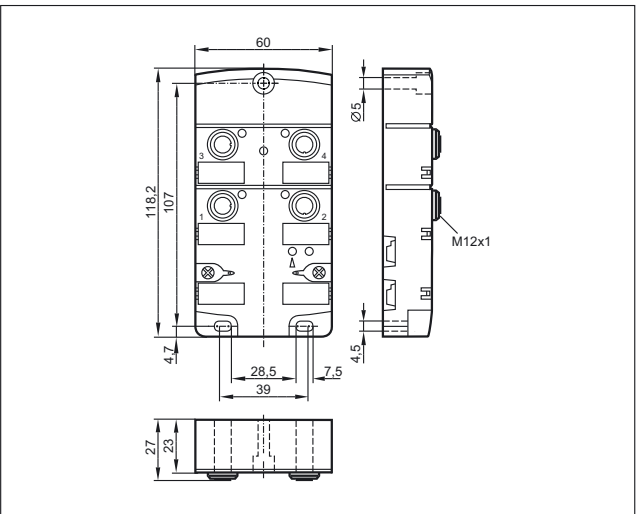
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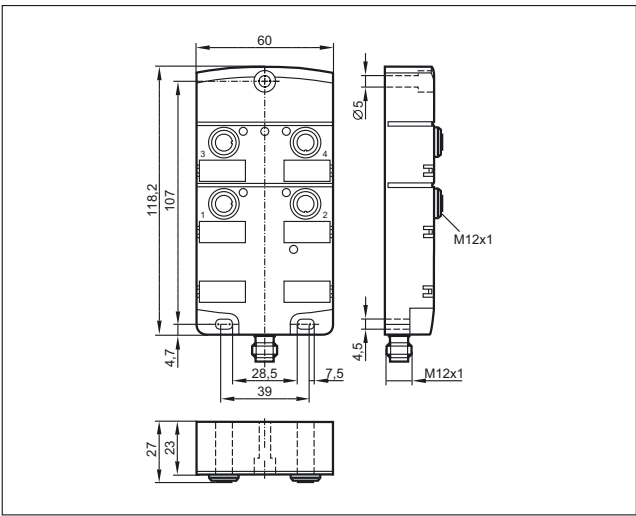
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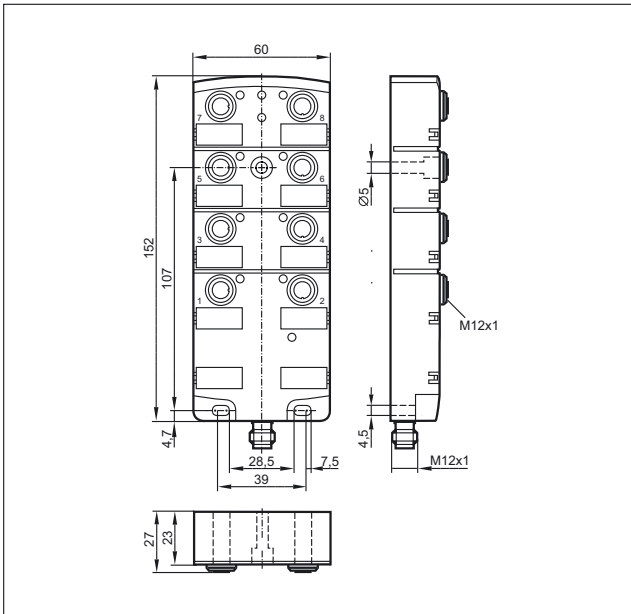
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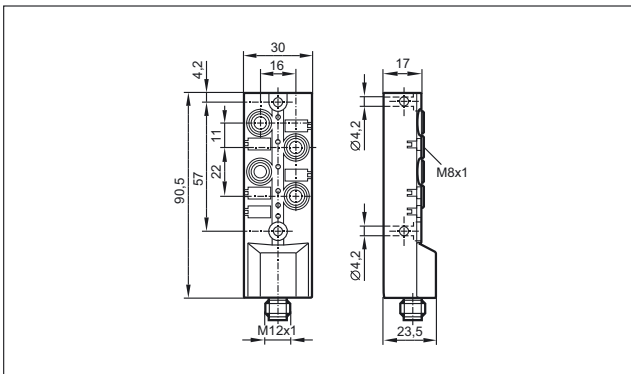


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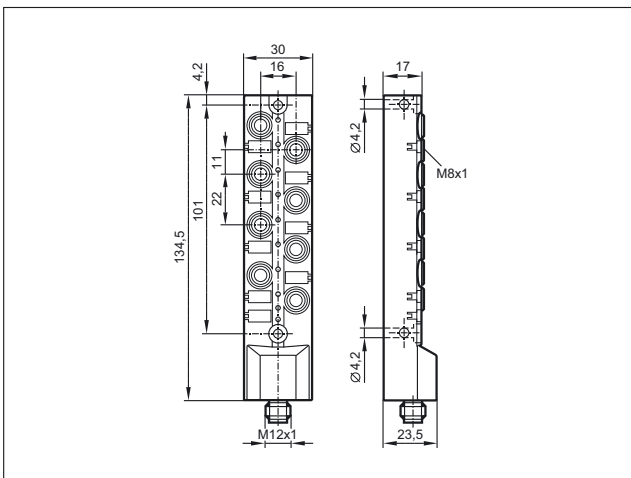
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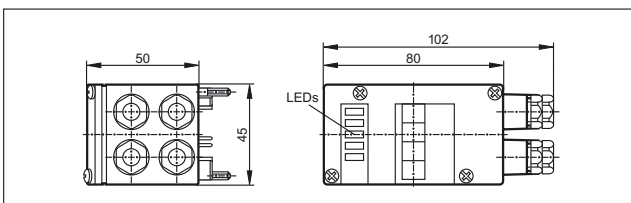
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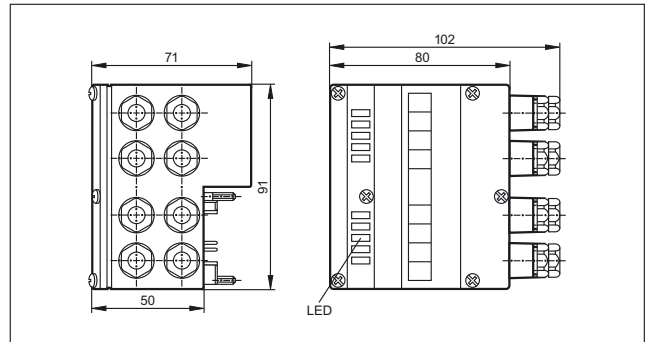
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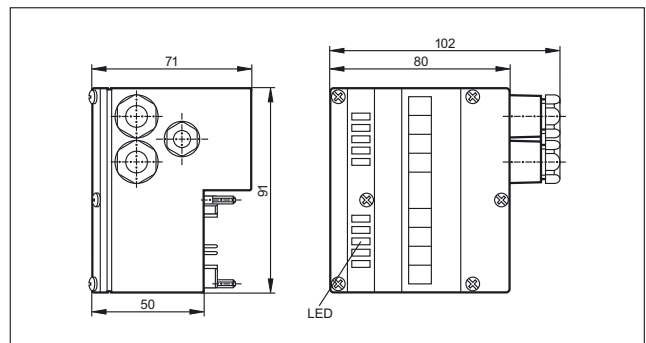
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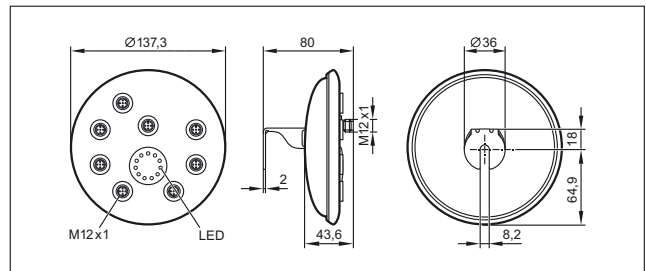
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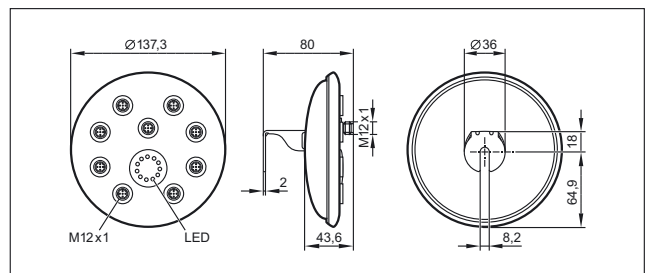
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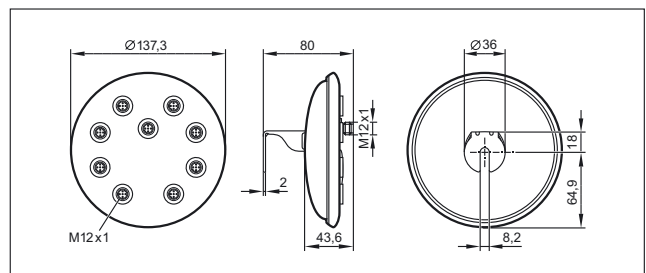
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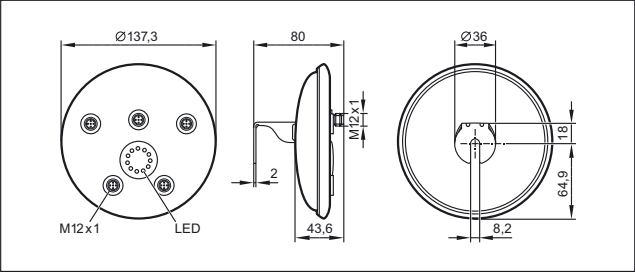


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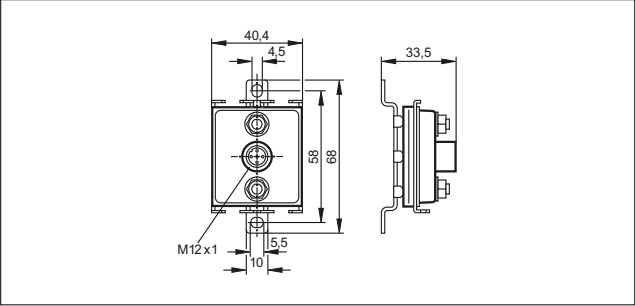


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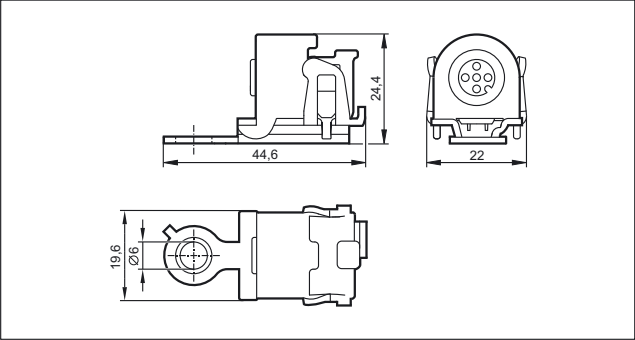
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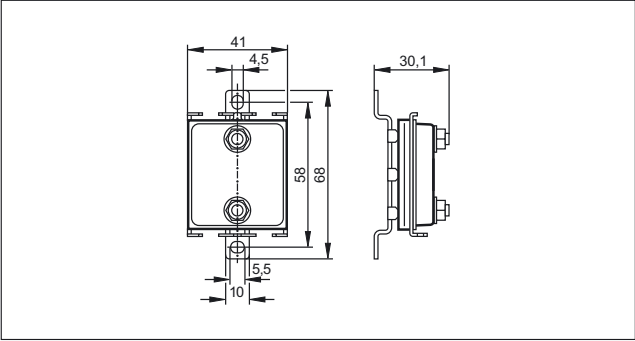
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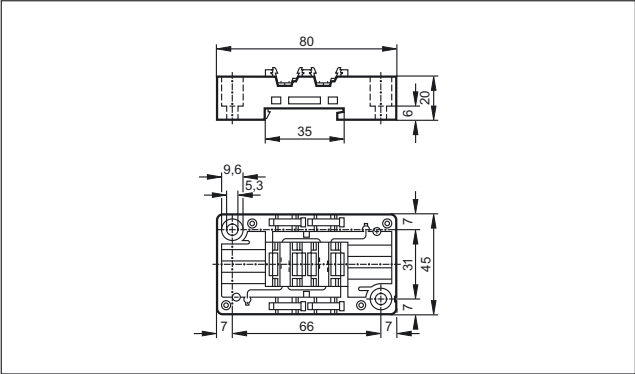
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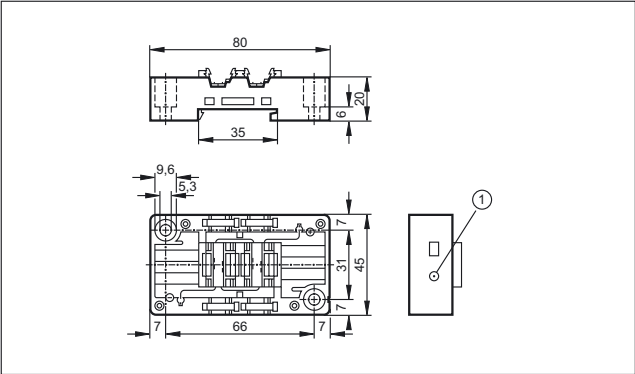
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1: Addressing socket



Industrial communication



AS-Interface AirBoxes for pneumatics

The AS-i AirBoxes are compact pneumatic valves, complemented by digital feedback inputs. They are integrated in a ClassicLine housing and are compatible in terms of space and mounting. The AS-i connection is carried out via the common flat cable or round cable lower parts. 3/2-way, 4/2-way, 5/2-way and 5/3-way valves are available.

System overview	Page
Pneumatic solutions (quick mounting)	630 - 631
Pneumatic solutions (ATEX)	631
Pneumatic solutions (screw mounting)	632
Accessories pneumatic components	632
Scale drawings / drawing no. – CAD download: www.ifm.com	633

Pneumatic solutions (quick mounting)

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	2 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Addressing socket · AS-i profile S-3.F.F · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC5227
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC5228
	4 inputs / 2 outputs; AirBox supply via external 24 V DC	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC5243
	4 inputs / 1 output ; AirBox supply via AS-i	AS-i AirBox · 5/2-way slide valve free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	2	AC5246
	4 inputs / 1 output; AirBox supply via external voltage 24 V DC	AS-i AirBox · 5/2-way slide valve free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	2	AC5249
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 5/2-way bistable slide valve free from overlapping · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC5251

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	4 inputs / 2 outputs; AirBox supply via external 24 V DC	AS-i AirBox · 5/2-way bistable slide valve free from overlapping · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC5253
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 5/3-way slide valve free from overlapping · closed · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC5270
	4 inputs / 2 outputs; AirBox supply via external 24 V DC	AS-i AirBox · 5/3-way slide valve free from overlapping · closed · Three orientations of the flat cable are possible · AS-i flat cable connection · Addressing socket · Version 2.11 and 3.0 with extended addressing mode · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC5271

Pneumatic solutions (ATEX)

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Digital inputs · Addressing socket · AS-i profile S-7.F.F · Versions 2.11 and 3.0 · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC542A
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC528A
	4 inputs / 1 output; AirBox supply via AS-i	AS-i AirBox · 5/2-way slide valve free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	2	AC546A
	2 inputs / 1 output; AirBox supply via AS-i	AS-i AirBox · 5/2-way slide valve free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Digital inputs · Addressing socket · AS-i profile S-3.F.F · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC246A
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 5/2-way bistable slide valve free from overlapping · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC551A
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 5/3-way slide valve free from overlapping · closed · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · ATEX approval · Group II, category 3D · Only in conjunction with impact protection housing E7000A or equivalent protection · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	1	AC570A



Industrial communication

Pneumatic solutions (screw mounting)

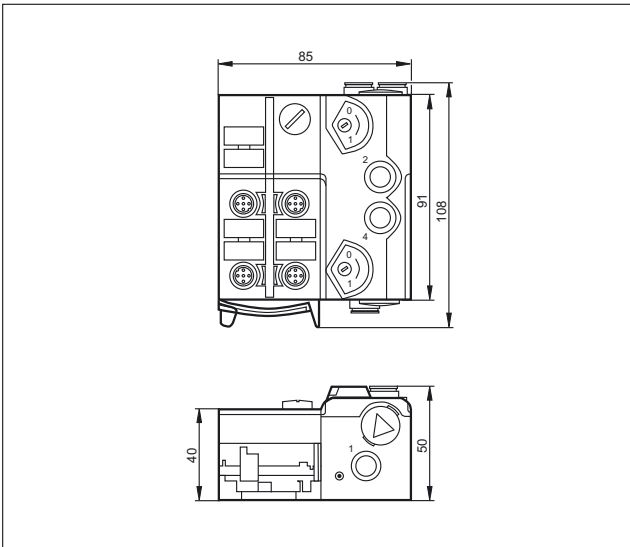
Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	2 x 2 inputs / 2 outputs	AS-i AirBox · Connection to the pneumatic system by tube fittings · Manual override by pressing/releasing or pressing/turning/locking · 2 x 2 digital inputs · 2 pneumatic outputs · Sockets M12 x 1 · housing: PBT / Metal parts: stainless steel / sealing: Viton	3	AC2055
	2 inputs / 1 output NO/NC selectable (monostable)	AS-i AirBox · Connection to the pneumatic system by tube fittings · 1 x 2 or 2 x 1 digital inputs · 1 pneumatic output (NO/NC selectable) · Sockets M12 x 1 · housing: PBT / Metal parts: stainless steel / sealing: Viton	4	AC2057

Accessories pneumatic components

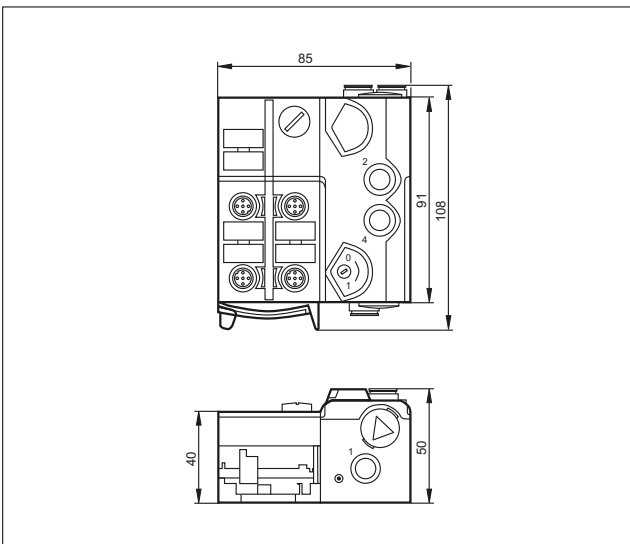
Type	Description	Order no.
	Silencer · Housing materials: connection piece: PP / filter: PE	E75232
	Push-in T-fitting · Housing materials: housing: Nickel-plated brass / PA66 / tooth lock washer: stainless steel	E75227
	Push-in L-fitting · Housing materials: housing: PA66 / release ring: polyoxymethylene / tooth lock washer: stainless steel / form ring: acrylonitrile butadiene caoutchouc	E75228
	Push-in L-fitting · Diameter reduction from Ø8 mm to Ø6 mm · Housing materials: housing: Nickel-plated brass / PA66 / tooth lock washer: stainless steel	E75229
	Sealing plug for AirBox · Housing materials: housing: PA66	E75231

Scale drawings / drawing no. – CAD download: www.ifm.com

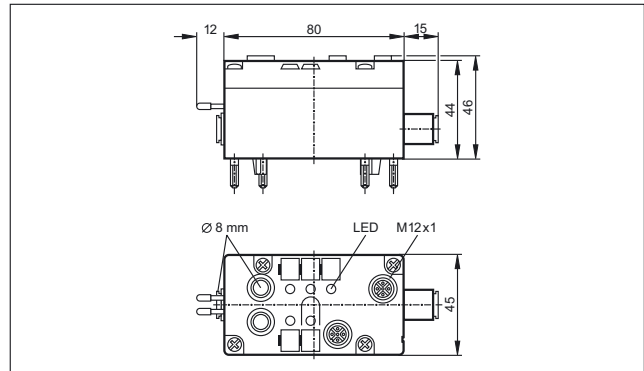
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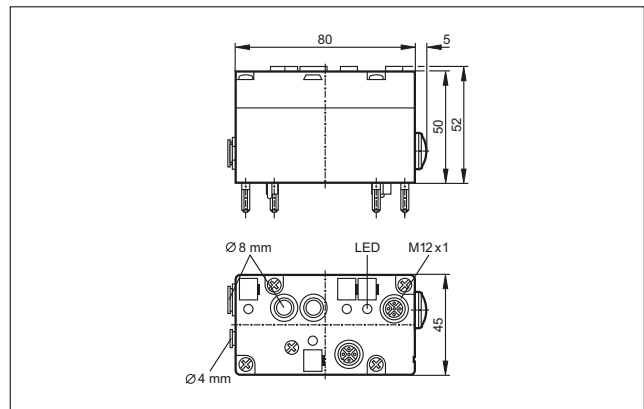
2



3



4





Industrial communication



AS-Interface sensors

The bus connection is already integrated in the intelligent AS-i sensors. So they can be directly connected to the yellow cable. In addition to the pure sensor information, further diagnostic data are available via the AS-interface, which can be transmitted and evaluated at a low cost.

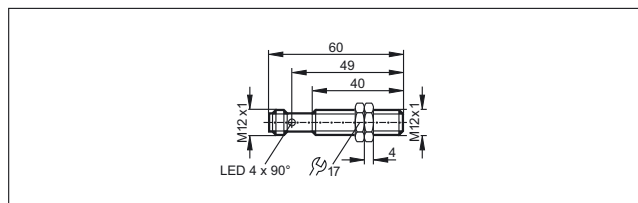
System overview	Page
AS-i sensors	634 - 635
Scale drawings / drawing no. – CAD download: www.ifm.com	635 - 636

AS-i sensors			
Type	Description	Drawing no.	Order no.
	Inductive sensor · M12 x 1 · Sensing range 4 mm · Gold-plated contacts · Connector, Gold-plated contacts · stainless steel / active face: LCP uncoloured	1	IFC247
	Inductive sensor · M12 x 1 · Sensing range 7 mm · Gold-plated contacts · Connector, Gold-plated contacts · stainless steel / active face: LCP uncoloured	2	IFC248
	Inductive sensor · M18 x 1 · Sensing range 8 mm · Gold-plated contacts · Connector, Gold-plated contacts · threaded sleeve: stainless steel / active face: LCP uncoloured / lock nuts: Brass	3	IGC234
	Inductive sensor · M18 x 1 · Sensing range 12 mm · Gold-plated contacts · Connector, Gold-plated contacts · threaded sleeve: stainless steel / active face: LCP uncoloured / lock nuts: Brass	4	IGC235
	Inductive sensor · M30 x 1.5 · Sensing range 14 mm · Gold-plated contacts · Connector, Gold-plated contacts · stainless steel / active face: LCP uncoloured	5	IIC220
	Inductive sensor · M30 x 1.5 · Sensing range 22 mm · Gold-plated contacts · Connector, Gold-plated contacts · stainless steel / active face: LCP uncoloured	6	IIC221
	Inductive sensor · Sensing range 15 mm · 5 positions of the sensing face selectable · Connector, rotatable, locking · PBT / PPE	7	IM5118
	Read/write head · With integrated AS-i slave profile 7.4 · M12 connector · rotatable · PA	8	DTA100
	Read head · with integrated AS-i slave profile 7.3 · M12 connector · rotatable · PA	8	DTA101
	Read/write head · With integrated AS-i slave profile 7.4 · M12 connector · 5 positions of the sensing face selectable · rotatable, locking · PA	7	DTA200

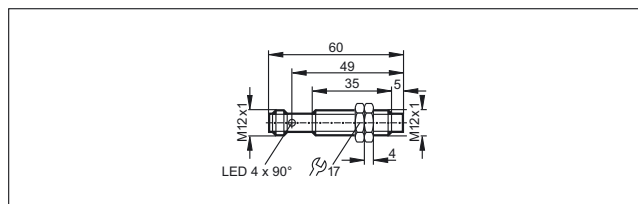
Type	Description	Draw- ing no.	Order no.
	Read head · with integrated AS-i slave profile 7.3 · M12 connector · 5 positions of the sensing face selectable · rotatable, locking · PA	7	DTA201
	Read/write head · With integrated AS-i slave profile 7.4 · M12 connector · rotatable · housing: PPE / Metal parts: diecast zinc / brass nickel-plated	9	DTA300
	Read head · with integrated AS-i slave profile 7.3 · M12 connector · rotatable · housing: PPE / Metal parts: diecast zinc / brass nickel-plated	9	DTA301

Scale drawings / drawing no. – CAD download: www.ifm.com

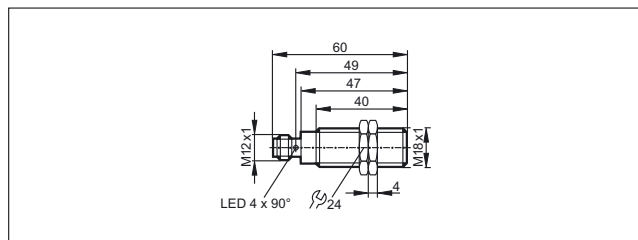
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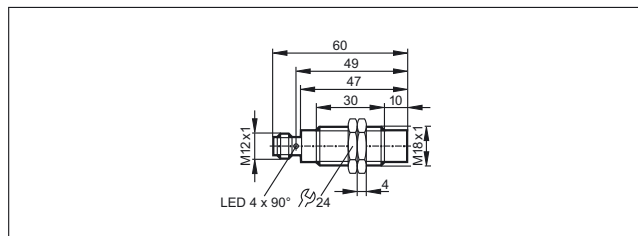
2



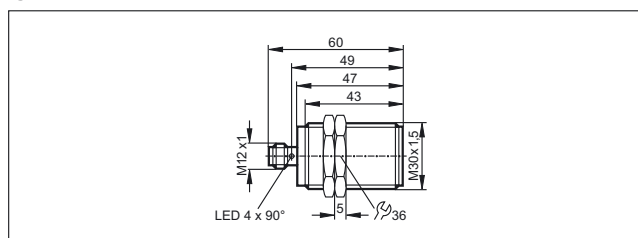
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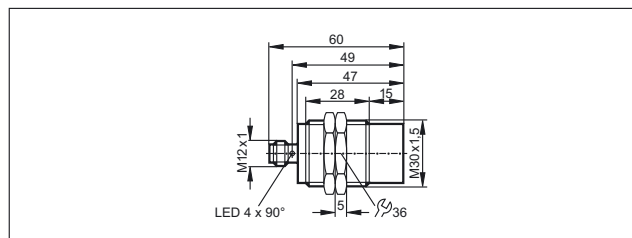
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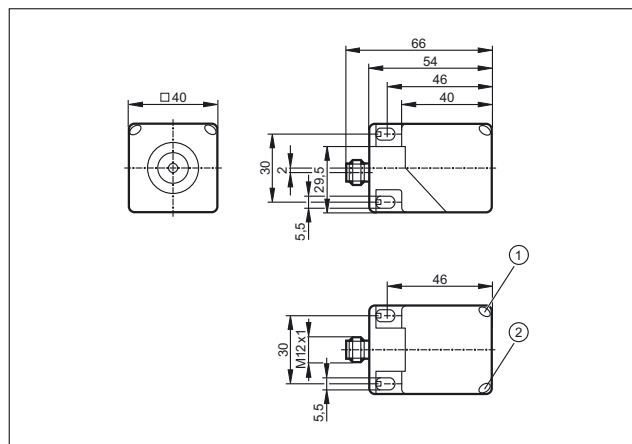
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6

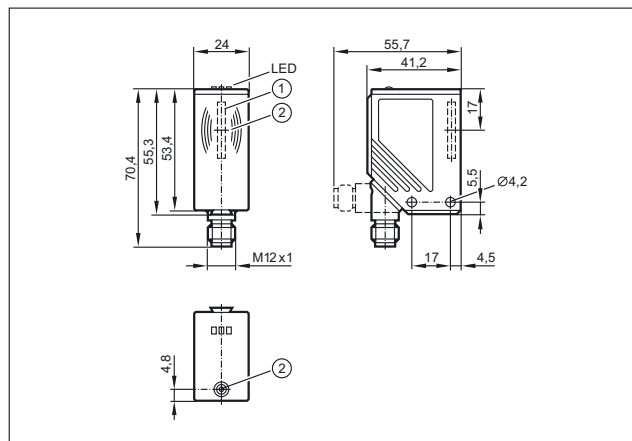


7



1: LED yellow, 2: LED green

8

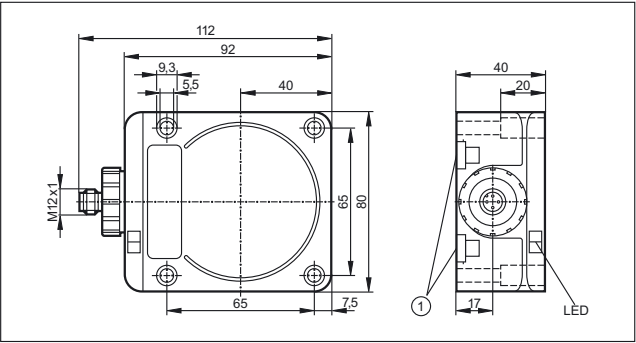


1: integrated antenna, 2: tag positioning mark (middle of the antenna)



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9



1: Mounting on DIN rail





Industrial communication



AS-Interface devices for valves and valve actuators

The valve controls for pneumatic quarter-turn actuators can be directly mounted to most quarter-turn actuators by means of the standardised mechanical interface. They contain two inductive sensors for position feedback, one or two outputs for the control of the pilot valve, and an AS-i slave.

System overview	Page
Sensors with ATEX approval 3D and / or 3G	638
Sensors for industrial applications, AS-i system	638 - 639
Wiring diagrams	639
Scale drawings / drawing no. – CAD download: www.ifm.com	639 - 640

Sensors with ATEX approval 3D and / or 3G

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

M12 connector · Output function transistor PNP · 2 inputs / 2 outputs · Connector groups 196, 198

	55 x 60 x 35	4	PBT	26.5...31.6	IP 5x	–	–	1	AC327A

M12 connector · Output function transistor PNP · 2 inputs / 1 output · Connector groups 196, 198

	55 x 60 x 35	4	PBT	26.5...31.6	IP 5x	–	–	1	AC336A

Sensors for industrial applications, AS-i system

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

M12 connector · Output function transistor PNP · AS-i · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202

	55 x 60 x 35	4 nf	PBT (Pocan)	26.5...31.6	IP 67	–	100	2	AC2310

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f AC / DC [Hz]	I _{load} AC / DC [mA]	Draw- ing no.	Order no.

M12 connector · AS-i · Wiring diagram no. 1 · Connector groups 10, 12, 13, 19, 21, 22, 23, 24, 148, 152, 153, 155, 184, 186, 188, 192, 193, 194, 202, 205



55 x 60 x 35 4 nf PBT (Pocan) 26.5...31.6 IP 67 – – 3 **AC2315**

M12 connector · Output function transistor PNP · AS-i · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202



55 x 60 x 35 4 nf PBT (Pocan) 26.5...31.6 IP 67 – 100 2 **AC2316**

M12 connector · Output function transistor PNP · 2 inputs / 2 outputs · Connector groups 8, 10, 19, 21, 23, 25, 44, 148, 149, 153, 159, 160, 184, 188, 193, 202

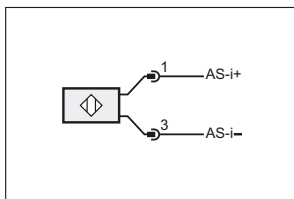


55 x 60 x 35 4 nf PBT (Pocan) 26.5...31.6 IP 67 – – 2 **AC2317**

f = flush / nf = non flush / qf = quasi-flush

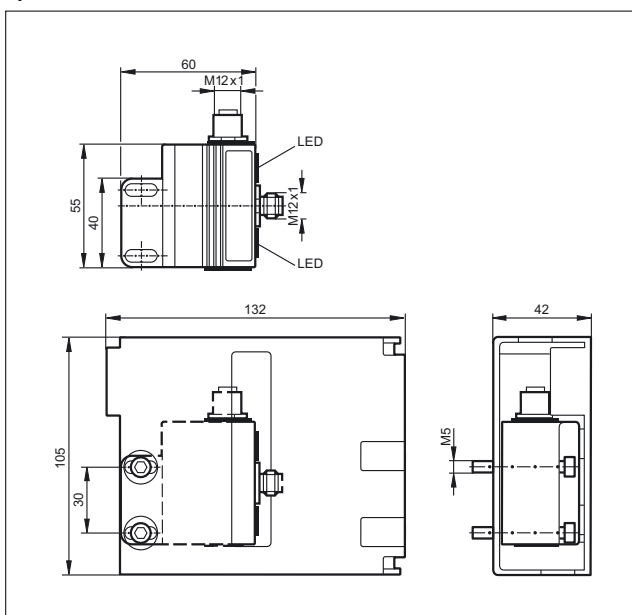
Wiring diagrams

1

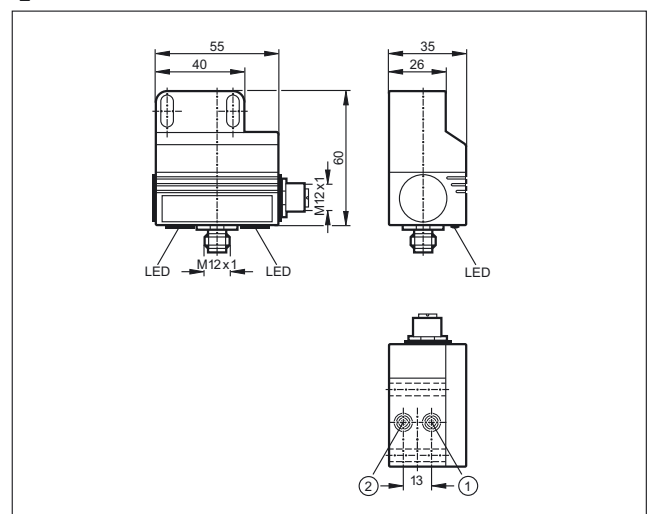


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1



2

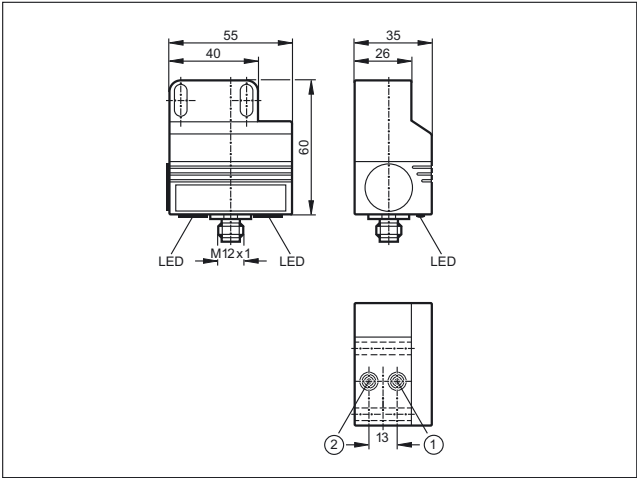


1: sensor 1, 2: sensor 2



Scale drawings / drawing no. – CAD download: www.ifm.com

3



1: sensor 1, 2: sensor 2





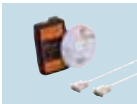
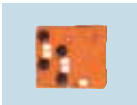
Industrial communication



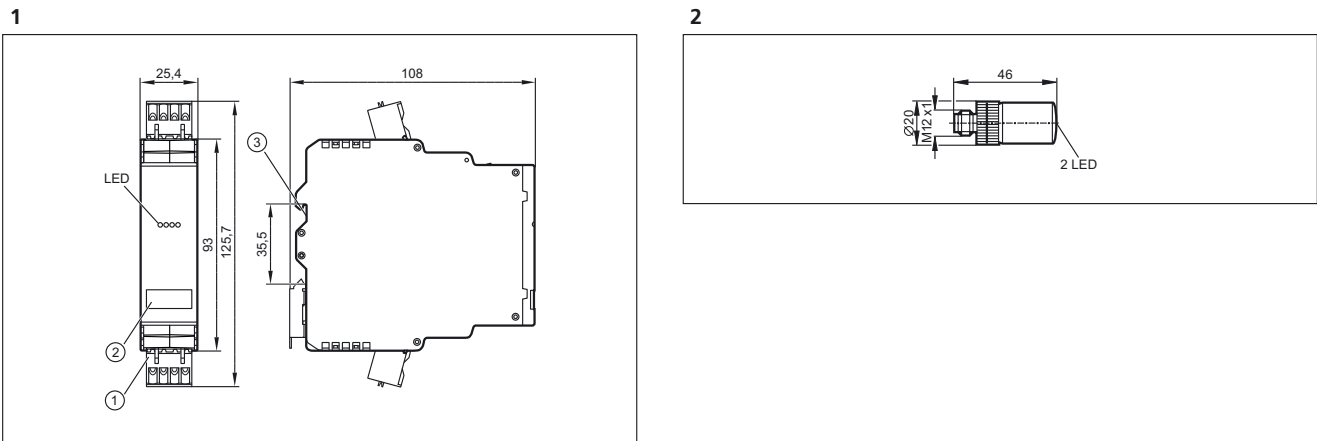
AS-Interface expansion

There are different ways to extend the AS-i cable. The specified one hundred metres can be extended up to 1000 metres in extreme cases.

System overview	Page
AS-i repeaters	642
Scale drawings / drawing no. – CAD download: www.ifm.com	642 - 643

AS-i repeaters			
Type	Description	Draw- ing no.	Order no.
	AS-i repeater · Extension of the AS-i network by another 100 m · One additional AS-i power supply necessary · Combicon connection · PC GF20	1	AC3225
	Passive AS-i bus termination · Extension of the cable to a maximum of 200 m without additional repeater · Improvement of the signal quality · Monitoring of the supply voltage by means of LEDs	2	AC1147
	eASI-Tester · Local diagnosis of the AS-i network · Creation of test reports for AS-i networks · User-friendly diagnosis and evaluation via the connected PC	3	AC1145
	AS-i tuner diagnostic module · Extension of the cable to a maximum of 200 m without additional repeater · Monitoring of the message quality · Display of critical states by "traffic light" LEDs · PBT	4	AC1146

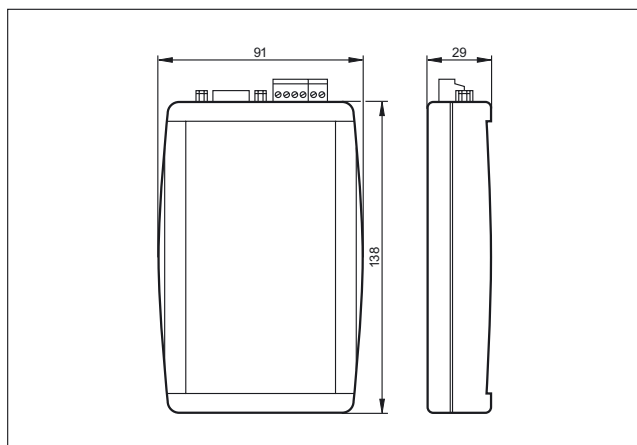
Scale drawings / drawing no. – CAD download: www.ifm.com



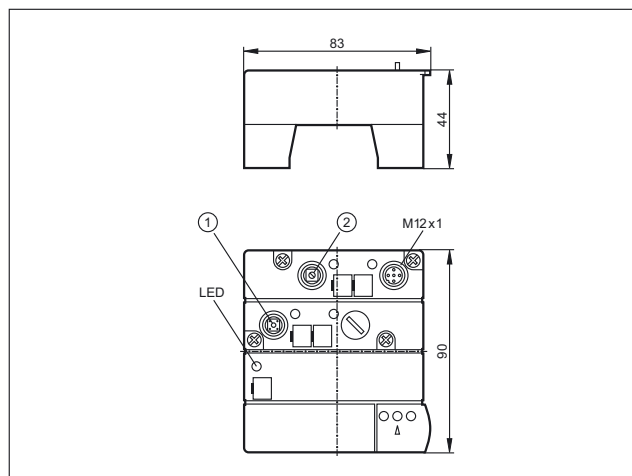
1: Plug with cage clamp connection, 2: label, 3: Mounting on DIN rail

Scale drawings / drawing no. – CAD download: www.ifm.com

3



4



1: tune button, 2: mode selector



Industrial communication



AS-Interface Safety at Work

The sophisticated AS-i technology and the extended diagnostic possibilities provide high reliability and machine uptime.

"Safety at Work" is the extension of the AS-interface by safety-related components. Safety components up to the highest control category 4 to EN 954-1, SIL 3 to IEC 61508 and EN ISO 13849 - 1 / PL e can be connected to AS-i.

System overview	Page
Safety at Work	644 - 646
Accessories Safety at Work	646 - 647
AS-i manuals	647
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Safety at Work

Type	Description	Draw- ing no.	Order no.
	AS-i safety monitor · Basic version · 1-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	AC001S
	AS-i safety monitor · Basic version · 2-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	AC002S
	AS-i safety monitor · Extended functionality · 1-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	AC003S
	AS-i safety monitor · Extended functionality · 2-channel · Configuration and setup by configuration software ASIMON · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	1	AC004S
	AS-i safety monitor · Extended functionality and integrated safe slave for triggering a safe AS-i output · 2-channel · Configuration and setup by configuration software ASIMON V3.0 · Screw terminal · polyamide black · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	2	AC032S
	AS-i safety monitor · 2 safe semi-conductor outputs · SIL 3 to EN 62061, IEC 61508 / SIL 3 and EN ISO 13849 - 1 / PL e · Chip card to save the configuration data · Configuration and setup by configuration software ASIMON V3 G2 · USB 2.0 interface · Chip card and Combicon screw terminals supplied with the device · Screw terminal	3	AC041S
	Safe active AS-i module · Performance Level e to EN ISO 13849-1 et IEC 61508 / SIL 3 for the connection of mechanical contacts · Combicon connection · PA · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	4	AC009S
	Safe active AS-i output module · SIL 3 to EN 62061, IEC 61508 / SIL 3 and EN ISO 13849 - 1 / PL e · for the safe triggering of actuators · Combicon connection · PA · Complies with the requirements: ISO 13849-1: PL e · IEC 61508: SIL 3	5	AC030S
	AS-i Safety at Work · Safe AS-i input module 2SI - 2LO · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 62061: SILcl 3	6	AC505S

Type	Description	Draw- ing no.	Order no.
	AS-i Safety at Work · Safe AS-i input module 4SI / 2DO T / 2LO · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 3 · ISO 13849-1: PL d · IEC 62061: SILcl 2	6	AC506S
	AS-i Safety at Work · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3 · IEC 62061: SILcl 3	6	AC507S
	AS-i Safety at Work · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 3 · ISO 13849-1: PL d · IEC 62061: SILcl 2	6	AC509S
	Illuminated E-STOP · front mounting · reset by turning · 2 NC contacts / 1 red LED · fool-proof E-STOP to EN ISO 13850	7	E7007S
	Illuminated E-STOP with integrated AS-i connection · fool-proof E-STOP to EN ISO 13850 · Pull to reset · AS-i interface via AS-i flat cable IP 67 · PC GF20 · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	8	AC010S
	Key-release E-STOP with integrated AS-i connection · Connector M12 x 1 · AS-i interface via AS-i flat cable IP 67 · fool-proof E-STOP to EN ISO 13850 · Reset by key operation · PC GF20 · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	9	AC011S
	safe AS-i e-stop operating unit with integrated AS-i connection · AS-i interface via M12 x 1 connector · fool-proof E-STOP to EN ISO 13850 · Pull to reset · interchangeable button inserts · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	10	AC012S
	AS-i safety PCB · Connection of mechanical contact and LED components · Certification to ISO 13849-1: PL e and IEC 61508 / SIL 3 · Complies with the requirements: · IEC 61508: SIL 3	11	AC015S
	AS-i Profinet gateway with safe preprocessing · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profinet RT device class B · LCD colour display · Integrated safety and non safety PLC · Configuration and setup by CODESYS V3 configuration software · aluminium powder-coated / steel sheet galvanised / Makrolon · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	12	AC402S
	AS-i Profibus gateway · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profibus DP (DPV0 + DPV1) · LCD colour display · Configuration and setup by CODESYS V3 configuration software · aluminium powder-coated / steel sheet galvanised / Makrolon · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	13	AC412S
	AS-i EtherNet/IP gateway with safe preprocessing · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · LCD colour display · Integrated safety and non safety PLC · Configuration and setup by CODESYS V3 configuration software · aluminium powder-coated / steel sheet galvanised / Makrolon · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	12	AC422S
	Fail-safe inductive sensor · M12 connector, Gold-plated contacts · PPE / diecast zinc · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	14	GM504S
	Fail-safe inductive sensor · M12 connector, Gold-plated contacts · PPE / diecast zinc · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	14	GM505S
	Fail-safe inductive sensor · M18 x 1 · M12 connector, Gold-plated contacts · high-grade stainless steel / PBT · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	15	GG505S
	Fail-safe inductive sensor · M30 x 1.5 · M12 connector, Gold-plated contacts · PEEK / high-grade stainless steel / O-ring: EPDM · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	16	GI505S
	Safety switch with guard locking · Normally closed principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply ext. from 24 V DC · M12 connector · thermoplastic reinforced glass-fibre	17	AC901S



Industrial communication

Type	Description	Draw- ing no.	Order no.
	Safety switch with guard locking · Normally open principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply ext. from 24 V DC · M12 connector · thermoplastic reinforced glass-fibre	17	AC902S
	Safety switch with guard locking · Normally closed principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply from AS-i · M12 connector · thermoplastic reinforced glass-fibre	18	AC903S
	Safety switch with guard locking · Normally open principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply from AS-i · M12 connector · thermoplastic reinforced glass-fibre	18	AC904S

Accessories Safety at Work

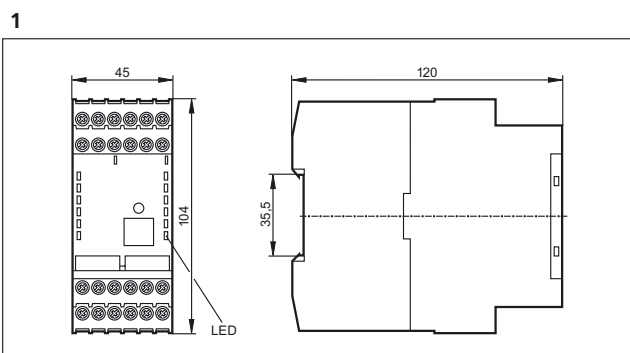
Type	Description	Order no.
	AS-i Safety at Work · Programming software for AS-i safety monitor AC001S / AC002S / AC003S / AC004S / AC032S · Version 3.0 · Configuration, set-up and diagnostics of the AS-i safety monitor	E7040S
	Software ASIMON V3 G2 · Configuration, set-up and diagnostics of the AS-i safety monitor · AC041S	E7050S
	USB interface cable for the connection of the safety monitor AC041S to the PC · cable length 1.8 m · 1.8 m	E7051S
	Chip card to save the configuration data of the AS-i safety monitor AC041S · 256 K	E7052S
	Safe contact expander without delay · 2 independent channels · 4 contact blocks (NO) per channel · 1 feedback circuit (NC) per channel · Mounting on DIN rail · Screw terminal	E7053S
	Connection cable PC / AS-i safety monitor · Parameter setting cable PC / AS-i safety monitor · Western connector RJ 45 8 poles / D-Sub socket 9 poles · 2.5 m	E7001S
	Connection cable AS-i safety monitor / AS-i safety monitor · Download cable AS-i safety monitor / AS-i safety monitor · Western connector RJ 45 8 poles · 0.3 m	E7002S
	EMERGENCY STOP label IP66 4 languages DE, UK, FR, IT · EMERGENCY STOP label 4 languages for a safe illuminated EMERGENCY STOP button with integrated AS-i interface AC010S / AC011S / AC012S · 50 x 50 mm	E7003S
	EMERGENCY STOP protective collar · EMERGENCY STOP protective collar for safe E-STOP AC010S / AC011S / AC012S · Housing materials: PC GF20 RAL 1004	E7004S
	bridging plug for safety modules · Housing materials: PUR	E7005S

Type	Description	Order no.
	bridging plug for safety modules · Housing materials: PUR	E7008S
	Bulkhead connector · straight · M20 - M12 · M12 connector · 0.07 m · Housing materials: polyamide	E7006S
	Bolt for safety guards · for heavy doors · For right or left hinged doors without escape release · No additional door handle required · screw mounting onto common aluminium profiles and machine panels · Housing materials: diecast aluminium yellow	E7901S
	Bolt for safety guards · for heavy doors · For right or left hinged doors without escape release · No additional door handle required · screw mounting onto common aluminium profiles and machine panels · Housing materials: glass-fibre reinforced plastic yellow	E7902S
	Actuator S standard straight · With rubber bush, overtravel 5 mm · Suitable for a maximum pull force of 2500 N for the door switches AC901S - AC904S	E7903S
	Actuator S standard angled · With rubber bush, overtravel 5 mm · Suitable for a maximum pull force of 2500 N for the door switches AC901S - AC904S	E7904S
	Hinged actuator left / right · For left or right hinged doors, overtravel 5 mm	E7905S
	Hinged actuator top / bottom · For top and bottom hinged doors, overtravel 5 mm	E7906S

AS-i manuals

Type	Description	Order no.
	ecolog asi system · AS-Interface Manual (German)	AC0115
	ecolog asi system · AS-Interface Manual (English)	AC0116

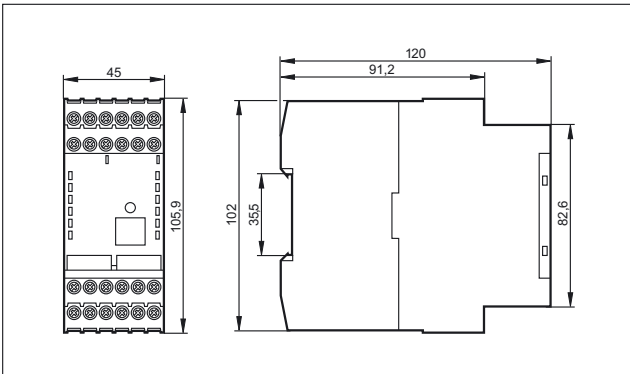
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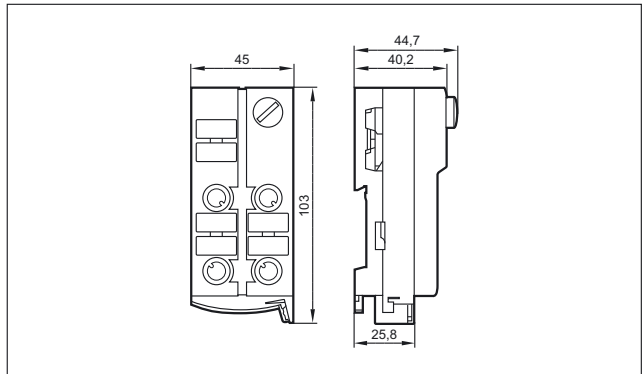


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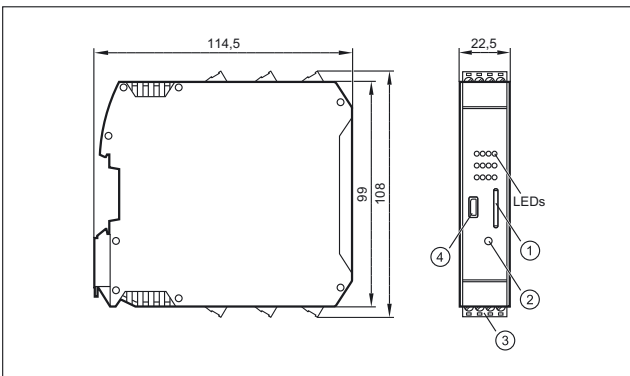
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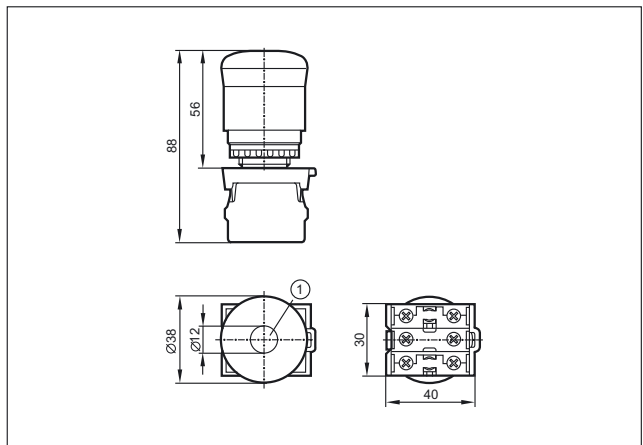


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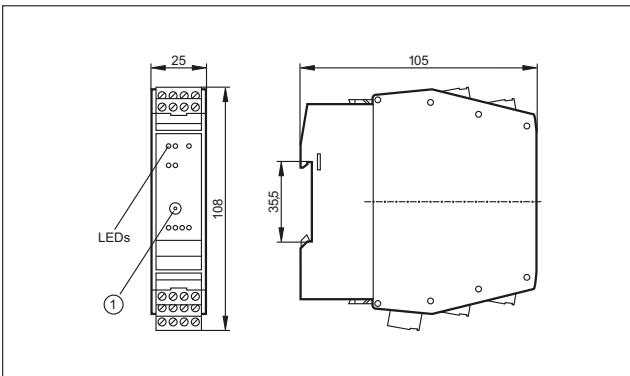


1: Chip card, 2: service button, 3: Combicon connector with screw terminals, 4: Micro USB interface

7

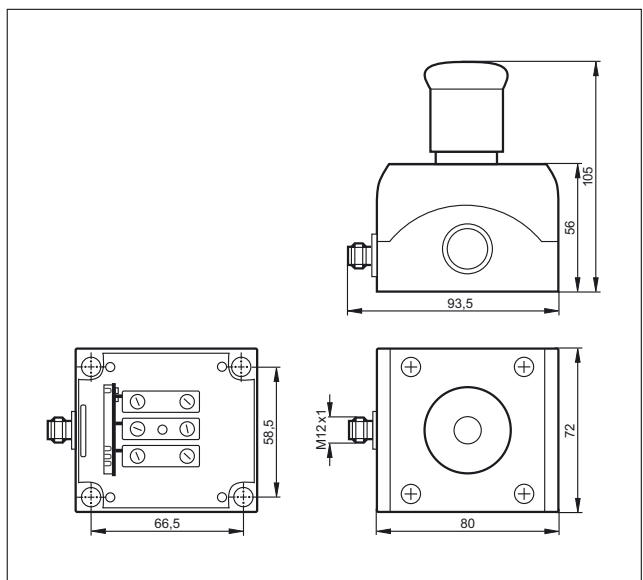


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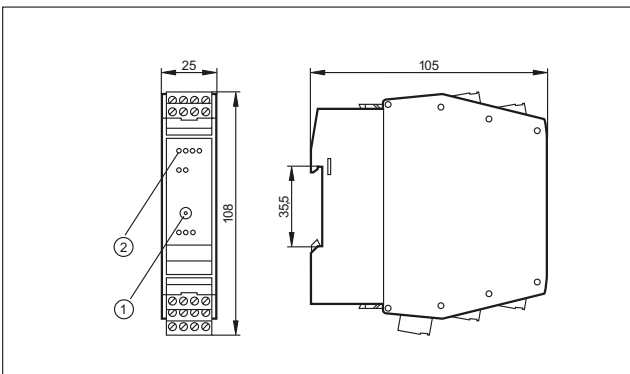


1: Addressing socket

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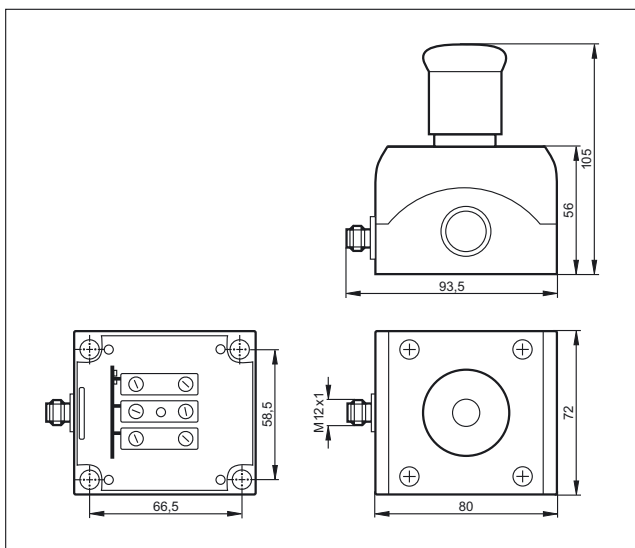
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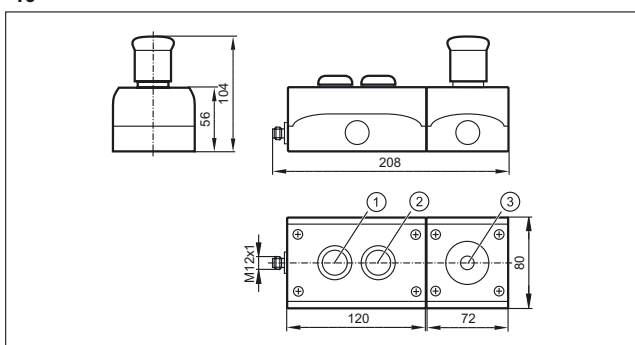
1: Addressing socket, 2: LED

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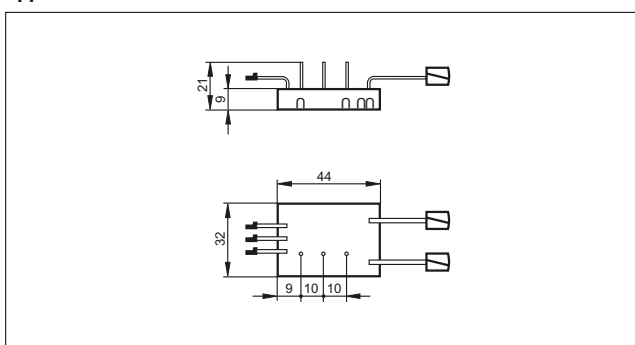
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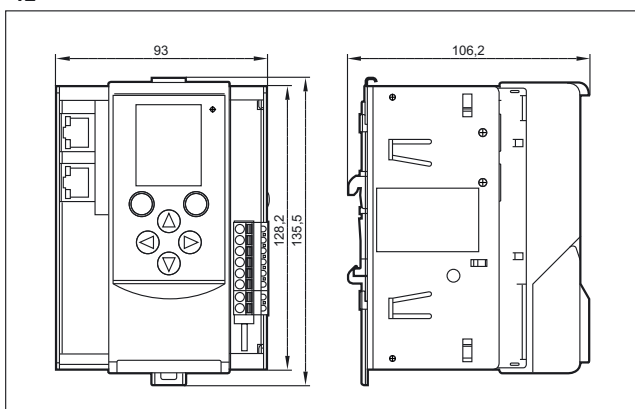
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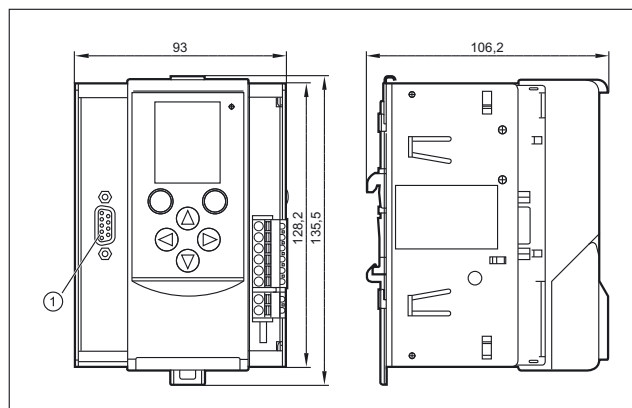
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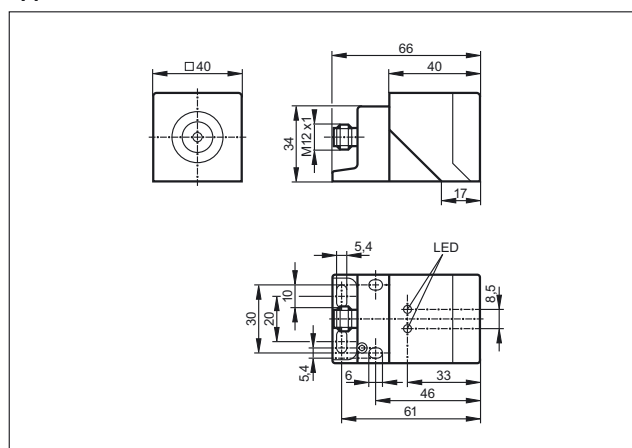
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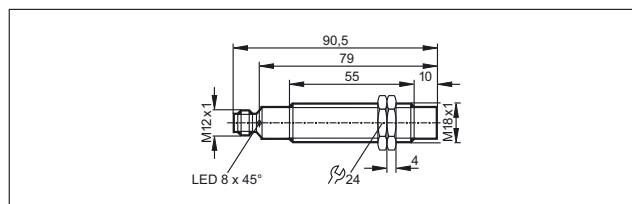
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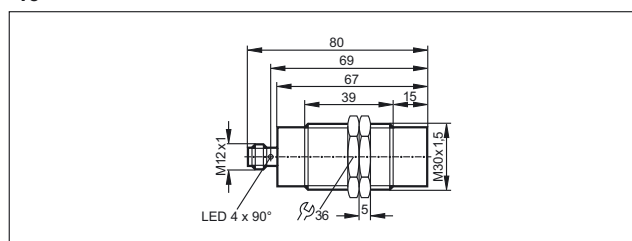
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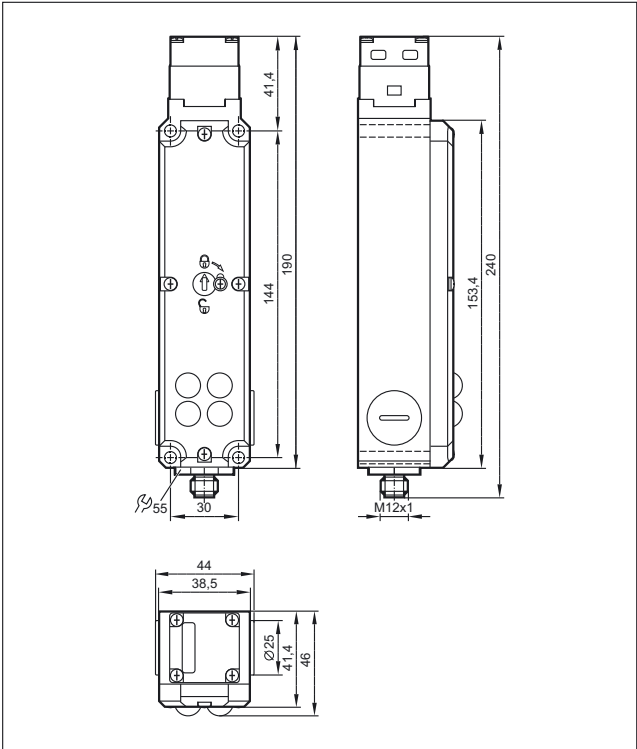
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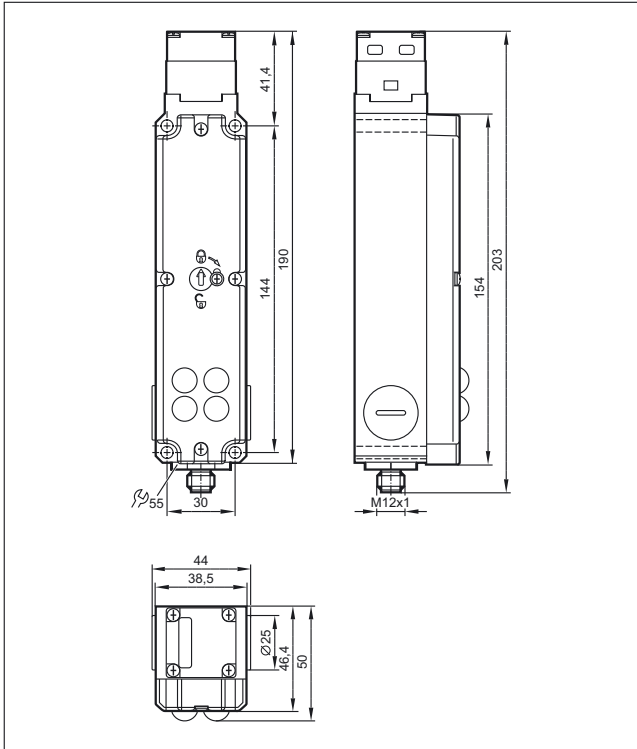


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17



18







Industrial communication



IO-Link components

IO-Link is a manufacturer-independent point-to-point communication system used to connect sensors and actuators to an automation system.

An IO-Link system consists of an IO-Link master and several IO-Link devices.

The IO-Link master represents the interface to the controller or fieldbus level and communicates with the connected IO-Link devices.

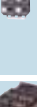
IO-Link is capable of processing switching signals of binary sensors, process values of analogue sensors and their parameters in a purely digital form based on a 24 V signal. This eliminates measuring value errors associated with the transmission and conversion of analogue signals.

IO-Link can be used to transfer several process values or parameters of a device simultaneously via one unscreened standard cable. IO-Link is an internationally standardised fieldbus and controller independent interface.

System overview	Page
IO-Link components	652 - 653
Accessories and software	653 - 654
Scale drawings / drawing no. – CAD download: www.ifm.com	654 - 656

IO-Link components

Type	Inputs / outputs	Description	Drawing no.	Order no.
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · Suited for use in the food and beverage industry (use of cleaning agents under high pressure and at high temperatures) · M12 connector · housing: polyamide grey / socket: Stainless steel 303	1	AL1101
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · Suited for use in the food and beverage industry (use of cleaning agents under high pressure and at high temperatures) · M12 connector · housing: polyamide grey / socket: Stainless steel 303	1	AL1121
	max. 8 IO-Link ports / max. 16 digital inputs / max. 8 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · Suited for use in the food and beverage industry (use of cleaning agents under high pressure and at high temperatures) · M12 connector · housing: polyamide grey / socket: Stainless steel 303	2	AL1103
	max. 8 IO-Link ports / max. 16 digital inputs / max. 8 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · Suited for use in the food and beverage industry (use of cleaning agents under high pressure and at high temperatures) · M12 connector · housing: polyamide grey / socket: Stainless steel 303	2	AL1123
	6 x 2 outputs	Active CompactLine module (IO-Link device) · I/O modules for field applications · Suited for use in the food and beverage industry (use of cleaning agents under high pressure and at high temperatures) · Sockets M12 x 1 · housing: polyamide grey / socket: Stainless steel 303	3	AL2230
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	1	AL1100
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	1	AL1120
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	4	AL1200
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	4	AL1220

Type	Inputs / outputs	Description	Draw- ing no.	Order no.
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	5	AL1202
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	5	AL1222
	max. 8 IO-Link ports / max. 16 digital inputs / max. 8 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	2	AL1102
	max. 8 IO-Link ports / max. 16 digital inputs / max. 8 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	2	AL1122
	4 x 2 inputs	Active CompactLine module (IO-Link device) · 4 way · Supply via IO-Link M12 connector · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / O-Ring : Viton	6	AL2400
	6 x 2 outputs	Active CompactLine module (IO-Link device) · I/O modules for field applications · Sockets M12 x 1 · housing: polyamide / socket: Brass nickel-plated	3	AL2330
	8 x 2 inputs	Active CompactLine module (IO-Link device) · 8 way · Supply via IO-Link M12 connector · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / O-Ring : Viton	7	AL2401
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · housing: PA / socket: Brass nickel-plated	8	AL1000
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with Profibus interface · I/O modules for field applications · Sockets M12 x 1 · housing: PA / socket: Brass nickel-plated	9	AL1010
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · Sockets M12 x 1 · housing: PA / socket: Brass nickel-plated	8	AL1020
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with EtherCat interface · I/O modules for field applications · Sockets M12 x 1 · housing: PA / socket: Brass nickel-plated	8	AL1030
	8 IO-Link ports / 10 digital inputs / 2 digital inputs or outputs	IO-Link master with Profinet interface · I/O modules for use in the control cabinet · IO-Link master 8 ports A and B variable · LineRecorder Agent embedded · 2 Ethernet ports with integrated switch · Additional binary inputs and outputs can be configured · Housing for DIN rail mounting · Screw terminal · housing: polyamide	10	AY1000
	8 IO-Link ports / 10 digital inputs / 2 digital inputs or outputs	IO-Link master with EtherNet/IP interface · I/O modules for use in the control cabinet · IO-Link master 8 ports A and B variable · LineRecorder Agent embedded · 2 Ethernet ports with integrated switch · Additional binary inputs and outputs can be configured · Housing for DIN rail mounting · Screw terminal · housing: polyamide	10	AY1020

Accessories and software

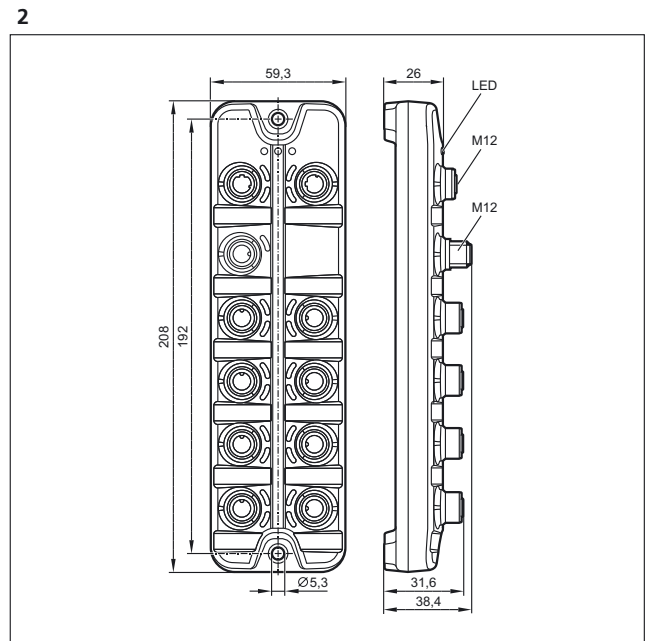
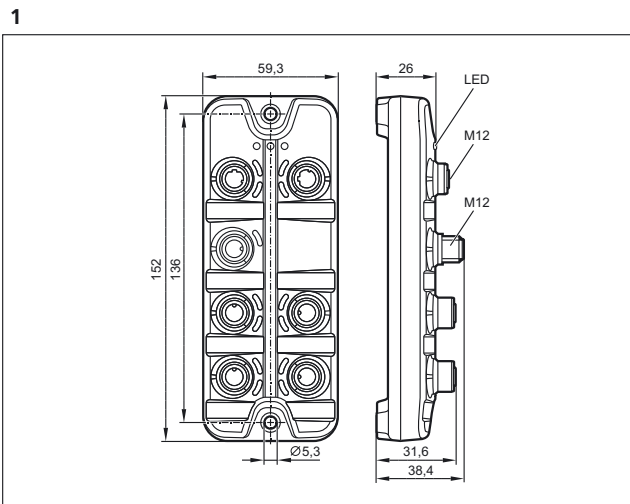
Type	Description	Order no.
	App for parameter setting and set-up of IO-Link sensors · Single user licence included (article no. E71400) · Version 1.1.0 · Data carrier: USB stick	AP3002



Industrial communication

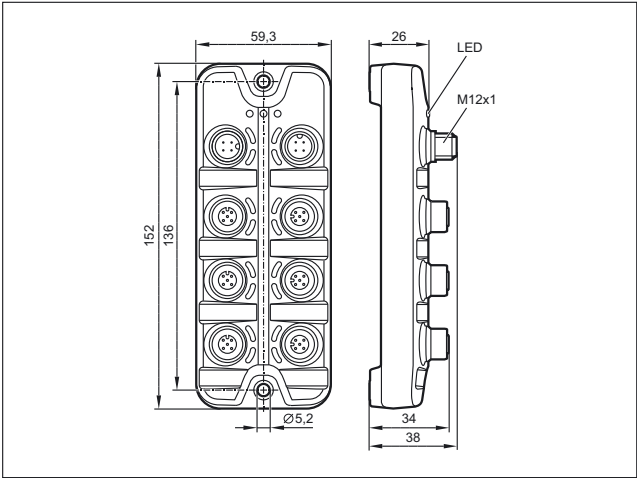
Type	Description	Order no.
	App for parameter setting and set-up of up to 5 O2I multicode readers · Single user licence included (article no. E71400) · Version 1.0.2 · Data carrier: USB stick	AP3022
	App for parameter setting and set-up of the 3D camera O3D2nn · Single user licence included (article no. E71400) · Version 1.0.0 · Data carrier: USB stick	AP3032
	App for parameter setting and set-up of the RFID read/write head · Single user licence included (article no. E71400) · Version 1.0.0 · Data carrier: USB stick	AP3042
	App for collecting and saving process data from AS-i IO-Link modules (AC5225) and analogue AS-i input slaves · Single user licence included (article no. E71400) · Version 1.0.1 · Data carrier: USB stick	AP3052
	App for the management of 999 AS-i configurations without special hardware · Single user licence included (article no. E71400) · Version 1.0.0 · Data carrier: USB stick	AP3062
	Protective cap · M12 · for M12 socket · IO-Link master · IO-Link device · Housing materials: end cap: Stainless steel 303 / sealing: EPDM	E12542

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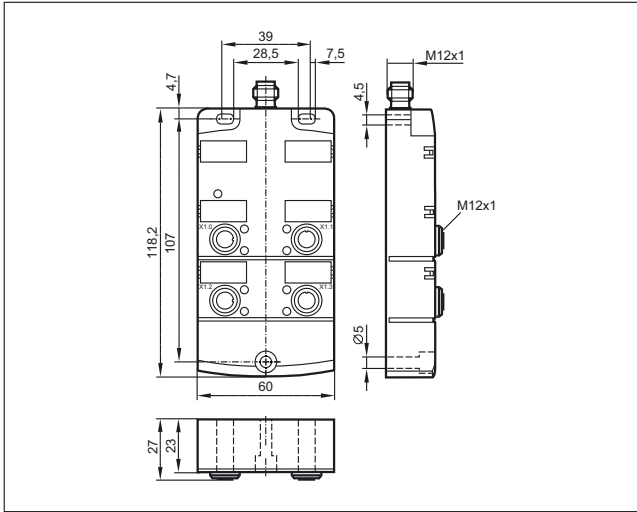


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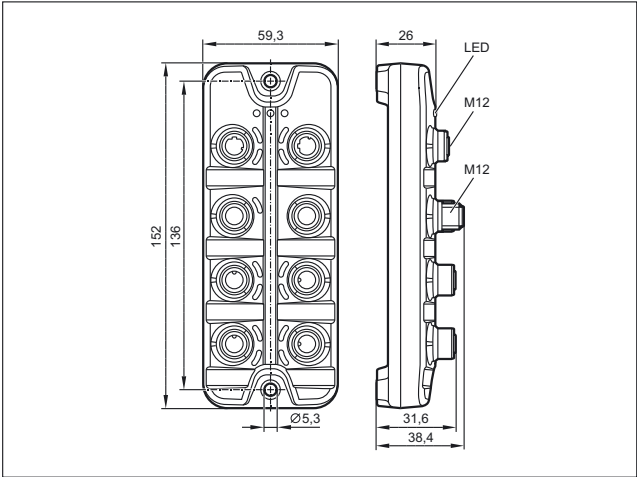
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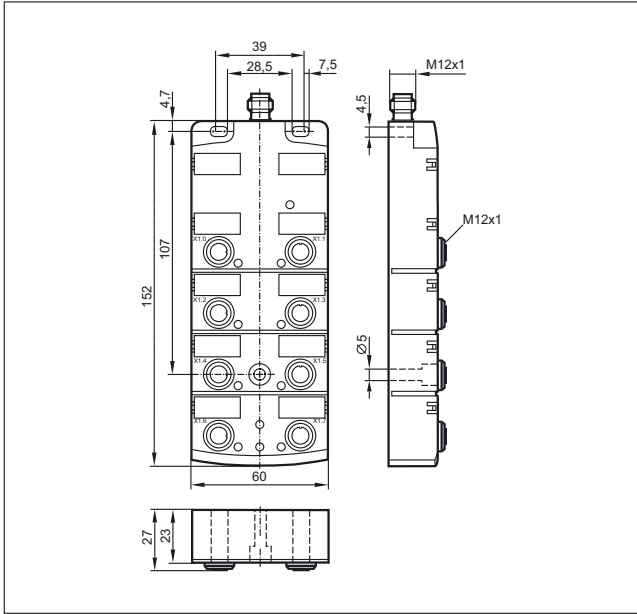
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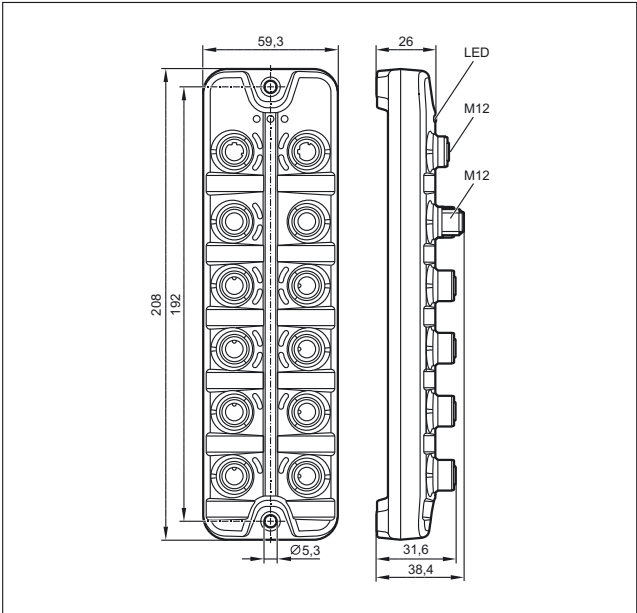
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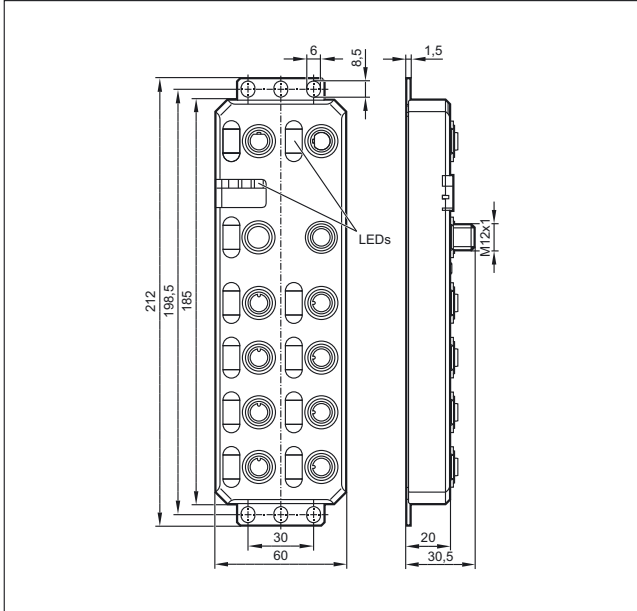
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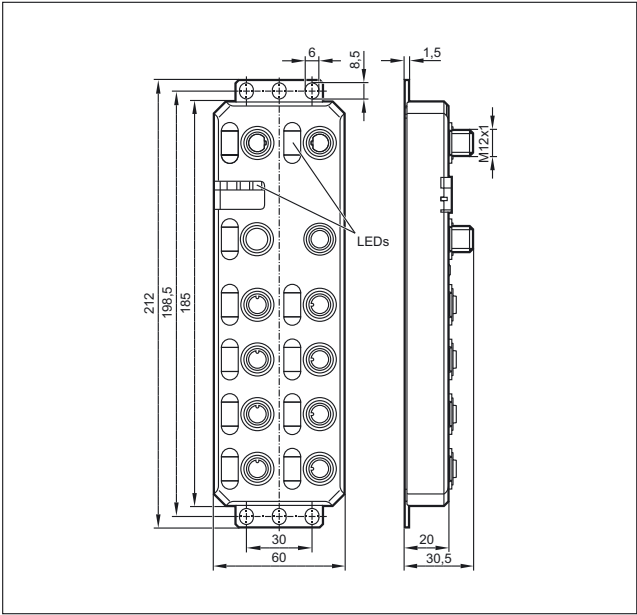
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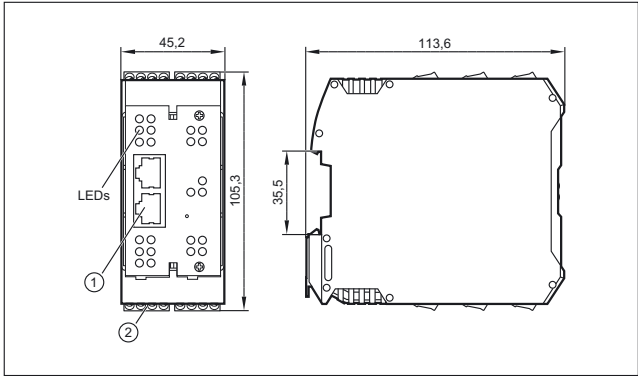


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9



10



1: Ethernet interface, 2: screw terminals





Multicode readers and RFID for clear identification



Multicode readers

ifm multicode readers handle not only the ECC200 Data Matrix code, but also many more 2D and 1D codes. Code reading is not dependent on the orientation of the code to the sensor. The industrially compatible mounting and wiring technology as well as the standardised process interfaces enable easy and quick integration into the industrial control system.

RF identification systems

ifm offers different RFID systems using different frequencies, ranges, interfaces and data volumes.

LF 125 kHz system with AS-Interface

ifm offers the first RFID system for AS-Interface worldwide. Up to 31 read/write heads can be connected to one AS-i master. Antenna, electronics and AS-i interface are integrated in a compact housing.

LF 125 kHz / HF 13.56 MHz system with different fieldbus interfaces

The RFID evaluation unit DTE10x with integrated fieldbus interfaces and web server is widely used in production to mark tools, for quality assurance, to monitor production steps, in conveying and in automation technology.

RFID compact unit suitable for mobile use

The robust RFID compact unit with CANopen interface has been developed for identification tasks in agricultural machines, municipal vehicles and construction machines.

UHF system with Ethernet

The ultra low and low range antennas achieve selectivities of a few centimetres. The mid-range antenna is chosen for applications in the near / far field with reading ranges of up to 2 m. The wide range antenna attains reading ranges of up to 10 m.

	<i>RFID 125 kHz</i>	660 - 665
	<i>RFID 13.56 MHz</i>	666 - 673
	<i>RFID UHF</i>	674 - 677
	<i>1D/2D code readers</i>	678 - 683



Identification systems



RFID 125 kHz

RFID systems based on 125 kHz for production and conveying technology, identification of workpiece carriers and products.

- System DTS 125 with AS-Interface
- System DTE 100 with Profibus DP
- System DTE 101 with Profinet
- System DTE 102 with Ethernet/IP

System overview	Page
RFID system 125 kHz with AS-Interface	660 - 661
ID tags 125 kHz for system DTS 125	661 - 662
Handheld readers for system DTS 125	662
Fixing components	662
DTE 100 RFID system with Profibus DP	662
DTE 101 RFID system with Profinet	663
DTE102 RFID system with EtherNet/IP	663
DTE103 RFID system with EtherCAT	663
DTE104 RFID system with Ethernet TCP/IP	663
RFID antennas 125 kHz for system DTE100, DTE101, DTE102, DTE104	663
RFID tags 125 kHz for antenna ANT512	664
Accessories DTE100	664
Connection technology	664
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RFID system 125 kHz with AS-Interface

Type	Dimensions [mm]	Travel speed read / write [m/s]	Process interface	Draw- ing no.	Order no.
M12 connector · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202					
	55 x 24 x 41	read: ≤ 0.5 (distance to the ID tag 15 mm) write: only static	AS-i	1	DTA100
	55 x 24 x 41	read: ≤ 0.5 (distance to the ID tag 15 mm)	AS-i	1	DTA101
	40 x 40 x 54	read: ≤ 0.5 (distance to the ID tag 30 mm) write: only static	AS-i	2	DTA200

Type	Dimensions [mm]	Travel speed read / write [m/s]	Process interface	Draw- ing no.	Order no.
M12 connector · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202					
	40 x 40 x 54	read: ≤ 0.5 (distance to the ID tag 30 mm)	AS-i	2	DTA201
	92 x 80 x 40	read: ≤ 0.5 (distance to the ID tag 40 mm) write: only static	AS-i	3	DTA300
	92 x 80 x 40	read: ≤ 0.5 (distance to the ID tag 40 mm)	AS-i	3	DTA301

ID tags 125 kHz for system DTS 125

Type	Description	Order no.
	ID tag · ID-TAG/M5x16.5/01 · M5 x 16.5 mm · Screw mounting · Housing materials: PA black (RAL 9005)	E80301
	ID tag · ID-TAG/M18x1/01 · M18 x 1 · Screw mounting · in metal · Housing materials: threaded sleeve: PBT orange	E80311
	ID tag · ID-TAG/D12x2/01 · Ø 12 x 2 mm · Housing materials: PPS black	E80312
	ID tag · ID-TAG/D20x2.15/01 · Ø 20 x 2.15 mm · Housing materials: polycarbonate black	E80317
	ID tag · ID-TAG/D30x2.15/01 · Ø 30 x 2.15 mm · Housing materials: polycarbonate black	E80318
	ID tag · ID-TAG/D50x2.2/01 · Ø 50 x 2.2 mm · Housing materials: polycarbonate black	E80319
	ID tag · ID-TAG/D26x4/01 · Ø 26 x 4 mm · Housing materials: PA High Temperature	E80322
	ID tag · ID-TAG/M5x16.5/01 · M5 x 16.5 mm · Screw mounting · Housing materials: PA black (RAL 9005)	E80345
	ID tag · ID-TAG/ISO-Card/01 · 54 x 86 x 1 mm · Housing materials: PVC white	E80320
	ID tag · ID-TAG/TRIANGLE HOUSING/01 · with ID tag E80345 · Housing materials: PBT orange (RAL 2003) / PA black (RAL 9005)	E80346



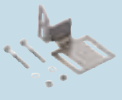
Identification systems

Type	Description	Order no.
	ID tag · ID-TAG/TRIANGLE HOUSING/01 · with ID tag E80301 · Housing materials: PBT orange (RAL 2003) / PA black (RAL 9005)	E80302

Handheld readers for system DTS 125

Type	Description	Order no.
	RFID Handheld Reader USB · suitable for use in PCs or notebooks · 125 kHz · 1.8 m · Housing materials: PS	E80321

Fixing components

Type	Description	Order no.
	Angle bracket · Housing materials: stainless steel	E80304
	Mounting set · Clamp mounting · aluminium profile · for type OC · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20901
	Mounting bracket · with integrated snap-on rail · for type IDC · Housing materials: stainless steel	E10730
	Mounting set · Clamp mounting · aluminium profile · for type OC · Housing materials: fixture: stainless steel 316Ti / 1.4571 / clamp: diecast zinc / Cube: diecast zinc	E20901
	Dovetail clamp · for type DTS, O4, O5 · Housing materials: AlMgSi0.5	E21088

DTE 100 RFID system with Profibus DP

Type	Description	Draw- ing no.	Order no.
Type DTE1 · M12 connector			
	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AlSi12	4	DTE100

DTE 101 RFID system with ProfiNet

Type	Description	Draw- ing no.	Order no.

Type DTE1 · M12 connector

	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-ALSi12	5	DTE101

DTE102 RFID system with EtherNet/IP

Type	Description	Draw- ing no.	Order no.

Type DTE1 · M12 connector

	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-ALSi12	5	DTE102

DTE103 RFID system with EtherCAT

Type	Description	Draw- ing no.	Order no.

Type DTE1 · M12 connector

	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-4H orange / Upper part: TPE / lower part: GD-ALSi12	5	DTE103

DTE104 RFID system with Ethernet TCP/IP

Type	Description	Draw- ing no.	Order no.

Type DTE1 · M12 connector

	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-ALSi12	5	DTE104

RFID antennas 125 kHz for system DTE100, DTE101, DTE102, DTE104

Type	Description	Draw- ing no.	Order no.

	Read/write head · M12 connector · 5 positions of the sensing face selectable · Housing materials: housing: PA / Metal parts: stainless steel	2	ANT512



Identification systems

RFID tags 125 kHz for antenna ANT512

Type	Description	Order no.
	ID tag · ID-TAG/30X2.5/05 - 256 bit · Ø 30 x 2.5 mm · Housing materials: PA 6 black	E80360
	ID tag · ID-TAG/30X2.5/05 - 2048 bit · Ø 30 x 2.5 mm · Housing materials: PA 6 black	E80361

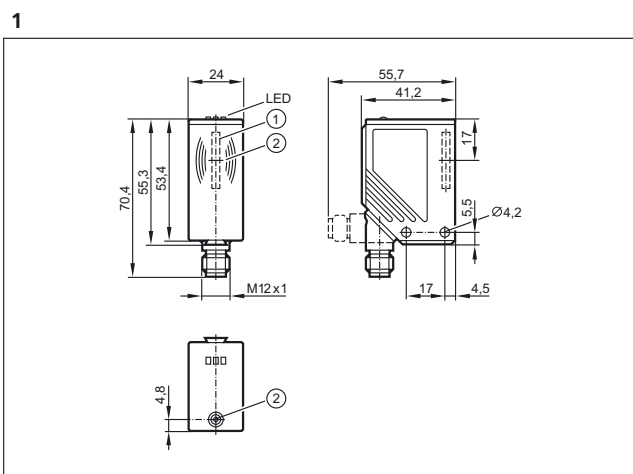
Accessories DTE100

Type	Description	Order no.
	Terminating resistor plug · straight · Free from silicone · Free from halogen · Gold-plated contacts · Housing materials: PUR	E12315
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 10 m · Housing materials: PUR	E12317
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: PUR	E12319
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: PUR	E12321

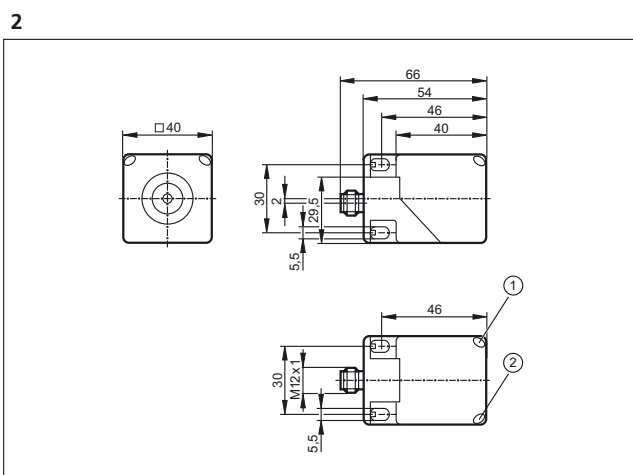
Connection technology

Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	E11898
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: TPU / PA	E12090
	Jumper · straight / straight · Ethernet · 10 m · Housing materials: PUR / PC	E12204
	Jumper · straight / straight · Ethernet · 20 m · Housing materials: PUR / PC	E12205

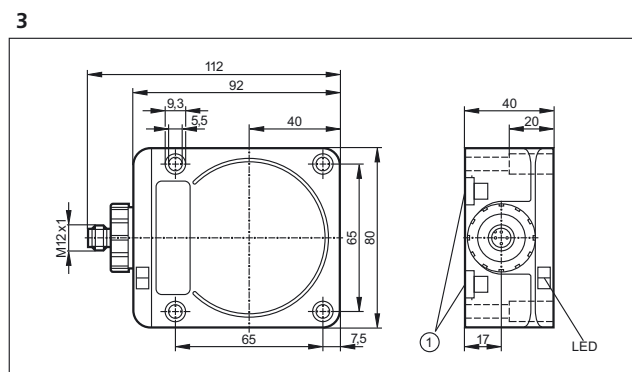
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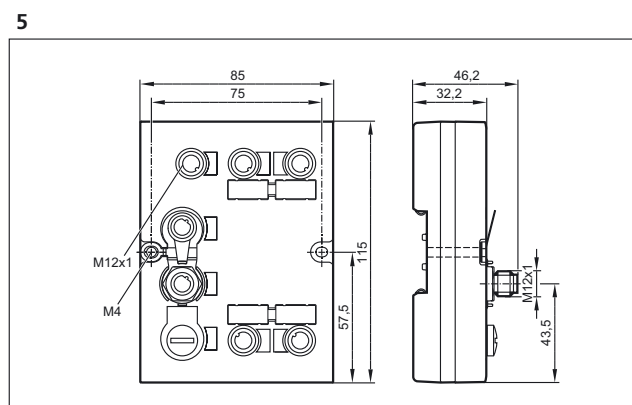
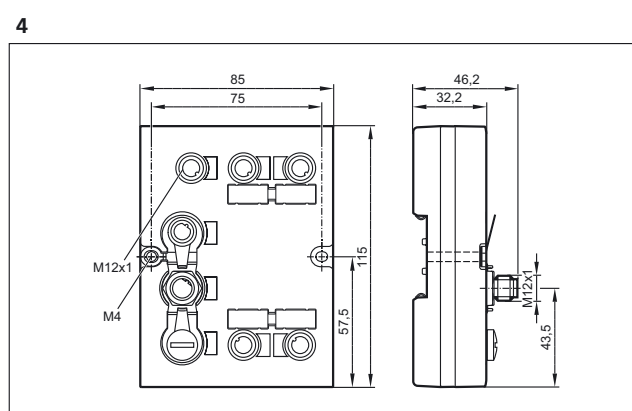
1: integrated antenna, 2: tag positioning mark (middle of the antenna)



1: LED yellow, 2: LED green



1: Mounting on DIN rail





Identification systems



RFID 13.56 MHz

Flexible system for production, assembly and handling technology. Ensures fast data transmission and supports the ISO 15693 standard.

- DTE100 system with Profibus DP
- DTE101 system with Profinet
- DTE102 system with EtherNet/IP
- DTE104 system with EtherNetTCP/IP

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DTE 100 RFID system with Profibus DP

Type	Description	Draw- ing no.	Order no.

Type DTE1 · M12 connector



RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AlSi12

1

DTE100

DTE 101 RFID system with ProfiNet

Type	Description	Draw- ing no.	Order no.

Type DTE1 · M12 connector

	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-ALSi12	2	DTE101

DTE102 RFID system with EtherNet/IP

Type	Description	Draw- ing no.	Order no.

Type DTE1 · M12 connector

	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-ALSi12	2	DTE102

DTE103 RFID system with EtherCAT

Type	Description	Draw- ing no.	Order no.

Type DTE1 · M12 connector

	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-4H orange / Upper part: TPE / lower part: GD-ALSi12	2	DTE103

DTE104 RFID system with Ethernet TCP/IP

Type	Description	Draw- ing no.	Order no.

Type DTE1 · M12 connector

	RFID evaluation unit · for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-ALSi12	2	DTE104

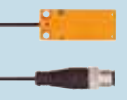
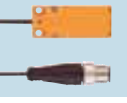
RFID antennas 13.56 MHz for system DTE100, DTE101, DTE102, DTE104

Type	Description	Draw- ing no.	Order no.

	Read/write head · M12 connector · Housing materials: housing: stainless steel / Top: PPS	3	ANT410



Identification systems

Type	Description	Draw- ing no.	Order no.
	Read/write head · M12 connector · Housing materials: housing: stainless steel / Top: PPS	4	ANT411
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	5	ANT420
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	6	ANT421
	Read/write head · M12 connector · Housing materials: housing: stainless steel / Top: PPS	7	ANT430
	Read/write head · M12 connector · Housing materials: housing: stainless steel / Top: PPS	8	ANT431
	Read/write head · M12 connector · 5 positions of the sensing face selectable · Housing materials: housing: PA / Metal parts: stainless steel	9	ANT513
	Read/write head · M12 connector · Cable with connector · 1 m · Housing materials: PBT / TPE-U / stainless steel	10	ANT515
	Read/write head · M12 connector · Cable with connector · 2 m · Housing materials: PBT / TPE-U / stainless steel	10	ANT516

RFID systems DTM424, DTM425, DTM434, DTM435 for mobile machines

Type	Description	Draw- ing no.	Order no.
Type M18 x 1 · M12 connector · CANopen interface			
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	11	DTM424
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	12	DTM425
Type M18 x 1 · M12 connector · J1939 interface			
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	11	DTM426
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	12	DTM427

Type	Description	Draw- ing no.	Order no.

Type M30 x 1.5 · M12 connector · CANopen interface

	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	13	DTM434
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	14	DTM435

Type M30 x 1.5 · M12 connector · J1939 interface

	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	13	DTM436
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	14	DTM437

**RFID tags 13.56 MHz for antennas
ANT513, ANT410, ANT411, ANT430, ANT431, DTM424, DTM425, DTM434, DTM435**

Type	Description	Order no.
	ID tag · ID-TAG/D12x2.3/06	E80341
	ID tag · Ø 34 x 6 mm · Housing materials: PPS	E80342
	ID tag · ID-TAG/D12x2.3/06 · 90 x 34 x 7 mm · Housing materials: ABS	E80343
	ID tag · ID-TAG/D16x3/06 · Ø 16 x 3 mm · Housing materials: PPS	E80344
	ID tag · ID-TAG/M5x16.5/01 · M5 x 16.5 mm · Screw mounting · Housing materials: PA black (RAL 9005)	E80347
	ID tag · ID-TAG/D20x3/06 · Ø 20 x 3 mm · Housing materials: PPA	E80349
	ID tag · ID-TAG/D40x31/06 · 40 x 31 x 5 mm · Housing materials: PC	E80387
	ID tag · ID-TAG/D12x2.3/06 · Ø 12.3 x 2.3 mm · Housing materials: PPA black	E80388



Identification systems

Type	Description	Order no.
	ID tag · ID-TAG/30X2.8/03 - 16 Kbit · Ø 30 x 2.8 mm · Housing materials: PA 6 black	E80370
	ID tag · ID-TAG/D50x3.0/0 FRAM-16 Kbit · Ø 50 x 3 mm · Housing materials: PPA black	E80383
	ID tag · ID-TAG/D50x3.0/0 1024bit · Ø 50 x 3 mm · Housing materials: PPA black	E80384
	ID tag · ID-TAG/30X2.8/03 - 64 Kbit · Ø 30 x 2.8 mm · Housing materials: PA 6	E80380
	ID tag · ID-TAG/30X2.5/06 - 896 bit · Ø 30 x 2.5 mm · Housing materials: PA 6 black	E80371
	ID tag · ID-TAG/R20X2.5/06 - 896 Bit · Ø 20 x 2.5 mm · Housing materials: PPA	E80377
	ID tag · ID-TAG/4.35X3.6/03 - 896 bit · Ø 4.3 x 3.6 mm · Housing materials: PPA GF30	E80381
	ID tag · ID-TAG/Label 65X30/03 - 896 bit	E80382
	ID tag · ID-TAG/Label 80x50/03 - 896 bit	E80379
	ID tag · ID-TAG/D22x4 · Ø 4 x 22 mm · Housing materials: glass	E80385
	ID tag · ID-TAG/51x51/06 · 51 x 51 x 6.5 mm · Housing materials: PPS	E80400
	Antenna adapter to increase the ranges · Housing materials: PVC	E80390
	Antenna adapter to increase the ranges · Housing materials: PVC	E80391
	Antenna adapter for a wider sensing field · Housing materials: POM	E80392
	ID tag · ID-TAG/HOLDER/01 · Housing materials: PPS black	E80401

Type	Description	Order no.
	ID tag · ID-TAG/TRIANGLE HOUSING/01 · with ID tag E80345 · Housing materials: PBT orange (RAL 2003) / PA black (RAL 9005)	E80348

Accessories DTE100

Type	Description	Order no.
	Terminating resistor plug · straight · Free from silicone · Free from halogen · Gold-plated contacts · Housing materials: PUR	E12315
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 10 m · Housing materials: PUR	E12317
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: PUR	E12319
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: PUR	E12321

Accessories DTM

Type	Description	Order no.
	BasicDisplay XL · 4.3" colour display · 6 freely programmable backlit function keys · Navigation key for cursor function · CAN interface · Programming according to IEC 61131-3 · 8...32 V DC	CR0452
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · For applications in particularly harsh environments · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVM036
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · For applications in particularly harsh environments · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVM038
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector with integrated CAN terminating resistor (120 ohm) · 5 m · Housing materials: housing: TPU black / sealing: FKM	EVC492
	Jumper · angled / angled · Free from silicone · Free from halogen · Gold-plated contacts · 5 m · Housing materials: housing connector: TPU orange / housing socket: TPU black transparent / sealing: FKM	EVC039
	Jumper · angled / straight · Free from silicone · Free from halogen · Gold-plated contacts · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC069

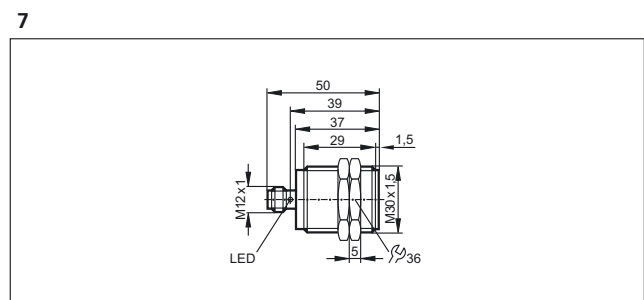
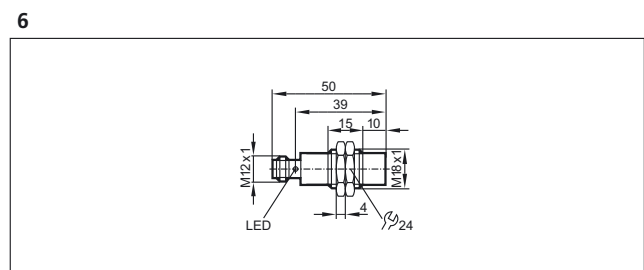
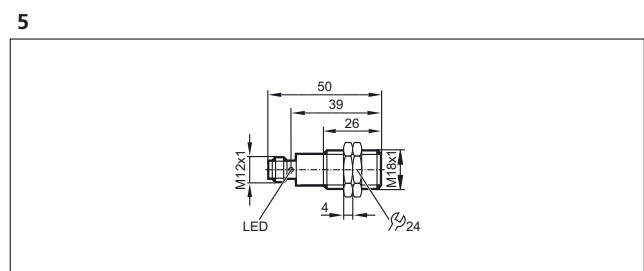
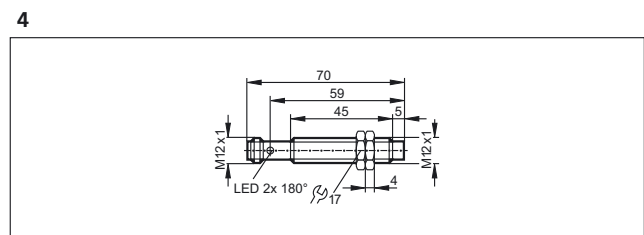
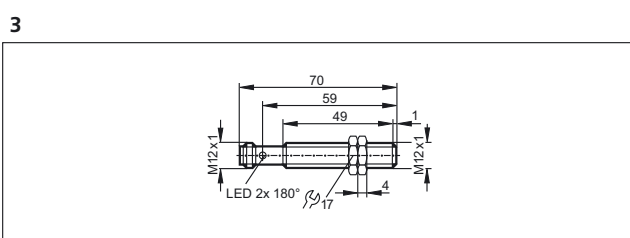
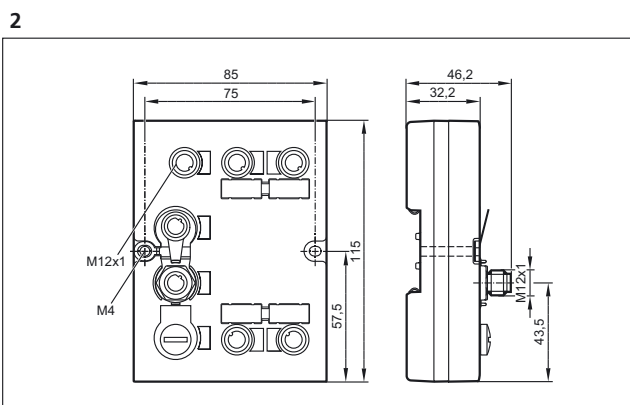
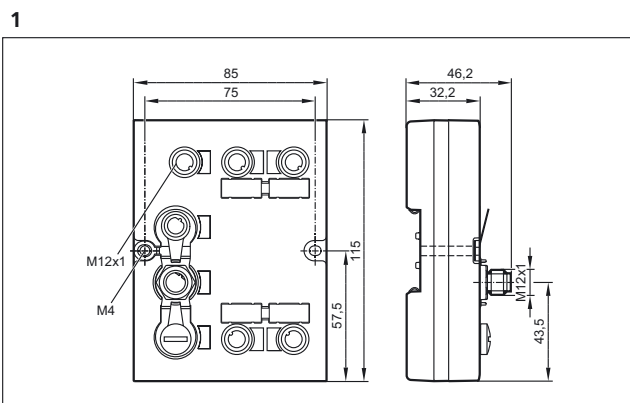


Identification systems

Connection technology

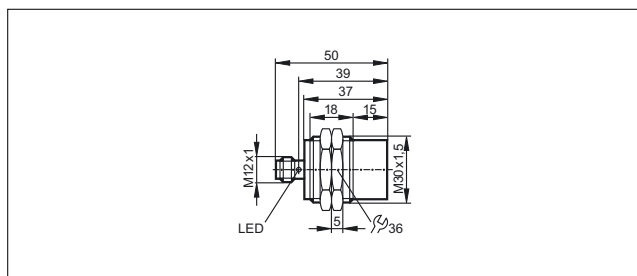
Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	E11898
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: TPU / PA	E12090
	Jumper · straight / straight · Ethernet · 10 m · Housing materials: PUR / PC	E12204
	Jumper · straight / straight · Ethernet · 20 m · Housing materials: PUR / PC	E12205

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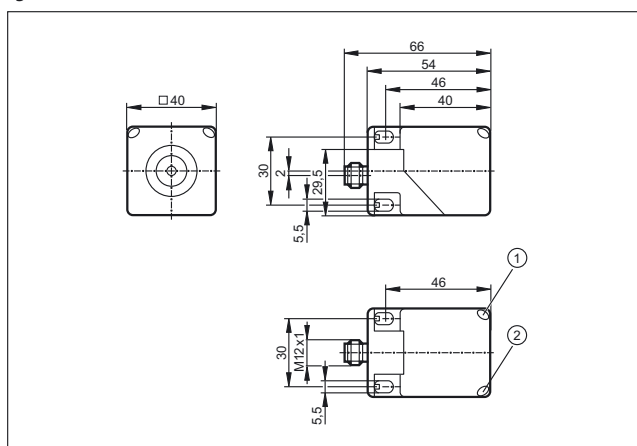


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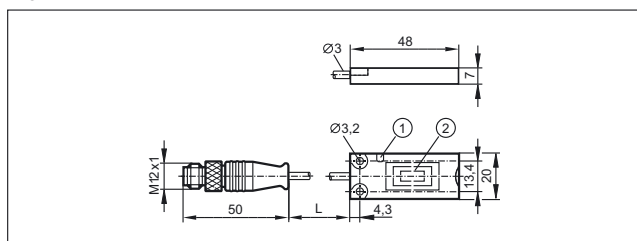


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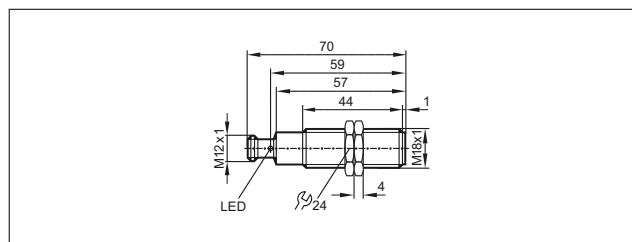
1: LED yellow, 2: LED green

10

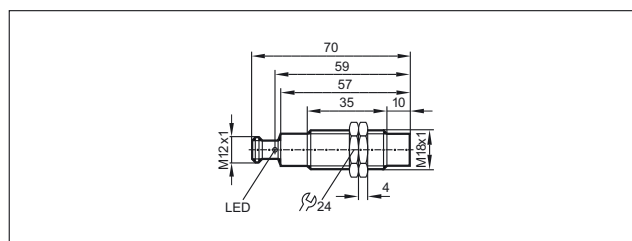


1: LED, 2: sensing face

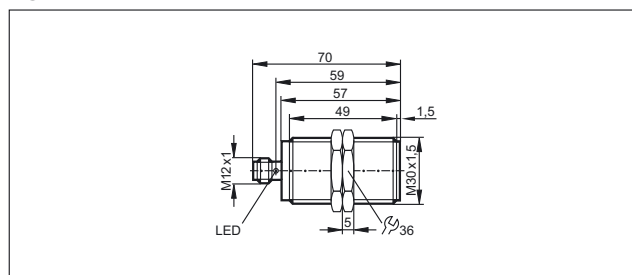
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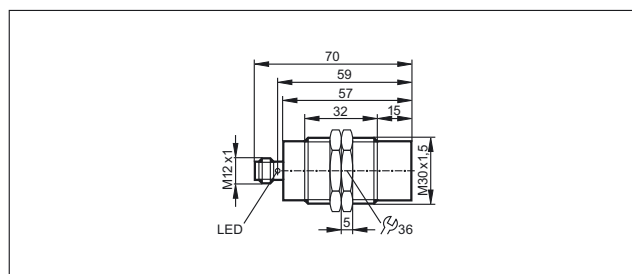
12



13



14





Identification systems



RFID UHF

The system is optimised for applications in production control, asset management, material flow control, track & trace and supply chain management:

- System DTE 800 for EU/ETSI
- System DTE 810 with Ethernet/IP
- System DTE 900 for US/FCC
- System DTE 910 with Ethernet/IP

System overview	Page
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RFID UHF readers

Type	Dimensions [mm]	Operating frequency [MHz]	Trans- mission power [mW ERP]	Number of antenna inputs	Process interface	Output	Draw- ing no.	Order no.
M12 connector · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	233.5 x 270 x 68	865-868 (ETSI)	2000	4	EtherNet/IP	–	1	DTE810
	233.5 x 270 x 68	902...928 (FCC)	2000	4	EtherNet/IP	–	1	DTE910
	233.5 x 270 x 68	916...927	2000	4	EtherNet/IP	–	1	DTE920
M12 connector · Connector group --								
	138.1 x 63 x 156	865-868 (ETSI)	266	–	Ethernet TCP/IP	–	2	DTE820

RFID UHF antennas

Type	Dimensions [mm]	Operating frequency [MHz]	Antenna gain [cBic]	Max. input power [mW]	Protection	Draw- ing no.	Order no.
TNC socket							
	63 x 28 x 90	865...928	-30	1000	IP 67	3	ANT805
	63 x 28 x 90	865...870	-15	500	IP 67	3	ANT810
	126 x 37 x 156	865...928	-12 (866 MHz) / -10 (915 MHz)	–	IP 67	4	ANT815
	126 x 37 x 156	865...870	2.5	–	IP 67	4	ANT820
	271 x 270 x 42	865...870	8.5	–	IP 65	5	ANT830
	63 x 28 x 90	902...928 (FCC)	-15	500	IP 67	3	ANT910
	271 x 270 x 42	902...928 (FCC)	8.3	–	IP 65	5	ANT930

ID tags UHF

Type	Description	Order no.
	ID tag · ID-TAG/D55x13/04 · Ø 55 x 13 mm · Housing materials: PA 6	E80351
	ID tag · ID-TAG/R30X10/04 · Ø 30 x 10 mm · Housing materials: PU black	E80353
	ID tag · ID-TAG/R40X10/04 · 40 x 32 x 8 mm · Housing materials: nylon black	E80354

Accessories for UHF systems

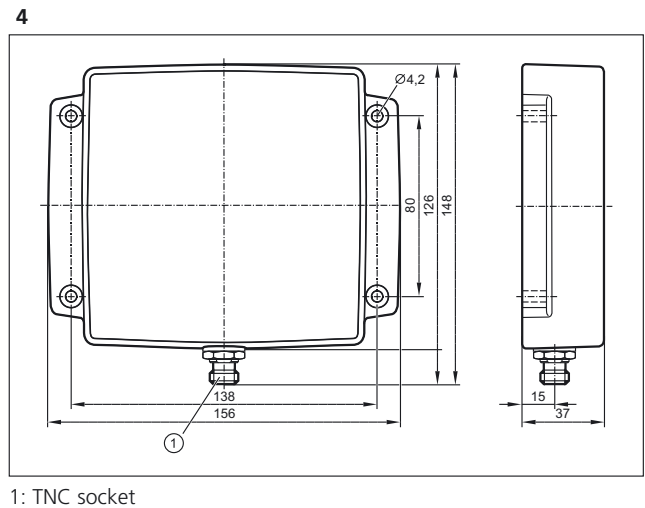
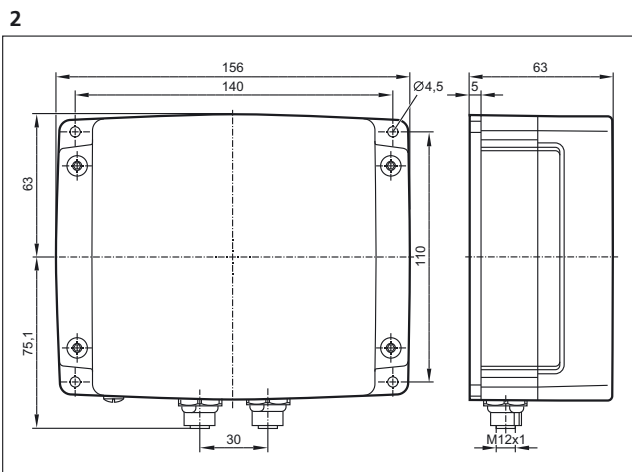
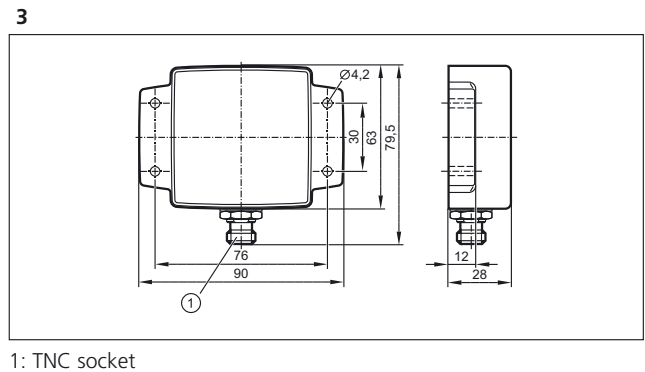
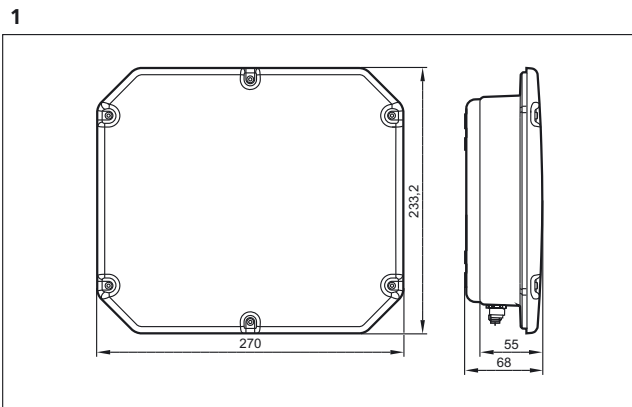
Type	Description	Order no.
	Jumper · straight / straight · For RFID antenna · 3 m	E80330



Identification systems

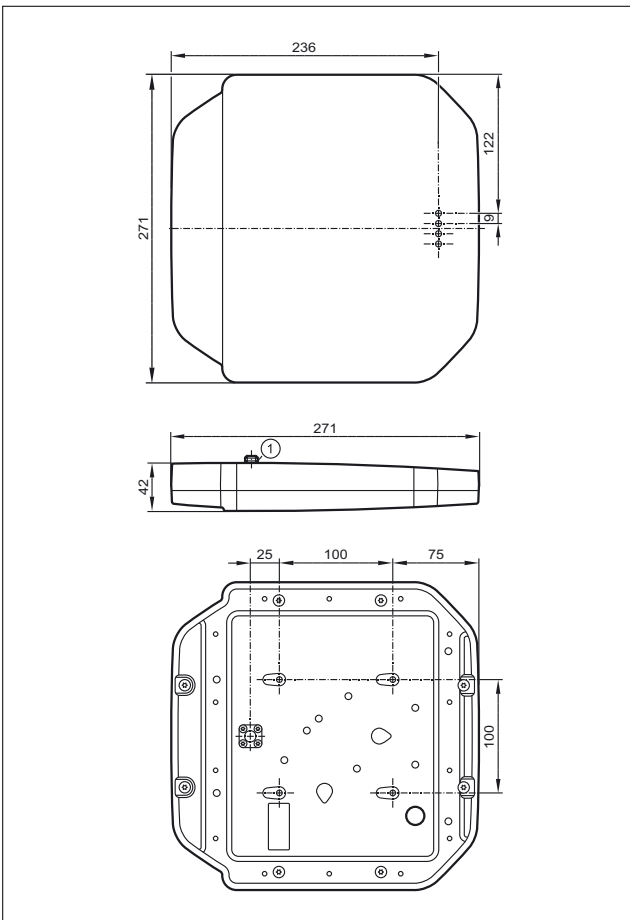
Type	Description	Order no.
	Jumper · straight / straight · For RFID antenna · 6 m	E80331
	Jumper · straight / straight · For RFID antenna · 10 m	E80332
	Jumper · straight / straight · For RFID antenna · 15 m	E80333
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	E11898
	Jumper · straight / straight · Ethernet · 10 m · Housing materials: PUR / PC	E12204
	Clamp · for RFID UHF readers DTE800/DTE900 and antennas ANT830/ANT930 · Housing materials: fixture: steel sheet galvanised / screws: stainless steel / Fixing strap: stainless steel	E80340

Scale drawings / drawing no. – CAD download: www.ifm.com



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5



1: TNC socket



Identification systems



1D/2D code readers

Photoelectric multicode reader for 1D bar codes and 2D codes. Versions with infra-red light and red light as well as different field of view sizes are available.

System overview	Page
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Panel PC for Multicode Reader	680
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Multicode reader

Type	Dimensions [mm]	Max. field of view size [mm]	Type of light LED	Motion speed int. / ext. lighting [m/s]	Process interface	Draw- ing no.	Order no.
Multicode Reader · M12 plug, 8 poles · M12 socket, 4 poles · Connector groups 16, 17, 157, 183							
	60 x 42 x 53.5	64 x 48	red light	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	1	O2I300
	60 x 42 x 53.5	132 x 94	red light	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	1	O2I302
	60 x 42 x 59	400 x 300	red light	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	2	O2I304
	60 x 42 x 53.5	64 x 48	infrared	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	1	O2I301
	60 x 42 x 53.5	132 x 94	infrared	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	1	O2I303

Type	Dimensions [mm]	Max. field of view size [mm]	Type of light LED	Motion speed int. / ext. lighting [m/s]	Process interface	Draw- ing no.	Order no.

Multicode Reader · M12 plug, 8 poles · M12 socket, 4 poles · Connector groups 16, 17, 157, 183

	60 x 42 x 59	400 x 300	infrared	3 / 5	Ethernet TCP/IP, EtherNet/IP, RS-232	2	O2I305

Multicode reader with text recognition

Type	Dimensions [mm]	Max. field of view size [mm]	Type of light LED	Motion speed int. / ext. lighting [m/s]	Process interface	Draw- ing no.	Order no.

Multicode Reader · M12 plug, 8 poles · M12 socket, 4 poles · Connector groups 16, 17, 157, 183

	60 x 42 x 53.5	–	red light	3 / 5	Ethernet	1	O2I350
	60 x 42 x 53.5	–	red light	3 / 5	Ethernet	1	O2I352
	60 x 42 x 59	–	red light	3 / 5	Ethernet	2	O2I354
	60 x 42 x 53.5	–	infrared	3 / 5	Ethernet	1	O2I351
	60 x 42 x 53.5	–	infrared	3 / 5	Ethernet	1	O2I353
	60 x 42 x 59	–	infrared	3 / 5	Ethernet	2	O2I355

Illumination units

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I ₀ normal light intensity [mA]	I ₀ high light intensity [mA]	Trigger	Draw- ing no.	Order no.

M12 connector · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	42 x 42 x 31	Red	–	180	90	External; 24 V PNP to IEC61131-1	3	O2D909
	42 x 42 x 32.2	Red	–	180	90	External; 24 V PNP to IEC61131-1	4	O2D913

PUR cable with M12 connector 0.3 m · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	Ø 122 / L = 20.5	Infrared	–	800	1400	external; 24 V PNP	5	O2D917



Identification systems

Type	Dimensions [mm]	Type of light	Active illuminated area [mm]	I ₀ normal light intensity [mA]	I ₀ high light intensity [mA]	Trigger	Draw- ing no.	Order no.
PUR cable with M12 connector 0.3 m · metal · DC · Wiring diagram no. 1 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202								
	116 x 13 x 18	Infrared	–	185	325	external; 24 V PNP	6	O2D922
	200 x 13 x 18	Infrared	–	415	640	external; 24 V PNP	7	O2D925

Software

Type	Description	Number of connections	Order no.
	Operating software · O2I · for multicode reader · Create and manage application-specific configurations Monitor mode for set-up and service · Service reports for statistical evaluations	–	E2I200
	Multicode reader OPC server · Software · German/English	25	E2I210
	Multicode reader OPC server · Software · German/English	50	E2I211
	Multicode reader OPC server · Software · German/English	75	E2I212
	Multicode reader OPC server · Software · German/English	100	E2I213

Panel PC for Multicode Reader

Type	Description	Order no.
	Touch Panel PC · 12.1" colour display · Intel Atom CPU 1.6 GHz · 2 GByte RAM · Windows Embedded Standard 7 SP1 (32 bits)	E2D400

Fixing components

Type	Description	Order no.
	Mounting set · O2D, O2M, O2I, O2V · Clamp mounting · rod mounting Ø 12 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E2D110
	Mounting set · O2D, O2M, O2I, O2V · Clamp mounting · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E2D112

Type	Description	Order no.
	Mounting set · Clamp mounting · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	E2D114
	Mounting set · Clamp mounting · for 4 bar lights 10x75 mm · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	E2D116
	Mounting set · Ring light · Clamp mounting · Housing materials: Mounting bracket: stainless steel / clamp: high-grade stainless steel	E2D201
	clamp · Ø 12 mm; M10 · Free-standing M10 · Housing materials: clamp: stainless steel	E20946
	clamp · Ø 12 mm · rod mounting Ø 12 mm · Housing materials: clamp: stainless steel	E21110
	clamp · Ø 14 mm; M12 · free-standing M12 · Housing materials: clamp: stainless steel	E20948
	clamp · Ø 14 mm · rod mounting Ø 14 mm · Housing materials: clamp: stainless steel	E21109
	mounting rod · Ø 12 · Length: 200 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21112
	mounting rod · Ø 12 · Length: 300 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E21113
	mounting rod · Ø 12 / M10 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20938
	mounting rod · Ø 12 / M10 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E20940
	mounting rod · Ø 14 / M12 · Length: 130 mm · straight · Housing materials: stainless steel 316Ti / 1.4571	E20939
	mounting rod · Ø 14 / M12 · Length: 200 mm · angled · Housing materials: stainless steel 316Ti / 1.4571	E20941
	Connection piece · Ø 20 mm · for the connection of two clamps with Ø 20 mm · Housing materials: stainless steel 316L / 1.4404	E21076



Identification systems

Protective panes and diffusers

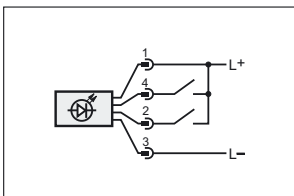
Type	Description	Order no.
	Plastic diffuser · O2D / O2I · Housing materials: housing: diecast zinc black / lens: PMMA	E21165
	Plastic protective pane for the food industry · O2D / O2I · Housing materials: housing: diecast zinc black / lens: PMMA	E21166
	Glass protective pane · O2D / O2I · Housing materials: housing: diecast zinc black / lens: float glass	E21168
	Laser protection pane plastic · O2D / O2I · Housing materials: housing: diecast zinc black / lens: PMMA / filter: polycarbonate	E21169

Connection technology

Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	E11898
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: TPU / PA	E12090
	Jumper · straight / straight · Ethernet · 10 m · Housing materials: PUR / PC	E12204
	Jumper · straight / straight · Ethernet · 20 m · Housing materials: PUR / PC	E12205

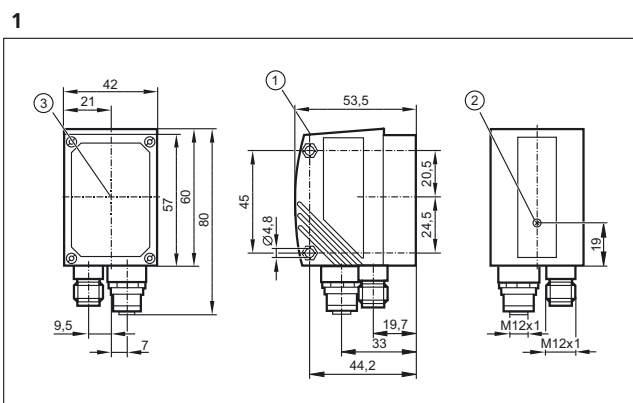
Wiring diagrams

1

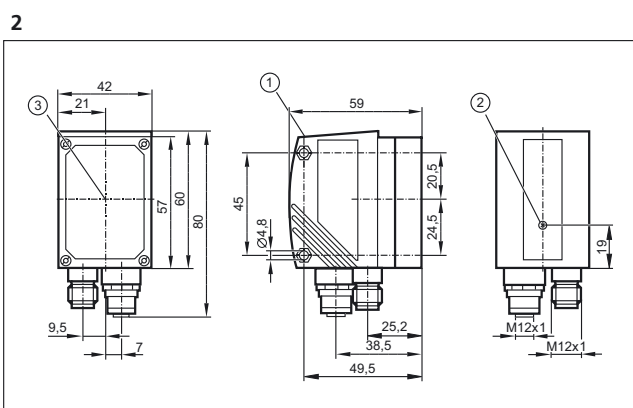


1: Trigger, 2: Operating mode
"high light intensity"

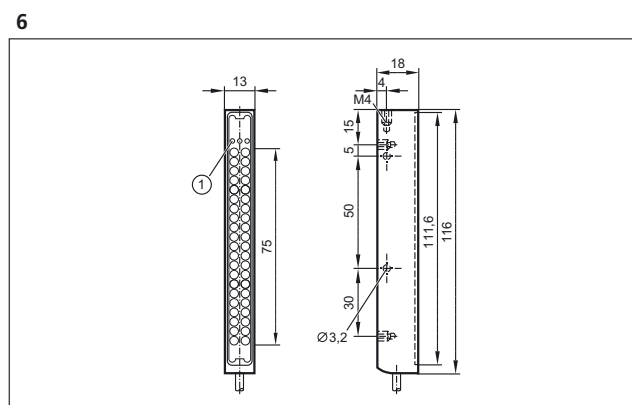
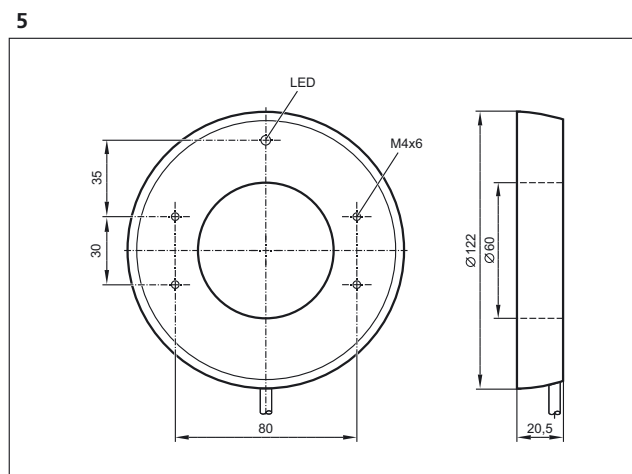
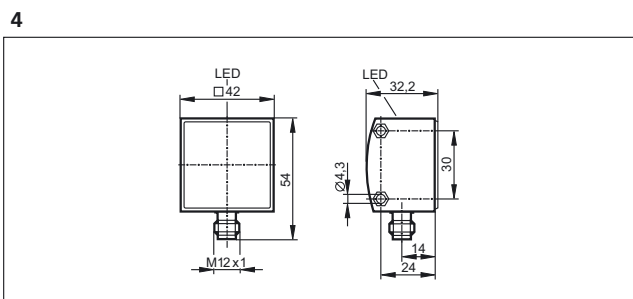
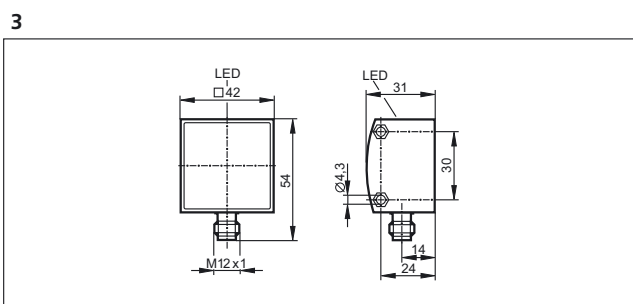
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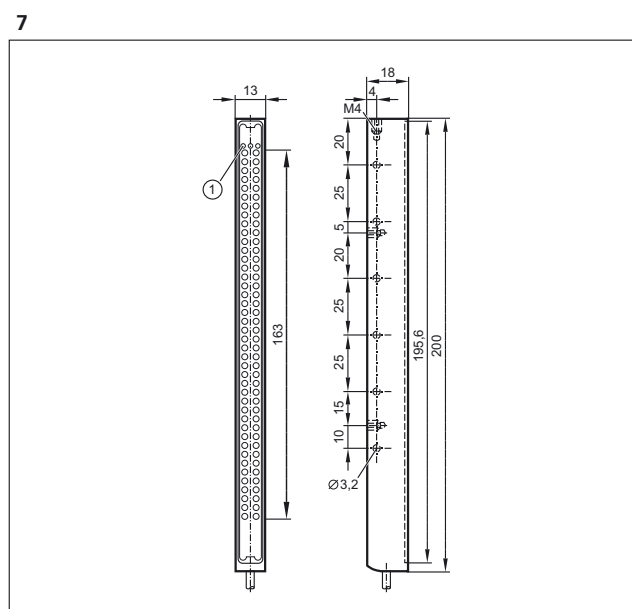
1: display, 2: Focus adjustment screw, 3: Centre of the lens axes



1: display, 2: Focus adjustment screw, 3: Centre of the lens axes



1: LED



1: LED



Early damage detection – Downtime prevention



Systems for vibration monitoring – the optimum solution for every requirement.

Vibration monitoring

Monitoring of overall vibration according to ISO 10816. Detects resulting damage at an early stage. Avoids consequential damage and increases life-time.

Condition monitoring

Early detection of potential faults and their causes based on individual vibration characteristics and other influencing factors.

Machine protection

Avoids damage to machine components, tools or workpieces via permanent monitoring and very short response times. The integration into the PLC makes it possible to adjust the vibration monitoring to the process of the machine or the plant.

Oil quality under control

The quality of oil is decisive for many machines for their precision and life span. The combined oil humidity and temperature sensor is designed for permanent monitoring and signalling of measurement data via analogue outputs. This makes it possible to avoid damage caused by inappropriate lubrication and to plan ideal maintenance intervals.



Vibration monitoring systems

686 - 691



Systems for oil quality monitoring

692 - 694





Condition monitoring systems



Vibration monitoring systems

efector octavis is a simple to implement vibration monitoring system which detects vibration data and automatically determines the machine diagnosis directly on the machine.

The machine condition is forwarded to the PLC or to SCADA systems.

It fulfils the main requirements for modern machine monitoring: compatibility, modularity, and transferable configuration.

System overview	Page
Vibration sensors for vibration monitoring of machines and plants to ISO 10816 type VK	686
Accessories VK	686
Vibration transmitters for vibration monitoring of machines and plants to ISO 10816 type VT	687
Vibration transmitter with ATEX approval 3D/3G	687
Compact vibration sensors type VN	687
Accessories VN	687 - 688
Diagnostic electronics – control cabinet modules for vibration diagnosis type VSE	688
Accessories VSE	688
Connection cables VSE	689
Vibration sensors for connection to external diagnostic electronics VSE – type VSA / VSP	689
Accessories VSA	690
Scale drawings / drawing no. – CAD download: www.ifm.com	690 - 691

Vibration sensors for vibration monitoring of machines and plants to ISO 10816 type VK

Type	Description	Draw- ing no.	Order no.
	M8 x 1.25 · Vibration monitor to DIN ISO 10816 · Measuring range RMS: 0...25 mm/s · Switching output NC DC PNP and analogue output 4...20 mA · 2 Inputs / outputs total · Measuring range 0...25 RMS mm/s · Frequency range 10...1000 Hz · Ambient temperature -25...80 °C · M12 connector · Operating voltage 18...32 V DC · IP 67	1	VKV021
	M8 x 1.25 · Vibration monitor to DIN ISO 10816 · Measuring range RMS: 0...50 mm/s · Switching output NC DC PNP and analogue output 4...20 mA · 2 Inputs / outputs total · Measuring range 0...50 RMS mm/s · Frequency range 10...1000 Hz · Ambient temperature -25...80 °C · M12 connector · Operating voltage 18...32 V DC · IP 67	1	VKV022

Accessories VK

Type	Description	Order no.
	Protective cover · with lead seal option · for pressure sensors type PK · for temperature sensors type TK · for vibration sensors type VK · Housing materials: PP transparent	E30094

Vibration transmitters for vibration monitoring of machines and plants to ISO 10816 type VT

Type	Description	Draw- ing no.	Order no.
	set screw · Vibration transmitter to ISO 10816 · Measuring range RMS: 0...25 mm/s · Analogue output 4...20 mA · 2-wire connection technology · 1 Inputs / outputs total · Frequency range 10...1000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 9.6...32 V DC · IP 67 / IP 68 / IP 69K	2	VTV122
	set screw · Vibration transmitter to ISO 10816 · Measuring range RMS: 0...50 mm/s · Analogue output 4...20 mA · 2-wire connection technology · 1 Inputs / outputs total · Frequency range 10...1000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 9.6...32 V DC · IP 67 / IP 68 / IP 69K	2	VTV121

Vibration transmitter with ATEX approval 3D/3G

Type	Description	Draw- ing no.	Order no.
	set screw · Vibration transmitter to ISO 10816 · Measuring range RMS: 0...25 mm/s · Analogue output 4...20 mA · 2-wire connection technology · ATEX approval · Group II, category 3D/3G · 1 Inputs / outputs total · Frequency range 10...1000 Hz · Ambient temperature -20...60 °C · M12 connector · Operating voltage 9.6...32 V DC · IP 67	2	VTV12A

Compact vibration sensors type VN

Type	Description	Draw- ing no.	Order no.
	Mounting set M5 / M8 · Vibration sensor to ISO 10816 · Parameter setting via pushbuttons · 3 Inputs / outputs total, configurable · Analogue input 4...20 mA · Measuring range 0...500 mm/s · Frequency range 2...1000 Hz · 4-digit alphanumeric display · Ambient temperature -30...60 °C · M12 connector · M8 connector · Operating voltage 9.6...30 V DC · IP 67	3	VNB001
	Mounting set M5 / M8 · Vibration sensor to ISO 10816 · Parameter setting via pushbuttons · 3 Inputs / outputs total, configurable · Analogue input 0/4...20 mA · Measuring range 0...25 g · Frequency range 0...6000 Hz · 4-digit alphanumeric display · Ambient temperature -30...60 °C · M12 connector · M8 connector · Operating voltage 9.6...30 V DC · IP 67	3	VNB211

Accessories VN

Type	Description	Order no.
	USB adapter cable · straight / straight · 5 m	E30136
	Adapter · 1/4" 28 UNF x M5 · Housing materials: stainless steel	E30137
	Power supply · 2 m · Housing materials: PPE	E30080



Condition monitoring systems

Type	Description	Order no.
	Y connection cable · 2 way · Free from halogen · 0.25 m · Housing materials: TPU	E12405

Diagnostic electronics – control cabinet modules for vibration diagnosis type VSE

Type	Description	Draw- ing no.	Order no.
	Diagnostic electronics for vibration sensors · Mounting on DIN rail · Integrated history memory with real-time clock · Counter function · TCP/IP Ethernet interface · Active wire break detection and self-test (only MEMS) of the connected acceleration sensors · Parameter setting via PC software VES004 · 8 Inputs / outputs total, configurable · Frequency range 0 / 2 / 10...12000 Hz · Ambient temperature 0...70 °C · Operating voltage 24 V DC ± 20 % · IP 20	4	VSE002
	Diagnostic electronics for vibration sensors · Mounting on DIN rail · Integrated history memory with real-time clock · Counter function · TCP/IP Ethernet interface · Active wire break detection and self-test (only MEMS) of the connected acceleration sensors · Parameter setting via PC software VES004 · 16 Inputs / outputs total, configurable · Frequency range 0...12000 Hz · Ambient temperature 0...70 °C · Operating voltage 24 V DC ± 20 % · IP 20	5	VSE100
	Diagnostic electronics for vibration sensors · Mounting on DIN rail · Parameter setting via PC software VES004 · TCP/IP Ethernet interface · Profinet IO data interface · 8 Inputs / outputs total, configurable · Ambient temperature 0...60 °C · Operating voltage 24 V DC ± 20 % · IP 20	6	VSE150

Accessories VSE

Type	Description	Number of connections	Order no.
	Parameter setting software VSExxx and VNBxxx · Version 1.21	–	VES004
	octavis OPC server · Software · German/English	25	VOS001
	octavis OPC server · Software · German/English	50	VOS002
	octavis OPC server · Software · German/English	75	VOS003
	octavis OPC server · Software · German/English	100	VOS004
	octavis OPC server · Software · German/English	1000	VOS005

Connection cables VSE

Type	Description	Order no.
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR	EC2080
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 5 m · Housing materials: PUR	E30112

Vibration sensors for connection to external diagnostic electronics VSE – type VSA / VSP

Type	Description	Draw- ing no.	Order no.
	Accelerometer · M8 x 1.25 · for connection to external diagnostic electronics type VSE · Measuring range ± 25 g · Frequency range 0...6000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 7.2...10.8 V DC · IP 68 / IP 69K	7	VSA001
	Accelerometer · for connection to external diagnostic electronics type VSE · Measuring range ± 3.3 g · Frequency range 0...1000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 9 V DC · IP 68 / IP 69K	7	VSA101
	Accelerometer · M8 x 1.25 · for connection to external diagnostic electronics type VSE · Measuring range ± 250 g · Frequency range 0...6000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 9 V DC · IP 68 / IP 69K	7	VSA201
	Accelerometer · M16 x 1.5 · for connection to external diagnostic electronics type VSE · Measuring range ± 25 g · Frequency range 0...10000 Hz · Ambient temperature -30...85 °C · PUR cable with M12 connector, 0.8 m · Operating voltage 9 V DC · IP 67	8	VSA002
	Accelerometer · M16 x 1.5 · for connection to external diagnostic electronics type VSE · Measuring range ± 25 g · Frequency range 0...10000 Hz · Ambient temperature -30...85 °C · PUR cable, 6 m · Operating voltage 9 V DC · IP 67	8	VSA006
	Accelerometer · Mounting screw · for connection to external diagnostic electronics type VSE · Measuring range ± 25 g · Frequency range 0...10000 Hz · Ambient temperature -30...100 °C · PUR cable, 3 m · Operating voltage 9 V DC · IP 67	9	VSA004
	Accelerometer · Mounting screw · for connection to external diagnostic electronics type VSE · Measuring range ± 25 g · Frequency range 0...10000 Hz · Ambient temperature -30...100 °C · PUR cable, 10 m · Operating voltage 9 V DC · IP 67	9	VSA005
	Accelerometer · set screw · for connection to external diagnostic electronics type VSE · Measuring range ± 50 g · Frequency range 2...10000 Hz · Ambient temperature -55...125 °C · M12 connector · Operating voltage 10...12 V DC · IP 67	10	VSP001
	Accelerometer · M8 x 1.25 · for connection to external diagnostic electronics type VSE · Measuring range ± 50 g · Frequency range 1.5...16000 Hz · Ambient temperature -55...130 °C · M12 connector · Operating voltage 10...12 V DC · IP 67	11	VSP003
	Accelerometer · M8 x 1.25 · ATEX approval · IECEx approval · Group II, category 1D · Group II, category 1G · For connection to VSExxx type external diagnostic electronics via safety barrier · Measuring range ± 50 g · Frequency range 2...10000 Hz · Ambient temperature -55...90 °C · PUR cable, 10 m · Operating voltage 10...12 V DC · IP 68	12	VSP01A
	Accelerometer · M8 x 1.25 · ATEX approval · IECEx approval · group 1, M1 · For connection to VSExxx type external diagnostic electronics via safety barrier · Measuring range ± 50 g · Frequency range 2...10000 Hz · Ambient temperature -55...90 °C · PUR cable, 10 m · Operating voltage 10...12 V DC · IP 68	12	VSP02A
	Accelerometer · M8 x 1.25 · for connection to VNB211 vibration sensors · Measuring range ± 25 g · Frequency range 0...6000 Hz · Ambient temperature -30...125 °C · M12 connector · Operating voltage 7.2...30 V DC · IP 68 / IP 69K	7	VNA001



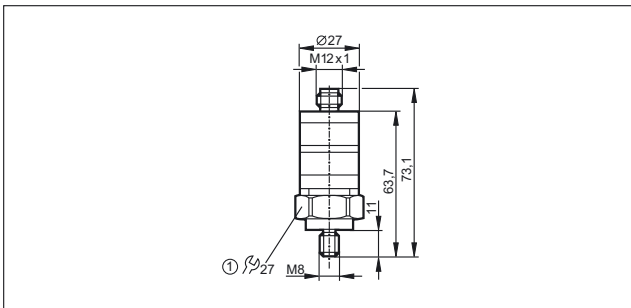
Condition monitoring systems

Accessories VSA

Type	Description	Order no.
	conical washer · Ø 8.4 / 15 mm · for vibration sensors VSA001, VSA101, VSA201 · Housing materials: stainless steel 316Ti / 1.4571	E30115
	Adapter · M8-M8 · for vibration sensors VSA001, VSA101, VSA201 · Electrical isolation · Housing materials: PEEK	E30132

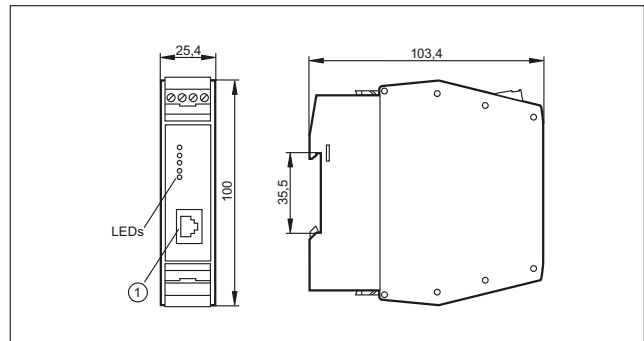
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1



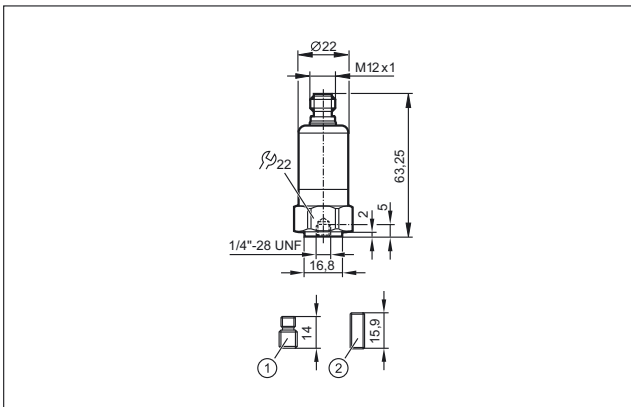
1: tightening torque 15 Nm

4



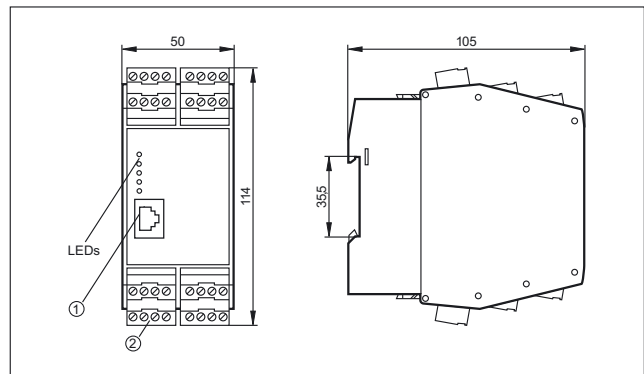
1: Ethernet interface

2



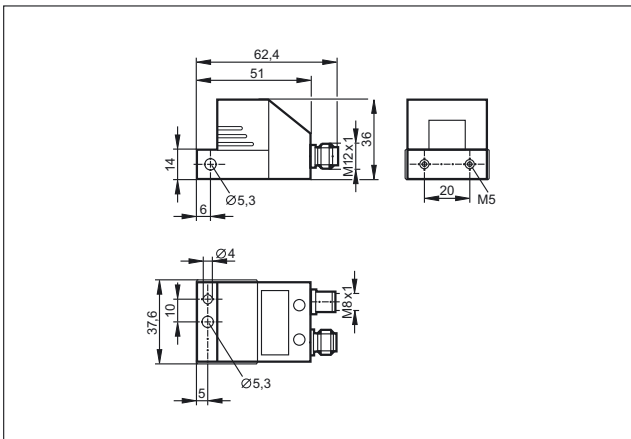
1: Threaded adapter 1/4"-28 UNF / M8 x 1.25 mm, 2: Threaded adapter 1/4"-28 UNF, tightening torque 8 Nm

5

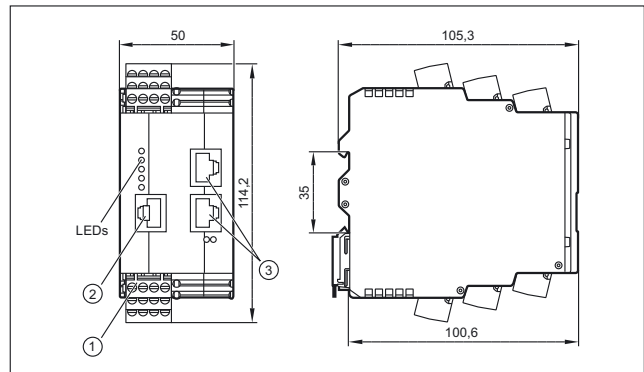


1: Ethernet interface, 2: Combicon plug with screw terminals (optional)

3



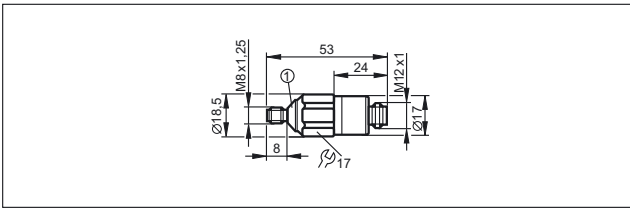
6



1: Combicon connector, 2: TCP/IP interface, 3: Profinet IO data interface

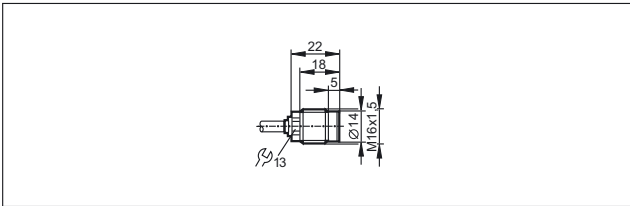
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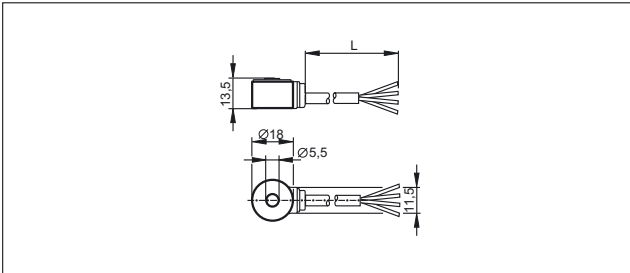


1: conical angle = 90°

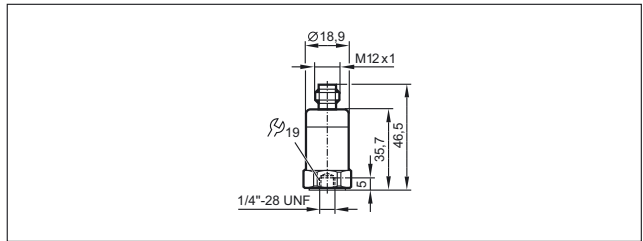
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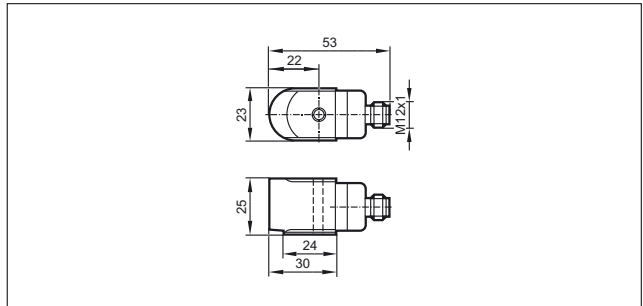
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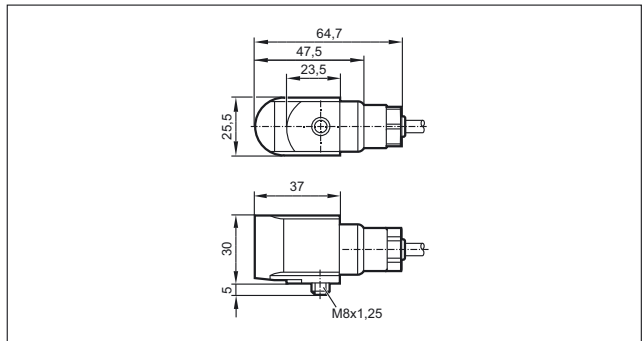
10



11



12





Condition monitoring systems



Systems for oil quality monitoring

For an early detection of too high a water content in lubricants and oils it is useful to continuously monitor the relative moisture in the media using a sensor.

The sensor measures the relative moisture in the oil in the range of 0...100 % by means of a capacitive measuring element. Besides the relative moisture the sensor also provides the medium temperature as an analogue signal.

LDP100 monitors the degree of cleanliness or the level of contamination in fluids.

Compatible media are mineral oils, ester oils and biodegradable oils. The calibration is made in accordance with ISO 11943.

The purity classes are indicated on the LCD display and provided via analogue output and CAN bus

System overview	Page
Oil particle sensor	692
Oil moisture sensor	692
Accessories for LDP oil particle monitor	693
Accessories for oil moisture sensor LDH	693
Wiring diagrams	693
Scale drawings / drawing no. – CAD download: www.ifm.com	694

Oil particle sensor

Type	Process connection	Pressure rating [bar]	Protection	Medium temperature oil [°C]	Ambient temperature [°C]	Drawing no.	Order no.

M12 connector · Output function 4...20 mA (can be configured); digital alarm output · Wiring diagram no. 1 · Connector groups 14, 15, 16, 17

	Minimess M16 x 2	420	IP 67	-10...80	-10...60	1	LDP100

Oil moisture sensor

Type	Process connection	Pressure rating [bar]	Protection	Medium temperature oil [°C]	Ambient temperature [°C]	Drawing no.	Order no.

M12 connector · Output function 4...20 mA analogue · Wiring diagram no. 2 · Connector groups 15, 16, 17

	G 3/4	50	IP 67	-20...85	-20...85	2	LDH100

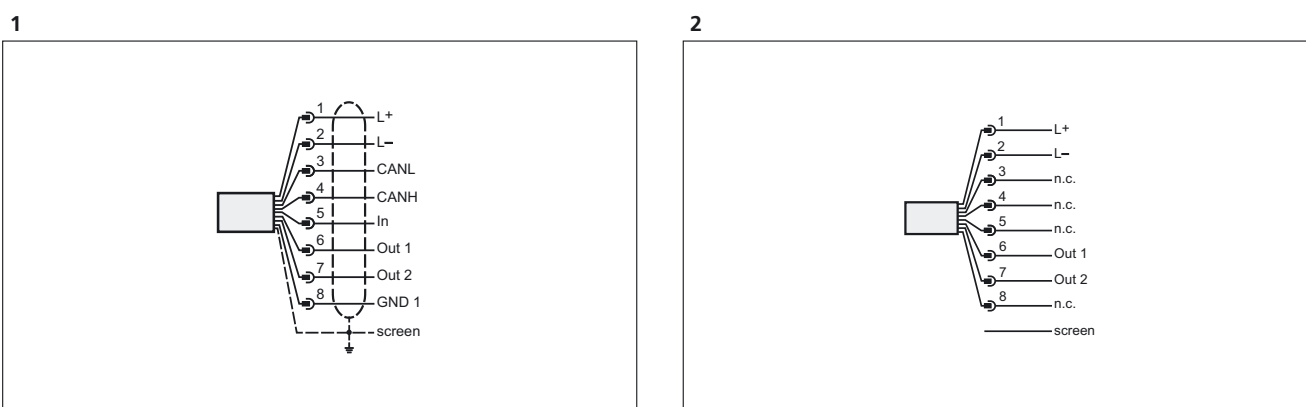
Accessories for LDP oil particle monitor

Type	Description	Order no.
	Screw couplings with cover plate · Blende 0.18 mm · Housing materials: socket housing: steel / surface characteristics: zinc/nickel grey / sealing: NBR	E43330
	Screw couplings with cover plate · Blende 0.3 mm · Housing materials: socket housing: steel / surface characteristics: zinc/nickel grey / sealing: NBR	E43331
	Jumper · straight / straight · CAN adapter cable: M12 plug, 5-pole / M12 socket, 8-pole · Gold-plated contacts · 0.15 m · Housing materials: PUR	E43332
	BasicDisplay · 2.8" colour display · 5 freely programmable backlit function keys · Navigation key for cursor function · CAN interface · Programming according to IEC 61131-3 · 8...32 V DC	CR0451

Accessories for oil moisture sensor LDH

Type	Description	Order no.
	Adapter block · D33 / G ¾ · for oil moisture sensor LDH100 · Housing materials: aluminium	E43400

Wiring diagrams



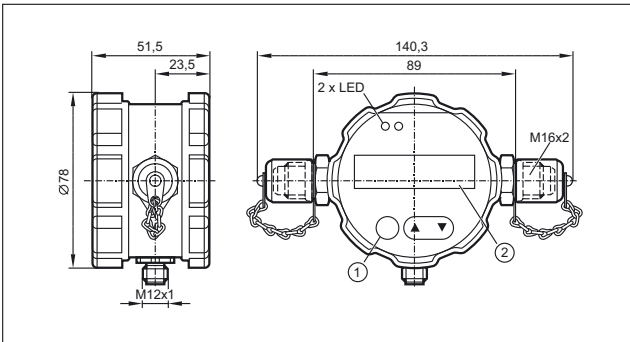
In: Switching input (low level activates measuring cycle), Out 1: Analogue output, Out 2: Switching output, GND 1: Signal ground
Out 1



Condition monitoring systems

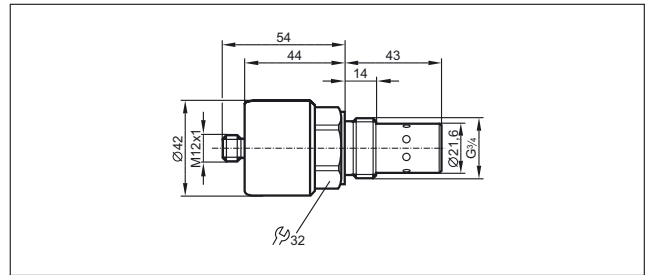
Scale drawings / drawing no. – CAD download: www.ifm.com

1



1: Programming buttons, 2: display

2







Robust electronics for use in harsh environments



Control technology for mobile applications

Life today cannot be imagined without electronics in motor vehicles and mobile machines. Many necessary and convenient functions would be impossible without electronic systems. In contrast to electronics in consumer goods and „normal“ industrial applications such as packaging machines and conveyors, the requirements for components for mobile applications are much higher.

Electronic requirements

The extreme mechanical stress caused by impacts and shocks as well as operation at low and high ambient temperatures require careful selection of electronic components. The direct influence of dirt, humidity and water often cannot be excluded in field applications. Therefore, the devices require high protection rating and a special choice of materials.

In addition to mechanical and environmental influences, electrical interference affecting the whole system as well as individual devices must be taken into account. A wide supply voltage range and adapted protection measures allow reliable operation of the devices even in cases of large voltage fluctuations caused by the battery/generator system and high conducted interference. Strong conducted or radiated interference must not influence the function either.

For device networking, the CAN bus has become the successful standard in the last few years. For the large volume of car production, special, optimised and adapted protocols are used, whereas the CANopen protocol has become indispensable in mobile machines. Manufacturer-specific and industry-specific protocols such as diagnostic engine data according to SAE J 1939 can be coupled to the machine process via gateways.

	<i>Basic control systems</i>	698 - 703
	<i>Mobile controllers</i>	704 - 710
	<i>I/O modules</i>	712 - 717
	<i>Dialogue modules / displays</i>	718 - 721
	<i>Cameras</i>	722 - 727
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Systems for mobile machines



Basic control systems

The ecomatmobile Basic control system has a modular design, is easy to install and to operate and is cost-optimised.

Besides pure control functions it provides solutions for wiring and protection.

In addition, a graphical visualisation module ensures the indication of system messages and simple display instruments.

System overview	Page
BasicController	698
Starter set ecomatmobile Basic	698
BasicRelay	699
BasicDisplay	699
BasicDisplay XL	699
Accessories for the mini control system Basic	699 - 702
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BasicController

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	20	12 x Digital 4 x analogue (U/I) 4 x frequency 4 x Resistor	8 x Digital 8 x PWM	2 x CAN	1	CR0401
	24	12 x Digital 4 x analogue (U/I) 4 x frequency 4 x Resistor	12 x Digital 2 x PWM-I 10 x PWM	2 x CAN	2	CR0403
	16	8 x Digital 4 x analogue (U/I) 4 x frequency 4 x Resistor	8 x Digital 8 x PWM-I 8 x PWM 4 x H bridge	2 x CAN	3	CR0411
	14	8 x Digital 4 x analogue (U/I) 4 x frequency 4 x Resistor	6 x Relay	2 x CAN	4	CR0431

Starter set ecomatmobile Basic

Type	Description	Order no.
	Starter set ecomatmobile Basic	EC0400

BasicRelay

Type	Inputs / outputs	Description	Drawing no.	Order no.
	–	BasicRelay · Locations for 6 automotive relays and 10 automotive fuses (6.3 mm) · 2 supply rails and 6 power distributors · freely wirable	5	CR0421

BasicDisplay

Type	Display	Operating elements	Inputs / outputs	Interfaces	Drawing no.	Order no.
5 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	2.8" colour display 320 x 240 pixels	5 Pushbuttons 1 Navigation key for cursor function	–	1 x CAN	6	CR0451
	2.8" colour display 320 x 240 pixels	5 Pushbuttons 1 Navigation key for cursor function	–	1 x CAN	6	CR9221

BasicDisplay XL

Type	Display	Operating elements	Inputs / outputs	Interfaces	Drawing no.	Order no.
6 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	4.3" colour display 480 x 272 pixels	6 Pushbuttons 1 Navigation key for cursor function	–	1 x CAN	7	CR0452
	4.3" colour display 480 x 272 pixels	6 Pushbuttons 1 Navigation key for cursor function	–	1 x CAN	7	CR9222

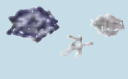
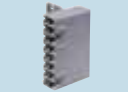
Accessories for the mini control system Basic

Type	Description	Order no.
	cover · for BasicController CR04xx and BasicRelay CR042x · incl. cable seal	EC0401
	cover · for BasicController CR04xx · Built-in display recess for BasicDisplay CR0451 · incl. cable seal	EC0402
	Mounting frame · for BasicDisplay CR0451 · panel · Housing materials: stainless steel	EC0403



Systems for mobile machines

Type	Description	Order no.
	Mounting frame · for BasicDisplay XL CR0452 · panel · Housing materials: stainless steel	EC0404
	RAM mount set · Ball size 1" (B) · e.g. for BasicDisplay · for use as a desktop unit · Housing materials: Mounting arm: aluminium black anodised / Mounting plate: aluminium black anodised / ball: rubber / Display carrier: plastics black	EC0405
	RAM mount set · Ball size 1" (B) · e.g. for BasicDisplay XL · for use as a desktop unit · Housing materials: Mounting arm: aluminium black anodised / Mounting plate: aluminium black anodised / ball: rubber / Display carrier: plastics black	EC0406
	Display carrier · RAM mount system · Ball size 1" (B) · e.g. for BasicDisplay · for use as a desktop unit · Housing materials: plastics black	EC0407
	Display carrier · RAM mount system · Ball size 1" (B) · e.g. for BasicDisplay XL · for use as a desktop unit · Housing materials: plastics black	EC0408
	Mounting plate · RAM mount system · Ball size 1" (B) · e.g. for BasicDisplay or BasicDisplay XL · for use as a desktop unit · Housing materials: Mounting plate: aluminium black anodised / ball: rubber	EC0409
	Mounting arm · 95 mm · RAM mount system · Ball size 1" (B) · e.g. for BasicDisplay or BasicDisplay XL · for use as a desktop unit · Housing materials: Mounting arm: aluminium black anodised	EC0410
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector with integrated CAN terminating resistor (120 ohm) · 5 m · Housing materials: housing: TPU black / sealing: FKM	EVC492
	Jumper · wired · for 2 BasicControllers CR04xx · CAN interface · Power supply · 0.5 m	EC0451
	Jumper · wired · for 1 BasicController CR04xx and 1 BasicDisplay CR045x · CAN interface · Power supply · M12 connector · 0.1 m	EC0452
	Jumper · wired · for 2 BasicControllers CR04xx and 1 BasicDisplay CR045x · CAN interface · Power supply · M12 connector · 0.5 m	EC0453
	Jumper · wired · for 1 BasicController CR04xx and 1 BasicDisplay CR045x · CAN interface · Power supply · M12 connector · 5 m	EC0454
	Jumper · wired · for 1 BasicController CR04xx and 1 BasicDisplay CR045x · CAN interface · Power supply · M12 connector · 10 m	EC0458
	Jumper · wired · for 2 BasicControllers CR04xx and 1 BasicDisplay CR045x · CAN interface · Power supply · M12 connector · 5 m	EC0455
	Contacts and contact housings · for BasicController CR04xx · wirable · utilising all connections to a BasicController	EC0456

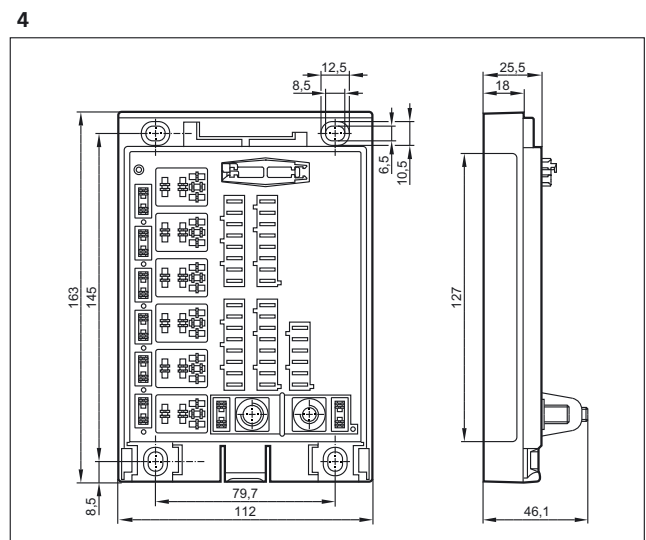
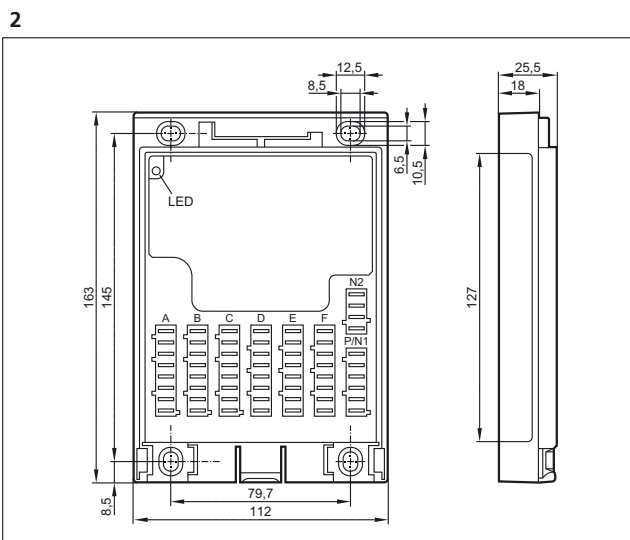
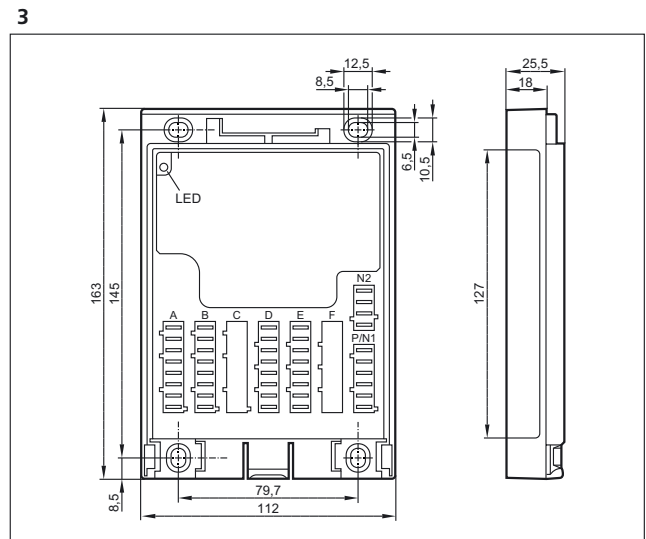
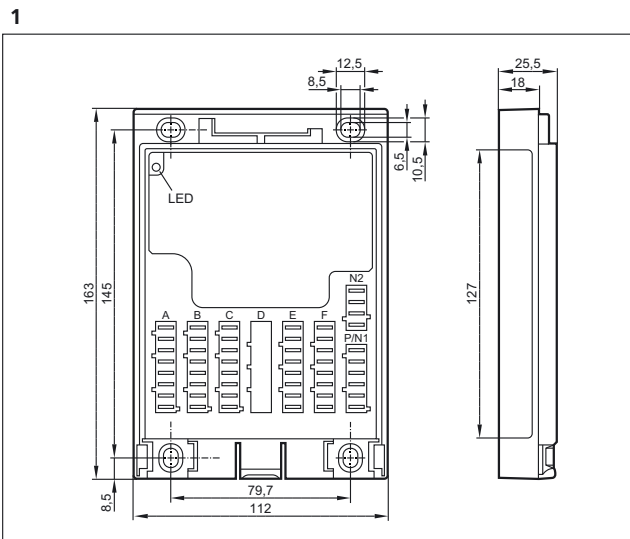
Type	Description	Order no.
	Set of contacts · for BasicRelay CR0421 · wirable · utilising all connections to a BasicRelay	EC0457
	Standard timer contact housing · for BasicController CR04xx · CAN1 and supply P/N1 · Coding · wirable · Housing materials: PA white	EC0460
	Standard timer contact housing · for BasicController CR04xx · CAN2 N2 · Coding · wirable · Housing materials: PA white	EC0461
	Standard timer contact housing · for BasicController CR04xx · Inputs A/B/C · Coding · wirable · Housing materials: PA grey	EC0462
	Standard timer contact housing · for BasicController CR04xx · Outputs D/E/F · Coding · wirable · Housing materials: PA white	EC0463
	Standard timer contact · for standard timer contact housing · 0.2...0.5 mm ² / Ø 1.0...1.6 mm · Housing materials: tin-plated	EC0459
	Standard timer contact · for standard timer contact housing · 0.5...1.0 mm ² / Ø 1.4...2.3 mm · Housing materials: tin-plated	EC0468
	Standard timer contact · for standard timer contact housing · 1.0...2.5 mm ² / Ø 2.1...3.1 mm · Housing materials: tin-plated	EC0469
	Standard power timer contact · for standard timer contact housing · 1.25...2.5 mm ² / Ø 2.1...3.1 mm · Housing materials: tin-plated	EC0470
	Contacts and contact housings · for BasicController relay CR0431 · wirable · utilising all connections to a BasicController relay	EC0464
	Connecting material for power supply · for BasicController relay CR0431 · wirable	EC0465
	Set of relays and fuses for 12 V DC systems · for BasicController relay CR0431	EC0466
	Set of relays and fuses for 24 V DC systems · for BasicController relay CR0431	EC0467
	CANfox · CAN/RS232-USB interface · Programming and diagnosis of CAN systems · 5 V DC (via USB interface)	EC2112
	Adapter cable · for CAN interface CANfox · CAN adapter: DIN connector, 6 poles / M12 connector, 5 poles · RS-232 adapter: DIN connector, 6 poles / Sub-D plug, 9 poles · Cable length 1 m	EC2113



Systems for mobile machines

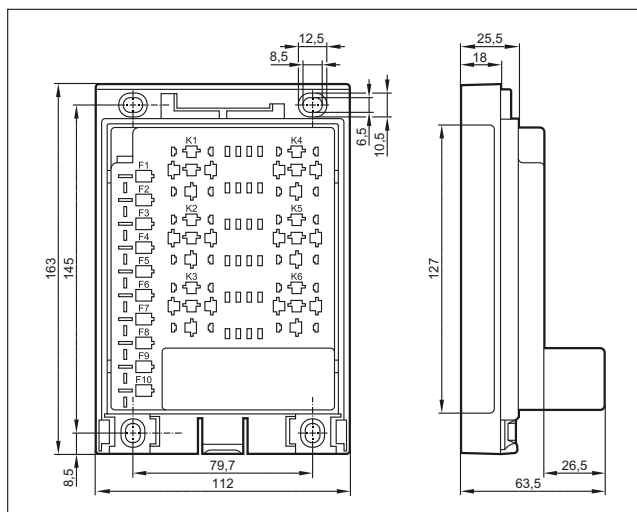
Type	Description	Order no.
	Set of programming cables · for CAN interface CANfox · Cable BasicController: DIN connector, 6-pole / standard timer contact housing, 6-pole · Cable BasicDisplay: DIN connector, 6-pole / M12 socket, 5-pole · CAN interface · Voltage supply via individual wires with end ferrules · Cable length 1 m · 1 m	EC2114
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · German version · incl. the DVD "Software, tools and documentation"	CP9006
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · English version · incl. the DVD "Software, tools and documentation"	CP9008

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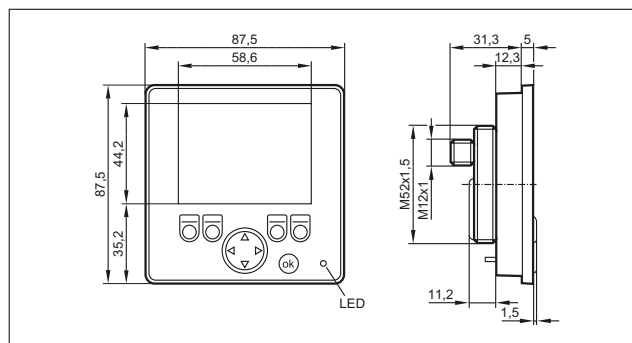


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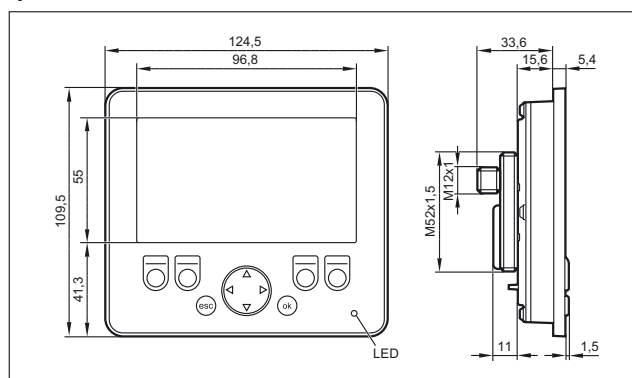
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6



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Systems for mobile machines



Mobile controllers

The platform of the ecomat*mobile* control system: the powerful controller family. Free programmability and the variety of configuration options enable use in a wide range of different applications.

System overview	Page
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32 bit ecomatController

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.

Configurable input / output functions, Programming according to IEC 61131-3

	60	32 x Digital 16 x analogue (U/I) 8 x frequency 4 x Resistor	27 x Digital 1 x analogue (0...10 V) 18 x PWM-I, 27 x PWM 3 x H bridge	4 x CAN 1 x Ethernet 1 x RS-232	1	CR711S

SmartController 32 bits

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.

Configurable input / output functions, Programming according to IEC 61131-3

	32	16 x Digital 4 x analogue (U/I) 4 x frequency 2 x Resistor	16 x Digital 2 x analogue (0.2...10 V) 2 x PWM-I 12 x PWM	2 x CAN	2	CR2530

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.

Configurable input / output functions, Programming according to IEC 61131-3

	64	32 x Digital 8 x analogue (U/I) 8 x frequency 4 x Resistor	32 x Digital 4 x analogue (0.2...10 V) 4 x PWM-I 24 x PWM	3 x CAN	3	CR2532

32-bit ClassicController

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.

Configurable input / output functions, Programming according to IEC 61131-3

	32	16 x Digital 16 x analogue (U/I) 16 x frequency	16 x Digital 16 x PWM-I 16 x PWM 2 x H bridge	4 x CAN 1 x RS-232 1 x USB	4	CR0032
	32	16 x Digital 12 x analogue (U/I) 12 x frequency 4 x Resistor	16 x Digital 16 x PWM-I 16 x PWM 2 x H bridge	4 x CAN 1 x RS-232 1 x USB	5	CR0033
	64	32 x Digital 16 x analogue (U/I) 16 x frequency 6 x Resistor	32 x Digital 2 x analogue (0.2...10 V) 18 x PWM-I, 28 x PWM 2 x H bridge	5 x CAN 1 x RS-232 1 x USB	6	CR0133

32-bit ExtendedController

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.

Configurable input / output functions, Programming according to IEC 61131-3

	80	32 x Digital 32 x analogue (U/I) 32 x frequency	48 x Digital 32 x PWM-I 32 x PWM 4 x H bridge	2 x 2 x CAN 1 x RS-232 1 x USB	6	CR0234
	80	40 x Digital 36 x analogue (U/I) 36 x frequency 4 x Resistor	40 x Digital 32 x PWM-I 32 x PWM 4 x H bridge	2 x 2 x CAN 1 x RS-232 1 x USB	6	CR0235

32 bit ISOBUS controller

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.

Configurable input / output functions, Programming according to IEC 61131-3

	32	16 x Digital 12 x analogue (U/I) 12 x frequency 4 x Resistor	16 x Digital 16 x PWM-I 16 x PWM 2 x H bridge	4 x CAN 1 x RS-232 1 x USB	5	CR0053
	64	32 x Digital 16 x analogue (U/I) 16 x frequency 6 x Resistor	32 x Digital 2 x analogue (0.2...10 V) 18 x PWM-I, 28 x PWM 2 x H bridge	5 x CAN 1 x RS-232 1 x USB	6	CR0153



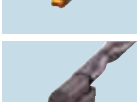
Systems for mobile machines

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw- ing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	80	40 x Digital 36 x analogue (U/I) 36 x frequency 4 x Resistor	40 x Digital 32 x PWM-I 32 x PWM 4 x H bridge	2 x 2 x CAN 1 x RS-232 1 x USB	6	CR0253
	32	16 x Digital 12 x analogue (U/I) 12 x frequency 4 x Resistor	16 x Digital 16 x PWM-I 16 x PWM 2 x H bridge	4 x CAN 1 x RS-232 1 x USB	5	CR0063
	64	32 x Digital 16 x analogue (U/I) 16 x frequency 6 x Resistor	32 x Digital 2 x analogue (0.2...10 V) 18 x PWM-I, 28 x PWM 2 x H bridge	5 x CAN 1 x RS-232 1 x USB	6	CR0163
	80	40 x Digital 36 x analogue (U/I) 36 x frequency 4 x Resistor	40 x Digital 32 x PWM-I 32 x PWM 4 x H bridge	2 x 2 x CAN 1 x RS-232 1 x USB	6	CR0263

CabinetController for use in control cabinets

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw- ing no.	Order no.
Configurable input / output functions, Programming according to IEC 61131-3						
	42	24 x Digital 8 x analogue (U/I) 4 x frequency	18 x Digital 8 x PWM 6 x PNP 10 A	2 x CAN 1 x RS-232	7	CR0303

Connection technology for control systems

Type	Description	Order no.
	Cable with connector · AMP 81-pole · B-coded · 47 cores · wired · Cable length 2.5 m	EC0720
	Cable with connector · AMP 81-pole · A-coded · 58 cores · wired · Cable length 2.5 m	EC0710
	Cable with connector · AMP 81-pole · B-coded · 73 cores · wired · Cable length 2.5 m	EC0721
	Cable with connector · AMP 81-pole · A-coded · 81 cores · wired · Cable length 2.5 m	EC0711
	Connector AMP 81-pole · A-coded · wirable · with contacts (Junior Power Timer)	EC0701
	Connector AMP 81-pole · B-coded · wirable · with contacts (Junior Power Timer)	EC0702

Product selectors and further information can be found at: www.ifm.com

Accessories and software

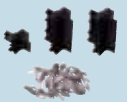
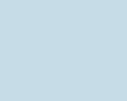
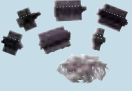
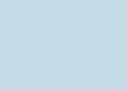
Type	Description	Order no.
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · German version · incl. the DVD "Software, tools and documentation"	CP9006
	Programming software CODESYS · for configuration, programming and diagnosis of ifm controller systems · English version · incl. the DVD "Software, tools and documentation"	CP9008
	Maintenance for PC with WINDOWS or LINUX operating system · USB stick	CP9030
	Maintenance for ifm displays with LINUX · USB stick	CP9031
	System Startup Virtual Terminal Client · USB stick · for ClassicController ISOBUS	CP9200
	System Startup TaskController Client · USB stick · for mobile controllers	CP9201

Connection technology for control systems

Type	Description	Order no.
	Connector AMP 55-pole · wirable · with contacts (Junior Power Timer)	EC2013
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Cores sealed individually · Core cross-section 1 mm ²	EC2084
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Cores sealed individually · Core cross-section 1 mm ²	EC2097
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC2086
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Core cross-section 1 mm ²	EC2046
	Cable with connector · AMP 6-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC1520
	Cable with connector · AMP 10-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC1521

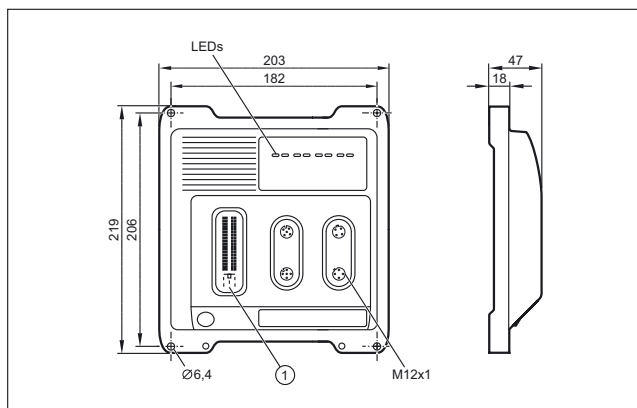


Systems for mobile machines

Type	Description	Order no.
	Cable with connector · AMP 14-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC1522
	Cable with connector · AMP 18-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC1523
	Cable with connector · AMP 18-pole · wired · partially wired · for input signals · Cable length 1.2 m · Core cross-section 1 mm ²	EC1524
	Cable with connector · AMP 18-pole · wired · fully wired · Cable length 2.5 m · Core cross-section 1 mm ²	EC1533
	Plug set for CabinetModule CR2012 / CR2014 · wirable · consisting of: · AMP Crimp housing 1 x 6 pins, 2 x 18 pins incl. Crimp contacts (Junior Power Timer)	EC2053
	Plug set for CabinetController CR0301 / CR0302 · wirable · consisting of: · AMP Crimp housing 1 x 6 pins, 2 x 10 pins, 3 x 18 pins incl. Crimp contacts (Junior Power Timer)	EC2075
	Plug set for CabinetModule CR201x · wirable · consisting of: · AMP Crimp housing 1 x 6 pins, 2 x 14 pins, 2 x 18 pins incl. Crimp contacts (Junior Power Timer)	EC2089
	Plug set · wirable · consisting of: · AMP Crimp housing 2 x 6 pins, 2 x 10 pins, 3 x 18 pins incl. Crimp contacts (Junior Power Timer)	EC2090
	RS-232 Programming adapter · with gender changer for pin-socket conversion	EC2076
	programming cable · cable length 2 m interface 9-pole D-SUB (female) · AMP 6-pole · Test input (AMP connector, pin 5) connected to VBB via link	EC2091
	programming cable · e.g. for ClassicController CR0032 or ExtendedController CR0232 · wired	EC2096
	Load-Dump-Module · 12 V DC	EC2015
	Load-Dump-Module · 24 V DC	EC2016
	Spring terminal box · e.g. for starter set	EC2032

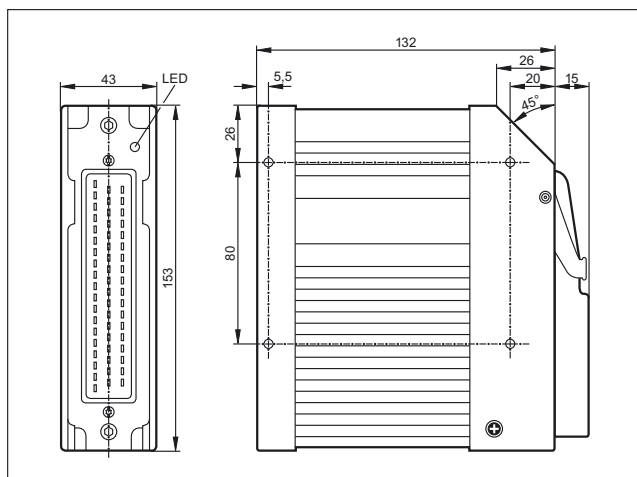
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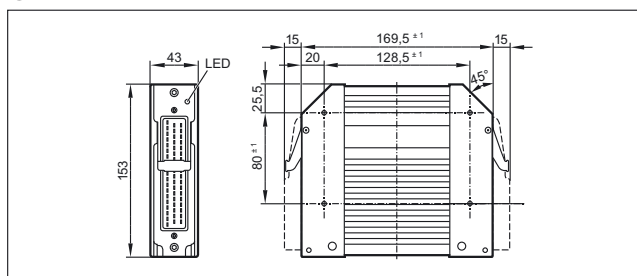


1: Connector AMP 81-pole, A-coded

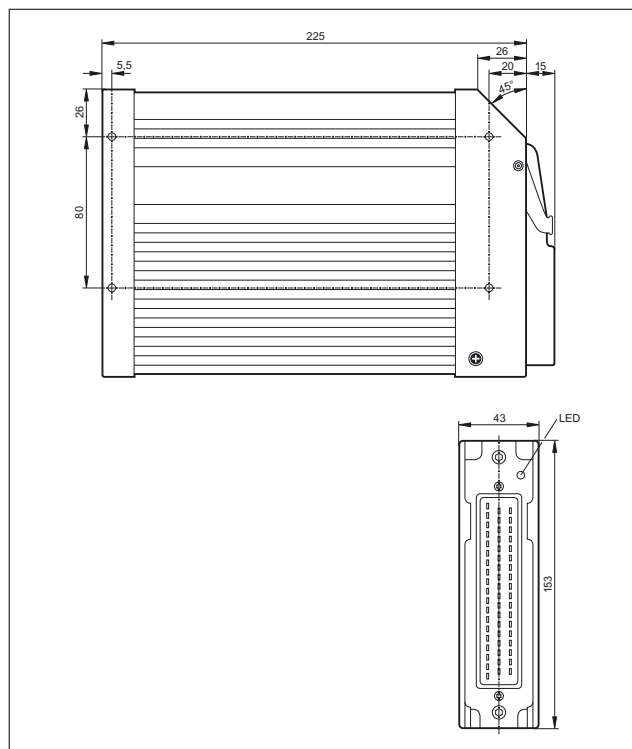
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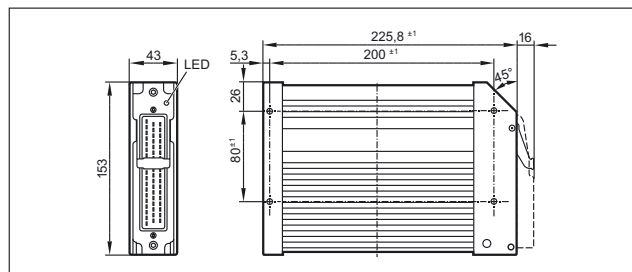
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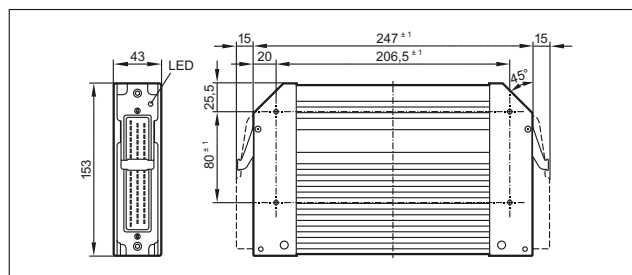
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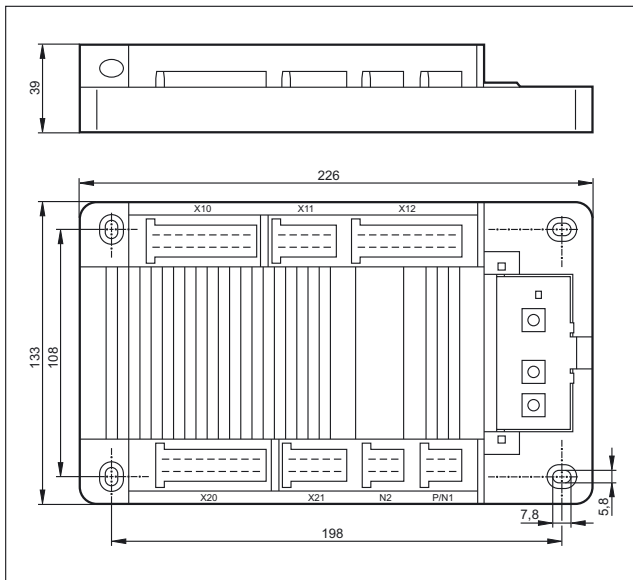




Systems for mobile machines

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Systems for mobile machines



I/O modules

Decentralised I/O modules for use in CANopen bus systems. Considerably reduced wiring, they are mounted where the signals are generated.

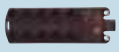
The flexible configuration of the inputs and outputs enables universal use and reduces the costs for stockholding.

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SmartModules	713
CabinetModules	713
Accessories for I/O modules	713 - 716
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ioControl

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Draw- ing no.	Order no.

Programming according to IEC 61131-3 · DEUTSCH connector

	16	16 x Digital 8 x analogue (U/I) 4 x frequency 4 x Resistor	–	2 x CAN	1	CR2050

Configurable output functions, Programming according to IEC 61131-3 · DEUTSCH connector

	16	–	16 x Digital 8 x PWM-I 16 x PWM	2 x CAN	1	CR2051

Configurable input / output functions, Programming according to IEC 61131-3 · DEUTSCH connector

	16	8 x Digital 4 x analogue (U/I) 4 x frequency 4 x Resistor	8 x Digital 8 x PWM-I 8 x PWM	2 x CAN	1	CR2052

CompactModules metal

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.

CAN parameters adjustable via coding switch, Configurable input / output functions · M12 connector

	8	–	8 x Digital 4 x PWM-I 4 x PWM	1 x CAN	2	CR2031
	16	8 x Digital 4 x analogue (U/I)	8 x Digital 4 x PWM	1 x CAN	3	CR2032
	12	8 x Digital 4 x analogue (U/I)	4 x Digital 4 x PWM	1 x CAN	4	CR2033

SmartModules

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.

Configurable input / output functions · 55-pole connec.

	30	15 x Digital 4 x analogue (U/I)	15 x Digital 3 x PWM 4 x PNP 10 A 4 x H bridge	1 x CAN	5	CR2520

CabinetModules

Type	Inputs / outputs total	Inputs	Outputs	Interfaces	Drawing no.	Order no.

CAN parameters adjustable via coding switch, Configurable input / output functions · Connector

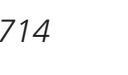
	16	16 x Digital 4 x analogue (0...10 V)	4 x Digital 2 x PWM	1 x CAN	6	CR2012
	16	16 x Digital 4 x analogue (0...5 V)	4 x Digital 2 x PWM	1 x CAN	6	CR2014
	32	16 x Digital 4 x analogue (U/I) 4 x frequency	16 x Digital 4 x PWM	1 x CAN	7	CR2016

Accessories for I/O modules

Type	Description	Order no.
	label tag · 20 x 9 mm · Housing materials: plastics white	E70424



Systems for mobile machines

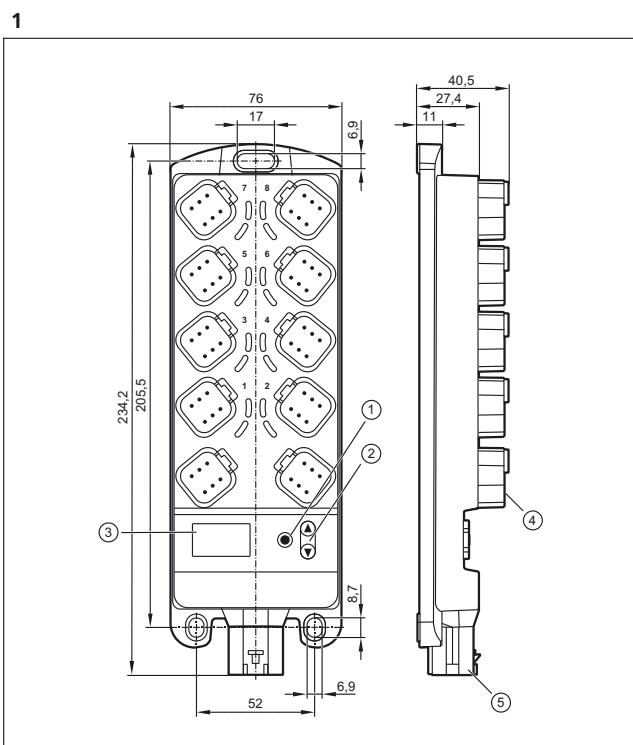
Type	Description	Order no.
	Protective cap · M12 · for M12 sockets of CompactModule Metal · Housing materials: PA black	EC2098
	Connector AMP 55-pole · wirable · with contacts (Junior Power Timer)	EC2013
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Cores sealed individually · Core cross-section 1 mm ²	EC2084
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Cores sealed individually · Core cross-section 1 mm ²	EC2097
	Cable with connector · AMP 55-pole · wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC2086
	Cable with connector · AMP 55-pole · wired · Cable length 2.5 m · Core cross-section 1 mm ²	EC2046
	Plug set for CabinetModule CR2012 / CR2014 · wirable · consisting of: · AMP Crimp housing 1 x 6 pins, 2 x 18 pins incl. Crimp contacts (Junior Power Timer)	EC2053
	Plug set for CabinetModule CR201x · wirable · consisting of: · AMP Crimp housing 1 x 6 pins, 2 x 14 pins, 2 x 18 pins incl. Crimp contacts (Junior Power Timer)	EC2089
	Plug set · wirable · consisting of: · AMP Crimp housing 2 x 6 pins, 2 x 10 pins, 3 x 18 pins incl. Crimp contacts (Junior Power Timer)	EC2090
	Cable with connector · AMP 6-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC1520
	Cable with connector · AMP 10-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC1521
	Cable with connector · AMP 14-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC1522
	Cable with connector · AMP 18-pole · wired · fully wired · Cable length 1.2 m · Core cross-section 1 mm ²	EC1523
	Cable with connector · AMP 18-pole · wired · partially wired · for input signals · Cable length 1.2 m · Core cross-section 1 mm ²	EC1524
	Cable with connector · AMP 18-pole · wired · fully wired · Cable length 2.5 m · Core cross-section 1 mm ²	EC1533

Type	Description	Order no.
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 2 m · 5-pole · Housing materials: PUR	E11596
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 5 m · 5-pole · Housing materials: PUR	E11597
	Terminating resistor socket · straight · Gold-plated contacts · M12 connector · 5-pole · Housing materials: TPU	E11589
	Terminating resistor plug · straight · Gold-plated contacts · M12 connector · 5-pole · Housing materials: TPU	E11590
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 2 m · 5-pole · Housing materials: PUR	E11598
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 5 m · 5-pole · Housing materials: PUR	E11599
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 0.3 m · 5-pole · Housing materials: PUR	E11591
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 1 m · 5-pole · Housing materials: PUR	E11592
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 2 m · 5-pole · Housing materials: PUR	E11593
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 5 m · 5-pole · Housing materials: PUR	E11594
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector with integrated CAN terminating resistor (120 ohm) · 5 m · 5-pole · Housing materials: housing: TPU black / sealing: Viton	EVC492
	Cable plug · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 6 m · 5-pole · Housing materials: housing: TPU black	E12215
	Wireable plug · straight · Free from silicone · Free from halogen · wireable · Gold-plated contacts · M12 connector · 5-pole · Housing materials: PA	E11506
	Wireable socket · straight · Free from silicone · Free from halogen · wireable · Gold-plated contacts · M12 connector · 5-pole · Housing materials: PA	E11511
	Wireable plug · straight · Free from silicone · Free from halogen · wireable · Gold-plated contacts · M12 connector · 4-pole · Housing materials: PA	E11504

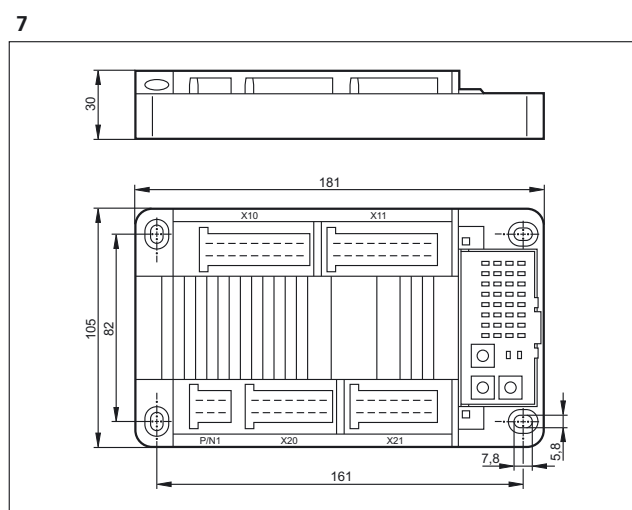
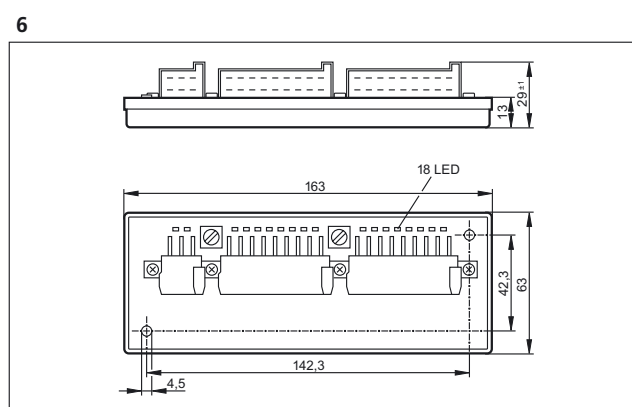
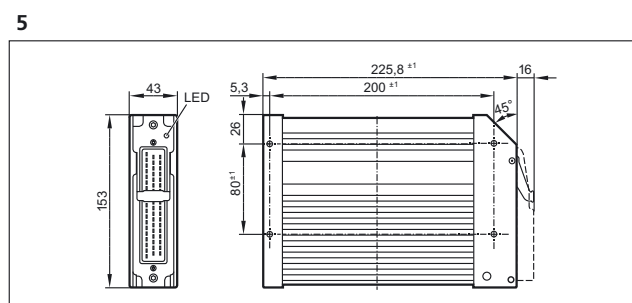
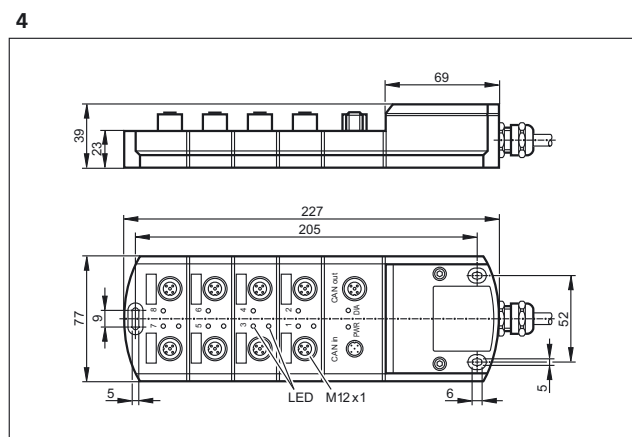
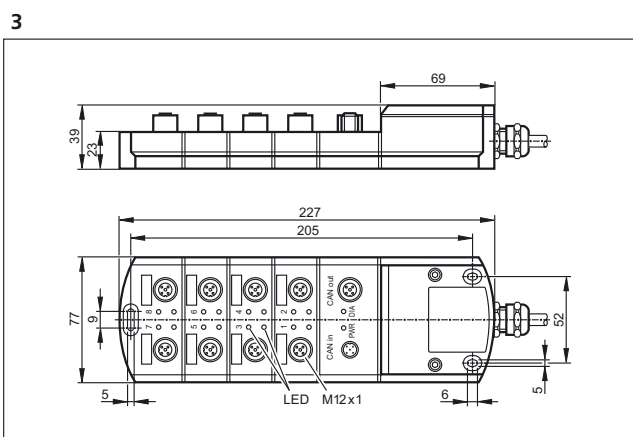
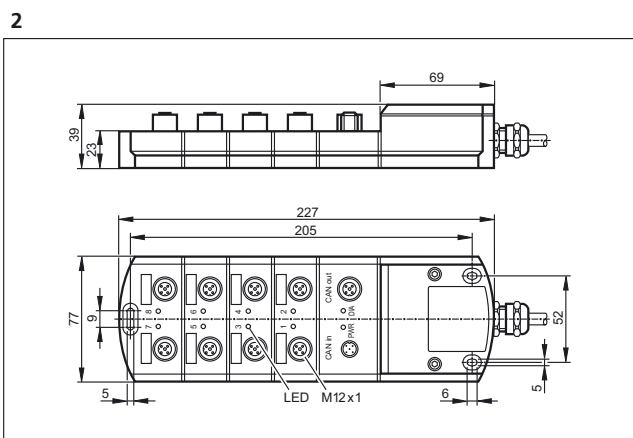


Systems for mobile machines

Type	Description	Order no.
	Wirable plug · angled · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 4-pole · Housing materials: PA	E11505
	Wirable plug · angled · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 5-pole · Housing materials: PA	E11860
	Wirable plug · angled · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 5-pole · Housing materials: PA	E11507
	Load-Dump-Module · 12 V DC	EC2015
	Load-Dump-Module · 24 V DC	EC2016
	Plug for Danfoss PWM valves · wirable · terminals	EC2056
	Plug for Danfoss PWM valves · M12 connector	EC2088
	Adapter cable for CAN devices with M12 connector (5 pole) · e.g. CANmem, CANremote or inclination sensors	EC2062

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1+2: Programming buttons, 3: 4-digit 10-segment display,
4: DEUTSCH connector, 5: AMP plug





Systems for mobile machines



Dialogue modules / displays

Displays with graphics capabilities, free programming to IEC 61131 and various interfaces are features of the dialogue modules.

The convenient user interface for service and machine handling – the dialogue modules of the ecomatmobile control system.

System overview	Page
PDM360 NG with 7" display	718 - 719
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Scale drawings / drawing no. – CAD download: www.ifm.com	721

PDM360 NG with 7" display

Type	Display	Operating elements	Inputs / outputs	Interfaces	Drawing no.	Order no.
Real-time clock, 8 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	7" colour display 800 x 480 pixels	8 Pushbuttons	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	1	CR1083
	7" colour display 800 x 480 pixels	8 Pushbuttons	1 x digital in 1 x analogue in 1 x digital out 1 x Buzzer Real-time clock	4 x CAN 1 x Ethernet 2 x USB	1	CR1087
Real-time clock, 9 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Encoder with pushbutton	1 x digital in 1 x analogue in 1 x digital out 1 x Buzzer Real-time clock	4 x CAN 1 x Ethernet 2 x USB	2	CR1080
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Navigation key with pushbutton	1 x digital in 1 x analogue in 1 x digital out 1 x Buzzer Real-time clock	4 x CAN 1 x Ethernet 2 x USB	3	CR1081
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Navigation key with pushbutton 1 Touch screen	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	3	CR1082

Type	Display	Operating elements	Inputs / outputs	Interfaces	Draw- ing no.	Order no.
Real-time clock, 9 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Encoder with pushbutton	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	2	CR1084
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Navigation key with pushbutton	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	3	CR1085

PDM360 NG with 7" display, optical bonding

Type	Display	Operating elements	Inputs / outputs	Interfaces	Draw- ing no.	Order no.
Real-time clock, 9 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector						
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Encoder with pushbutton	1 x digital in 1 x analogue in 1 x digital out 1 x Buzzer Real-time clock	4 x CAN 1 x Ethernet 2 x USB	2	CR9223
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Navigation key with pushbutton	1 x digital in 1 x analogue in 1 x digital out 1 x Buzzer Real-time clock	4 x CAN 1 x Ethernet 2 x USB	3	CR9224

Real-time clock, 8 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector

	7" colour display 800 x 480 pixels	8 Pushbuttons	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	1	CR9225

Real-time clock, 9 freely programmable backlit function keys, Programming according to IEC 61131-3 · M12 connector

	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Encoder with pushbutton	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	2	CR9226
	7" colour display 800 x 480 pixels	9 Pushbuttons 1 Navigation key with pushbutton	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	3	CR9227

PDM360 NG with 12" display

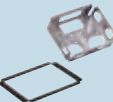
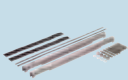
Type	Display	Operating elements	Inputs / outputs	Interfaces	Draw- ing no.	Order no.
Real-time clock, Programming according to IEC 61131-3 · M12 connector						
	12" colour display 1024 x 768 pixels	13 Pushbuttons 1 Navigation key with pushbutton	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	4	CR1200



Systems for mobile machines

Type	Display	Operating elements	Inputs / outputs	Interfaces	Drawing no.	Order no.
Real-time clock, Programming according to IEC 61131-3 · M12 connector						
	12" colour display 1024 x 768 pixels	13 Pushbuttons 1 Navigation key with pushbutton 1 Touch screen	1 x digital in 1 x analogue in 1 x digital out 2 x Video (CVBS) 1 x Buzzer	4 x CAN 1 x Ethernet 2 x USB	4	CR1201

Accessories for displays

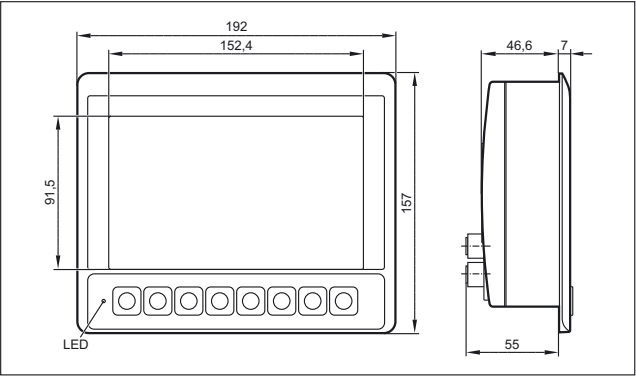
Type	Description	Order no.
	Mounting plate · RAM mount system · Ball size 1.5" (C) · e.g. for process and dialogue monitors PDM360 NG, PDM360, PDM360 compact or PDM360 smart · for use as a desktop unit	EC1410
	Mounting arm short · 90 mm · RAM mount system · Ball size 1.5" (C) · e.g. for process and dialogue monitors PDM360 NG, PDM360, PDM360 compact or PDM360 smart · for use as a desktop unit	EC1411
	Mounting arm standard · 144 mm · RAM mount system · Ball size 1.5" (C) · e.g. for process and dialogue monitors PDM360 NG, PDM360, PDM360 compact or PDM360 smart · for use as a desktop unit	EC1412
	Mounting arm long · 231 mm · RAM mount system · Ball size 1.5" (C) · e.g. for process and dialogue monitors PDM360 NG, PDM360, PDM360 compact or PDM360 smart · for use as a desktop unit	EC1413
	RAM mount set 1 · 144 mm · RAM mount system · Ball size 1.5" (C) · e.g. for process and dialogue monitors PDM360 NG, PDM360, PDM360 compact or PDM360 smart · for use as a desktop unit	EC1414
	Load-Dump-Module · 12 V DC	EC2015
	Load-Dump-Module · 24 V DC	EC2016
	Mounting frame and vibration absorber · for process and dialogue modules PDM360 NG · panel · Housing materials: steel sheet	EC2110
	Seal and vibration absorber · for process and dialogue modules PDM360 NG · panel · Housing materials: TPE black	EC2115
	Installation kit · for process and dialogue modules PDM360 NG-12 · panel · Housing materials: steel sheet	EC2117

Connection technology for displays

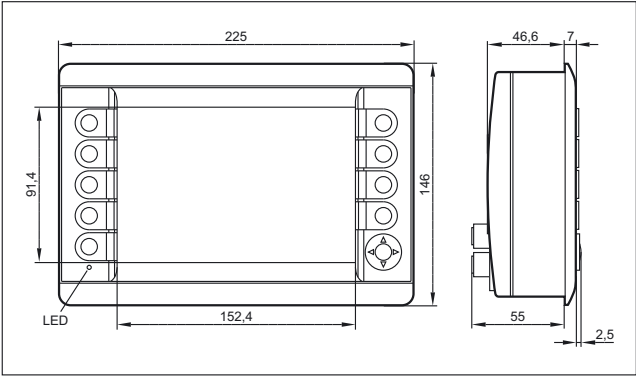
Type	Description	Order no.
	Wireable plug · straight · shieldable · Free from silicone · Free from halogen · wirable · Gold-plated contacts · B-coded · M12 connector · Housing materials: diecast zinc nickel-plated	E12355
	Jumper · for process and dialogue modules PDM360 NG · USB socket for installation in control panel or dashboard · 1.5 m	EC2099
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	E11898

Scale drawings / drawing no. – CAD download: www.ifm.com

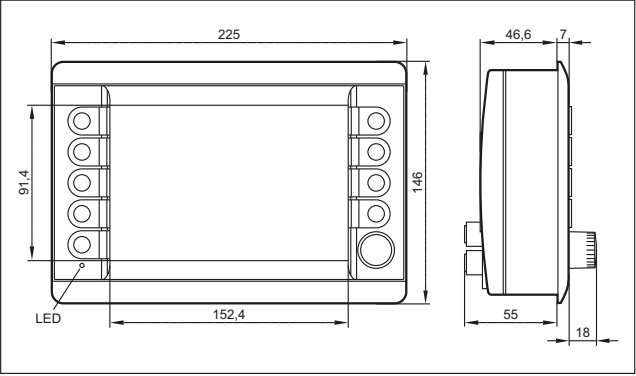
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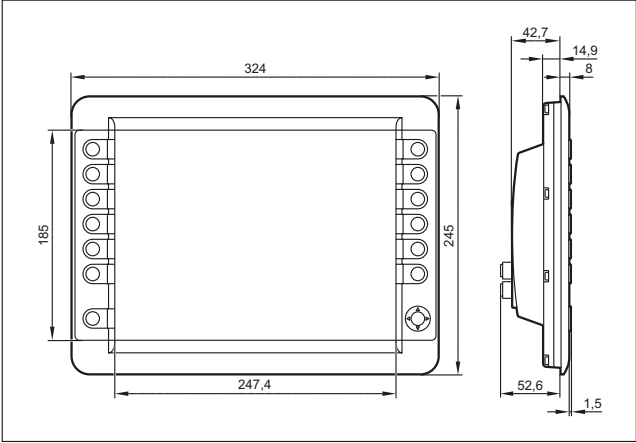
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2



4





Systems for mobile machines



Cameras

In almost all mobile machines, users today use displays for indicating machine information. At the same time camera systems monitor the operating areas. Here, the new camera system O2M is used. Designed for extreme operating conditions.

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Accessories	723
Connection cables for industrial imaging	723 - 724
Camera systems for PDM360 color and PDM360 NG	724
Connection technology for displays	725
Accessories	725
Connection technology for displays	726
Scale drawings / drawing no. – CAD download: www.ifm.com	726 - 727

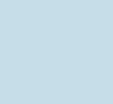
3D sensors for mobile machines

Type	Image resolution	Angle of aperture [°]	Additional functions	Interfaces	Draw- ing no.	Order no.
M12 connector						
	64 x 16 pixels	70 x 23	CAN output	Video signal analogue	1	O3M151
	64 x 16 pixels	95 x 32	CAN output	Video signal analogue	2	O3M161
	640 x 480 pixels	90	CAN output	Video signal analogue	3	O3M251
	720 x 576 pixels	120	CAN output	Video signal analogue	4	O3M261

Accessories

Type	Description	Order no.
	IR illumination unit · Device interfaces: MCI · Angle of aperture 70° x 23° (horizontal x vertical) · IR illumination unit for the operation of O3M15x and O3M25x · Connector · Housing materials: diecast aluminium	O3M950
	IR illumination unit · Device interfaces: MCI · Angle of aperture 95° x 32° (horizontal x vertical) · IR illumination unit for the operation of O3M16x and O3M26x · Connector · Housing materials: diecast aluminium	O3M960
	CANfox · CAN/RS232-USB interface · Programming and diagnosis of CAN systems · 5 V DC (via USB interface)	EC2112
	Set of programming cables · for CAN interface CANfox · Cable BasicController: DIN connector, 6-pole / standard timer contact housing, 6-pole · Cable BasicDisplay: DIN connector, 6-pole / M12 socket, 5-pole · CAN interface · Voltage supply via individual wires with end ferrules · Cable length 1 m	EC2114
	Operating software · O3Mxxx · O3D3xx	E3D300
	Mounting set · O3M · U-shaped fixture, adjustable · screw mounting onto common aluminium profiles and machine panels · Housing materials: fixture: stainless steel	E3M100
	Weather protection · O3M · mounting via screws · Housing materials: stainless steel black	E3M101
	Mounting set · O3M · U-shaped fixture, adjustable · screw mounting onto common aluminium profiles and machine panels · Housing materials: fixture: stainless steel black	E3M102
	Mounting set · O3M · Clamp mounting · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E3M103

Connection cables for industrial imaging

Type	Description	Order no.
	Jumper · Connector · Connection between mobile 3D camera / sensor and illumination unit · 0.25 m	E3M120
	Jumper · Connector · Connection between mobile 3D camera / sensor and illumination unit · 1 m	E3M121
	Jumper · Connector · Connection between mobile 3D camera / sensor and illumination unit · 2 m	E3M122
	Jumper · Connector · Connection between mobile 3D camera / sensor and illumination unit · 3 m	E3M123



Systems for mobile machines

Type	Description	Order no.
	Socket · straight · M12 connector · Gold-plated contacts · Power supply for illumination unit · 2 m · Housing materials: PUR	E3M131
	Socket · straight · M12 connector · Gold-plated contacts · Power supply for illumination unit · 5 m · Housing materials: PUR	E3M132
	Socket · straight · M12 connector · Gold-plated contacts · Power supply for illumination unit · 10 m · Housing materials: PUR	E3M133
	Jumper · straight / angled · Connector · For mobile 3D Smart sensor with analogue PAL video output · M12 connector · 5 m · for type O3M · Housing materials: housing: PUR / sealing: FKM / Contact pins: CuSn6 surface nickel and tin-plated	E3M151
	Jumper · straight / angled · Connector · For mobile 3D Smart sensor with analogue PAL video output · M12 connector · 11 m · for type O3M · Housing materials: housing: PUR / sealing: FKM / Contact pins: CuSn6 surface nickel and tin-plated	E3M152
	Jumper · straight / angled · Connector · For mobile 3D Smart sensor with analogue PAL video output · M12 connector · 16 m · for type O3M · Housing materials: housing: PUR / sealing: FKM / Contact pins: CuSn6 surface nickel and tin-plated	E3M153
	Jumper · straight / angled · Connector · For mobile 3D Smart sensor with analogue PAL video output · M12 connector · 21 m · for type O3M · Housing materials: housing: PUR / sealing: FKM / Contact pins: CuSn6 surface nickel and tin-plated	E3M154
	Extension cable · straight / straight · Connector · For mobile 3D Smart sensor with analogue PAL video output · M12 connector · 5 m · for type O3M · Housing materials: housing: PUR / sealing: FKM / Contact pins: CuSn6 surface nickel and tin-plated	E3M159
	Jumper · straight · M12 connector · Gold-plated contacts · For mobile 3D Smart sensor with analogue PAL video output · For connection of a video grabber · 1 m · Housing materials: PUR black	E3M160

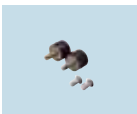
Camera systems for PDM360 color and PDM360 NG

Type	Image resolution	Angle of aperture [°]	Additional functions	Interfaces	Drawing no.	Order no.
M16 connector						
	720 x 480	78	lens heating	Video signal analogue	5	O2M200
	720 x 480	78	Integrated mirror function lens heating	Video signal analogue	5	O2M201
	720 x 480	115	lens heating	Video signal analogue	5	O2M202
	720 x 480	115	Integrated mirror function lens heating	Video signal analogue	5	O2M203

Connection technology for displays

Type	Description	Order no.
	Adapter cable · straight / straight · M16 - M12 · Gold-plated contacts · Free from silicone · 0.6 m · Housing materials: housing: PVC / sealing: EPDM	E2M200
	Adapter cable · straight / straight · Y adapter cable M12 plug / 2 x M16 socket · Gold-plated contacts · Free from silicone · 0.95 m · Housing materials: housing: PVC / sealing: EPDM	E2M201
	Jumper · straight / straight · M16 - M16 · Gold-plated contacts · Free from silicone · 5 m · Housing materials: housing: PVC / sealing: EPDM	E2M203
	Jumper · straight / straight · M16 - M16 · Gold-plated contacts · Free from silicone · 16 m · Housing materials: housing: PVC / sealing: EPDM	E2M205
	Jumper · straight / straight · M16 - M16 · Gold-plated contacts · Free from silicone · 21 m · Housing materials: housing: PVC / sealing: EPDM	E2M206

Accessories

Type	Description	Order no.
	Video splitter · M16 connector · Housing materials: housing: stainless steel 316/1.4401	E2M250
	Socket · straight · Free from halogen · M16 connector · 3.85 m · Housing materials: housing: diecast zinc / sealing: PBT	E2M251
	Socket · straight · wirable · Free from halogen · M16 connector · Housing materials: housing: diecast zinc / sealing: PBT	E2M252
	protective housing · O2M2 · Housing materials: housing: 1.4301	E2M212
	Mounting bracket · O2M2 · Housing materials: housing: ABS reinforced glass-fibre / PC / PA	E2M211
	Vibration damper · O2M2 · Housing materials: Absorber: rubber / set screw: steel M6 x 15 mm	E2M213
	Mounting set · O2M2 · Housing materials: fixture: ABS	E2M210



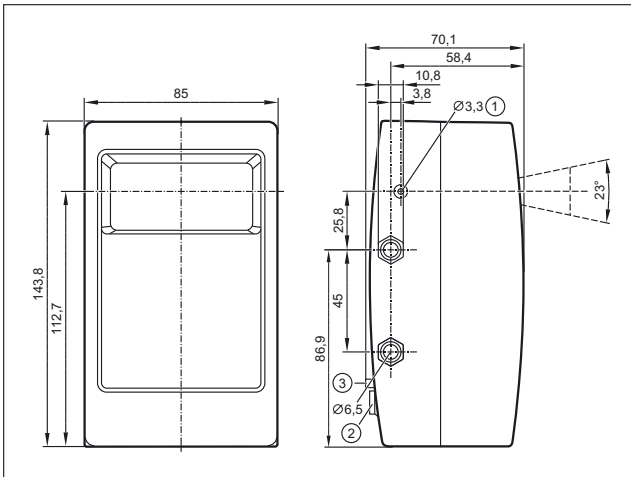
Systems for mobile machines

Connection technology for displays

Type	Description	Order no.
	Ethernet switch · 5 ports · Autosensing · Autocrossing · 10/100Base-TX · Redundant voltage supply · 10...30 V DC	EC2095
	Jumper · straight / straight · Ethernet · Cross-over patch cable · 2 m · Housing materials: PUR / PC	E11898
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 2 m · Housing materials: TPU	E21138
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 5 m · Housing materials: TPU	E21139
	Jumper · straight / straight · Ethernet · Gold-plated contacts · 10 m · Housing materials: TPU	E21137

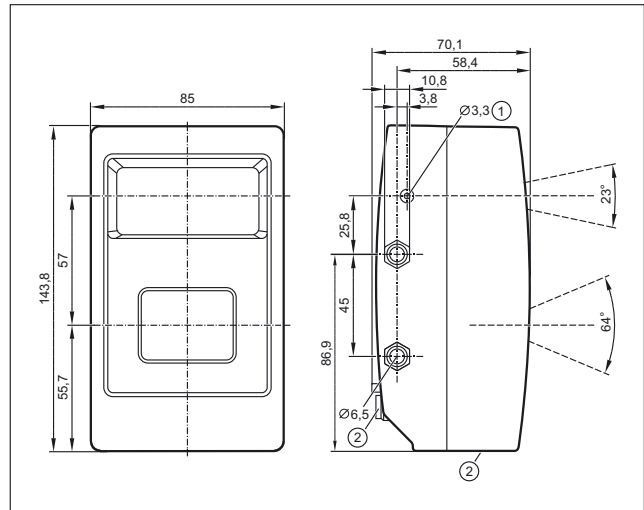
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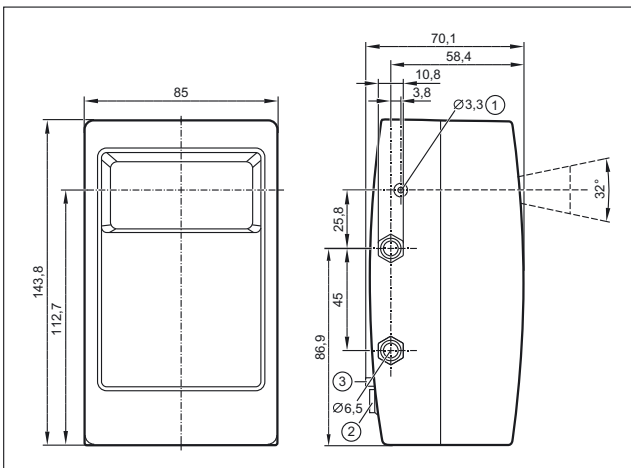


1: Reference socket, 2: Connections

3

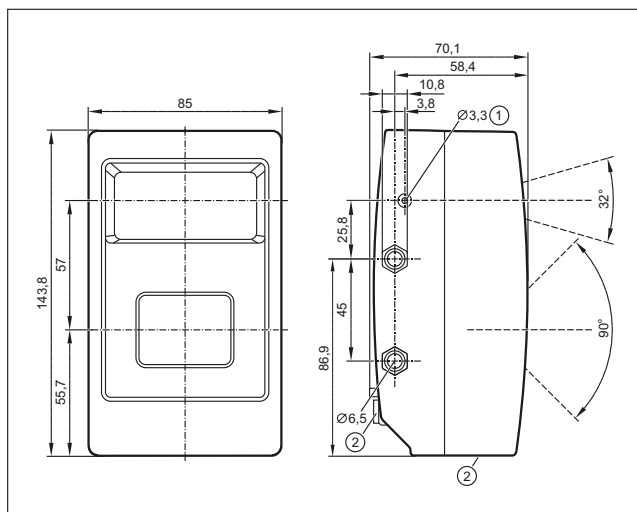


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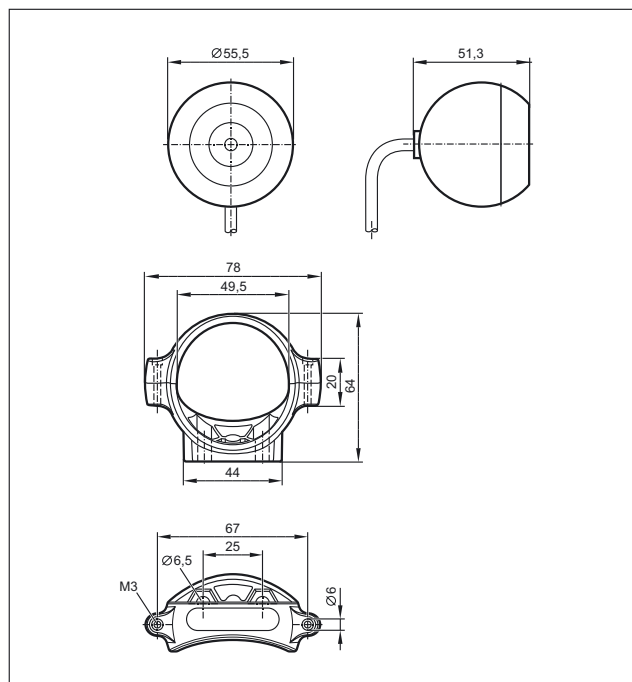


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4



5





Systems for mobile machines



Diagnostic and service units

Detection of diagnostic data – the basis for a powerful and low-cost remote maintenance and monitoring concept.

Reduced service costs and standstill times in cases of failure are essential advantages of this modern technology.

System overview	Page
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CAN interface and diagnosis	728 - 729
Accessories for remote maintenance	729
CAN cables	729
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Remote maintenance

Type	Description	Drawing no.	Order no.
M12 connector, 5-pole · FME connector, GSM antenna · SMA socket, GPS antenna			
	CAN 3G/GPS radio modem · GSM/GPRS/EDGE (850/900/1800/1900 MHz) · UMTS/HSDPA (800/850/900/1700/1900/2100 MHz) · for the transfer of SMS messages and data packages · with GPS/Glonass receiver for location tracking · Shock sensor · aluminium powder-coated	1	CR3114

CAN interface and diagnosis

Type	Description	Drawing no.	Order no.
	CANfox · CAN/RS232-USB interface · Programming and diagnosis of CAN systems · 5 V DC (via USB interface)	2	EC2112
	Adapter cable · for CAN interface CANfox · CAN adapter: DIN connector, 6 poles / M12 connector, 5 poles · RS-232 adapter: DIN connector, 6 poles / Sub-D plug, 9 poles · Cable length 1 m	3	EC2113
	Real-time clock for CAN systems · Automotive relay housing · CAN interface · Parameter setting to IEC 61131 · Digital output · plastics:	4	CR3020
	CAN interface · polyamide	5	CR3130

Type	Description	Draw- ing no.	Order no.
	CAN interface · polyamide	6	CR3131
	Wifi / Bluetooth planar antenna · with integrated amplifier · Cable length 3 m · flat design for mounting on all plain surfaces · RP SMA plug	7	EC2118

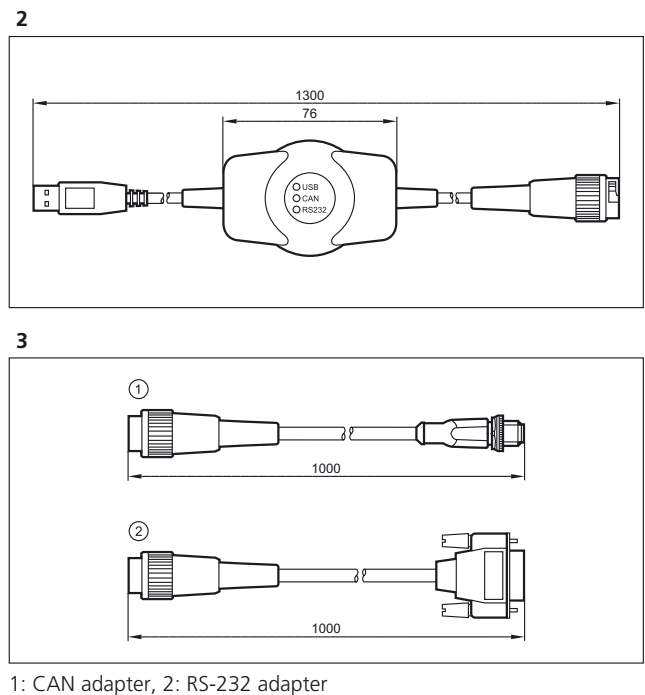
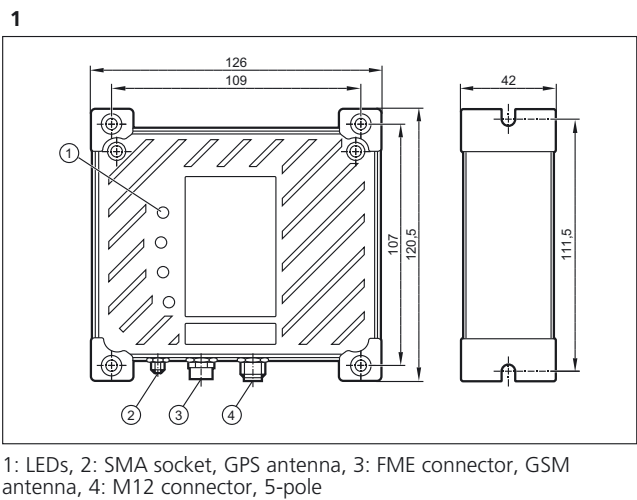
Accessories for remote maintenance

Type	Description	Order no.
	GSM/GPS combined antenna · GSM 850/900/1800/1900 · UMTS 1920...2170 MHz · with integrated amplifier · Cable length 3 m · FME socket (GSM) · SMA plug (GPS) · flat design for mounting on all plain surfaces · e.g. for CANremote CR3114 · thread M16 x 1.5	EC2116

CAN cables

Type	Description	Order no.
	Adapter cable for CAN devices with M12 connector (5 pole) · e.g. CANmem, CANremote or inclination sensors	EC2062
	Wirable socket · straight · Free from silicone · Free from halogen · wirable · Gold-plated contacts · M12 connector · 5-pole · Housing materials: PA	E11511

Scale drawings / drawing no. – CAD download: www.ifm.com

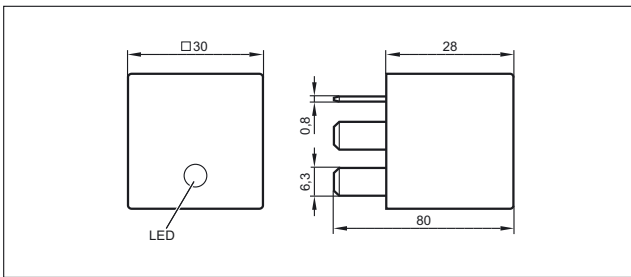




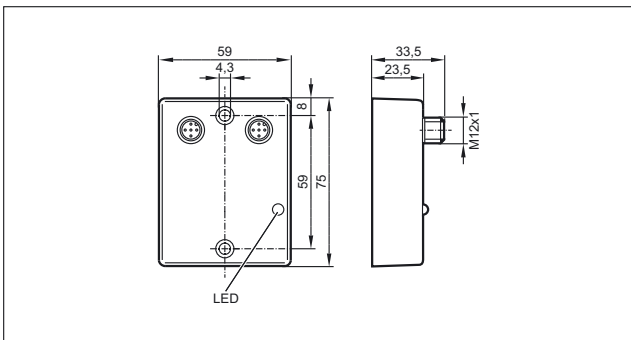
Systems for mobile machines

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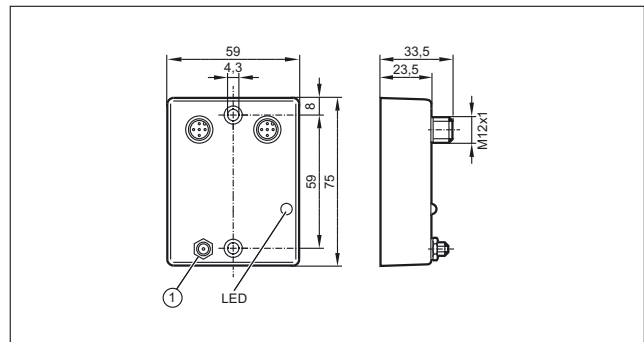
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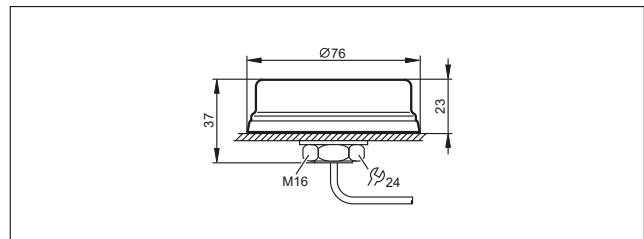


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1: RP SMA socket

7







Systems for mobile machines



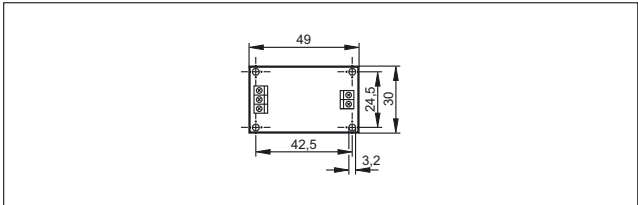
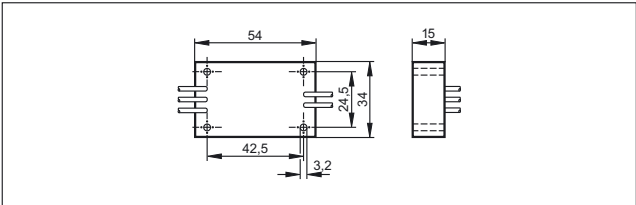
Signal converters

The solution provider for special applications. Signal converter to adapt sensor and actuator signals to the inputs and outputs of the controller or CANopen modules.

System overview	Page
Converters and PWM modules	732
Scale drawings / drawing no. – CAD download: www.ifm.com	732 - 733

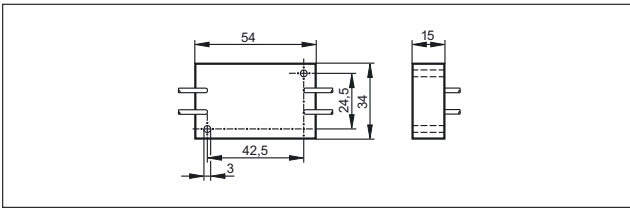
Converters and PWM modules			
Type	Description	Draw- ing no.	Order no.
	PWM / analogue module · PCB · Input 24 V DC PWM signal · Output 0...5 V DC	1	CR3001
	PWM / analogue module · PCB · Input 24 V DC PWM signal · Output 0...10 V DC	1	CR3002
	PWM / analogue module · Housing · Input 24 V DC PWM signal · Output 0...5 V DC	2	CR3003
	PWM / analogue module · Housing · Input 24 V DC PWM signal · Output 0...10 V DC	2	CR3004
	PWM / analogue module · Housing · Input 24 V DC PWM signal · Output 4...20 mA	2	CR3008
	DC/DC converter · Input 18...36 V DC · Output 10 V DC	3	EC2025

Scale drawings / drawing no. – CAD download: www.ifm.com

1	2
	

Scale drawings / drawing no. – CAD download: www.ifm.com

3





Systems for mobile machines



Sensors

From CAN-bus compatible or analogue inclination sensors to inductive proximity switches and pressure sensors for mobile applications. The sensors of the ecomat*mobile* system are reliable even under the extreme conditions of use in a mobile machine.

System overview	Page
Absolute multiturn-encoders (CANopen) for mobile applications	734
RFID systems DTM424, DTM425, DTM434, DTM435 for mobile machines	735
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Absolute multiturn-encoders (CANopen) for mobile applications

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Draw- ing no.	Order no.
M12 connector · Output function CANopen interface · Connector group 205									
	4096	9...30	–	–	10	-40...85	axial	1	RM9000
	4096	9...30	–	–	10	-40...85	axial	2	RM9001

RFID systems DTM424, DTM425, DTM434, DTM435 for mobile machines

Type	Description	Draw- ing no.	Order no.
Type M18 x 1 · M12 connector · CANopen interface			
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	3	DTM424
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	4	DTM425
Type M18 x 1 · M12 connector · J1939 interface			
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	3	DTM426
	Read/write head · M18 x 1 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	4	DTM427
Type M30 x 1.5 · M12 connector · CANopen interface			
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	5	DTM434
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	6	DTM435
Type M30 x 1.5 · M12 connector · J1939 interface			
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	5	DTM436
	Read/write head · M30 x 1.5 · M12 connector · Housing materials: housing: stainless steel / Top: PPS / connector housing: PEI	6	DTM437

CAN inclination sensors

Type	Angular range [°]	Number of axes	Resolution / accuracy [°]	Interfaces	Wiring diag. no.	Draw- ing no.	Order no.
2 x M12 connection (CAN-In / CAN-Out)							
	0...360° / ± 180°	2	0.001 / ≤ ± 0.5°	1 x CAN	–	7	JN2100
	± 45°	2	0.001 / ± 0.01°	1 x CAN	–	7	JN2101



Systems for mobile machines

Inclination sensors

Type	Angular range [°]	Supply voltage	Output signal	Repeatability [°]	Drawing no.	Order no.
Cable						
	±90°	15...30 V DC	1 x analogue (0...10 V)	0.1°	8	EC2019
	±90°	8...30 DC	1 x analogue (0.5...4.5 V)	0.1°	8	EC2045
Cable with M12 connector						
	±20°	11...15 V DC	1 x analogue (4...20 mA)	0.1°	8	EC2060
	±90°	20...30 V DC	1 x analogue (4...20 mA)	0.1°	8	EC2082

Tilt sensors

Type	Angular range [°]	Supply voltage	Output signal	Repeatability [°]	Drawing no.	Order no.
Cable						
	2.5...5.5°	10...30 V DC	1 x Digital	0.2°	9	EC2061

Inductive sensors for mobile applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Drawing no.	Order no.
Cable 6 m · Output function  · DC PNP · Wiring diagram no. 1									
	M12 / L = 79	4 f	stainless steel	10...60	IP 67 / IP 69K	400	200	10	IFM209
	M12 / L = 79	7 nf	High-grade st. steel	10...60	IP 67 / IP 69K	300	200	11	IFM210
	M18 / L = 81	8 f	stainless steel	10...60	IP 67 / IP 69K	200	200	12	IGM206
	M18 / L = 81	12 nf	stainless steel	10...60	IP 67 / IP 69K	200	200	13	IGM207

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable 6 m · Output function · DC PNP · Wiring diagram no. 1

	M30 / L = 81	12 f	stainless steel	10...60	IP 67 / IP 69K	100	200	14	IIM210
	M30 / L = 81	22 nf	stainless steel	10...60	IP 67 / IP 69K	100	200	15	IIM211

Cable 6 m · Output function · 3-wire DC PNP; 2-wire DC PNP/NPN · Wiring diagram no. 11

	M12 / L = 79	4 f	stainless steel	10...36	IP 67 / IP 69K	400	100	10	IFM207
	M12 / L = 79	7 nf	stainless steel	10...36	IP 67 / IP 69K	300	100	11	IFM208
	M18 / L = 81	8 f	stainless steel	10...36	IP 67 / IP 69K	200	100	12	IGM202
	M18 / L = 81	12 nf	stainless steel	10...36	IP 67 / IP 69K	200	100	13	IGM203
	M30 / L = 81	12 f	stainless steel	10...36	IP 67 / IP 69K	100	100	14	IIM202
	M30 / L = 81	22 nf	stainless steel	10...36	IP 67 / IP 69K	100	100	15	IIM203

M12 connector · Output function · DC PNP · Wiring diagram no. 2 · Connector groups 202, 203, 204

	M12 / L = 70	4 f	High-grade st. steel	10...60	IP 67 / IP 69K	400	200	16	IFM205
	M12 / L = 70	7 nf	stainless steel	10...60	IP 67 / IP 69K	300	200	17	IFM206
	M18 / L = 70	8 f	stainless steel	10...60	IP 67 / IP 69K	200	200	18	IGM204
	M18 / L = 70	12 nf	stainless steel	10...60	IP 67 / IP 69K	200	200	19	IGM205
	M30 / L = 70	12 f	stainless steel	10...60	IP 67 / IP 69K	100	200	20	IIM208
	M30 / L = 70	22 nf	stainless steel	10...60	IP 67 / IP 69K	100	200	21	IIM209



Systems for mobile machines

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · 3-wire DC PNP; 2-wire DC PNP/NPN · Wiring diagram no. 12 · Connector groups 202, 203, 204									
	M12 / L = 70	4 f	High-grade st. steel	10...36	IP 67 / IP 69K	400	100	16	IFM203
	M12 / L = 70	7 nf	High-grade st. steel	10...36	IP 67 / IP 69K	300	100	17	IFM204
	M18 / L = 70	8 f	stainless steel	10...36	IP 67 / IP 69K	200	100	18	IGM200
	M18 / L = 70	12 nf	stainless steel	10...36	IP 67 / IP 69K	200	100	19	IGM201
	M30 / L = 70	12 f	stainless steel	10...36	IP 67 / IP 69K	100	100	20	IIM200
	M30 / L = 70	22 nf	stainless steel	10...36	IP 67 / IP 69K	100	100	21	IIM201

f = flush / nf = non flush / qf = quasi-flush

Full metal sensors for industrial applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.
M12 connector · Output function  · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 93	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	22	MFH200
M12 connector · Output function  · DC NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 93	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	22	MFH201
M12 connector · Output function  · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	23	MFH202
M12 connector · Output function  · DC NPN · Wiring diagram no. 3 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202									
	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	23	MFH203

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

M12 connector · Output function  · DC PNP · Wiring diagram no. 4 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	M12 / L = 60	1.8 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	23	MFH204

M12 connector · Output function  · DC PNP · Wiring diagram no. 2 · Connector groups 8, 10, 11, 18, 19, 21, 23, 25, 148, 149, 150, 153, 154, 184, 188, 190, 193, 202, 203, 204

	M14 / L = 53	2 f	High-grade st. steel	10...36	IP 65 / IP 68 / IP 69K	1000	200	24	M9H200

f = flush / nf = non flush / qf = quasi-flush

Sensors for mobile applications

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Draw- ing no.	Order no.

Cable with connector 0.15 m · Output function  · DC PNP · Wiring diagram no. 2 · Connector groups 1, 2, 3, 78, 84, 145, 146

	40 x 12 x 26	60	PBT	10...30	IP 67	–	200	25	MN5200

Electronic pressure sensors for mobile applications

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

AMP Superseal · Output function 0...10 V analogue · Wiring diagram no. 5

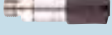
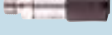
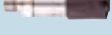
	G ¼ A	–	0...400	1000	1700	16...32	26	PU5600
	G ¼ A	–	0...250	625	1200	16...32	26	PU5601
	G ¼ A	–	0...100	250	1000	16...32	26	PU5602
	G ¼ A	–	0...25	65	600	16...32	26	PU5603
	G ¼ A	–	0...10	25	300	16...32	26	PU5604
	G ¼ A	–	0...600	1500	2500	16...32	26	PU5660



Systems for mobile machines

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Draw- ing no.	Order no.

DEUTSCH connector DT04-3P · Output function 0...10 V analogue · Wiring diagram no. 6

	G ¼ A	–	0...400	1000	1700	16...32	27	PU5700
	G ¼ A	–	0...250	625	1200	16...32	27	PU5701
	G ¼ A	–	0...100	250	1000	16...32	27	PU5702
	G ¼ A	–	0...25	65	600	16...32	27	PU5703
	G ¼ A	–	0...10	25	300	16...32	27	PU5704
	G ¼ A	–	0...600	1500	2500	16...32	27	PU5760

AMP Superseal · Output function 4...20 mA analogue · Wiring diagram no. 7

	G ¼ A	–	0...400	1000	1700	8...32	26	PT5600
	G ¼ A	–	0...250	625	1200	8...32	26	PT5601
	G ¼ A	–	0...100	250	1000	8...32	26	PT5602
	G ¼ A	–	0...25	65	600	8...32	26	PT5603
	G ¼ A	–	0...10	25	300	8...32	26	PT5604
	G ¼ A	–	0...600	1500	2500	8...32	26	PT5660

DEUTSCH connector DT04-3P · Output function 4...20 mA analogue · Wiring diagram no. 8

	G ¼ A	–	0...400	1000	1700	8...32	27	PT5700
	G ¼ A	–	0...250	625	1200	8...32	27	PT5701
	G ¼ A	–	0...100	250	1000	8...32	27	PT5702

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Drawing no.	Order no.

DEUTSCH connector DT04-3P · Output function 4...20 mA analogue · Wiring diagram no. 8

	G ¼ A	–	0...25	65	600	8...32	27	PT5703
	G ¼ A	–	0...10	25	300	8...32	27	PT5704
	G ¼ A	–	0...600	1500	2500	8...32	27	PT5760

DEUTSCH connector DT04-3P · Wiring diagram no. 6

	G ¼	–	0...400	1000	1700	8...32	27	PU8700
	G ¼	–	0...250	625	1200	8...32	27	PU8701
	G ¼	–	0...100	250	1000	8...32	27	PU8702
	G ¼	–	0...25	65	600	8...32	27	PU8703
	G ¼	–	0...10	25	300	8...32	27	PU8704
	G ¼	–	0...160	400	1100	8...32	27	PU8712
	G ¼	–	0...40	100	800	8...32	27	PU8743
	G ¼	–	0...600	1500	2500	8...32	27	PU8760

M12 connector · Output function 4...20 mA analogue · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

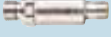
	G ¼ A	–	0...600	1500	2500	8...32	28	PT5560
	G ¼ A	–	0...400	1000	1700	8...32	28	PT5500
	G ¼ A	–	0...250	625	1200	8...32	28	PT5501



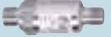
Systems for mobile machines

Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Drawing no.	Order no.

M12 connector · Output function 4...20 mA analogue · Wiring diagram no. 9 · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	G ¼ A	–	0...100	250	1000	8...32	28	PT5502
	G ¼ A	–	0...25	65	600	8...32	28	PT5503
	G ¼ A	–	0...10	25	300	8...32	28	PT5504

M12 connector · Output function 0...10 V analogue · Wiring diagram no. 10 · Connector group 202

	G ¼ A	–	0...400	600	1600	16...36	29	PT9550
	G ¼ A	–	0...250	400	1000	16...36	29	PT9551
	G ¼ A	–	0...100	200	1000	16...36	29	PT9552
	G ¼ A	–	0...25	60	600	16...36	29	PT9553
	G ¼ A	–	0...10	25	300	16...36	29	PT9554

Temperature transmitters for mobile applications

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	30	TA3105
	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	30	TA3115
	-50...150 / -58...302	G ¼ A	200	10...30	1 / 3	30	TA3155

DEUTSCH connector · high-grade stainless steel · DC

	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	31	TA4105

Type	Measuring range [°C / °F]	Process connection	Installation length [mm]	U _b [V]	Dynamic response T05 / T09 [s]	Drawing no.	Order no.

DEUTSCH connector · high-grade stainless steel · DC

	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	31	TA4115

AMP plug · high-grade stainless steel · DC

	-50...150 / -58...302	G ¼ A	25	10...30	1 / 3	32	TA5105

	-50...150 / -58...302	G ¼ A	50	10...30	1 / 3	32	TA5115

M12 connector · high-grade stainless steel · DC · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	30	TU3105

DEUTSCH connector · high-grade stainless steel · DC

	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	31	TU4105

AMP plug · high-grade stainless steel · DC

	-50...150 / -58...302	G ¼ A	25	8...32	1 / 3	32	TU5105

M12 connector · high-grade stainless steel · Connector groups 8, 10, 19, 21, 23, 25, 148, 149, 153, 184, 188, 193, 202

	-40...150 / -40...302	G ¼	25	–	1 / 3	33	TM5101

DEUTSCH connector · high-grade stainless steel

	-40...150 / -40...302	G 1/4	25	–	1 / 3	34	TM6101

Accessories for sensors for mobile applications

Type	Description	Order no.
	Mounting clamp · Ø 12 mm · with end stop · for type M12 · Housing materials: PC	E11047
	Mounting clamp · Ø 18 mm · with end stop · for type M18 · Housing materials: PC	E11048



Systems for mobile machines

Type	Description	Order no.
	Mounting clamp · Ø 30 mm · with end stop · for type M30 · Housing materials: PC	E11049
	Angle bracket · for type M12 · Housing materials: stainless steel	E10735
	Angle bracket · for type M18 · Housing materials: stainless steel	E10736
	Angle bracket · for type M30 · Housing materials: stainless steel	E10737

Connection technology for sensors for mobile use

Type	Description	Order no.
	Jumper · straight / straight · Free from silicone · Free from halogen · Gold-plated contacts · 0.3 m · Housing materials: housing: TPU orange / sealing: FKM	EVC010
	Jumper · straight / straight · Free from silicone · Free from halogen · Gold-plated contacts · 1 m · Housing materials: housing: TPU orange / sealing: FKM	EVC012
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC004
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC005
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC006
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC001
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC002
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC003
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC526
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC527

Type	Description	Order no.
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC528
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC529
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC530
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC531
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC532
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC533
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC534
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC535
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC536
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC537
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC538
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC539
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC540
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC541
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC542
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC543

You can find wiring diagrams and scale drawings from page 747



Systems for mobile machines

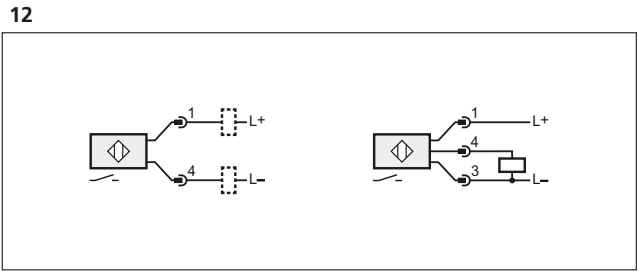
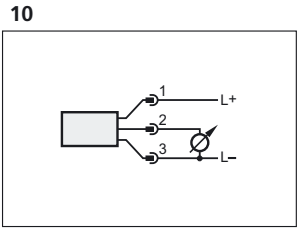
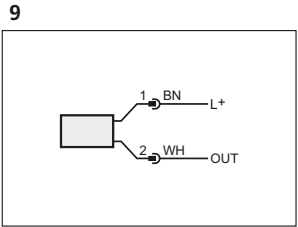
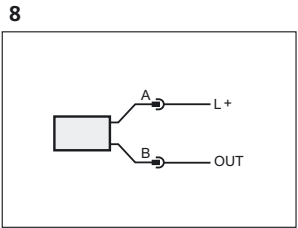
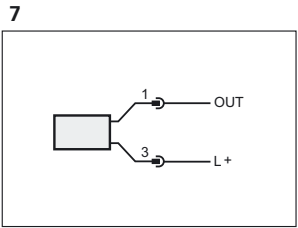
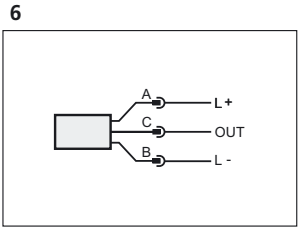
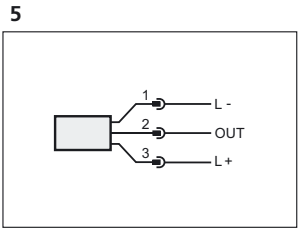
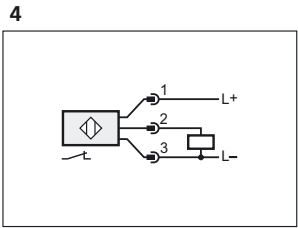
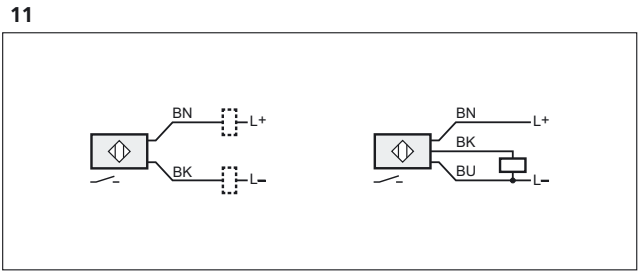
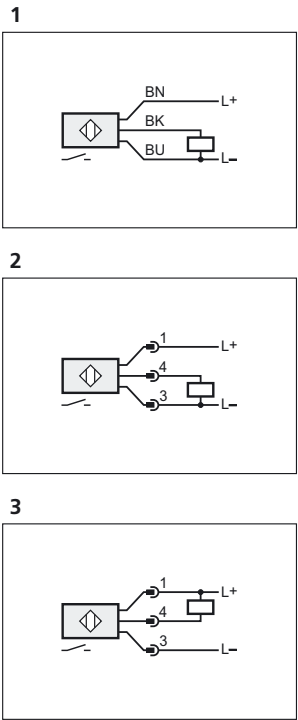
Type	Description	Order no.
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC544
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC545
	Socket · straight · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC546
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC547
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC548
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 10 m · Housing materials: housing: TPU orange / sealing: FKM	EVC549
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: PUR	E11596
	Socket · straight · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: PUR	E11597
	Terminating resistor socket · straight · Gold-plated contacts · M12 connector · Housing materials: TPU	E11589
	Terminating resistor plug · straight · Gold-plated contacts · M12 connector · Housing materials: TPU	E11590
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 2 m · Housing materials: PUR	E11598
	Cable plug · straight · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: PUR	E11599
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 0.3 m · Housing materials: PUR	E11591
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 1 m · Housing materials: PUR	E11592
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 2 m · Housing materials: PUR	E11593

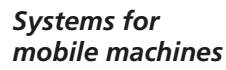
Type	Description	Order no.
	Jumper · straight / straight · Free from halogen · Gold-plated contacts · 5 m · Housing materials: PUR	E11594
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector with integrated CAN terminating resistor (120 ohm) · 5 m · Housing materials: housing: TPU black / sealing: FKM	EVC492
	Cable plug · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 6 m · Housing materials: housing: TPU black	E12215

Wiring diagrams

Core colours

BK black
BN brown
BU blue
WH white





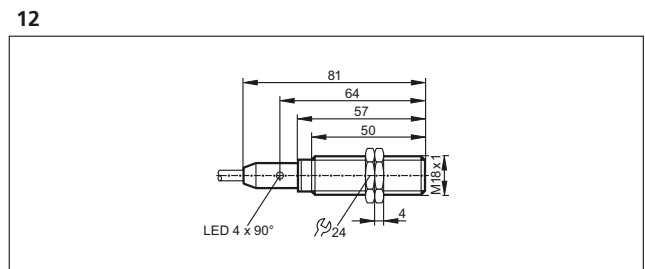
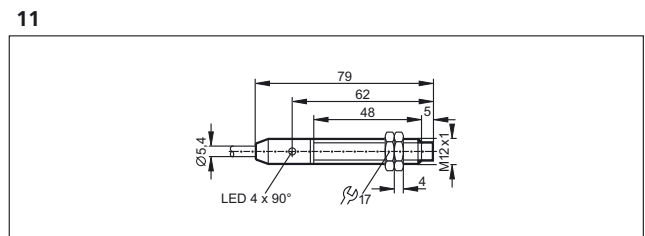
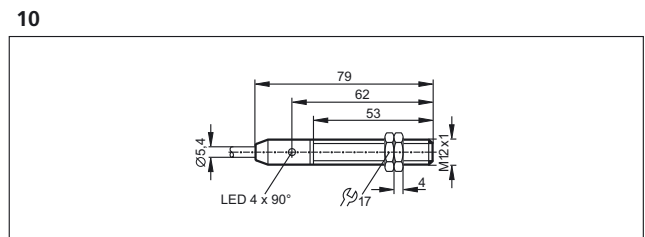
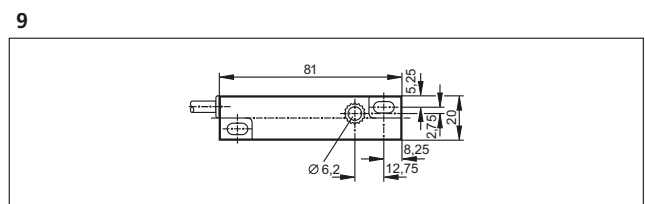
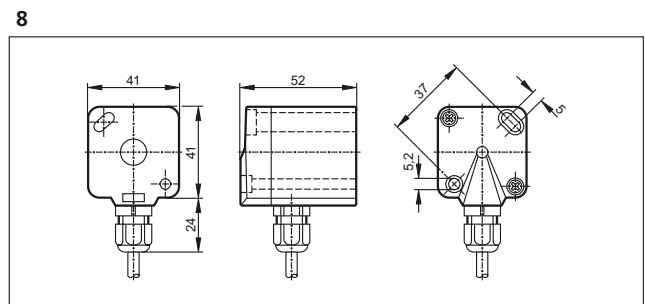
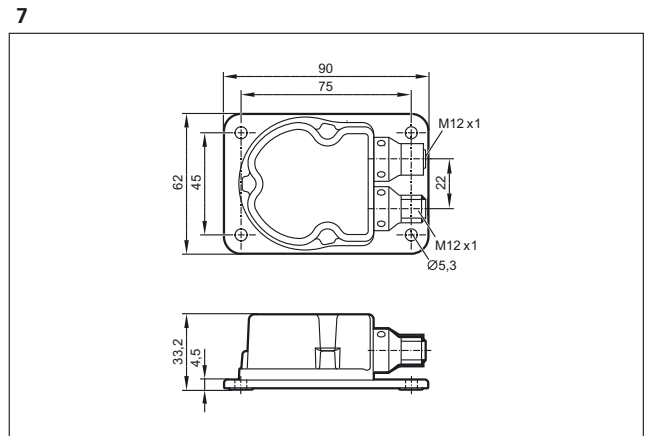
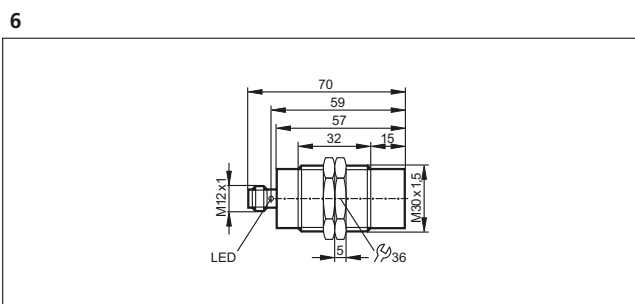
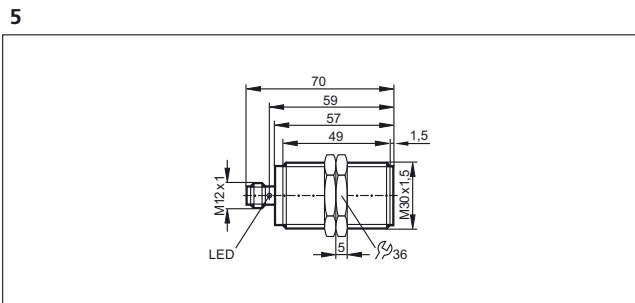
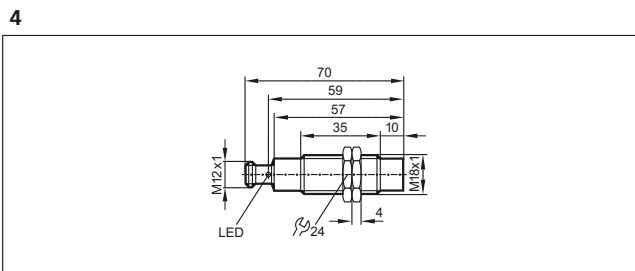
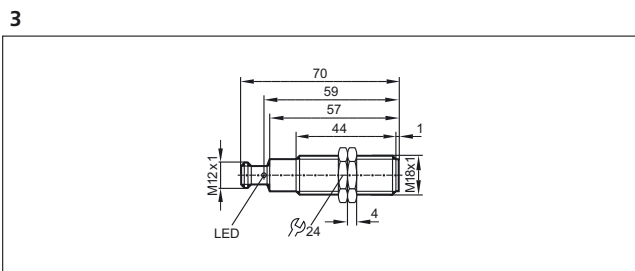
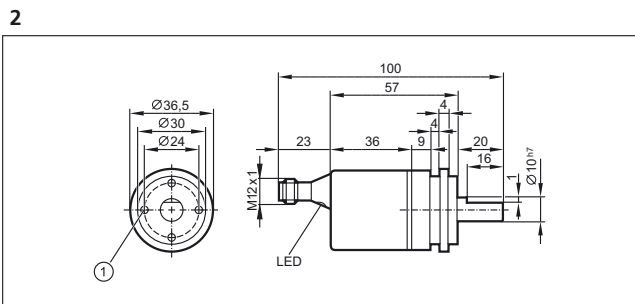
Technical drawing of the LED module showing front and side views with dimensions.

Front View (Left):

- Overall diameter: $\varnothing 36,5$
- Mounting hole diameter: $\varnothing 30^{+0,7}$
- Central hole diameter: $\varnothing 24$
- Four mounting holes are distributed around the central hole.
- Callout 1 points to the mounting holes.

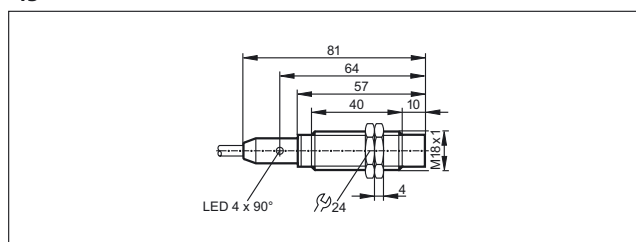
Side View (Right):

- Overall length: 100
- Distance from mounting flange to LED chip: 57
- Mounting flange diameter: $\varnothing 10^{+0,8}$
- LED chip diameter: $\varnothing 4$
- Distance from mounting flange to LED chip: 36
- Distance from LED chip to mounting flange: 9
- Distance from LED chip to mounting flange: 20
- Mounting flange thickness: 4
- Mounting flange hole diameter: $\varnothing 12 \times 1$
- LED chip is labeled "LED".

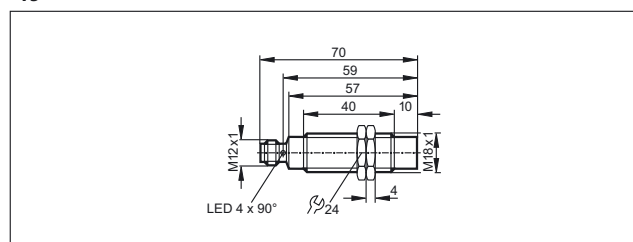


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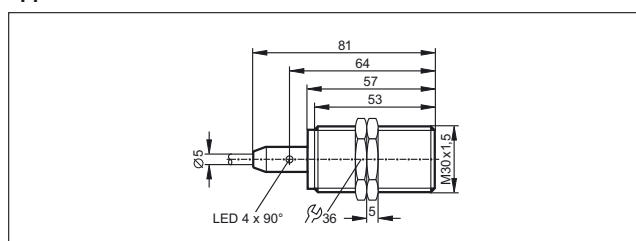
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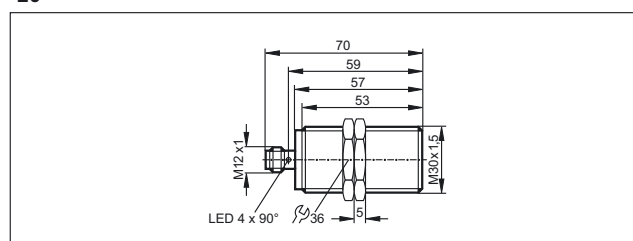
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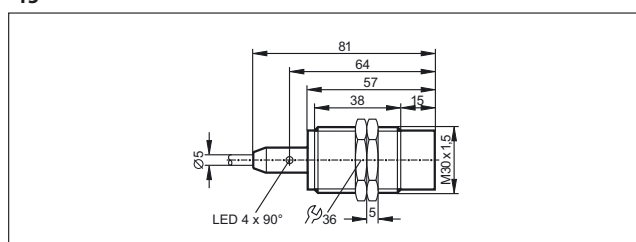
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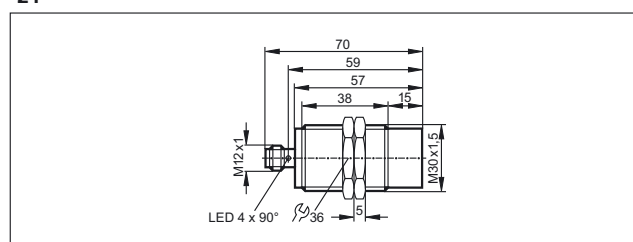
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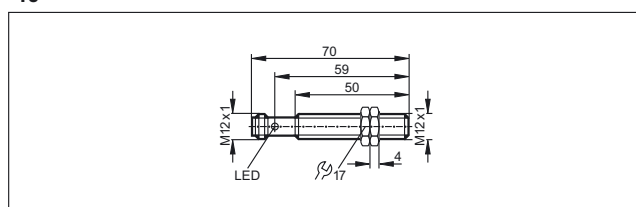
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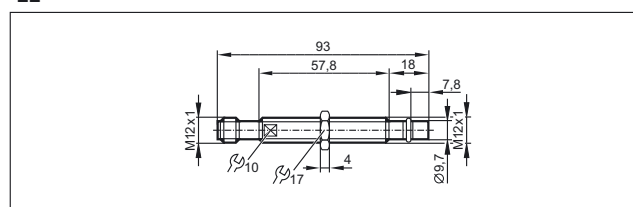
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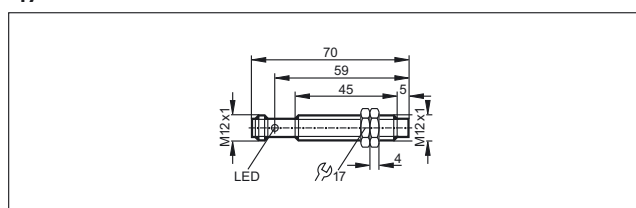
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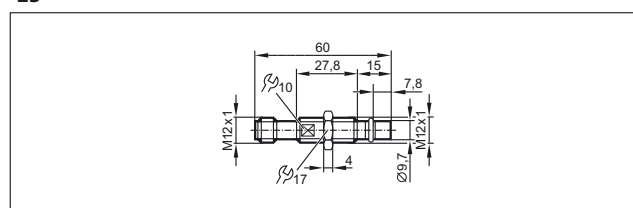
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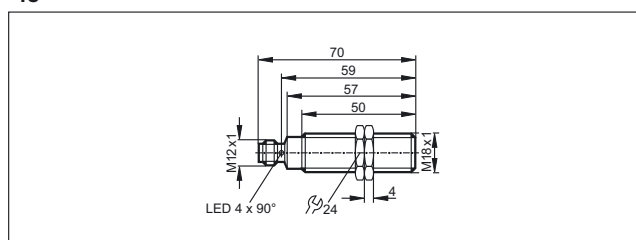
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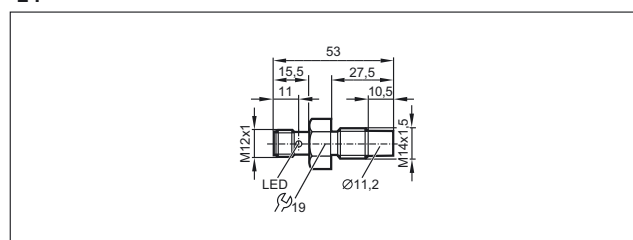
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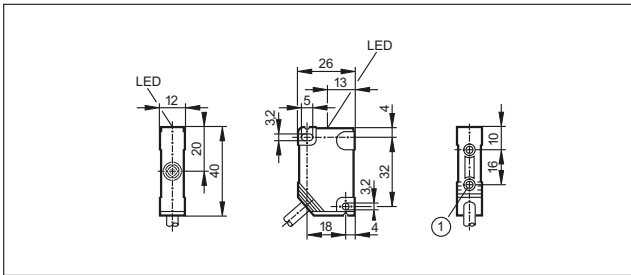




Systems for mobile machines

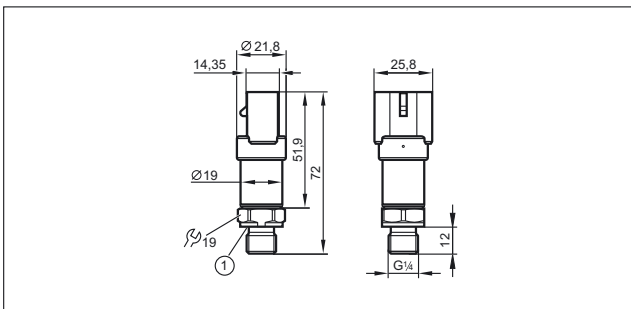
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25



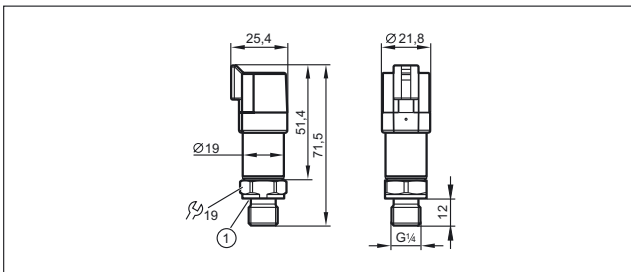
1: threaded insert M3, depth 5.8 mm, max. tightening torque 1.2 Nm (screw fixing class 8.8) when brass insert in contact with counterpart.

26



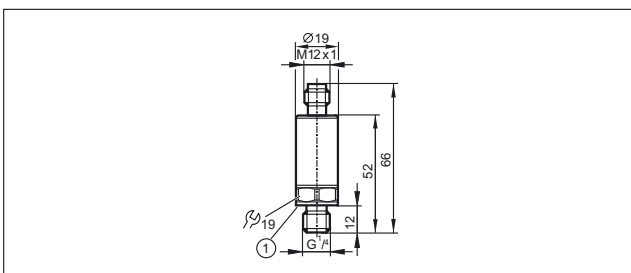
1: sealing FKM / DIN 3869

27



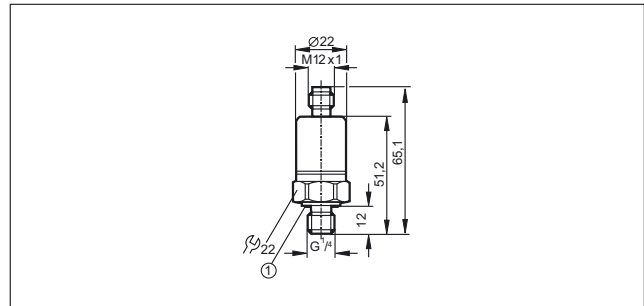
1: sealing FKM / DIN 3869

28



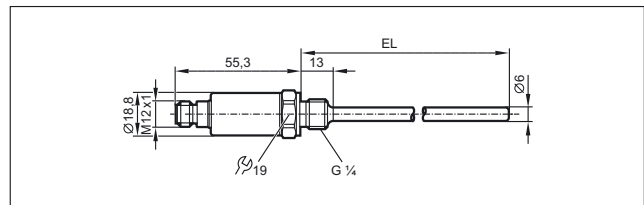
1: sealing

29

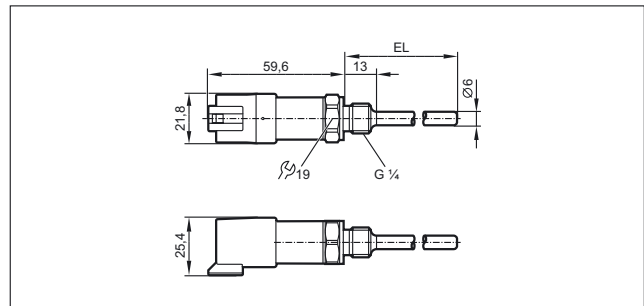


1: FKM seal / DIN 3869-14, tightening torque 25 Nm

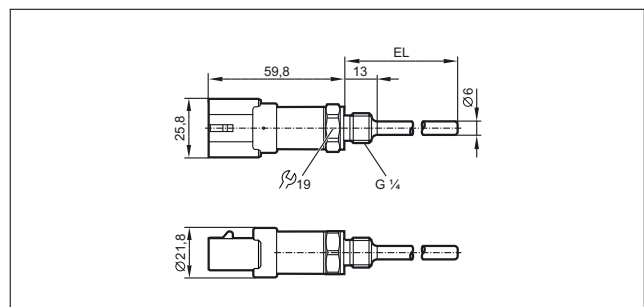
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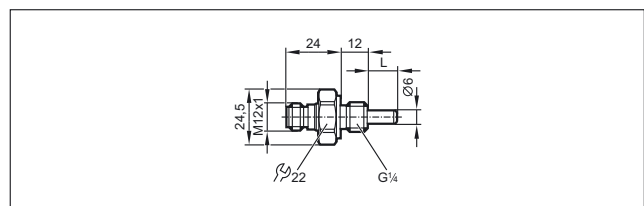
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32

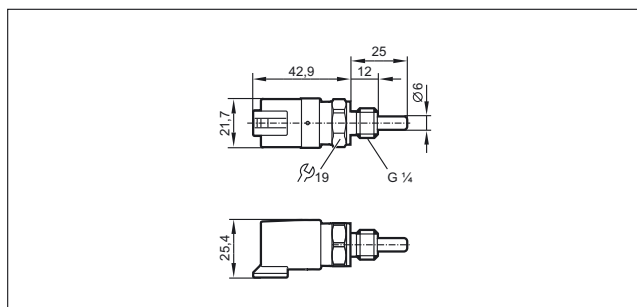


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High-quality connectors for multiple applications



Connection technology

To match the large range of different sensor designs, ifm offers a great variety of high-quality connectors. The choice of types covers common M8, M12, M18 types through to valve plugs. The „ecolink“ connectors (order no. EVxxxx) offer additional quality features.

ecolink – a new dimension in connection technology

Due to the special installation of a mechanical end stop, the O-ring is always correctly compressed and so permanently maintains its sealing function. The connector remains securely positioned on the unit even in case of extreme vibration and impacts. The innovative design and a transparent black housing ensure that, even in bright lighting conditions, the LEDs are more clearly visible than with the clear transparent versions.

For industrial applications

High-quality materials suited to the requirements in industrial environments. Largely resistant to oils, fats and coolants.

For hygienic and wet areas

PVC housing and cable, gold-plated contacts and high-grade stainless steel nuts are the optimum choice for long life.

For hazardous areas

Connection technology for ATEX categories 1D, 2D, 3D and 1G, 3G. With the EC type examination certificate for components from DEKRA EXAM, the connection technology meets strictest requirements.

For welding applications

Halogen-free PUR cables prevent burning-in of weld spatter; teflon-coated coupling nuts prevent weld spatter sticking. The cables are also suited for drag chains and torsional movements.

For sensors in robust applications

The saw tooth contoured vibration protection secures against strong shocks and vibrations. The high protection rating, wide temperature range and high-quality housing materials (high-grade stainless steel, TPU) ensure permanent safe connection in harsh environments.

	Sockets	754 - 786
	Plugs	788 - 792
	Jumper cables	794 - 835
	Splitter boxes	836 - 855
	Y-splitters	856 - 860



Connection technology



Sockets

Sockets are mainly used for the connection of sensors. High-quality socket contacts and materials ensure reliable electrical connections.

In addition to a wide range of standard products ifm also offers versions without silicone and halogen, versions for hygienic areas, for applications in contact with coolants and lubricants, as well as for welding applications.

System overview	Page
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M12 sockets for industrial applications	756 - 761
M12 sockets for industrial applications with screen	761 - 763
M16 sockets for industrial applications	763
M18 sockets for industrial applications	763
M23 sockets for industrial applications	764 - 765
1/2" sockets for industrial applications	765 - 766
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Connectors weld slag resistant	767 - 768
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M12 cable sockets for hygienic and wet areas with screen	772 - 776
Connectors for hazardous areas	776 - 777
Connectors for robust applications	777 - 779
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Scale drawings / drawing no. – CAD download: www.ifm.com	782 - 786

M8 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 1 · Socket M8, 3-pole, 3-wire · Wiring diagram no. 1									
	2 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC141

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.
Group 1 · Socket M8, 3-pole, 3-wire · Wiring diagram no. 1									
	5 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC142
	10 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC143
	2 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC144
	5 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC145
	10 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC146
Group 2 · Socket M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	2 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	EVC147
	5 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	EVC148
	10 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	EVC149
Group 3 · Wirable socket M8, 3-pole · Wiring diagram no. 3									
	wirable	–	PA / Brass	...45 AC ...70 DC	-25...90	IP 68	–	–	E11552
Group 4 · Socket M8, 4-pole, 4-wire · Wiring diagram no. 4									
	2 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC150
	5 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC151
	10 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC152
	2 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVC153



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 4 · Socket M8, 4-pole, 4-wire · Wiring diagram no. 4

	5 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVC154
	10 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVC155

Group 5 · Wirable socket M8, 4-pole · Wiring diagram no. 5

	wirable	–	PA / Brass	...45 AC ...70 DC	-25...90	IP 68	–	–	E11553

M12 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 6 · Socket M12, 5-pole, 2-wire · Wiring diagram no. 6

	2 m black PUR cable	2 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC164
	5 m black PUR cable	2 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC165
	10 m black PUR cable	2 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC166
	2 m black PUR cable	2 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC161
	5 m black PUR cable	2 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC162
	10 m black PUR cable	2 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC163

Group 7 · socket M12, 2-pole + PE, 3-wire · Wiring diagram no. 7

	2 m orange PVC cable	3 x AWG 22 (3 x 0.34 mm ²), Ø 5 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	8	E10865
	5 m orange PVC cable	3 x AWG 22 (3 x 0.34 mm ²), Ø 5 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	8	E10866
	2 m orange PVC cable	3 x AWG 22 (3 x 0.34 mm ²), Ø 5 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	9	E10867

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 7 · socket M12, 2-pole + PE, 3-wire · Wiring diagram no. 7

	5 m orange PVC cable	3 x AWG 22 (3 x 0.34 mm ²), Ø 5 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	9	E10868

Group 8 · Wirable socket M12, 4-pole · Wiring diagram no. 5

	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / Brass	45 AC 70 DC	-25...85	IP 68	–	10	E11509
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / Brass	45 AC 70 DC	-25...85	IP 68	–	11	E11508

Group 9 · Wirable socket M12, 4-pole, LED, PNP · Wiring diagram no. 8

	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / Brass	10...30 DC	-25...85	IP 68	green / yellow	12	E11510
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA	10...30 DC	-40...85	IP 67	green / yellow	11	E10136

Group 10 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4

	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC004
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC005
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC006
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC001
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC002
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC003

Group 11 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 9

	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	EVC007
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	EVC008

You can find wiring diagrams and scale drawings from page 780



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 11 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 9

	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	EVC009

Group 12 · Wirable socket M12, 5-pole · Wiring diagram no. 10

	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / Brass	45 AC 70 DC	-25...85	IP 68	–	14	E11512
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / Brass	125 AC/DC	-25...85	IP 68	–	15	E11511

Group 13 · Socket M12, 5-pole, 5-wire · Wiring diagram no. 11

	2 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC073
	5 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC074
	10 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC075
	2 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC070
	5 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC071
	10 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC072

Group 14 · Socket M12, 8-pole, 6-wire · Wiring diagram no. 12

	5 m black PUR cable	6 x 0.34 mm ² , Ø 6 mm	TPU / diecast zinc	60 AC/DC	-25...85	IP 68	–	16	E10976
	10 m black PUR cable	6 x 0.34 mm ² , Ø 6 mm	TPU / diecast zinc	60 AC/DC	-25...85	IP 68	–	16	E10977

Group 15 · socket M12, 8-pole, 7-wire + screen · Wiring diagram no. 13

	2 m black PUR cable	7 x 0.25 mm ² + screen	TPU / diecast zinc	60 AC/DC	-25...85	IP 67	–	16	E20738
	5 m black PUR cable	7 x 0.25 mm ² + screen	TPU / diecast zinc	60 AC/DC	-25...85	IP 67	–	16	E20838

Product selectors and further information can be found at: www.ifm.com

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 16 · Socket M12, 8/7-pole, 8-wire · Wiring diagram no. 14

	2 m black PUR cable	8 x 0.25 mm ² , Ø 6.2 mm	PUR / Brass	30 AC 36 DC	-25...80	IP 67	–	17	E11231
	5 m black PUR cable	8 x 0.25 mm ² , Ø 6.2 mm	PUR / Brass	30 AC 36 DC	-25...80	IP 67	–	17	E11232
	2 m black PUR cable	8 x 0.25 mm ² , Ø 6.2 mm	PUR / Brass	30 AC 36 DC	-25...80	IP 68	–	18	E11950
	5 m black PUR cable	8 x 0.25 mm ² , Ø 6.2 mm	PUR / Brass	30 AC 36 DC	-25...80	IP 68	–	18	E11807
	10 m black PUR cable	8 x 0.25 mm ² , Ø 6.2 mm	PUR / Brass	30 AC 36 DC	-25...80	IP 68	–	18	E11311

Group 17 · Socket M12, 8/7-pole, 8-wire · Wiring diagram no. 15

	5 m black PUR cable	8 x 0.25 mm ²	TPU / Brass	30 AC 36 DC	-40...80	IP 68	–	17	E12168
	10 m black PUR cable	8 x 0.25 mm ²	TPU / Brass	30 AC 36 DC	-40...80	IP 68	–	17	E12169
	5 m black PUR cable	8 x 0.25 mm ²	TPU / Brass	30 AC 36 DC	-40...80	IP 67	–	18	E12166
	10 m black PUR cable	8 x 0.25 mm ²	TPU / Brass	30 AC 36 DC	-40...80	IP 67	–	18	E12167

Group 18 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 16

	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	EVC644
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	EVC645
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	EVC646

Group 19 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4

	2 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC706



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.
Group 19 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4									
	5 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC707
	10 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC708
	20 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC709
	50 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC710
	2 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC711
	5 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC712
	10 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC713
	20 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC714
	50 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC715
Group 20 · Socket M12, 12-pole, 12-wire · Wiring diagram no. 17									
	5 m black PUR cable	12 x 0.25 mm ² , Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	20	E12457
	10 m black PUR cable	12 x 0.25 mm ² , Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	20	E12505
	15 m black PUR cable	12 x 0.25 mm ² , Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	20	E12506
	5 m black PUR cable	12 x 0.25 mm ² , Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	21	E12502
	10 m black PUR cable	12 x 0.25 mm ² , Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	21	E12503

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 20 · Socket M12, 12-pole, 12-wire · Wiring diagram no. 17

	15 m black PUR cable	12 x 0.25 mm ² , Ø 6.6 mm	PUR / diecast zinc	30 AC/DC	-25...90	IP 67	–	21	E12504

M12 sockets for industrial applications with screen

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 21 · Socket M12, halogen-free, screened, screen not connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 18

	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC526
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC527
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC528
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC529
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC530
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC531

Group 22 · Socket M12, halogen-free, screened, screen not connected to the socket, 5-pole, 5-wire · Wiring diagram no. 19

	2 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC532
	5 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC533
	10 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC534
	2 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC535
	5 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC536



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 22 · Socket M12, halogen-free, screened, screen not connected to the socket, 5-pole, 5-wire · Wiring diagram no. 19

	10 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC537

Group 23 · Socket M12, halogen-free, screened, screen connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 20

	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	7	EVC538
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	7	EVC539
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	7	EVC540
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	6	EVC541
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	6	EVC542
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67	–	6	EVC543

Group 24 · Socket M12, halogen-free, screened, screen connected to the socket, 5-pole, 5-wire · Wiring diagram no. 21

	2 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	7	EVC544
	5 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	7	EVC545
	10 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	7	EVC546
	2 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	6	EVC547
	5 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	6	EVC548
	10 m black PUR cable	5 x 0.25 mm ² , Ø 4.9 mm	TPU / Brass	30 AC 36 DC	-25...90	IP 65 / IP 67	–	6	EVC549

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 25 · Socket M12, halogen-free, screened, screen not connected to the socket, 4-pole, 4-wire · Wiring diagram no. 18

	5 m black PUR cable	4 x 0.34 mm ² , Ø 5 mm	TPU / Brass	50 AC 60 DC	-25...85	IP 67	–	22	E12339
	10 m black PUR cable	4 x 0.34 mm ² , Ø 5 mm	TPU / Brass	50 AC 60 DC	-40...85	IP 67	–	22	E12340

M16 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 26 · socket M16, 14-pole, 10-wire · Wiring diagram no. 22

	5 m black PUR cable	8 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 9.2 mm	PUR / Brass	30 DC	-25...80	IP 67	–	23	E11226
	10 m black PUR cable	8 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 10 mm	PUR / Brass	30 DC	-25...80	IP 67	–	23	E11227

Group 27 · Socket M16, 14-pole, 12-wire · Wiring diagram no. 23

	2 m black PUR cable	2 x 0.34 mm ² + 9 x 0.25 mm ² , Ø 7.5 mm	PUR / Brass	30 DC	-25...90	IP 67	–	24	E11645
	5 m black PUR cable	2 x 0.34 mm ² + 9 x 0.25 mm ² , Ø 7.5 mm	PUR / Brass	30 DC	-25...90	IP 67	–	24	E11697

M18 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 28 · Wirable socket M18, 4-pole · Wiring diagram no. 5

	wirable	...0.75 mm ² (Ø 6...8 mm)	PA	20...250 AC/DC	-40...85	IP 65	–	25	E10013
	wirable	...0.75 mm ² (Ø 6...8 mm)	PA / ULTRAMID	20...250 AC/DC	-40...85	IP 65	–	26	E10137



Connection technology

M23 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 29 · Socket M23, 12-pole, 12-wire · Wiring diagram no. 24									
	5 m black PUR cable	8 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	27	E11739
	10 m black PUR cable	8 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	27	E11740
	15 m black PUR cable	8 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	27	E11741
	5 m black PUR cable	8 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	28	E11736
	10 m black PUR cable	8 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	28	E11737
	15 m black PUR cable	8 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 9.3 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	28	E11738
Group 30 · Wirable M23 socket, 12 poles									
	wirable	...1 mm ² (Ø 10...14 mm)	Brass	10...30 DC	-25...90	IP 65	–	29	E10448
	wirable	...1 mm ² (Ø 10...14 mm)	Brass	10...30 DC	-25...90	IP 65	–	30	E10447
Group 31 · Socket M23, 19-pole, 19-wire · Wiring diagram no. 34									
	5 m black PUR cable	16 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	31	E11745
	10 m black PUR cable	16 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	31	E11746
	15 m black PUR cable	16 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	31	E11747
	5 m black PUR cable	16 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	32	E11742
	10 m black PUR cable	16 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	32	E11743

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 31 · Socket M23, 19-pole, 19-wire · Wiring diagram no. 34

	15 m black PUR cable	16 x 0.5 mm ² + 3 x 1.0 mm ² , Ø 11.6 mm	PUR / Brass	63 AC/DC	-25...80	IP 67	–	32	E11744

Group 32 · Wirable socket M23, 19-pole

	wirable	...1 mm ² (Ø 10...14 mm)	Brass	10...30 DC	-25...90	IP 65	–	–	E10887
	wirable	...1 mm ² (Ø 10...14 mm)	Brass	10...30 DC	-25...90	IP 65	–	–	E10886

1/2" sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 33 · socket 1/2", 2-pole + PE, 3-wire · Wiring diagram no. 25

	2 m yellow PVC cable	3 x AWG 22, Ø 5.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	33	E10190
	5 m yellow PVC cable	3 x AWG 22, Ø 5.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	33	E10200
	2 m yellow PVC cable	3 x AWG 22, Ø 5.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	34	E10189
	5 m yellow PVC cable	3 x AWG 22, Ø 5.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	34	E10191
	10 m yellow PVC cable	3 x AWG 22, Ø 5.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 67	–	33	E10261

Group 34 · socket 1/2", 5-pole, 4-wire · Wiring diagram no. 26

	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.7 mm	TPU / Brass	300 AC	-25...90	IP 67	–	35	E11248
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.7 mm	TPU / Brass	300 AC	-25...90	IP 67	–	35	E11249
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.7 mm	TPU / Brass	300 AC	-25...90	IP 67	–	36	E11250



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 34 · socket 1/2", 5-pole, 4-wire · Wiring diagram no. 26

	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.7 mm	TPU / Brass	300 AC	-25...90	IP 67	–	36	E11251

7/8" sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 35 · socket 7/8", 2-pole + PE, 3-wire

	2 m black PVC cable	3 x 0.75 mm ² , Ø 5.2 mm	TPU / diecast zinc	250 AC	-40...80	IP 68	–	37	E20428

Group 36 · socket 7/8", 3-pole, 3-wire

	2 m black PVC cable	3 x 0.5 mm ² , Ø 5.4 mm	TPU	10...30 DC	-40...80	IP 68	–	37	E20430

DIN sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 37 · socket DIN A (DIN EN 175301-803) · Wiring diagram no. 27

	wirable	...1.5 mm ² (Ø 6...8 mm)	PA	45 AC 70 DC	-40...125	IP 65	–	38	E10058

RD24 sockets for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 38 · socket Rd24, 6-pole + PE · Wiring diagram no. 28

	wirable	...2.5 mm ² (Ø 10...12 mm)	PBT	250 AC 300 DC	-40...100	IP 67	–	39	E70142
	wirable	...2.5 mm ² (Ø 6...8 mm)	PBT / PA	250 AC 300 DC	-40...100	IP 67	–	40	E11043

Connectors weld slag resistant

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.
Group 137 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4									
	2 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVW004
	5 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVW005
	10 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVW006
	2 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVW001
	5 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVW002
	10 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVW003
Group 138 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 9									
	2 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	EVW007
	5 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	EVW008
	10 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	13	EVW009
Group 139 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 29									
	2 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	EVW167
	5 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	EVW168
	10 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	19	EVW169



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 140 · Socket M12, 5/4-pole, 5-wire · Wiring diagram no. 11

	2 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVW013
	5 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVW014
	10 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVW015

Group 141 · Socket M12, 5/4-pole, 5-wire · Wiring diagram no. 11

	2 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVW010
	5 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVW011
	10 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVW012

Connectors for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 145 · Socket M8, 3-pole, 3-wire · Wiring diagram no. 1

	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	41	EVT122
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	41	EVT123
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	41	EVT124
	25 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	41	EVT125
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	42	EVT126
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	42	EVT127

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 145 · Socket M8, 3-pole, 3-wire · Wiring diagram no. 1

	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	42	EVT128
	25 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	42	EVT129

Group 146 · Socket M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2

	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	43	EVT130
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	43	EVT131
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	43	EVT132
	25 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	43	EVT133

Group 147 · Socket M8, 4-pole, 4-wire · Wiring diagram no. 4

	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	EVT134
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	EVT135
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	EVT136
	25 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	EVT137
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	45	EVT138
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	45	EVT139
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	45	EVT140
	25 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	45	EVT141



Connection technology

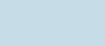
Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 148 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4									
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT067
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT004
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT005
	25 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT006
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT064
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT001
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT002
	25 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT003
Group 149 · Wirable socket M12, 4-pole · Wiring diagram no. 5									
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / high-grade st. steel	45 AC 70 DC	-25...85	IP 67	–	48	E11862
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / high-grade st. steel	45 AC 70 DC	-25...90	IP 67	–	49	E11861
Group 150 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 9									
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	EVT069
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	EVT007
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	EVT008
	25 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	EVT009

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 151 · Wirable socket M12, 5/4-pole, LED, PNP · Wiring diagram no. 30

	wirable	...0.75 mm ² (Ø 4...6 mm)	PBT / high-grade st. steel	10...30 DC	-25...85	IP 67 / IP 69K	green / yellow	51	E11863

Group 152 · Socket M12, 5-pole, 5-wire · Wiring diagram no. 11

	5 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT013
	10 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT014
	25 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT015
	5 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT010
	10 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT011
	25 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT012

Group 153 · Socket M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 4

	5 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF001
	10 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF002
	25 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF003
	5 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF004
	10 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF005
	25 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF006



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 154 · Socket M12, 5/4-pole, 4-wire, LED, PNP · halogen-free · Wiring diagram no. 9

	5 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	EVF007
	10 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	EVF008
	25 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	50	EVF009

Group 155 · Socket M12, 5-pole, 5-wire · halogen-free · Wiring diagram no. 11

	5 m grey MPPE cable	5 x 0.34 mm ² , Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF010
	10 m grey MPPE cable	5 x 0.34 mm ² , Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF011
	25 m grey MPPE cable	5 x 0.34 mm ² , Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF012
	5 m grey MPPE cable	5 x 0.34 mm ² , Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF013
	10 m grey MPPE cable	5 x 0.34 mm ² , Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF014
	25 m grey MPPE cable	5 x 0.34 mm ² , Ø 5.1 mm	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF015

M12 cable sockets for hygienic and wet areas with screen

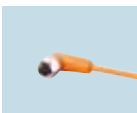
Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 184 · Socket M12, screened, screen not connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 18

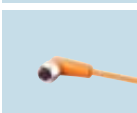
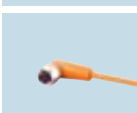
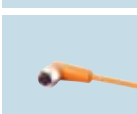
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT381
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT382
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT383

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 184 · Socket M12, screened, screen not connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 18

	25 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT384
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT385
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT386
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT387
	25 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT388

Group 186 · Socket M12, screened, screen not connected to the socket, 5-pole, 5-wire · Wiring diagram no. 19

	2 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT389
	5 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT390
	10 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT391
	25 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT392
	2 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT393
	5 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT394
	10 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT395
	25 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT396

Group 188 · Socket M12, screened, screen connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 20

	2 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT397

You can find wiring diagrams and scale drawings from page 780



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 188 · Socket M12, screened, screen connected to the socket, 5/4-pole, 4-wire · Wiring diagram no. 20									
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT398
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT399
	25 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT400
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT401
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT402
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT403
	25 m orange PVC cable	4 x 0.34 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT404
Group 190 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 29									
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	52	EVT461
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	52	EVT462
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	52	EVT463
	25 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	52	EVT464
Group 192 · Socket M12, screened, screen connected to the socket, 5-pole, 5-wire · Wiring diagram no. 21									
	2 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT405
	5 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT406
	10 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT407

Product selectors and further information can be found at: www.ifm.com

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 192 · Socket M12, screened, screen connected to the socket, 5-pole, 5-wire · Wiring diagram no. 21									
	25 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT408
	2 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT409
	5 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT410
	10 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT411
	25 m orange PVC cable	5 x 0.25 mm ² , Ø 5.2 mm	PVC / stainless steel 316L / 1.4404	30 AC 36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT412

Group 193 · Socket M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 4									
	2 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF480
	5 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF481
	10 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF482
	20 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF483
	50 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVF484
	2 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF485
	5 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF486
	10 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF487
	20 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF488



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 193 · Socket M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 4

	50 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVF489

Group 194 · Wirable socket M12, 5-pole · Wiring diagram no. 10

	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / high-grade st. steel	60 AC/DC	-25...85	IP 67	–	53	E11865
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / high-grade st. steel	45 AC 70 DC	-25...90	IP 67	–	54	E11864

Connectors for hazardous areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 195 · Socket M12, 5/4 poles, 4 wires, cat. 1D / 1G · Wiring diagram no. 4

	2 m blue PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	ENC04A
	5 m blue PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	ENC05A
	10 m blue PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	ENC06A
	2 m blue PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	ENC01A
	5 m blue PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	ENC02A
	10 m blue PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	ENC03A

Group 196 · Socket M12, 5/4 poles, 4 wires, cat. 2D / 3G · Wiring diagram no. 4

	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	55	EVC04A
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	55	EVC05A
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	55	EVC06A

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 196 · Socket M12, 5/4 poles, 4 wires, cat. 2D / 3G · Wiring diagram no. 4

	25 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	55	EVC14A

Group 197 · socket M12, 5 poles, 5 wires, cat. 1D / 1G · Wiring diagram no. 11

	2 m blue PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	ENC10A
	5 m blue PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	ENC11A
	10 m blue PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	ENC12A
	25 m blue PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	ENC13A
	50 m blue PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	6	ENC14A
	2 m blue PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	ENC07A
	5 m blue PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	ENC08A
	10 m blue PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	...30 DC	-25...90	IP 67	–	7	ENC09A

Connectors for robust applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 199 · Socket DEUTSCH Stecker DT, 6-pole, 2-wire · Wiring diagram no. 31

	1 m black PUR cable	2 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	E12549
	2 m black PUR cable	2 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	E12550
	5 m black PUR cable	2 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	E12551



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 200 · Socket DEUTSCH Stecker DT, 6-pole, 2-wire · Wiring diagram no. 32									
	1 m black PUR cable	3 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	E12543
	2 m black PUR cable	3 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	E12544
	5 m black PUR cable	3 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	56	E12545
Group 201 · Socket AMP, 6-wire · Wiring diagram no. 33									
	2 m black PVC cable	4 x 2.5 mm ² (Ø 2.8 mm) + 2 x 0.5 mm ² (Ø 1.5 mm)	PBT	12...24 DC	-40...100	–	–	57	E12565
	5 m black PVC cable	4 x 2.5 mm ² (Ø 2.8 mm) + 2 x 0.5 mm ² (Ø 1.5 mm)	PBT	12...24 DC	-40...100	–	–	57	E12566
Group 202 · Socket M12, 5/4-pole, 4-wire · Wiring diagram no. 4									
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVM004
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVM005
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVM006
	25 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVM012
	50 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVM010
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVM001
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVM002
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVM003
	25 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	250 AC 300 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVM014

Product selectors and further information can be found at: www.ifm.com

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 203 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 9									
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVM007
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVM008
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVM009
Group 204 · Socket M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 29									
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	60	EVM068
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	60	EVM069
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	10...36 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	2 x green / 4 x yellow	60	EVM070
Group 205 · Socket M12, 5-pole, 5-wire · Wiring diagram no. 11									
	2 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVM036
	5 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVM037
	10 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVM038
	2 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	50 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVM039
	5 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	50 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVM040
	10 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	50 AC 60 DC	-40...90	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVM041



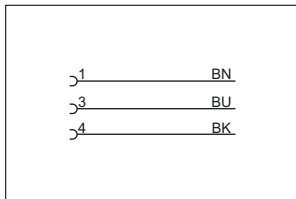
Connection technology

Wiring diagrams

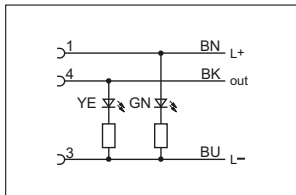
Core colours

BK	black
BN	brown
BU	blue
WH	white
GN/YE	green/yellow
GY	grey
GN	green
YE	yellow
PK	pink
screen	Screen
OG	orange
VT	purple
RD	red
GY/PK	GY/PK
RD/BU	RD/BU
RD/BK	red/black
RD/WH	red/white

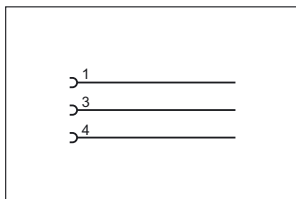
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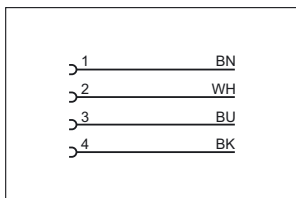
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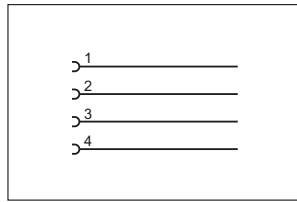
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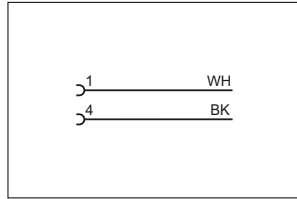
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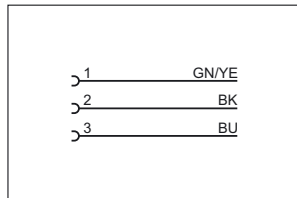
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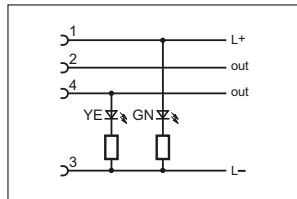
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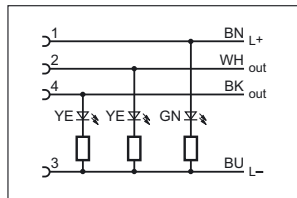
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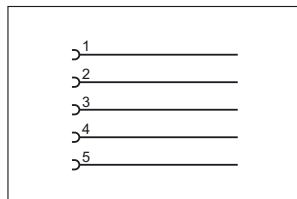
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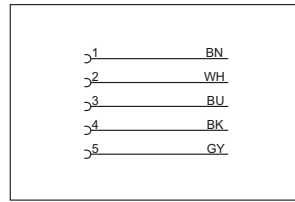
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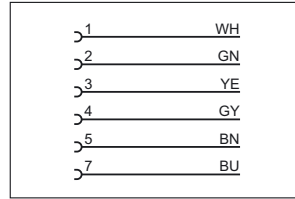
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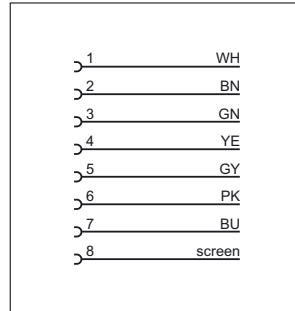


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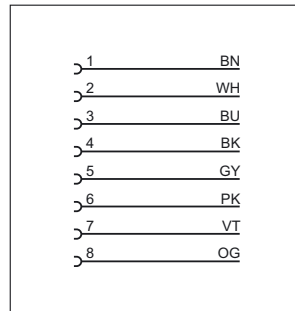


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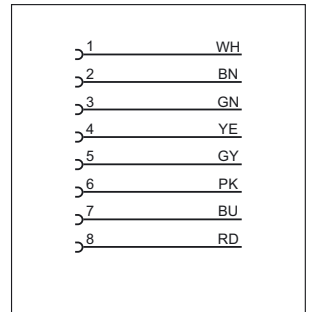


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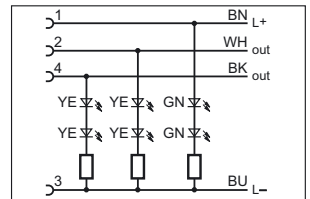


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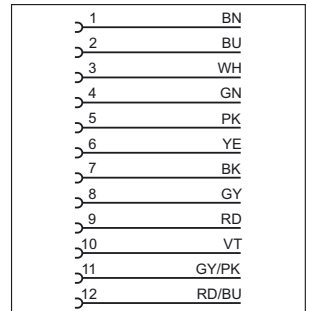
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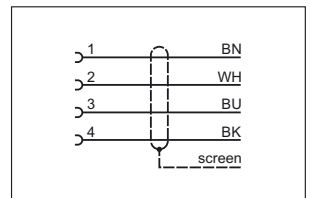
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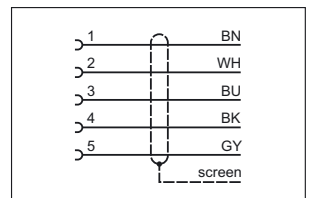
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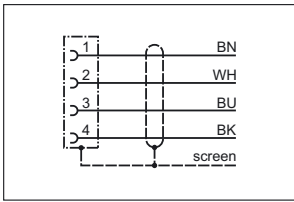


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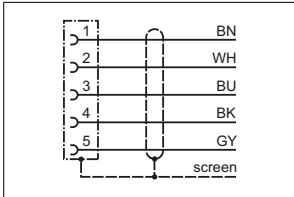


Wiring diagrams

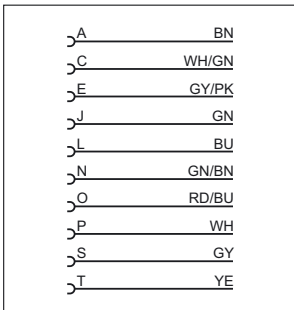
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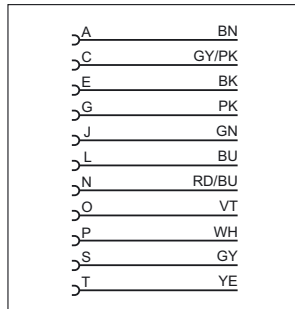
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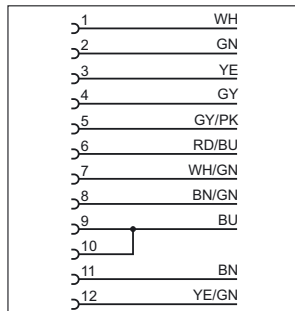
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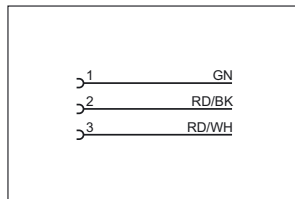
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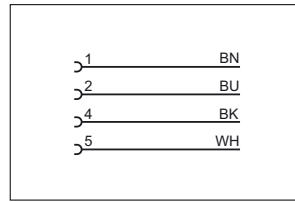
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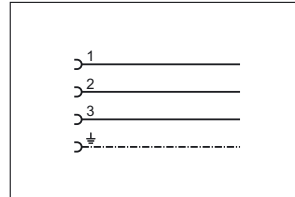
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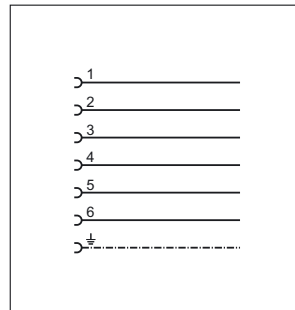
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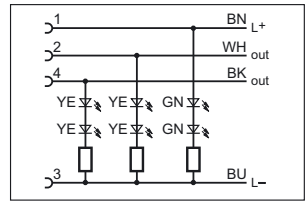
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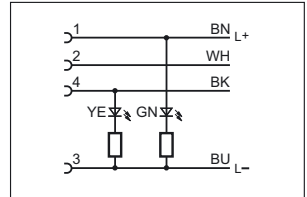
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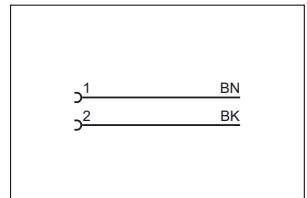
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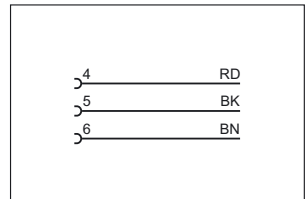
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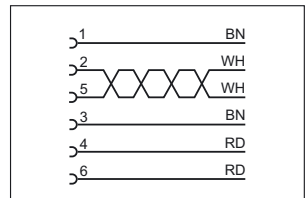
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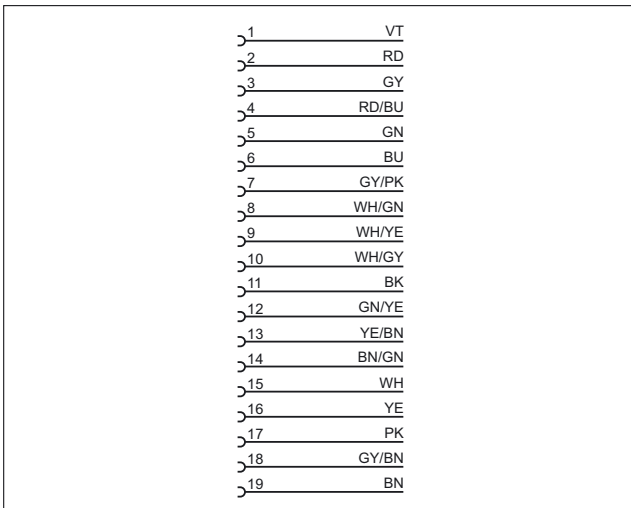
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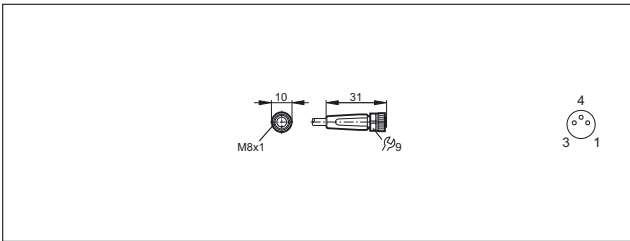




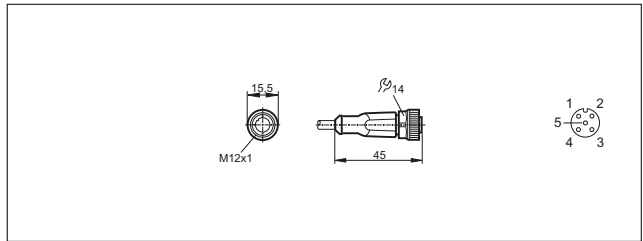
Connection technology

Scale drawings / drawing no. – CAD download: www.ifm.com

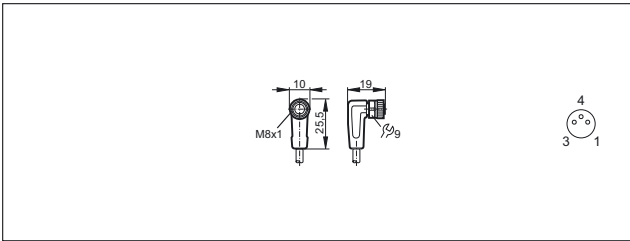
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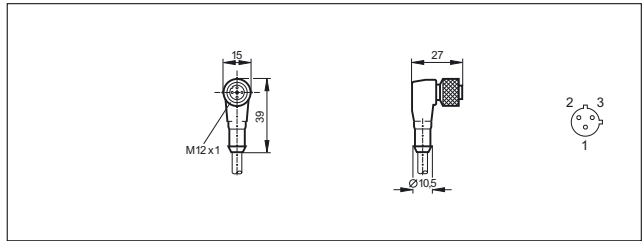
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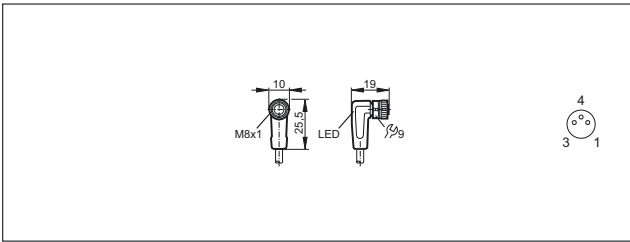
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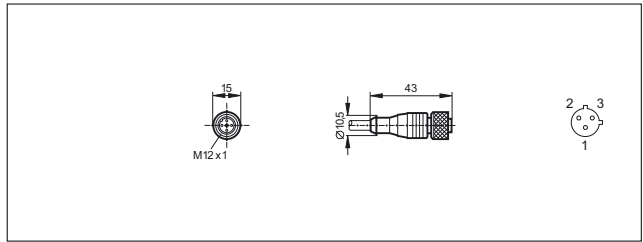
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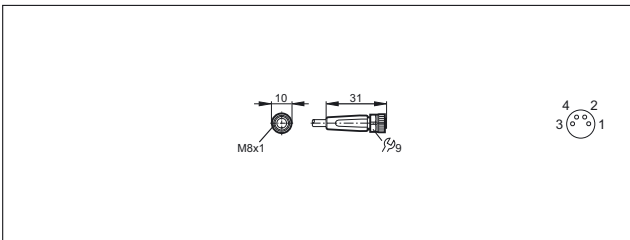
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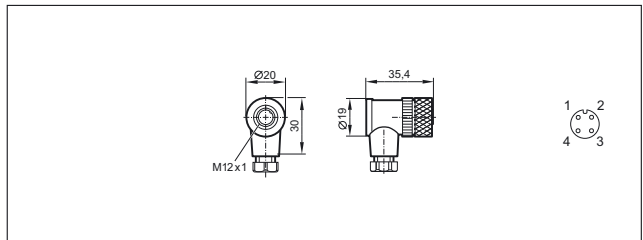
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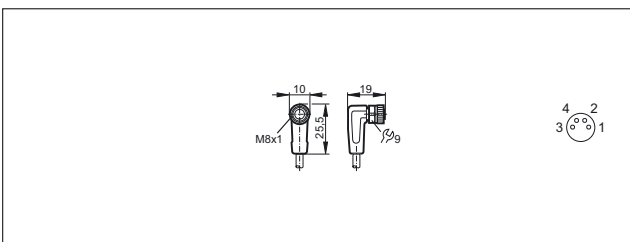
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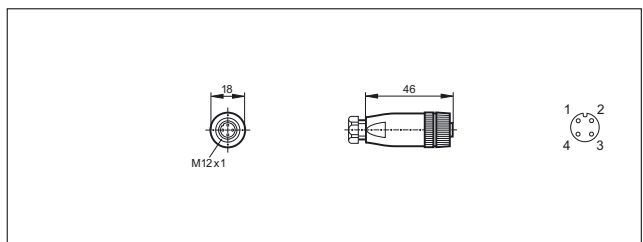
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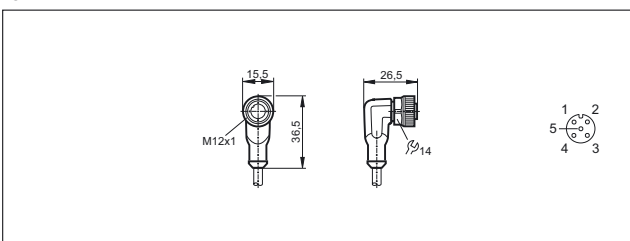
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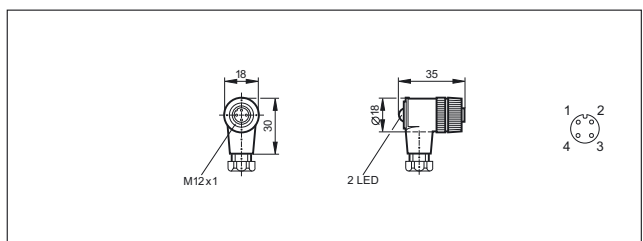
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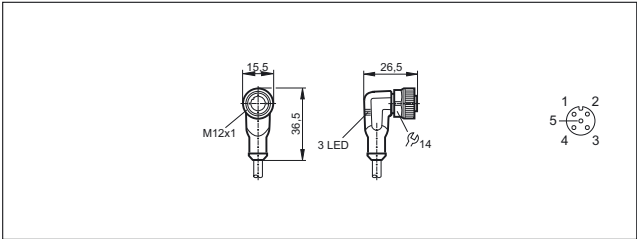


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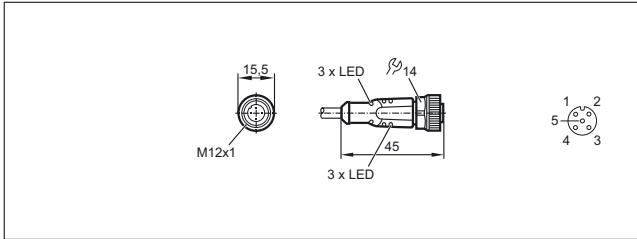


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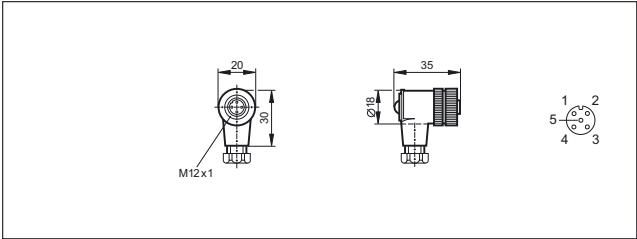
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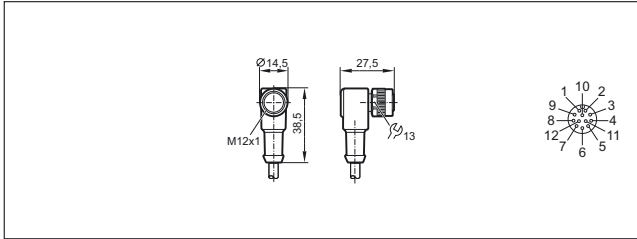
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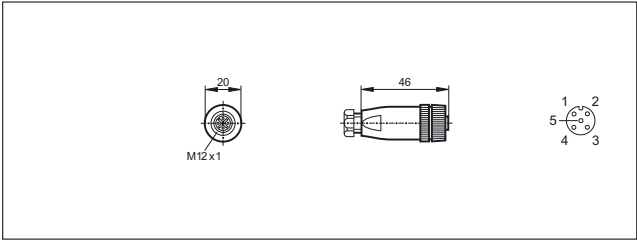
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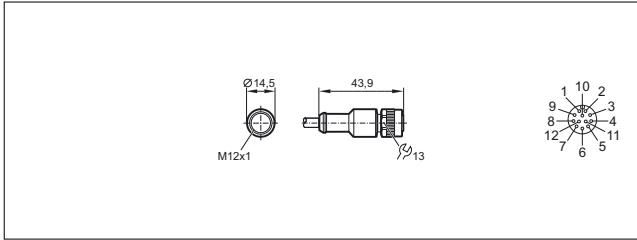
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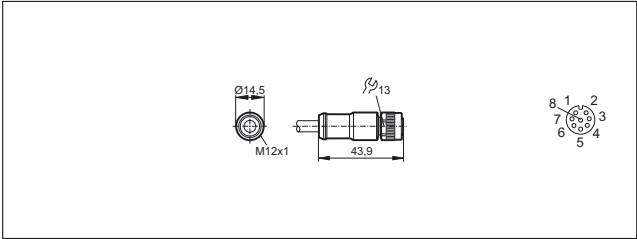
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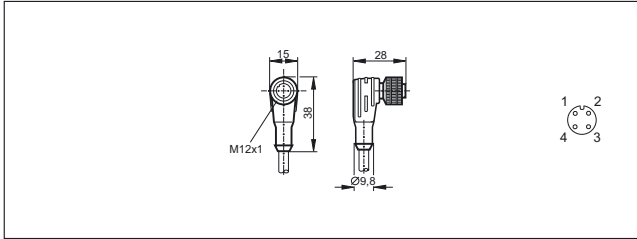
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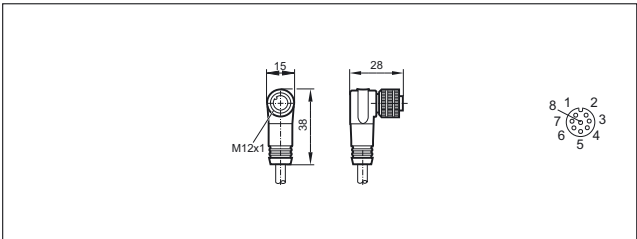
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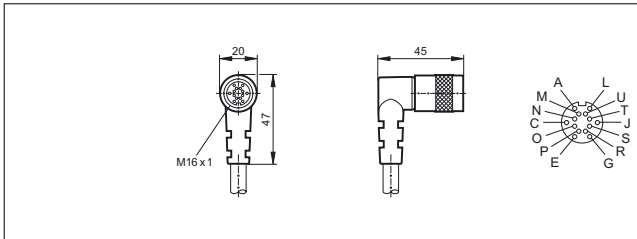
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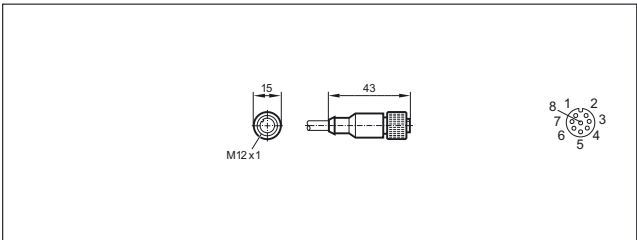
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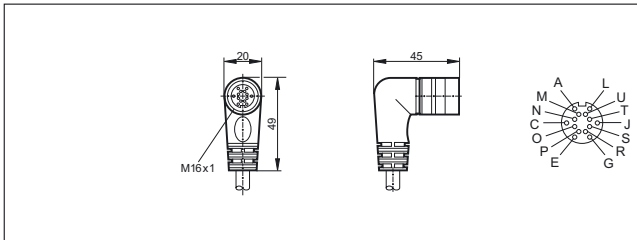
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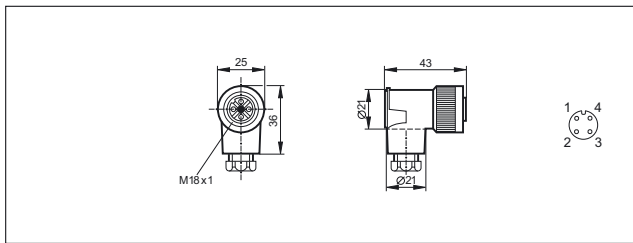




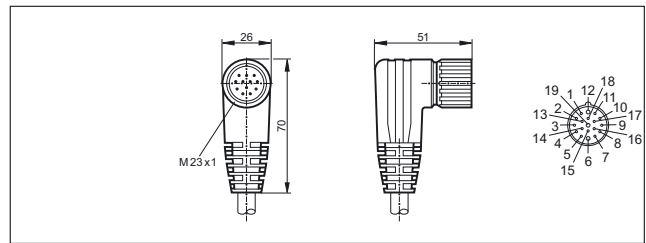
Connection technology

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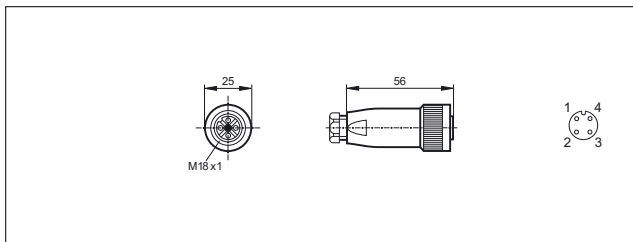
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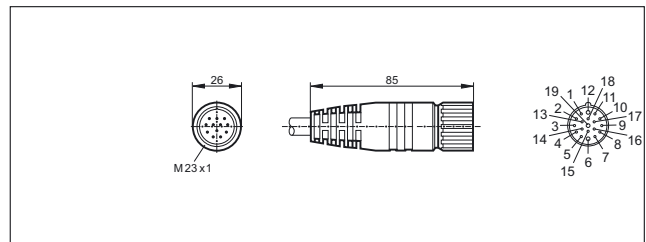
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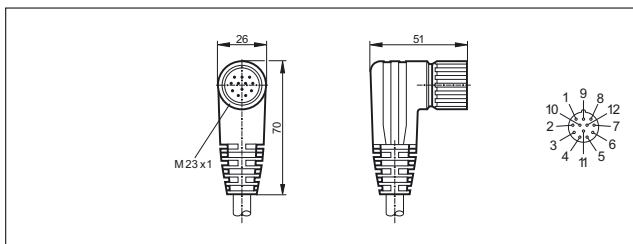
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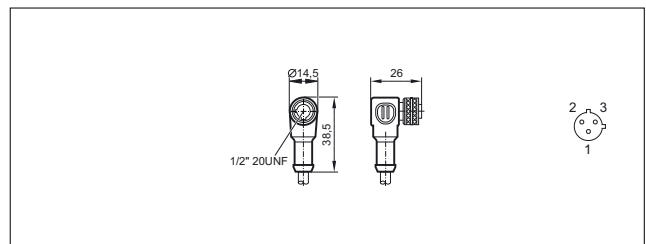
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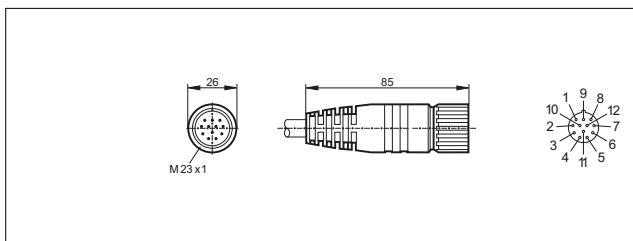
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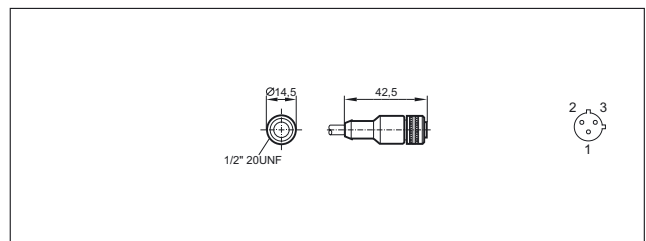
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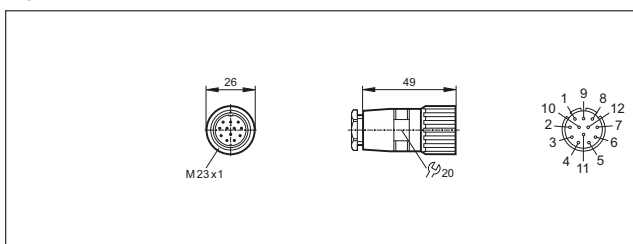
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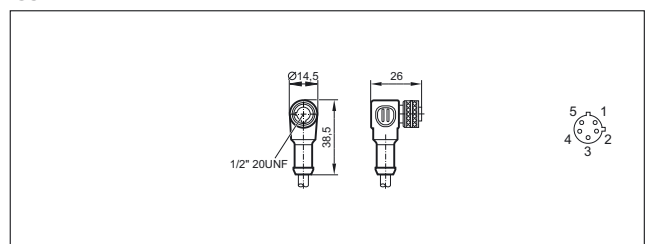
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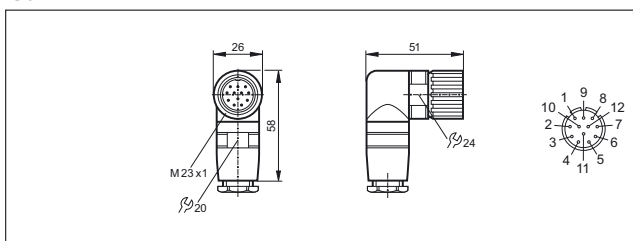
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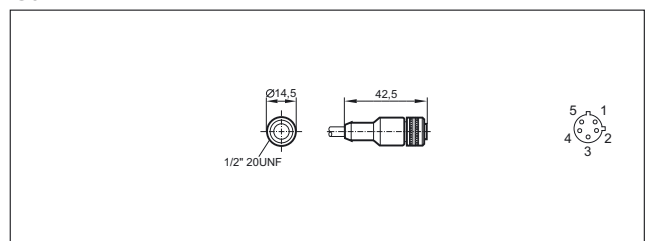
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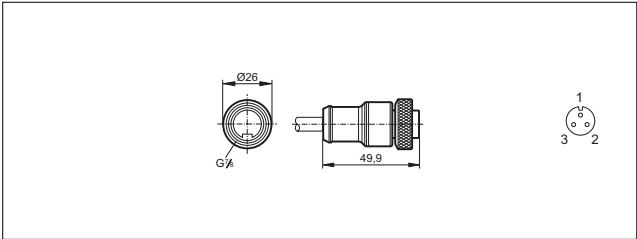


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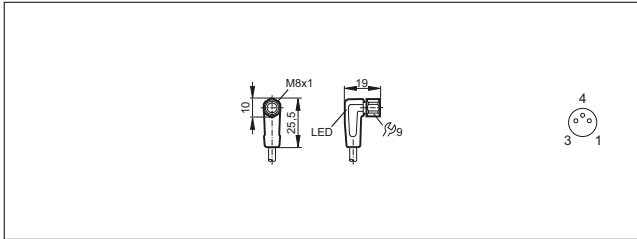


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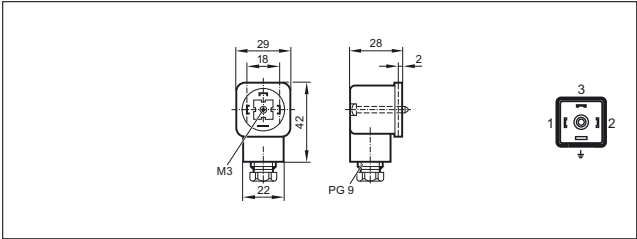
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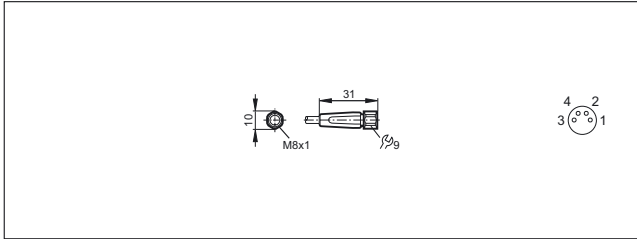
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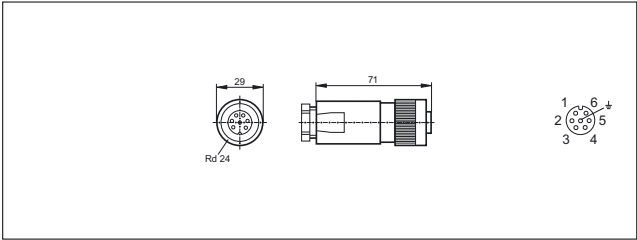
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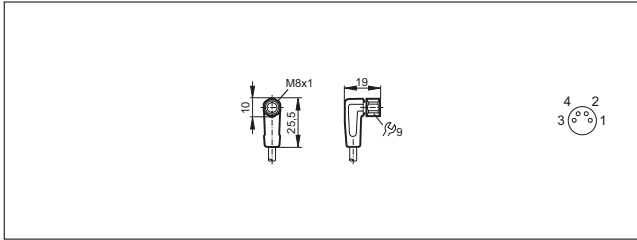
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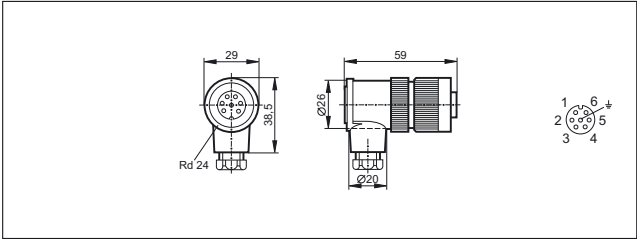
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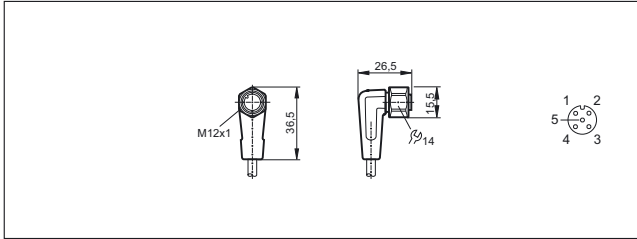
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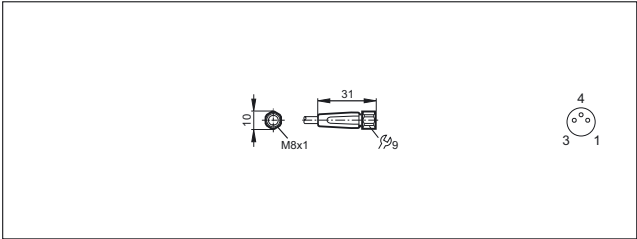
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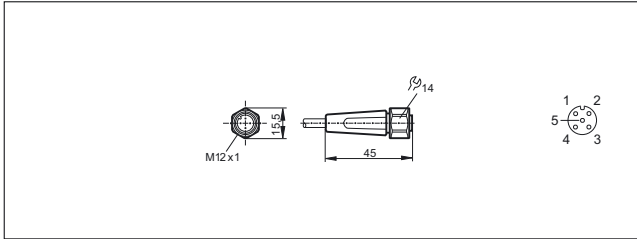
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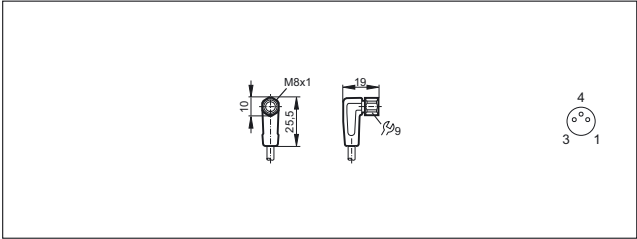
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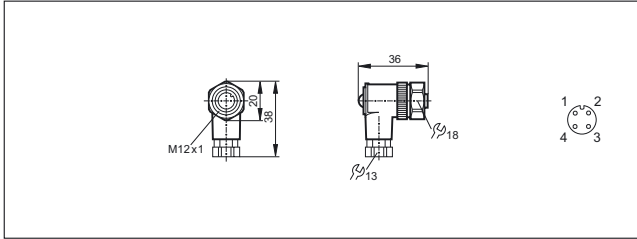
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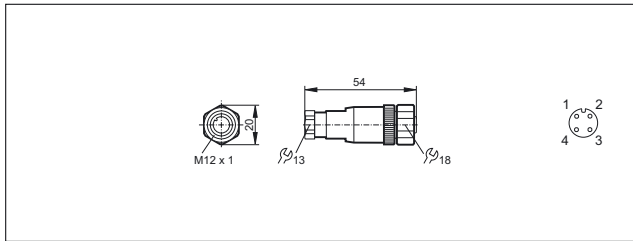




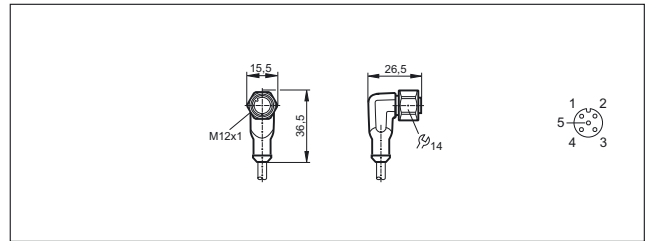
Connection technology

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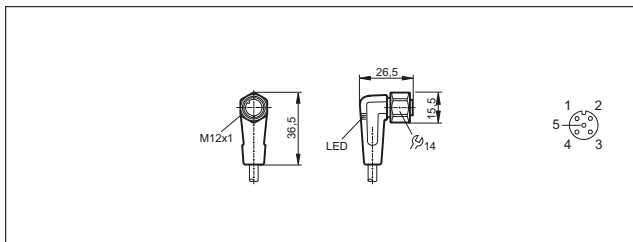
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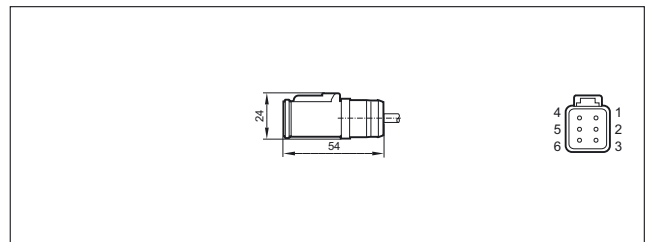
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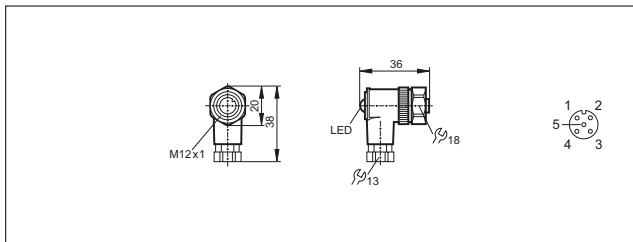
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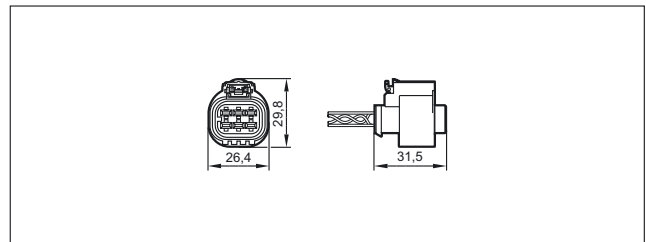
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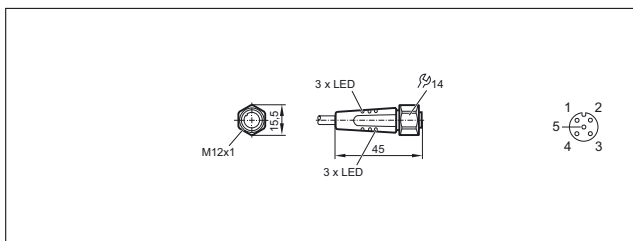
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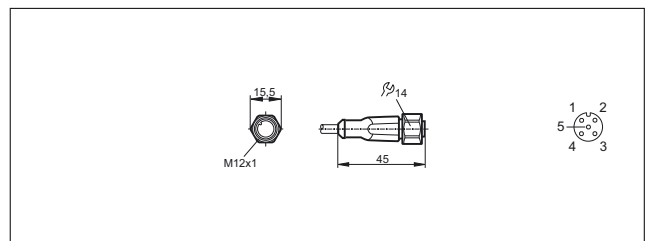
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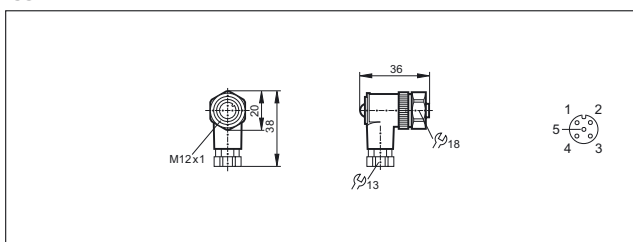
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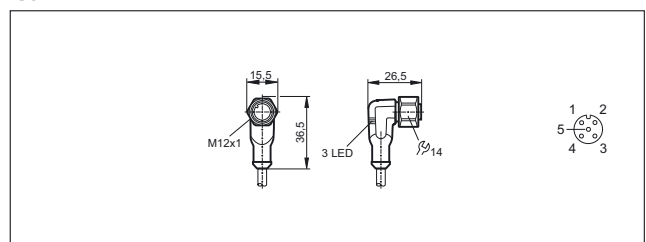
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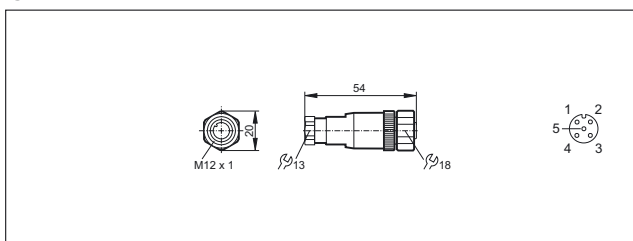
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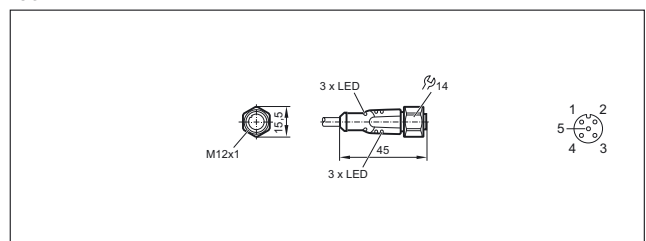
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Connection technology



Plugs

Plugs are mainly used for the connection to splitter boxes and modules. High-quality pin contacts and materials ensure reliable electrical connections.

In addition to a wide range of standard products ifm also offers versions without silicone and halogen, versions for hygienic areas, for applications in contact with coolants and lubricants, as well as for welding applications.

System overview	Page
M8 cable plugs for industrial applications	788
M12 cable plugs for industrial applications	788 - 789
Connectors for hygienic and wet areas	789 - 790
Wiring diagrams	791
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M8 cable plugs for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 39 · Wirable plug M8, 3-pole · Wiring diagram no. 1									
	wirable	–	PA / Brass	50 V AC 75 V DC	-25...90	IP 68	–	–	E11550
Group 40 · Wirable plug M8, 4-pole · Wiring diagram no. 2									
	wirable	–	PA / Brass	60 AC 75 DC	-25...90	IP 68	–	–	E11551

M12 cable plugs for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 41 · Cable plug M12, 4-pole, 4-wire · Wiring diagram no. 3									
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC079
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC080

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 41 · Cable plug M12, 4-pole, 4-wire · Wiring diagram no. 3

	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC081
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC076
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC077
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC078

Group 42 · Wirable plug M12, 4-pole · Wiring diagram no. 2

	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / Brass	250 AC/DC	-25...85	IP 68	–	3	E11505
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / Brass	45 AC 70 DC	-25...85	IP 68	–	4	E11504

Group 43 · Cable plug M12, 5-pole, 5-wire · Wiring diagram no. 4

	2 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVC095
	2 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC094

Group 44 · Wirable plug M12, 5-pole · Wiring diagram no. 5

	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / Brass	125 AC/DC	-25...85	IP 68	–	7	E11507
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / Brass	45 AC 70 DC	-25...85	IP 68	–	8	E11506

Connectors for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 156 · Cable plug M12, 4-pole, 4-wire · Wiring diagram no. 3

	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	9	EVT071

You can find wiring diagrams and scale drawings from page 791



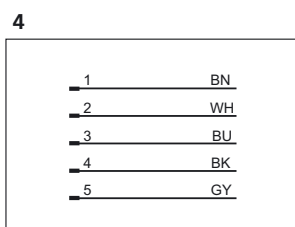
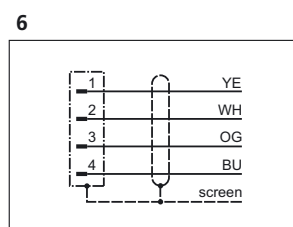
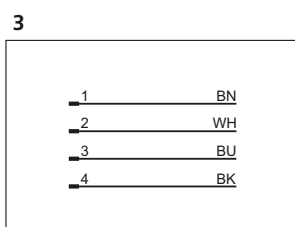
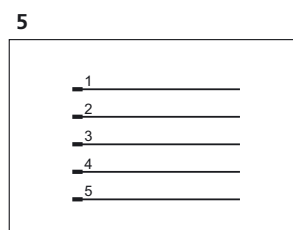
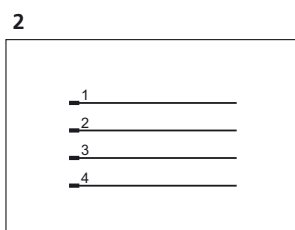
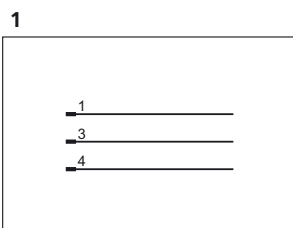
Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 156 · Cable plug M12, 4-pole, 4-wire · Wiring diagram no. 3									
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	9	EVT072
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	9	EVT073
Group 157 · Cable plug M12, 4-pole, 4-wire · halogen-free · Wiring diagram no. 6									
	2 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	10	EVF518
	5 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	10	EVF519
	10 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	10	EVF520
	20 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	10	EVF521
	50 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	10	EVF522
Group 158 · Wirable plug M12, 4-pole · Wiring diagram no. 2									
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / high-grade st. steel	45 AC 70 DC	-25...85	IP 67	–	11	E11858
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / high-grade st. steel	45 AC 70 DC	-25...85	IP 67	–	12	E11857
Group 159 · Cable plug M12, 5-pole, 5-wire · Wiring diagram no. 4									
	2 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	13	EVT074
Group 160 · Wirable plug M12, 5-pole · Wiring diagram no. 5									
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / high-grade st. steel	60 AC/DC	-25...85	IP 67	–	14	E11860
	wirable	...0.75 mm ² (Ø 4...6 mm)	PA / high-grade st. steel	125 AC/DC	-25...85	IP 67	–	15	E11859

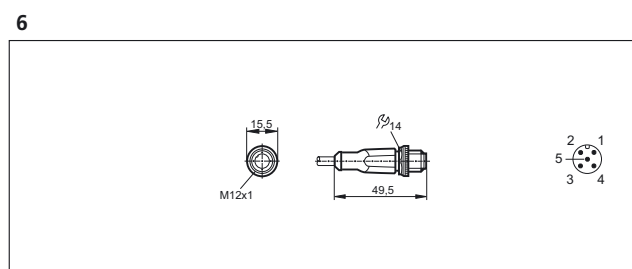
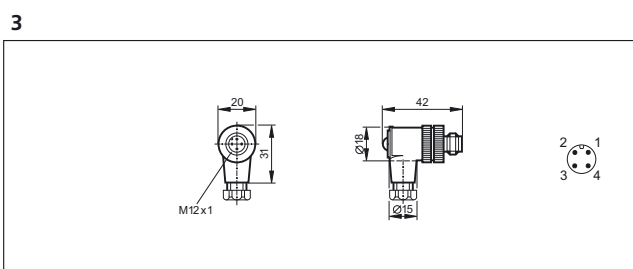
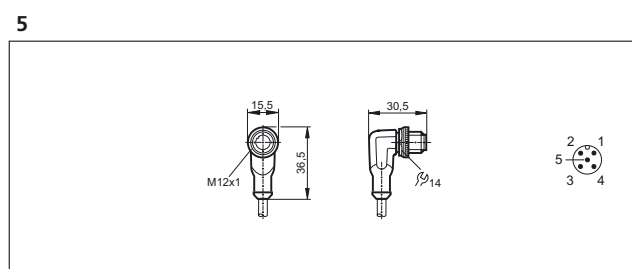
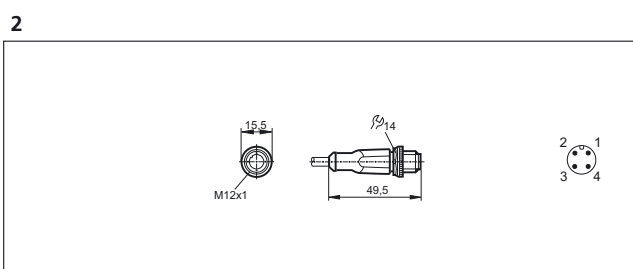
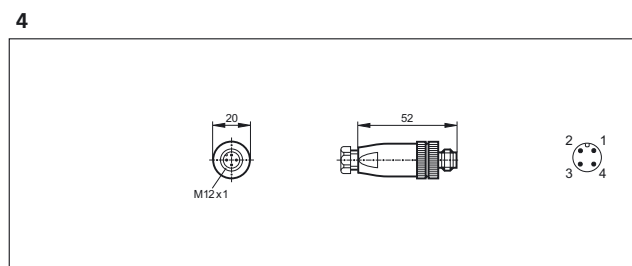
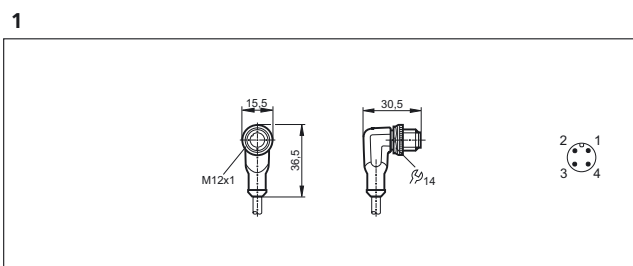
Wiring diagrams

Core colours

BK	black
BN	brown
BU	blue
WH	white
GY	grey
OG	orange
YE	yellow



Scale drawings / drawing no. – CAD download: www.ifm.com

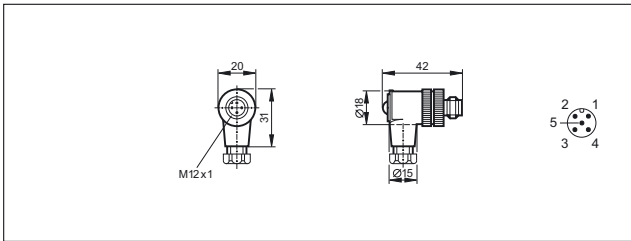




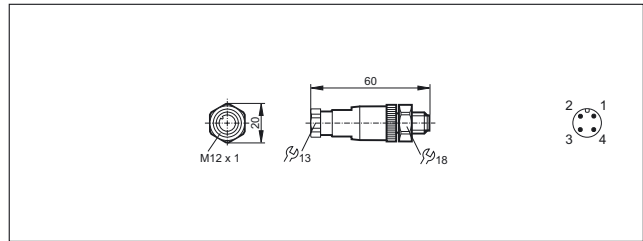
Connection technology

Scale drawings / drawing no. – CAD download: www.ifm.com

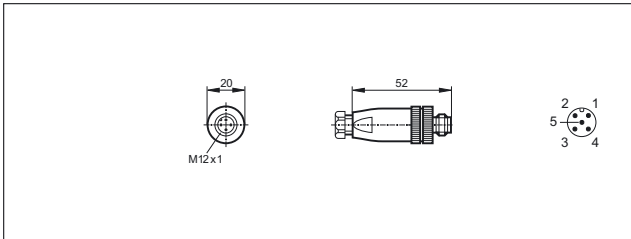
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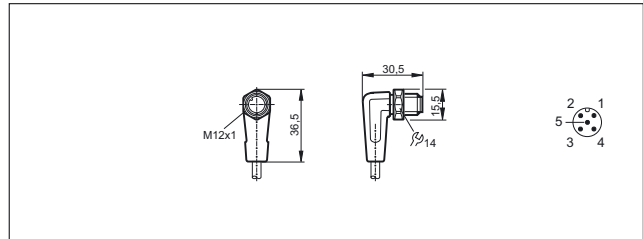
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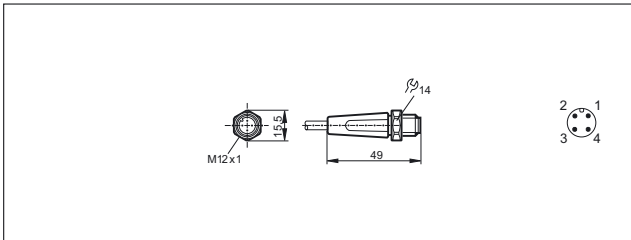
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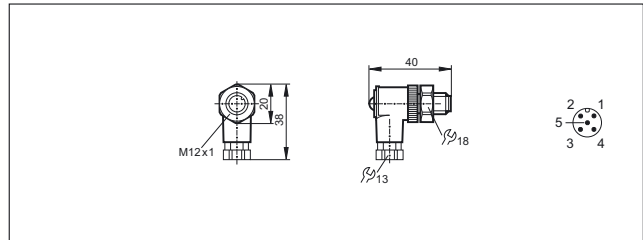
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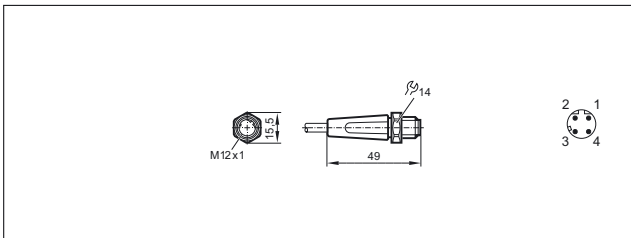
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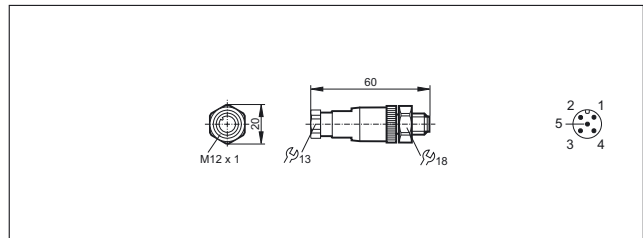
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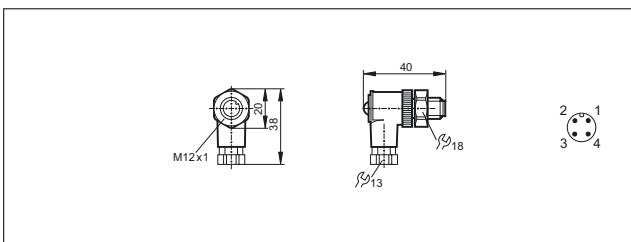
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Connection technology



Jumper cables

Connection cables feature a plug and a socket. They are used for the connection of sensors to splitter boxes and modules.

High-quality contacts and materials ensure reliable electrical connections.

In addition to a wide range of standard products ifm also offers versions without silicone and halogen, versions for hygienic areas, for applications in contact with coolants and lubricants, as well as for welding applications.

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M8 – M8 jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Drawing no.	Order no.
Group 45 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC275
	0.6 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC276
	1 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC277
	2 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC278

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 45 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1

	5 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC279
	0.3 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC265
	0.6 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC266
	1 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC267
	2 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC268
	5 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC269

Group 46 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2

	0.3 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	1	EVC280
	0.6 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	1	EVC281
	1 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	1	EVC282
	2 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	1	EVC283
	5 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	1	EVC284

Group 47 · Jumper , plug: M8, 4-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1

	0.3 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	3	EVC305
	0.6 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	3	EVC306
	1 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	3	EVC307



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 47 · Jumper , plug: M8, 4-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1

	2 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	3	EVC308
	5 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	3	EVC309
	0.3 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC315
	0.6 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC316
	1 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC317
	2 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC318
	5 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC319

Group 48 · Jumper , plug: M8, 3-pole, socket: M8, 4-pole, 3-wire · Wiring diagram no. 1

	0.3 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVC260
	0.6 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVC261
	1 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVC262
	2 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVC263
	5 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVC264
	0.3 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC270
	0.6 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC271
	1 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC272

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 48 · Jumper , plug: M8, 3-pole, socket: M8, 4-pole, 3-wire · Wiring diagram no. 1

	2 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC273
	5 m black PUR cable	3 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVC274

Group 49 · Jumper , plug: M8, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3

	0.3 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC300
	0.6 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC301
	1 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC302
	2 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC303
	5 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	7	EVC304
	0.3 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	8	EVC310
	0.6 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	8	EVC311
	1 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	8	EVC312
	2 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	8	EVC313
	5 m black PUR cable	4 x 0.25 mm ² , Ø 3.7 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	8	EVC314



Connection technology

M8 socket – M12 plug jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 50 · Jumper , plug: M12, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	9	EVC230
	0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	9	EVC231
	1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	9	EVC232
	2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	9	EVC233
	5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	9	EVC234
	0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	10	EVC215
	0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	10	EVC216
	1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	10	EVC217
	2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	10	EVC218
	5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	10	EVC219
Group 51 · Jumper , plug: M12, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	11	EVC225
	0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	11	EVC226
	1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	11	EVC227
	2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	11	EVC228

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 51 · Jumper , plug: M12, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2



5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	11	EVC229

Group 52 · Jumper , plug: M12, 3-pole, socket: M8, 4-pole, 3-wire · Wiring diagram no. 1



0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	12	EVC210
0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	12	EVC211
1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	12	EVC212
2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	12	EVC213
5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	12	EVC214



0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	13	EVC220
0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	13	EVC221
1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	13	EVC222
2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	13	EVC223
5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	13	EVC224

Group 53 · Jumper , plug: M12, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3



0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	14	EVC235
0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	14	EVC236
1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	14	EVC237



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 53 · Jumper , plug: M12, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3

	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	14	EVC238
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	14	EVC239
	0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	15	EVC240
	0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	15	EVC241
	1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	15	EVC242
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	15	EVC243
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	15	EVC244

M8 plug - M12 socket jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 54 · Jumper , plug: M8, 3-pole, socket: M12, 5/4-pole, 3-wire · Wiring diagram no. 1

	0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	16	EVC245
	0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	16	EVC246
	1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	16	EVC247
	2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	16	EVC248
	5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	16	EVC249

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 55 · Jumper , plug: M8, 3-pole, socket: M12, 5-pole, 3-wire · Wiring diagram no. 1

	0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	17	EVC255
	0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	17	EVC256
	1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	17	EVC257
	2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	17	EVC258
	5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	17	EVC259

Group 56 · Jumper , plug: M8, 3-pole, socket: M12, 5-pole, 3-wire, LED, PNP · Wiring diagram no. 2

	0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	18	EVC250
	0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	18	EVC251
	1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	18	EVC252
	2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	18	EVC253
	5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	18	EVC254

Group 57 · Jumper , plug: M8, 4-pole, socket: M12, 5-pole, 4-wire · Wiring diagram no. 3

	0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	19	EVC285
	0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	19	EVC286
	1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	19	EVC287
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	19	EVC288



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 57 · Jumper , plug: M8, 4-pole, socket: M12, 5-pole, 4-wire · Wiring diagram no. 3



5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	19	EVC289

Group 58 · Jumper , plug: M8, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3



0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	20	EVC295
0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	20	EVC296
1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	20	EVC297
2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	20	EVC298
5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	20	EVC299

Group 59 · Jumper , plug: M8, 4-pole, socket: M12, 5-pole, 4-wire, LED, PNP · Wiring diagram no. 4



0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	21	EVC290
0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	21	EVC291
1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	21	EVC292
2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	21	EVC293
5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	21	EVC294

M12 – M12 jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 60 · Jumper , plug: M12, 3-pole, socket: M12, 5-pole, 3-wire · Wiring diagram no. 1



0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	22	EVC045

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 60 · Jumper , plug: M12, 3-pole, socket: M12, 5-pole, 3-wire · Wiring diagram no. 1

	0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	22	EVC046
	1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	22	EVC047
	2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	22	EVC048
	5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	22	EVC049
	0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	23	EVC040
	0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	23	EVC041
	1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	23	EVC042
	2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	23	EVC043
	5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	23	EVC044

Group 62 · Jumper , plug: M12, 3-pole, socket: M12, 5-pole, 3-wire, LED, PNP · Wiring diagram no. 2

	0.3 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	24	EVC050
	0.6 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	24	EVC051
	1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	24	EVC052
	2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	24	EVC053
	5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	24	EVC054



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 64 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC015
	0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC016
	1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC017
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC018
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC019
	0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC010
	0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC011
	1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC012
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC013
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC014
Group 66 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 4									
	0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	27	EVC020
	0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	27	EVC021
	1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	27	EVC022
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	27	EVC023

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 66 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 4



5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	27	EVC024

Group 67 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3



0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC025
0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC026
1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC027
2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC028
5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC029



0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC030
0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC031
1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC032
2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC033
5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC034

Group 68 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 4



0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	30	EVC035
0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	30	EVC036
1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	30	EVC037



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.
Group 68 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 4									
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	30	EVC038
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	30	EVC039
Group 69 · Jumper , plug: M12, 5-pole, socket: M12, 5-pole, 5-wire · Wiring diagram no. 5									
	0.3 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVC060
	0.6 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVC061
	1 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVC062
	2 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVC063
	5 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVC064
	0.3 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVC055
	0.6 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVC056
	1 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVC057
	2 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVC058
	5 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVC059
	0.3 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EVC065
	0.6 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EVC066

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 69 · Jumper , plug: M12, 5-pole, socket: M12, 5-pole, 5-wire · Wiring diagram no. 5

	1 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EVC067
	2 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EVC068
	5 m black PUR cable	5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EVC069

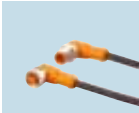
Group 70 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3

	0.25 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC716
	0.5 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC717
	1 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC718
	2 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC719
	5 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC720
	10 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC721
	20 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	26	EVC722
	0.25 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC723
	0.5 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC724
	1 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC725
	2 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC726



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 70 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	5 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC727
	10 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC728
	20 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	25	EVC729
	0.25 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC730
	0.5 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC731
	1 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC732
	2 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC733
	5 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC734
	10 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC735
	20 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	28	EVC736
	0.25 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC737
	0.5 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC738
	1 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC739
	2 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC740

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 70 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	5 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC741
	10 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC742
	20 m black PUR cable	4 x 1.00 mm ² , Ø 6.2 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	29	EVC743

Valve - plug jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 71 · Jumper , plug: M12, 3-pole, valve plug: Housing A, 4-pole, 3-wire, LED · Wiring diagram no. 6									
	0.3 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	34	E11416
	0.6 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	34	E11417
	1 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	34	E11418
	2 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	34	E11419
	5 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	34	E11420
Group 72 · Jumper , plug: M12, 3-pole, valve plug: Housing B, 3-pole, 3-wire, LED · Wiring diagram no. 7									
	0.3 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	35	E11421
	0.6 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	35	E11422
	1 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	35	E11423
	2 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	35	E11424



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 72 · Jumper , plug: M12, 3-pole, valve plug: Housing B, 3-pole, 3-wire, LED · Wiring diagram no. 7



5 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	35	E11425

Group 73 · Jumper , plug: M12, 3-pole, valve plug: Housing B (industrial standard), 3-pole, 3-wire, LED · Wiring diagram no. 7



0.3 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	36	E11431
0.6 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	36	E11432
1 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	36	E11433
2 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	36	E11434
5 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	36	E11435

Group 74 · Jumper , plug: M12, 3-pole, valve plug: Housing C, 4-pole, 3-wire, LED · Wiring diagram no. 6



0.3 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 65	yellow	37	E11426
0.6 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 65	yellow	37	E11427
1 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 65	yellow	37	E11428
2 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 65	yellow	37	E11429
5 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 65	yellow	37	E11430

Group 75 · Jumper , plug: M12, 3-pole, valve plug: Housing C (industrial standard), 4-pole, 3-wire, LED · Wiring diagram no. 6



0.3 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	38	E11436
0.6 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	38	E11437

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 75 · Jumper , plug: M12, 3-pole, valve plug: Housing C (industrial standard), 4-pole, 3-wire, LED · Wiring diagram no. 6

	1 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	38	E11438
	2 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	38	E11439
	5 m black PUR cable	3 x 0.5 mm ² , Ø 5 mm	PUR / Brass	24 AC/DC	-25...80	IP 67	yellow	38	E11440

Jumpers weld slag resistant

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 142 · Jumper , plug: M12, 4-pole, socket: M12, 5-pole, 4-wire · Wiring diagram no. 3

	0.3 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	EVW036
	0.5 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	EVW022
	1 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	EVW030
	2 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	EVW031
	5 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	EVW034
	10 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	39	EVW035
	0.3 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	EVW037
	0.5 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	EVW023
	1 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	EVW024
	2 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	EVW025



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.
Group 142 · Jumper , plug: M12, 4-pole, socket: M12, 5-pole, 4-wire · Wiring diagram no. 3									
	5 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	EVW028
	10 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	40	EVW029
Group 143 · Jumper , plug: M12, 5-pole, socket: M12, 5-pole, 4-wire · Wiring diagram no. 5									
	0.3 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVW054
	0.6 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVW055
	1 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVW056
	2 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVW057
	5 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVW058
	10 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EVW059
	0.3 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVW048
	0.6 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVW049
	1 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVW050
	2 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVW051
	5 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVW052
	10 m grey PUR cable	5 x 0.34 mm ² , Ø 5.1 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EVW053

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 144 · Jumper , plug: M12, 4-pole, socket: M12, 5-pole, 4-wire, LED, PNP · Wiring diagram no. 4

	1 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	41	EVW038
	2 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	41	EVW039
	5 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	41	EVW041
	10 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	41	EVW042
	1 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	42	EVW043
	2 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	42	EVW044
	3 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	42	EVW045
	5 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	42	EVW046
	10 m grey PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	42	EVW047

Jumpers for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 161 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1

	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	EVT142
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	EVT143
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	EVT144
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	EVT145



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 161 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1									
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	EVT146
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	43	EVT147
	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	EVT148
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	EVT149
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	EVT150
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	EVT151
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	EVT152
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	44	EVT153
Group 163 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	EVT154
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	EVT155
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	EVT156
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	EVT157
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	EVT158
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	45	EVT159

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 165 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1

	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT160
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT161
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT162
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT163
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT164
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	46	EVT165
	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT166
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT167
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT168
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT169
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT170
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	47	EVT171

Group 166 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2

	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	EVT172
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	EVT173
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	EVT174

You can find wiring diagrams and scale drawings from page 828



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 166 · Jumper , plug: M8, 3-pole, socket: M8, 3-pole, 3-wire, LED, PNP · Wiring diagram no. 2									
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	EVT175
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	EVT176
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	48	EVT177
Group 167 · Jumper , plug: M8, 3-pole, socket: M8, 4-pole, 3-wire · Wiring diagram no. 1									
	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	49	EVT279
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	49	EVT280
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	49	EVT281
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	49	EVT203
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	49	EVT204
	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	50	EVT283
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	50	EVT284
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	50	EVT285
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	50	EVT211
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	50	EVT286
Group 168 · Jumper , plug: M8, 3-pole, socket: M12, 5-pole, 3-wire · Wiring diagram no. 1									
	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	51	EVT260

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 168 · Jumper , plug: M8, 3-pole, socket: M12, 5-pole, 3-wire · Wiring diagram no. 1

	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	51	EVT261
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	51	EVT262
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	51	EVT263
	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	EVT265
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	EVT266
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	EVT267
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	EVT268
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	EVT269
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	52	EVT270

Group 169 · Jumper , plug: M8, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3

	0.3 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	EVT178
	0.6 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	EVT179
	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	EVT180
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	EVT181
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	EVT182
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	53	EVT183

You can find wiring diagrams and scale drawings from page 828



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 169 · Jumper , plug: M8, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	EVT184
	0.6 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	EVT185
	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	EVT186
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	EVT187
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	EVT188
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	54	EVT189
	0.3 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVT190
	0.6 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVT191
	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVT192
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVT193
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVT194
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	55	EVT195
	0.3 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	EVT196
	0.6 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	EVT197
	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	EVT198

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.
Group 169 · Jumper , plug: M8, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3									
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	EVT199
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	EVT200
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	56	EVT201
Group 170 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 3									
	0.3 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVF040
	0.6 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVF041
	1 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVF042
	2 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVF043
	5 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVF044
	10 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVF045
	0.3 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF046
	0.6 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF047
	1 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF048
	2 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF049
	5 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF050



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 170 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 3

	10 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF051

Group 171 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · halogen-free · Wiring diagram no. 4

	0.3 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVF052
	0.6 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVF053
	1 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVF054
	2 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVF055
	5 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVF056
	10 m grey MPPE cable	4 x 0.34 mm ² , Ø 4.9 mm	PP / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVF057

Jumpers for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.

Group 172 · Jumper , plug: M12, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1

	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	60	EVT236
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	60	EVT237
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	60	EVT238
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	60	EVT239
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	60	EVT240

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 172 · Jumper , plug: M12, 3-pole, socket: M8, 3-pole, 3-wire · Wiring diagram no. 1

	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	61	EVT242
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	61	EVT243
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	61	EVT244
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	61	EVT245
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	61	EVT246

Group 173 · Jumper , plug: M12, 3-pole, socket: M12, 5/4/3-pole, 3-wire · Wiring diagram no. 1

	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	EVT028
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	EVT029
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	EVT030
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	EVT031
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	EVT032
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	62	EVT033
	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	EVT022
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	EVT023
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	EVT024
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	EVT025

You can find wiring diagrams and scale drawings from page 828



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 173 · Jumper , plug: M12, 3-pole, socket: M12, 5/4/3-pole, 3-wire · Wiring diagram no. 1

	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	EVT026
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	63	EVT027

Group 174 · Jumper , plug: M12, 3-pole, socket: M12, 5/4/3-pole, 3-wire, LED, PNP · Wiring diagram no. 2

	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	EVT034
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	EVT035
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	EVT036
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	EVT037
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	EVT038
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	64	EVT039

Group 175 · Jumper , plug: M12, 3-pole, socket: M12, 5/4/3-pole, 3-wire · Wiring diagram no. 1

	0.3 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	EVT079
	0.6 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	EVT110
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	EVT111
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	EVT112
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	EVT113
	10 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	65	EVT114

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 176 · Jumper , plug: M12, 4-pole, socket: M8, 4-pole, 4-wire · Wiring diagram no. 3

	0.3 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	66	EVT248
	0.6 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	66	EVT249
	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	66	EVT250
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	66	EVT251
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	66	EVT290
	0.3 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	EVT253
	0.6 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	EVT254
	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	EVT255
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	EVT256
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	EVT257
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	67	EVT258

Group 177 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3

	0.3 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVT046
	0.6 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVT047
	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVT048
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVT049



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 177 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVT050
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVT051
	0.3 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVT040
	0.6 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVT041
	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVT042
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVT043
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVT044
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVT045
Group 178 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire, LED, PNP · Wiring diagram no. 4									
	0.3 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVT052
	0.6 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVT053
	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVT054
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVT055
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVT056
	10 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / 2 x yellow	59	EVT057

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 179 · Jumper , plug: M12, 5-pole, socket: M12, 5-pole, 5-wire · Wiring diagram no. 5

	0.3 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	EVT058
	0.6 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	EVT059
	1 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	EVT060
	2 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	EVT061
	5 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	EVT062
	10 m orange PVC cable	5 x 0.34 mm ² , Ø 5.1 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	68	EVT063

Group 180 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 3

	0.25 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	57	EVF490

Group 181 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 8

	0.5 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	EVF491
	1 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	EVF492
	2 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	EVF493
	5 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	EVF494
	10 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	EVF495
	20 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	69	EVF496



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 182 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 3									
	0.25 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF497
	0.5 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF498
	1 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF499
	2 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF500
	5 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF501
	10 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF502
	20 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	58	EVF503
	0.25 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	EVF504
	0.5 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	EVF505
	1 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	EVF506
	2 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	EVF507
	5 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	EVF508
	10 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	EVF509
	20 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	70	EVF510

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 182 · Jumper , plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · halogen-free · Wiring diagram no. 3

	0.25 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	EVF511
	0.5 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	EVF512
	1 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	EVF513
	2 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	EVF514
	5 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	EVF515
	10 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	EVF516
	20 m grey MPPE cable	4 x 1.00 mm ² , Ø 6.2 mm	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	71	EVF517

Group 183 · Jumper , plug: M12, 4-pole, 4-wire · halogen-free · Wiring diagram no. 9

	0.25 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	EVF528
	0.5 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	EVF529
	1 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	EVF530
	2 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	EVF531
	5 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	EVF532
	10 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	EVF533
	20 m grey MPPE cable	4 x 0.34 mm ² , Ø 6.5 mm	PP / stainless steel 316L / 1.4404	50 AC 60 DC	-25...80	IP 65 / IP 67 / IP 68 / IP 69K	–	72	EVF534

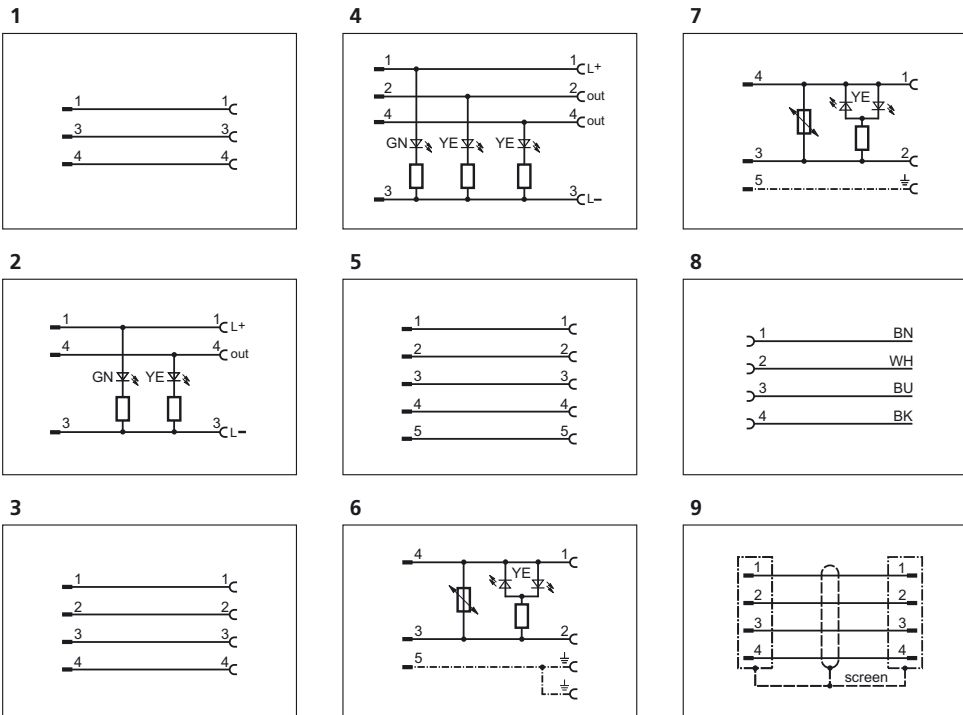


Connection technology

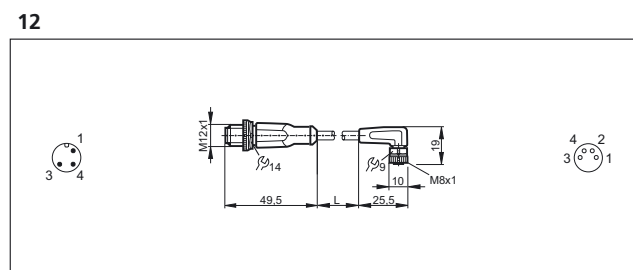
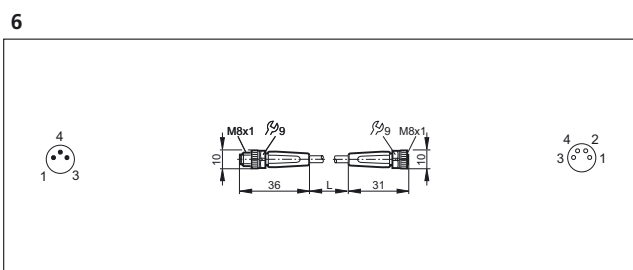
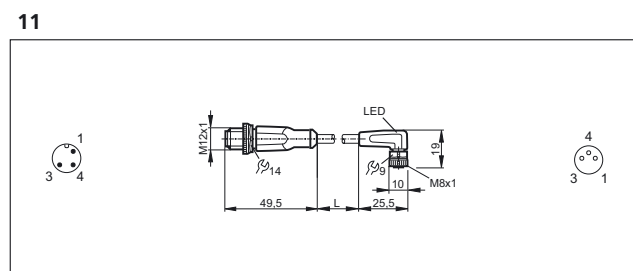
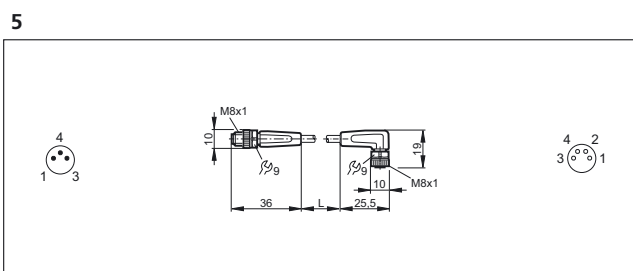
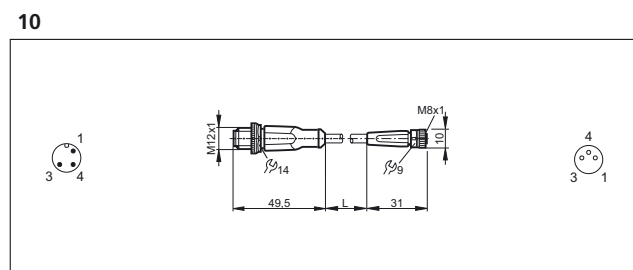
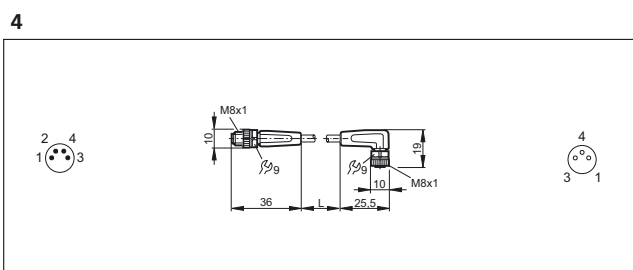
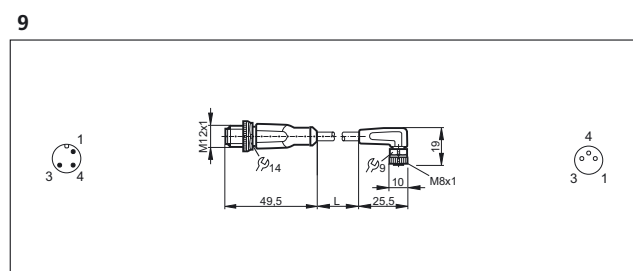
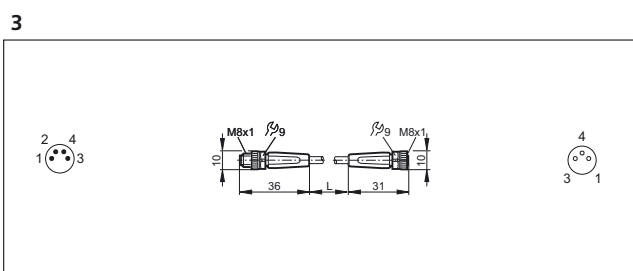
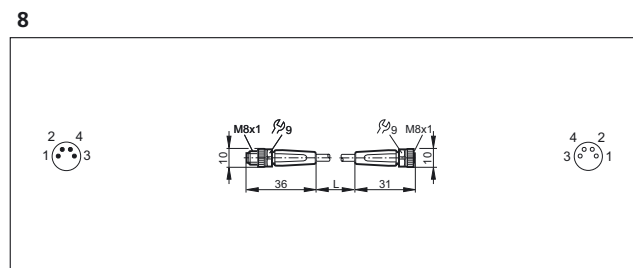
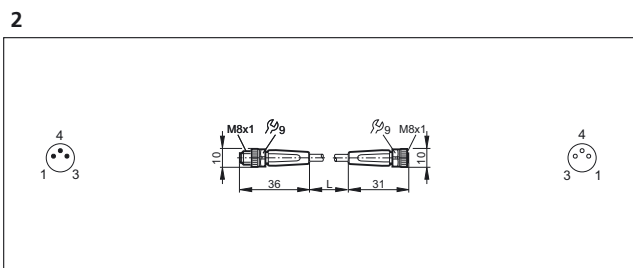
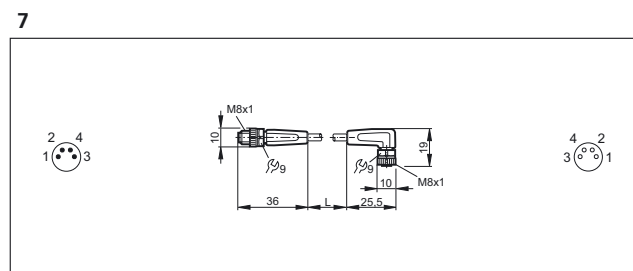
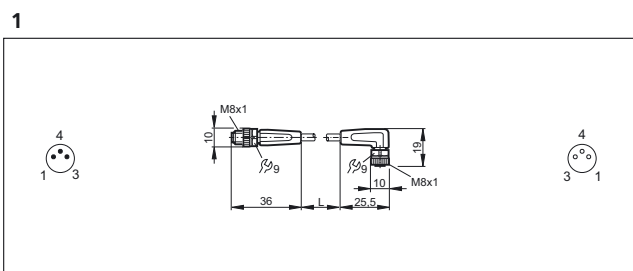
Jumpers for hazardous areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 198 · Jumper, plug: M12, 4-pole, socket: M12, 5/4-pole, 4-wire · Wiring diagram no. 3									
	0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	EVC09A
	0.6 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	EVC10A
	1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	EVC11A
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	EVC07A
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	EVC12A
	10 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / stainless steel 316L / 1.4404	60 AC 60 DC	-20...60	IP 67	–	73	EVC13A

Wiring diagrams



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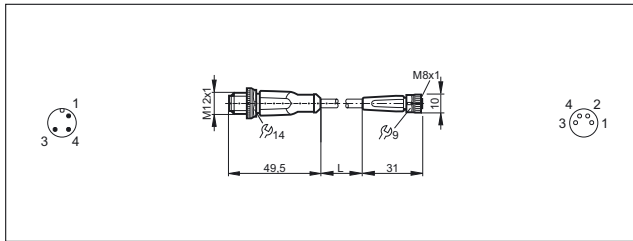




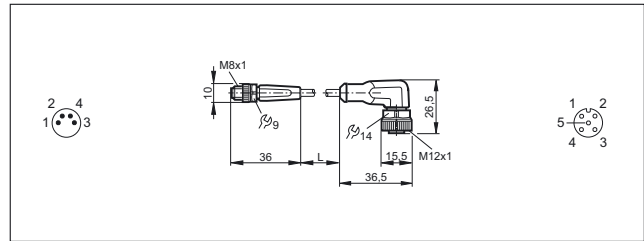
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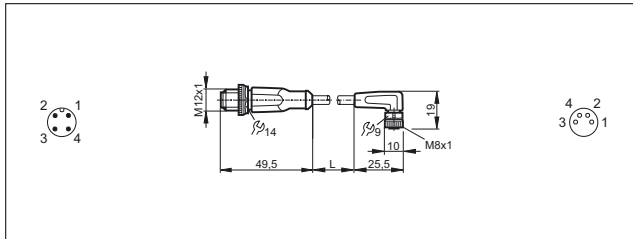
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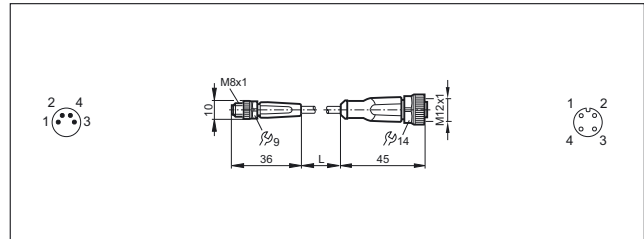
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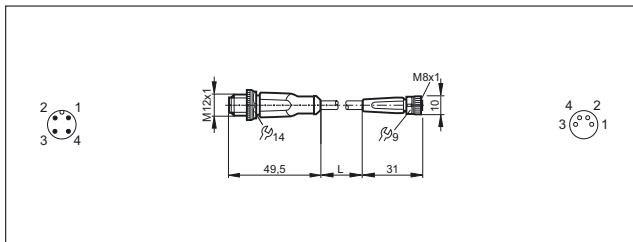
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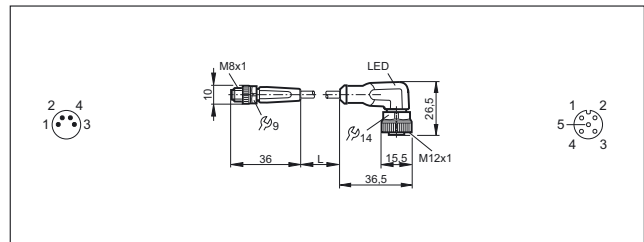
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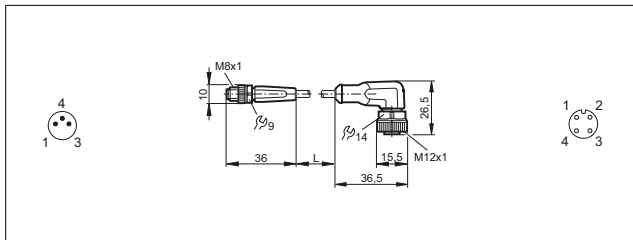
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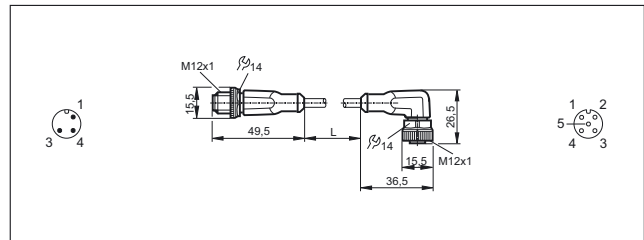
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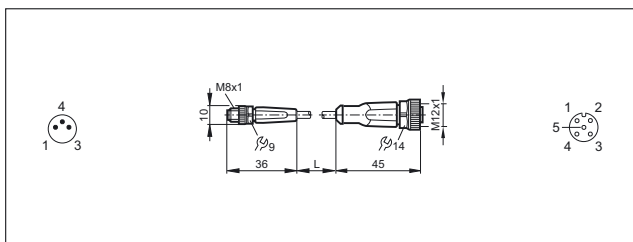
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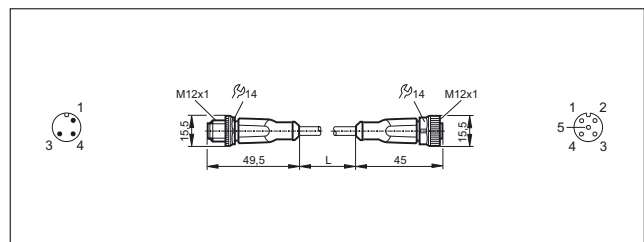
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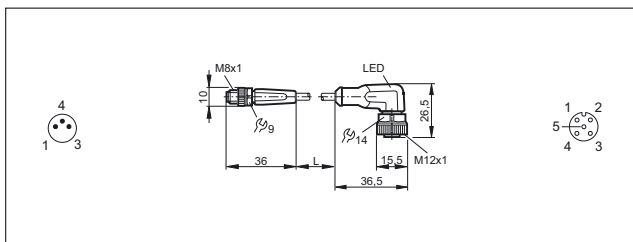
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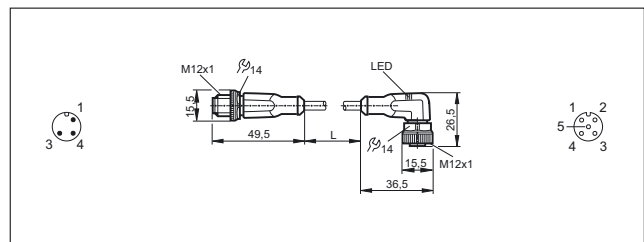
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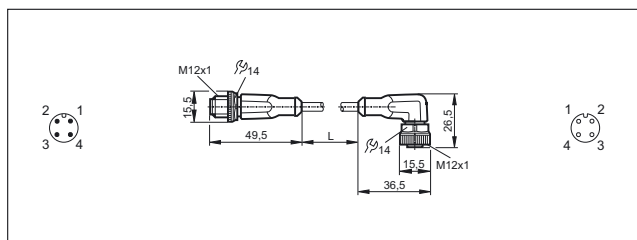


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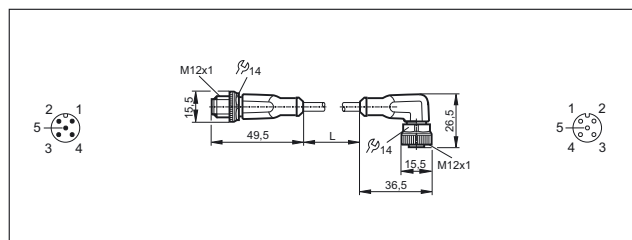


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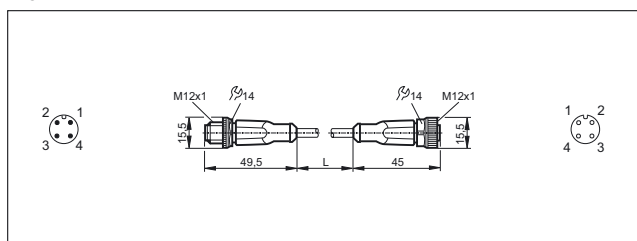
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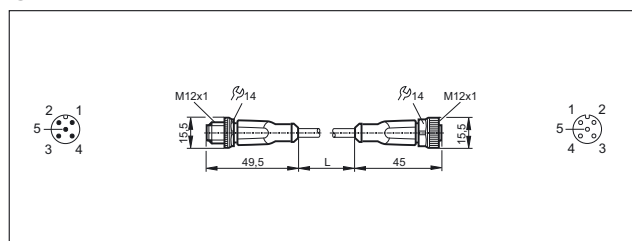
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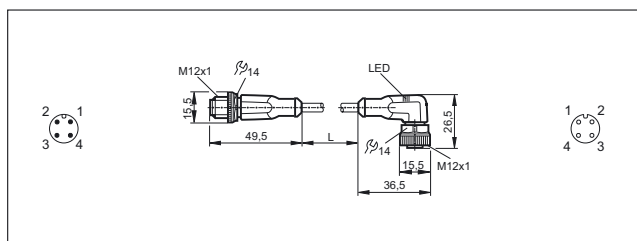
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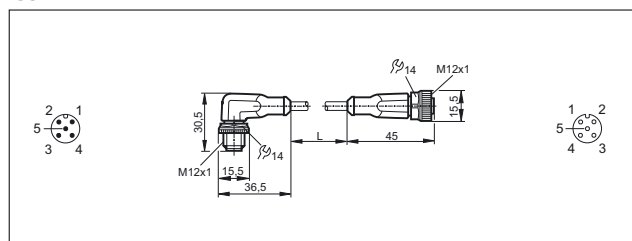
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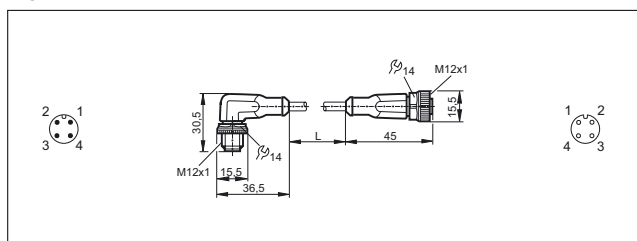
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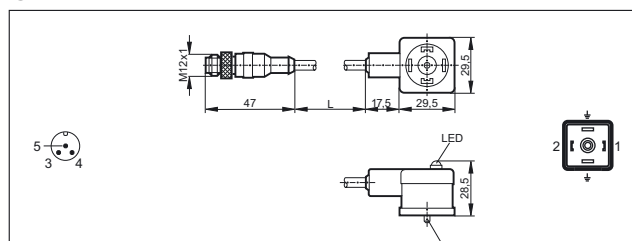
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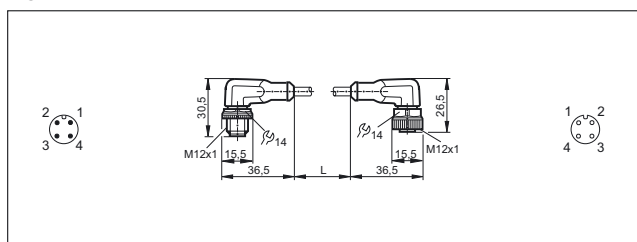
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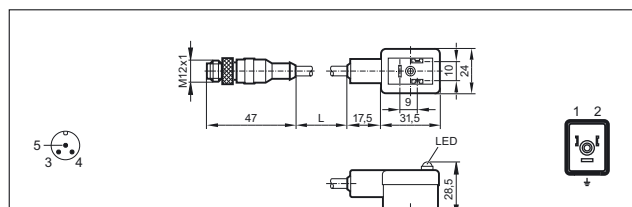
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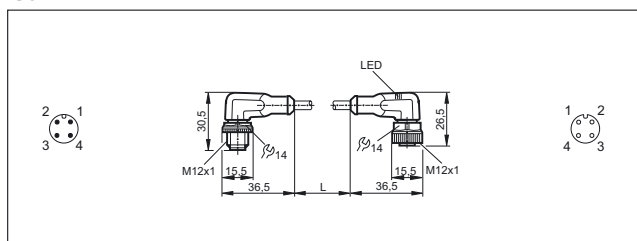
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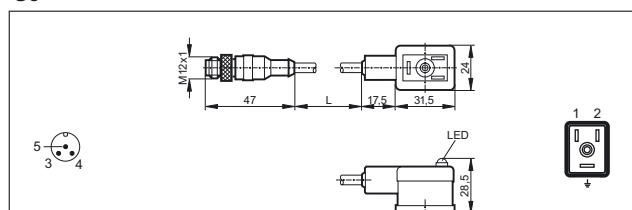
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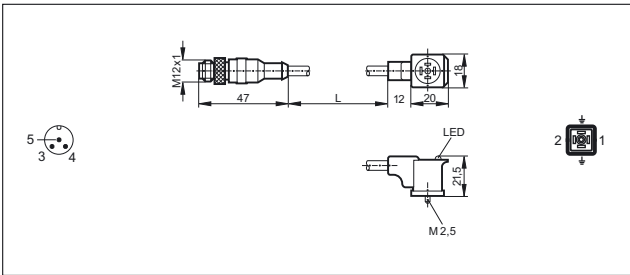




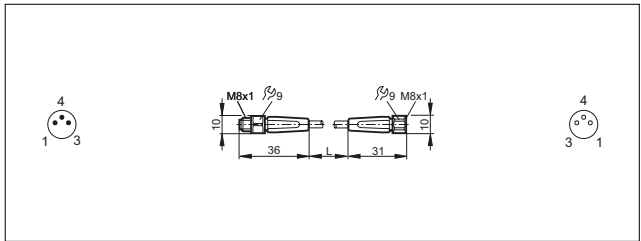
Connection technology

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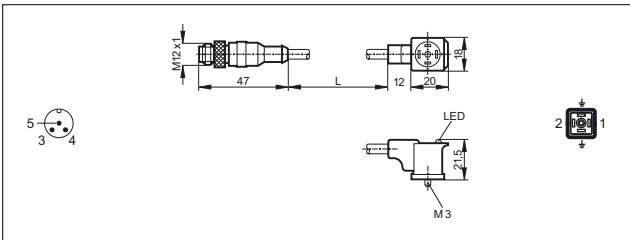
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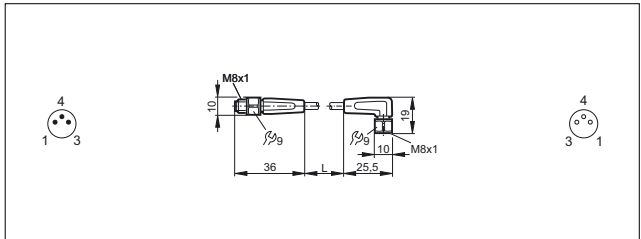
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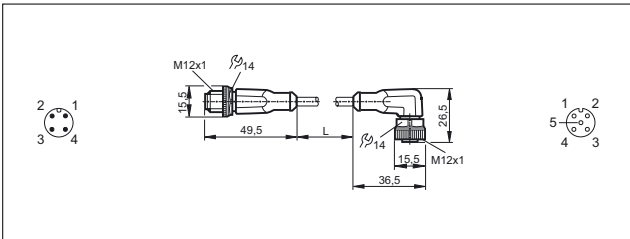
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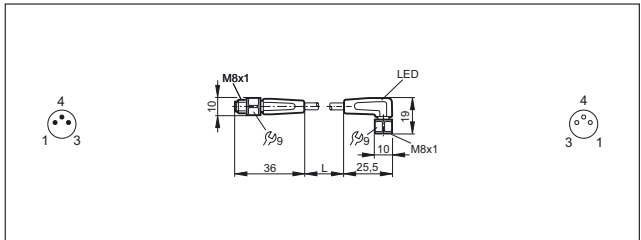
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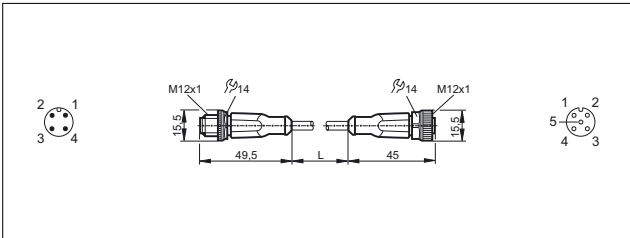
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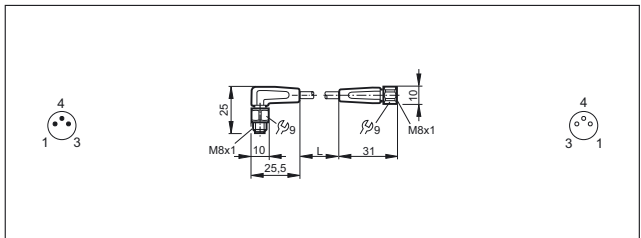
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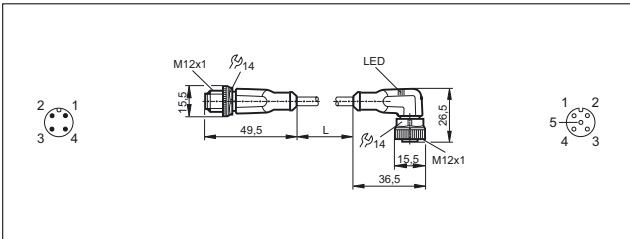
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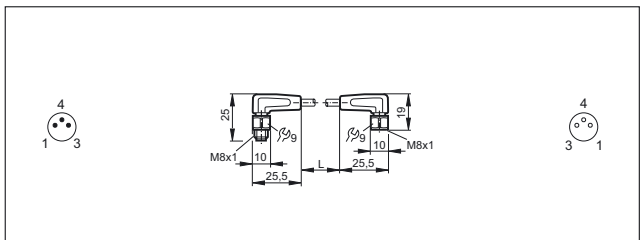
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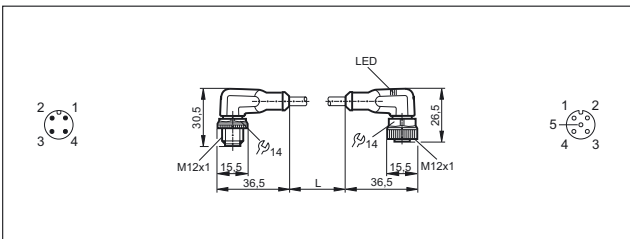
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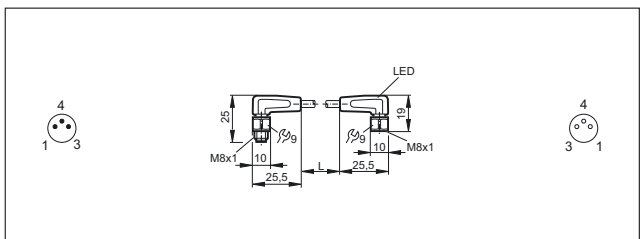
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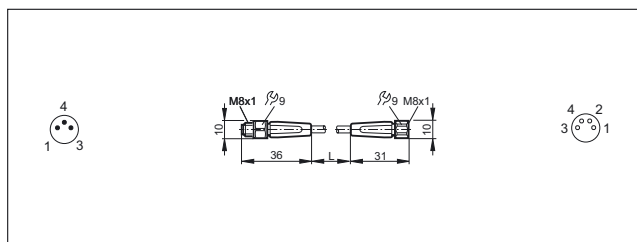


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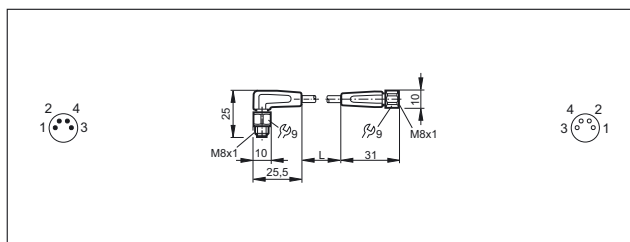


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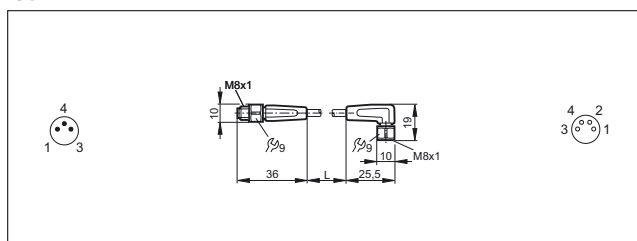
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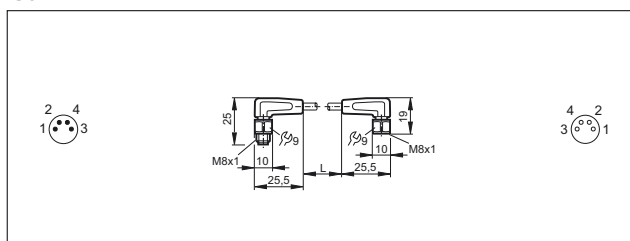
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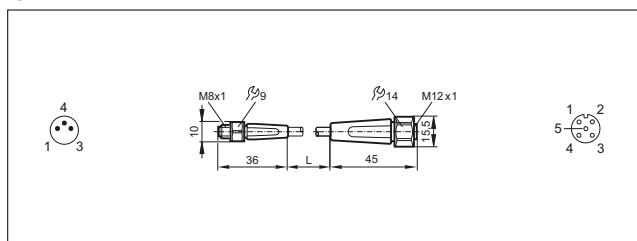
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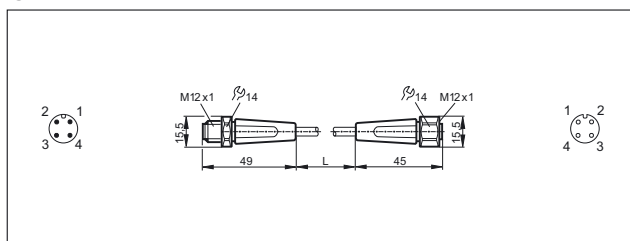
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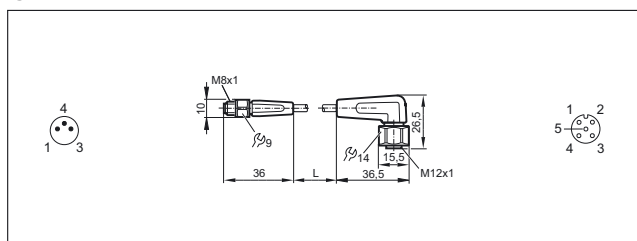
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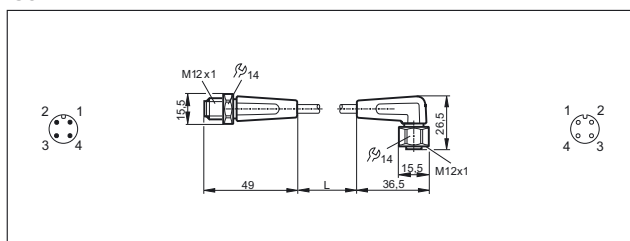
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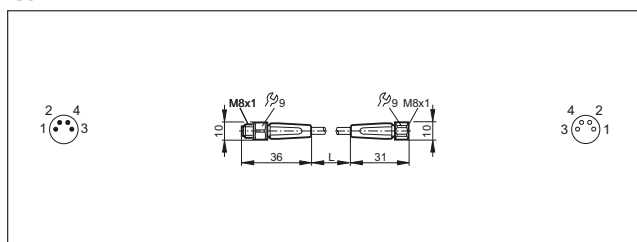
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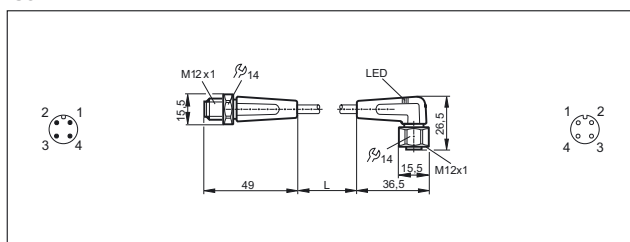
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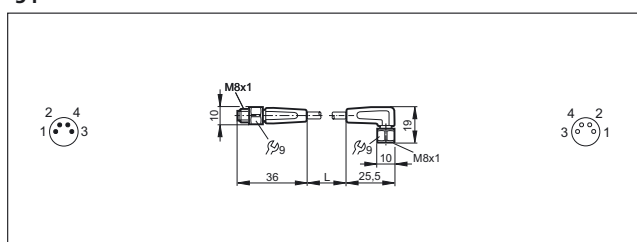
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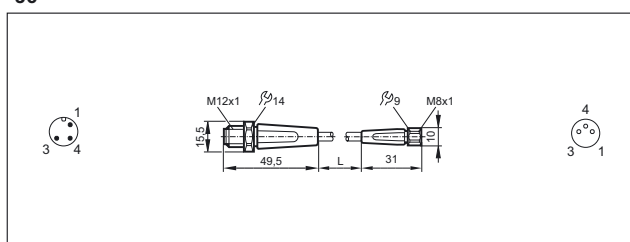
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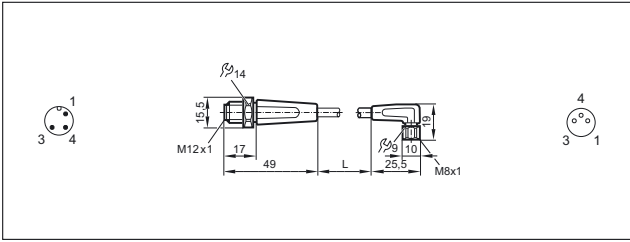




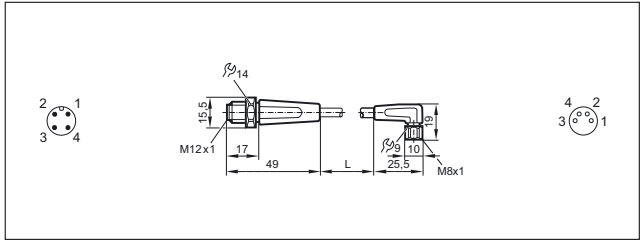
Connection technology

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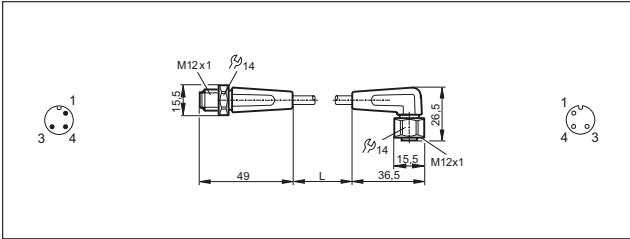
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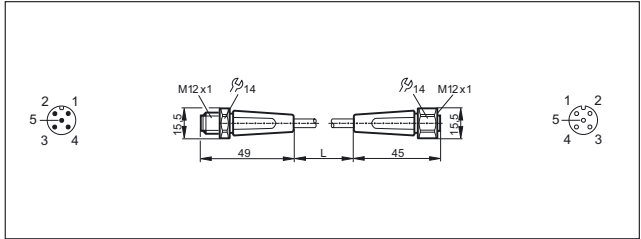
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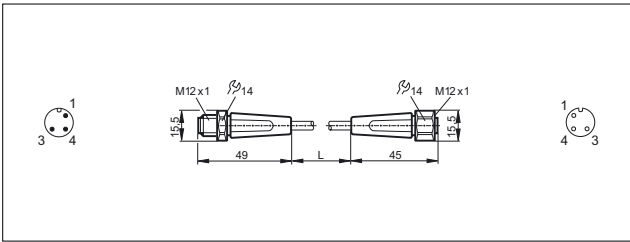
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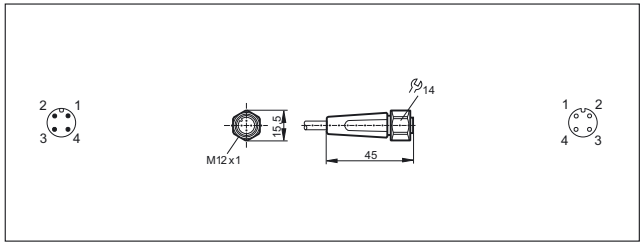
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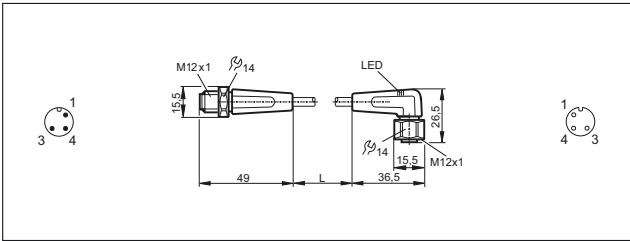
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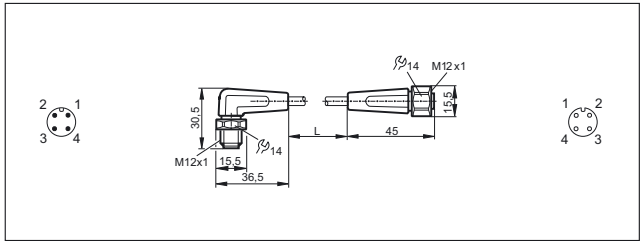
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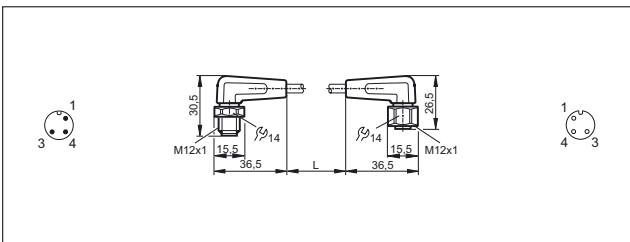
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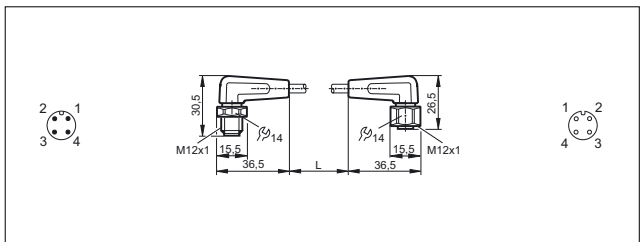
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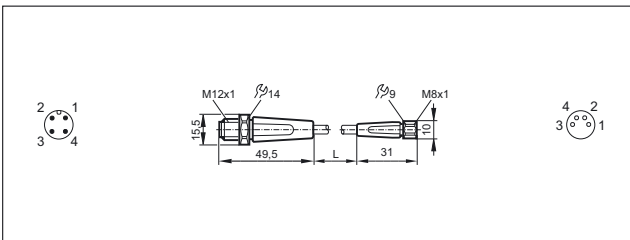
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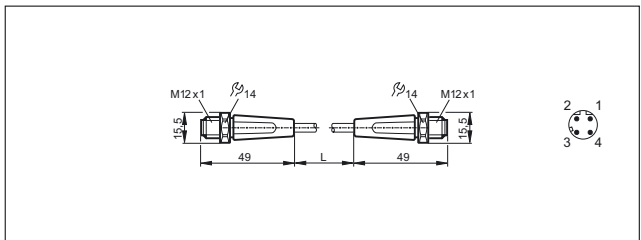
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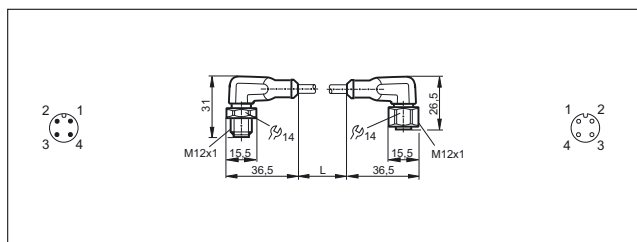


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Connection technology



Splitter boxes

Splitter boxes enable the connection of several sensors and the transmission of the corresponding signals and supply voltages via a multi-wire cable.

This considerably reduces installation and wiring complexity.

In addition to splitter boxes with potted cable, versions with central connector are also available.

System overview	Page
Splitter boxes for industrial applications	836 - 843
Splitter boxes for hygienic and wet areas	843 - 844
Wiring diagrams	844 - 850
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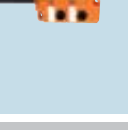
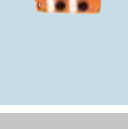
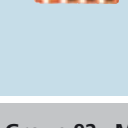
Splitter boxes for industrial applications

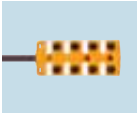
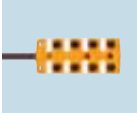
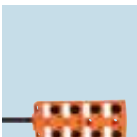
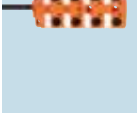
Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 76 · M12 splitter box for 1 signal · Wiring diagram no. 1									
	5 m black PUR cable	4 x 0.25 mm ² , Ø 5 mm	TPU / Brass	10...55 DC	-25...80	IP 67	–	1	E10437
Group 77 · splitter box M8, 3-pole, LED · Wiring diagram no. 20									
	5 m black PUR cable	4 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 6.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 4 x yellow	2	EBC048
	10 m black PUR cable	4 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 6.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 4 x yellow	2	EBC049
Group 78 · splitter box M8, 3-pole, LED · Wiring diagram no. 21									
	M12 connector	–	PBT-GF 20	10...30 DC	-25...80	IP 67 / IP 68	green / 4 x yellow	3	EBC050
Group 79 · splitter box M8, 4-pole, LED · Wiring diagram no. 22									
	5 m black PUR cable	8 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 7.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	4	EBC051
	10 m black PUR cable	8 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 7.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	4	EBC052

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 80 · splitter box M8, 4-pole, LED · Wiring diagram no. 23									
	M16 connector	–	PBT-GF 20	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	5	EBC053
Group 81 · splitter box M8, 3-pole, LED · Wiring diagram no. 24									
	5 m black PUR cable	8 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 7.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	6	EBC054
	10 m black PUR cable	8 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 9.1 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	6	EBC055
Group 82 · splitter box M8, 4-pole, LED · Wiring diagram no. 25									
	5 m black PUR cable	16 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 8.5 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 16 x yellow	7	EBC056
	10 m black PUR cable	16 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 8.5 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 16 x yellow	7	EBC057
Group 83 · splitter box M8, 3-pole, LED · Wiring diagram no. 26									
	5 m black PUR cable	4 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 6.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 4 x yellow	2	EBC058
	10 m black PUR cable	4 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 6.4 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 4 x yellow	2	EBC059
Group 84 · splitter box M8, 3-pole, LED · Wiring diagram no. 27									
	M12 connector	–	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 4 x yellow	3	EBC060
Group 85 · splitter box M8, 4-pole, LED · Wiring diagram no. 28									
	5 m black PUR cable	8 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 7.4 mm	PBT-GF 20	10...30 DC	-20...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	4	EBC061
	10 m black PUR cable	8 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 7.4 mm	PBT-GF 20	10...30 DC	-20...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	4	EBC062
Group 86 · splitter box M8, 4-pole, LED · Wiring diagram no. 29									
	M16 connector	–	PBT-GF 20	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	5	EBC063



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw- ing no.	Order no.
Group 87 · splitter box M8, 3-pole, LED · Wiring diagram no. 30									
	5 m black PUR cable	8 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 9.1 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	6	EBC064
	10 m black PUR cable	8 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 9.1 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 8 x yellow	6	EBC065
Group 88 · splitter box M8, 4-pole, LED · Wiring diagram no. 31									
	5 m black PUR cable	16 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 8.5 mm	PBT-GF 20	10...30 DC	-20...80	IP 65 / IP 67 / IP 68	green / 16 x yellow	7	EBC066
	10 m black PUR cable	16 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 8.5 mm	PBT-GF 20	10...30 DC	-20...80	IP 65 / IP 67 / IP 68	green / 16 x yellow	7	EBC067
Group 89 · M12 splitter box for 1 signal · Wiring diagram no. 2									
	5 m black PUR cable	4 x 0.34 mm ² + 3 x 1 mm ² , Ø 7.5 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	8	EBC013
	10 m black PUR cable	4 x 0.34 mm ² + 3 x 1 mm ² , Ø 7.5 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	8	EBC025
Group 90 · M12 splitter box for 1 signal, LED · Wiring diagram no. 32									
	5 m black PUR cable	4 x 0.34 mm ² + 3 x 1 mm ² , Ø 7.5 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 4 x yellow	9	EBC015
	10 m black PUR cable	4 x 0.34 mm ² + 3 x 1 mm ² , Ø 7.5 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 4 x yellow	9	EBC027
Group 91 · M12 splitter box for 1 signal · Wiring diagram no. 3									
	5 m black PUR cable	6 x 0.34 mm ² + 3 x 1 mm ² , Ø 7.8 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	10	EBC017
	10 m black PUR cable	6 x 0.34 mm ² + 3 x 1 mm ² , Ø 7.8 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	10	EBC029
Group 92 · M12 splitter box for 1 signal, LED · Wiring diagram no. 33									
	5 m black PUR cable	6 x 0.34 mm ² + 3 x 1 mm ² , Ø 7.8 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 6 x yellow	11	EBC019
	10 m black PUR cable	6 x 0.34 mm ² + 3 x 1 mm ² , Ø 7.8 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 6 x yellow	11	EBC031

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.
Group 93 · M12 splitter box for 1 signal · Wiring diagram no. 4									
	5 m black PUR cable	8 x 0.34 mm ² + 3 x 0.75 mm ² , Ø 8.2 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	12	EBC021
	10 m black PUR cable	8 x 0.34 mm ² + 3 x 0.75 mm ² , Ø 8.2 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	12	EBC033
Group 94 · M12 splitter box for 1 signal, LED · Wiring diagram no. 34									
	5 m black PUR cable	8 x 0.34 mm ² + 3 x 0.75 mm ² , Ø 8.2 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	13	EBC023
	10 m black PUR cable	8 x 0.34 mm ² + 3 x 0.75 mm ² , Ø 8.2 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	13	EBC035
Group 95 · M12 splitter box for 1 signal · Wiring diagram no. 5									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	14	EBC001
Group 96 · M12 splitter box for 1 signal, LED · Wiring diagram no. 35									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 4 x yellow	15	EBC002
Group 97 · M12 splitter box for 1 signal · Wiring diagram no. 6									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	16	EBC005
Group 98 · M12 splitter box for 1 signal, LED · Wiring diagram no. 36									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 6 x yellow	17	EBC006
Group 99 · M12 splitter box for 1 signal · Wiring diagram no. 7									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	18	EBC009
Group 100 · M12 splitter box for 1 signal, LED · Wiring diagram no. 37									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 8 x yellow	19	EBC010



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Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 101 · M12 splitter box for 2 signals · Wiring diagram no. 8									
	5 m black PUR cable	8 x 0.34 mm ² + 3 x 1.0 mm ² , Ø 8.2 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	8	EBC014
	10 m black PUR cable	8 x 0.34 mm ² + 3 x 1.0 mm ² , Ø 8.2 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	8	EBC026
Group 102 · M12 splitter box for 2 signals, LED · Wiring diagram no. 38									
	5 m black PUR cable	8 x 0.34 mm ² + 3 x 1.0 mm ² , Ø 8.2 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	20	EBC016
	10 m black PUR cable	8 x 0.34 mm ² + 3 x 1.0 mm ² , Ø 8.2 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	20	EBC028
Group 103 · M12 splitter box for 2 signals · Wiring diagram no. 39									
	5 m black PUR cable	12 x 0.34 mm ² + 3 x 1.0 mm ² , Ø 8.8 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	10	EBC018
	10 m black PUR cable	12 x 0.34 mm ² + 3 x 1.0 mm ² , Ø 8.8 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	10	EBC030
Group 104 · M12 splitter box for 2 signals, LED · Wiring diagram no. 40									
	5 m black PUR cable	12 x 0.34 mm ² + 3 x 1.0 mm ² , Ø 8.8 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 12 x yellow	21	EBC020
	10 m black PUR cable	12 x 0.34 mm ² + 3 x 1.0 mm ² , Ø 8.8 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 12 x yellow	21	EBC032
Group 105 · M12 splitter box for 2 signals · Wiring diagram no. 41									
	5 m black PUR cable	16 x 0.34 mm ² + 3 x 0.75 mm ² , Ø 9.7 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	12	EBC022
	10 m black PUR cable	16 x 0.34 mm ² + 3 x 0.75 mm ² , Ø 9.7 mm	PA	30 AC/DC	-25...80	IP 67 / IP 68	–	12	EBC034
Group 106 · M12 splitter box for 2 signals, LED · Wiring diagram no. 42									
	5 m black PUR cable	16 x 0.34 mm ² + 3 x 1.0 mm ² , Ø 9.7 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 16 x yellow	22	EBC024
	10 m black PUR cable	16 x 0.34 mm ² + 3 x 1.0 mm ² , Ø 9.7 mm	PA	10...30 DC	-25...80	IP 67 / IP 68	green / 16 x yellow	22	EBC036

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 107 · M12 splitter box for 2 signals · Wiring diagram no. 9									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	23	EBC003
Group 108 · M12 splitter box for 2 signals, LED · Wiring diagram no. 43									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 8 x yellow	24	EBC004
Group 109 · M12 splitter box for 2 signals · Wiring diagram no. 10									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	25	EBC007
Group 110 · M12 splitter box for 2 signals, LED · Wiring diagram no. 44									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 12 x yellow	26	EBC008
Group 111 · M12 splitter box for 2 signals · Wiring diagram no. 11									
	M23 connector	–	PA	30 AC/DC	-25...80	IP 67	–	27	EBC011
Group 112 · M12 splitter box for 2 signals, LED · Wiring diagram no. 45									
	M23 connector	–	PA	10...30 DC	-25...80	IP 67	green / 16 x yellow	28	EBC012
Group 113 · Y splitter , 5-pole · Wiring diagram no. 12									
	M12 connector	–	PUR / diecast zinc	60 DC	-25...85	IP 67	–	29	E12481
Group 114 · Y splitter M12-plug / 2x M8-socket, 4/3-pole · Wiring diagram no. 13									
		–	PA / Brass	50 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	30	EBC112
Group 115 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 13									
		–	PA / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EBC113
Group 116 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 16									
		–	PA / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EBC114

You can find wiring diagrams and scale drawings from page 844



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 117 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 14									
		–	PA / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EBC115
Group 118 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 15									
		–	PA / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EBC116
Group 119 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 17									
		–	PA / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EBC117
Group 120 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 18									
		–	PA / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	31	EBC118
Group 121 · splitter box M8, 3-pole, LED · Wiring diagram no. 48									
	5 m black PUR cable	10 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 9.1 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 10 x yellow	35	EBC136
	10 m black PUR cable	10 x 0.34 mm ² + 2 x 0.75 mm ² , Ø 9.1 mm	PBT-GF 20	10...30 DC	-25...80	IP 65 / IP 67 / IP 68	green / 10 x yellow	35	EBC137
Group 122 · splitter box M8, 4-pole, LED · Wiring diagram no. 46									
	M12 connector	–	PBT-GF 20	15...30 DC	-25...80	IP 67 / IP 68	green / 8 x yellow	34	EBC138
Group 123 · splitter box M8, 4-pole, LED · Wiring diagram no. 47									
	M12 connector	–	PBT-GF 20	15...30 DC	-25...80	IP 67 / IP 68	green / 10 x yellow	36	EBC139
Group 124 · Y splitter M12-plug / 2 x M12-socket, 4/5-pole · Wiring diagram no. 13									
		–	PA / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EBT006
Group 125 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 16									
		–	PA / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EBT007

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 126 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 14

		–	PA / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EBT008

Group 127 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 15

		–	PA / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EBT009

Group 128 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 19

		–	PA / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EBT010

Group 129 · Y splitter M12-plug / 2 x M12-socket, 5-pole · Wiring diagram no. 18

		–	PA / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EBT011

Splitter boxes for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 130 · splitter box M12, LED · Wiring diagram no. 42

	10 m black PUR / PVC cable	3 x 0.75 mm ² + 16 x 0.34 mm ² , Ø 11 mm	high-grade stainless steel	10...36 DC	-5...70	IP 69K	green / 16 x yellow	37	E11775

Group 131 · Y splitter M12-plug / 2 x M12-socket, 4/5-pole · halogen-free · Wiring diagram no. 13

		–	PP / stainless steel 316L / 1.4404	250 AC 300 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	32	EBF006

Group 132 · Y splitter M12-plug / 2 x M12-socket, 5-pole · halogen-free · Wiring diagram no. 16

		–	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EBF007

Group 133 · Y splitter M12-plug / 2 x M12-socket, 5-pole · halogen-free · Wiring diagram no. 14

		–	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EBF008

Group 134 · Y splitter M12-plug / 2 x M12-socket, 5-pole · halogen-free · Wiring diagram no. 15

		–	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EBF009

You can find wiring diagrams and scale drawings from page 844



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 135 · Y splitter M12-plug / 2 x M12-socket, 5-pole · halogen-free · Wiring diagram no. 19



–	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EBF010

Group 136 · Y splitter M12-plug / 2 x M12-socket, 5-pole · halogen-free · Wiring diagram no. 18

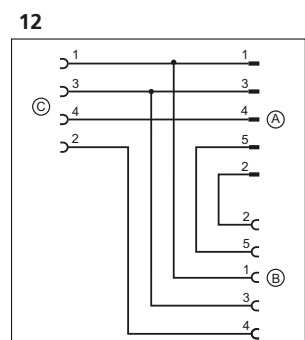
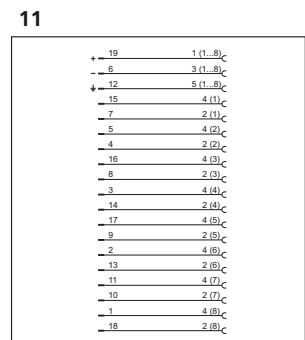
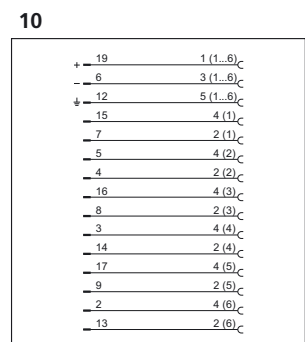
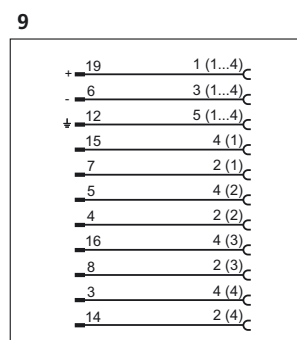
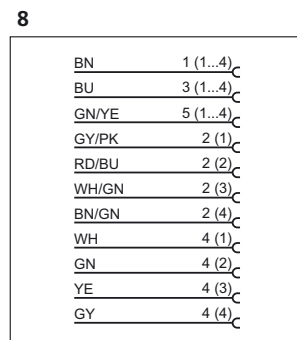
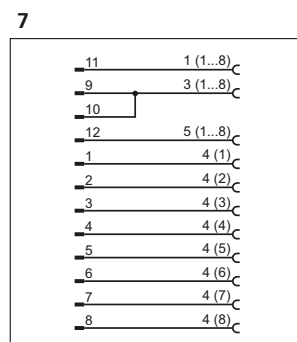
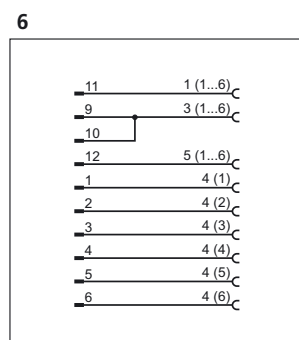
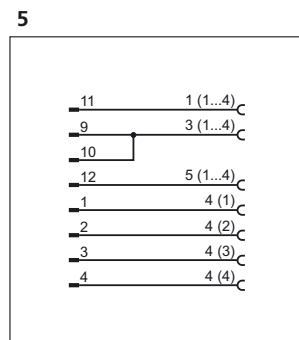
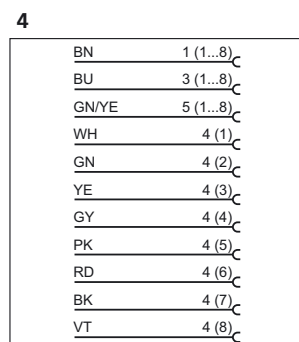
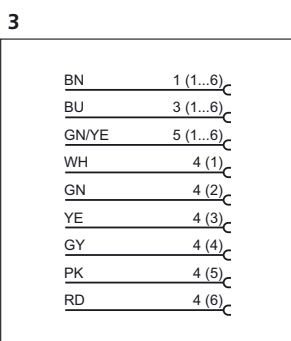
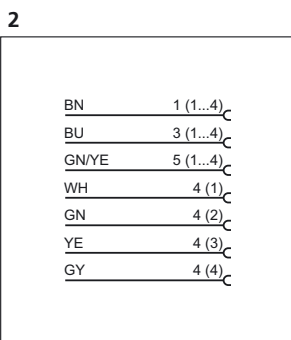
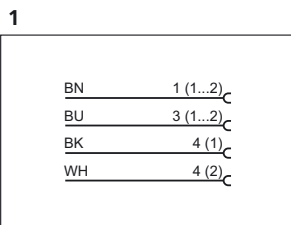


–	PP / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	33	EBF011

Wiring diagrams

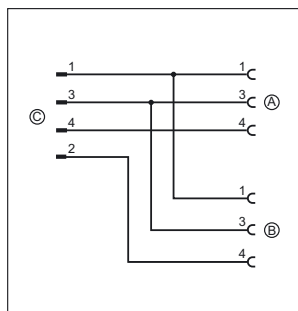
Core colours

BK	black
BN	brown
BU	blue
WH	white
GN	green
GY	grey
YE	yellow
PK	pink
RD	red
VT	purple
GN/YE	green/yellow

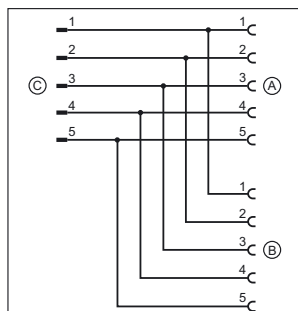


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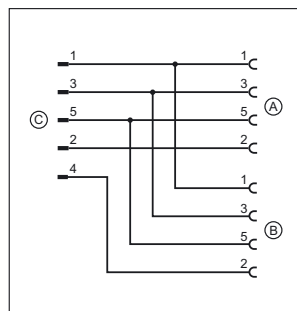
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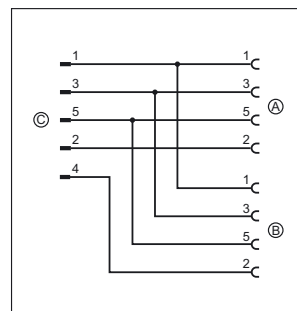
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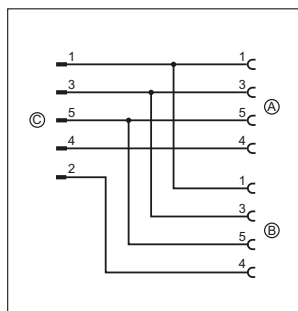
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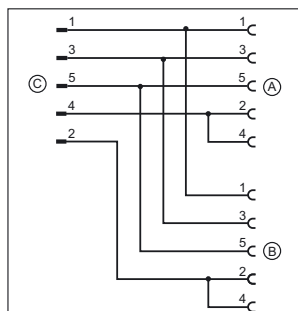
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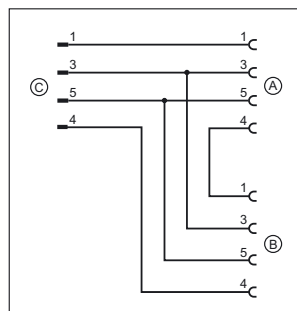
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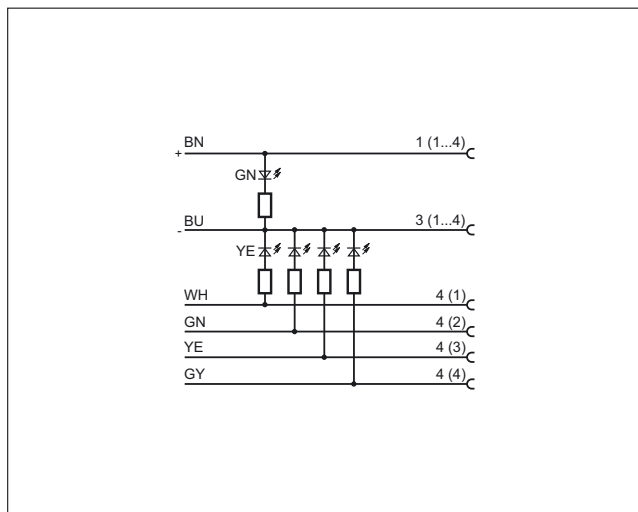
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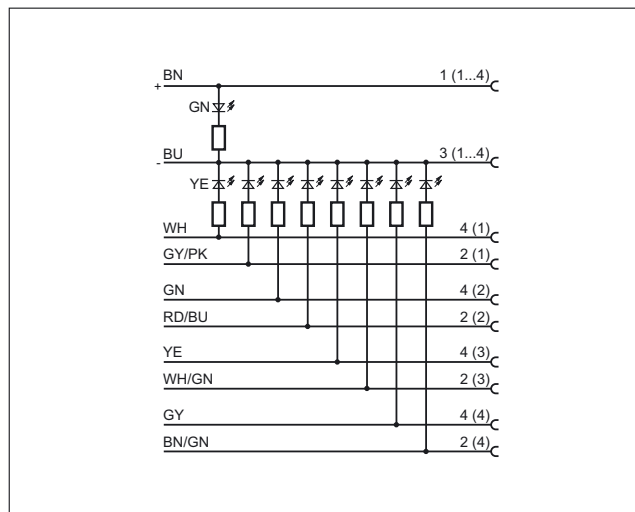
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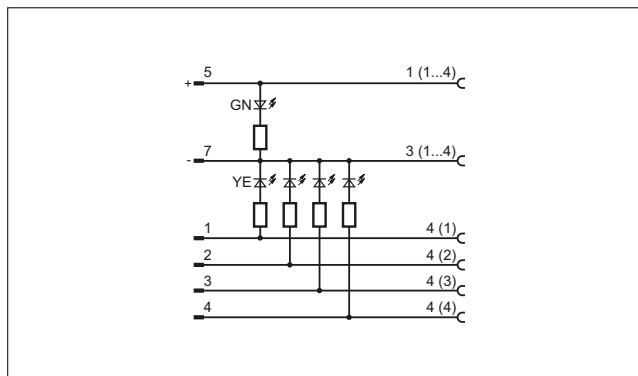
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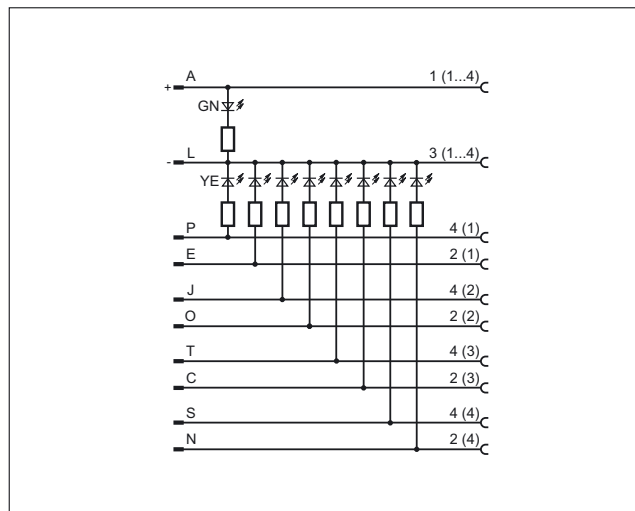
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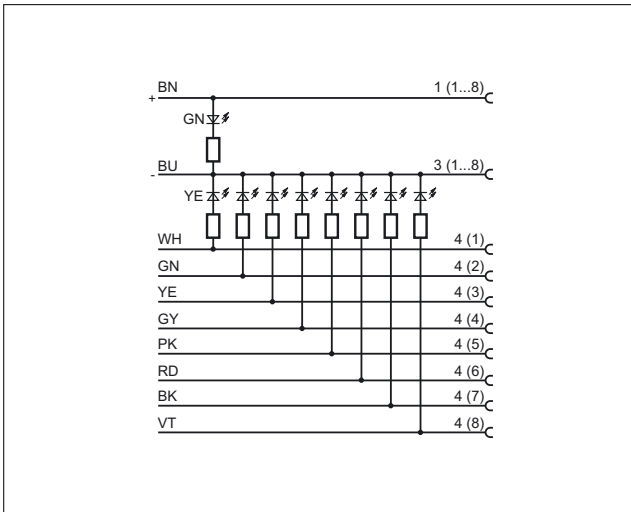




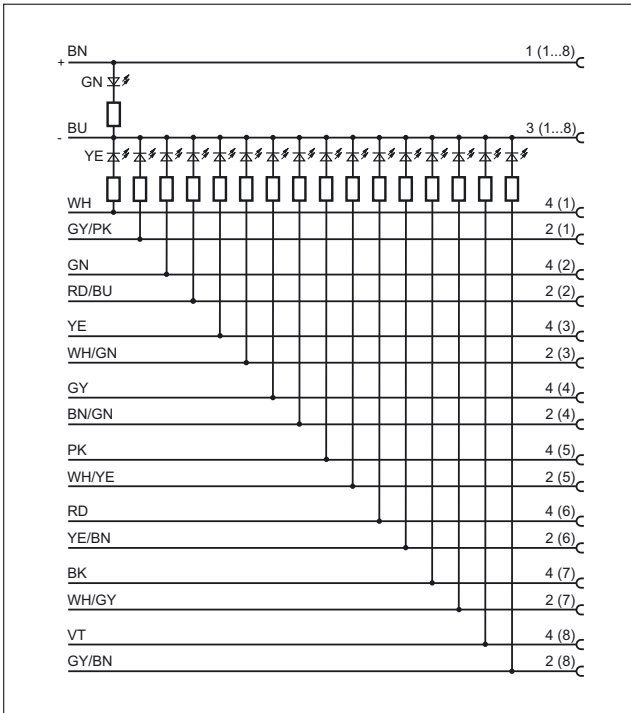
Connection technology

Wiring diagrams

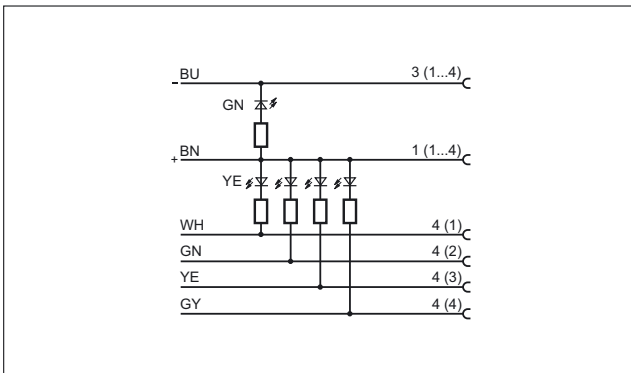
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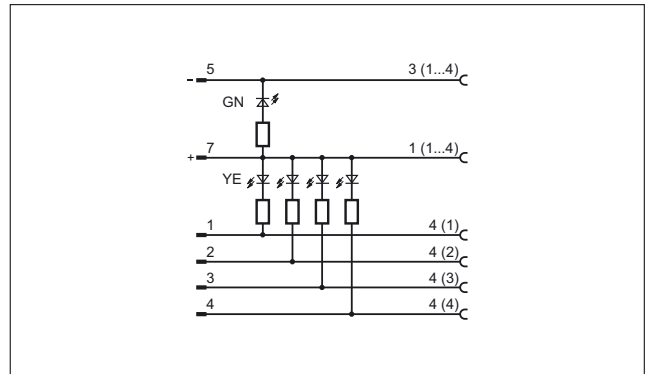
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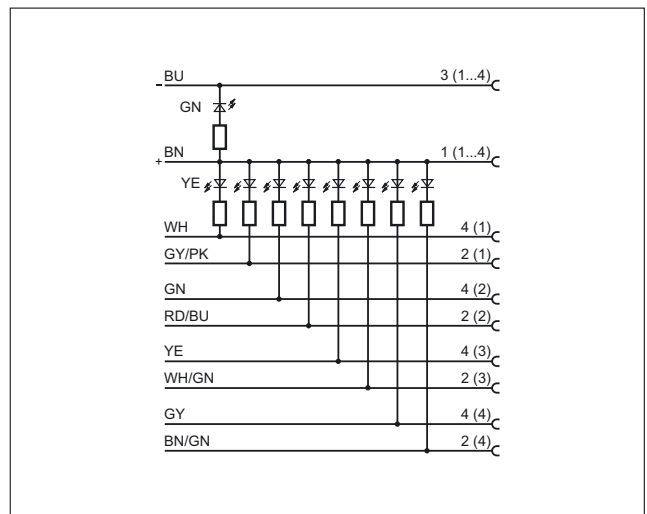
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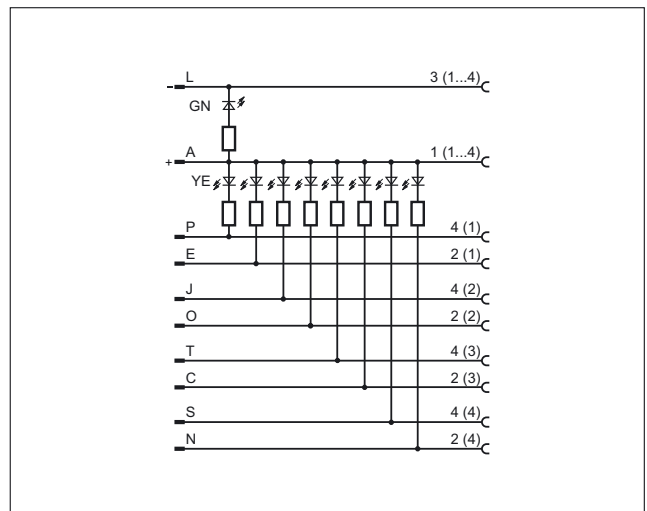
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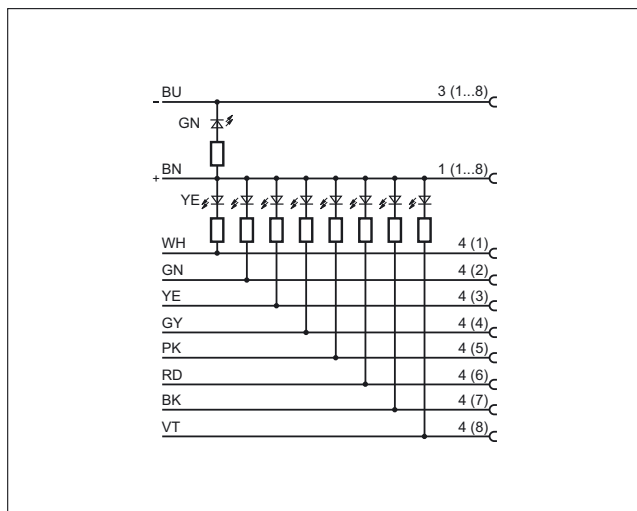


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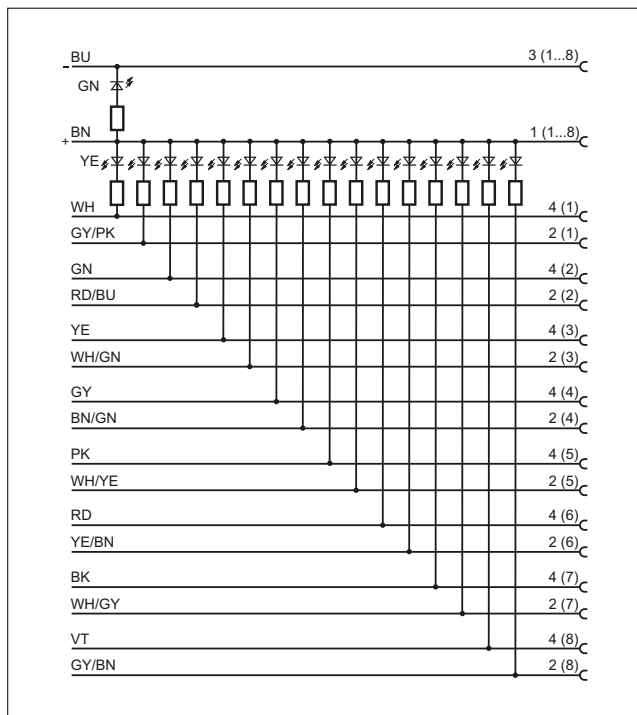


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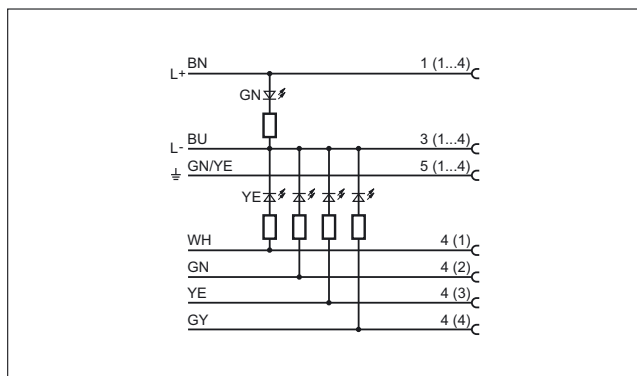
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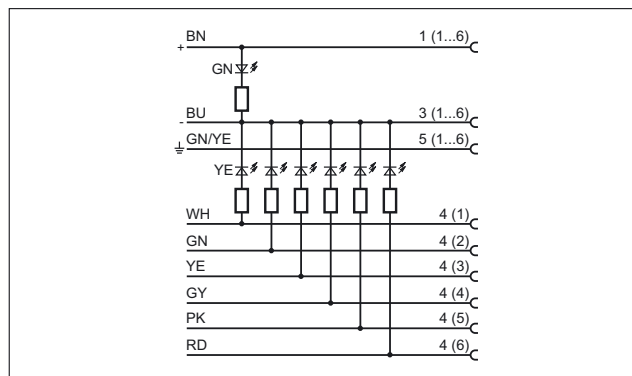
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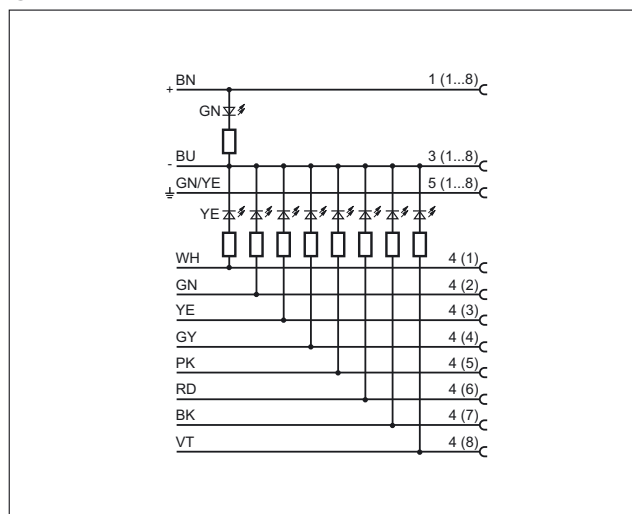
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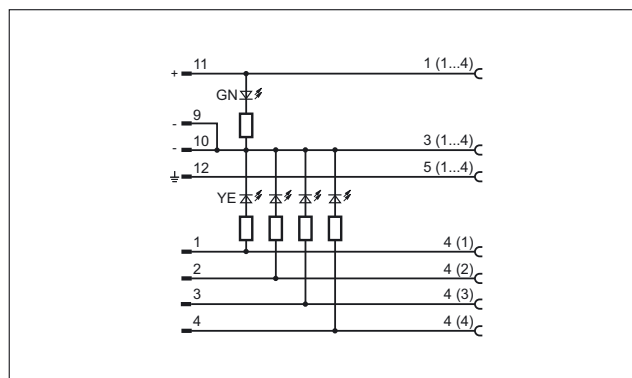
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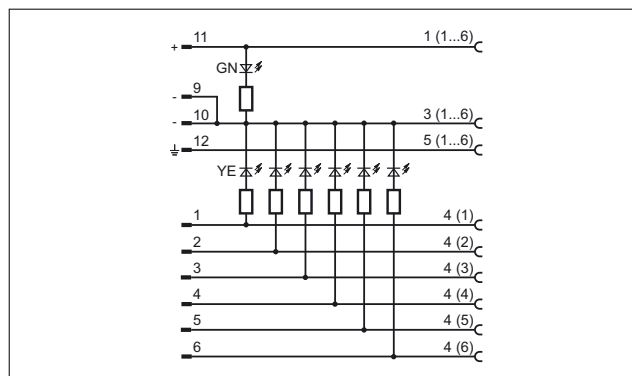
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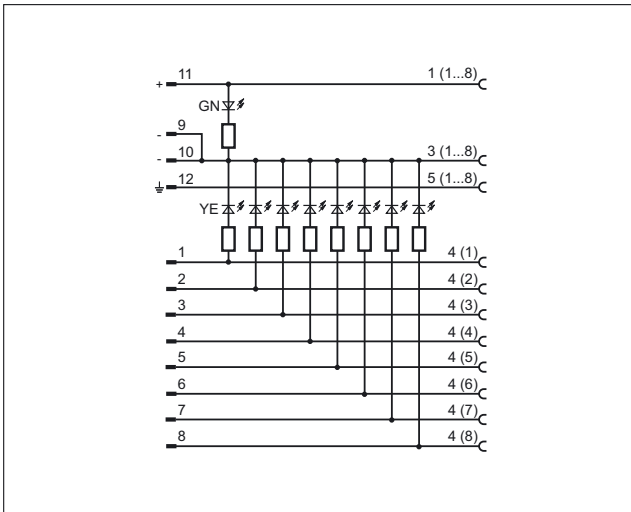




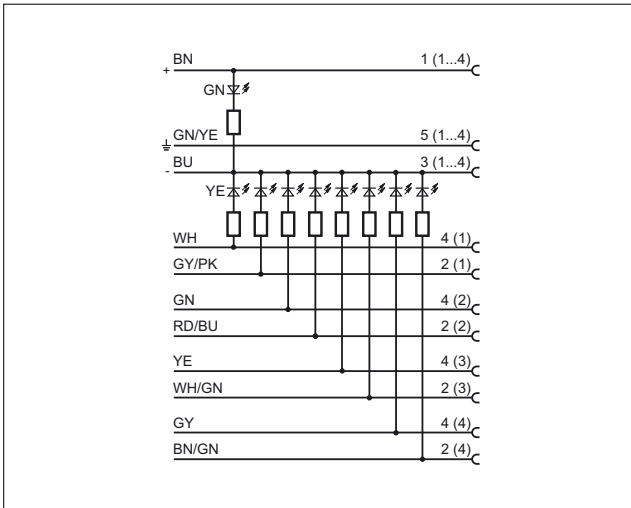
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Wiring diagrams

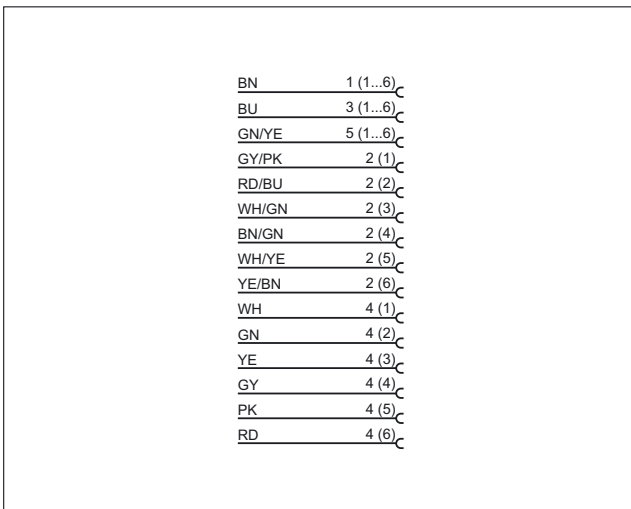
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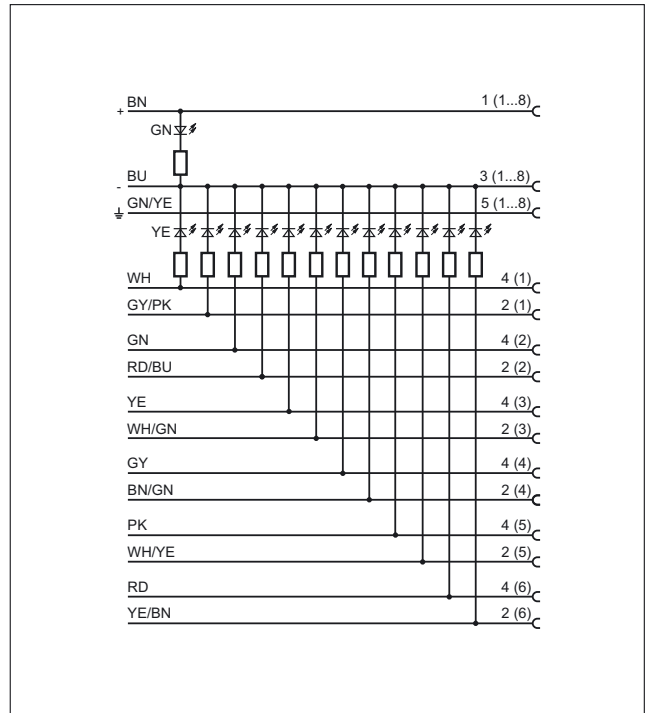
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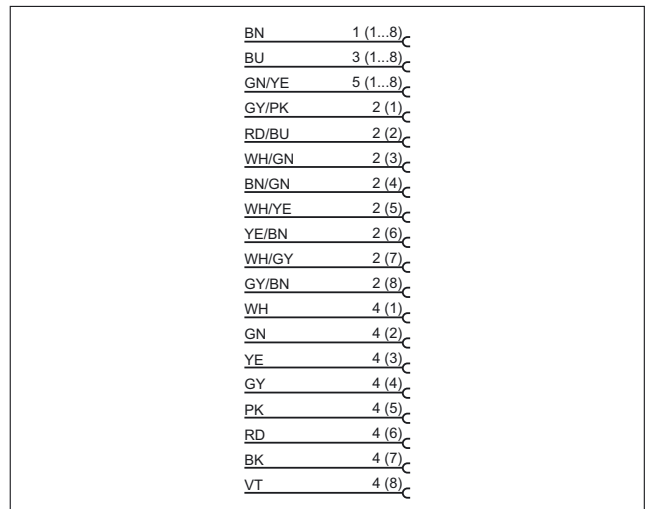
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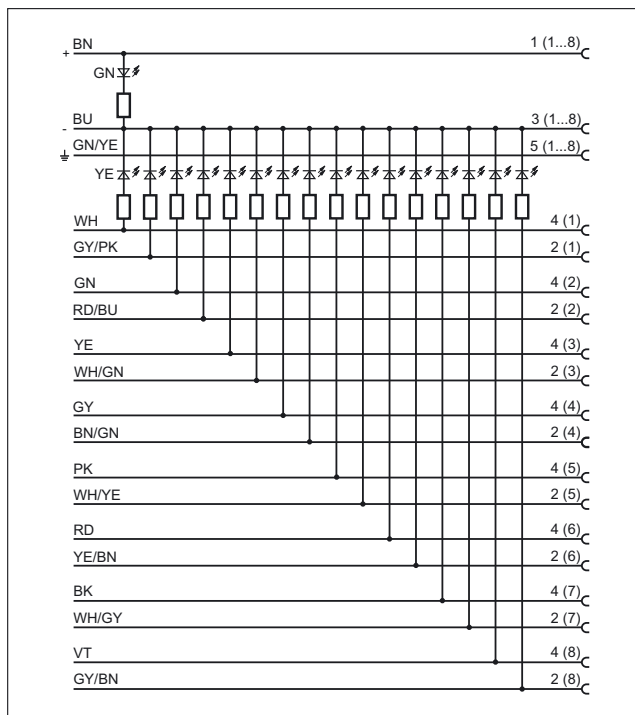


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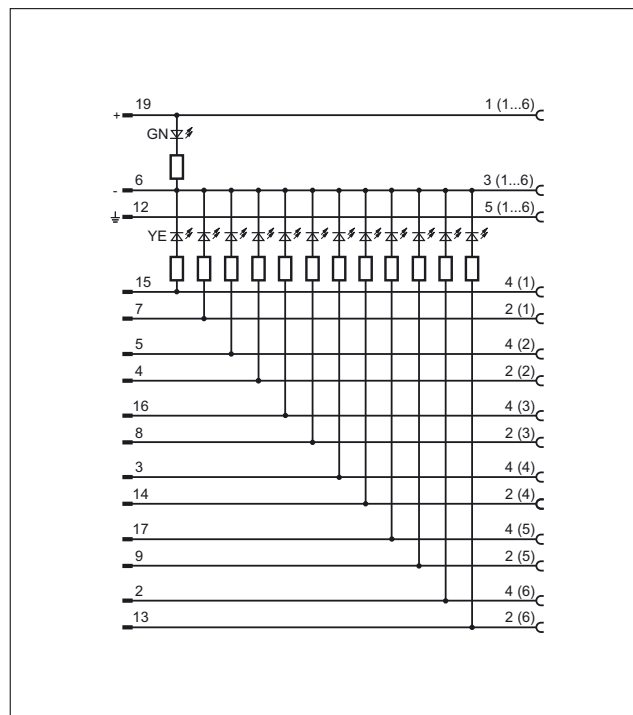


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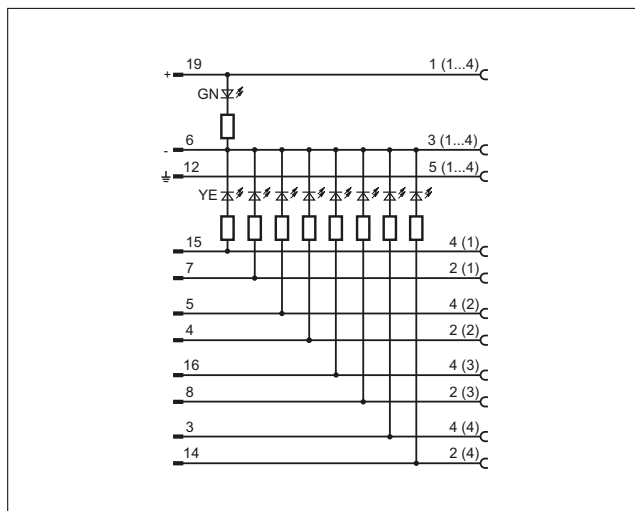
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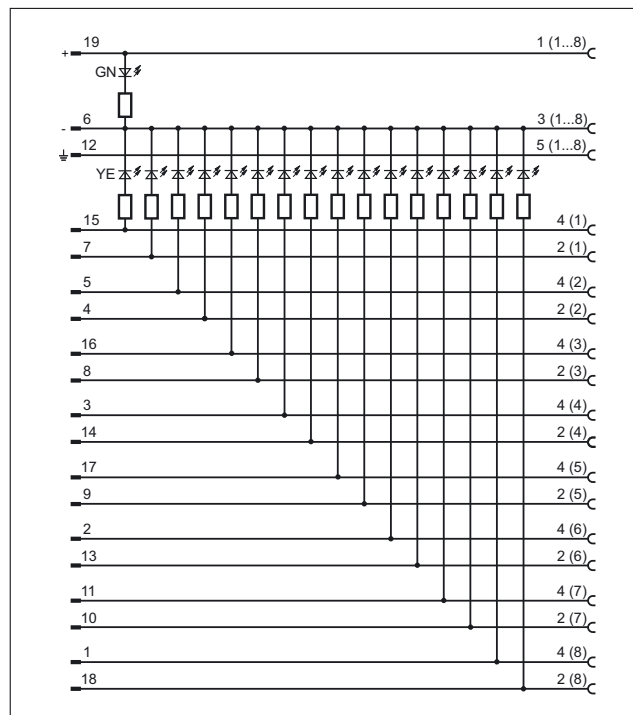
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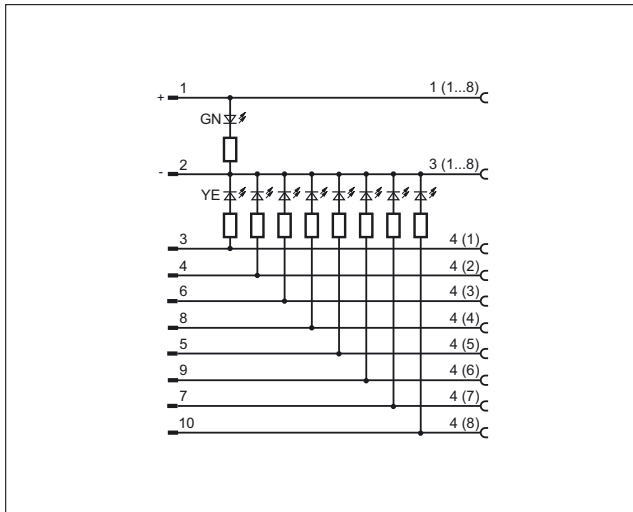




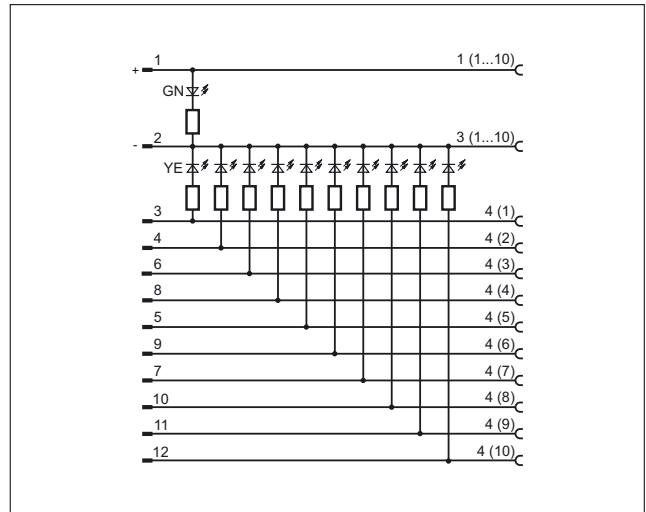
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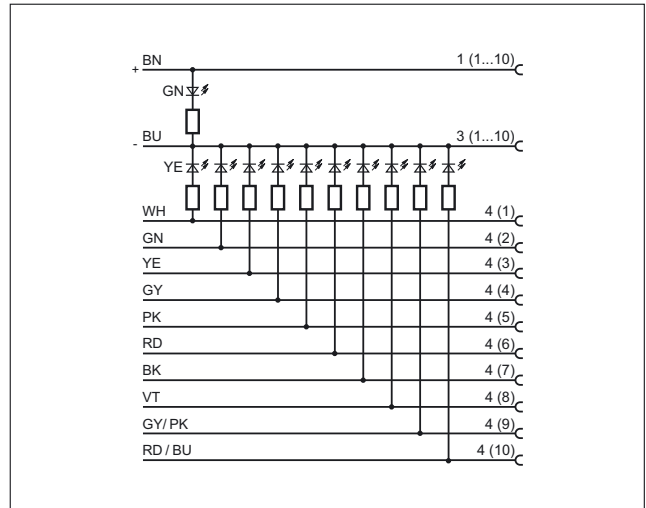
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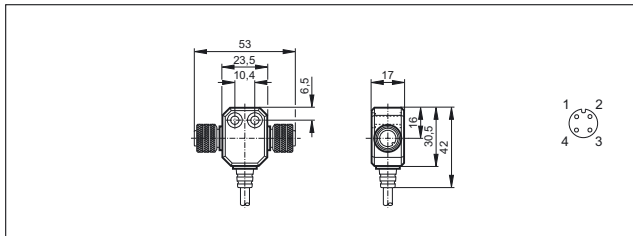


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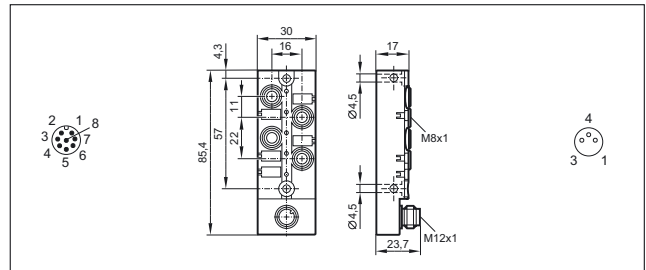


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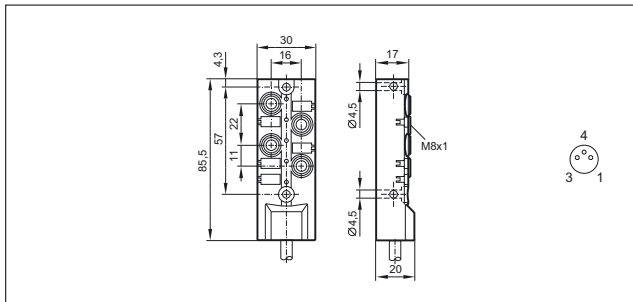
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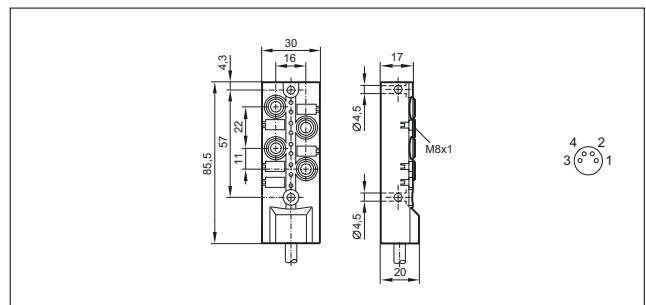
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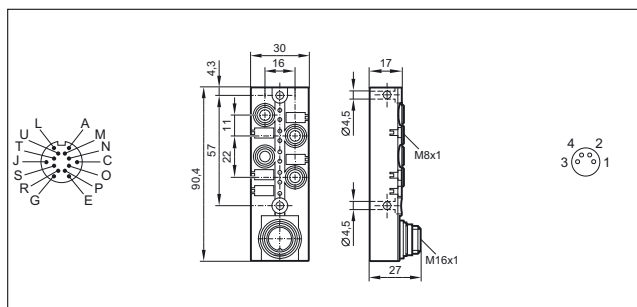


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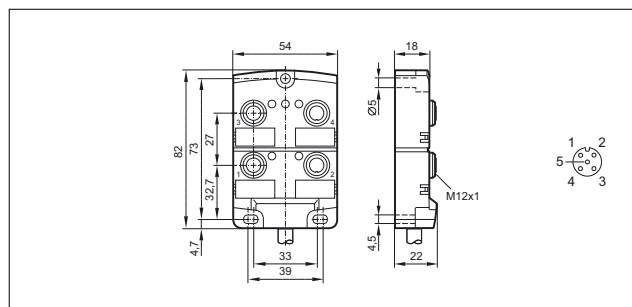


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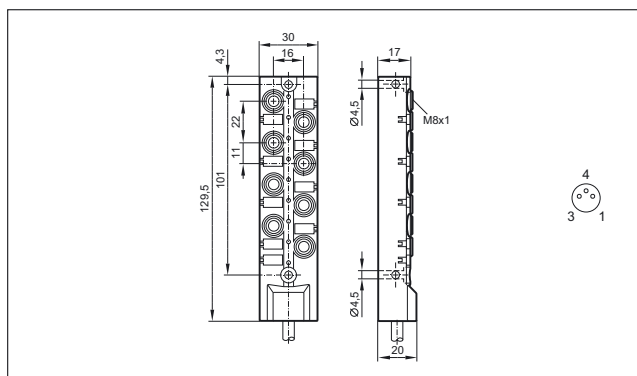
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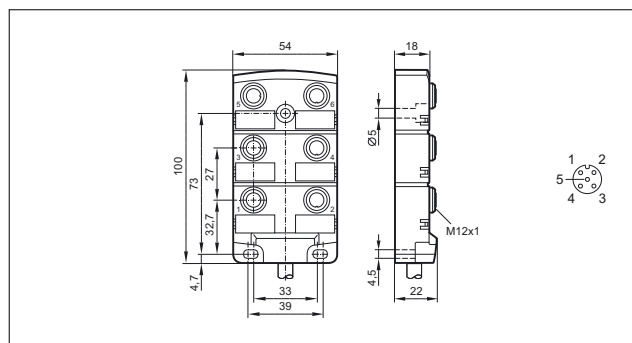
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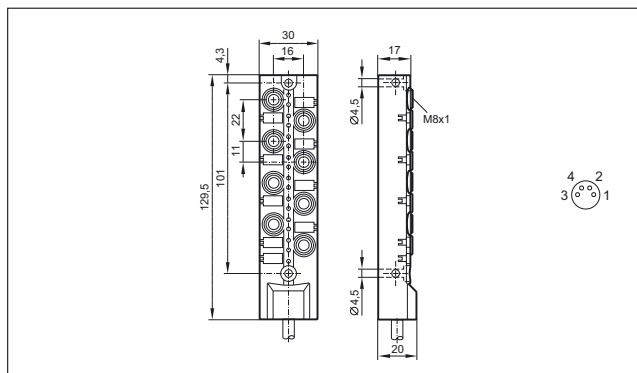
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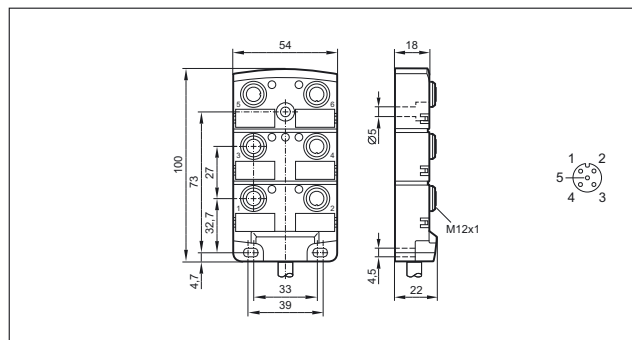
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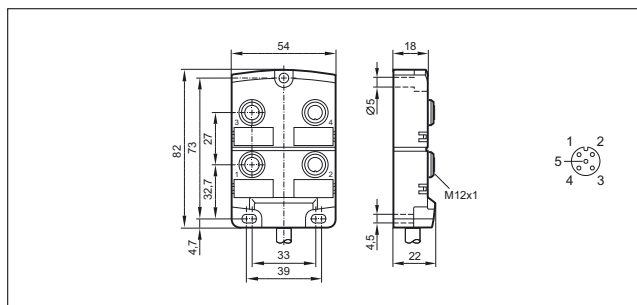
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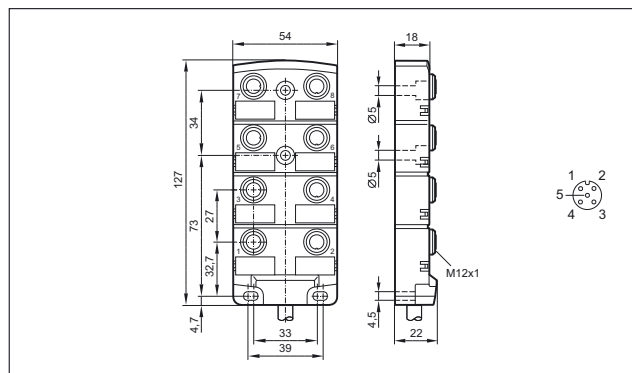
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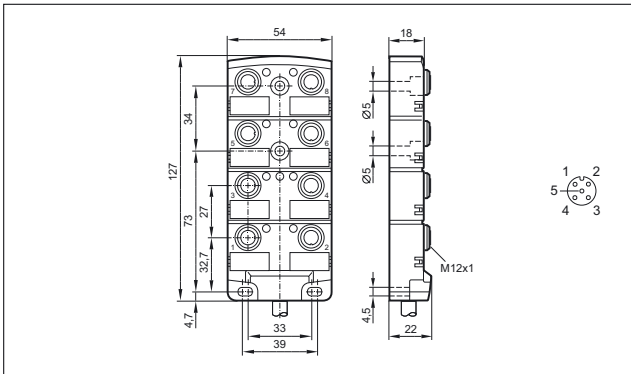




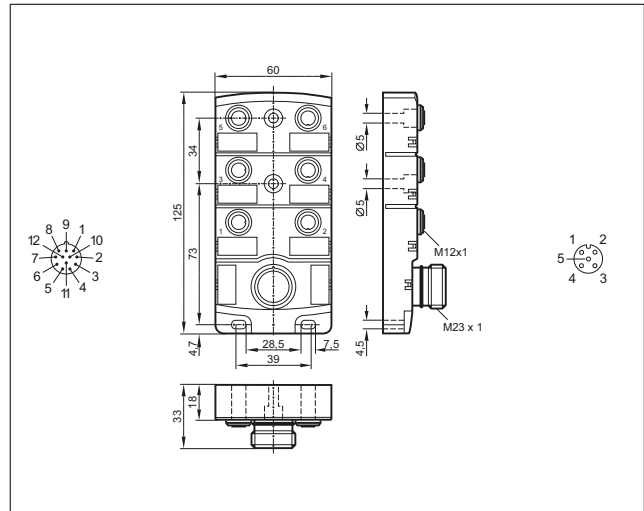
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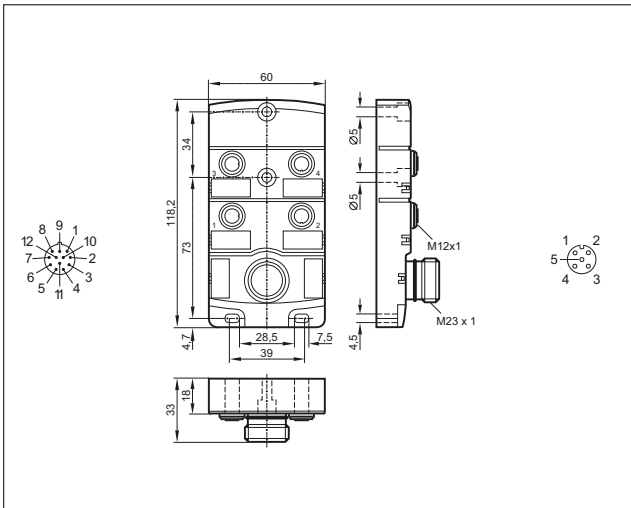
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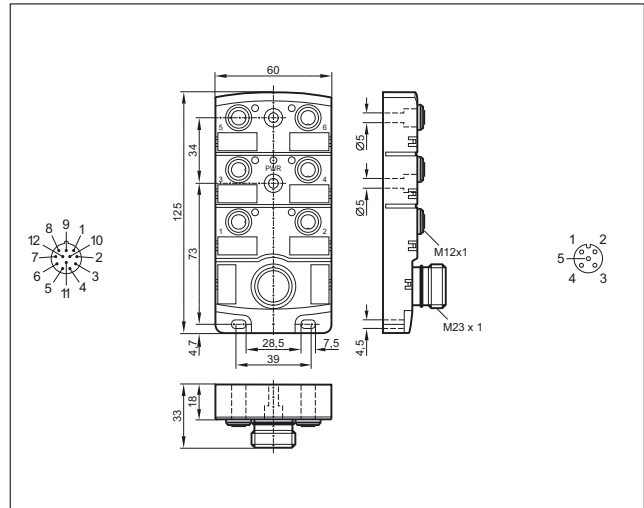
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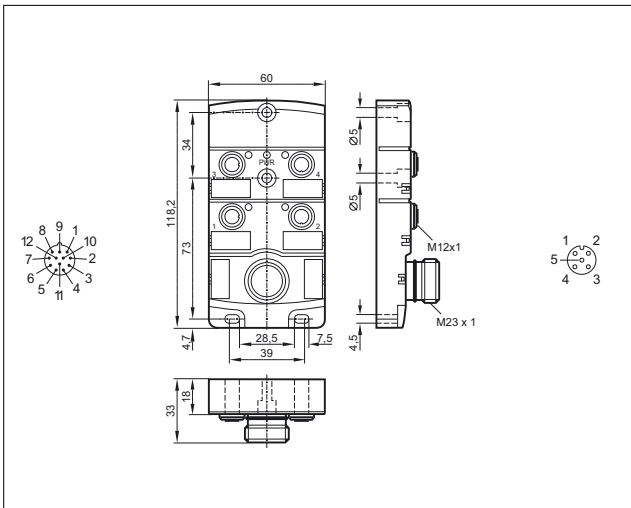
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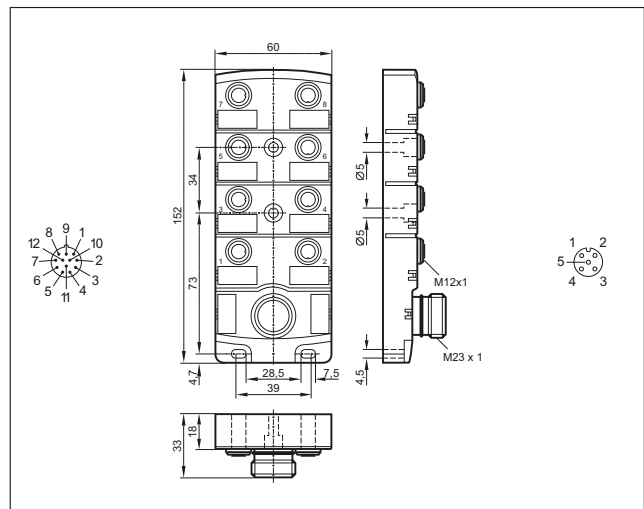
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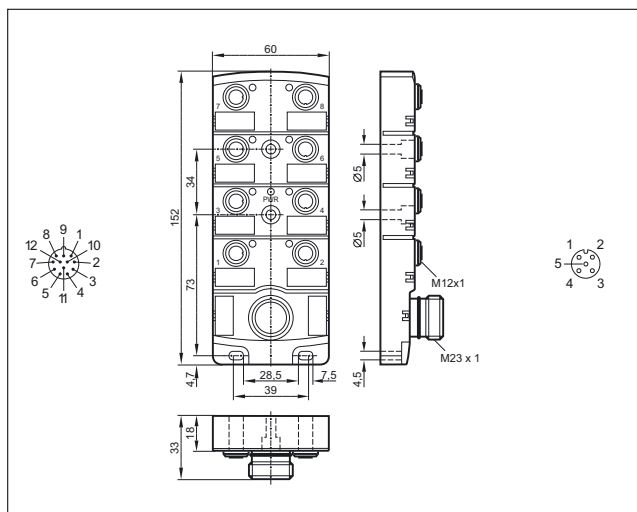


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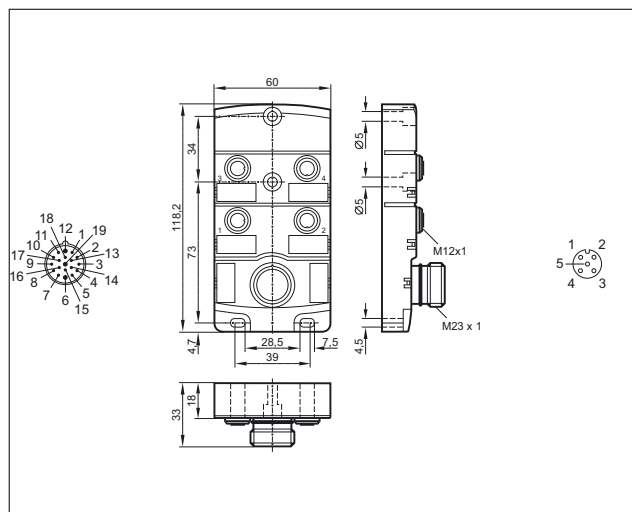


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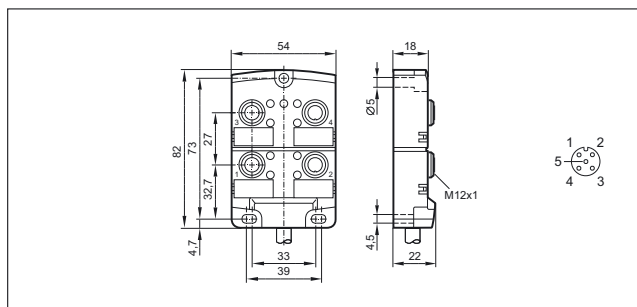
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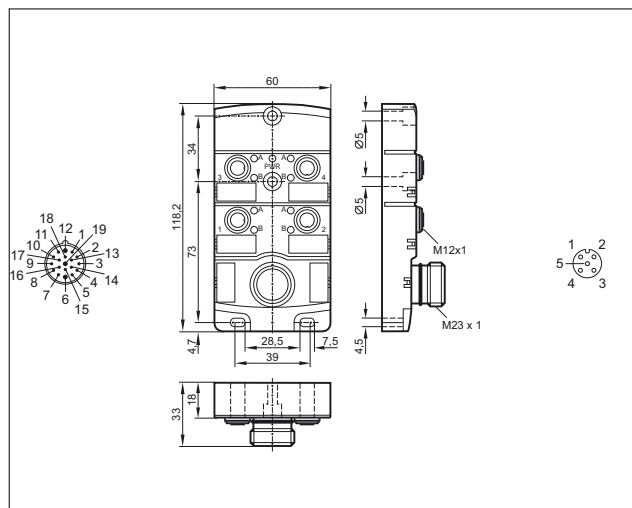
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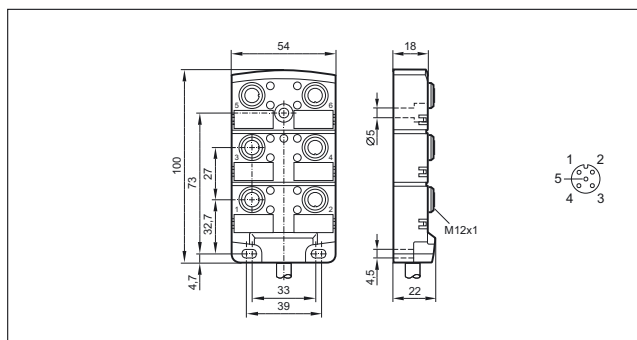
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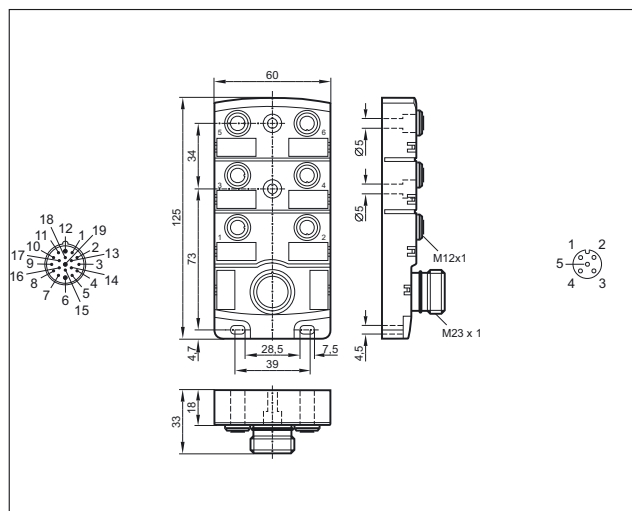
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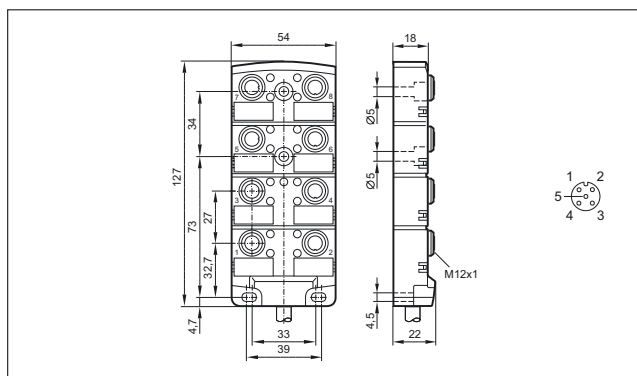
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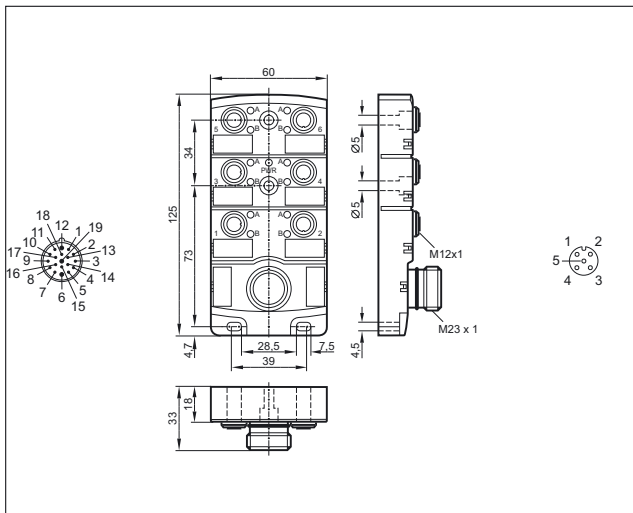




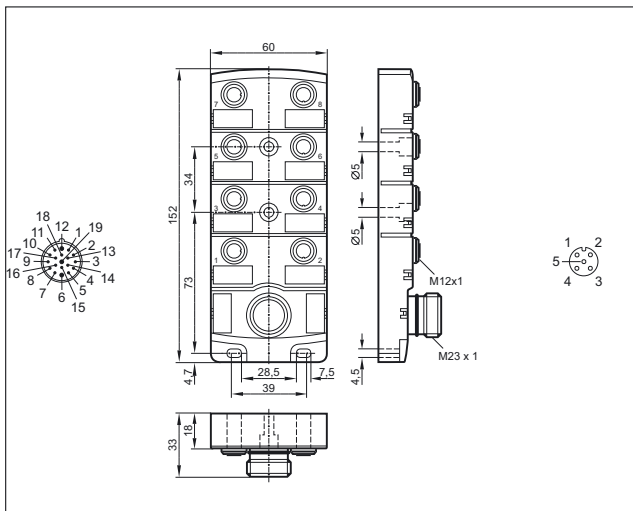
Connection technology

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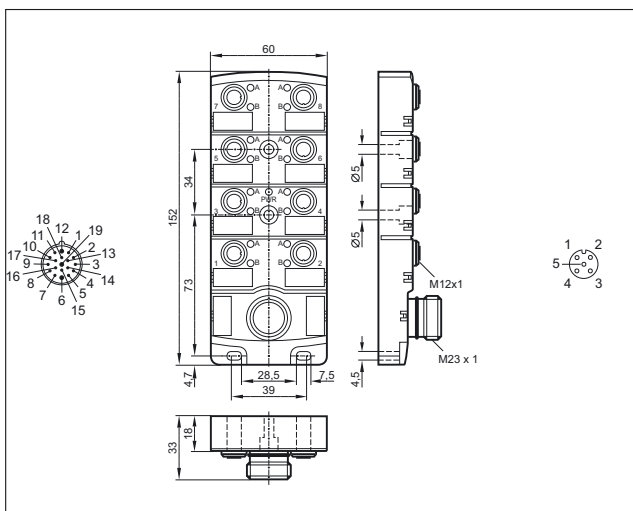
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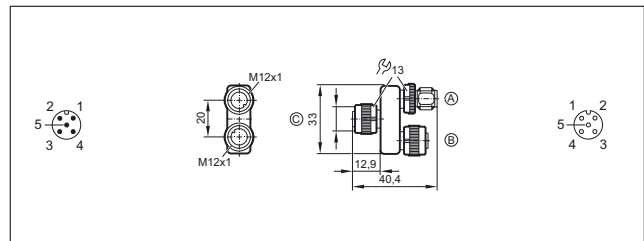
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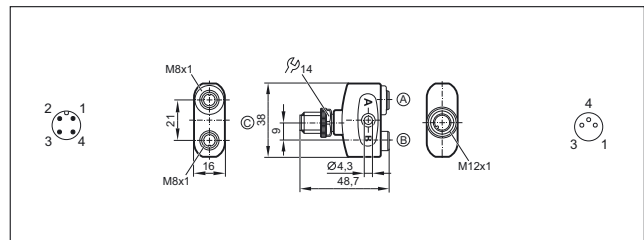
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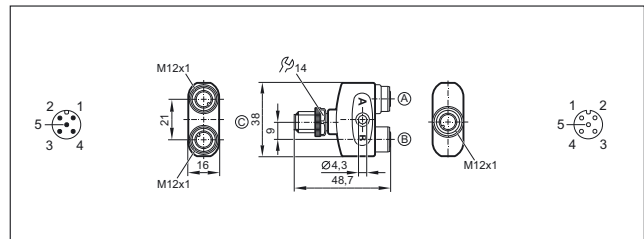
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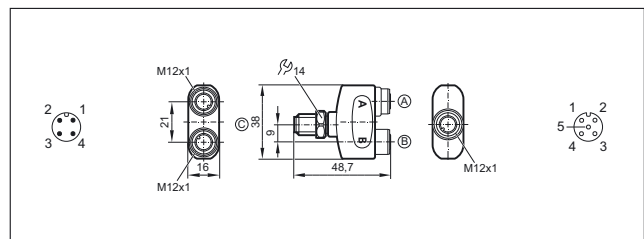
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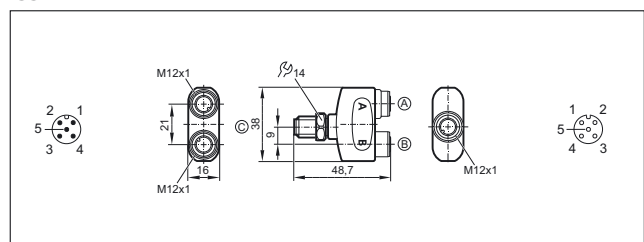
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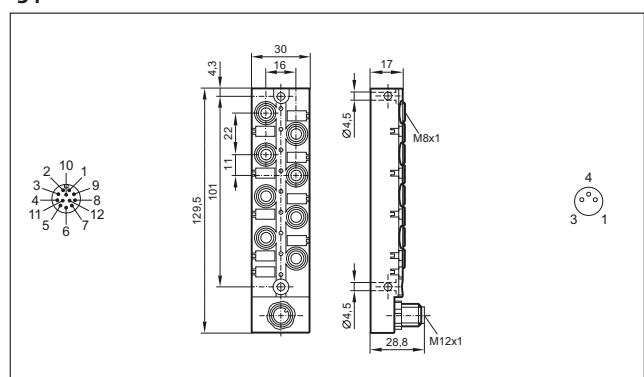
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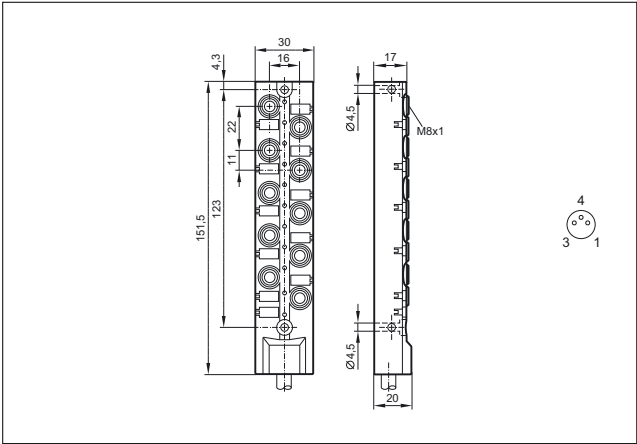


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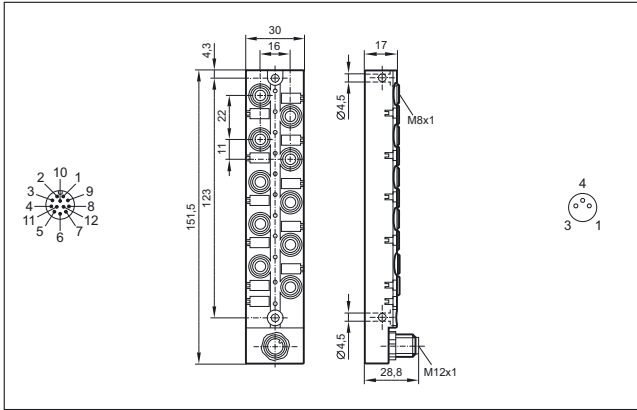


Scale drawings / drawing no. – CAD download: www.ifm.com

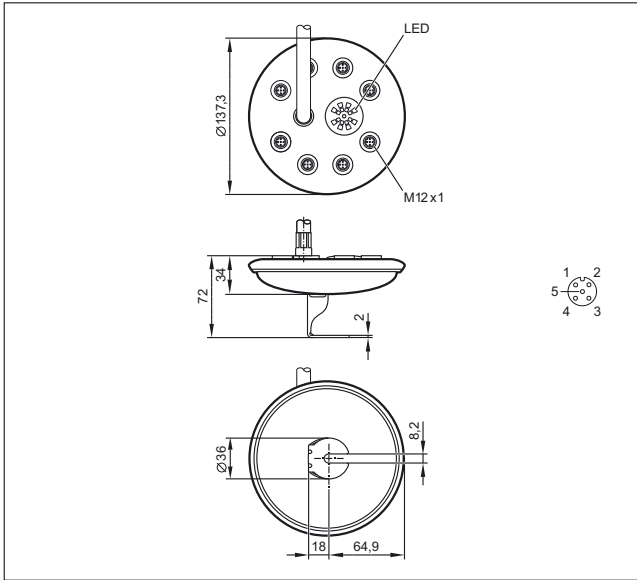
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Connection technology



Y-splitters

Y connection cables are used for the distribution of signals and the connection of two units to a connector.

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M12 – M12 jumpers for industrial applications	856 - 857
Jumpers for hygienic and wet areas	857 - 858
Connection cables for industrial applications	858 - 859
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M12 – M12 jumpers for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 60 · Y connection cable , plug: M12, 5-pole, socket: M12, 5-pole, 5-wire · Wiring diagram no. 1									
	1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC431
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC432
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	1	EVC433
	1 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC434
	2 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC435
	5 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	60 AC 60 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	2	EVC436
Group 62 · Y connection cable , plug: M12, 4-pole, socket: M12, 5-pole, 5-wire, LED, PNP · Wiring diagram no. 6									
	1 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	EVC437

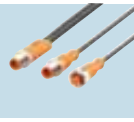
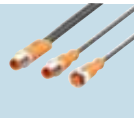
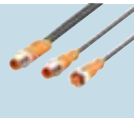
Product selectors and further information can be found at: www.ifm.com

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 62 · Y connection cable , plug: M12, 4-pole, socket: M12, 5-pole, 5-wire, LED, PNP · Wiring diagram no. 6

	2 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	EVC438
	5 m black PUR cable	3 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	10...36 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	3	EVC439

Group 64 · Y connection cable , 5-wire · B-port generator · Wiring diagram no. 7

	1 m black PUR cable	2 x 0.34 mm ² + 5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	24 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC693
	2 m black PUR cable	2 x 0.34 mm ² + 5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	24 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC694
	5 m black PUR cable	2 x 0.34 mm ² + 5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	24 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC695
	10 m black PUR cable	2 x 0.34 mm ² + 5 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	24 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	4	EVC696

Jumpers for hygienic and wet areas

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Draw-ing no.	Order no.

Group 161 · Y connection cable , plug: M12, 5-pole, socket: M12, 5-pole, 5-wire · Wiring diagram no. 1

	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVT329
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVT330
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	5	EVT331
	1 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVT332
	2 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVT333
	5 m orange PVC cable	4 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	60 AC 60 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	–	6	EVT334



Connection technology

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 163 · Y connection cable , plug: M12, 4-pole, socket: M12, 5-pole, 5-wire, LED, PNP · Wiring diagram no. 6									
	1 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	7	EVT335
	2 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	7	EVT336
	5 m orange PVC cable	3 x 0.34 mm ² , Ø 4.9 mm	PVC / stainless steel 316L / 1.4404	10...36 DC	-25...100	IP 65 / IP 67 / IP 68 / IP 69K	green / yellow	7	EVT337

Connection cables for industrial applications

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.
Group 184 · Y connection cable , socket: Y, 6-pole, 6-wire · Wiring diagram no. 2									
	1 m black PUR cable	3 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	E12546
	2 m black PUR cable	3 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	E12547
	5 m black PUR cable	3 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	E12548
Group 186 · Y connection cable , socket: Y, 6-pole, 4-wire · Wiring diagram no. 3									
	1 m black PUR cable	2 x 2 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	E12552
	2 m black PUR cable	2 x 2 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	E12553
	5 m black PUR cable	2 x 2 x 0.50 mm ² , Ø 5.4 mm	PA	12...24 DC	-40...80	IP 67	–	8	E12554
Group 188 · Jumper , socket: Y/M12, 6/3-pole, 3-wire · Wiring diagram no. 4									
	1 m black PUR cable	3 x 0.50 mm ² , Ø 5.4 mm	PA / Brass	12...24 DC	-40...80	IP 67	–	9	E12558
	2 m black PUR cable	3 x 0.50 mm ² , Ø 5.4 mm	PA / Brass	12...24 DC	-40...80	IP 67	–	9	E12559

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Protection	LEDs	Drawing no.	Order no.

Group 188 · Jumper , socket: Y/M12, 6/3-pole, 3-wire · Wiring diagram no. 4


5 m black
PUR cable

3 x 0.50 mm², Ø 5.4 mm

PA /
Brass

12...24 DC

-40...80

IP 67

–

9

E12560

Group 190 · Y connection cable , socket: Y/M12, 6/3-pole, 6-wire · Wiring diagram no. 5


1 m black
PUR cable

3 x 0.50 mm², Ø 5.4 mm

PA /
Brass

12...24 DC

-40...80

IP 67

–

10

E12561



2 m black
PUR cable

3 x 0.50 mm², Ø 5.4 mm

PA /
Brass

12...24 DC

-40...80

IP 67

–

10

E12562



5 m black
PUR cable

3 x 0.50 mm², Ø 5.4 mm

PA /
Brass

12...24 DC

-40...80

IP 67

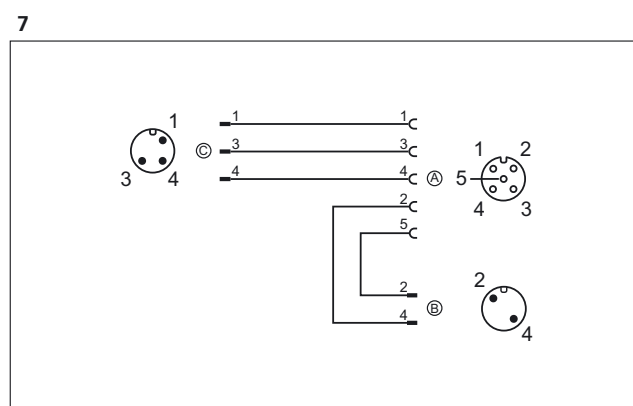
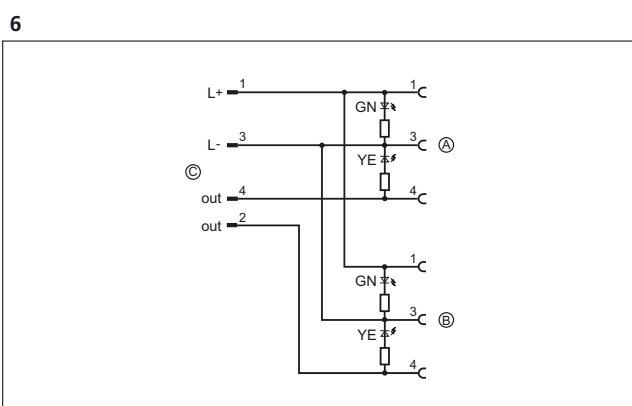
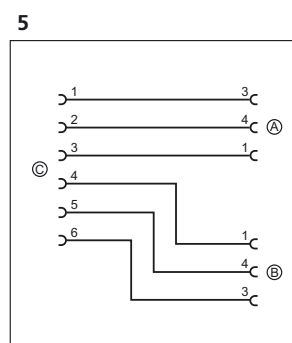
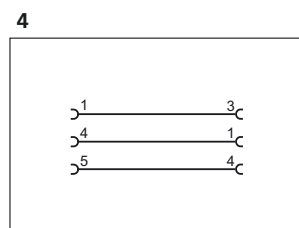
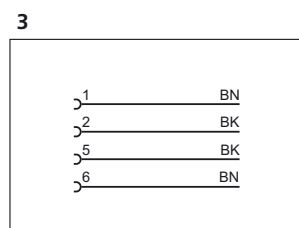
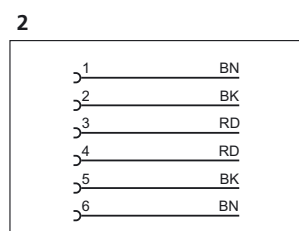
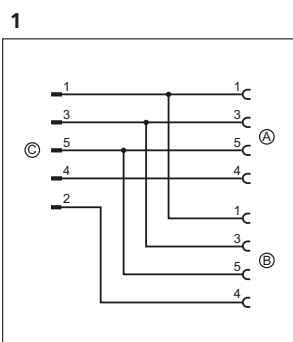
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E12563

Wiring diagrams
Core colours

BK black
BN brown
RD red

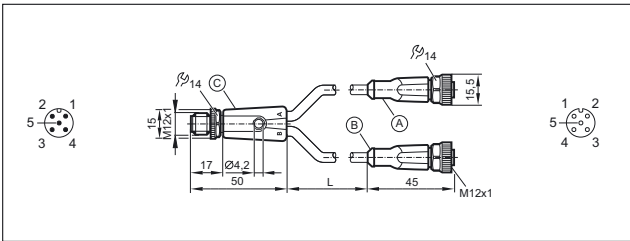




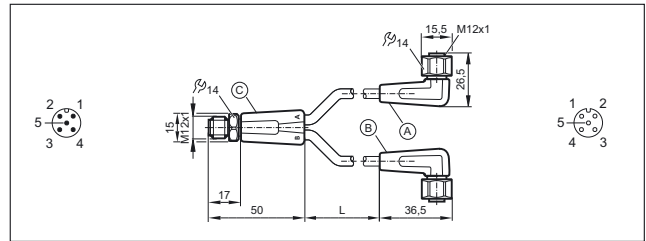
Connection technology

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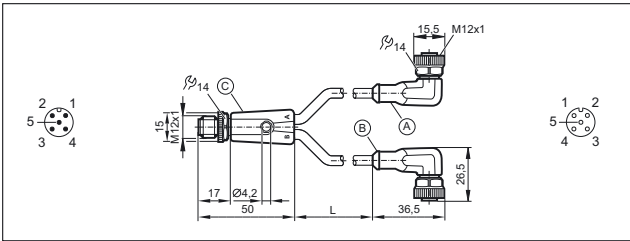
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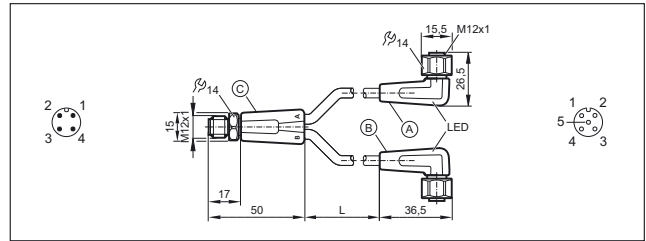
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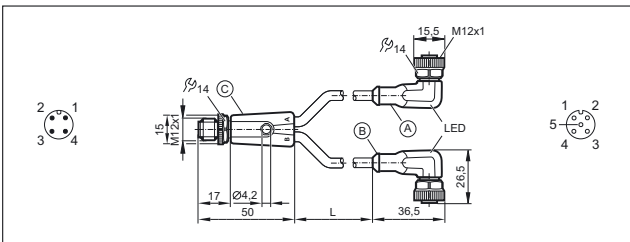
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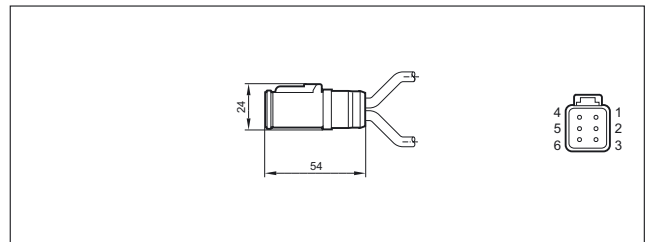
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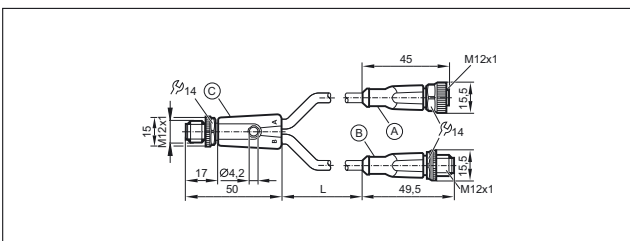
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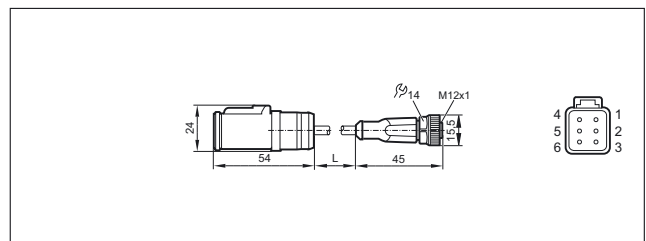
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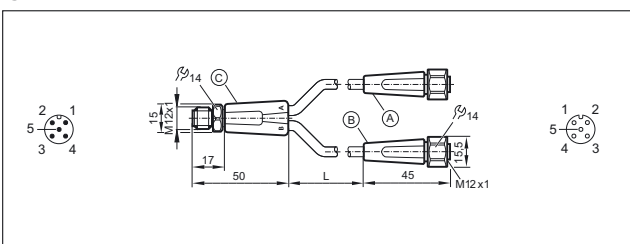
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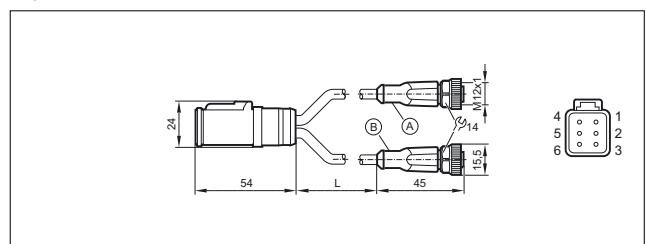
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5



10







Power supplies

Switched-mode power supplies



Switched-mode power supplies

Primary switched-mode power supplies are a compact and economical solution to supply sensors and actuators. As opposed to conventional transformer power supplies with regulated output voltage, primary switched-mode power supplies need no heavy transformers so that there are fewer iron and copper losses. They are therefore distinguished by a very high degree of efficiency of up to 95 %. Due to the operating principle using high frequency transformers, switched-mode power supplies are much smaller and lighter than transformer power supplies that provide the same power. Nevertheless they ensure electrical separation. Moreover, they offer a wide standard input voltage range, e.g. 100...240 or 323...576 V AC. This makes them fit for worldwide use.

ifm switched-mode power supplies have a regulated output voltage of typ. 24 V DC with a tolerance of $\pm 2\%$. Apart from few exceptions, the output voltage can be set between 24 V and 28 V to compensate, for example, for a voltage drop on long cables. Between no load and full load they ensure a stable supply voltage and thus operational reliability in case of supply voltage fluctuations.

Power reserves

Switched-mode power supplies from ifm are rated for permanent operation in the specified performance limits. This allows the power supplies to be used at full load over almost the complete temperature range. Moreover they feature an excess gain of 20 % while reaching 100 % switch-on time.

Mains fluctuations and interference are compensated for. Even mains voltage dips of a few milliseconds are bridged while the output voltage is completely maintained.

An inrush current limitation actively reduces the peak inrush current and thus enables the use of common automatic circuit breakers.

The outputs are protected against short circuits and overload.



24 V DC power supplies

864 - 869



AS-i power supplies

870 - 872



Power supplies



24 V DC power supplies

These high-quality 24V switched-mode power supplies excel by their wide range of performance. Flexible one-phase or three-phase primary voltages with wide-range inputs can be used worldwide. Degrees of efficiency of up to 94 percent ensure that the control cabinet only heats up slightly. The units are protected against over-voltage and permanent short circuit.

System overview	Page
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Power supplies / switching amplifiers with 2 inputs and 2 outputs	864
Switched-mode power supplies, single phase, in compact plastic housing	865
Standard switched-mode power supplies, single phase, in robust metal housing	865
Standard switched-mode power supplies, two-phase, in robust metal housing	865
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Power supplies / switching amplifiers with one output

Type	Current [mA]	Output voltage [V]	Nominal voltage [V]	Output	Draw- ing no.	Order no.
	–	24 DC SELV, ± 10 %, 300 mA	110...240 AC	relay (1 changeover contact)	1	DN0210

Power supplies / switching amplifiers with 2 inputs and 2 outputs

Type	Current [mA]	Output voltage [V]	Nominal voltage [V]	Output	Draw- ing no.	Order no.
	–	24 DC SELV, ± 10 %, 2 x ≤ 150 mA	110...240 AC	2 relays (1 changeover contact per channel)	2	DN0220

Switched-mode power supplies, single phase, in compact plastic housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Draw- ing no.	Order no.
	1.25	24...28	115 / 230 AC	120 (230 V AC; 24 V DC; 1.25 A)	84	3	DN1030
	2.5	24...28	115 / 230 AC	90 (230 V AC; 24 V DC; 2.5 A)	88	3	DN1031
	4.1	24...28 DC (±2%)	115 / 230 AC	> 40 (230 V AC; 24 V DC / 4.1 A)	90	4	DN1022

Standard switched-mode power supplies, single phase, in robust metal housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Draw- ing no.	Order no.
	3.3	24...28 DC	115 / 230 AC	30 (120 V AC; 60 Hz) / 128 (230 V AC; 50 Hz)	88	5	DN4011
	5	24...28 DC	115 / 230 AC	80 (120 V AC; 60 Hz) / 78 (230 V AC; 50 Hz)	89.4	5	DN4012
	10	24...28 DC	115 / 230 AC	46 (120 V AC; 60 Hz) / 47 (230 V AC; 50 Hz)	91	6	DN4013
	20	24...28 DC	115 / 230 AC	26 (120 V AC; 60 Hz) / 26 (230 V AC; 50 Hz)	92.7	7	DN4014
	40	24...28 DC	115 / 230 AC	27 (120 V AC; 60 Hz) / 27 (230 V AC; 50 Hz)	93.6	8	E84016

Standard switched-mode power supplies, two-phase, in robust metal housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Draw- ing no.	Order no.
	5	24...28 DC	2 x 400 AC	27 (400 V AC; 50 Hz) / 48 (480 V AC; 60 Hz)	90.4	9	DN4032



Power supplies

Standard switched-mode power supplies, three-phase, in robust metal housing

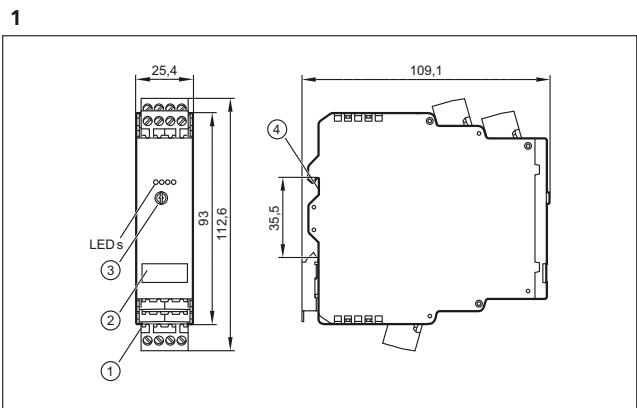
Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Draw- ing no.	Order no.
	10	24...28 DC	3 x 400 AC	34 (400 V AC; 50 Hz) / 54 (480 V AC; 60 Hz)	92.8	10	DN4033
	20	24...28 DC	3 x 400 AC	22 (400 V AC; 50 Hz) / 22 (480 V AC; 60 Hz)	95	11	DN4034
	30	24...28 DC (±2%)	3 x 400...500 AC	> 10	93	12	DN2036
	40	24...28 DC	3 x 400 AC	25 (400 V AC; 50 Hz) / 25 (480 V AC; 60 Hz)	95.3	13	E84036

Accessories

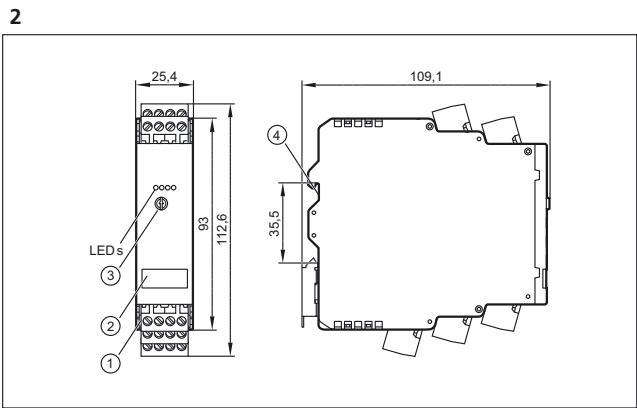
Type	Description	Order no.
	Supply module, standard · rail TH35 (to EN 60715) · Input current (max. total current) 40 A · for circuit protection modules DF12xx · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	DF1100
	Supply module, IO-Link · rail TH35 (to EN 60715) · Input current (max. total current) 40 A · for circuit protection modules DF22xx · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	DF2100
	Circuit protection module, standard · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 2 A · for supply module DF1100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	DF1212
	Circuit protection module, standard · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 4 A · for supply module DF1100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	DF1214
	Circuit protection module, standard · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 6 A · for supply module DF1100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	DF1216
	Circuit protection module, standard · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 1 x 8 A · for supply module DF1100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 18...30 V DC · IP 20	DF1208
	Circuit protection module, standard · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 1 x 10 A · for supply module DF1100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 18...30 V DC · IP 20	DF1210
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 2 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	DF2212
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 4 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	DF2214

Type	Description	Order no.
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 6 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	DF2216
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 1 x 8 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 18...30 V DC · IP 20	DF2208
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 1 x 10 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 18...30 V DC · IP 20	DF2210

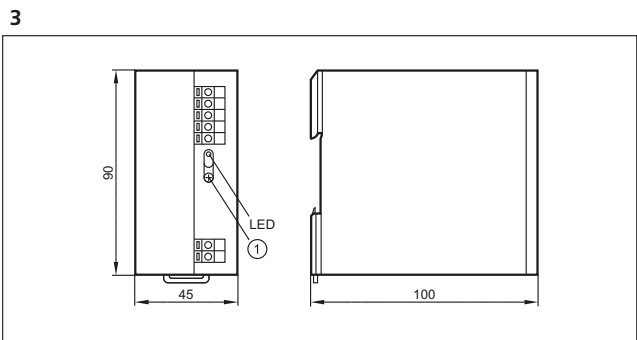
Scale drawings / drawing no. – CAD download: www.ifm.com



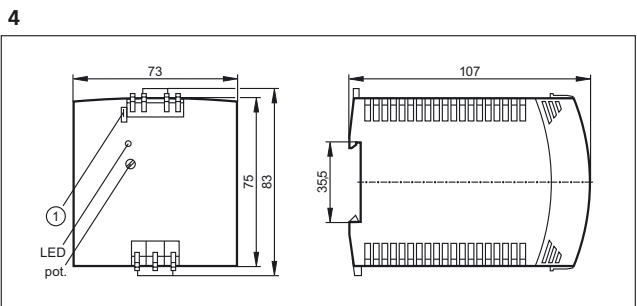
1: plug-in screw terminals, 2: label, 3: potentiometer, 4: Mounting on DIN rail



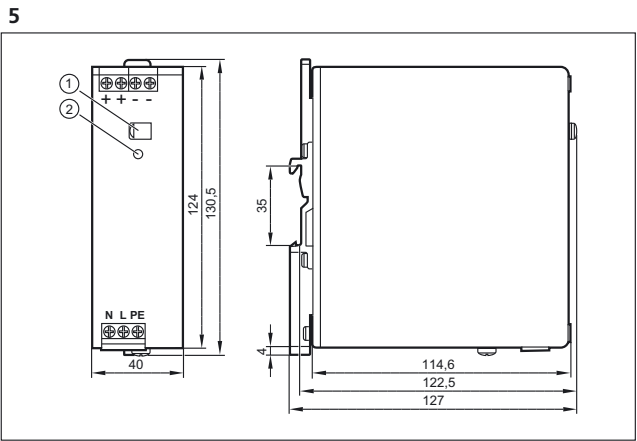
1: plug-in screw terminals, 2: label, 3: potentiometer, 4: Mounting on DIN rail



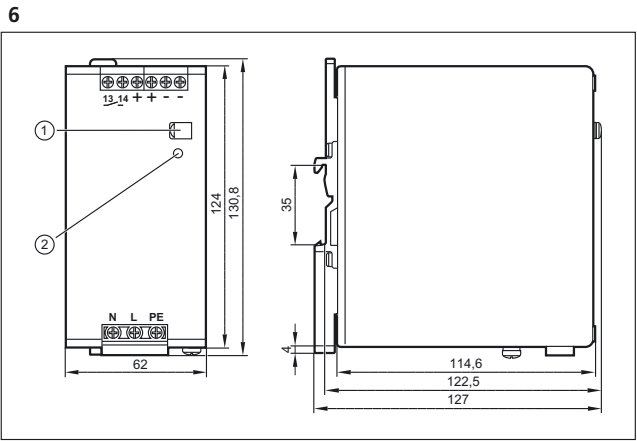
1: potentiometer



1: Jumper "single/parallel operation"



1: Potentiometer 24...28 V DC, 2: LED DC ok



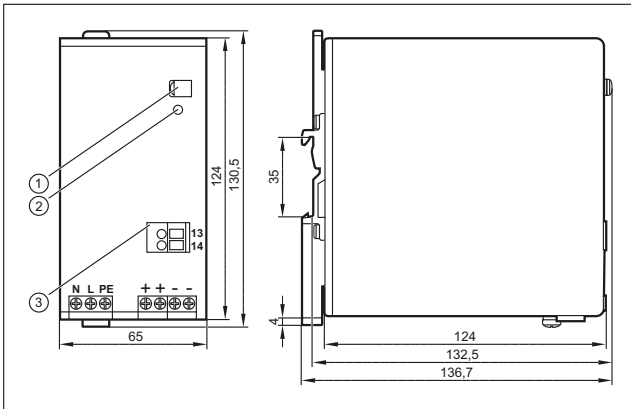
1: Potentiometer 24...28 V DC, 2: LED DC ok



Power supplies

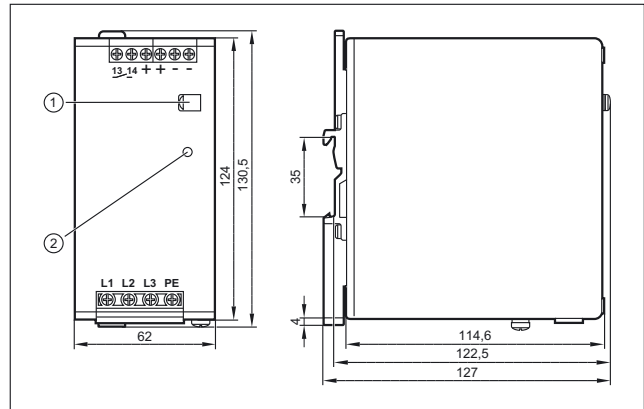
Scale drawings / drawing no. – CAD download: www.ifm.com

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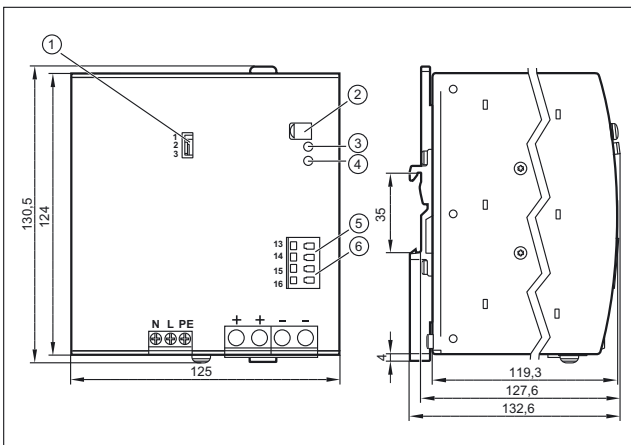
1: Potentiometer 24...28 V DC, 2: LED DC ok, 3: Terminals DC OK signal

10



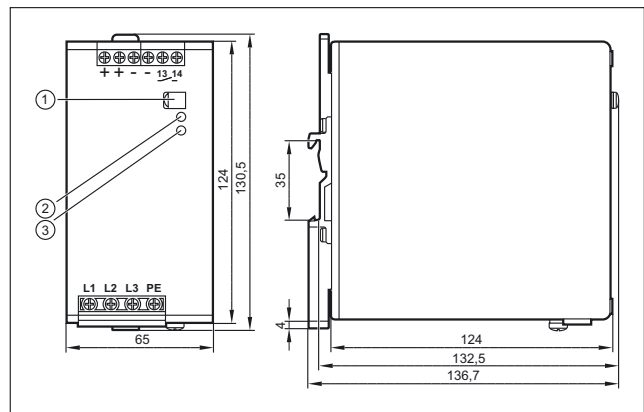
1: Potentiometer 24...28 V DC, 2: LED DC ok

8



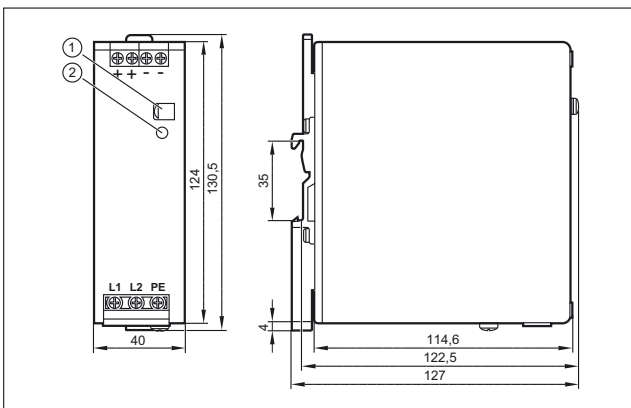
1: Jumper "single/parallel operation", 2: Potentiometer 24...28 V DC, 3: LED DC ok, 4: LED Overload, 5: Terminals DC OK signal, 6: Terminals shut down input

11



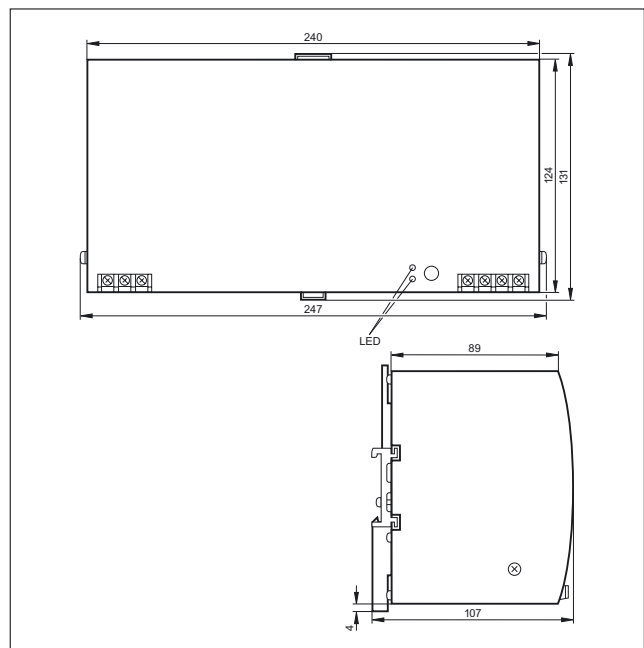
1: Potentiometer 24...28 V DC, 2: LED DC ok, 3: LED Overload

9



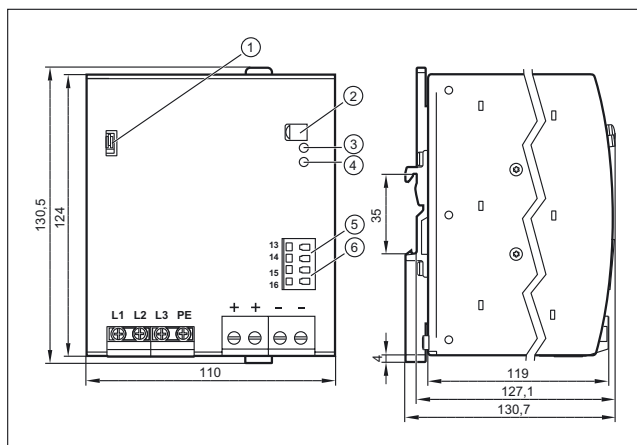
1: Potentiometer 24...28 V DC, 2: LED DC ok

12



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1: Jumper "single/parallel operation", 2: Potentiometer 24...28 V DC,
3: LED DC ok, 4: LED Overload, 5: Terminals DC OK signal,
6: Terminals shut down input



Power supplies



AS-i power supplies

All AS-i power supplies are primary switched-mode power supplies with a high degree of efficiency. The robust DIN rail housing can be easily integrated in large control cabinets as well as in local boxes. The primary voltage range stretches from 24 V DC via 230 V AC up to 400 V AC three-phase and can consequently be adapted to the local conditions.

System overview	Page
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AS-i switched-mode power supplies, single phase, in robust metal housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Draw- ing no.	Order no.
	2.8	30.5 DC	115 / 230 AC	98 (120 V AC; 60 Hz) / 96 (230 V AC; 50 Hz)	86.9	1	AC1256
	4	30.5 DC	115 / 230 AC	70 (120 V AC; 60 Hz) / 70 (230 V AC; 50 Hz)	88	1	AC1254
	8	30.5 DC	115 / 230 AC	44 (120 V AC; 60 Hz) / 42 (230 V AC; 50 Hz)	89.4	2	AC1258

AS-i switched-mode power supplies, single phase, in compact plastic housing

Type	Current [A]	Output voltage [V]	Nominal voltage [V]	Mains buffering time [ms]	Efficiency typ. [%]	Draw- ing no.	Order no.
	1.9	29.5...31.6 DC	100...240 AC	90 (230 V AC)	88	3	AC1221

AS-i switched-mode power supplies, three -phase, in robust metal housing

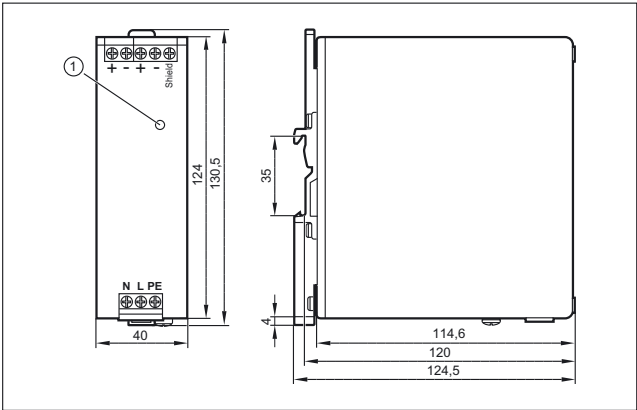
Type	Current	Output voltage	Nominal voltage	Mains buffering time	Efficiency typ.	Drawing no.	Order no.
	[A]	[V]	[V]	[ms]	[%]		
	8	30.5 DC	3 x 400 AC	34 (400 V AC; 50 Hz) / 53 (480 V AC; 60 Hz)	92	4	AC1253

DC / DC converter (24 V / AS-i), in robust metal housing

Type	Current	Output voltage	Nominal voltage	Mains buffering time	Efficiency typ.	Drawing no.	Order no.
	[A]	[V]	[V]	[ms]	[%]		
	4	30.5 DC	24 DC	6 (24 V DC)	90.5	5	AC1257

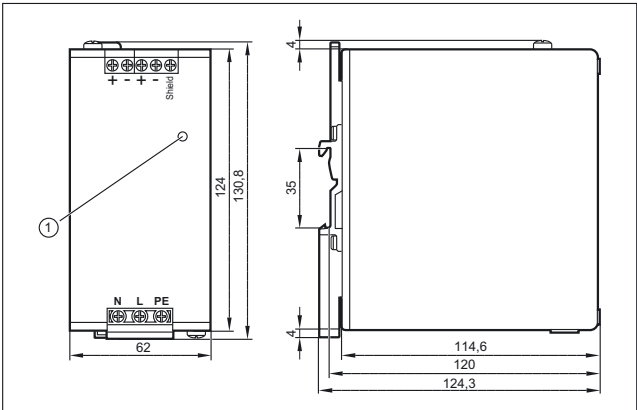
Scale drawings / drawing no. – CAD download: www.ifm.com

1



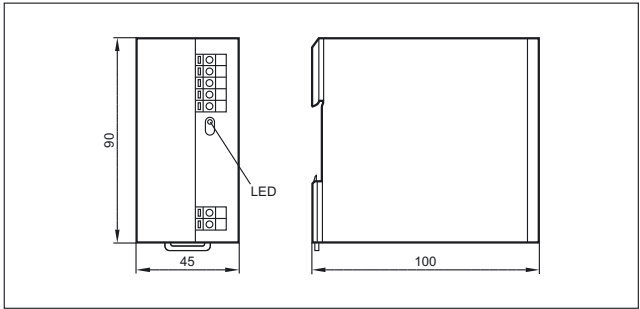
1: LED AS-i ok

2

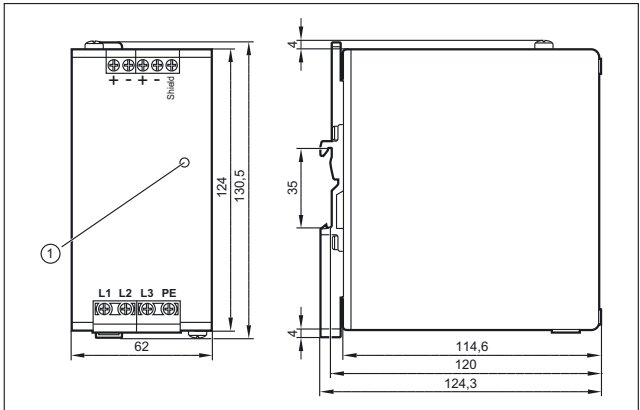


1: LED AS-i ok

3



4



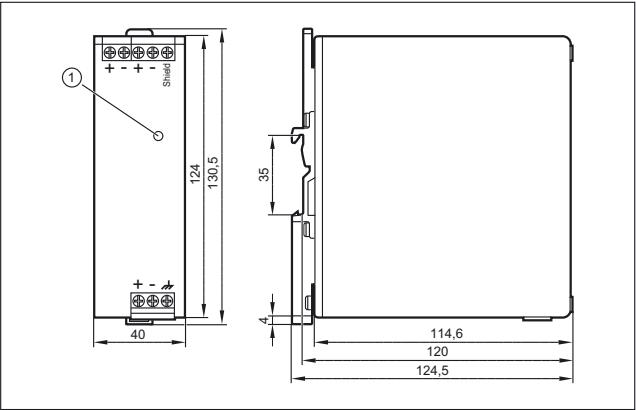
1: LED AS-i ok



Power supplies

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1: LED AS-i ok