

Fluid Sensors







Fluid Sensors

wenglor's fluid sensor technology covers a broad range of more than 900 products including flow, pressure and temperature sensors. Flow sensors ascertain the speed at which liquid media flow within closed systems and determine temperature as well. Pressure sensors measure the relative pressure of any desired media in closed systems. Temperature sensors determine the temperature of liquid and gaseous media, and permit reliable temperature monitoring within processes.

weFlux² flow and temperature sensors are equipped with a rugged V4A stainless steel housing with integrated analysis module. The FDA-compliant sensors intentionally refrain from the use of a display in order to be ideally suited for strict requirements in hygienically sensitive industrial areas. weFlux² Sensors are EHEDG-certified in combination with selected process connectors.

UniFlow, UniBar and UniTemp sensors are extremely user-friendly thanks to their uniform design, control and connection concepts. In particular the large 7-segment display ensures easy, intuitive operation.

Only a small selection of wenglor's fluid sensors is included in the catalog. An overview of the complete range can be viewed at www.wenglor.com. Customer-specific solutions can be implemented quickly and efficiently thanks to the modular design.

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Pressure Sensors

UniBar pressure sensors measure the relative pressure in closed systems of any medium in the range of -1...600 bar.

The pressure applied to a pressure sensor is converted into an electronic signal and transmitted to a microprocessor for evaluation by an electronic amplifier. This takes on the evaluation of programmable switching points and finally displays the current pressure on the 7-segment display. The switch output reads out the corresponding switching signal, the analog output and the measurement value (optionally in 0...10 V or 4...20 mA).

Thanks to their front flush design, **pressure sensors with metal membrane** are piggable and therefore particularly suitable for areas with increased hygiene requirements, such as the food and pharmaceutical industries.

Only a small selection of wenglor pressure sensors is listed in the catalog. The full product range of pressure sensors can be found at www.wenglor.com. Various plastic and stainless steel housing types, pressure ranges, process connections and outputs can be combined.

Application examples:

- Process monitoring
- Monitoring and regulating pressure in filling systems
- Monitoring of compressed air systems
- Fill level determination in tank/silo systems
- Pressure regulation of aggregates
- Filter monitoring





wenglor Pressure Sensors at a Glance

This table provides information on additional sensors not included in the catalog. The data sheets are available for download at www.wenglor.com.

All sensors have M12 \times 1 connector. The PNP switch output can be defined via the menu as normally closed or normally open.

Additional options:

- Pressure unit on display foil in mbar, bar or MPa
- Analog output as current or voltage output

Housing:	FA (Plastic)	FM (Plastic)	FX (Stainless Steel)
		175- 1-10-	

Pressure range	Process conr female	nection,			Process conr male	nection,
	G1/8"	G1/4"	G3/8"	G1/2"	G1/2"	G1/2" CIP-capable
-10 bar	FA	_	—	FA	_	_
-0,50 bar	FA	_	_	FA	—	—
-0,250 bar	FA	—	—	FA		—
-0,10 bar	FA	—	—	FA	_	—
00,1 bar	FA	—	—	FA		—
00,5 bar	FA	—	—	FA	—	—
01 bar	FA	—	—	FA		—
06 bar	FA	—	—	FA		_
010 bar	FA	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
025 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
040 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0100 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0160 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0250 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0400 bar	—	FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX
0600 bar		FA, FM	FA, FM	FA, FM	FA, FM	FA, FM, FX

All Standard Sensors are available under www.wenglor.com. Individual sensor solutions are available on request.

Pressure Sensor



Range



- Highly visible output indicator
- Piggable with flush mounting
- Simple operation via the display
- Space-saving process connection thanks to small pressure membrane

Sensor-specific data	
Adjustable Range	4100 %
Medium	Liquids, gases
Switching Hysteresis	2 %
Measuring error	< ± 0,5 %
Temperature Drift	0,025 %/K
Environmental conditions	
Temperature of medium	-2560 °C
Ambient temperature	-2580 °C
EMC	DIN EN 61326-2-3
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (102000 Hz)
Electrical Data	
Supply Voltage	1632 V DC
Current Consumption (Ub = 24 V)	< 60 mA
Response Time	30 ms
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Resolution	10 bit
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	
Mechanical Data	
Setting Method	Menu
Housing Material	PBT; PC; FKM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404
Connection	M12 × 1: 4-pin

Technical Data

Process Connection

UniBar pressure sensors measure the relative pressure in closed systems of any medium in the range -1...600 bar. UniBar pressure sensors are very easy to use thanks

to the integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.

Thanks to the metallic sealing edge on the process connection, no further seals are required.



8

G 1/2" CIP-capable



	Plug Version					
* Tested by wenglor	FFM P001	FFM P002	FFM P003	FFMP189	FFMP190	FFMP191
Analog Output						
Final value, analog output: scalable 2:1						
PNP NO/NC switchable				\bullet		\bullet
Measuring Range	010 bar	025 bar	040 bar	010 bar	025 bar	040 bar
Maximum overload pressure	20 bar	50 bar	80 bar	20 bar	50 bar	80 bar
Bursting pressure	40 bar	100 bar	160 bar	40 bar	100 bar	160 bar
Switching Outputs	1	1	1	2	2	2
Analog Output	420 mA Press	420 mA Press	420 mA Press			
Current Output Load Resistance	< 500 Ohm	< 500 Ohm	< 500 Ohm			
Degree of Protection	IP65 *	IP67 *	IP67 *	IP65 *	IP67 *	IP67 *
Connection Diagram No.	533	533	533	536	536	536
Control Panel No.	A05	A05	A05	A05	A05	A05
Suitable Connection Technology No.	21	21	21	21	21	21
Suitable Mounting Technology No.	905 906	905 906	905 906	905 906	905 906	905 906

The complete product range of pressure sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.





01 = Switching Status Indicator 99 = Right button

20 = Enter Button

22 = UP Button 60 = Display



Pressure Sensor

0...40 bar

Range



- Highly visible output indicator
- Piggable with flush mounting
- Simple operation via the display
- Space-saving process connection thanks to small pressure membrane

Sensor-specific data Adjustable Range 4...100 % Medium Liquids, gases 2 % Switching Hysteresis < ± 0,5 % Measuring error 0,025 %/K **Temperature Drift Environmental conditions** -25...60 °C Temperature of medium -25...80 °C Ambient temperature EMC DIN EN 61326-2-3 Shock resistance per DIN IEC 68-2-27 50 g / 11 ms 20 g (10...2000 Hz) Vibration resistance per DIN IEC 60068-2-6 **Electrical Data** 16...32 V DC Supply Voltage Current Consumption (Ub = 24 V) < 60 mA **Response Time** 30 ms Switching Output/Switching Current < 250 mA Switching Output Voltage Drop < 2 V Resolution 10 bit Short Circuit Protection yes **Reverse Polarity Protection** yes Protection Class Ш **Mechanical Data** Setting Method Menu Housing Material PBT; PC; FKM Material Control Panel Polyester Material in contact with media 1.4435; 1.4404

Technical Data

Connection

Process Connection

UniBar pressure sensors measure the relative pressure in closed systems of any medium in the range -1...600 bar.

UniBar pressure sensors are very easy to use thanks to the integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.

Thanks to the metallic sealing edge on the process connection, no further seals are required.



UniBar

M12 × 1; 4-pin

G 1/2" CIP-capable



	Plug Version					
* Tested by wenglor	FFAP001	FFAP002	FFAP003	FFAP231	FFAP232	FFAP233
Analog Output						
Final value, analog output: scalable 2:1		\bullet				
PNP NO/NC switchable	\bullet					
Measuring Range	010 bar	025 bar	040 bar	010 bar	025 bar	040 bar
Maximum overload pressure	20 bar	50 bar	80 bar	20 bar	50 bar	80 bar
Bursting pressure	40 bar	100 bar	160 bar	40 bar	100 bar	160 bar
Switching Outputs	1	1	1	2	2	2
Analog Output	420 mA Press	420 mA Press	420 mA Press			
Current Output Load Resistance	< 500 Ohm	< 500 Ohm	< 500 Ohm			
Degree of Protection	IP65 *	IP67 *	IP67 *	IP65 *	IP67 *	IP67 *
Connection Diagram No.	533	533	533	536	536	536
Control Panel No.	A05	A05	A05	A05	A05	A05
Suitable Connection Technology No.	21	21	21	21	21	21
Suitable Mounting Technology No.	905 906	905 906	905 906	905 906	905 906	905 906

The complete product range of pressure sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.

Ctrl. Panel



01 = Switching Status Indicator 99 = Right button

20 = Enter Button

22 = UP Button 60 = Display



Pressure Sensor

0...40 bar

Range



- FDA compliant
- Hygienic design makes it easy to clean
- Piggable with flush mounting
- Robust stainless steel housing with IP69K
- Space-saving process connection thanks to small pressure membrane

Adjustable Range Medium Liquids, gases Switching Hysteresis 2 % < ± 0,5 % Measuring error 0,025 %/K **Temperature Drift Environmental conditions** -25...60 °C Temperature of medium -25...80 °C Ambient temperature EMC DIN EN 61326-2-3 Shock resistance per DIN IEC 68-2-27 50 g / 11 ms 20 g (10...2000 Hz) Vibration resistance per DIN IEC 60068-2-6 **Electrical Data** Supply Voltage 16 32 V DC Current Consumption (Ub = 24 V) < 60 mA **Response Time** 1.2 s Switching Output/Switching Current < 250 mA Switching Output Voltage Drop < 2 V Resolution 10 bit Short Circuit Protection yes **Reverse Polarity Protection** yes Protection Class Ш **Mechanical Data** Setting Method Menu Housing Material 1.4404; PC; EPDM Material Control Panel Polyester

Technical Data Sensor-specific data

Material in contact with media

Connection

Process Connection

UniBar pressure sensors measure the relative pressure in closed systems of any medium in the range -1...600 bar.

UniBar pressure sensors are very easy to use thanks to the removable cover on the integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.

Thanks to the metallic sealing edge on the process connection, no further seals are required.



InoxSens UniBar

4...100 %

1.4435; 1.4404

M12 × 1; 4-pin

G 1/2" CIP-capable



	Plug Version					
* Tested by wenglor	FFXP001	FFXP002	FF XP003	FF XP050	FFXP051	FFXP052
Analog Output	•	•	•			
Final value, analog output: scalable 2:1		\bullet	\bullet			
PNP NO/NC switchable				\bullet		
Measuring Range	010 bar	025 bar	040 bar	010 bar	025 bar	040 bar
Maximum overload pressure	20 bar	50 bar	80 bar	20 bar	50 bar	80 bar
Bursting pressure	40 bar	100 bar	160 bar	40 bar	100 bar	160 bar
Switching Outputs	1	1	1	2	2	2
Analog Output	420 mA Press	420 mA Press	420 mA Press			
Current Output Load Resistance	< 500 Ohm	< 500 Ohm	< 500 Ohm			
Degree of Protection	IP65/IP69K *	IP67/IP69K *	IP67/IP69K *	IP65/IP69K *	IP67/IP69K *	IP67/IP69K *
Connection Diagram No.	533	533	533	536	536	536
Control Panel No.	A13	A13	A13	A13	A13	A13
Suitable Connection Technology No.	21	21	21	21	21	21
Suitable Mounting Technology No.	905 906	905 906	905 906	905 906	905 906	905 906

The complete product range of pressure sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.











Flow Sensors

Flow Sensors from wenglor ascertain flow velocity and temperature of liquid media in closed systems. The unique, patented measuring method makes it possible to mount these sensor inside of pipes regardless of position without aligning the measuring probe to the direction of flow.

weFlux² Flow Sensors are equipped with a compact V4A stainless steel housing with integrated analysis module. The IO-Link version is distinguished by its variability with regard to combination and configuration of the two sensor outputs. The sensors can be configured in a decentralized fashion and diagnosis data can be queried at any time via the modern interface. A variant with two analog outputs in a single sensor has been made available for the first time ever by the weFlux² series.

UniFlow Flow Sensors are equipped with a large 7-segment display which permits easy reading of measured values as percentages or in liters per minute. The uniform design with intuitive control and connection concepts offers maximized user-friendliness. Depending on actual requirements, the sensors can be equipped with either one or two switching outputs, or one switching output in combination with an analog output.

Only a small selection of wenglor's fluid sensors is included in the catalog. An overview of the complete range can be viewed at www.wenglor.com.

Application examples:

- Flow rate monitoring in filling machines
- Coolant water monitoring in electric power generators
- Coolant water control
- Protection to prevent pumps from running dry





wenglor Flow Sensors at a Glance

This table provides information on additional sensors not included in the catalog. The data sheets are available for download at www.wenglor.com.

Uni Flow Additional options: • Various process co • Analog output as cr • Versions with 2 swit • Versions with relay	nnection length urrent or voltag tching outputs output	ns e output	weFlux ² Additional • Various • Version • Version	options: process connection lengths with IO-Link with 2 analog outputs	
Housing:	FA (Plastic)	FX (Stainl	ess Steel) FX	FF (Stainless Steel)	
	(1)		Ø	the second se	
Flow speed oil	Process conr	nection			
	G1/4"	G1/2"	G1/2" CIP-capable	Sealing cone M18×1,5	
1 m/s	FA	FA	FX	FA	
Flow speed water	Process conr	nection			
	G1/4"	G1/2"	G1/2" CIP-capable	Sealing cone M18×1,5	Insulation displacement connector 6 mm
2 m/s	FA	FA	FX	FA	_
3 m/s	FA	FA	FX	FA	_
4 m/s	_		_	FXFF	FXFF

All Standard Sensors are available under www.wenglor.com. Individual sensor solutions are available on request.

Flow Sensor

15...200 cm/s

Range



- Highest precision of its class
- Installation in any position
- Measurement independent of flow direction
- Simple operation via the display
- Temperature of the medium: 0 ... 100° C (140° C for 24 hours without current measurement)

Sensor-specific data Measuring Range 15...200 cm/s 15...200 cm/s Adjustable Range Medium Water Measuring error 2 % 5 % Switching Hysteresis 30 K Temperature gradient 10 s Response time in case of temperature jump **Environmental conditions** 0...100 °C Temperature of medium Temperature of the medium, short-term 140 °C Ambient temperature -20...70 °C Mechanical Strength 60 bar FMC DIN FN 60947-5-9 Shock resistance per DIN IEC 68-2-27 50 g / 11 ms Vibration resistance per DIN IEC 60068-2-6 20 g (10...2000 Hz) **Electrical Data** Supply Voltage 16...32 V DC Current Consumption (Ub = 24 V) 60 mA Switching Outputs 1 Response Time 1...5 s Switching Output/Switching Current < 250 mA Switching Output Voltage Drop < 2 V Short Circuit Protection yes **Reverse Polarity Protection** yes **Protection Class** Ш **Mechanical Data** Setting Method Menu PBT; PC; FKM Housing Material Material Control Panel Polyester Material in contact with media 1.4435; 1.4404; FKM Degree of Protection IP67 * M12 × 1; 4-pin Connection Sealing cone M18 × **Process Connection** .5 Process Connection Length 64 mm Probe Length 44 mm Safety-relevant Data

MTTFd (EN ISO 13849-1)

Technical Data

1436,42 a

wenglor UniFlow flow sensors measure the flow rate of aqueous and oily media in closed piping systems. UniFlow flow sensors are very easy to operate thanks to the integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.



UniFlow



		Plug Version
* Tested by wenglor	Part Number	FFAF001
PNP NO/NC switchable		
Connection Diagram No.		532
Control Panel No.		A03
Suitable Connection Technology No.		2
Suitable Mounting Technology No.		900 901

The complete product range of flow sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.

Complementary Products

Flow calculator software DNNF008

Ctrl. Panel



01 = Switching Status Indicator 99 = Right button

20 = Enter Button 22 = UP Button

60 = Display



Flow Sensor

10...300 cm/s

Range



- Display can be switched between flow and medium temperature
- Highest precision of its class
- Measurement independent of flow direction
- Selectable measuring range
- Simple operation via the display
- Temperature of the medium: 0 ... 100° C (140° C for 24 hours without current measurement)

wenglor UniFlow flow sensors measure the flow rate of
aqueous and oily media in closed piping systems.
UniFlow flow sensors are very easy to operate thanks
to the integrated display. The highly visible switching
status display enables the rapid localization of affected
sensors for maintenance processes.

Sensor-specific data	
Selectable measuring range	10300 cm/s
Measuring range 1	10150 cm/s
Adjustable range 1	15150 cm/s
Measuring range 2	20300 cm/s
Adjustable range 2	30300 cm/s
Medium	Water
Measuring error	2 %
Switching Hysteresis	5 %
Temperature gradient	30 K
Response time in case of temperature jump	10 s
Environmental conditions	
Temperature of medium	0100 °C
Temperature of the medium, short-term	140 °C
Ambient temperature	-2070 °C
Mechanical Strength	60 bar
EMC	DIN EN 60947-5-9
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (102000 Hz)
Electrical Data	
Supply Voltage	1632 V DC
Current Consumption (Ub = 24 V)	60 mA
Switching Outputs	1
Response Time	15 s
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Current Output Load Resistance	< 500 Ohm
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Setting Method	Menu
Housing Material	PBT; PC; FKM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404; FKM
Degree of Protection	IP67 *
Connection	M12 × 1; 4-pin
Process Connection	Sealing cone M18 × 1.5
Process Connection Length	64 mm
Probe Length	44 mm
Safety-relevant Data	

MTTFd (EN ISO 13849-1)

Technical Data

1194,55 a

UniFlow





	Plug Version		
* Tested by wenglor	FFAF002	FF AF003	FFAF186
Analog output flow			
Analog output temperature		\bullet	
Analog output switchable to flow or temperature			
PNP NO/NC switchable		\bullet	\bullet
Analog Output	420 mA Flow	420 mA Temp	420 mA Flow / Temp
Connection Diagram No.	533	533	533
Control Panel No.	A03	A03	A03
Suitable Connection Technology No.	21	21	21
Suitable Mounting Technology No.	900 901	900 901	900 901

The complete product range of flow sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.

Complementary Products

Flow calculator software DNNF008

Ctrl. Panel



- 01 = Switching Status Indicator 99 = Right button
- 20 = Enter Button
- 22 = UP Button 60 = Display

Ø 55 M12 x 1 106,1 4 Π 44 Ф 6,5 71.7 22

All dimensions in mm (1 mm = 0.03937 lnch)

Flow Sensor

10...300 cm/s

Range



- CIP-capable
- FDA compliant
- Highest precision of its class
- Hygienic design makes it easy to clean
- Measurement independent of flow direction
- Temperature of the medium: 0 ... 100° C (140° C for 24 hours without current measurement)

wenglor UniFlow flow sensors measure the flow rate of aqueous and oily media in closed piping systems.

UniFlow flow sensors are very easy to operate thanks to the removable cover on the integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.

Thanks to the metallic sealing edge on the process connection, no further seals are required.



InoxSens UniFlow

Те	chni	cal	Data	

Sensor-specific data	
Selectable measuring range	10300 cm/s
Measuring range 1	10150 cm/s
Adjustable range 1	15150 cm/s
Measuring range 2	20300 cm/s
Adjustable range 2	30300 cm/s
Medium	Water
Measuring error	2 %
Switching Hysteresis	5 %
Temperature gradient	30 K
Response time in case of temperature jump	10 s
Environmental conditions	
Temperature of medium	0100 °C
Temperature of the medium, short-term	140 °C
Ambient temperature	-2070 °C
Mechanical Strength	60 bar
EMC	DIN EN 60947-5-9
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (102000 Hz)
Electrical Data	
Supply Voltage	1632 V DC
Current Consumption (Ub = 24 V)	60 mA
Switching Outputs	1
Response Time	15 s
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Current Output Load Resistance	< 500 Ohm
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Setting Method	Menu
Housing Material	1.4404; PC; EPDM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404
Degree of Protection	IP67/IP69K *
Connection	M12 × 1; 4-pin
Process Connection	G 1/2" CIP-capable
Process Connection Length	48 mm
Probe Length	10 mm
Safety-relevant Data	

Fluid Sensors



		Plug Version		
* Tested by wenglor	Part Number	FFXF001	FFXF002	
Analog output flow		•		
Analog output temperature			\bullet	
PNP NO/NC switchable			\bullet	
Analog Output		420 mA Flow	420 mA Temp	
Connection Diagram No.		533	533	
Control Panel No.		A12	A12	
Suitable Connection Technology No.		21	21	
Suitable Mounting Technology No.		903 905 906	903 905 906	

The complete product range of flow sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.

Complementary Products

Flow calculator software DNNF008

Ctrl. Panel



99 = Right button

22 = UP Button

 ϕ 60 50,5 4′L6 6,5 61/2 27 1 = Rotatable relative to housing at 340° All dimensions in mm (1 mm = 0.03937 Inch)

Flow Sensor

10...400 cm/s

Range



- A single sensor for flow and temperature
- FDA compliant
- Measurement independent of flow direction and instillation position
- Ready for Industry 4.0 with IO-Link 1.1

weFlux² Flow Sensors simultaneously measure flow velocity and the temperature of aqueous liquids regardless of position and direction of flow. Advantage: The number of measuring points and the diversity of sensor variants are cut in half, and greatest possible flexibility is assured for installation in closed piping systems. Either 2 switching outputs or 1 switching output and 1 analog output are available depending on application requirements. The outputs can be configured as desired via IO-Link in order to flexibly adapt the sensors to the respective application.



weFlux² InoxSens

Technical Data

Sensor-specific data	
Measuring Range	10400 cm/s
Temperature Measurement Range	-25150 °C
Adjustable Range	10400 cm/s
Medium	Water
Measuring error	2 %
Temperature gradient	30 K
Response time in case of temperature jump	10 s
Environmental conditions	
Temperature of medium	-25150 °C
Ambient temperature	-2580 °C
Storage temperature	-2580 °C
Mechanical Strength	100 bar
EMC	DIN EN 60947-5-9
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (102000 Hz)
Electrical Data	
Supply Voltage	1232 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Switching Outputs	2
Analog Output	010 V/420 mA
Analog Output Response Time	010 V/420 mA 15 s
Analog Output Response Time Switching Output/Switching Current	010 V/420 mA 15 s ± 100 mA
Analog Output Response Time Switching Output/Switching Current Switching Output Voltage Drop	010 V/420 mA 15 s ± 100 mA < 2 V
Analog Output Response Time Switching Output/Switching Current Switching Output Voltage Drop Current Output Load Resistance	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A
Analog Output Response Time Switching Output/Switching Current Switching Output Voltage Drop Current Output Load Resistance Current Load Voltage Output	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA
Analog OutputResponse TimeSwitching Output/Switching CurrentSwitching Output/Switching CurrentCurrent Output Voltage DropCurrent Load ResistanceCurrent Load Voltage OutputShort Circuit Protection	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes
Analog OutputResponse TimeSwitching Output/Switching CurrentSwitching Output/Switching CurrentCurrent Output Voltage DropCurrent Load ResistanceCurrent Load Voltage OutputShort Circuit ProtectionReverse Polarity Protection	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes
Analog OutputResponse TimeSwitching Output/Switching CurrentSwitching Output Voltage DropCurrent Output Load ResistanceCurrent Load Voltage OutputShort Circuit ProtectionReverse Polarity ProtectionProtection Class	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes III
Analog OutputResponse TimeSwitching Output/Switching CurrentSwitching Output/Switching CurrentCurrent Output Load ResistanceCurrent Load Voltage OutputShort Circuit ProtectionReverse Polarity ProtectionProtection ClassInterface	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes III IO-Link
Analog OutputResponse TimeSwitching Output/Switching CurrentSwitching Output/Switching CurrentCurrent Output Voltage DropCurrent Output Load ResistanceCurrent Load Voltage OutputShort Circuit ProtectionReverse Polarity ProtectionProtection ClassInterfaceIO-Link Version	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes III IO-Link 1.1
Analog OutputResponse TimeSwitching Output/Switching CurrentSwitching Output/Switching CurrentCurrent Output Load ResistanceCurrent Load Voltage OutputShort Circuit ProtectionReverse Polarity ProtectionProtection ClassInterfaceIO-Link VersionMechanical Data	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes III IO-Link 1.1
Analog OutputResponse TimeSwitching Output/Switching CurrentSwitching Output/Switching CurrentCurrent Output Load ResistanceCurrent Load Voltage OutputShort Circuit ProtectionReverse Polarity ProtectionProtection ClassInterfaceIO-Link VersionMechanical DataSetting Method	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes III IO-Link 1.1 IO-Link
Analog OutputResponse TimeSwitching Output/Switching CurrentSwitching Output/Switching CurrentCurrent Output Load ResistanceCurrent Load Voltage OutputShort Circuit ProtectionReverse Polarity ProtectionProtection ClassInterfaceIO-Link VersionSetting MethodHousing Material	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes III IO-Link 1.1 IO-Link 1.4404
Analog OutputResponse TimeSwitching Output/Switching CurrentSwitching Output/Switching CurrentCurrent Output Voltage DropCurrent Load Voltage OutputShort Circuit ProtectionReverse Polarity ProtectionProtection ClassInterfaceIO-Link VersionSetting MethodHousing MaterialMaterial in contact with media	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes III IO-Link 1.1 IO-Link 1.4404 1.4404
Analog Output Response Time Switching Output/Switching Current Switching Output/Switching Current Switching Output Voltage Drop Current Output Load Resistance Current Load Voltage Output Short Circuit Protection Reverse Polarity Protection Protection Class Interface IO-Link Version Setting Method Housing Material Material in contact with media Degree of Protection	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes yes III IO-Link 1.1 IO-Link 1.4404 1.4404 IP68/IP69K *
Analog Output Response Time Switching Output/Switching Current Switching Output/Switching Current Current Output Voltage Drop Current Output Load Resistance Current Load Voltage Output Short Circuit Protection Reverse Polarity Protection Protection Class Interface IO-Link Version Setting Method Housing Material Material in contact with media Degree of Protection Connection	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes III IO-Link 1.1 IO-Link 1.4404 1.4404 IP68/IP69K * M12 × 1; 4-pin
Analog Output Response Time Switching Output/Switching Current Switching Output/Switching Current Switching Output Voltage Drop Current Output Load Resistance Current Load Voltage Output Short Circuit Protection Reverse Polarity Protection Protection Class Interface IO-Link Version Setting Method Housing Material	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes yes III IO-Link I.1 IO-Link IO-Link 1.4404
Analog Output Response Time Switching Output/Switching Current Switching Output/Switching Current Switching Output Voltage Drop Current Output Load Resistance Current Load Voltage Output Short Circuit Protection Reverse Polarity Protection Protection Class Interface IO-Link Version Setting Method Housing Material Material in contact with media Degree of Protection Connection	010 V/420 mA 15 s ± 100 mA < 2 V (Ub-Ubmin)/0,02A ≤ 20 mA yes yes III IO-Link 1.1 IO-Link 1.4404 1.4404 IP68/IP69K * M12 × 1; 4-pin



Plug Version				
Tested by wenglor Tested by wenglor COMPUTED	Part Number	FXFF001	FXFF002	
Analog output switchable to flow or temperature			•	
Switching output switchable to flow or temperature		\bullet		
Switchable to NC/NO		\bullet		
Configurable as PNP/NPN/Push-Pull		\bullet	•	
Process Connection Length		60 mm	110 mm	
Probe Length		50 mm	100 mm	
Connection Diagram No.		139	139	
Suitable Connection Technology No.		21	21	
Suitable Mounting Technology No.		907 908	907 908	

The complete product range of flow sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.



Complementary Products

Flow calculator software DNNF008 IO-Link Master wTeach2 software DNNF005 ZH6C00x adapter to G1/4"

Flow Sensor

10...400 cm/s

Range



- 2 analog outputs: 4 ... 20 mA
- A single sensor for flow and temperature
- FDA compliant
- Measurement independent of flow direction and instillation position

Temperature Measurement Range -25...150 °C Adjustable Range 10...400 cm/s Medium Water 2 % Measuring error 30 K Temperature gradient Response time in case of temperature jump 10 s **Environmental conditions** -25...150 °C Temperature of medium Ambient temperature -25...80 °C -25...80 °C Storage temperature Mechanical Strength 100 bar DIN EN 60947-5-9

Technical Data Sensor-specific data Measuring Range

EMC

weFlux² InoxSens

10...400 cm/s

Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (102000 Hz)
Electrical Data	
Supply Voltage	1232 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Analog output O1	420 mA Flow
Analog output O2	420 mA Temp
Response Time	15 s
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Housing Material	1.4404
Material in contact with media	1.4404
Degree of Protection	IP68/IP69K *
Connection	M12 × 1; 4-pin
Process Connection	Cutting/locking ring

weFlux² Flow Sensors with two analog outputs simultaneously measure flow velocity and the temperature of aqueous liquids regardless of position and direction of flow. Advantage: The number of measuring points and the diversity of sensor variants are cut in half, and greatest possible flexibility is assured for installation in closed piping systems. The analysis module is integrated into the compact housing.





		Plug Version		
* Tested by wenglor	Part Number	FXFF101	FXFF102	
Analog output flow		•	\bullet	
Analog output temperature		\bullet	\bullet	
Process Connection Length		60 mm	110 mm	
Probe Length		50 mm	100 mm	
Connection Diagram No.		141	141	
Suitable Connection Technology No.		21	21	
Suitable Mounting Technology No.		907 908	907 908	

The complete product range of flow sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.



Complementary Products

Flow calculator software DNNF008 ZH6C00x adapter to G1/4"

Flow Sensor

10...400 cm/s

Range



- A single sensor for flow and temperature
- FDA compliant
- Measurement independent of flow direction and instillation position
- Ready for Industry 4.0 with IO-Link 1.1

weFlux² Flow Sensors simultaneously measure flow velocity and the temperature of aqueous liquids regardless of position and direction of flow. Advantage: The number of measuring points and the diversity of sensor variants are cut in half, and greatest possible flexibility is assured for installation in closed piping systems. Either 2 switching outputs or 1 switching output and 1 analog output are available depending on application requirements. The outputs can be configured as desired via IO-Link in order to flexibly adapt the sensors to the respective application.



Technical Data

Sensor-specific data	
Measuring Range	10400 cm/s
Temperature Measurement Range	-25150 °C
Adjustable Range	10400 cm/s
Medium	Water
Measuring error	2 %
Temperature gradient	30 K
Response time in case of temperature jump	10 s
Environmental conditions	
Temperature of medium	-25150 °C
Ambient temperature	-2580 °C
Storage temperature	-2580 °C
Mechanical Strength	100 bar
EMC	DIN EN 60947-5-9
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (102000 Hz)
Electrical Data	
Supply Voltage	1232 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Switching Outputs	2
Analog Output	010 V/420 mA
Response Time	15 s
Switching Output/Switching Current	± 100 mA
Switching Output Voltage Drop	< 2 V
Current Output Load Resistance	(Ub-Ubmin)/0,02A
Current Load Voltage Output	≤ 20 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	Ш
Interface	IO-Link
IO-Link Version	1.1
Mechanical Data	
Setting Method	IO-Link
Housing Material	1.4404
Material in contact with media	1.4404
Degree of Protection	IP68/IP69K *
Connection	M12 × 1; 4-pin
Process Connection	Clamp diameter: 50,5 mm
Process Connection Length	49 mm
Probe Length	32 mm

weFlux² InoxSens



		Plug Version
* Tested by wenglor		
USTED DELEMENTE CENTRAL CENTRA	Part Number	FXFF005
Analog output switchable to flow or temperature	•	
Switching output switchable to flow or temperature	•	
Switchable to NC/NO	•	
Configurable as PNP/NPN/Push-Pull		\bullet
Connection Diagram No.		139
Suitable Connection Technology No.		21

The complete product range of flow sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.



Complementary Products

Flow calculator software DNNF008 IO-Link Master wTeach2 software DNNF005

All dimensions in mm (1 mm = 0.03937 Inch)

Flow Sensor

10...400 cm/s

Range



- A single sensor for flow and temperature
- FDA compliant
- Measurement independent of flow direction and instillation position
- Ready for Industry 4.0 with IO-Link 1.1

weFlux² Flow Sensors simultaneously measure flow velocity and the temperature of aqueous liquids regardless of position and direction of flow. Advantage: The number of measuring points and the diversity of sensor variants are cut in half, and greatest possible flexibility is assured for installation in closed piping systems. Either 2 switching outputs or 1 switching output and 1 analog output are available depending on application requirements. The outputs can be configured as desired via IO-Link in order to flexibly adapt the sensors to the respective application.



Technical Data

Sensor-specific data	
Measuring Range	10400 cm/s
Temperature Measurement Range	-25150 °C
Adjustable Range	10400 cm/s
Medium	Water
Measuring error	2 %
Temperature gradient	30 K
Response time in case of temperature jump	10 s
Environmental conditions	
Temperature of medium	-25150 °C
Ambient temperature	-2580 °C
Storage temperature	-2580 °C
Mechanical Strength	100 bar
EMC	DIN EN 60947-5-9
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (102000 Hz)
Electrical Data	
Supply Voltage	1232 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Switching Outputs	2
Analog Output	010 V/420 mA
Response Time	15 s
Switching Output/Switching Current	± 100 mA
Switching Output Voltage Drop	< 2 V
Current Output Load Resistance	(Ub-Ubmin)/0,02A
Current Load Voltage Output	≤ 20 mA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Interface	IO-Link
IO-Link Version	1.1
Mechanical Data	
Setting Method	IO-Link
Housing Material	1.4404
Material in contact with media	1.4404
Degree of Protection	IP68/IP69K *
Connection	M12 × 1; 4-pin
Process Connection	M18×1,5

weFlux² InoxSens



Plug Version				
Tested by wengior USFED DECEMBER LISTED DECEMBER LISTED DECEMBER DECE	FXFF003	FXFF004		
Analog output switchable to flow or temperature	•	•		
Switching output switchable to flow or temperature				
Switchable to NC/NO				
Configurable as PNP/NPN/Push-Pull				
Process Connection Length	82 mm	132 mm		
Probe Length	50 mm	100 mm		
Connection Diagram No.	139	139		
Suitable Connection Technology No.	21	21		
Suitable Mounting Technology No.	900 901 902	900 901 902		

The complete product range of flow sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.



Complementary Products

Flow calculator software DNNF008 IO-Link Master wTeach2 software DNNF005

Flow Sensor

10...400 cm/s

Range



- 2 analog outputs: 4 ... 20 mA
- A single sensor for flow and temperature
- FDA compliant
- Measurement independent of flow direction and instillation position

weFlux² InoxSens

Technical Data	l
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Sensor-specific data	
Measuring Range	10400 cm/s
Temperature Measurement Range	-25150 °C
Adjustable Range	10400 cm/s
Medium	Water
Measuring error	2 %
Temperature gradient	30 K
Response time in case of temperature jump	10 s
Environmental conditions	
Temperature of medium	-25150 °C
Ambient temperature	-2580 °C
Storage temperature	-2580 °C
Mechanical Strength	100 bar
EMC	DIN EN 60947-5-9
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (102000 Hz)
Electrical Data	
Supply Voltage	1232 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Analog output O1	420 mA Flow
Analog output O2	420 mA Temp
Response Time	15 s
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Housing Material	1.4404
Material in contact with media	1.4404
Degree of Protection	IP68/IP69K *
Connection	M12 × 1; 4-pin
Process Connection	M18×1,5

weFlux² Flow Sensors with two analog outputs simultaneously measure flow velocity and the temperature of aqueous liquids regardless of position and direction of flow. Advantage: The number of measuring points and the diversity of sensor variants are cut in half, and greatest possible flexibility is assured for installation in closed piping systems. The analysis module is integrated into the compact housing.





Plug Version				
* Tested by wenglor	Part Number	FXFF103	FXFF104	
Analog output flow			•	
Analog output temperature				
Process Connection Length		82 mm	132 mm	
Probe Length		50 mm	100 mm	
Connection Diagram No.		141	141	
Suitable Connection Technology No.		21	21	
Suitable Mounting Technology No.		900 901 902	900 901 902	

The complete product range of flow sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.



Complementary Products

Flow calculator software DNNF008





Temperature Sensors

wenglor's temperature sensors measure and monitor the temperature of liquid and gaseous media in closed systems. They're distinguished by their compact design, their large measuring ranges and their high levels of accuracy.

weFlux² Temperature Sensors are available with an integrated IO-Link interface or a PT100/PT1000 resistance value. The variant with IO-Link has a measuring range of -50 to $+150^{\circ}$ C and is distinguished by its variability with regard to combination and configuration of the two sensor outputs. The sensors can be configured in a decentralized fashion and diagnosis data can be queried at any time via the modern interface. The temperature sensors with PT100/PT1000 resistance value are distinguished by a large measuring range of -50 to $+200^{\circ}$ C.

UniTemp Temperature Sensors detect temperature changes within a range of 0 to 200° C. Measured values are read out at the large, easy-to-read 7-segment display. The uniform design with intuitive operating and connection concepts is clear-cut and extremely user-friendly. Depending on actual requirements, the sensors can be equipped with either one or two switching outputs, or one switching output in combination with an analog output.

Only a small selection of wenglor's fluid sensors is included in the catalog. An overview of the complete range can be viewed at www.wenglor.com.

Application examples:

- Temperature monitoring in brewing processes
- Monitoring of inlet and return temperatures for solar-thermal energy conversion
- Temperature control in cheese production
- Temperature measurement in tempering ovens





wenglor Temperature Sensors at a Glance

This table provides information on additional sensors not included in the catalog. The data sheets are available for download at www.wenglor.com.

UniFlowweFlux2Additional options:Additional options:• Various process connection lengths• Various process connection lengths• Analog output as current or voltage output• Version with IO-Link• Versions with 2 switching outputs• Version with PT100 or PT1000• Versions with relay output					ection lengths PT1000
Housing:	FA (Plastic)	FX (Stain	ess Steel) FX	TT (Stainless Steel) FXDD (Stainless Steel)
Temperature Range	Process conn	ection			
	G1/4"	G1/2"	G1/2" CIP-capable	Sealing cone M18×1,5	Insulation displacement connector 6 mm
0…140 °C	FA	FA	FA, FX	FA	FA, FX
0200 °C	—	—	—	—	FA, FX
−50…+150 °C	_		—	FXTT	FXTT
−50…+200 °C	—	—	—	FXDD	FXDD

All Standard Sensors are available under www.wenglor.com. Individual sensor solutions are available on request.

Temperature Sensor

0...140 °C

Range



- Highly visible output indicator
- Simple operation via the display
- Temperature range: 0...200°C available

0...140 °C Temperature Measurement Range 2...139 °C Adjustable Range Medium Liquids, gases Measuring error ±1°C Resolution 1 °C Switching Hysteresis 2 °C 2...4 s Response Time **Environmental conditions** 0...140 °C Temperature of medium -20...80 °C Ambient temperature Mechanical Strength 60 bar EMC DIN EN 61326-2-3 Shock resistance per DIN IEC 68-2-27 50 g / 11 ms

Technical Data Sensor-specific data

Probe Length

Vibration resistance per DIN IEC 60068-2-6	20 g (102000 Hz)
Electrical Data	
Supply Voltage	1632 V DC
Current Consumption (Ub = 24 V)	60 mA
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Setting Method	Menu
Housing Material	PBT; PC; FKM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404; FKM
Degree of Protection	IP67 *
Connection	M12 × 1; 4-pin
Process Connection	Sealing cone M18 × 1.5
Process Connection Length	64 mm

44 mm

UniTemp temperature sensors measure the temperature of liquid or gaseous media and facilitate the temperature monitoring of processes.



UniTemp



Plug Version				
* Tested by wenglor	FFA T001	FFAT041		
Analog Output	•			
PNP NO/NC switchable				
Switching Outputs	1	2		
Analog Output	420 mA Temp			
Current Output Load Resistance	< 500 Ohm			
MTTFd (EN ISO 13849-1)	1194,55 a	1341,35 a		
Connection Diagram No.	533	536		
Control Panel No.	A01	A01		
Suitable Connection Technology No.	21	21		
Suitable Mounting Technology No.	900 901	900 901		

The complete product range of temperature sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.





01 = Switching Status Indicator 99 = Right button

20 = Enter Button

22 = UP Button 60 = Display



Temperature Sensor

0...140 °C

Range



- FDA compliant
- Hygienic design makes it easy to clean
- Robust stainless steel housing with IP69K
- Simple operation via the display
- Temperature range: 0...200°C available

UniTemp temperature sensors measure the temperature of liquid or gaseous media and facilitate the temperature monitoring of processes.

UniTemp temperature sensors are very easy to operate thanks to the removable cover on the integrated display. The highly visible switching status display enables the rapid localization of affected sensors for maintenance processes.

Thanks to the metallic sealing edge on the process connection, no further seals are required.



InoxSens UniTemp

Technical Data

Sensor-specific data	
Temperature Measurement Range	0140 °C
Adjustable Range	2139 °C
Medium	Liquids, gases
Measuring error	±1 °C
Resolution	1 °C
Switching Hysteresis	2 °C
Response Time	24 s
Environmental conditions	
Temperature of medium	0140 °C
Ambient temperature	-2080 °C
Mechanical Strength	60 bar
EMC	DIN EN 61326-2-3
Shock resistance per DIN IEC 68-2-27	50 g / 11 ms
Vibration resistance per DIN IEC 60068-2-6	20 g (102000 Hz)
Electrical Data	
Supply Voltage	1632 V DC
Current Consumption (Ub = 24 V)	60 mA
Switching Outputs	1
Switching Output/Switching Current	< 250 mA
Switching Output Voltage Drop	< 2 V
Analog Output	420 mA Temp
Current Output Load Resistance	< 500 Ohm
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Mechanical Data	
Setting Method	Menu
Housing Material	1.4404; PC; EPDM
Material Control Panel	Polyester
Material in contact with media	1.4435; 1.4404
Degree of Protection	IP67/IP69K *
Connection	M12 × 1; 4-pin
Process Connection	G 1/2" CIP-capable
Process Connection Length	48 mm
Probe Length	10 mm
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	1194,55 a



		Plug Version
Tested by wenglor	Part Number	FFXT001
Analog Output		
PNP NO/NC switchable		\bullet
Connection Diagram No.		533
Control Panel No.		A11
Suitable Connection Technology No.		21
Suitable Mounting Technology No.		903 905 906

The complete product range of temperature sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.



27

Temperature Sensor

-50...150 °C

Range



- FDA compliant
- Ready for Industry 4.0 with IO-Link 1.1
- Response time T90: < 2 seconds
- Temperature measuring range: -50 ... +150° C

Sensor-specific data Sensor element PT1000, Class B -50...150 °C Temperature Measurement Range -50...150 °C Adjustable Range Medium Liquids, gases ± 0,5 °C Measuring error Resolution 0,01 °C < 2 s Response Time **Environmental conditions** -50...150 °C Temperature of medium Ambient temperature -25...80 °C -25...80 °C Storage temperature Mechanical Strength 100 bar FMC DIN EN 61326-1 IEC 60751 Shock Resistance Vibration resistance IEC 60751 **Electrical Data** 2-wire supply power 8...32 V DC 3-wire supply power 12...32 V DC Current Consumption (Ub = 24 V) < 15 mA Switching Outputs 2 Switching Output/Switching Current ± 100 mA Switching Output Voltage Drop < 1,5 V DC Analog Output 0...10 V/4...20 mA Current Output Load Resistance (Ub-Ubmin)/0,02A Short Circuit Protection yes **Reverse Polarity Protection** yes Protection Class Ш

Technical Data

Interface IO-Link Version

Mechanical Data Setting Method

Housing Material

Connection Process Connection

Degree of Protection

Material in contact with media

weFlux² Temperature Sensors ensure precise temperature measurement of liquids and gases in closed piping systems. Either 2 switching outputs, 1 switching output and 1 analog output or one 2-wire analog output is available depending on settings and connection configuration. The outputs can be configured as desired via IO-Link in order to flexibly adapt the sensors to the respective application.



IO-Link

IO-Link

1.4404

1.4404 IP68/IP69K *

M12 × 1; 4-pin

Cutting/locking ring

1.1



Plug Version					
* Tested by wenglor					
LISTED DECIMINATION LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED LISTED	FXTT001	FXTT002			
Analog Output	•	•			
PNP NO/NC switchable					
Configurable as PNP/NPN/Push-Pull					
Process Connection Length 110 mm 210 mm					
Probe Length 100 mm 200 mm					
Connection Diagram No. 139 139					
Suitable Connection Technology No. 21 21					
Suitable Mounting Technology No.	907 908	907 908			

The complete product range of temperature sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.



Complementary Products

IO-Link Master wTeach2 software DNNF005 ZH6C00x adapter to G1/4"

Temperature Sensor

-50...150 °C

Range



- FDA compliant
- Ready for Industry 4.0 with IO-Link 1.1
- Response time T90: < 2 seconds
- Temperature measuring range: -50 ... +150° C

Technical Data Sensor-specific data PT1000, Class B -50...150 °C Temperature Measurement Range

Sensor element

weFlux² InoxSens

Adjustable Range	-50150 °C
Medium	Liquids, gases
Measuring error	± 0,5 °C
Resolution	0,01 °C
Response Time	< 2 s
Environmental conditions	
Temperature of medium	-50150 °C
Ambient temperature	-2580 °C
Storage temperature	-2580 °C
Mechanical Strength	100 bar
EMC	DIN EN 61326-1
Shock Resistance	IEC 60751
Vibration resistance	IEC 60751
Electrical Data	
2-wire supply power	832 V DC
3-wire supply power	1232 V DC
Current Consumption (Ub = 24 V)	< 15 mA
Switching Outputs	2
Switching Output/Switching Current	± 100 mA
Switching Output Voltage Drop	< 1,5 V DC
Analog Output	010 V/420 mA
Current Output Load Resistance	(Ub-Ubmin)/0,02A
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Protection Class	III
Interface	IO-Link
IO-Link Version	1.1
Mechanical Data	
Setting Method	IO-Link
Housing Material	1.4404
Material in contact with media	1.4404
Degree of Protection	IP68/IP69K *
Connection	M12 × 1; 4-pin
Process Connection	M18×1,5

weFlux² Temperature Sensors ensure precise temperature measurement of liquids and gases in closed piping systems. Either 2 switching outputs, 1 switching output and 1 analog output or one 2-wire analog output is available depending on settings and connection configuration. The outputs can be configured as desired via IO-Link in order to flexibly adapt the sensors to the respective application.





Plug Version					
* Tested by wenglor					
ROHS	Part Number	FXTT003	FXTT004		
Analog Output			•		
PNP NO/NC switchable			\bullet		
Process Connection Length 132 mm 232 mm					
Probe Length		100 mm	200 mm		
Connection Diagram No.		139	139		
Suitable Connection Technology No.		21	21		
Suitable Mounting Technology No.		900 901	900 901		

The complete product range of temperature sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.



Complementary Products

IO-Link Master wTeach2 software DNNF005

Temperature Sensor

-50...150 °C

Range



weFlux² InoxSens

Technical Data

Sensor-specific data	
Temperature Measurement Range	-50200 °C
Medium	Liquids, gases
Response Time	< 2 s
Environmental conditions	
Temperature of medium	-50200 °C
Ambient temperature	-2580 °C
Storage temperature	-2580 °C
Mechanical Strength	100 bar
Shock Resistance	IEC 60751
Vibration resistance	IEC 60751
Mechanical Data	
Housing Material	1.4404
Material in contact with media	1.4404
Degree of Protection	IP68/IP69K *
Connection	M12 × 1; 4-pin
Process Connection	Cutting/locking ring

• FDA compliant

- Response time T90: < 2 seconds
- Robust stainless steel housing with IP69K
- Temperature measuring range: -50 ... +200° C

weFlux² Temperature Sensors ensure precise temperature measurement of liquids and gases in closed piping systems. It's easy to incorporate the standardized PT100/PT1000 resistance value into the controller. The compact housing with a diameter of just 27 mm is made of V4A stainless steel and features an easy-toclean surface. Thanks to their rugged housing and functional design, the Temperature Sensors are FDA compliant.





	Plug Version				
* Tested by wenglor					
USTED USTED WICKOW TA USTED WICKOW TA USTED WICKOW TA USTED WICKOW TA USTED WICKOW TA WICKOW TA USTED WICKOW TA WICKOW TA WICK	FXDD001	FXDD002	FXDD101	FXDD102	FXDD103
PT100	•	•			
PT1000					
Sensor element	PT100, Class B	PT100, Class B	PT1000, Class B	PT1000, Class B	PT1000, Class B
Process Connection Length	60 mm	110 mm	60 mm	110 mm	210 mm
Probe Length	50 mm	100 mm	50 mm	100 mm	200 mm
Connection Diagram No.	140	140	140	140	140
Suitable Connection Technology No.	21	21	21	21	21
Suitable Mounting Technology No.	907 908	907 908	900 901 902	900 901 902	900 901 902

The complete product range of temperature sensors can be found at www.wenglor.com. An overview of this can be found in the table of contents.



Complementary Products ZH6C00x adapter to G1/4"

Connection Diagrams

Legen	nd	PT	Platinum measuring resistor	ENA	Encoder A	
+	Supply Voltage +	nc	not connected	ENв	Encoder B	
-	Supply Voltage 0 V	U	Test Input	Амін	Digital output MIN	
~	Supply Voltage (AC Voltage)	Ū	Test Input inverted	Амах	Digital output MAX	
А	Switching Output (NO)	W	Trigger Input	Аок	Digital output OK	
Ā	Switching Output (NC)	0	Analog Output	SY In	Synchronization In	
٧	Contamination/Error Output (NO)	0-	Ground for the Analog Output	SY OUT	Synchronization OUT	
V	Contamination/Error Output (NC)	BZ	Block Discharge	OLT	Brightness output	
E	Input (analog or digital)	Amv	Valve Output	М	Maintenance	
Т	Teach Input	а	Valve Control Output +			
Z	Time Delay (activation)	b	Valve Control Output 0 V	_		
S	Shielding	SY	Synchronization	Wire C	Colors according to	
RxD	Interface Receive Path	E+	Receiver-Line	DIN IE	DIN IEC 757	
TxD	Interface Send Path	S+	Emitter-Line	BK	Black	
RDY	Ready	<u>+</u>	Grounding	BN	Brown	
GND	Ground	SnR	Switching Distance Reduction	RD	Red	
CL	Clock	Rx+/-	- Ethernet Receive Path	OG	Orange	
E/A	Output/Input programmable	Tx+/-	- Ethernet Send Path	YE	Yellow	
0	IO -Link	Bus	Interfaces-Bus A(+)/B(-)	GN	Green	
PoE	Power over Ethernet	La	Emitted Light disengageable	BU	Blue	
IN	Safety Input	Mag	Magnet activation	VT	Violet	
OSSD	Safety Output	RES	Input confirmation	GY	Grey	
Signal	Signal Output	EDM	Contactor Monitoring	WH	White	
BI_D+/-	Ethernet Gigabit bidirect. data line (A-	D) ENArs42	²² Encoder A/Ā (TTL)	PK	Pink	
ENnes42	Encoder 0-pulse 0-0 (TTL)	FNBR54	" Encoder B/B (TTL)	GNYE	Green/Yellow	













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