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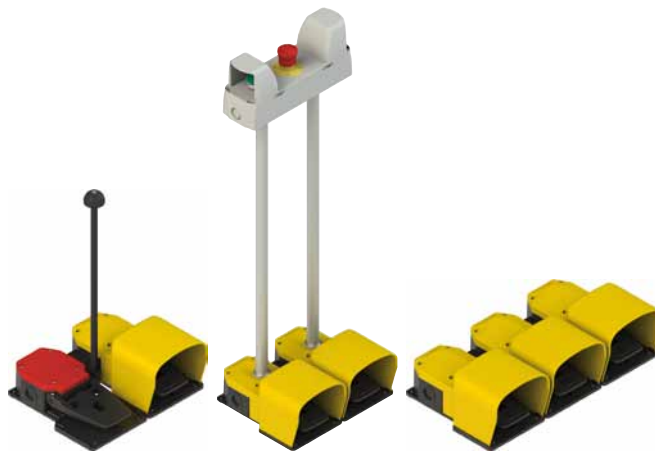
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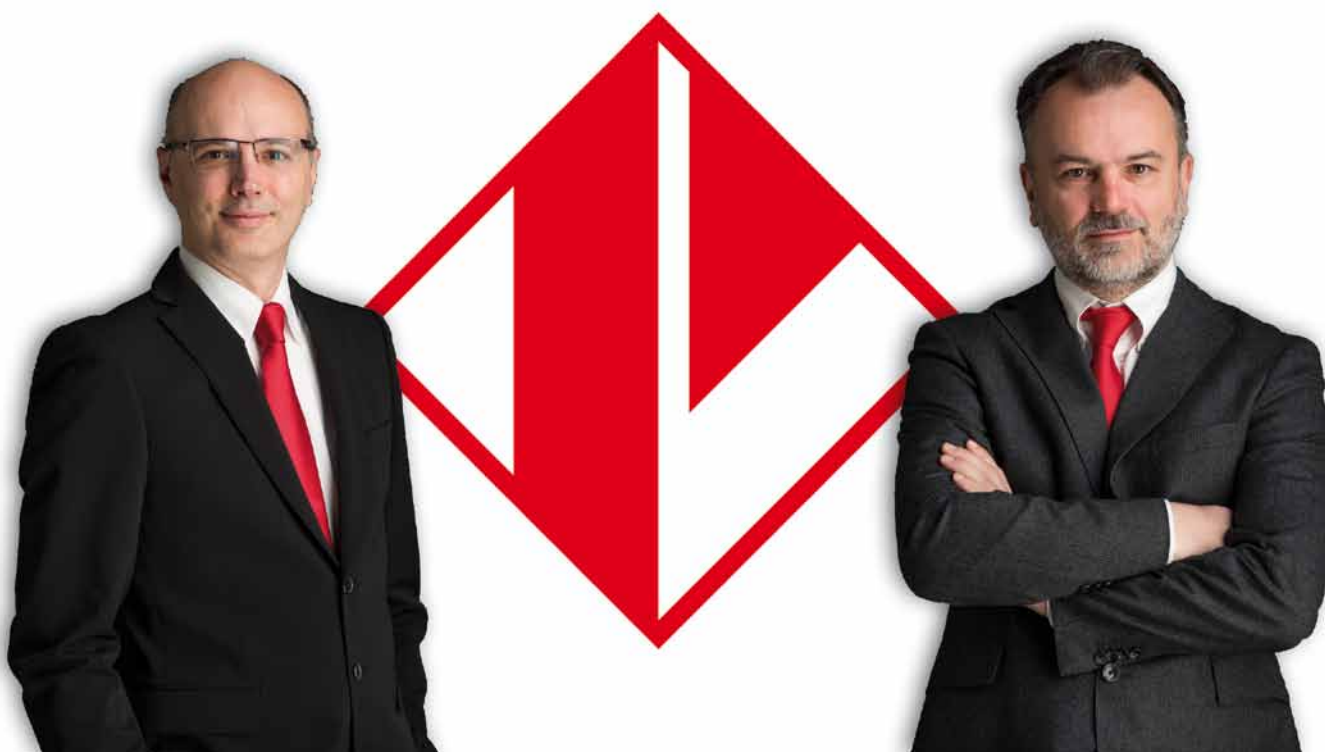
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## MORE THAN 200 PROFESSIONALS WITH PASSION

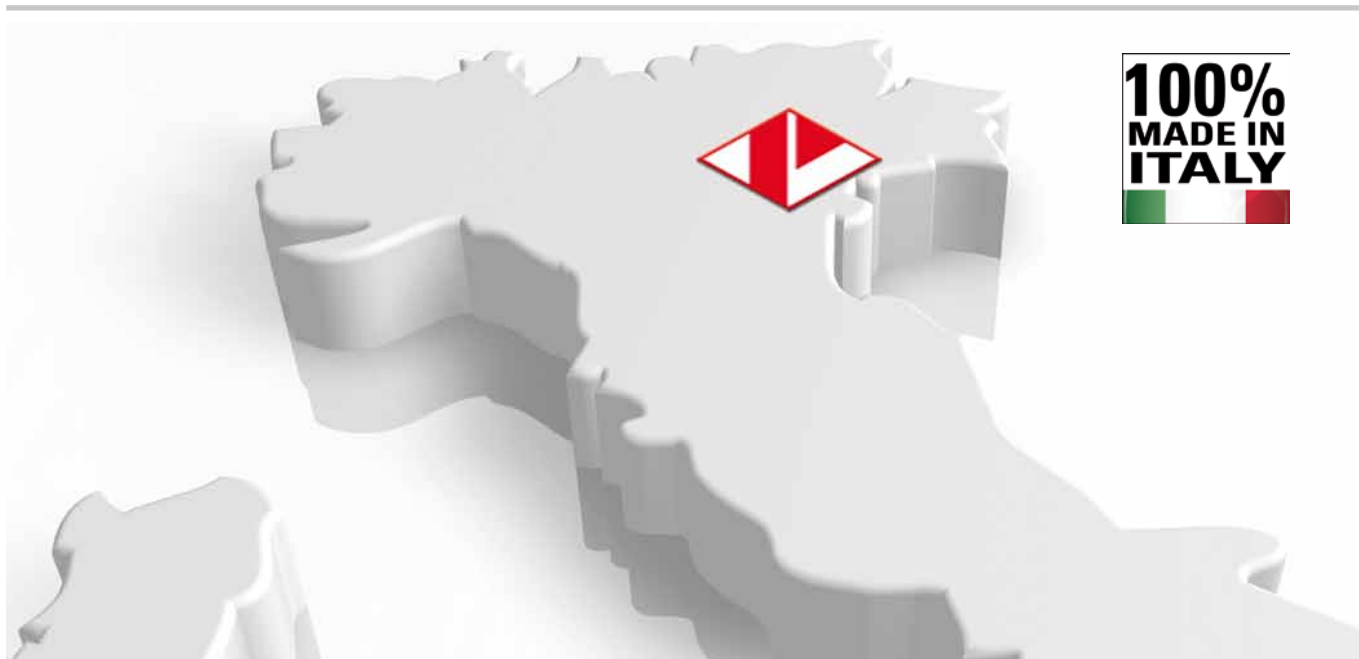
It is people, with their professionalism and dedication that make a great company. This profound conviction has always guided Pizzato Elettrica in its choice of employees and partners. Today, Giuseppe and Marco Pizzato lead a tireless team providing the fastest and most efficient response to the demands of the market. This team has grown since the year 2000 and has achieved a considerable increase in business in all the countries where Pizzato Elettrica is present.

The various strategic sectors of the business are headed by professionals with significant experience and expertise. Many of these people have developed over years with the company. Others are experts in their specific field and have integrated personal experience with the Pizzato Elettrica ethos to extend the company's capability and knowledge.



From the design office to the technical assistance department, from managers to workers, every employee believes in the company and its future. Pizzato Elettrica employees all give the best of themselves secure in the knowledge they are the fundamental elements of a highly valuable enterprise.





## 100% MADE IN ITALY

Pizzato Elettrica is one of the leading European manufacturers of position switches, microswitches, safety devices, safety modules, foot switches, control and signalling devices, and devices for elevators.

An entrepreneurial company such as Pizzato Elettrica bases its foundations on a solid and widely shared value system. The pillars that form the basis of the company's work have remained constant, and constitute the fundamental guiding principles for all company activities.

### PASSION FOR QUALITY

Passion for product quality, orientation towards excellence, innovation, and continuous development, represent the key principles of Pizzato Elettrica's everyday work.

Anyone using Pizzato Elettrica's products does so in the certainty that these devices are of certified quality, since they are the result of a process that is scrupulously controlled at every stage of the production.

The company's goal is to offer the market safe, reliable, and innovative solutions.

### CARE FOR THE CUSTOMER

In order to be successful, a product must respond to the specific needs of those who will use it. Market developments must be carefully monitored in order to understand, in advance, which new applications will prove themselves truly useful. This is why Pizzato Elettrica has always cultivated close synergies with the companies that have chosen them as a supplier, using this continuous dialogue to identify the potential developments of the own product range in order to make it highly flexible, complete and capable to respond to the most diverse needs.

### 100% MADE IN ITALY

All Pizzato Elettrica products are designed, developed, and tested entirely at the 7 company plants in Marostica, in the province of Vicenza in Italy. The company is thus able to meet specific customer requirements at all times, by offering a comprehensive range of products and technologically advanced solutions.







## 1984: AN ENTREPRENEURIAL STORY BEGINS

### 1984

The company Pizzato di Pizzato B. & C. snc. manufacturer of position switches is founded.

### 1988

The company becomes a limited liability partnership, and is renamed Pizzato Elettrica, a brand shortly destined to become renowned and valued nationwide. Also in the year 1988, the first company-owned plant geared towards mechanical processing was built. By the end of the decade, thanks to the development of quality products and the experience built on the Italian market, Pizzato Elettrica turns to the international market.

### 1995

Building of the second plant geared towards the moulding of plastic materials. Development of the position switch range continues in parallel. Start of significant years in terms of safety devices planning. The safety sector becomes a key sector to the company.

### 1998

Construction of the third plant, housing the assembly department.

### 2002

New millennium starts with quality certifications: achievement of the ISO 9001:2000 certification. Launching of the first safety modules. Construction of the new headquarters and logistics site; currently the company head office. Continued expansion of the industrial safety and automation product range.

### 2007

Pizzato Elettrica faces their first generational change: Giuseppe and Marco Pizzato take over the company directorship.

### 2010

Extension of Pizzato Elettrica product portfolio, with the launch of the innovative EROUND line consisting of control and signalling devices. This product range accompanies position switches and safety devices, thus offering complete solutions to customers.

### 2012

Introduction of Gemnis Studio, the first software produced by Pizzato Elettrica. A graphic development environment for the creation, simulation, and debugging of programs that can be integrated in the Gemnis line modules.

### 2013

Foundation of first subsidiary of Pizzato Elettrica, Pizzato Deutschland GmbH, in Germany.

### 2014

A new production facility dedicated to switches and automatic machines is opened, spanning a surface area of 6000 m<sup>2</sup>.

### 2016

Foundation of second subsidiary of Pizzato Elettrica, Pizzato France SARL, in France.

The new NS series of safety switches with electromagnets and RFID technology is introduced, fruit of the company's experience, spanning more than thirty years in the field of industrial safety. To date it is the state of the art in its industry.

### 2017

The company continues to expand and now includes an additional production facility, the new location of the offices in the sales network.

### Today

Giuseppe and Marco Pizzato lead a company in constant growth in terms of new product launches, number of employees (more than 200 employees at present), turnover, and new markets. Pizzato Elettrica is continuing their new product internationalisation and development process.





## 70,000,000 PARTS SOLD WORLDWIDE

Pizzato Elettrica's product catalogue contains more than 7,000 articles, with more than 1,300 special codes developed for devices personalised according to clients' specific needs.

Pizzato Elettrica devices can be grouped, according to typology, into three main macro-categories:

- **POSITION SWITCHES.** Pizzato Elettrica position switches are daily installed in every type of industrial machinery all over the world for applications in the sector of wood, metal, plastic, automotive, packaging, lifting, medicinal, naval, etc. In order to be used in a such wide variety of sectors and countries, Pizzato Elettrica position switches are made to be assembled in a lot of configurations thanks to the various body shapes, dozens of contact blocks, hundreds of actuators and materials, forces, assembling versions.

Pizzato Elettrica can offer one of the widest product range of position switches in the world. Moreover, the use of high quality materials, high reliability technologies (e.g. twin bridge contact blocks) as well as the IP67 protection degree make this range of position switches one of the most technologically evolved.

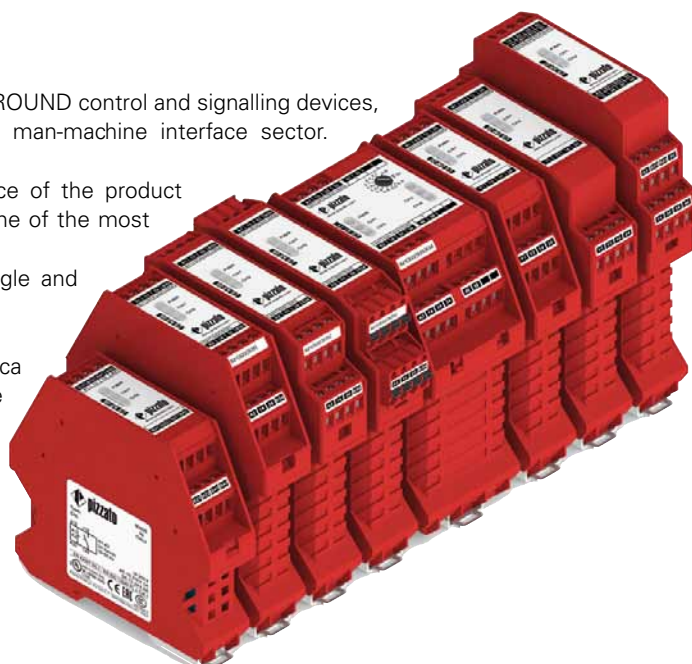
- **SAFETY DEVICES.** The company Pizzato Elettrica has been one of the first Italian companies developing dedicated items for this sector, creating and patenting dozens of innovative products, thus becoming one of the main European manufacturers of safety devices. The wide range of specific products for machine safety completely designed and assembled in our company premises in Marostica (VI) - Italy, has been extended by the introduction of coded magnetic sensors, solenoid switches provided with emergency release devices, safety hinge switches and safety handles. Recent products include the safety sensors with RFID technology of the ST series, the stainless steel hinge safety switches of the HX series, the RFID safety switches with block of the NG series, the safety handle of the P-KUBE 2 line and the safety switches with electromagnets and RFID technology of the NS series.

- **MAN-MACHINE INTERFACE.** Thanks to the introduction of the EROUND control and signalling devices, Pizzato Elettrica has remarkably widened their offer within the man-machine interface sector.

Thanks to the new design, the care for details and the elegance of the product combined with its maximum safety and reliability, this series is one of the most complete and cutting-edge on the market.

Our company offers a wide range of products that includes single and modular foot switches with many patented joining kits.

In order to satisfy its customers' needs and requests, Pizzato Elettrica offers a lot of accessories purposely designed not only to complete their wide range of products, but also to help device installation on machineries.







## 12 MILLION CERTIFIED PRODUCT CODES

A simple brand isn't enough: the company is aiming for the Pizzato Elettrica brand to be widely recognised as a synonym for absolute quality and certainty.

A result that has been reached and consolidated over the years, updating and expanding the series of certifications obtained from the most important Italian and international control organisations. Product quality is assessed by five accredited external bodies: IMQ, UL, CCC, TÜV SÜD, EAC. These bodies lay out high technical and qualitative standards for the company to achieve and maintain, verified yearly with seven different inspections: these are performed, without prior notice, by qualified inspectors, who extract samples of products and materials destined for sale from plants, or from the market directly, to subject them to apposite tests.

- **CE MARK.** All Pizzato Elettrica products bear the CE marking in conformity with the European Directives in force.
- **ISO 9001 CERTIFICATION.** The company's production system complies with national UNI EN ISO 9001 and international ISO 9001 standards. The certification covers all of the company's plants and their production and managerial activities: entry checks, technical, purchasing and commercial department activities, manufacturing operations assessments, final pre-shipping product tests and checks, equipment reviews and the management of the metrological lab.
- **CERTIFICATION OF COMPANY QUALITY SYSTEMS.** Pizzato Elettrica has obtained the certificate of compliance with the UNI EN ISO 9000 regulations in force in Italy and abroad. It is issued by a recognised independent body that guarantees the quality and reliability of the service offered to clients worldwide.
- **CSQ, CISQ AND IQNET.** The CSQ system is part of the CISQ (Italian Certification of Quality Systems) federation, which consists of the primary certification bodies operating in Italy in the various product sectors. CISQ is the Italian representative body within IQNet, the biggest international Quality Systems and Company Management certification network, which is adhered to by 25 certification organs in as many countries.







## TRADE FAIRS AND EVENTS

### TRADE FAIRS

Pizzato Elettrica regularly participates to many trade fairs in Italy and abroad, presenting in this way to the market the products, the latest news, etc.

### EVENTS

Besides offering qualified technical assistance, Pizzato Elettrica presents itself as a dynamic partner who is attentive to the needs of its customers. For this reason, the company organises several meetings and training courses with particular attention to the regulatory aspect of machinery safety.

### MULTILINGUAL DOCUMENTATION

Pizzato Elettrica provides its customers with a wide range of technical documentation available in several languages: Italian, English, German, French, Spanish, etc.

From the general catalogue to the detailed brochures, from leaflets of new products to price lists and DVDs, Pizzato Elettrica customers can find in a quick and exact way all the information concerning products, the technical characteristics and functionality, the proper installation methods, application examples, etc.







## NEW WEBSITE

To remain in line with its objectives and strategies, Pizzato Elettrica has also decided to renew their image online by designing and creating a new website.

The aim was therefore to create a more modern website: one that would be technologically competitive and feature eye-catching graphics but would also offer users detailed, up-to-date contents.

The main characteristics of version 2.0 of the website [www.pizzato.com](http://www.pizzato.com) are therefore as follows:

### SEARCH USING FILTERS

The product section has been extended and a decision was made to enhance it with several new aspects. Firstly, the use of filters, to aid customers as they search for products, and guide them in creating the item that best suits their requirements by enabling them to choose its characteristics.

### RESPONSIVE DESIGN

Another significant characteristic is the compatibility of this new website with all kinds of devices. Indeed, it is a responsive site, capable of automatically adapting its graphic layout to suit the device with which it is viewed and so minimising the need for the user to resize and scroll the contents.

### BROWSABLE, DOWNLOADABLE CATALOGUE

Users can also download our full catalogue or alternatively browse it directly online, an extremely handy solution for those wishing to consult our range of products simply and rapidly.

### HIGH RESOLUTION IMAGES

The information provided for each one of our products is complete with high resolution images to offer visitors to the website a clear, accurate view of our items in close detail, also offering them the possibility to zoom in and out on the image.

### LARGE VIDEO SECTION

The large video section of the website is capable of showcasing the main characteristics, functions and use of the various products.





## TECHNICAL AND SALES ASSISTANCE



### TECHNICAL DEPARTMENT

The Pizzato Elettrica technical department provides direct technical and qualified assistance in Italian and English, helping in this way the customers to choose the suitable product for their own application explaining the characteristics and the correct installation.

Office hours: Monday to Friday  
08 am - 12 pm / 02 pm - 06 pm CET  
Phone: +39.0424.470.930  
fax: +39.0424.470.955  
e-mail: tech@pizzato.com

Spoken languages:  | 



### SALES DEPARTMENT

Among the strengths in the company relationship with the commercial network, the direct assistance guaranteed in five languages: Italian, English, French, German and Spanish. A service that confirms Pizzato Elettrica quality and attention to the needs of customers from around the world.

Office hours: Monday to Friday  
08 am - 12 pm / 02 pm - 06 pm CET  
Phone: +39.0424.470.930  
fax: +39.0424.470.955  
e-mail: info@pizzato.com

Spoken languages:  |  |  |  | 





## Joystick Line EROUND

- Protection degrees IP67 and IP69K
- 4-slot mounting adapter with standard contact block
- Two different heights: standard (55 mm), reduced (45 mm)
- Version with central locking system to prevent accidental activation
- Versions with 2 or 4 directions
- Versions with spring-return or maintained actuation
- Two-step actuation in the same direction
- Possibility of combining the joystick with the specific labels available in black or grey

► 75



## Monolithic buzzer Line EROUND

- Buzzer fully integrated in a reduced-size monolithic body
- Protection degree up to IP67 and IP69K
- High sound intensity
- Continuous or pulsed sound version
- Versions with supply voltage of 12 Vac/dc and 24 Vac/dc
- Version with perforated or perforation-free lens

► 115



## Quadruple buttons Line EROUND

- 4 independent contact blocks controlled by just one device
- Protection degree IP67
- Two different shapes available: projecting and flush
- Customisable with symbols and indelible markings
- More than 1,000,000 guaranteed operations

► 45



## RJ45 and USB sockets Line EROUND

- USB 3.0 connectors (maximum data transfer speed) and USB 2.0 connectors (standard data transfer speed)
- RJ45 connectors for Ethernet networks
- Protection degree IP67
- Version with socket/socket
- Version with socket / cable with plug

► 107

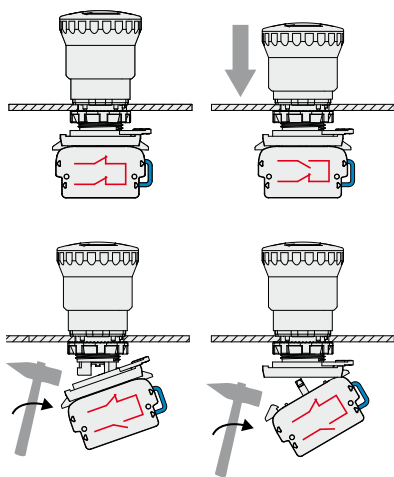




## New protected locks Line ERROUND

- Keyhole protected from dust and other pollutants
- Used as standard in all key selector switches and emergency buttons with key release
- Corrosion-proof metal key
- Available with many cipherings

► 49



## Self-monitored contact blocks Line ERROUND

- Electrical circuit opening indicates the detachment from the device
- Ideal for emergency buttons
- Positive opening NC contacts acc. to IEC 60947-5-1
- Highly reliable contact blocks provided with self-cleaning contacts with quadruple support point
- Versions with gold-plated contacts

► 89



## Dual function luminous disc Line ERROUND

- Enables the device to be lit with a continuous or blinking light using a simple wiring system
- High visibility
- Protection degree IP67
- Versions with supply voltage of 12 Vac/dc and 24 Vac/dc
- Available in yellow and white
- Customisable using indelible symbols and texts marked by laser

► 131



## Housings Line ERROUND

- Protection degrees IP67 and IP69K
- Versions with perforated cover (Ø 22 mm) for the installation of control and signalling devices
- Versions with perforation-free cover and cover with perforations for the luminous disc
- Stainless steel captive screws
- 4x side cable entries + 2x bottom cable entries

► 117



### Description



The PX and PA foot switches are traditional products of Pizzato Elettrica that have recorded a continuous growth and success in the market. Modified and updated over time, this cutting-edge series keeps offering new solutions to all flexibility and modularity demands. Moreover, the latest changes have reduced its weight and therefore its environmental impact.

### Protection degree IP65

# IP65

These devices are designed to be used in the toughest environmental conditions and they pass the tests required for IP65 acc. to EN 60529. They can therefore be used in all environments in which the wrapping must present a high degree of protection. Available also with IP53 for applications requiring a high price/quality ratio.

### Conduit entry with cable clamp



Inside the housing immediately after the cable inlet there is a cable clamp in line with the hole. Ideal for maintaining the electrical cable in position; it prevents any tractions or repeated movements from discharging on the electrical connections of the contact blocks. Reversible, it can tighten both large and small cables.

### Sturdy cap

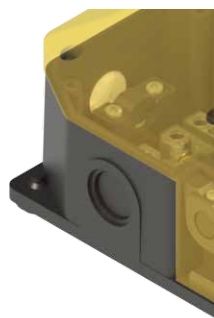
# 800 N



Foot switches of the PX series are provided with a reinforced shaped cap. This solution enables the cap to bear static loads of up to 800 N without breaking, therefore being tread-proof. For particularly difficult environments, the cap can be provided in material reinforced with charges in fibre glass to also resist impacts from dynamic knocks. Furthermore, for PA series foot switches in heavy duty environments it is

also available a metal protection with oversize dimensions, designed for persons wearing safety shoes.

### Side openings



All PX and PA series foot switches are provided with two knock-out side openings. These openings enable the single pedal, via a specific joining KIT, to be laterally connected to other single Pizzato Elettrica pedals. Two normal pedals can therefore be transformed at any time into a single, sturdy double pedal. The joining kits are provided with special gaskets which maintain the device protection degree unaltered, and with a special internal conduit that allows to pass the wires from one foot switch to the next.

### Stainless steel external metallic parts

# AISI 304

All external metal parts of the single foot switch are made in stainless steel. All the screws, springs and external metal sliding pivots are made of stainless steel. Ideal for applications used in presence of corrosive elements such as in the food and pharmaceutical sectors.

### Contact block



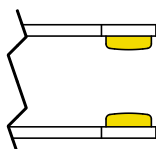
Up to two contact blocks with two contacts each can be fitted in one foot switch. These units are available in several models, with slow or snap action and various operation travels. All contact blocks are provided with highly reliable twin bridge electrical contacts and positive opening NC contacts in accordance with IEC 60947-5-1, and are therefore suitable for safety circuits.

### Non-slip rubber feet



All foot switches are provided with four dedicated non-slip feet. Being hollow in the middle, these feet guarantee smaller contact surface and greater friction coefficient. This way the actuation of the foot switch is simple and practical, preventing its sliding away on very smooth and polished floors.

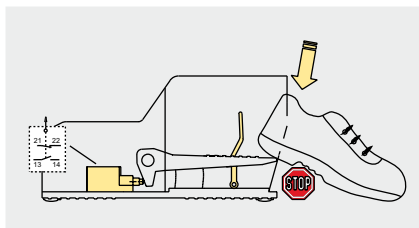
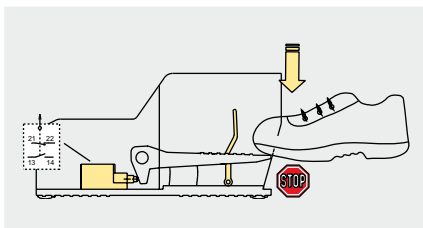
### Gold-plated contacts



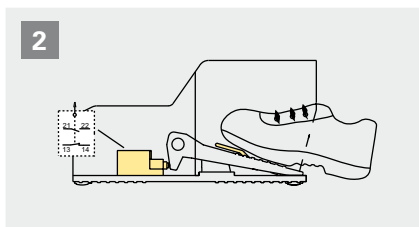
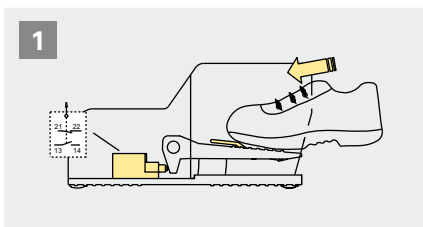
The contact blocks of these devices can be supplied gold-plated upon request. Ideal for applications with low voltages or currents; it ensures increased contact reliability. Available in two thicknesses (1 or 2.5 microns), it adapts perfectly to the various fields of application, ensuring a long endurance over time.



## Safety lever

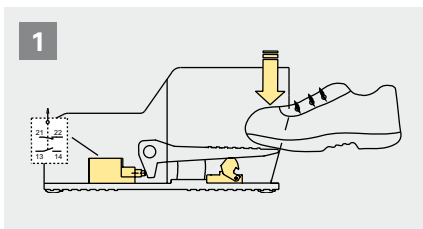


The safety lever prevents the lowering of the pedal actuator in case the foot is not fully inserted into the pedal. This prevents the accidental activation of the pedal.

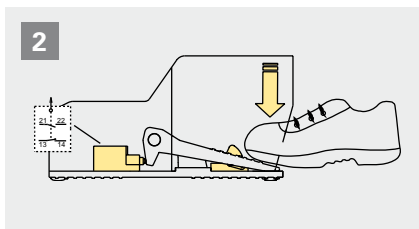


Only if the foot is completely inserted it is possible to lower the safety lever and push down the pedal actuator.

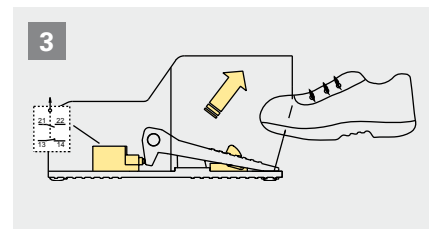
## Lock of the pedal actuator



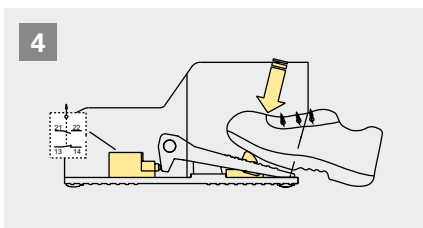
Insertion of the foot into the pedal



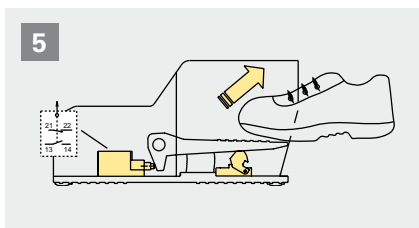
Pushing down the pedal actuator, the contacts switch and the locking device locks the actuator



Releasing the pedal actuator, the lock device keeps it down.

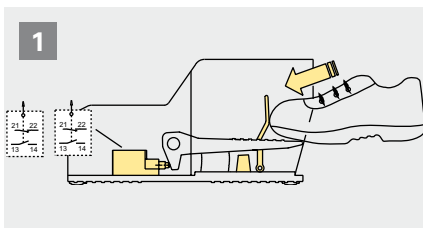


To unlock the pedal actuator push on the locking device.

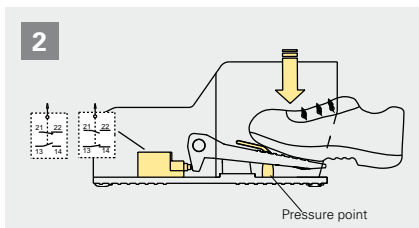


Removing the foot from the foot switch, the pedal actuator and the contacts return to their initial positions.

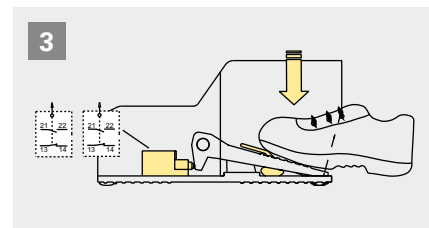
## 2-stage actuating force



PX pedal with two shifted, snap action contact blocks (2x 1NO+1NC), 2-step actuation force and safety lever.



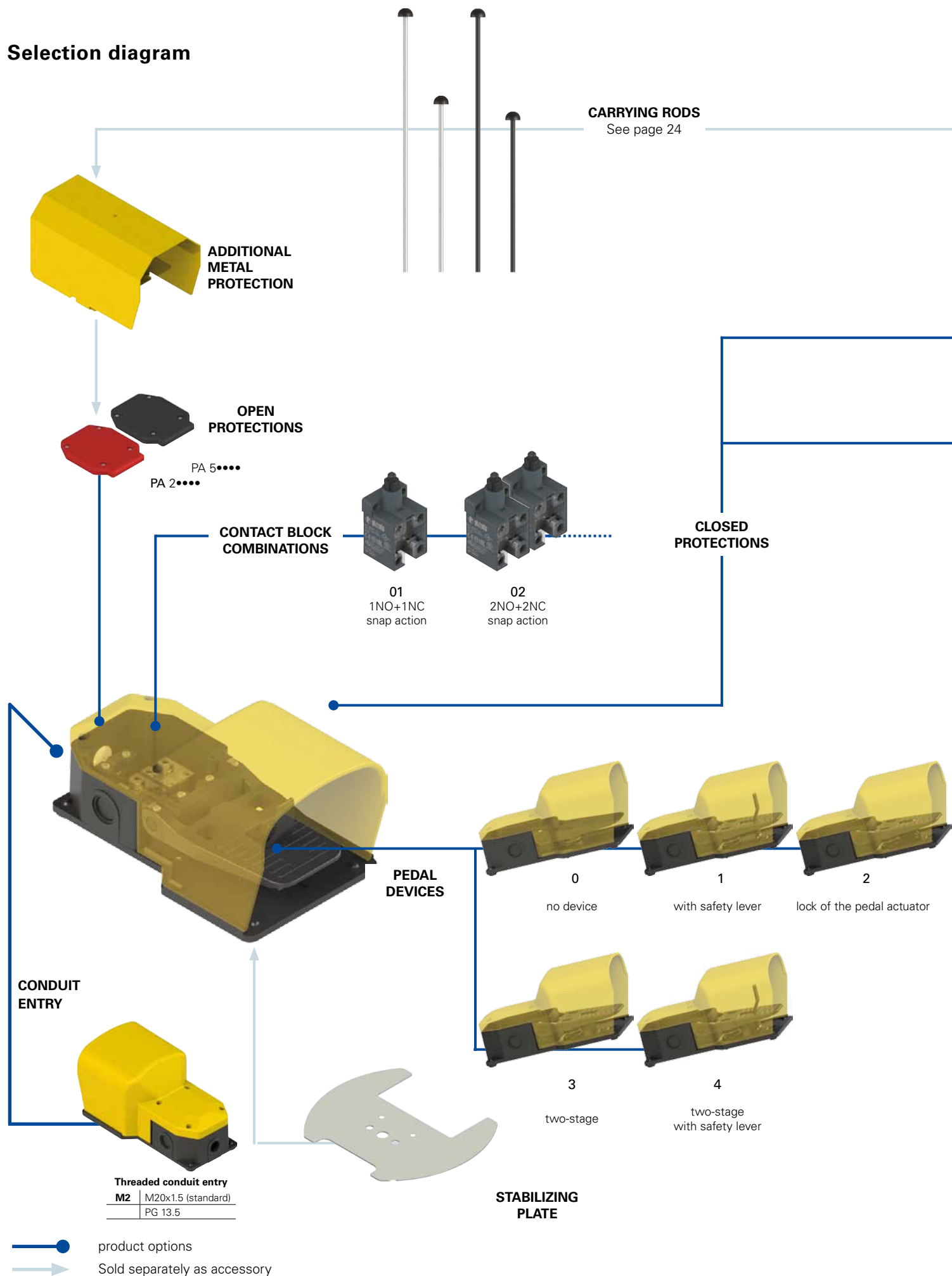
With a light pressure ( $\sim 19$  N) on the pedal actuator, one of the two contact blocks switches while the second keeps its state. The pedal actuator stops at pressure point.



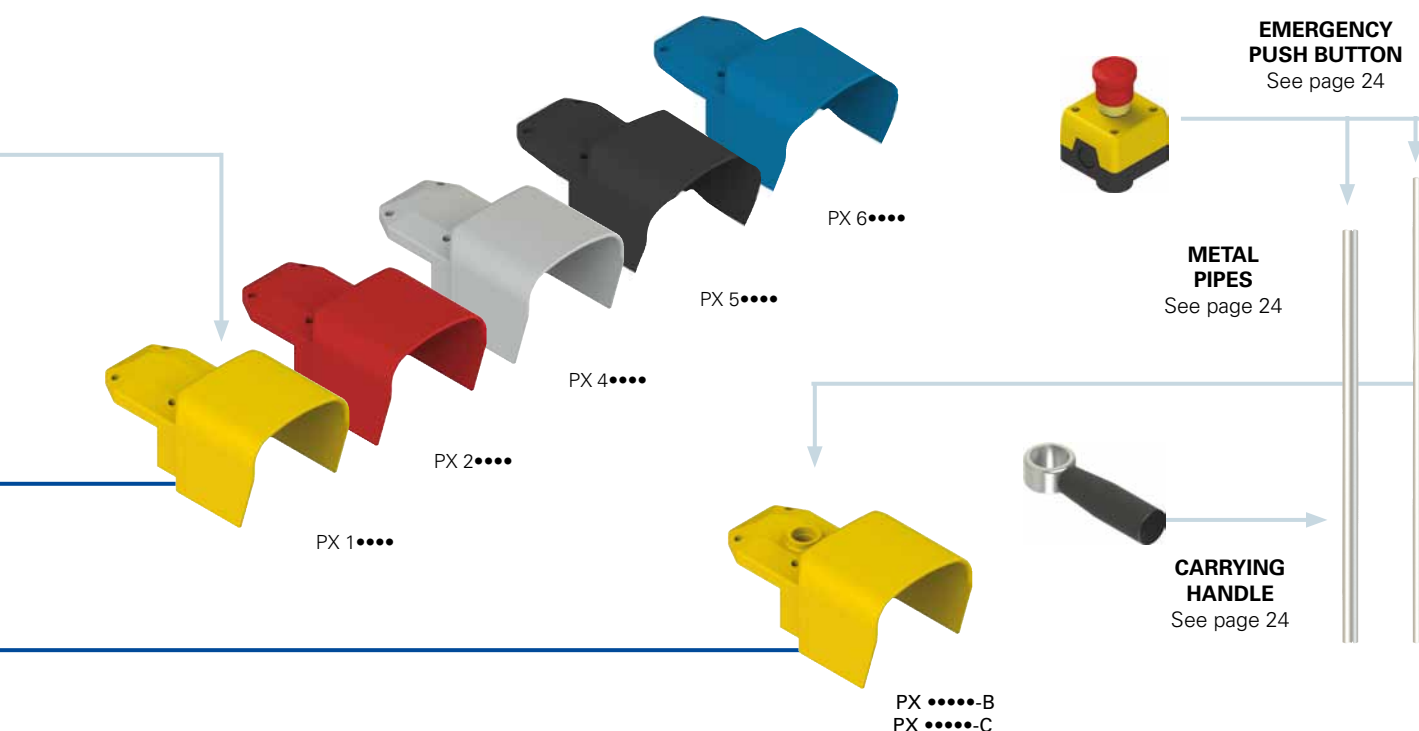
By pushing down with higher force ( $\sim 180$  N) on the pedal actuator, the second contact block switches as well. In this position, both contact blocks are switched.



## Selection diagram







## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

article options  
**PX 10110-AGM2**

### Foot switches

<b>PX</b>	closed version
<b>PA</b>	open version

### Protection colour

<b>1</b>	yellow RAL 1023 (standard)
<b>2</b>	red RAL 3020
<b>4</b>	grey RAL 7035
<b>5</b>	black RAL 9017
<b>6</b>	blue RAL 5017

### Contact block combinations

<b>01</b>	1NO+1NC, snap action (VF B501)
<b>02</b>	2x (1NO+1NC), snap action (VF B501+VF B501)
<b>03</b>	1NO+1NC, slow action (VF B601)
<b>04</b>	2x (1NO+1NC), slow action (VF B601+VF B601)
<b>05</b>	2x 2NO, slow action (VF B1001+VF B1001)
<b>06</b>	2x 2NC, slow action (VF B901+VF B901)
<b>07</b>	2NC, slow action (VF B901)
<b>08</b>	2NO, slow action (VF B1001)
<b>09</b>	1NO+1NC, slow action, make before break (VF B701)
<b>14</b>	2NO, snap action (VF B1201)
<b>15</b>	2NC, snap action (VF B1101)
<b>20</b>	2x (1NO+1NC), snap action shifted (VF B501+VF B501)
<b>24</b>	(1NO+1NC)+(2NC), snap action, shifted (VF B501+VF B1101)

Other combinations on request.  
For contact block data see page 27.

### Threaded conduit entry

<b>M2</b>	M20x1.5 (standard)
	PG 13.5

### Contact type

	silver contacts (standard)
<b>G</b>	silver contacts with 1 µm gold coating
<b>G1</b>	silver contacts with 2.5 µm gold coating

### Accessories (PX series only)

	no accessories
<b>A</b>	with technopolymer carrying rod (400 mm)
<b>B</b>	with M25 hole for VF KIT31
<b>C</b>	with M25 hole for VF KIT31 with stabilizing plate
<b>D</b>	with technopolymer carrying rod (660 mm)

### Protection degree

<b>0</b>	IP53
<b>1</b>	IP65

### Devices

<b>0</b>	no device
<b>1</b>	with safety lever
<b>2</b>	lock of the pedal actuator
<b>3</b>	without safety lever and with two-stage actuating force (only with contact block combination 20, 24)
<b>4</b>	with safety lever and with two-stage actuating force (only with contact block combination 20, 24)





### Main features

- Technopolymer, shock-proof housing
- Protection degree IP53 or IP65
- 14 contact blocks available
- Several auxiliary devices available
- Assemblable through special joining kits

### Utilization categories

Alternating current: AC15 (50÷60 Hz)

U <sub>e</sub> (V)	250	400	500
I <sub>e</sub> (A)	6	4	1

Direct current: DC13

U <sub>e</sub> (V)	24	125	250
I <sub>e</sub> (A)	6	1.1	0.4

### Quality marks:

complete foot switch



EAC approval: RU C-IT ДМ94.В.01024

### Internal contact block



UL approval: E131787

CCC approval: 2013010305600704

EAC approval: RU C-IT ДМ94.В.01024

### Technical data

#### Housing

Housing with double insulation:

Base:

Cap:

External metallic parts:

Cap screw tightening torque:

Actuating force:

One threaded conduit entry:

Cable clamp screw tightening torque:

Protection degree:



glass fibre reinforced technopolymer, self-extinguishing and shock-proof technopolymer, self-extinguishing and shock-proof

stainless steel

0.8 ... 1.2 Nm

16 N

M20x1.5 (standard)

0.8 ... 1 Nm

IP53 (P•••••0-M2) or

IP65 (P•••••1-M2)

acc. to EN 60529 with cable gland showing equal or higher protection degree

#### General data

Ambient temperature:

-25°C ... +80°C

Safety parameter B<sub>10D</sub>:

20,000,000 for NC contacts

Max. operating frequency:

3600 operating cycles/hour

Mechanical endurance:

10 million operating cycles

#### Electrical data

Thermal current (I<sub>th</sub>):

10 A

Rated insulation voltage (U<sub>i</sub>):

500 Vac 600 Vdc

Rated impulse withstand voltage (U<sub>imp</sub>):

6 kV

Conditional short circuit current:

1000 A acc. to EN 60947-5-1

Protection against short circuits:

type aM fuse 10 A 500 V

Pollution degree:

3

#### Cable cross section (flexible copper strands)

Contact block combinations (all):

min. 1 x 0.5 mm<sup>2</sup> (1 x AWG 20)

max. 2 x 2.5 mm<sup>2</sup> (2 x AWG 14)

Terminal screw tightening torque:

0.6 ... 0.8 Nm

#### In compliance with standards:

IEC 60947-5-1, EN 60947-5-1, IEC 60947-1, EN 60947-1, EN 60529.

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/108/EC.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### ⚠ Installation for safety applications:

Use only switches marked with the symbol ⊕ next to the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as required by **EN ISO 14119, paragraph 5.4** for specific interlock applications and **EN ISO 13849-2 table D3** (well-tried components) and **D.8** (fault exclusions) for safety applications in general.





## Dimensional drawings

All measures in the drawings are in mm

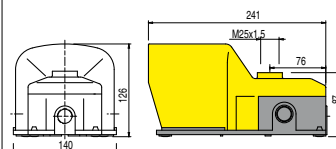
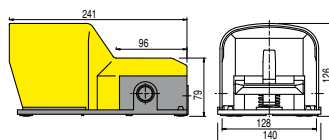
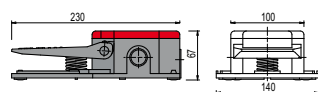
Contact type:

**R** = snap action  
**L** = slow action  
**LO** = slow action  
make before

break  
**RS** = snap action  
shifted

open version

closed version

closed version with M25  
hole for VF KIT31Contact block  
combinations

Travel diagram

01	<b>R</b>	PA 20100-M2 → 1NO+1NC	PX 10110-M2 → 1NO+1NC	PX 10110-BM2 → 1NO+1NC	Travel diagram
02	<b>R</b>	PA 20200-M2 → 2x (1NO+1NC)	PX 10210-M2 → 2x (1NO+1NC)	PX 10210-BM2 → 2x (1NO+1NC)	Travel diagram
03	<b>L</b>	PA 20300-M2 → 1NO+1NC	PX 10310-M2 → 1NO+1NC	PX 10310-BM2 → 1NO+1NC	Travel diagram
04	<b>L</b>	PA 20400-M2 → 2x (1NO+1NC)	PX 10410-M2 → 2x (1NO+1NC)	PX 10410-BM2 → 2x (1NO+1NC)	Travel diagram
05	<b>L</b>	PA 20500-M2 2x 2NO	PX 10510-M2 2x 2NO	PX 10510-BM2 2x 2NO	Travel diagram
06	<b>L</b>	PA 20600-M2 → 2x 2NC	PX 10610-M2 → 2x 2NC	PX 10610-BM2 → 2x 2NC	Travel diagram
07	<b>L</b>	PA 20700-M2 → 2NC	PX 10710-M2 → 2NC	PX 10710-BM2 → 2NC	Travel diagram
08	<b>L</b>	PA 20800-M2 2NO	PX 10810-M2 2NO	PX 10810-BM2 2NO	Travel diagram
09	<b>LO</b>	PA 20900-M2 → 1NO+1NC	PX 10910-M2 → 1NO+1NC	PX 10910-BM2 → 1NO+1NC	Travel diagram
14	<b>R</b>	PA 21400-M2 2NO	PX 11410-M2 2NO	PX 11410-BM2 2NO	Travel diagram
15	<b>R</b>	PA 21500-M2 → 2NC	PX 11510-M2 → 2NC	PX 11510-BM2 → 2NC	Travel diagram
20	<b>RS</b>	PA 22030-M2 → 1NO+1NC (1 cont.) 1NO+1NC (2 cont.)	PX 12040-M2 → 1NO+1NC (1 cont.) 1NO+1NC (2 cont.)	PX 12040-BM2 → 1NO+1NC (1 cont.) 1NO+1NC (2 cont.)	Travel diagram
24	<b>RS</b>	PA 22430-M2 → 1NO+1NC (1 cont.) 2NC (2 cont.)	PX 12440-M2 → 1NO+1NC (1 cont.) 2NC (2 cont.)	PX 12440-BM2 → 1NO+1NC (1 cont.) 2NC (2 cont.)	Travel diagram

For contact block data see page 27



Stock items

## Key to travel diagrams

- Closed contact
- Open contact
- ⊕ Positive opening travel
- ▶ By pushing the switch / By releasing the switch

PA 20100-M2  
PX 10100-M2  
PX 10110-M2  
PX 10111-M2  
PX 10210-M2  
PX 10110-BM2  
PX 10200-M2  
PX 10120-M2  
PX 10101-M2  
PX 10311-M2  
PX 12040-M2  
PX 20100-M2

Items with code on **green** background are stock items

Accessories See page 143

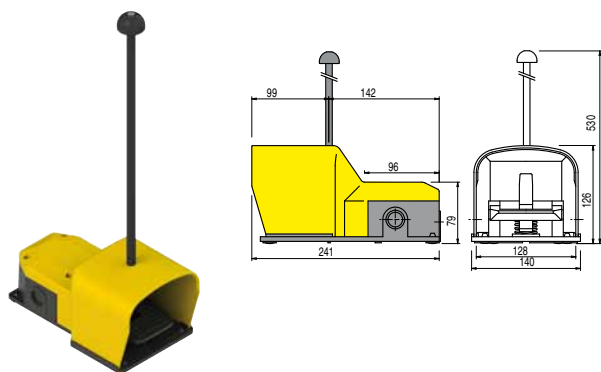
→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



## Combination examples

All measures in the drawings are in mm

Foot switch, closed version, provided with a 400 mm technopolymer carrying rod

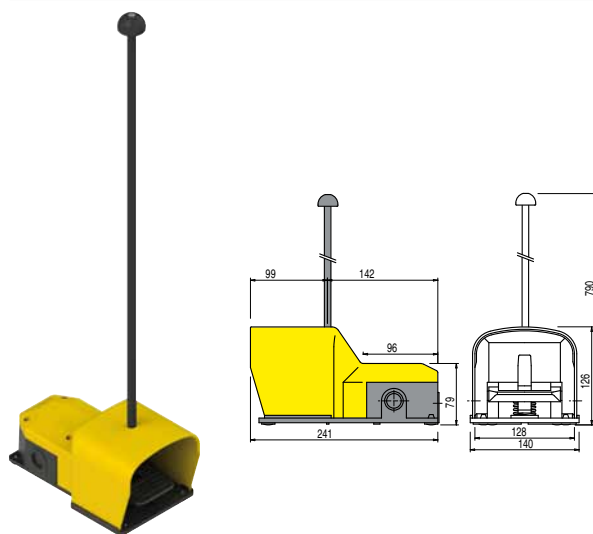


Ordering example:

PX 10110-M2	VF KIT21		

This article can also be purchased with single code PX 10110-AM2. In this case the cap is supplied already perforated for the carrying rod fixing.

Foot switch, closed version, provided with a 660 mm technopolymer carrying rod

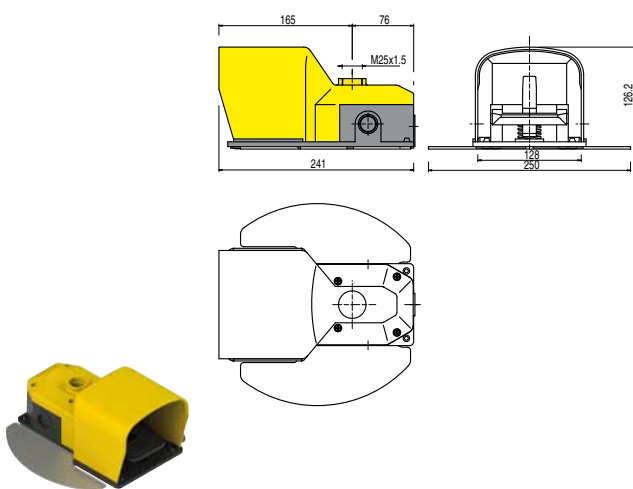


Ordering example:

PX 10110-M2	VF KIT22		

This article can also be purchased with single code PX 10110-DM2. In this case the cap is supplied already perforated for the carrying rod fixing.

Foot switch, closed version, provided with M25x1.5 hole and stabilizing plate

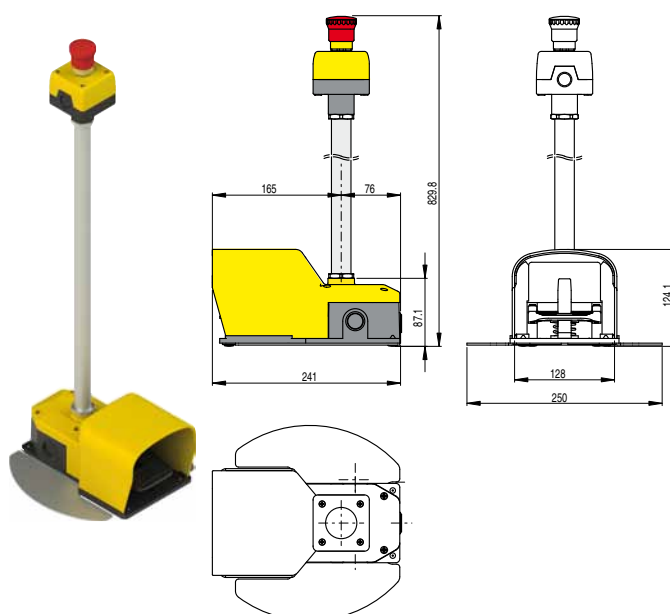


Ordering example:

PX 10110-BM2	VF KIT60		

This article can also be purchased with single code PX 10110-CM2.

Foot switch, closed version, provided with metal pipe, stabilizing plate and emergency button 1 NC



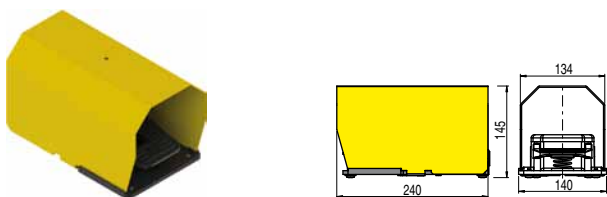
Ordering example:

PX 10110-BM2	VF KIT60	VF KIT31	VF KIT32



## Combination examples

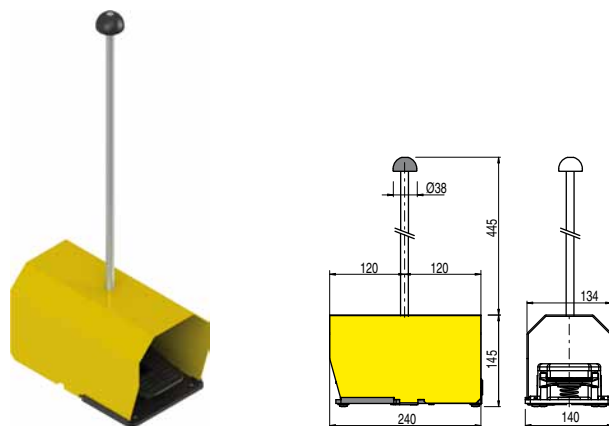
Foot switch, open version, provided with an additional metal protection. Ideal for heavy duty applications with safety shoes.



Ordering example:

PA 20100-M2	VF KIT71		

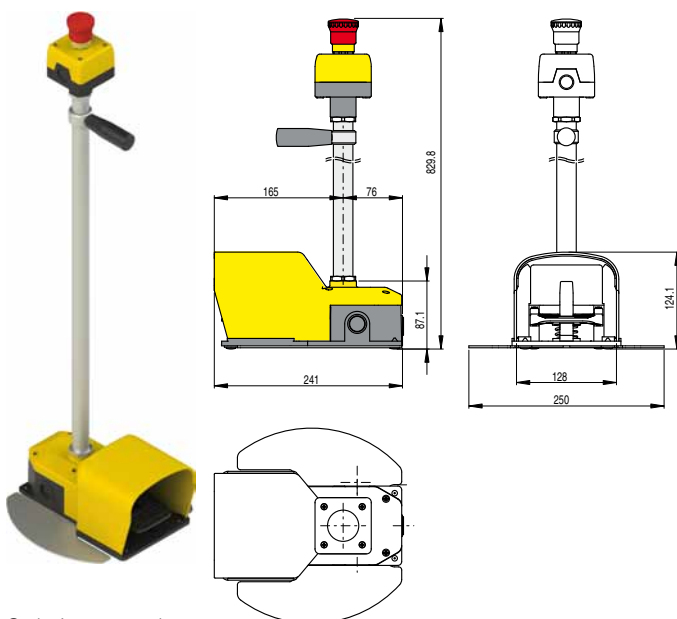
Foot switch, open version, provided with metal protection and a 400 mm metal carrying rod. In heavy-duty work environments, protection hood with increased dimensions for safety shoes.



Ordering example:

PA 20100-M2	VF KIT71	VF KIT25	

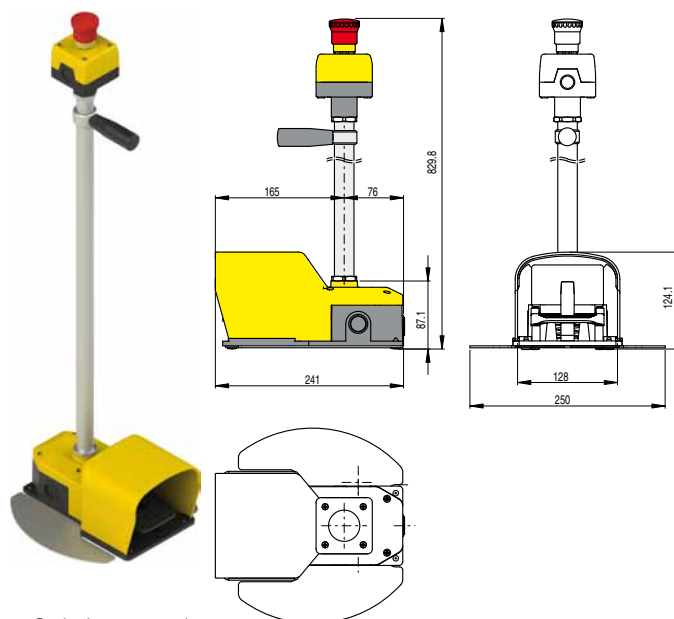
Foot switch, closed version, provided with metal pipe, stabilizing plate, carrying handle and emergency button 1 NC



Ordering example:

PX 10110-BM2	VF KIT60	VF KIT31	VF KIT32	VF KIT50

Foot switch, closed version, provided with shifted contacts, two-stage actuating force, metal pipe, stabilizing plate, carrying handle and emergency button 1 NC

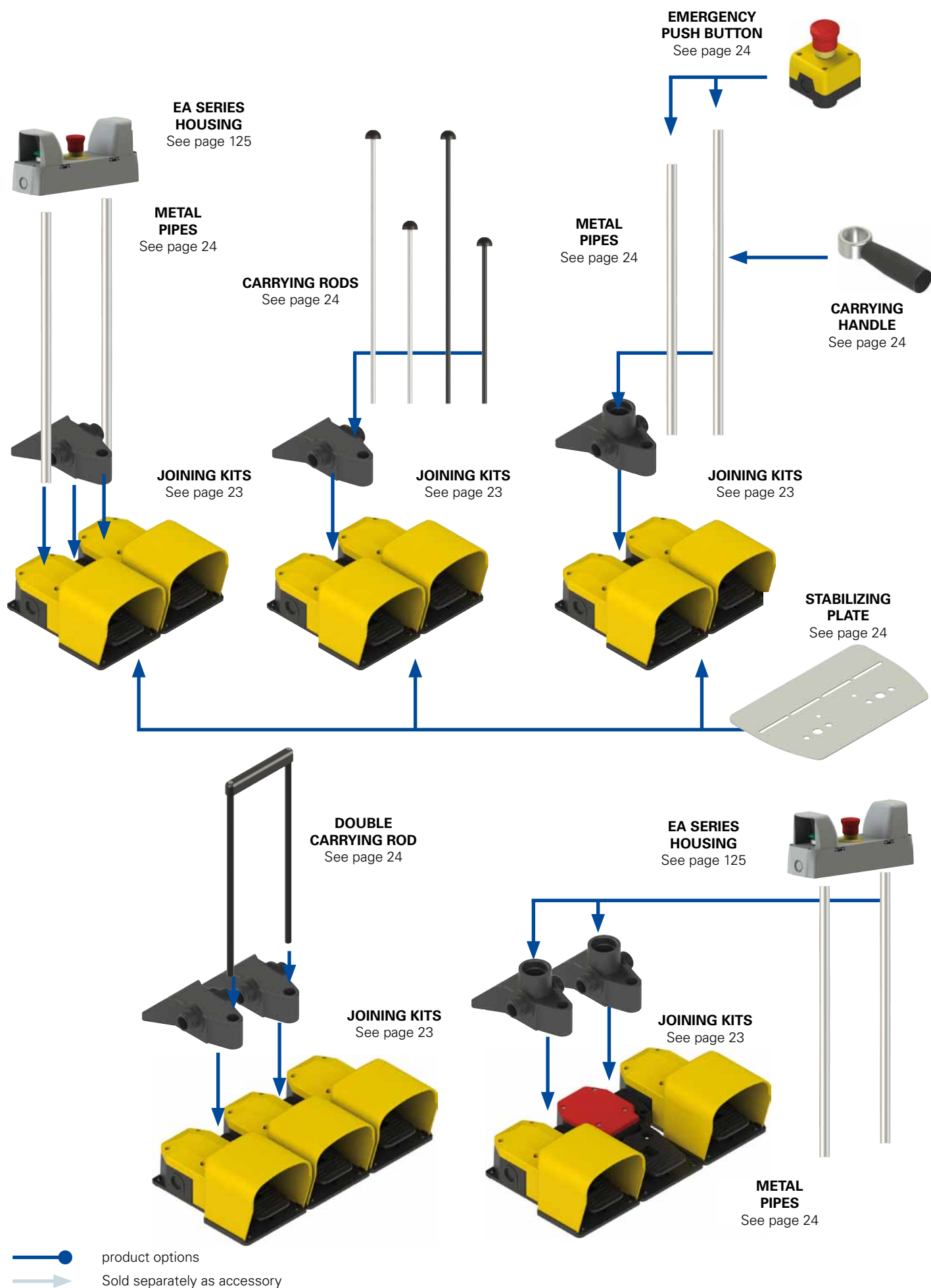


Ordering example:

PX 12040-BM2	VF KIT60	VF KIT31	VF KIT32	VF KIT50



## Selection diagram







## Combinations of existing double foot switches

If you wish to purchase modular foot switches already assembled or with a single order code, please contact our sales department. Before contacting our offices, please look at the following table where some already assigned multiple foot switch combinations are listed.

Code	Left foot switch	Joining element	Right foot switch	Additional sets
PC 2-101	PX 10110-M2	VF KIT20	PX 10110-M2	VF KIT21
PC 2-102	PX 10111-M2	VF KIT20	PX 10111-M2	
PC 2-103	PX 20110-M2	VF KIT20	PX 10210-M2	VF KIT21
PC 2-104	PX 20110-M2	VF KIT20	PX 10110-M2	VF KIT21
PC 2-105	PX 10110-M2	VF KIT20	PX 20110-M2	VF KIT21
PC 2-106	PX 10120-M2	VF KIT20	PX 10110-M2	VF KIT21
PC 2-107	PX 10310-M2	VF KIT20	PX 10310-M2	VF KIT21
PC 2-108	PX 10410-M2	VF KIT20	PX 10410-M2	VF KIT21
PC 2-109	PX 10210-M2	VF KIT20	PX 10210-M2	VF KIT21
PC 2-110	PX 10301-M2	VF KIT20	PX 10301-M2	
PC 2-111	PX 10100-M2	VF KIT20	PX 10100-M2	
PC 2-112	PX 10111-M2	VF KIT20	PX 10111-M2	VF KIT21
PC 2-113	PX 10120-M2	VF KIT20	PX 10120-M2	VF KIT21
PC 2-114	PX 10411-M2	VF KIT20	PX 10411-M2	VF KIT21
PC 2-115	PX 10211-M2	VF KIT20	PX 10201-M2	
PC 2-116	PX 10211-M2	VF KIT20	PX 10211-M2	VF KIT21
PC 2-117	PX 10100-M2	VF KIT20	PX 10210-M2	VF KIT21
PC 2-118	PA 20100-M2	VF KIT20	PX 10110-M2	VF KIT21
PC 2-119	PA 20101-M2	VF KIT20	PX 10111-M2	VF KIT21
PC 2-120	PA 20300-M2	VF KIT20	PX 10310-M2	VF KIT21
PC 2-121	PA 20120-M2	VF KIT20	PX 10110-M2	VF KIT21
PC 2-122	PA 20121-M2	VF KIT20	PX 10111-M2	VF KIT21
PC 2-123	PA 20200-M2	VF KIT20	PX 10810-M2	VF KIT21
PC 2-124	PA 20100-M2	VF KIT20	PX 10210-M2	VF KIT21
PC 2-125	PA 20100-M2	VF KIT20	PX 10100-M2	VF KIT21
PC 2-126	PA 20100-M2	VF KIT20	PA 20100-M2	VF KIT21
PC 2-127	PA 20400-M2	VF KIT20	PA 20400-M2	VF KIT21
PC 2-128	PX 10110-M2	VF KIT30	PX 10110-M2	
PC 2-129	PA 20100-M2	VF KIT30	PX 10110-M2	
PC 2-130	PX 10111-M2	VF KIT30	PX 10111-M2	
PC 2-131	PX 10110-BM2	VF KIT20	PX 10110-BM2	
PC 2-132	PX 10111-M2	VF KIT30	PX 10111-M2	VF KIT29+ VF KIT32+VF KIT50
PC 2-133	PX 20210-M2	VF KIT20	PX 20210-M2	
PC 2-134	PX 20410-M2	VF KIT20	PX 20410-M2	
PC 2-35	PX 20211-M2	VF KIT20	PX 20211-M2	
PC 2-137	PX 10421-M2	VF KIT20	PX 10401-M2	
PC 2-138	PX 10210-M2	VF KIT20	PX 20210-M2	VF KIT21
PC 2-139	PX 40220-M2	VF KIT20	PX 40200-M2	
PC 2-40	PA 20100-M2	VF KIT20	PX 10110-M2	VF KIT22
PC 2-141	PX 10110-M2	VF KIT20	PA 20100-M2	
PC 2-142	PX 10111-M2	VF KIT30	PX 10111-M2	VF KIT31+ VF KIT32
PC 2-143	PX 10100-M2	VF KIT30	PX 10210-M2	VF KIT31+ VF KIT33
PC 2-144	PX 10810-M2	VF KIT30	PX 10110-M2	VF KIT31+ VF KIT32
PC 2-145	PX 40100-M2	VF KIT30	PX 40100-M2	VF KIT31+ VF KIT33
PC 2-146	PA 20100-M2	VF KIT30	PX 10110-M2	VF KIT31+ VF KIT36
PC 2-147	PX 10110-M2	VF KIT30	PX 12040-M2	VF KIT31+ VF KIT34
PC 2-148	PX 10110-M2	VF KIT20	PX 10110-M2	VF KIT21 + VF KIT61
PC 2-149	PX 10111-M2	VF KIT30	PX 10111-M2	VF KIT29+ VF KIT32+VF KIT50+ VF KIT61
PC 2-150	PX 40310-M2	VF KIT30	PA 20300-M2	VF KIT29+ VF KIT32

## Combinations of existing triple foot switches

Code	Left foot switch	Joining element	Central foot switch	Joining element	Right foot switch	Additional sets
PC 3-11	PX 10110-M2	VF KIT20	PA 20100-M2	VF KIT20	PX 10110-M2	
PC 3-12	PX 10100-M2	VF KIT20	PX 10100-M2	VF KIT20	PX 10100-M2	
PC 3-13	PX 10110-M2	VF KIT20	PA 20100-M2	VF KIT20	PX 10110-M2	VF KIT40
PC 3-14	PX 10110-M2	VF KIT30	PX 10110-M2	VF KIT30	PX 10110-M2	2x VF KIT31 + 2x VF KIT18

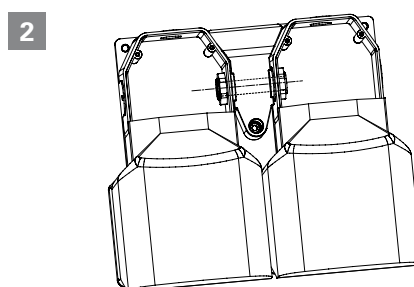
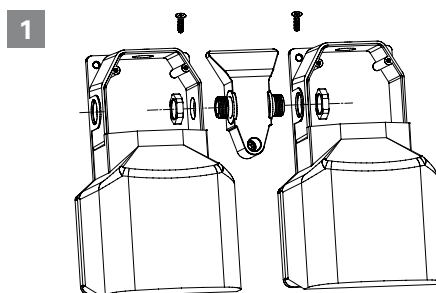
### Note:

VF KIT21, 22, 26, 29, 31, 32, 33, 34, 35, 40, 50 sets are not supplied assembled because, in order to be wired, kits should be first disassembled in any case.



### How to combine the modular foot switches

All single foot switches (see page 17) are provided with knock-out side openings, designed for inserting the threaded ends of the joining elements. By tightening the threaded nuts of the joining elements a tight cable feed-through for electrical cables is created between the foot switches. In addition to this, with the supplied screws, the joining elements allow the definitive mechanical locking and the stabilization of two or more foot switches as a single object.



Besides the possibility of joining from two to four single foot switches, the joining elements make it possible to apply a metal tube that enables the electrical connection between the foot contacts and the contacts of an emergency push button, connected to the same tube, preserving thus an IP65 protection degree.



### Joining elements for modular foot switches

Article	Description
VF KIT20	Joining element



Joining element for technopolymer pedals with hole for carrying rod, with nuts, seals and self-tapping screws for the fixing of the two single pedals. Protection degree IP65.

Article	Description
VF KIT30	Joining element

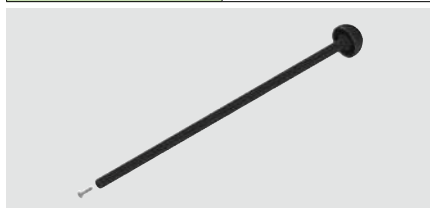


Joining kit for technopolymer pedals with M25x1.5 threaded hole (for VF KIT31 or VF KIT29) with nuts, gaskets and self-tapping screws for joining two single pedals. Protection degree IP65.



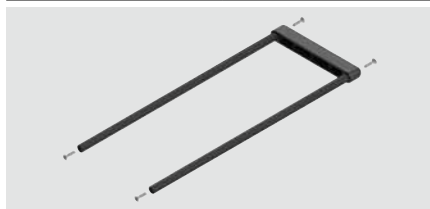
## Auxiliary elements for modular foot switches

Article	Description
<b>VF KIT21</b>	Carrying rod set, L=400 mm
<b>VF KIT22</b>	Carrying rod set, L=660 mm



Plastic carrying rod set (can be connected to VF KIT20) with self-tapping screw for rod fixing.

Article	Description
<b>VF KIT40</b>	Double carrying rod set, L=400 mm
<b>VF KIT41</b>	Double carrying rod set, L=660 mm



Double carrying rod kit with handle and self-tapping screws for fixing, to be combined with two VF KIT20.

Article	Description
<b>VF KIT18</b>	Metal nut



Metal nut M25x1.5 to combine with VF KIT31 or VF KIT29 if housings of the EA series are used.

Packs of 10 pcs.

Article	Description
<b>VF KIT50</b>	Carrying handle



Carrying handle kit for metal tube Ø 25 mm (VF KIT31-VF KIT29).

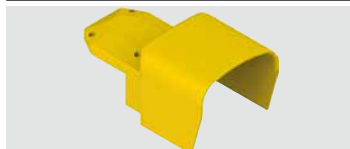
Article	Description
<b>VF KIT61</b>	Metal stabilizing plate



Metal stabilizing plate for double pedals.

Note: VF KIT21, 22, 25, 26, 29, 31, 32, 33, 34, 35, 40, 41, 50 sets can be supplied already assembled.

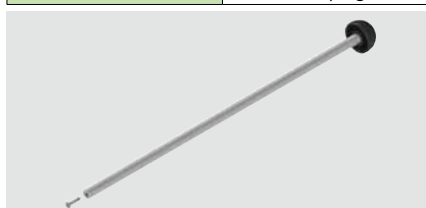
Article	Description
	Technopolymer closed protection
<b>AC 1270</b>	Colour: yellow
<b>AC 1027</b>	Colour: red
<b>AC 1271</b>	Colour: grey
<b>AC 1275</b>	Colour: black
<b>AC 1276</b>	Colour: blue



Ideal as a spare part, in case of breakage of the one provided with the foot switch.

Items with code on **green** background are stock items

Article	Description
<b>VF KIT25</b>	Metal carrying rod set, L=400 mm
<b>VF KIT26</b>	Metal carrying rod set, L=660 mm



Metal carrying rod set (can be connected to VF KIT20) with self-tapping screw for rod fixing.

Article	Description
<b>VF KIT31</b>	Ø 25 mm metal tube set, L=660 mm
<b>VF KIT29</b>	Ø 25 mm metal tube set, L=740 mm



Ø 25 mm metal tube set with M25x1.5 threaded ends (for VF KIT32, VF KIT33, VF KIT34, VF KIT35) with metal nuts and gaskets. Protection degree IP65.

Article	Description
<b>VF KIT32</b>	Emergency button kit, 1NC
<b>VF KIT33</b>	Emergency button kit, 1NC+1NO
<b>VF KIT34</b>	Emergency button kit, 2NC
<b>VF KIT35</b>	Housing set for Ø 22 mm buttons



Emergency button kit, rotary release, compliant with EN 60947-5-1 and EN ISO 13850, to combine with VF KIT31 or VF KIT29. Protection degree IP65.

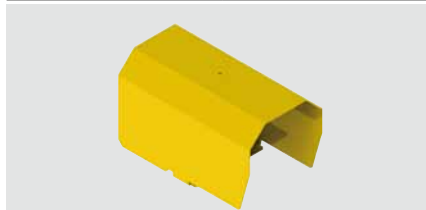
Additional contacts on page 85

Article	Description
<b>VF KIT60</b>	Metal stabilizing plate



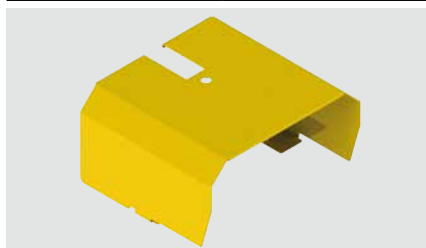
Metal stabilizing plate for single pedal.

Article	Description
<b>VF KIT71</b>	Yellow single metal protection



Additional metal protections for single PA series foot switches. In heavy-duty work environments, increased dimensions for safety shoes. Not applicable with VF KIT60.

Article	Description
<b>VF KIT81</b>	Yellow double metal protection



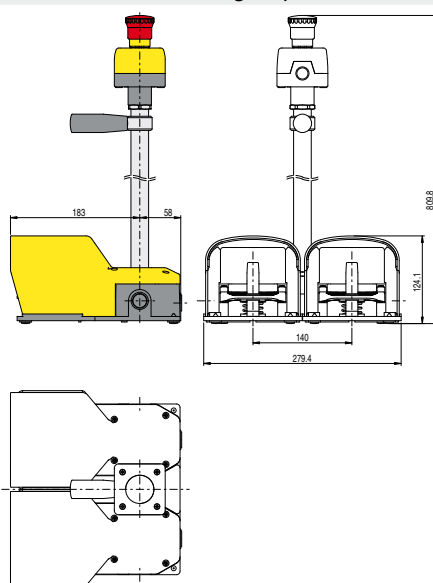
Additional metal protections for PC series modular foot switches. In heavy-duty work environments, increased dimensions for safety shoes. Not applicable with VF KIT61.



## Combination examples

All measures in the drawings are in mm

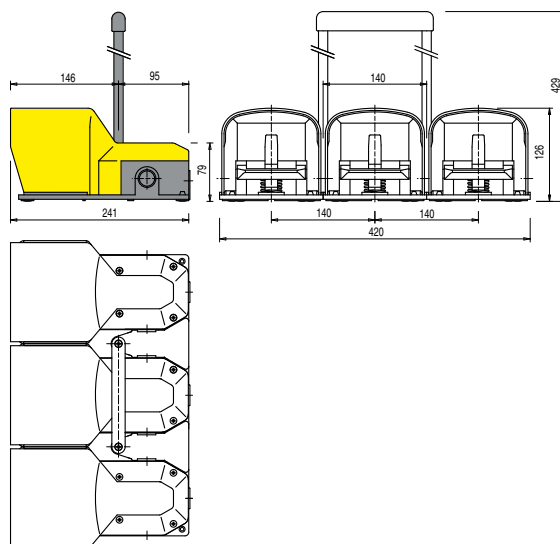
Double foot switches with joining device, metal tube and 1NC emergency button



Ordering example:

2x PX 10110-M2	VF KIT30
VF KIT50	VF KIT31
VF KIT32	

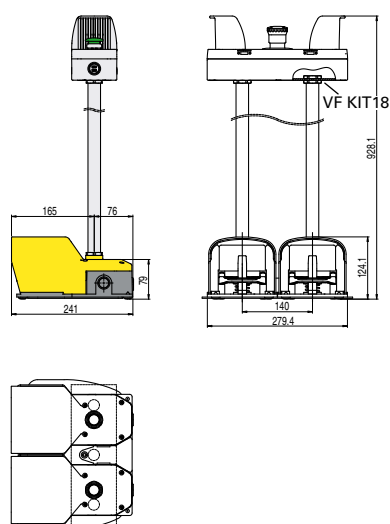
Triple foot switches with two joining devices and double carrying rod



Ordering example:

3x PX 10110-M2	2x VF KIT20
VF KIT40	

Double foot switch with joining device, two metal tubes, stabilizing plate and EA series housing

EA SERIES  
HOUSING  
See page 125

Ordering example:

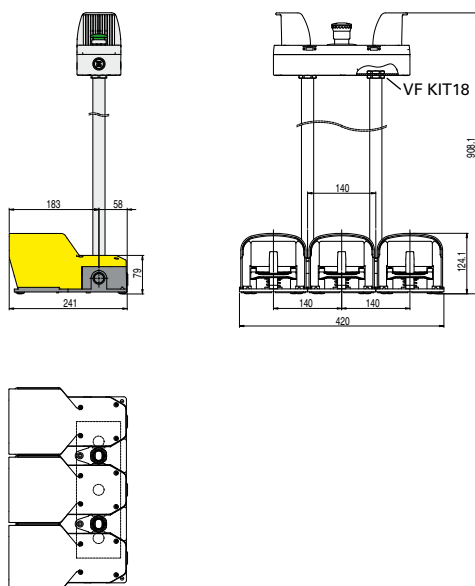
2x PX 10110-BM2	VF KIT20
2x VF KIT29	2x VF KIT18
VF KIT61	EA AC37041



### Triple foot switches with two joining devices, two metal tubes and EA series housing



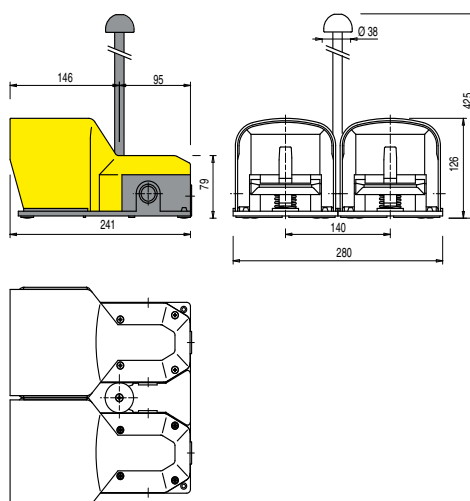
EA SERIES  
HOUSING  
See page 125



Ordering example:

3x PX 10110-M2	2x VF KIT30
2x VF KIT29	2x VF KIT18
EA AC37041	

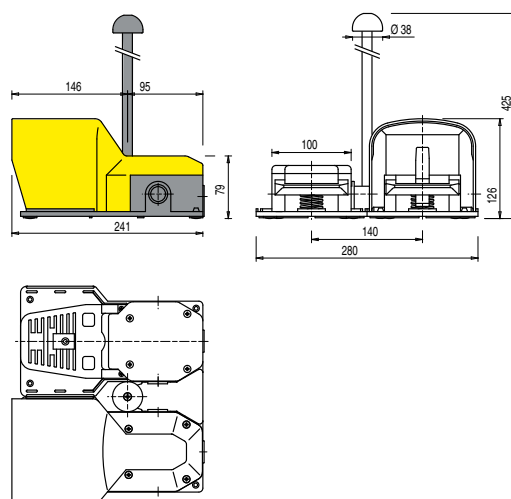
### Double foot switches with joining device and carrying rod



Ordering example:

2x PX 10110-M2	VF KIT20
VF KIT21	

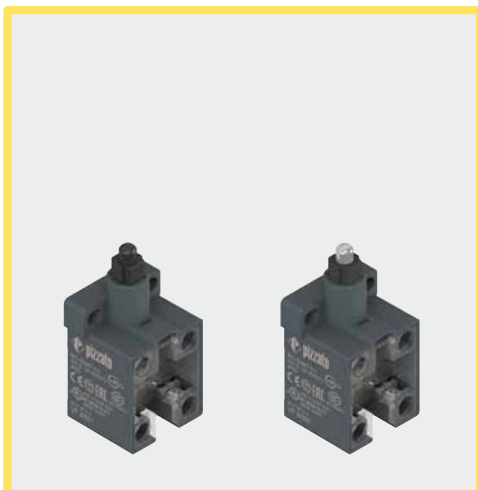
### Double foot switches (available with or without pedal actuator protection) with joining device and carrying rod



Ordering example:

PX 10110-M2	PA 20100-M2
VF KIT20	VF KIT21





### Main features

- Technopolymer housing
- Protection degree IP20 (terminals), IP40 (contacts)
- 14 contact blocks available
- Actuators with plastic or metal button
- Contact block with positive opening  $\ominus$
- For internal use in PA, PX, PC series foot switches

### Quality marks:



IMQ approval: CA02.06217  
 UL approval: E131787  
 CCC approval: 2013010305600704  
 EAC approval: RU C-IT.AJ35.B.00454

### Installation for safety applications:

Use only switches marked with the symbol  $\ominus$  next to the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as required by **EN ISO 14119, paragraph 5.4** for specific interlock applications and **EN ISO 13849-2 table D3** (well-trying components) and **D.8** (fault exclusions) for safety applications in general. Actuate the switch **at least up to the positive opening travel** reported in the travel diagrams. Actuate the switch **at least up to the positive opening force**, reported in brackets below each article, aside the minimum force value.

**⚠ If not expressly indicated in this chapter, for correct installation and utilization of all articles see chapter Utilization requirements from page 211 to page 222 of the 2017-2018 catalogue Detection.**

### Technical data

#### Housing

Housing made of glass fibre reinforced technopolymer, self-extinguishing and shock-proof

Protection degree: IP20 (terminals), IP40 (contacts) acc. to EN 60529

#### General data

Ambient temperature: -40°C ... +80°C  
 Safety parameter  $B_{10D}$ : 40,000,000 for NC contacts  
 Max. actuation frequency: 3600 operating cycles/hour  
 Mechanical endurance: 20 million operating cycles  
 Max. actuation speed: 0.5 m/s  
 Min. actuation speed: 1 mm/s (slow action)  
 0.01 mm/s (snap action)

Tightening torques for contact block screws: 0.6 ... 0.8 Nm

#### Cable cross section (flexible copper strands)

Contact blocks: min. 1 x 0.5 mm<sup>2</sup> (1 x AWG 20)  
 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 18, 37, 66, 67. max. 2 x 2.5 mm<sup>2</sup> (2 x AWG 14)

#### In compliance with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, UL 508, CSA 22.2 No. 14.

#### Approvals:

UL 508, CSA 22.2 No. 14, EN 60947-1, EN 60947-5-1

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### Electrical data

Thermal current ( $I_{th}$ ): 10 A  
 Rated insulation voltage (U): 500 Vac 600 Vdc  
 Rated impulse withstand voltage ( $U_{imp}$ ): 6 kV  
 Conditional short circuit current: 1000 A acc. to EN 60947-5-1  
 Protection against short circuits: type aM fuse 10 A 500 V  
 Pollution degree: 3

### Utilization category

Alternating current: AC15 (50÷60 Hz)  
 Ue (V) 250 400 500  
 Ie (A) 6 4 1  
 Direct current: DC13  
 Ue (V) 24 125 250  
 Ie (A) 6 1.1 0.4

### Features approved by UL

Utilization categories: Q300 (69 VA, 125-250 Vdc)  
 A600 (720 VA, 120-600 Vac)

Housing data: opEN type

For all contact blocks use 60 or 75 °C copper (Cu) conductors, rigid or flexible, wire size AWG 12-14. Terminal tightening torque of 7.1 lb in (0.8 Nm).

In compliance with standard: UL 508, CSA 22.2 No. 14

Please contact our technical department for the list of approved products.



## Description



Contact block with captive screws, finger protection and self-lifting clamping screw plates. Provided with positive opening NC contacts for safety applications. Provided with twin bridge contacts, they are particularly suitable for high-reliability applications. Suitable for installation inside PA, PX and PC series foot switches.

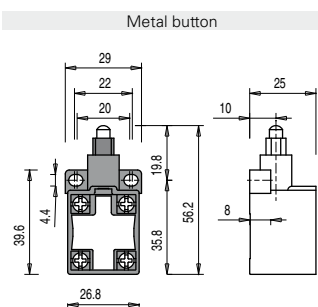
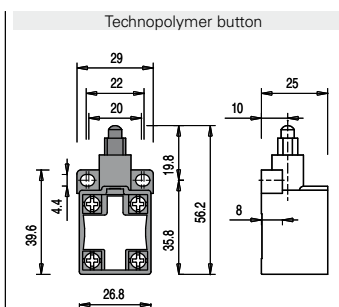
## Dimensional drawings

All measures in the drawings are in mm

Contact type:

- R** = snap action
- L** = slow action
- LO** = slow action make before break
- LS** = slow action shifted
- LV** = slow action shifted and spaced
- LA** = slow action closer

Contact block



Travel diagrams

5	<b>R</b>	VF B501	1NO+1NC	VF B502	1NO+1NC	
6	<b>L</b>	VF B601	1NO+1NC	VF B602	1NO+1NC	
7	<b>LO</b>	VF B701	1NO+1NC	VF B702	1NO+1NC	
9	<b>L</b>	VF B901	2NC	VF B902	2NC	
10	<b>L</b>	VF B1001	2NO	VF B1002	2NO	
11	<b>R</b>	VF B1101	2NC	VF B1102	2NC	
12	<b>R</b>	VF B1201	2NO	VF B1202	2NO	
13	<b>LV</b>	VF B1301	2NC	VF B1302	2NC	
14	<b>LS</b>	VF B1401	2NC	VF B1402	2NC	
15	<b>LS</b>	VF B1501	2NO	VF B1502	2NO	
18	<b>LA</b>	VF B1801	1NO+1NC	VF B1802	1NO+1NC	
37	<b>L</b>	VF B3701	1NO+1NC	VF B3702	1NO+1NC	
66	<b>L</b>	VF B6601	1NC	VF B6602	1NC	
67	<b>L</b>	VF B6701	1NO	VF B6702	1NO	
Max. speed		0,5 m/s		0,5 m/s		
Actuating force		8 N (20 N )		8 N (20 N )		

### Legend

Closed contact | Open contact | Positive opening travel acc. to IEC 60947-5-1 | Pushing the switch / Releasing the switch

## Code structure

article options  
**VF B501-G**

### Contact block

<b>5</b>	1NO+1NC, snap action
<b>6</b>	1NO+1NC, slow action
<b>7</b>	1NO+1NC, slow action, make before break
<b>9</b>	2NC, slow action
<b>10</b>	2NO, slow action
<b>11</b>	2NC, snap action
<b>12</b>	2NO, snap action
...	...

### Contact type

	silver contacts (standard)
<b>G</b>	silver contacts with 1 µm gold coating
<b>G1</b>	silver contacts with 2.5 µm gold coating

### Actuators

<b>01</b>	with technopolymer button
<b>02</b>	with metal button

Items with code on **green** background are stock items

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



# EROUND line introduction

## Design and maximum reliability

Elegance and functionality in one single product: Pizzato Elettrica presents the innovative EROUND line of control and signalling devices. The ergonomic design allows a comfortable and easy use of the devices. The details have been carefully designed giving the products a pleasant appearance and making them suitable for applications also on well designed machinery.

The devices of the EROUND line, thanks to their design and functionality, guarantee maximum reliability, and are suitable for any type of application.



## A new generation of products



Designed for improving the functions of our existing products already present in the market, the control and signalling devices of the EROUND line are provided with technical features that make this series one of the most complete in the industrial safety sector.

Thanks to the new design, the care for details and the elegance of the product combined with its maximum safety and reliability, this series is one of the most cutting-edge on the market.

## Safety at a glance



Thanks to the chosen shapes, the employed materials and the use of high luminosity LEDs, the illuminated devices of the EROUND line guarantee greater safety increasing thus the signalling and visibility level in any situation.

## Maximum protection

All control and signalling devices of the EROUND line are provided with an IP67 protection degree. This makes it possible to install them in any type of application, also in the most difficult environment conditions.

Most devices, not only have an IP67 protection degree, but have also passed the test proving their IP69K protection degree according to the prescriptions established by the ISO 20653 standard.

Therefore they are suitable for use in machineries subjected to intense washing with high pressure and high temperature water jets and for any condition or environment where a particular attention for cleanness and hygiene is required.



## Laser engraving

Pizzato Elettrica has introduced a new laser engraving system for control and signalling devices of the EROUND line.

Thanks to this new system which excludes the use of pad printing, engravings on the products are indelible.

Furthermore, in case of machineries subjected to intense washing with high pressure water jets, there is no risk of inscriptions becoming illegible over time.



## Guaranteed resistance

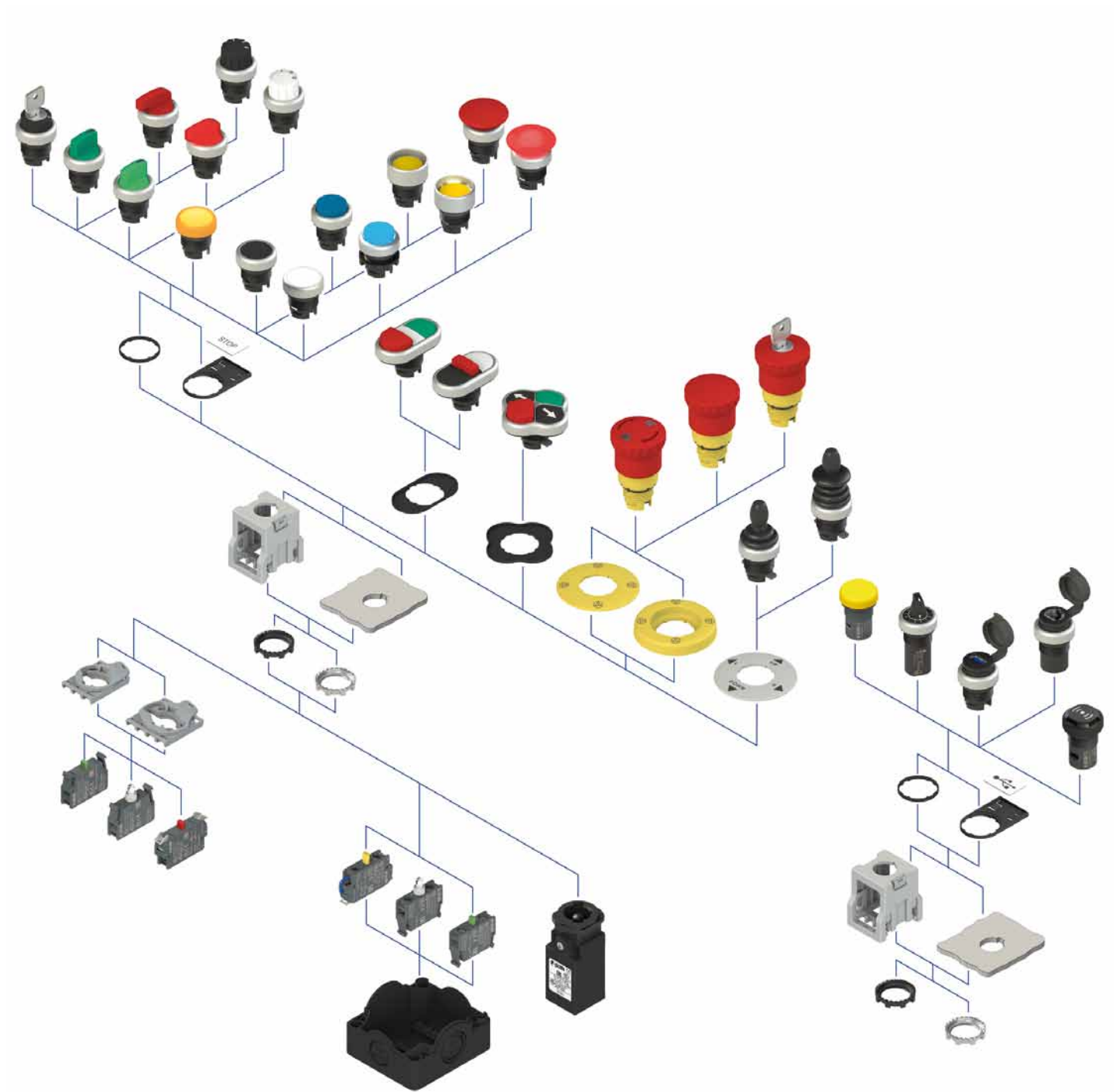


Pizzato Elettrica has tested the control and signalling devices of the EROUND line according to the specific tests of the EN 60947-5-1 standard.

The particular design and the choice of employed materials made it possible to achieve considerable mechanical durability, which is expressed in number of cycles the articles have been subjected to: among the various tested products, the contact blocks reached and exceeded 20 million cycles, the buttons 15 million cycles, and the emergency buttons 300,000 cycles.

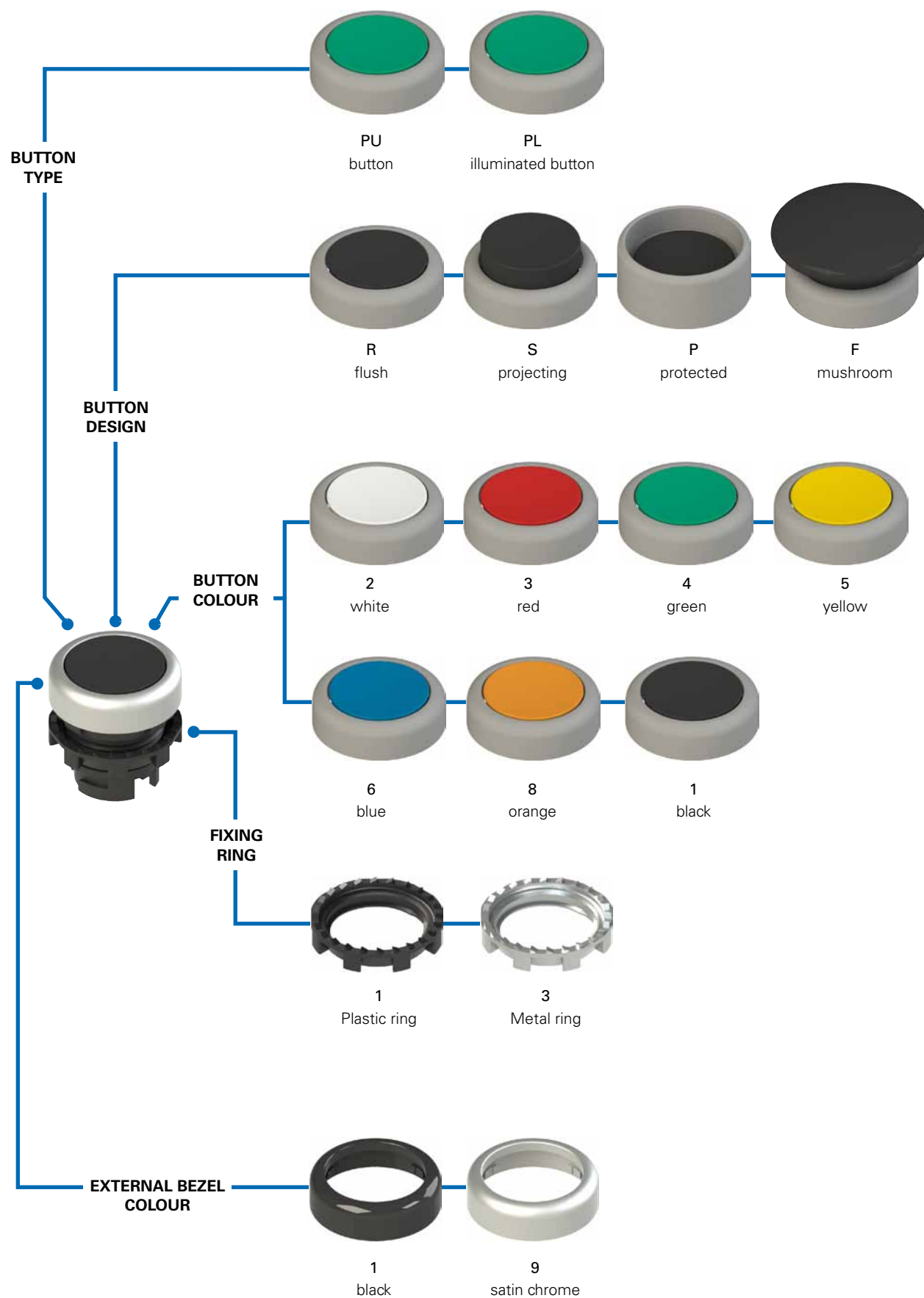


## EROUND line selection diagram





## Selection diagram





## Code structure for buttons

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

article		options	
E2 1PU2R1210		-T6	
<b>Fixing ring and shaped ring</b>		<b>Ambient temperature</b>	
1	Plastic ring (standard)	-25°C +80°C (standard), spring-return button	
2	Plastic fixing ring and shaped ring	-25°C ... +50°C (standard), maintained button	
3	Metal ring	<b>T6</b> -40°C ... +80°C spring-return button,	
4	Metal fixing ring and shaped ring	-40°C ... +50°C maintained button	
<b>Button function</b>		<b>Button engraving</b>	
1	maintained	0	no engraving
2	spring-return (standard)	L1	O
4	spring-return for 4-slot base	L2	I
<b>Button design</b>		...	.....
R	flush	Other engravings on request. See page 138.	
S	projecting	<b>External bezel colour</b>	
P	protected	1	black (standard)
F	mushroom	9	satın chrome (standard)
<b>Button colour</b>		<b>Button diameter</b>	
0	without lens	2	Ø 20 mm
1	black	4	Ø 36 mm (mushroom only)
2	white		
3	red		
4	green		
5	yellow		
6	blue		
8	orange		

## Code structure for illuminated buttons

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

article		options	
E2 1PL2R2210		-T6	
<b>Fixing ring and shaped ring</b>		<b>Ambient temperature</b>	
1	Plastic ring (standard)	-25°C +80°C (standard), spring-return button	
2	Plastic fixing ring and shaped ring	-25°C ... +50°C (standard), maintained button	
3	Metal ring	<b>T6</b> -40°C ... +80°C spring-return button,	
4	Metal fixing ring and shaped ring	-40°C ... +50°C maintained button	
<b>Button function</b>		<b>Button engraving</b>	
1	maintained	0	no engraving
2	spring-return (standard)	L1	O
<b>Button design</b>		L2	I
R	flush	...	.....
S	projecting	Other engravings on request. See page 138.	
P	protected	<b>External bezel colour</b>	
F	mushroom	1	black (standard)
<b>Button colour</b>		9	satın chrome (standard)
0	without lens	<b>Button diameter</b>	
2	white	2	Ø 20 mm
3	red	4	Ø 36 mm (mushroom only)
4	green		
5	yellow		
6	blue		
8	orange		

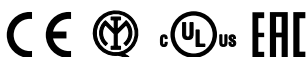




### Main features

- Protection degrees IP67 and IP69K
- 4 different shapes
- 7 colours available
- - 40°C versions
- Maintained or spring-return version

### Quality marks:



IMQ approval: CA02.04805  
 UL approval: E131787  
 EAC approval: RU C-IT ДМ94.В.01024

### Technical data

#### General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C ... +80°C (spring-return button) -25°C ... +50°C (maintained button)
Safety parameter $B_{10D}$ :	30,000,000 (spring-return button) 2,000,000 (maintained button)
Mechanical endurance:	15 million operating cycles (spring-return button) 1 million operating cycles (maintained button)
Max. actuation frequency:	3600 operating cycles/hour
Actuating force at limit of travel:	3.7 N (without contacts) (spring-return button) 4.4 N (without contacts) (maintained button)
Maximum travel:	5 mm
Tightening torque of the fixing ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

#### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14

#### ⚠ Installation for safety applications:

Use only contact blocks marked with the symbol ☺. The safety circuit must always be connected to **NC contacts** (normally closed contacts: .1-.2)

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

#### Features approved by UL

For Use on a Flat Surface of a Type 1, 4X, 12 and 13  
 Tightening torque 2.0 Nm

### General data

#### Protection degrees IP67 and IP69K

**IP69K**  
**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection

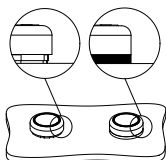
degree of the housing is required. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and a 80°C).

#### Metal fixing ring



The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.

#### Shaped ring

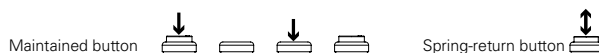


The shaped ring can be used when no label holder or other devices are applied; it prevents dirt and other residues from settling between the button and the panel or housing.

This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

### Functions

Depending on the type of application, the EROUND line buttons of Pizzato Elettrica are available in two versions: the one with maintained function (once the button is pressed, a second manual intervention is necessary for unlocking) and the one with spring-return function (the button is not maintained locked).



#### Customisable



In order to satisfy various customer requests and demands, Pizzato Elettrica offers the possibility to customize the control and signalling devices of the EROUND line: the bezels can be requested with different colours (black and satin chrome), whereas the lenses can be customized with a wide range of writings, symbols, and colours.

#### Extended temperature range

**-40°C**

These devices are also available in a special version suitable for an ambient operating temperature range from -40°C up to +80°C.

They can therefore be used for applications in cold stores, sterilisers and other equipment with low temperature environments. The special materials that have been used to realize these versions, maintain unchanged their features also in these conditions, widening the installation possibilities.



## Selection table for buttons



Colour and engraving actuator	Flush		Projecting		Protected		Mushroom	
	black bezel	satin chr. bezel	black bezel	satin chr. bezel	black bezel	satin chr. bezel	black bezel	satin chr. bezel
without lens	E2 1PU2R0210	E2 1PU2R0290	Same article, flush button	Same article, flush button	E2 1PU2P0210	E2 1PU2P0290	-	-
black	E2 1PU2R1210	E2 1PU2R1290	E2 1PU2S1210	E2 1PU2S1290	E2 1PU2P1210	E2 1PU2P1290	E2 1PU2F1410	E2 1PU2F1490
white	E2 1PU2R2210	E2 1PU2R2290	E2 1PU2S2210	E2 1PU2S2290	E2 1PU2P2210	E2 1PU2P2290	E2 1PU2F2410	E2 1PU2F2490
red	E2 1PU2R3210	E2 1PU2R3290	E2 1PU2S3210	E2 1PU2S3290	E2 1PU2P3210	E2 1PU2P3290	E2 1PU2F3410	E2 1PU2F3490
green	E2 1PU2R4210	E2 1PU2R4290	E2 1PU2S4210	E2 1PU2S4290	E2 1PU2P4210	E2 1PU2P4290	E2 1PU2F4410	E2 1PU2F4490
yellow	E2 1PU2R5210	E2 1PU2R5290	E2 1PU2S5210	E2 1PU2S5290	E2 1PU2P5210	E2 1PU2P5290	E2 1PU2F5410	E2 1PU2F5490
blue	E2 1PU2R6210	E2 1PU2R6290	E2 1PU2S6210	E2 1PU2S6290	E2 1PU2P6210	E2 1PU2P6290	E2 1PU2F6410	E2 1PU2F6490
orange	E2 1PU2R8210	E2 1PU2R8290	E2 1PU2S8210	E2 1PU2S8290	E2 1PU2P8210	E2 1PU2P8290	E2 1PU2F8410	E2 1PU2F8490
red	E2 1PU2R321L1	E2 1PU2R329L1	E2 1PU2S321L1	E2 1PU2S329L1	-	-	E2 1PU2F341L1	E2 1PU2F349L1
green	E2 1PU2R421L2	E2 1PU2R429L2	E2 1PU2S421L2	E2 1PU2S429L2	E2 1PU2P421L2	E2 1PU2P429L2	E2 1PU2F441L2	E2 1PU2F449L2
black	E2 1PU2R121L1	E2 1PU2R129L1	E2 1PU2S121L1	E2 1PU2S129L1	-	-	E2 1PU2F141L1	E2 1PU2F149L1
white	E2 1PU2R221L2	E2 1PU2R229L2	E2 1PU2S221L2	E2 1PU2S229L2	E2 1PU2P221L2	E2 1PU2P229L2	E2 1PU2F241L2	E2 1PU2F249L2

For ordering a maintained button replace 1PU2 with 1PU1 in the respective article code.

Example: E2 1PU2R0210 → E2 1PU1R0210

## Selection table for illuminated buttons



Actuator colour and engraving	Flush		Projecting		Protected		Mushroom	
	black bezel	satin chr. bezel	black bezel	satin chr. bezel	black bezel	satin chr. bezel	black bezel	satin chr. bezel
without lens	E2 1PL2R0210	E2 1PL2R0290	Same article, flush button	Same article, flush button	E2 1PL2P0210	E2 1PL2P0290	-	-
white	E2 1PL2R2210	E2 1PL2R2290	E2 1PL2S2210	E2 1PL2S2290	E2 1PL2P2210	E2 1PL2P2290	E2 1PL2F2410	E2 1PL2F2490
red	E2 1PL2R3210	E2 1PL2R3290	E2 1PL2S3210	E2 1PL2S3290	E2 1PL2P3210	E2 1PL2P3290	E2 1PL2F3410	E2 1PL2F3490
green	E2 1PL2R4210	E2 1PL2R4290	E2 1PL2S4210	E2 1PL2S4290	E2 1PL2P4210	E2 1PL2P4290	E2 1PL2F4410	E2 1PL2F4490
yellow	E2 1PL2R5210	E2 1PL2R5290	E2 1PL2S5210	E2 1PL2 S5290	E2 1PL2P5210	E2 1PL2P5290	E2 1PL2F5410	E2 1PL2F5490
blue	E2 1PL2R6210	E2 1PL2R6290	E2 1PL2S6210	E2 1PL2S6290	E2 1PL2P6210	E2 1PL2P6290	E2 1PL2F6410	E2 1PL2F6490
orange	E2 1PL2R8210	E2 1PL2R8290	E2 1PL2S8210	E2 1PL2S8290	E2 1PL2P8210	E2 1PL2P8290	E2 1PL2F8410	E2 1PL2F8490
red	E2 1PL2R321L1	E2 1PL2R329L1	E2 1PL2S321L1	E2 1PL2S329L1	-	-	E2 1PL2F341L1	E2 1PL2F349L1
green	E2 1PL2R421L2	E2 1PL2R429L2	E2 1PL2S421L2	E2 1PL2S429L2	E2 1PL2P421L2	E2 1PL2P429L2	E2 1PL2F441L2	E2 1PL2F449L2
white	E2 1PL2R221L1	E2 1PL2R229L1	E2 1PL2S221L1	E2 1PL2S229L1	-	-	E2 1PL2F241L1	E2 1PL2F249L1
white	E2 1PL2R221L2	E2 1PL2R229L2	E2 1PL2S221L2	E2 1PL2S229L2	E2 1PL2P221L2	E2 1PL2P229L2	E2 1PL2F241L2	E2 1PL2F249L2

For ordering a maintained button replace 1PL2 with 1PL1 in the respective article code.

Example: E2 1PL2R0210 → E2 1PL1R0210

Items with code on **green** background are stock items



## Complete units with buttons



Colour and engraving actuator	Contacts			Flush	Projecting
	pos. 2	pos. 3	pos. 1	black bezel	black bezel
black	-	1NO	-	<b>E2 AC-DXBC1204</b> E2 1PU2R1210 + E2 1BAC11 + E2 CP10G2V1	
white	-	1NO	-	<b>E2 AC-DXBC1200</b> E2 1PU2R2210 + E2 1BAC11 + E2 CP10G2V1	
red	-	1NC ⊖	-	<b>E2 AC-DXBC1208</b> E2 1PU2R3210 + E2 1BAC11 + E2 CP01G2V1	<b>E2 AC-DXBC1209</b> E2 1PU2S3210 + E2 1BAC11 + E2 CP01G2V1
green	-	1NO	-	<b>E2 AC-DXBC1201</b> E2 1PU2R4210 + E2 1BAC11 + E2 CP10G2V1	
yellow	-	1NO	-	<b>E2 AC-DXBC1206</b> E2 1PU2R5210 + E2 1BAC11 + E2 CP10G2V1	
blue	-	1NO	-	<b>E2 AC-DXBC1207</b> E2 1PU2R6210 + E2 1BAC11 + E2 CP10G2V1	
red	-	1NC ⊖	-	<b>E2 AC-DXBC1211</b> E2 1PU2R3211L1 + E2 1BAC11 + E2 CP01G2V1	<b>E2 AC-DXBC1212</b> E2 1PU2S3211L1 + E2 1BAC11 + E2 CP01G2V1
green	-	1NO	-	<b>E2 AC-DXBC1210</b> E2 1PU2R4211L2 + E2 1BAC11 + E2 CP10G2V1	
black	-	1NC ⊖	-	<b>E2 AC-DXBC1227</b> E2 1PU2R1211L1 + E2 1BAC11 + E2 CP01G2V1	
white	-	1NO	-	<b>E2 AC-DXBC1226</b> E2 1PU2R2211L2 + E2 1BAC11 + E2 CP10G2V1	

Other combinations on request.

→ For data regarding contact blocks and LED units, please see the respective chapters.

## Complete units with illuminated buttons



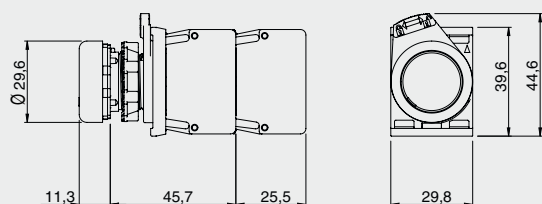
Colour and engraving actuator	Contacts			Flush
	pos. 2	pos. 3	pos. 1	black bezel
white	1NC ⊖	LED	1NO	<b>E2 AC-DXBC0400</b> E2 1PL2R2210 + E2 1BAC11 + E2 CP01G2V1 + E2 LP1A2V1 + E2 CP10G2V1
red	1NC ⊖	LED	1NO	<b>E2 AC-DXBC0402</b> E2 1PL2R3210 + E2 1BAC11 + E2 CP01G2V1 + E2 LP1A3V1 + E2 CP10G2V1
green	1NC ⊖	LED	1NO	<b>E2 AC-DXBC0401</b> E2 1PL2R4210 + E2 1BAC11 + E2 CP01G2V1 + E2 LP1A4V1 + E2 CP10G2V1
yellow	1NC ⊖	LED	1NO	<b>E2 AC-DXBC0404</b> E2 1PL2R5210 + E2 1BAC11 + E2 CP01G2V1 + E2 LP1A2V1 + E2 CP10G2V1
blue	1NC ⊖	LED	1NO	<b>E2 AC-DXBC0403</b> E2 1PL2R6210 + E2 1BAC11 + E2 CP01G2V1 + E2 LP1A6V1 + E2 CP10G2V1

Other combinations on request.

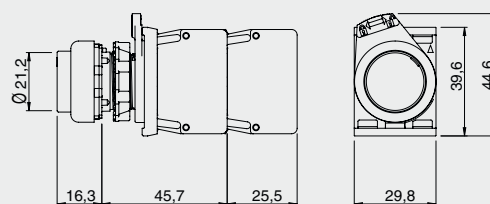
## Dimensions

All measures in the drawings are in mm

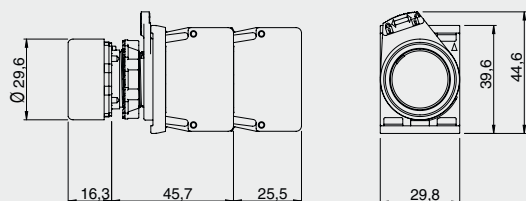
## Flush button



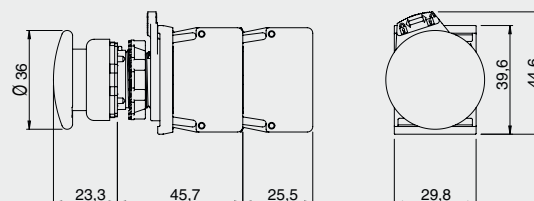
## Projecting button



## Protected button



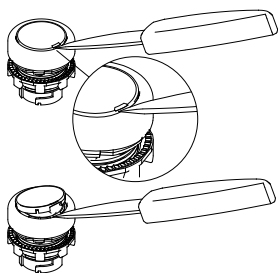
## Mushroom button



→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

































## Lenses for E2 •PU buttons and E2 •PL illuminated buttons



















The buttons and the illuminated buttons feature replaceable lenses.

To remove the lenses, leverage them with a pointed object near the reference notch on the external diameter of the lens itself.



Lenses without engraving				
Article	Type	Description	Colours	Pieces/ package
VE LP21R10		Lens for flush button, black, without engraving		10
VE LP22R20		Lens for flush button, white, without engraving		10
VE LP22R30		Lens for flush button, red, without engraving		10
VE LP22R40		Lens for flush button, green, without engraving		10
VE LP22R50		Lens for flush button, yellow, without engraving		10
VE LP22R60		Lens for flush button, blue, without engraving		10
VE LP22R80		Lens for flush button, orange, without engraving		10
VE LP22RA0		7 lenses for flush button without engraving, colours: black, white, red, green, yellow, blue and orange	      	1
VE LP21S10		Lens for projecting button, black, without engraving		10
VE LP22S20		Lens for projecting button, white, without engraving		10
VE LP22S30		Lens for projecting button, red, without engraving		10
VE LP22S40		Lens for projecting button, green, without engraving		10
VE LP22S50		Lens for projecting button, yellow, without engraving		10
VE LP22S60		Lens for projecting button, blue, without engraving		10
VE LP22S80		Lens for projecting button, orange, without engraving		10
VE LP22SA0		7 lenses for protruding button without engraving, colours: black, white, red, green, yellow, blue and orange	      	1



Lenses with engraving				
Article	Type	Description	Colours	Pieces/ package
VE LP21R1●●●		Lens for flush button, black, with engraving		1
VE LP22R2●●●		Lens for flush button, white, with engraving		1
VE LP22R3●●●		Lens for flush button, red, with engraving		1
VE LP22R4●●●		Lens for flush button, green, with engraving		1
VE LP22R5●●●		Lens for flush button, yellow, with engraving		1
VE LP22R6●●●		Lens for flush button, blue, with engraving		1
VE LP22R8●●●		Lens for flush button, orange, with engraving		1
VE LP21S1●●●		Lens for projecting button, black, with engraving		1
VE LP22S2●●●		Lens for projecting button, white, with engraving		1
VE LP22S3●●●		Lens for projecting button, red, with engraving		1
VE LP22S4●●●		Lens for projecting button, green, with engraving		1
VE LP22S5●●●		Lens for projecting button, yellow, with engraving		1
VE LP22S6●●●		Lens for projecting button, blue, with engraving		1
VE LP22S8●●●		Lens for projecting button, orange, with engraving		1

The black lens cannot be used with illuminated buttons.

### For ordering lenses for buttons with engraving:

Replace the dots ●●● in the article codes with the engraving code reported on the table at page 138.

Example: white lens for flush button with "O" engraving.

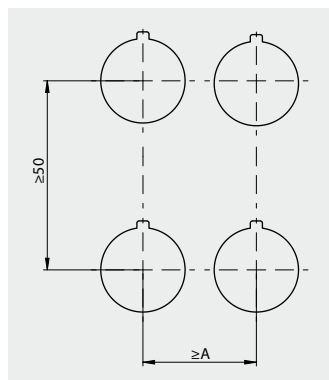
VE LP22R2●●● → VE LP22R2L1

Items with code on **green** background are stock items



## Minimum distances for installation

All measures in the drawings are in mm



## 3-slot mounting adapter

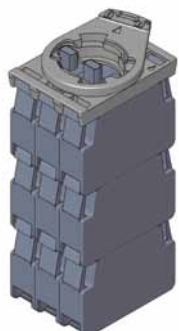
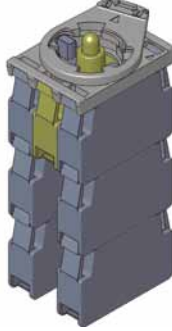
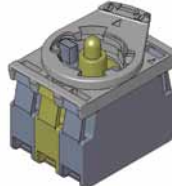
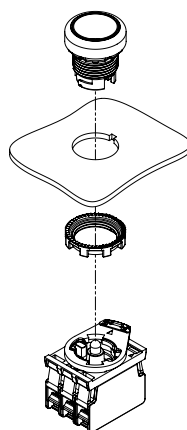
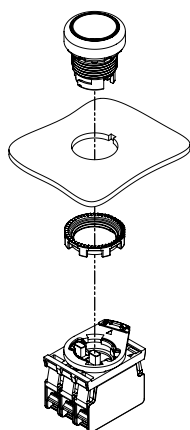
Button type	A
flush	30 mm
projecting	30 mm
protected	30 mm
mushroom	40 mm

## 4-slot mounting adapter

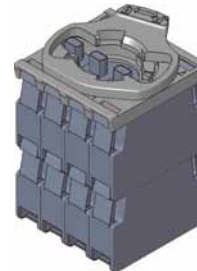
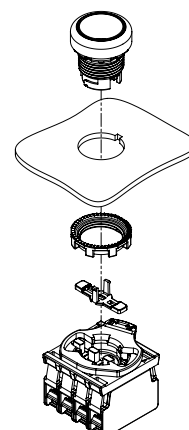
Button type	A
flush	40 mm
projecting	40 mm
protected	40 mm
mushroom	40 mm

## Maximum number of contact blocks

## 3-slot mounting adapter

Spring-return buttons  
E2 •PU2•••••maximum number:  
9 contact blocks  
3 levelsMaintained buttons  
E2 •PU1•••••maximum number:  
3 contact blocks  
1 levelIlluminated spring-  
return buttons  
E2 •PL2•••••maximum number:  
6 contact blocks  
3 levelsIlluminated  
maintained buttons  
E2 •PL1•••••maximum number:  
2 contact blocks  
1 level

## 4-slot mounting adapter

Spring-return buttons  
E2 •PU4•••••maximum number:  
8 contact blocks  
2 levelsContact  
blockLED  
unitThe mounting of the actuator for 4-slot base must  
be carried out after fixing the button.



### Closing cap

Packs of **10 pcs.**



Article	Description
VE AS1211	Central closing cap for illuminated button E2 •PL•••••. For 3-slot mounting adapters.

It closes the central hole of the illuminated button and makes it possible to actuate a contact instead of the LED.

### Actuator for 4-slot base

Packs of **10 pcs.**



Article	Description
VE AS1218	Closed long actuator for 4-slot mounting adapter. It must be installed after fixing the button to the wall. For E2 •PU••••• buttons

### Shaped ring

Packs of **50 pcs.**



Article	Description
VE GP12H1A	Shaped ring for single device

Not applicable in presence of label holders, adapters from Ø 22 to Ø 30 mm, guards or protection caps.

### Protection cap

Packs of **10 pcs.**



Article	Description
VE CA1A1	Protection cap for flush button (panel width from 1 to 5 mm)
VE CA1B1	Shroud for single projecting button (panel width from 1 to 5 mm)

Not applicable in presence of shaped rings, label holders, adapters from Ø 22 to Ø 30 mm or protection guards.

### Fixing ring

Packs of **20 pcs.**



Article	Description
VE GF720A	Metal fixing ring

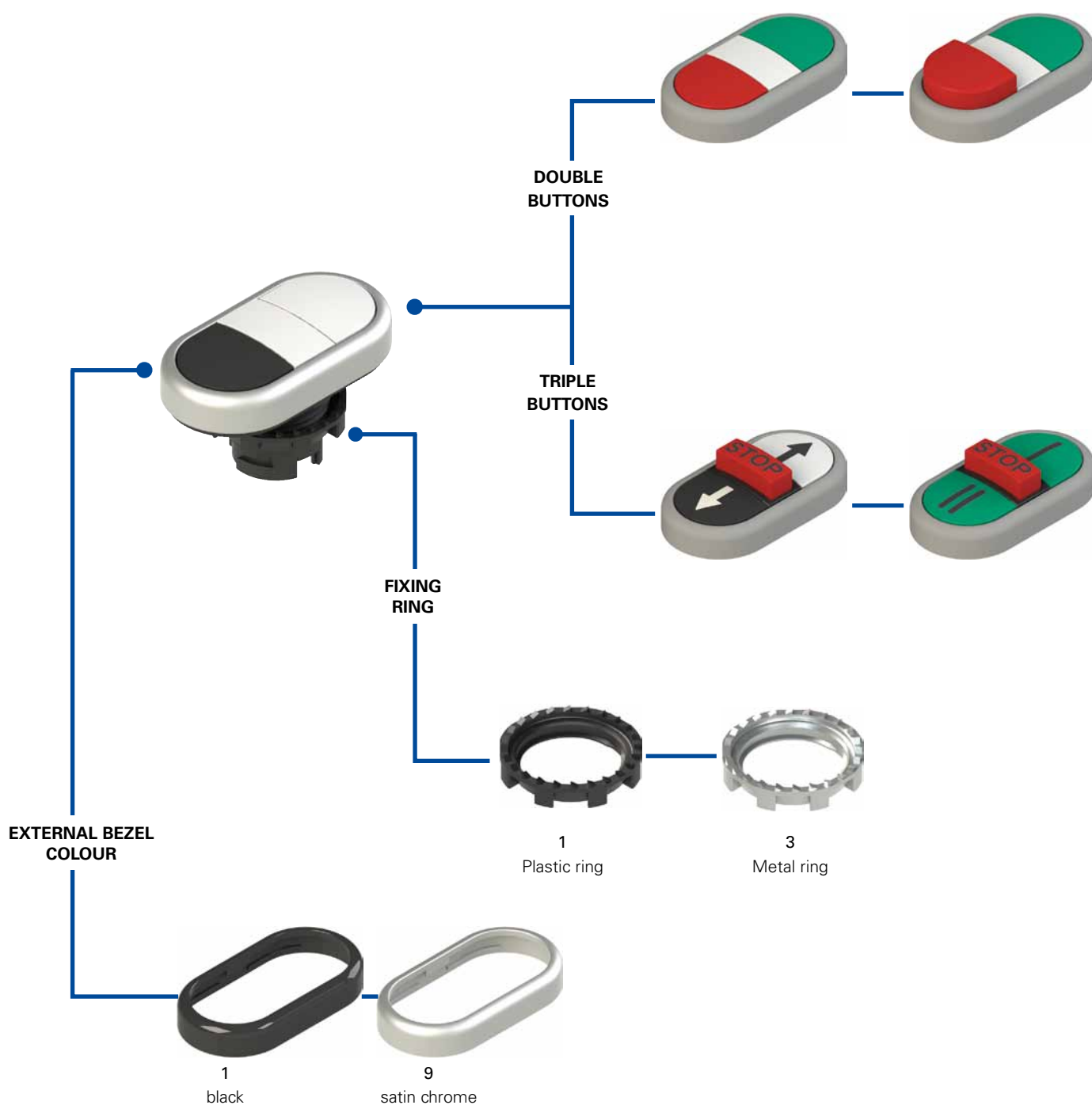
Items with code on **green** background are stock items

### Accessories

➔ More ACCESSORIES on page 135



## Selection diagram





## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

article options  
**E2 1PDRL10423-T6**

### Fixing ring and shaped ring

<b>1</b>	Plastic ring (standard)
<b>2</b>	Plastic fixing ring and shaped ring
<b>3</b>	Metal ring
<b>4</b>	Metal fixing ring and shaped ring

### No. of functions

<b>D</b>	Double button
<b>T</b>	triple button

### Upper and lower button

<b>A</b>	upper projecting, lower flush
<b>B</b>	upper projecting, lower projecting
<b>R</b>	upper flush, lower flush
<b>S</b>	upper flush, lower projecting

### Intermediate element

<b>L</b>	backlit cap (only double buttons)
<b>S</b>	projecting button (triple buttons only)
<b>Q</b>	cap and actuators for 4-slot base (double buttons only)

### Bezel colour

<b>1</b>	black (standard)
<b>9</b>	satin chrome (standard)

### Ambient temperature

	-25°C ... +80°C (standard)
<b>T6</b>	-40°C ... +80°C

### Colours and symbols

	upper button		central cap		lower button	
	colour	symbol	colour	symbol	colour	symbol
<b>0423</b>	green	-	white	-	red	-
<b>0221</b>	white	-	white	-	black	-
<b>0222</b>	white	-	white	-	white	-
<b>0121</b>	black	-	white	-	black	-

Other combinations on request.

	upper button		central cap		lower button	
	colour	symbol	colour	symbol	colour	symbol
<b>AAAD</b>	green	<b>I</b>	white	-	red	<b>O</b>
<b>AAAP</b>	green	<b>START</b>	white	-	red	<b>STOP</b>
<b>AAAA</b>	white	<b>I</b>	white	-	black	<b>O</b>
<b>AAAN</b>	white	<b>START</b>	white	-	black	<b>STOP</b>
<b>AAAB</b>	black	<b>↑</b>	white	-	black	<b>↓</b>
<b>AAAC</b>	black	<b>+</b>	white	-	black	-

Other combinations on request.

	upper button		central button projecting		lower button	
	colour	symbol	colour	symbol	colour	symbol
<b>AAAY</b>	green	<b>I</b>	red	<b>STOP</b>	green	<b>II</b>
<b>AAAZ</b>	green	<b>←</b>	red	<b>STOP</b>	green	<b>→</b>
<b>AABD</b>	white	<b>→</b>	red	<b>STOP</b>	black	<b>←</b>
<b>AABA</b>	green	<b>↑</b>	red	<b>STOP</b>	green	<b>↓</b>
<b>AABE</b>	white	<b>↑</b>	red	<b>STOP</b>	black	<b>↓</b>
<b>AABF</b>	black	<b>↑</b>	red	<b>STOP</b>	black	<b>↓</b>
<b>AABB</b>	green	<b>+</b>	red	<b>STOP</b>	green	-
<b>AABC</b>	white	<b>+</b>	red	<b>STOP</b>	white	-

Other combinations on request.

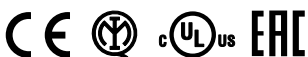




### Main features

- Protection degrees IP67 and IP69K
- Version with 2 or 3 buttons
- - 40°C version
- Version with central backlit cap

### Quality marks:



IMQ approval: CA02.04805  
 UL approval: E131787  
 EAC approval: RU C-IT ДМ94.В.01024

### Technical data

#### General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C ... +80°C
Safety parameter B <sub>10D</sub> :	2,000,000
Mechanical endurance:	1 million operating cycles
Max. actuation frequency:	3600 operating cycles/hour
Actuating force at limit of travel:	4.4 N (without contacts)
Maximum travel:	5 mm
Tightening torque of the fixing ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

#### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14

#### ⚠ Installation for safety applications:

Use only contact blocks marked with the symbol ⊕. The safety circuit must always be connected to **NC contacts** (normally closed contacts: .1-.2).

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### Features approved by UL

For Use on a Flat Surface of a Type 1, 4X, 12 and 13  
 Tightening torque 2.0 Nm

### General data

#### Button profile

In order to be used in different types of application the new EROUND line double and triple buttons are now available in two shapes: projecting and flush. The possible choice of shapes, colours and symbols allows various code combinations for buttons.

#### Illuminated version

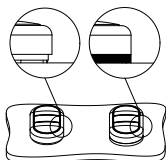
For double buttons, the version with central backlit cap is available.

#### Metal fixing ring



The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.

#### Shaped ring



The shaped ring can be used when no label holder or other devices are applied; it prevents dirt and other residues from settling between the button and the panel or housing.

This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

#### Customisable



In order to satisfy various customer requests and demands, Pizzato Elettrica offers the possibility to customize the control and signalling devices of the EROUND line: the bezels can be requested with different colours (black and satin chrome), whereas the lenses can be customized with a wide range of writings, symbols, and colours.

#### Protection degrees IP67 and IP69K

**IP69K**  
**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and a 80°C).

#### Extended temperature range

**-40°C**









These devices are also available in a special version suitable for an ambient operating temperature range from -40°C up to +80°C.

They can therefore be used for applications in cold stores, sterilisers and other equipment with low temperature environments. The special materials that have been used to realize these versions, maintain unchanged their features also in these conditions, widening the installation possibilities.



## Selection table for double buttons







Actuator colour and engraving		upper button flush central cap, flush lower button flush		upper button flush central cap, flush lower button projecting	
		black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
	green button white cap, illuminated red button "I"	E2 1PDRL10423	E2 1PDRL90423	E2 1PDSL10423	E2 1PDSL90423
	green button white cap, illuminated "O" red button "START"	E2 1PDRL1AAAD	E2 1PDRL9AAAD	E2 1PDSL1AAAD	E2 1PDSL9AAAD
	green button white cap, illuminated "STOP"	E2 1PDRL1AAAP	E2 1PDRL9AAAP	E2 1PDSL1AAAP	E2 1PDSL9AAAP
	white button white cap, illuminated black button "I"	E2 1PDRL10221	E2 1PDRL90221	E2 1PDSL10221	E2 1PDSL90221
	white button white cap, illuminated "O" black button "START"	E2 1PDRL1AAAA	E2 1PDRL9AAAA	E2 1PDSL1AAAA	E2 1PDSL9AAAA
	white button white cap, illuminated "STOP"	E2 1PDRL1AAAN	E2 1PDRL9AAAN	E2 1PDSL1AAAN	E2 1PDSL9AAAN
	black button white cap, illuminated "STOP"	E2 1PDRL1AAAB	E2 1PDRL9AAAB	E2 1PDSL1AAAB	E2 1PDSL9AAAB
	black button white cap, illuminated "STOP"				

Other combinations on request.

Items with code on **green** background are stock items





## Selection table for triple buttons



Actuator colour and engraving		upper button flush central button projecting lower button flush	
		black bezel	Satin chrome bezel
	"I" green button "STOP" red button "II"	E2 1PTRS1AAAY	E2 1PTRS9AAAY
	green button "STOP" red button "→"	E2 1PTRS1AAAZ	E2 1PTRS9AAAZ
	white button "STOP" red button "←"	E2 1PTRS1AABD	E2 1PTRS9AABD
	green button "STOP" red button "↓"	E2 1PTRS1AABA	E2 1PTRS9AABA

Other combinations on request.



Actuator colour and engraving		upper button flush central button projecting lower button flush	
		black bezel	Satin chrome bezel
	white button "STOP" red button "↓"	E2 1PTRS1AABE	E2 1PTRS9AABE
	black button "STOP" red button "↓"	E2 1PTRS1AABF	E2 1PTRS9AABF
	green button "STOP" red button "↑"	E2 1PTRS1AABB	E2 1PTRS9AABB
	white button "STOP" red button "↑"	E2 1PTRS1AABC	E2 1PTRS9AABC

Other combinations on request.



## Complete units with double buttons



Actuator colour and engraving		Contacts			upper button flush central cap, flush lower button projecting
		pos. 2	pos. 3	pos. 1	
	"I" green button			1NO	<b>E2 AC-DXBC0625</b> E2 1PDSL1AAAD + E2 1BAC11 + E2 CP01G2V1 + E2 CP10G2V1
	white cap, illuminated				
	"O" red button	1NC			

Other combinations on request.

## Complete units with triple buttons



Actuator colour and engraving		Contacts			upper button flush central button projecting lower button flush
		pos. 2	pos. 3	pos. 1	
	"I" green button			1NO	<b>E2 AC-DXBC0801</b> E2 1PTRS1AAAY + E2 1BAC11 + E2 CP10G2V1 + E2 CP01G2V1 + E2 CP10G2V1
	"STOP" red button		1NC		
	"II" green button	1NO			

Other combinations on request.



Actuator colour and engraving		Contacts			upper button flush central cap, flush lower button projecting
		pos. 2	pos. 3	pos. 1	
	"I" green button			1NO	<b>E2 AC-DXBC0602</b> E2 1PDSL1AAAD + E2 1BAC11 + E2 CP01G2V1 + E2 LP1A2V1 + E2 CP10G2V1
	white cap, illuminated		LED		
	"O" red button	1NC			

Other combinations on request.

→ For data regarding contact blocks and LED units, please see the respective chapters.

## Protection cap

Packs of 10 pcs.

	Article	Description
	VE CA1C1	Protection cap for double and triple projecting buttons
	VE CA1D1	Shroud for double flush button

With the shroud it is not possible to apply the shaped ring

Items with code on green background are stock items

## Shaped ring

Packs of 50 pcs.

	Article	Description
	VE GP12L1A	Shaped ring for double and triple button E2 •PD•••••••• E2 •PT••••••••

With the shaped ring it is not possible to apply the shroud

## Accessories

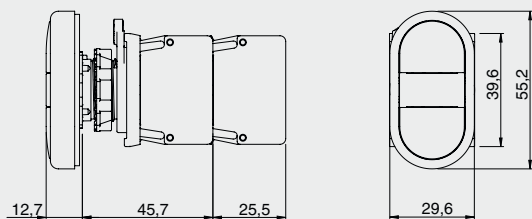
→ More ACCESSORIES on page 135



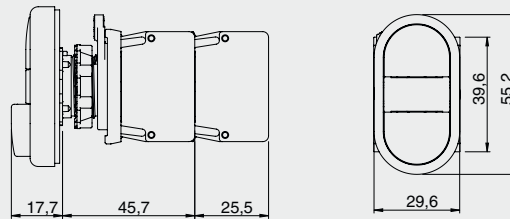
## Dimensions

All measures in the drawings are in mm

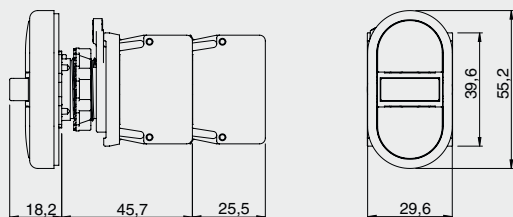
### Flush double button



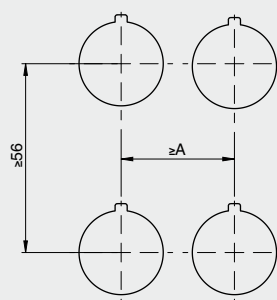
### Projecting double button



### Triple button



### Minimum distances for installation

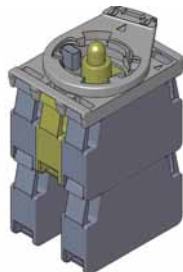


→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

## Maximum number of contact blocks

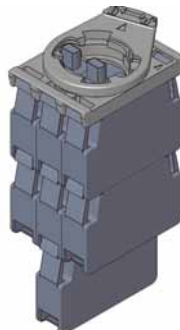
### 3-slot mounting adapter

Double buttons E2 •PD••••••••

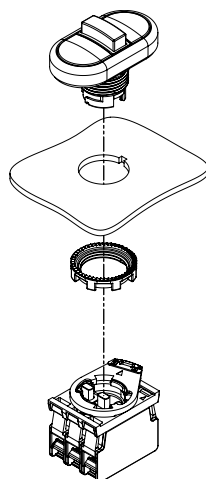


maximum number:  
4 contact blocks  
2 levels

Triple buttons E2 •PT••••••••

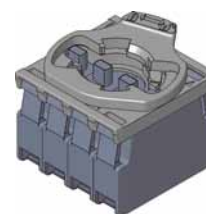


maximum number:  
7 contact blocks  
3 levels

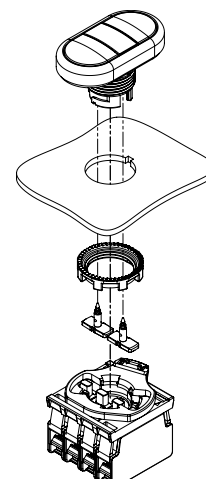


### 4-slot mounting adapter

Double buttons E2 •PD•Q••••••••



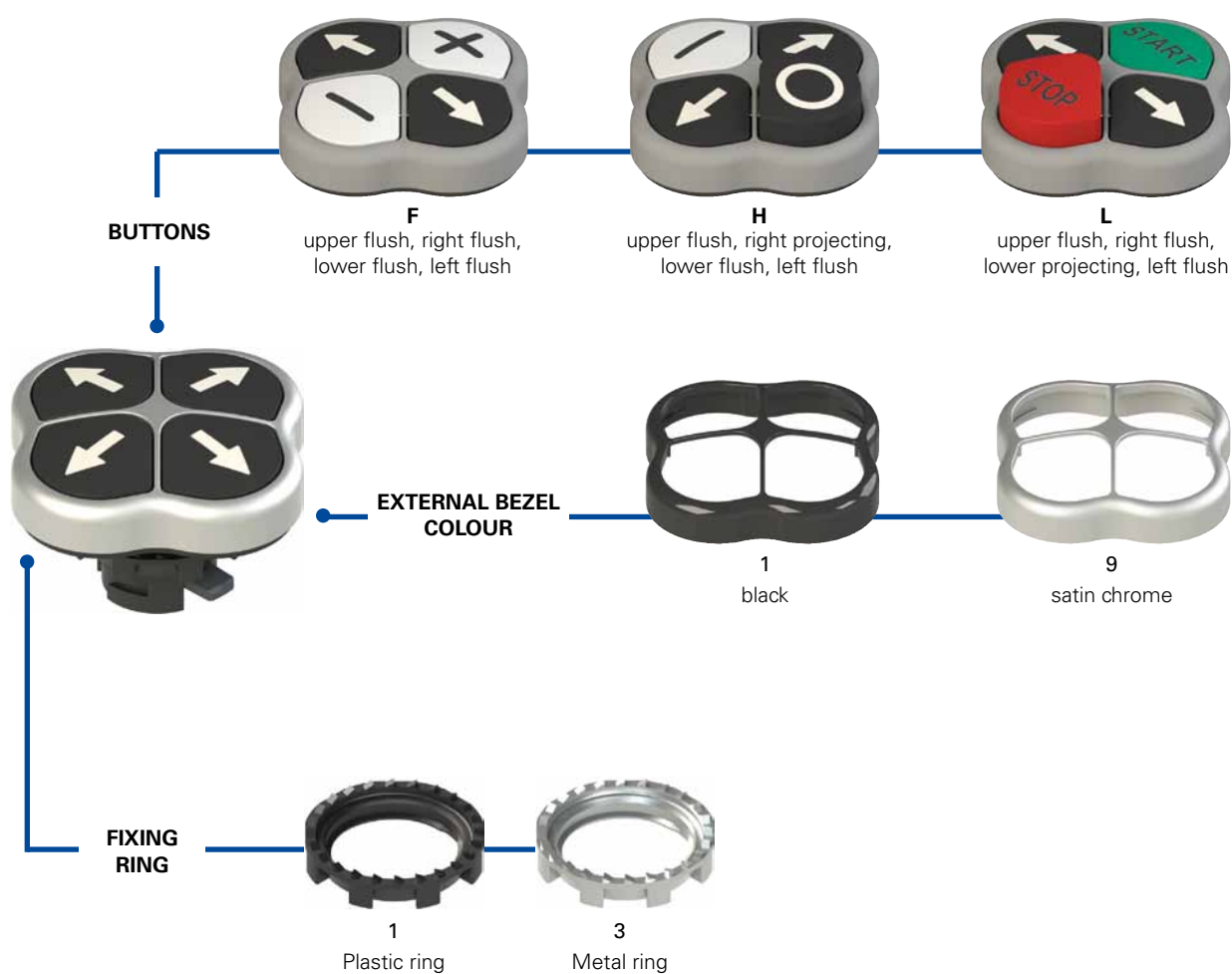
maximum number:  
4 contact blocks  
1 level



The actuators, with the specific button for 4-slot base, can be mounted only after fixing the button.



## Selection diagram



## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

## E2 1PQFA1QAAA

## Fixing ring and shaped ring

- |   |                                     |
|---|-------------------------------------|
| 1 | Plastic ring (standard)             |
| 2 | Plastic fixing ring and shaped ring |
| 3 | Metal ring                          |
| 4 | Metal fixing ring and shaped ring   |

## Buttons

- |          |   |
|----------|---|
| <b>F</b> | upper flush, right flush,<br>lower flush, left flush      |
| <b>H</b> | upper flush, right projecting,<br>lower flush, left flush |
| <b>L</b> | upper flush, right flush,<br>lower projecting, left flush |

Other combinations on request.

## Bezel colour

- |          |                         |
|----------|-------------------------|
| <b>1</b> | black (standard)        |
| <b>9</b> | satin chrome (standard) |

## Colours and symbols

	upper button		right button		lower button		left button	
	colour	symbol	colour	symbol	colour	symbol	colour	symbol
<b>QAAA</b>	black	↑	black	→	black	↓	black	←
<b>QAAB</b>	green	START	black	→	red	STOP	black	←
<b>QAAC</b>	white	START	black	→	black	STOP	black	←
<b>QAAD</b>	green	I	black	→	red	O	black	←
<b>QAAE</b>	white	I	black	→	black	O	black	←
<b>QAAF</b>	white	+	black	→	white	-	black	←
<b>QAAH</b>	black	↑	red	STOP	black	↓	green	START
<b>QAAJ</b>	black	↑	black	STOP	black	↓	white	START
<b>QAAK</b>	black	↑	red	O	black	↓	green	I
<b>QAAL</b>	black	↑	black	O	black	↓	white	I
<b>QAAM</b>	black	↑	white	-	black	↓	white	+
<b>QAAN</b>	black	↑	white	⚠	black	↓	white	⚡

Other combinations on request.





#### Main features

- Protection degree IP67
- Version with projecting buttons
- Customisation with symbols available

#### Quality marks:



UL approval: E131787  
EAC approval: RU C-IT DM94.B.01024

#### Technical data

##### General data

Protection degree:	IP67 acc. to EN 60529
Ambient temperature:	-25°C ... +80°C
Safety parameter B <sub>10D</sub> :	2,000,000
Mechanical endurance:	1 million operating cycles
Max. actuation frequency:	3600 operating cycles/hour
Actuating force at limit of travel:	6.5 N (without contacts)
Maximum travel:	5 mm
Tightening torque of the fixing ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

##### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14

##### ⚠ Installation for safety applications:

Use only contact blocks marked with the symbol ⊕. The safety circuit must always be connected to **NC contacts** (normally closed contacts: .1-.2).

##### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

##### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

#### Features approved by UL

For Use on a Flat Surface of a Type 1, 4X, 12 and 13  
Tightening torque 2.0 Nm

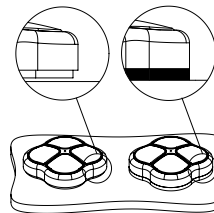
#### General data

##### Button profile



In order to be used in different types of application the EROUND line quadruple buttons are now available in two shapes: projecting and flush. The possible choice of shapes, colours and symbols allows various code combinations for buttons.

##### Shaped ring



The shaped ring can be used when no label holder or other devices are applied; it prevents dirt and other residues from settling between the button and the panel or housing. This turns out to be particularly useful in the sectors where high standards of cleanliness and hygiene are required.

##### Protection degree IP67

**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments

where maximum protection degree of the housing is required.

##### Customisable

In order to suit the various requests and needs of the customers, Pizzato Elettrica offers the possibility to customize the quadruple buttons with indelible laser inscriptions and symbols.

##### Metal fixing ring



The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.





Selection table for quadruple buttons



Actuator colour and engraving (starting from the top and clockwise)		upper button flush right button flush lower button flush left button flush		upper button flush right button projecting lower button flush left button flush		upper button flush right button flush lower button projecting left button flush	
		black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
	black button "↑" black button "↓" black button "←" black button "→"	E2 1PQFA1QAAA	E2 1PQFA9QAAA	-	-	-	-
	black button "START" green button "→" black button "STOP" red button "←"	E2 1PQFA1QAAB	E2 1PQFA9QAAB	-	-	E2 1PQLA1QAAB	E2 1PQLA9QAAB
	black button "START" white button "→" black button "STOP" black button "←"	E2 1PQFA1QAAC	E2 1PQFA9QAAC	-	-	E2 1PQLA1QAAC	E2 1PQLA9QAAC
	black button "I" green button "→" black button "O" red button "←"	E2 1PQFA1QAAD	E2 1PQFA9QAAD	-	-	E2 1PQLA1QAAD	E2 1PQLA9QAAD
	black button "I" white button "→" black button "O" black button "←"	E2 1PQFA1QAAE	E2 1PQFA9QAAE	-	-	E2 1PQLA1QAAE	E2 1PQLA9QAAE
	black button "+"	E2 1PQFA1QAAF	E2 1PQFA9QAAF	-	-	-	-
	black button "↑" black button "STOP" red button "↓" black button "START" green button "←"	E2 1PQFA1QAAH	E2 1PQFA9QAAH	E2 1PQHA1QAAH	E2 1PQHA9QAAH	-	-
	black button "↑" black button "STOP" black button "↓" black button "START" white button "←"	E2 1PQFA1QAAJ	E2 1PQFA9QAAJ	E2 1PQHA1QAAJ	E2 1PQHA9QAAJ	-	-
	black button "↑" black button "O" red button "↓" black button "I" green button "←"	E2 1PQFA1QAAK	E2 1PQFA9QAAK	E2 1PQHA1QAAK	E2 1PQHA9QAAK	-	-
	black button "↑" black button "O" black button "↓" black button "I" white button "←"	E2 1PQFA1QAAAL	E2 1PQFA9QAAAL	E2 1PQHA1QAAAL	E2 1PQHA9QAAAL	-	-
	black button "↑" black button "O" white button "↓" black button "←"	E2 1PQFA1QAAM	E2 1PQFA9QAAM	-	-	-	-


Other combinations on request.

Items with code on **green** background are stock items




## Complete units



Actuator colour and engraving (starting from the top and clockwise)	Contacts				upper button flush right button flush lower button flush left button flush	Satin chrome bezel
	pos. 3	pos. 2	pos. 4	pos. 1		
	"↑" black button			1NO	<b>E2 AC-DXBC2000</b> E2 1PQFA9QAAA + E2 1BAC21 + E2 CP10G2V1 + E2 CP10G2V1 + E2 CP10G2V1 + E2 CP10G2V1	
	"→" black button			1NO		
	"↓" black button		1NO			
	"←" black button					
	1NO					

Other combinations on request.



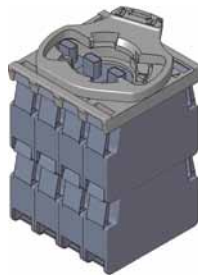
Actuator colour and engraving (starting from the top and clockwise)	Contacts				upper button flush right button projecting lower button flush left button flush	Satin chrome bezel
	pos. 3	pos. 2	pos. 4	pos. 1		
	"↑" black button			1NO	<b>E2 AC-DXBC2001</b> E2 1PQHA9QAAH + E2 1BAC21 + E2 CP10G2V1 + E2 CP10G2V1 + E2 CP10G2V1 + E2 CP10G2V1	
	"STOP" red button			1NC ⊖		
	"↓" black button		1NO			
	"START" green button	1NO				

Other combinations on request.

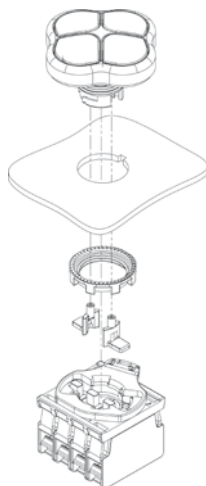
## Maximum number of contact blocks

4-slot mounting adapter

Quadruple buttons E2 •PQ••••••



maximum number:  
8 contact blocks  
2 levels



The assembly of the 2 lateral actuators, supplied with the quadruple button, must be done after the fixing of the button.



Contact block

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

## Mounting adapter

Packs of 10 pcs.



Article	Description
E2 1BAC21	4-slot mounting adapter for E2 CP•••••• contact block

## Shaped ring

Packs of 10 pcs.



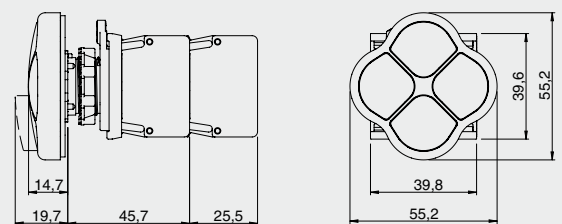
Article	Description
VE GP12M1A	Shaped ring for quadruple button E2 •PQ••••••

Items with code on green background are stock items

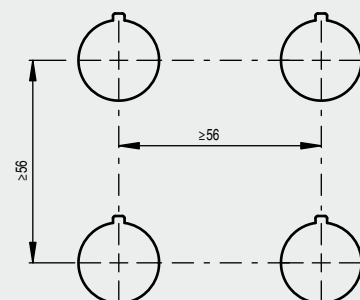
## Dimensions

All measures in the drawings are in mm

### Quadruple button

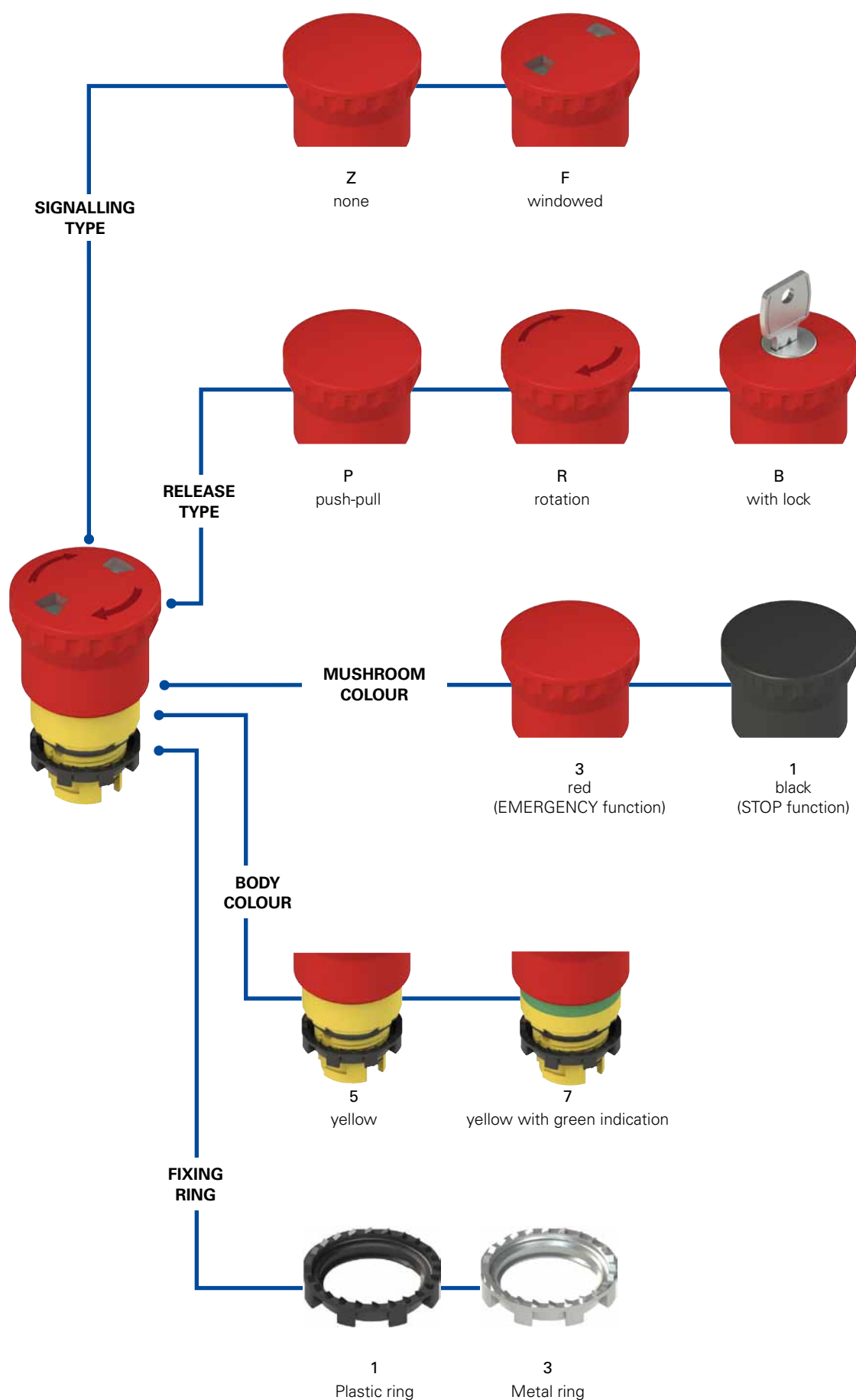


### Minimum distances for installation





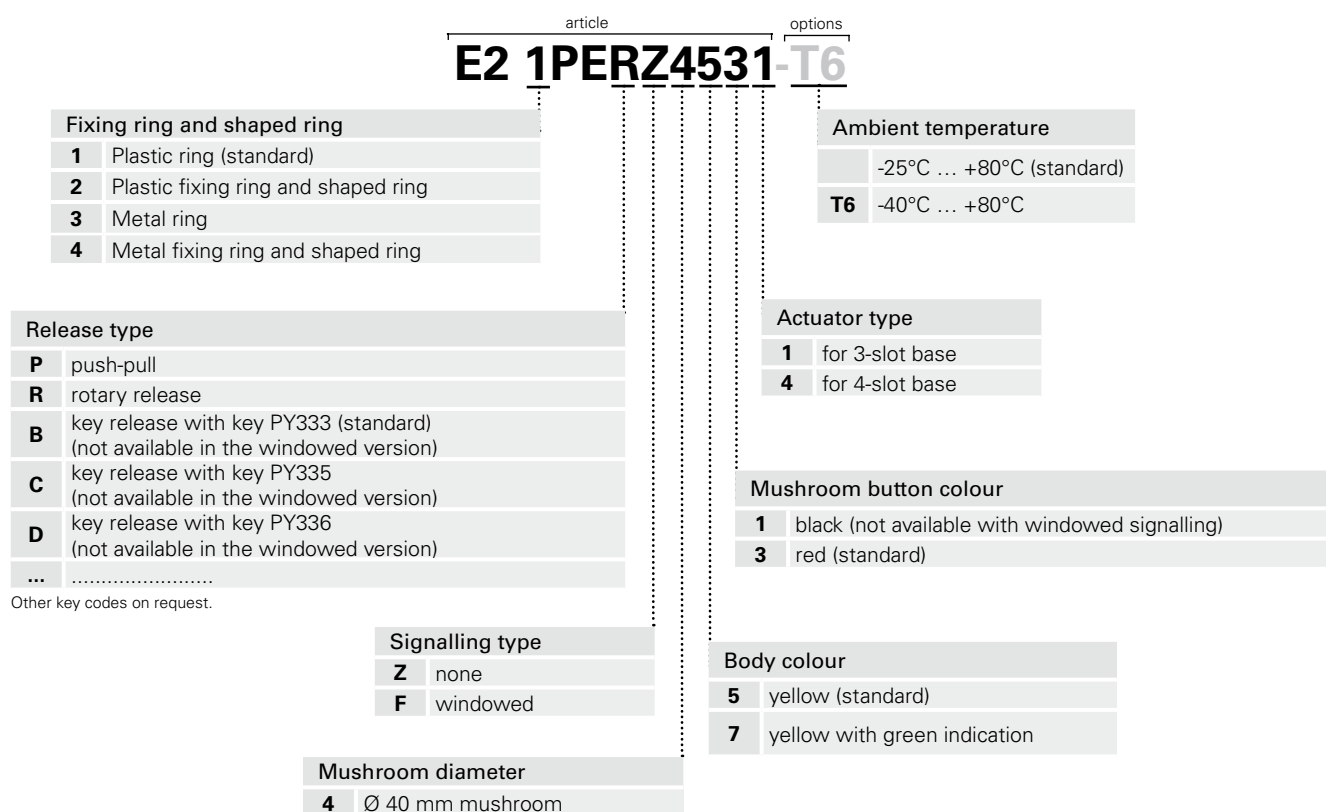
## Selection diagram



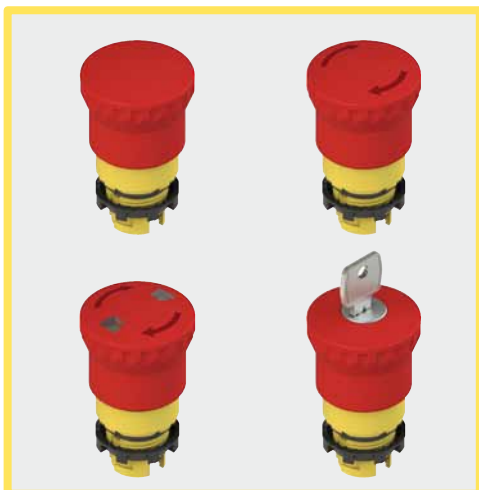


## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.



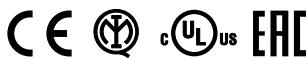




## Main features

- Protection degrees IP67 and IP69K
- 3 different release modes
- Windowed version
- -40°C versions

## Quality marks:



IMQ approval: CA02.04805  
UL approval: E131787  
EAC approval: RU C-IT DM94.B.01024

## Technical data

### General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C ... +80°C
Safety parameter $B_{10D}$ :	600,000
Mechanical endurance:	300,000 operating cycles
Max. actuation frequency:	3600 operating cycles/hour
Actuation travel:	4 mm (NO contact), 4 mm (NC contact)
Actuating force:	25 N
Actuating force at limit of travel:	Push-pull 18.5 N (without contacts) Rotary release, 35 N (without contacts)
Maximum travel:	9 mm
Tightening torque of the fixing ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60947-5-5, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60947-5-5, EN 60204-1, EN ISO 13850, UL 508, CSA 22-2 No. 14

### ⚠ Installation for safety applications:

Use only contact blocks marked with the symbol The safety circuit must always be connected to **NC contacts** (normally closed contacts: .1-.2).

### Compliance with the requirements of:

Machinery Directive 2006/42/EC

### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

## Features approved by UL

For Use on a Flat Surface of a Type 1, 4X, 12 and 13  
Tightening torque 2.0 Nm

## General data

### Visual signalling



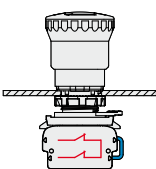
The versions of the emergency buttons with pull or rotary release can also visually signal the status with a mechanical indicator. The signalling windows change from green to red to signal the change of status of the button, namely from idle to actuated respectively.

### Luminous disc



The luminous disc can also be used in all situations when it is necessary to highlight the emergency button on the machine compared to the other devices, or where there are more mushrooms and it is necessary to know which one has been pressed. Provided with high luminosity, it is available in the versions with continuous or blinking light. Protected with protection degree IP67, it can be customised with writings or symbols upon request. For details see page 131.

### Self-monitored contact



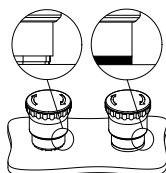
Specially designed for emergency mushroom buttons, the self-monitored contact makes it possible to reach a high level of self-control. Possible anomalies, such as the detachment from the emergency mushroom button, are immediately signalled by the opening of the safety circuit. This makes immediately evident failures that will be otherwise difficult to detect. Indeed, the detachment of a normal NC contact from the mushroom allows the machine to continue to function and makes the emergency stop unusable. For details see page 89.

### Protection degrees IP67 and IP69K

IP69K  
IP67

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and a 80°C).

### Shaped ring



The shaped ring can be used when no label holder or other devices are applied; it prevents dirt and other residues from settling between the button and the panel or housing. This turns out to be particularly useful in sectors where high standards of cleanliness and hygiene are required.

### Extended temperature range

-40°C

These devices are also available in a special version suitable for an ambient operating temperature range from -40°C up to +80°C. They can therefore be used for applications in cold stores, sterilisers and other equipment with low temperature environments. The special materials that have been used to realize these versions, maintain unchanged their features also in these conditions, widening the installation possibilities.



## Selection table for emergency buttons









Body colour and marking	Actuator colour	Push-pull	Rotary release	Windowed push-pull	Windowed rotary release	Key release Key coding PY333
yellow	red	E2 1PEPZ4531	E2 1PERZ4531	E2 1PEPF4531	E2 1PERF4531	E2 1PEBZ4531
yellow with green indication	red	E2 1PEPZ4731	E2 1PERZ4731	E2 1PEPF4731	E2 1PERF4731	E2 1PEBZ4731
yellow	black	E2 1PEPZ4511	E2 1PERZ4511	-	-	E2 1PEBZ4511

**Attention!** For safety applications, only use red mushrooms, black mushrooms can only be used for stop functions.

Items with code on **green** background are stock items

## Complete units with emergency buttons




Body colour and marking	Actuator colour	Contacts			Push-pull	Rotary release	Key release Key coding PY333
		pos. 2	pos. 3	pos. 1			
yellow	red	-	1NC 	-	E2 AC-DXBC1005 E2 1PEPZ4531 + E2 1BAC11 + E2 CP01G2V1	E2 AC-DXBC1006 E2 1PERZ4531 + E2 1BAC11 + E2 CP01G2V1	E2 AC-DXBC1007 E2 1PEBZ4531 + E2 1BAC11 + E2 CP01G2V1
yellow	red	-	1NC  SELF-MONITORED	-	E2 AC-DXBC1022 E2 1PEPZ4531 + E2 1BAC11 + E2 CP01S2V1	E2 AC-DXBC1023 E2 1PERZ4531 + E2 1BAC11 + E2 CP01S2V1	E2 AC-DXBC1024 E2 1PEBZ4531 + E2 1BAC11 + E2 CP01S2V1
yellow	red	1NC 	-	1NC 	E2 AC-DXBC1010 E2 1PEPZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1	E2 AC-DXBC1002 E2 1PERZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1	E2 AC-DXBC1011 E2 1PEBZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1
yellow	red	1NC 	1NC 	1NO	E2 AC-DXBC1012 E2 1PEPZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1 + E2 CP10G2V1	E2 AC-DXBC1000 E2 1PERZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1 + E2 CP10G2V1	E2 AC-DXBC1013 E2 1PEBZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1 + E2 CP10G2V1

Other combinations on request.

→ For contact block features see page 85.

## Locking keys

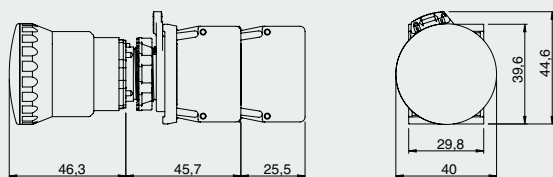
Article	Description
VE KE1A00-PY333	Locking key
	Order only if further keys besides the supplied one are needed. Key with key coding PY333. Other codes on request.



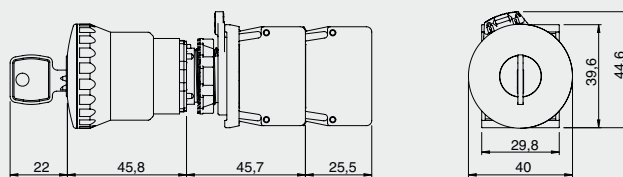
## Dimensions

All measures in the drawings are in mm

## Emergency button



## Emergency button, key release

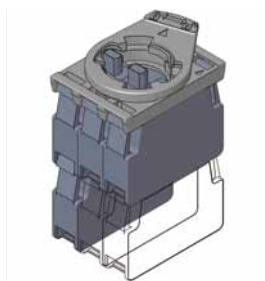


→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

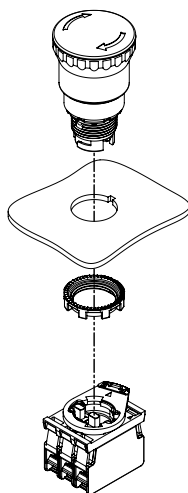
## Maximum number of contact blocks

## 3-slot mounting adapter

Emergency buttons E2 •PE•••••1



maximum number:  
4 contact blocks  
2 levels



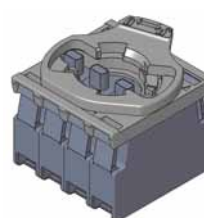
Contact block



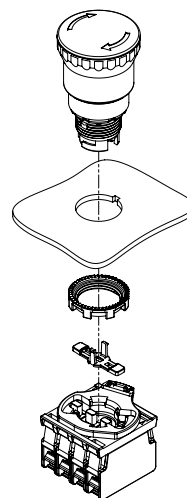
Alternative position contact block

## 4-slot mounting adapter

Emergency buttons E2 •PE•••••4



maximum number:  
4 contact blocks  
1 level



The mounting of the actuator for 4-slot base must be carried out after fixing the button.

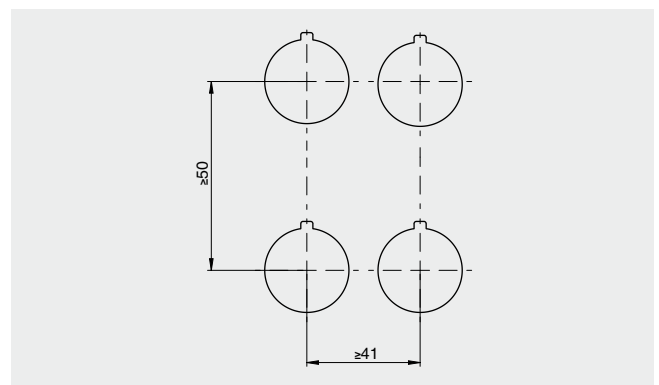


## Actuator for 4-slot base

Packs of **10 pcs.**

Article	Description
VE AS1218	Closed long actuator for 4-slot mounting adapter. It must be installed after fixing the button to the wall. For E2 •PE•••••4 buttons.

## Minimum distances for installation



## Accessories

→ More ACCESSORIES on page 135

## Labels with shaped hole

Packs of **5 pcs.**






























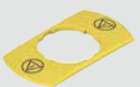






Suitable for devices E2 •PE•••••.

In compliance with EN ISO 13850.

Can be turned in 90° steps.


Inscriptions in other languages available on request.

**It does not alter the IP67 / IP69K protection degree of the associated device.**

Article	Description
 VE TF32A5700	Label with shaped hole, Ø 60 mm yellow disc, no writing, acc. to ISO 13850
VE TF32D5700	Label with shaped hole, Ø 90 mm yellow disc, no writing, acc. to ISO 13850
 VE TF32A5113	Label with shaped hole, Ø 60 mm yellow disc, writing:  , acc. to ISO 13850
VE TF32D5113	Label with shaped hole, Ø 90 mm yellow disc, writing:  , acc. to ISO 13850
 VE TF32A5101	Label with shaped hole, Ø 60 mm yellow disc, inscription: STOP  EMERGENZA 
VE TF32D5101	Label with shaped hole, Ø 90 mm yellow disc, inscription: STOP  EMERGENZA 
 VE TF32A5102	Label with shaped hole, Ø 60 mm yellow disc, inscription: EMERGENCY  STOP 
VE TF32D5102	Label with shaped hole, Ø 90 mm yellow disc, inscription: EMERGENCY  STOP 
 VE TF32A5109	Label with shaped hole, Ø 60 mm yellow disc, inscription: STOP  STOP  STOP  STOP 
VE TF32D5109	Label with shaped hole, Ø 90 mm yellow disc, inscription: STOP  STOP  STOP  STOP
 VE TF32A5120	Label with shaped hole, Ø 60 mm yellow disc, inscription: STOP EMERGENZA  ARRET D'URGENCE  NOT AUS  EMERGENCY STOP 
VE TF32D5120	Label with shaped hole, Ø 90 mm yellow disc, inscription: STOP EMERGENZA  ARRET D'URGENCE  NOT AUS  EMERGENCY STOP
 VE TF32G5700	Label with shaped hole, yellow, 30x60 mm rectangular, no engraving, acc. to ISO 13850
 VETF32G5121	Label with shaped hole, yellow, 30x60 mm rectangular, engraving:   , acc. to ISO 13850
 VE TF32G5103	Label with shaped hole, yellow, 30x60 mm rectangular, engraving: STOP 
 VE TF32G5110	Label with shaped hole, yellow, 30x60 mm rectangular, engraving: STOP 

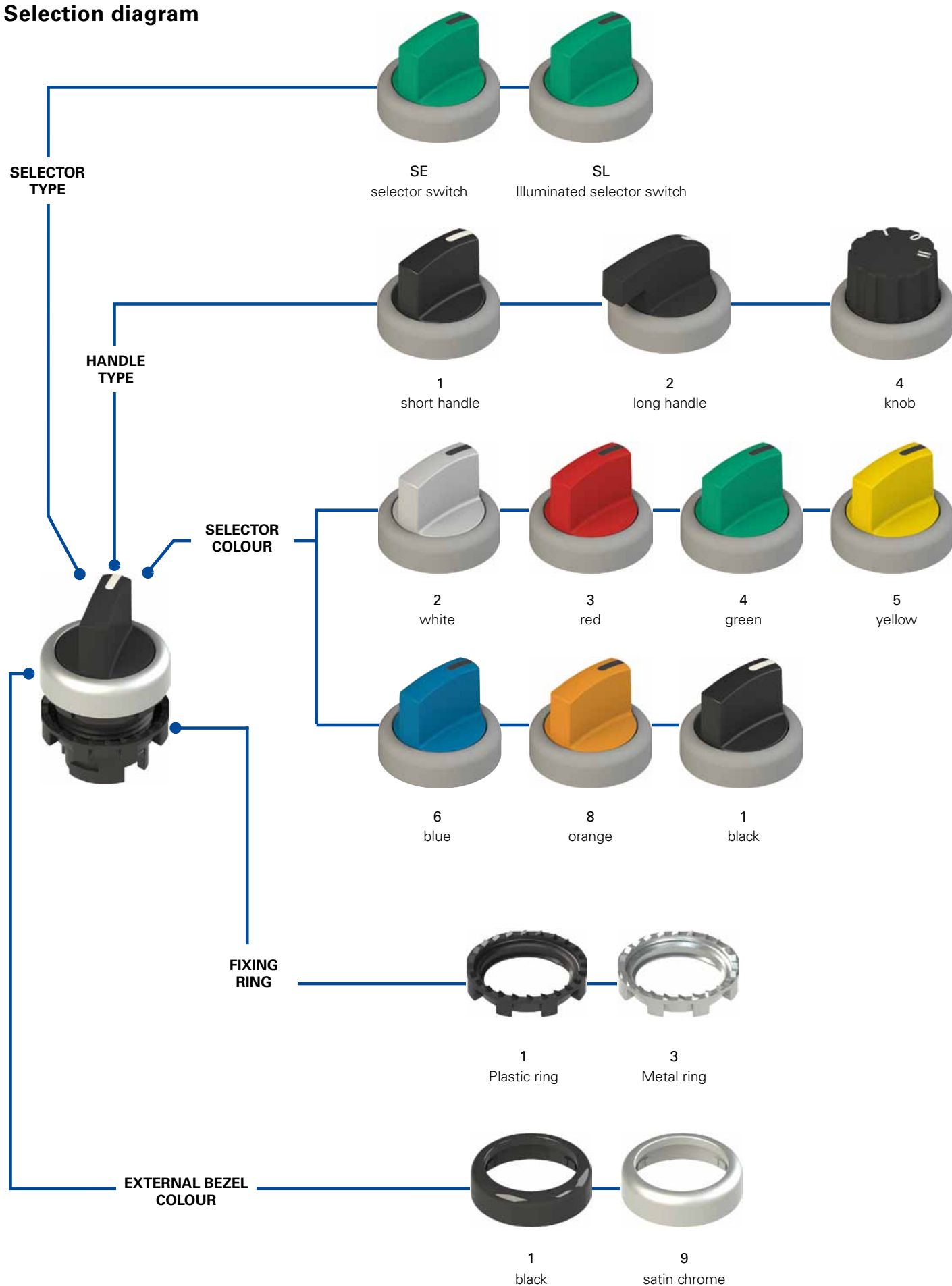
Items with code on **green** background are stock items

## Luminous disc

	Yellow luminous disc, Ø 60 mm. Data at page 131
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## Selection diagram





**Selector switches code structure** **Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.


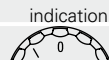












## E2 1SE13ACE11AB

Fixing ring and shaped ring					
1	Plastic ring (standard)				
2	Plastic fixing ring and shaped ring				
3	Metal ring				
4	Metal fixing ring and shaped ring				
Handle type					
1	short handle				
2	long handle				
4	knob				
Positions					
2AV		2AC		3GC	
2EV		2EC		4-position selector switches see p. 62	
2FV		3AC			
2FC		3EC			
2BC		3FC			
Cams and actuators					
A	cam for 2-position selector switch for 3-slot base				
E	cam for 3-position selector switch for 3-slot base				
Q	cam for 2-position selector switch for 4-slot base				
R	cam for 3-position selector switch for 4-slot base				
Selector colour					
1	black				
2	white				
3	red				
4	green				
5	yellow				
6	blue				
8	orange				
Marking type					
AB	 indication notch (standard)				
AC	 only for knobs, positions 2AC, 2EC				
AD	 only for knobs, positions 3AC, 3EC, 3FC, 3GC Other combinations on request.				
Bezel colour					
1	black (standard)				
9	satin chrome (standard)				

**Legend:** Maintained Spring-return

**Illuminated selector switch code structure** **Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

## E2 1SL13ACH21AB

<b>Fixing ring and shaped ring</b>			<b>Cams and actuators</b>			<b>Marking type</b>					
<b>1</b>	Plastic ring (standard)					<b>AB</b>		indication notch (standard)			
<b>2</b>	Plastic fixing ring and shaped ring								<b>AC</b>		only for knobs, positions 2AC, 2EC
<b>3</b>	Metal ring										
<b>4</b>	Metal fixing ring and shaped ring		<b>AD</b>		only for knobs, positions 3AC, 3EC, 3FC, 3GC						
<b>Handle type</b>						<b>Other combinations on request.</b>					
<b>1</b>	short handle										
<b>2</b>	long handle										
<b>4</b>	knob										
<b>Positions</b>						<b>Selector colour</b>			<b>Bezel colour</b>		
<b>2AV</b>		<b>2AC</b>		<b>3GC</b>		<b>2</b>	white				
<b>2EV</b>		<b>2EC</b>		4-position selector switches see p. 62		<b>3</b>	red				
<b>2FV</b>		<b>3AC</b>				<b>4</b>	green				
<b>2FC</b>		<b>3EC</b>				<b>5</b>	yellow				
<b>2BC</b>		<b>3FC</b>				<b>6</b>	blue				
						<b>8</b>	orange				

**Legend:** Maintained Spring-return

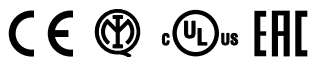




### Main features

- Protection degrees IP67 and IP69K
- 4 different shapes
- Standard or illuminated version
- Maintained or spring-return version

### Quality marks:



IMQ approval: CA02.04805  
 UL approval: E131787  
 EAC approval: RU C-IT DM94.B.01024

### Technical data

#### General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C ... +80°C
Safety parameter B <sub>10D</sub> :	2,000,000
Mechanical endurance:	1 million operating cycles
Max. actuation frequency:	3600 operating cycles/hour
Actuating force at limit of travel:	0.07 Nm (without contacts)
Maximum travel:	60° (2 stable positions) 40° (2 momentary positions) ±60° (3 stable positions) ±40° (3 momentary positions)
Tightening torque of the fixing ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

#### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14

#### ⚠ Installation for safety applications:

Use only contact blocks marked with the symbol The safety circuit must always be connected to **NC contacts** (normally closed contacts: .1-.2).

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### Features approved by UL

For Use on a Flat Surface of a Type 1, 4X, 12 and 13  
 Tightening torque 2.0 Nm

### General data

#### Protection degrees IP67 and IP69K

**IP69K**  
**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection

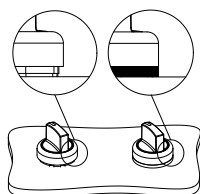
degree of the housing is required. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and a 80°C).

#### Metal fixing ring



The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.

#### Shaped ring

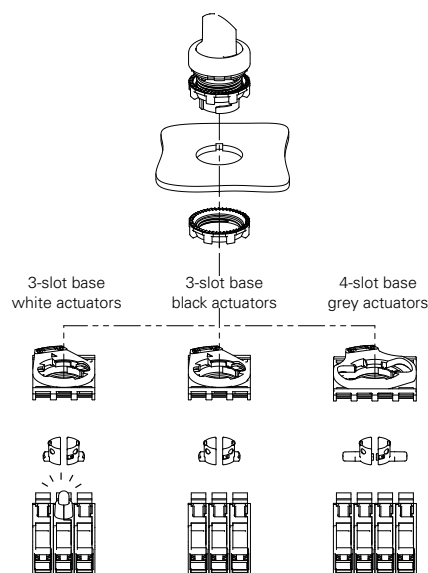


The shaped ring can be used when no label holder or other devices are applied; it prevents dirt and other residues from settling between the selector switch and the panel or housing. This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

#### Actuators for selector switches

Three types of actuators are available, which activate the cursors of the contacts combined with the selector: a white actuator allowing the commutation of a single contact block, and a black or grey actuator allowing the simultaneous commutation of two contact blocks next to each other.

























































The white, black (3-slot base) and grey (4-slot base) actuators can be removed and replaced at any moment. This allows to configure at will the switching type executed by the selector on the contacts.







## Selection table for selector switches



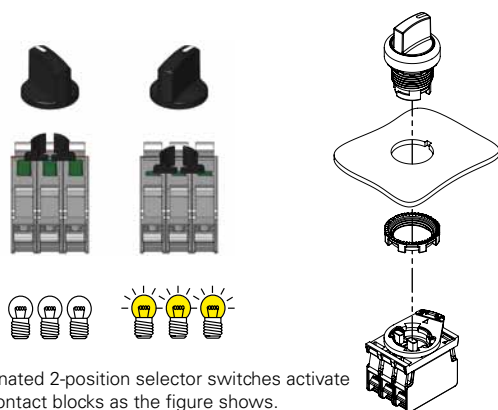
Actuator colour and engraving	Two positions	short handle		knob		long handle	
		black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
 black		E2 1SE12AVA11AB	E2 1SE12AVA19AB	E2 1SE42AVA11AB	E2 1SE42AVA19AB	E2 1SE22AVA11AB	E2 1SE22AVA19AB
 white		E2 1SE12AVA21AB	E2 1SE12AVA29AB	E2 1SE42AVA21AB	E2 1SE42AVA29AB	E2 1SE22AVA21AB	E2 1SE22AVA29AB
 red		E2 1SE12AVA31AB	E2 1SE12AVA39AB	E2 1SE42AVA31AB	E2 1SE42AVA39AB	E2 1SE22AVA31AB	E2 1SE22AVA39AB
 green		E2 1SE12AVA41AB	E2 1SE12AVA49AB	E2 1SE42AVA41AB	E2 1SE42AVA49AB	E2 1SE22AVA41AB	E2 1SE22AVA49AB
 yellow		E2 1SE12AVA51AB	E2 1SE12AVA59AB	E2 1SE42AVA51AB	E2 1SE42AVA59AB	E2 1SE22AVA51AB	E2 1SE22AVA59AB
 blue		E2 1SE12AVA61AB	E2 1SE12AVA69AB	E2 1SE42AVA61AB	E2 1SE42AVA69AB	E2 1SE22AVA61AB	E2 1SE22AVA69AB
 orange		E2 1SE12AVA81AB	E2 1SE12AVA89AB	E2 1SE42AVA81AB	E2 1SE42AVA89AB	E2 1SE22AVA81AB	E2 1SE22AVA89AB
 black		E2 1SE12EVA11AB	E2 1SE12EVA19AB	E2 1SE42EVA11AB	E2 1SE42EVA19AB	E2 1SE22EVA11AB	E2 1SE22EVA19AB
 white		E2 1SE12EVA21AB	E2 1SE12EVA29AB	E2 1SE42EVA21AB	E2 1SE42EVA29AB	E2 1SE22EVA21AB	E2 1SE22EVA29AB
 red		E2 1SE12EVA31AB	E2 1SE12EVA39AB	E2 1SE42EVA31AB	E2 1SE42EVA39AB	E2 1SE22EVA31AB	E2 1SE22EVA39AB
 green		E2 1SE12EVA41AB	E2 1SE12EVA49AB	E2 1SE42EVA41AB	E2 1SE42EVA49AB	E2 1SE22EVA41AB	E2 1SE22EVA49AB
 yellow		E2 1SE12EVA51AB	E2 1SE12EVA59AB	E2 1SE42EVA51AB	E2 1SE42EVA59AB	E2 1SE22EVA51AB	E2 1SE22EVA59AB
 blue		E2 1SE12EVA61AB	E2 1SE12EVA69AB	E2 1SE42EVA61AB	E2 1SE42EVA69AB	E2 1SE22EVA61AB	E2 1SE22EVA69AB
 orange		E2 1SE12EVA81AB	E2 1SE12EVA89AB	E2 1SE42EVA81AB	E2 1SE42EVA89AB	E2 1SE22EVA81AB	E2 1SE22EVA89AB
 black		E2 1SE12ACA11AB	E2 1SE12ACA19AB	E2 1SE42ACA11AB	E2 1SE42ACA19AB	E2 1SE22ACA11AB	E2 1SE22ACA19AB
 white		E2 1SE12ACA21AB	E2 1SE12ACA29AB	E2 1SE42ACA21AB	E2 1SE42ACA29AB	E2 1SE22ACA21AB	E2 1SE22ACA29AB
 red		E2 1SE12ACA31AB	E2 1SE12ACA39AB	E2 1SE42ACA31AB	E2 1SE42ACA39AB	E2 1SE22ACA31AB	E2 1SE22ACA39AB
 green		E2 1SE12ACA41AB	E2 1SE12ACA49AB	E2 1SE42ACA41AB	E2 1SE42ACA49AB	E2 1SE22ACA41AB	E2 1SE22ACA49AB
 yellow		E2 1SE12ACA51AB	E2 1SE12ACA59AB	E2 1SE42ACA51AB	E2 1SE42ACA59AB	E2 1SE22ACA51AB	E2 1SE22ACA59AB
 blue		E2 1SE12ACA61AB	E2 1SE12ACA69AB	E2 1SE42ACA61AB	E2 1SE42ACA69AB	E2 1SE22ACA61AB	E2 1SE22ACA69AB
 orange		E2 1SE12ACA81AB	E2 1SE12ACA89AB	E2 1SE42ACA81AB	E2 1SE42ACA89AB	E2 1SE22ACA81AB	E2 1SE22ACA89AB
 black		E2 1SE12ECA11AB	E2 1SE12ECA19AB	E2 1SE42ECA11AB	E2 1SE42ECA19AB	E2 1SE22ECA11AB	E2 1SE22ECA19AB
 white		E2 1SE12ECA21AB	E2 1SE12ECA29AB	E2 1SE42ECA21AB	E2 1SE42ECA29AB	E2 1SE22ECA21AB	E2 1SE22ECA29AB
 red		E2 1SE12ECA31AB	E2 1SE12ECA39AB	E2 1SE42ECA31AB	E2 1SE42ECA39AB	E2 1SE22ECA31AB	E2 1SE22ECA39AB
 green		E2 1SE12ECA41AB	E2 1SE12ECA49AB	E2 1SE42ECA41AB	E2 1SE42ECA49AB	E2 1SE22ECA41AB	E2 1SE22ECA49AB
 yellow		E2 1SE12ECA51AB	E2 1SE12ECA59AB	E2 1SE42ECA51AB	E2 1SE42ECA59AB	E2 1SE22ECA51AB	E2 1SE22ECA59AB
 blue		E2 1SE12ECA61AB	E2 1SE12ECA69AB	E2 1SE42ECA61AB	E2 1SE42ECA69AB	E2 1SE22ECA61AB	E2 1SE22ECA69AB
 orange		E2 1SE12ECA81AB	E2 1SE12ECA89AB	E2 1SE42ECA81AB	E2 1SE42ECA89AB	E2 1SE22ECA81AB	E2 1SE22ECA89AB

Legend:  Maintained  Spring-return

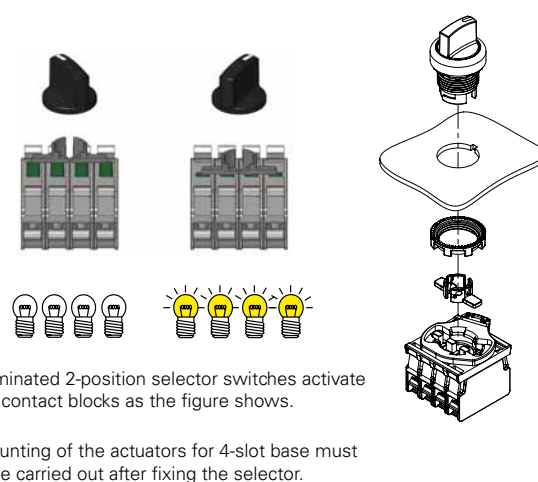
Items with code on **green** background are stock items

On request, knob selector switches can be customized with symbols and inscriptions.

### 3-slot mounting adapter



### 4-slot mounting adapter





Selection table for selector switches



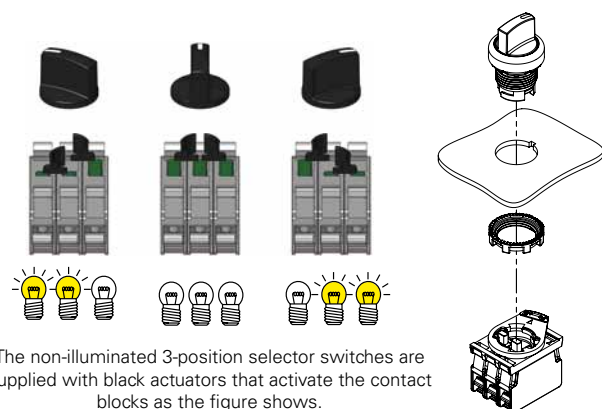
Actuator colour and engraving	Three positions	short handle		knob		long handle	
		black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
black	↙	E2 1SE13ACE11AB	E2 1SE13ACE19AB	E2 1SE43ACE11AB	E2 1SE43ACE19AB	E2 1SE23ACE11AB	E2 1SE23ACE19AB
white	↘	E2 1SE13ACE21AB	E2 1SE13ACE29AB	E2 1SE43ACE21AB	E2 1SE43ACE29AB	E2 1SE23ACE21AB	E2 1SE23ACE29AB
red	↙	E2 1SE13ACE31AB	E2 1SE13ACE39AB	E2 1SE43ACE31AB	E2 1SE43ACE39AB	E2 1SE23ACE31AB	E2 1SE23ACE39AB
green	↘	E2 1SE13ACE41AB	E2 1SE13ACE49AB	E2 1SE43ACE41AB	E2 1SE43ACE49AB	E2 1SE23ACE41AB	E2 1SE23ACE49AB
yellow	↙	E2 1SE13ACE51AB	E2 1SE13ACE59AB	E2 1SE43ACE51AB	E2 1SE43ACE59AB	E2 1SE23ACE51AB	E2 1SE23ACE59AB
blue	↘	E2 1SE13ACE61AB	E2 1SE13ACE69AB	E2 1SE43ACE61AB	E2 1SE43ACE69AB	E2 1SE23ACE61AB	E2 1SE23ACE69AB
orange	↙	E2 1SE13ACE81AB	E2 1SE13ACE89AB	E2 1SE43ACE81AB	E2 1SE43ACE89AB	E2 1SE23ACE81AB	E2 1SE23ACE89AB
black	↙↘	E2 1SE13ECE11AB	E2 1SE13ECE19AB	E2 1SE43ECE11AB	E2 1SE43ECE19AB	E2 1SE23ECE11AB	E2 1SE23ECE19AB
white	↘↙	E2 1SE13ECE21AB	E2 1SE13ECE29AB	E2 1SE43ECE21AB	E2 1SE43ECE29AB	E2 1SE23ECE21AB	E2 1SE23ECE29AB
red	↙↘	E2 1SE13ECE31AB	E2 1SE13ECE39AB	E2 1SE43ECE31AB	E2 1SE43ECE39AB	E2 1SE23ECE31AB	E2 1SE23ECE39AB
green	↘↙	E2 1SE13ECE41AB	E2 1SE13ECE49AB	E2 1SE43ECE41AB	E2 1SE43ECE49AB	E2 1SE23ECE41AB	E2 1SE23ECE49AB
yellow	↙↘	E2 1SE13ECE51AB	E2 1SE13ECE59AB	E2 1SE43ECE51AB	E2 1SE43ECE59AB	E2 1SE23ECE51AB	E2 1SE23ECE59AB
blue	↘↙	E2 1SE13ECE61AB	E2 1SE13ECE69AB	E2 1SE43ECE61AB	E2 1SE43ECE69AB	E2 1SE23ECE61AB	E2 1SE23ECE69AB
orange	↙↘	E2 1SE13ECE81AB	E2 1SE13ECE89AB	E2 1SE43ECE81AB	E2 1SE43ECE89AB	E2 1SE23ECE81AB	E2 1SE23ECE89AB
black	↙↘↙	E2 1SE13FCE11AB	E2 1SE13FCE19AB	E2 1SE43FCE11AB	E2 1SE43FCE19AB	E2 1SE23FCE11AB	E2 1SE23FCE19AB
white	↘↙↘	E2 1SE13FCE21AB	E2 1SE13FCE29AB	E2 1SE43FCE21AB	E2 1SE43FCE29AB	E2 1SE23FCE21AB	E2 1SE23FCE29AB
red	↙↘↙	E2 1SE13FCE31AB	E2 1SE13FCE39AB	E2 1SE43FCE31AB	E2 1SE43FCE39AB	E2 1SE23FCE31AB	E2 1SE23FCE39AB
green	↘↙↘	E2 1SE13FCE41AB	E2 1SE13FCE49AB	E2 1SE43FCE41AB	E2 1SE43FCE49AB	E2 1SE23FCE41AB	E2 1SE23FCE49AB
yellow	↙↘↙	E2 1SE13FCE51AB	E2 1SE13FCE59AB	E2 1SE43FCE51AB	E2 1SE43FCE59AB	E2 1SE23FCE51AB	E2 1SE23FCE59AB
blue	↘↙↘	E2 1SE13FCE61AB	E2 1SE13FCE69AB	E2 1SE43FCE61AB	E2 1SE43FCE69AB	E2 1SE23FCE61AB	E2 1SE23FCE69AB
orange	↙↘↙	E2 1SE13FCE81AB	E2 1SE13FCE89AB	E2 1SE43FCE81AB	E2 1SE43FCE89AB	E2 1SE23FCE81AB	E2 1SE23FCE89AB
black	↙↘↙↘	E2 1SE13GCE11AB	E2 1SE13GCE19AB	E2 1SE43GCE11AB	E2 1SE43GCE19AB	E2 1SE23GCE11AB	E2 1SE23GCE19AB
white	↘↙↘↙	E2 1SE13GCE21AB	E2 1SE13GCE29AB	E2 1SE43GCE21AB	E2 1SE43GCE29AB	E2 1SE23GCE21AB	E2 1SE23GCE29AB
red	↙↘↙↘	E2 1SE13GCE31AB	E2 1SE13GCE39AB	E2 1SE43GCE31AB	E2 1SE43GCE39AB	E2 1SE23GCE31AB	E2 1SE23GCE39AB
green	↘↙↘↙	E2 1SE13GCE41AB	E2 1SE13GCE49AB	E2 1SE43GCE41AB	E2 1SE43GCE49AB	E2 1SE23GCE41AB	E2 1SE23GCE49AB
yellow	↙↘↙↘	E2 1SE13GCE51AB	E2 1SE13GCE59AB	E2 1SE43GCE51AB	E2 1SE43GCE59AB	E2 1SE23GCE51AB	E2 1SE23GCE59AB
blue	↘↙↘↙	E2 1SE13GCE61AB	E2 1SE13GCE69AB	E2 1SE43GCE61AB	E2 1SE43GCE69AB	E2 1SE23GCE61AB	E2 1SE23GCE69AB
orange	↙↘↙↘	E2 1SE13GCE81AB	E2 1SE13GCE89AB	E2 1SE43GCE81AB	E2 1SE43GCE89AB	E2 1SE23GCE81AB	E2 1SE23GCE89AB

Legend ↙ Maintained ↘ Spring-return

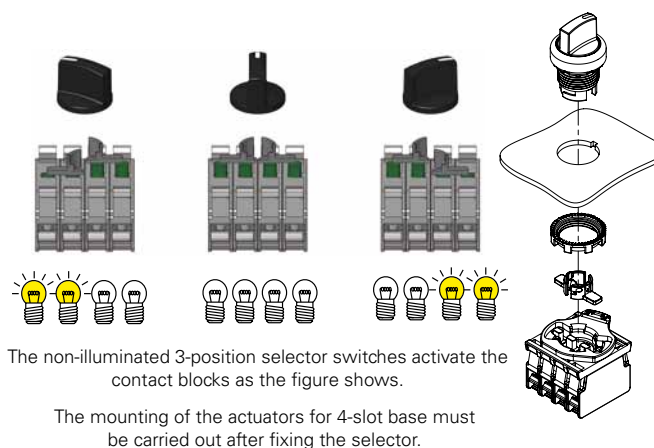
Items with code on **green** background are stock items

On request, knob selector switches can be customized with symbols and inscriptions.

3-slot mounting adapter



4-slot mounting adapter



















































Other configurations on request



Other configurations on request



## Selection table for illuminated selector switches



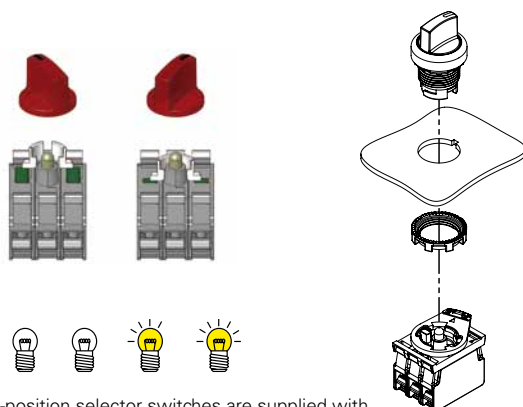
Actuator colour and engraving	Two positions	short handle		knob		long handle	
		black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
 white		E2 1SL12AVD21AB	E2 1SL12AVD29AB	E2 1SL42AVD21AB	E2 1SL42AVD29AB	E2 1SL22AVD21AB	E2 1SL22AVD29AB
 red		E2 1SL12AVD31AB	E2 1SL12AVD39AB	E2 1SL42AVD31AB	E2 1SL42AVD39AB	E2 1SL22AVD31AB	E2 1SL22AVD39AB
 green		E2 1SL12AVD41AB	E2 1SL12AVD49AB	E2 1SL42AVD41AB	E2 1SL42AVD49AB	E2 1SL22AVD41AB	E2 1SL22AVD49AB
 yellow		E2 1SL12AVD51AB	E2 1SL12AVD59AB	E2 1SL42AVD51AB	E2 1SL42AVD59AB	E2 1SL22AVD51AB	E2 1SL22AVD59AB
 blue		E2 1SL12AVD61AB	E2 1SL12AVD69AB	E2 1SL42AVD61AB	E2 1SL42AVD69AB	E2 1SL22AVD61AB	E2 1SL22AVD69AB
 orange		E2 1SL12AVD81AB	E2 1SL12AVD89AB	E2 1SL42AVD81AB	E2 1SL42AVD89AB	E2 1SL22AVD81AB	E2 1SL22AVD89AB
 white		E2 1SL12EVD21AB	E2 1SL12EVD29AB	E2 1SL42EVD21AB	E2 1SL42EVD29AB	E2 1SL22EVD21AB	E2 1SL22EVD29AB
 red		E2 1SL12EVD31AB	E2 1SL12EVD39AB	E2 1SL42EVD31AB	E2 1SL42EVD39AB	E2 1SL22EVD31AB	E2 1SL22EVD39AB
 green		E2 1SL12EVD41AB	E2 1SL12EVD49AB	E2 1SL42EVD41AB	E2 1SL42EVD49AB	E2 1SL22EVD41AB	E2 1SL22EVD49AB
 yellow		E2 1SL12EVD51AB	E2 1SL12EVD59AB	E2 1SL42EVD51AB	E2 1SL42EVD59AB	E2 1SL22EVD51AB	E2 1SL22EVD59AB
 blue		E2 1SL12EVD61AB	E2 1SL12EVD69AB	E2 1SL42EVD61AB	E2 1SL42EVD69AB	E2 1SL22EVD61AB	E2 1SL22EVD69AB
 orange		E2 1SL12EVD81AB	E2 1SL12EVD89AB	E2 1SL42EVD81AB	E2 1SL42EVD89AB	E2 1SL22EVD81AB	E2 1SL22EVD89AB
 white		E2 1SL12ACD21AB	E2 1SL12ACD29AB	E2 1SL42ACD21AB	E2 1SL42ACD29AB	E2 1SL22ACD21AB	E2 1SL22ACD29AB
 red		E2 1SL12ACD31AB	E2 1SL12ACD39AB	E2 1SL42ACD31AB	E2 1SL42ACD39AB	E2 1SL22ACD31AB	E2 1SL22ACD39AB
 green		E2 1SL12ACD41AB	E2 1SL12ACD49AB	E2 1SL42ACD41AB	E2 1SL42ACD49AB	E2 1SL22ACD41AB	E2 1SL22ACD49AB
 yellow		E2 1SL12ACD51AB	E2 1SL12ACD59AB	E2 1SL42ACD51AB	E2 1SL42ACD59AB	E2 1SL22ACD51AB	E2 1SL22ACD59AB
 blue		E2 1SL12ACD61AB	E2 1SL12ACD69AB	E2 1SL42ACD61AB	E2 1SL42ACD69AB	E2 1SL22ACD61AB	E2 1SL22ACD69AB
 orange		E2 1SL12ACD81AB	E2 1SL12ACD89AB	E2 1SL42ACD81AB	E2 1SL42ACD89AB	E2 1SL22ACD81AB	E2 1SL22ACD89AB
 white		E2 1SL12ECD21AB	E2 1SL12ECD29AB	E2 1SL42ECD21AB	E2 1SL42ECD29AB	E2 1SL22ECD21AB	E2 1SL22ECD29AB
 red		E2 1SL12ECD31AB	E2 1SL12ECD39AB	E2 1SL42ECD31AB	E2 1SL42ECD39AB	E2 1SL22ECD31AB	E2 1SL22ECD39AB
 green		E2 1SL12ECD41AB	E2 1SL12ECD49AB	E2 1SL42ECD41AB	E2 1SL42ECD49AB	E2 1SL22ECD41AB	E2 1SL22ECD49AB
 yellow		E2 1SL12ECD51AB	E2 1SL12ECD59AB	E2 1SL42ECD51AB	E2 1SL42ECD59AB	E2 1SL22ECD51AB	E2 1SL22ECD59AB
 blue		E2 1SL12ECD61AB	E2 1SL12ECD69AB	E2 1SL42ECD61AB	E2 1SL42ECD69AB	E2 1SL22ECD61AB	E2 1SL22ECD69AB
 orange		E2 1SL12ECD81AB	E2 1SL12ECD89AB	E2 1SL42ECD81AB	E2 1SL42ECD89AB	E2 1SL22ECD81AB	E2 1SL22ECD89AB

Legend:  Maintained  Spring-return

On request, knob selector switches can be customized with symbols and inscriptions.

Items with code on **green** background are stock items

3-slot mounting adapter



The illuminated 2-position selector switches are supplied with white actuators that activate the contact blocks as the figure shows.



Selection table for illuminated selector switches



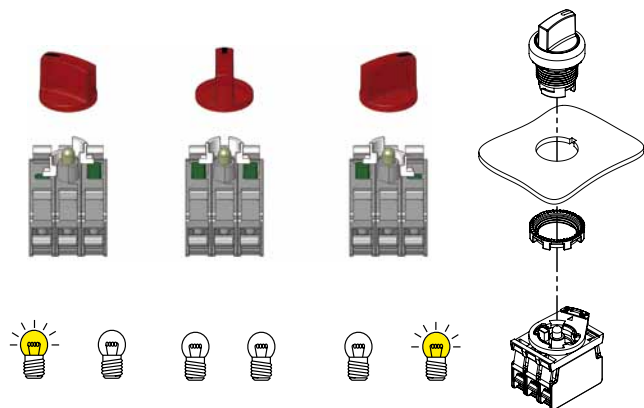
Actuator colour and engraving	Three positions	short handle		knob		long handle	
		black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
white		E2 1SL13ACH21AB	E2 1SL13ACH29AB	E2 1SL43ACH21AB	E2 1SL43ACH29AB	E2 1SL23ACH21AB	E2 1SL23ACH29AB
red		E2 1SL13ACH31AB	E2 1SL13ACH39AB	E2 1SL43ACH31AB	E2 1SL43ACH39AB	E2 1SL23ACH31AB	E2 1SL23ACH39AB
green		E2 1SL13ACH41AB	E2 1SL13ACH49AB	E2 1SL43ACH41AB	E2 1SL43ACH49AB	E2 1SL23ACH41AB	E2 1SL23ACH49AB
yellow		E2 1SL13ACH51AB	E2 1SL13ACH59AB	E2 1SL43ACH51AB	E2 1SL43ACH59AB	E2 1SL23ACH51AB	E2 1SL23ACH59AB
blue		E2 1SL13ACH61AB	E2 1SL13ACH69AB	E2 1SL43ACH61AB	E2 1SL43ACH69AB	E2 1SL23ACH61AB	E2 1SL23ACH69AB
orange		E2 1SL13ACH81AB	E2 1SL13ACH89AB	E2 1SL43ACH81AB	E2 1SL43ACH89AB	E2 1SL23ACH81AB	E2 1SL23ACH89AB
white		E2 1SL13ECH21AB	E2 1SL13ECH29AB	E2 1SL43ECH21AB	E2 1SL43ECH29AB	E2 1SL23ECH21AB	E2 1SL23ECH29AB
red		E2 1SL13ECH31AB	E2 1SL13ECH39AB	E2 1SL43ECH31AB	E2 1SL43ECH39AB	E2 1SL23ECH31AB	E2 1SL23ECH39AB
green		E2 1SL13ECH41AB	E2 1SL13ECH49AB	E2 1SL43ECH41AB	E2 1SL43ECH49AB	E2 1SL23ECH41AB	E2 1SL23ECH49AB
yellow		E2 1SL13ECH51AB	E2 1SL13ECH59AB	E2 1SL43ECH51AB	E2 1SL43ECH59AB	E2 1SL23ECH51AB	E2 1SL23ECH59AB
blue		E2 1SL13ECH61AB	E2 1SL13ECH69AB	E2 1SL43ECH61AB	E2 1SL43ECH69AB	E2 1SL23ECH61AB	E2 1SL23ECH69AB
orange		E2 1SL13ECH81AB	E2 1SL13ECH89AB	E2 1SL43ECH81AB	E2 1SL43ECH89AB	E2 1SL23ECH81AB	E2 1SL23ECH89AB
white		E2 1SL13FCH21AB	E2 1SL13FCH29AB	E2 1SL43FCH21AB	E2 1SL43FCH29AB	E2 1SL23FCH21AB	E2 1SL23FCH29AB
red		E2 1SL13FCH31AB	E2 1SL13FCH39AB	E2 1SL43FCH31AB	E2 1SL43FCH39AB	E2 1SL23FCH31AB	E2 1SL23FCH39AB
green		E2 1SL13FCH41AB	E2 1SL13FCH49AB	E2 1SL43FCH41AB	E2 1SL43FCH49AB	E2 1SL23FCH41AB	E2 1SL23FCH49AB
yellow		E2 1SL13FCH51AB	E2 1SL13FCH59AB	E2 1SL43FCH51AB	E2 1SL43FCH59AB	E2 1SL23FCH51AB	E2 1SL23FCH59AB
blue		E2 1SL13FCH61AB	E2 1SL13FCH69AB	E2 1SL43FCH61AB	E2 1SL43FCH69AB	E2 1SL23FCH61AB	E2 1SL23FCH69AB
orange		E2 1SL13FCH81AB	E2 1SL13FCH89AB	E2 1SL43FCH81AB	E2 1SL43FCH89AB	E2 1SL23FCH81AB	E2 1SL23FCH89AB
white		E2 1SL13GCH21AB	E2 1SL13GCH29AB	E2 1SL43GCH21AB	E2 1SL43GCH29AB	E2 1SL23GCH21AB	E2 1SL23GCH29AB
red		E2 1SL13GCH31AB	E2 1SL13GCH39AB	E2 1SL43GCH31AB	E2 1SL43GCH39AB	E2 1SL23GCH31AB	E2 1SL23GCH39AB
green		E2 1SL13GCH41AB	E2 1SL13GCH49AB	E2 1SL43GCH41AB	E2 1SL43GCH49AB	E2 1SL23GCH41AB	E2 1SL23GCH49AB
yellow		E2 1SL13GCH51AB	E2 1SL13GCH59AB	E2 1SL43GCH51AB	E2 1SL43GCH59AB	E2 1SL23GCH51AB	E2 1SL23GCH59AB
blue		E2 1SL13GCH61AB	E2 1SL13GCH69AB	E2 1SL43GCH61AB	E2 1SL43GCH69AB	E2 1SL23GCH61AB	E2 1SL23GCH69AB
orange		E2 1SL13GCH81AB	E2 1SL13GCH89AB	E2 1SL43GCH81AB	E2 1SL43GCH89AB	E2 1SL23GCH81AB	E2 1SL23GCH89AB

Legend: Maintained Spring-return

On request, knob selector switches can be customized with symbols and inscriptions.

Items with code on green background are stock items

3-slot mounting adapter



The illuminated 3-position selector switches are supplied with white actuators that activate the contact blocks as the figure shows.



## Selection table for complete units with four-position selector switches

### Four-position selector switches





### Illuminated four-position selector switches



















Actuator colour and engraving	Four positions	Contacts			4 positions		Contacts			4 positions, illuminated	
		pos. 2	pos. 3	pos. 1	black bezel	Satin chrome bezel	pos. 2	pos. 3	pos. 1	black bezel	Satin chrome bezel
 black		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2201	E2 AC-DXBC2203	-	-	-	-	-
 white		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2209	E2 AC-DXBC2211	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2257	E2 AC-DXBC2259
 red		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2217	E2 AC-DXBC2219	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2265	E2 AC-DXBC2267
 green		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2225	E2 AC-DXBC2227	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2273	E2 AC-DXBC2275
 yellow		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2233	E2 AC-DXBC2235	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2281	E2 AC-DXBC2283
 blue		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2241	E2 AC-DXBC2243	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2289	E2 AC-DXBC2291
 orange		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2249	E2 AC-DXBC2251	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2297	E2 AC-DXBC2299
 black		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2200	E2 AC-DXBC2202	-	-	-	-	-
 white		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2208	E2 AC-DXBC2210	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2256	E2 AC-DXBC2258
 red		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2216	E2 AC-DXBC2218	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2264	E2 AC-DXBC2266
 green		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2224	E2 AC-DXBC2226	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2272	E2 AC-DXBC2274
 yellow		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2232	E2 AC-DXBC2234	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2280	E2 AC-DXBC2282
 blue		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2240	E2 AC-DXBC2242	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2288	E2 AC-DXBC2290
 orange		1NO+1NC	-	1NO+1NC	E2 AC-DXBC2248	E2 AC-DXBC2250	1NO+1NC	LED	1NO+1NC	E2 AC-DXBC2296	E2 AC-DXBC2298

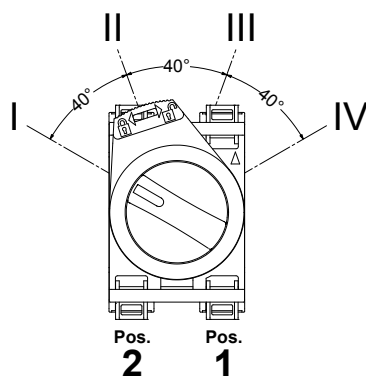
**Note:** The LED supplied with the illuminated selector switch has a supply voltage of 12 ... 30 Vac/dc. Other voltages on request.

**Legend:**  Maintained  Spring-return

### Wiring diagram

		Selector position			
		I	II	III	IV
pos. 2	.1				
	.2				
pos. 1	.3				
	.4				

■ closed contact □ open contact



### Four-position selector switches

The combination of this version of the selector with the dedicated double contact blocks allows to close a single contact in each of the four positions; the angular rotation of the lever remains the same for versions with 2, 3 and 4 positions, thus facilitating the handling of the device.

The 4-position selector must not be combined with contact blocks different from those supplied.

### Handle type

The four-position selector can be supplied with three different handle types. For further information contact our sales office.



with short handle



with long handle



with knob



## Complete units with two- or three-position selector switches



Actuator colour and engraving	Positions	Contacts			2 positions
		pos. 2	pos. 3	pos. 1	black bezel
● black	↙	-	1NO	-	<b>E2 AC-DXBC1401</b> E2 1SE12AVA11AB + E2 1BAC11 + E2 CP10G2V1
● black	↘	-	1NO	-	<b>E2 AC-DXBC1402</b> E2 1SE12EVA11AB + E2 1BAC11 + E2 CP10G2V1

Other combinations on request.



Actuator colour and engraving	Positions	Contacts			3 positions
		pos. 2	pos. 3	pos. 1	black bezel
● black	↙	1NO	-	1NO	<b>E2 AC-DXBC1405</b> E2 1SE13ACE11AB + E2 1BAC11 + E2 CP10G2V1 + E2 CP10G2V1
● black	↘	1NO	-	1NO	<b>E2 AC-DXBC1406</b> E2 1SE13GCE11AB + E2 1BAC11 + E2 CP10G2V1 + E2 CP10G2V1

Other combinations on request.

## Complete units with two- or three-position illuminated selector switches



Actuator colour and engraving	Positions	Contacts			2 positions
		pos. 2	pos. 3	pos. 1	black bezel
○ white	↙	1NO	LED	1NC ⊕	<b>E2 AC-DXBC1805</b> E2 1SL12AVD21AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A2V1 + E2 CP01G2V1
● green	↘	1NO	LED	1NC ⊕	<b>E2 AC-DXBC1801</b> E2 1SL12AVD41AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A4V1 + E2 CP01G2V1

Other combinations on request.



Actuator colour and engraving	Positions	Contacts			3 positions
		pos. 2	pos. 3	pos. 1	black bezel
○ white	↙	1NO	LED	1NC ⊕	<b>E2 AC-DXBC1806</b> E2 1SL13ACH21AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A2V1 + E2 CP01G2V1
● green	↘	1NO	LED	1NC ⊕	<b>E2 AC-DXBC1803</b> E2 1SL13ACH41AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A4V1 + E2 CP01G2V1

Other combinations on request.

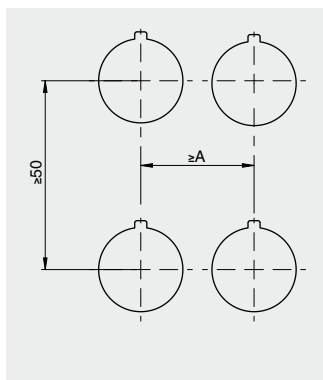
**Legend:** ↙ Maintained    ↘ Spring-return

→ For data regarding contact blocks and LED units, please see the respective chapters.



## Minimum distances for installation

All measures in the drawings are in mm



3-slot mounting adapter

A=30 mm

4-slot mounting adapter

A=40 mm

## Maximum number of contact blocks

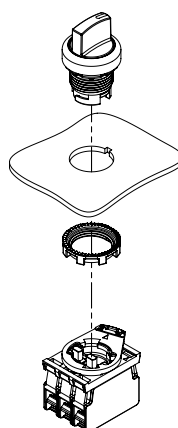
3-slot mounting adapter

4-slot mounting adapter

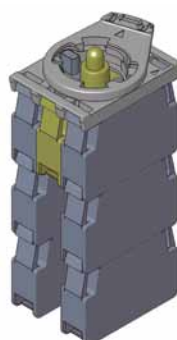
Selector switches E2 •SE••••••••



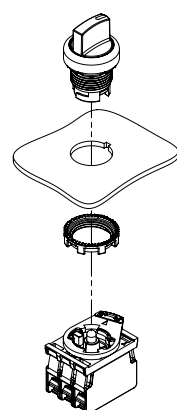
maximum number:  
6 contact blocks  
3 levels



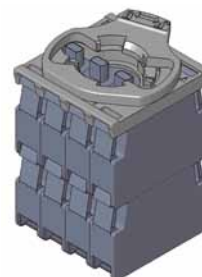
Illuminated selector switches E2  
•SL••••••••



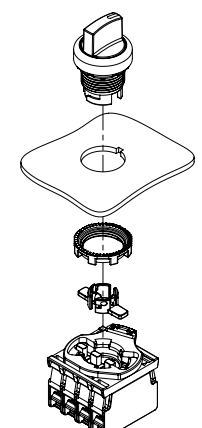
maximum number:  
6 contact blocks  
3 levels



Selector switches E2 •SE••••••••



maximum number:  
8 contact blocks  
2 levels



Contact  
block



Alternative  
position  
contact  
block



LED  
unit

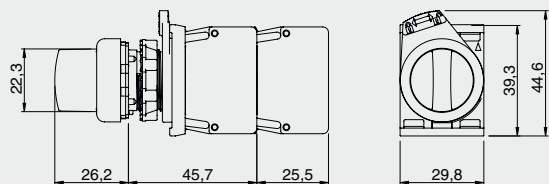
The mounting of the actuators for 4-slot base must be carried out after fixing the selector.



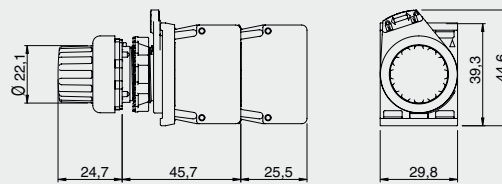
## Dimensions

All measures in the drawings are in mm

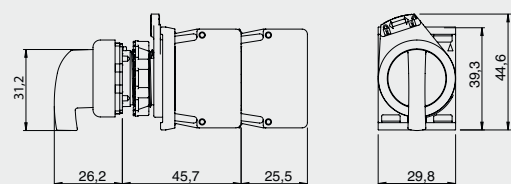
## Selector switch with short handle



## Knob selector switch






## Selector switch with long handle



→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

## Actuators


Packs of **10 pcs.**

Article	Description
 <b>VE AS1212</b>	Black closed actuator for 3-slot base. Actuates 2 contact blocks at the same time. For E2 ●SE●●●●●● selector switches
 <b>VE AS1213</b>	White open actuator for 3-slot base. Actuates 1 contact block. For E2 ●SE●●●●●●, E2 ●SL●●●●●● selector switches
 <b>VE AS1216</b>	Grey closed actuator for 4-slot base. Actuates 2 contact blocks at the same time. For E2 ●SE●●●●●● selector switches

Note: 2 actuators needed for each selector.


## Shaped ring

Packs of **50 pcs.**

Article	Description
 <b>VE GP12H1A</b>	Shaped ring for single device Not applicable in presence of label holders, adapters from Ø 22 to Ø 30 mm, guards or protection caps.

## Fixing ring

Packs of **20 pcs.**

Article	Description
 <b>VE GF720A</b>	Metal fixing ring

## Accessories

→ More ACCESSORIES on page 135

Items with code on **green** background are stock items

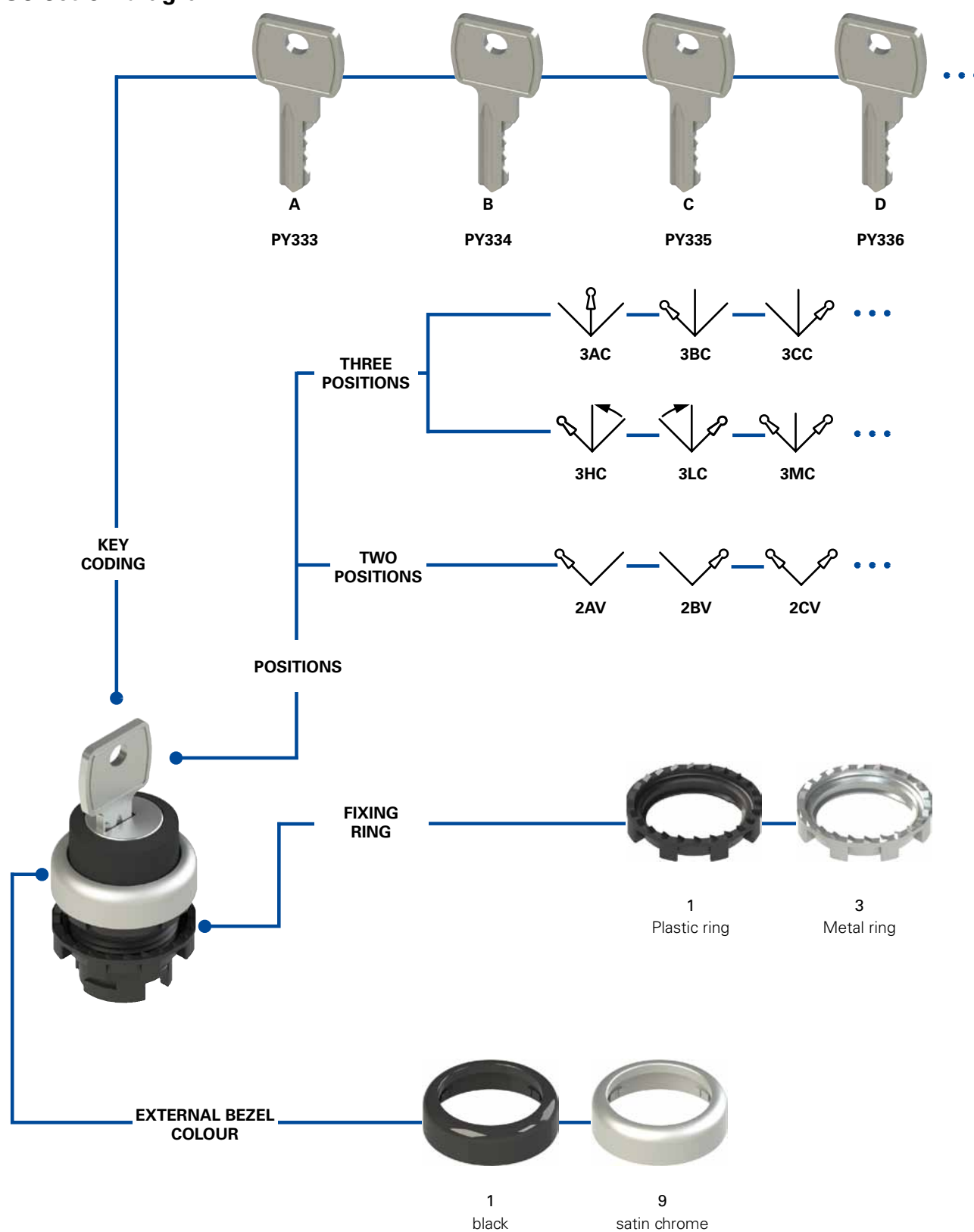


## Notes

[illegible][illegible]



## Selection diagram





## Key selector switch code structure






















**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

# E2 1SC2ACA11AA

### Fixing ring and shaped ring

- |   |                                     |
|---|-------------------------------------|
| 1 | Plastic ring (standard)             |
| 2 | Plastic fixing ring and shaped ring |
| 3 | Metal ring                          |
| 4 | Metal fixing ring and shaped ring   |

### Positions and key removal




2AV		3AC		3HC	
2BV		3BC		3LC	
2CV		3CC		3MC	
2DV		3DC		3NC	
2AC		3EC		3PC	
2BC		3FC		3QC	
2DC		3GC		3RC	

**Legend:**  Maintained  Spring-return  Key extraction position

### Cams and actuators

- |   |  |
|---|--|
| A | cam for 2-position selector switch for 3-slot base |
| E | cam for 3-position selector switch for 3-slot base |
| Q | cam for 2-position selector switch for 4-slot base |
| R | cam for 3-position selector switch for 4-slot base |

### Marking type

- |   |  |
|---|--|
| A | no writing (standard)  |
| C |  for selector switches only, positions 2AC, 2BC, 2DC      |
| D |  for three-position selector switches only                |
| E |  for selector switches only, positions 2AV, 2BV, 2CV, 2DV |
- Other combinations on request.

### Key coding

- |   |                             |
|---|-----------------------------|
| A | Key coding PY333 (standard) |
| B | Key coding PY334            |
| C | Key coding PY335            |
| D | Key coding PY336            |
| E | Key coding PY337            |
| F | Key coding PY338            |
| G | Key coding PY339            |
| H | Key coding PY340            |
| L | Key coding PY341            |

### Bezel colour

- |   |                         |
|---|-------------------------|
| 1 | black (standard)        |
| 9 | satin chrome (standard) |

### Selector colour

- |   |       |
|---|-------|
| 1 | black |
|---|-------|

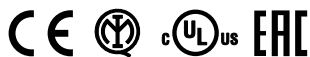




### Main features

- Protection degrees IP67 and IP69K
- Maintained or spring-return version

### Quality marks:



IMQ approval: CA02.04805  
 UL approval: E131787  
 EAC approval: RU C-IT DM94.B.01024

### Technical data

#### General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C ... +80°C
Safety parameter B <sub>10D</sub> :	600,000
Mechanical endurance:	300,000 operating cycles
Max. actuation frequency:	3600 operating cycles/hour
Actuating force at limit of travel:	0.07 Nm (without contacts)
Maximum travel:	60° (2 stable positions) 40° (2 momentary positions) ±60° (3 stable positions) ±40° (3 momentary positions)
Tightening torque of the fixing ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

#### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14

#### ⚠ Installation for safety applications:

Use only contact blocks marked with the symbol ⊕. The safety circuit must always be connected to **NC contacts** (normally closed contacts: .1-.2).

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### Features approved by UL

For Use on a Flat Surface of a Type 1, 4X, 12 and 13  
 Tightening torque 2.0 Nm

### General data

#### Protection degrees IP67 and IP69K

**IP69K**  
**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required. Due to

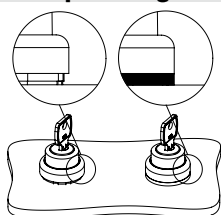
their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and a 80°C).

#### Metal fixing ring



The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.

#### Shaped ring

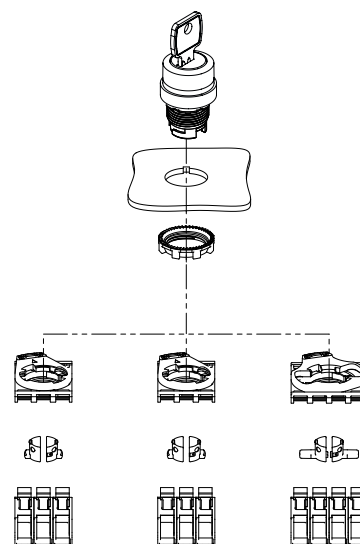


The shaped ring can be used when no label holder or other devices are applied; it prevents dirt and other residues from settling between the selector switch and the panel or housing. This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

#### Actuators for selector switches









Three types of actuators are available, which activate the cursors of the contacts combined with the selector: a white actuator allowing the commutation of a single contact block, and a black or grey actuator allowing the simultaneous commutation of two contact blocks next to each other.

The white, black (3-slot base) and grey (4-slot base) actuators can be removed and replaced at any moment. This allows to configure at will the switching type executed by the selector on the contacts.






## Selection table for key selector switches

Actuator colour and engraving	Two positions	with key	
		black bezel	Satin chrome bezel
		E2 1SC2AVA11AA	E2 1SC2AVA19AA
		E2 1SC2BVA11AA	E2 1SC2BVA19AA
		E2 1SC2CVA11AA	E2 1SC2CVA19AA
		E2 1SC2DVA11AA	E2 1SC2DVA19AA
		E2 1SC2ACA11AA	E2 1SC2ACA19AA
		E2 1SC2BCA11AA	E2 1SC2BCA19AA
		E2 1SC2DCA11AA	E2 1SC2DCA19AA

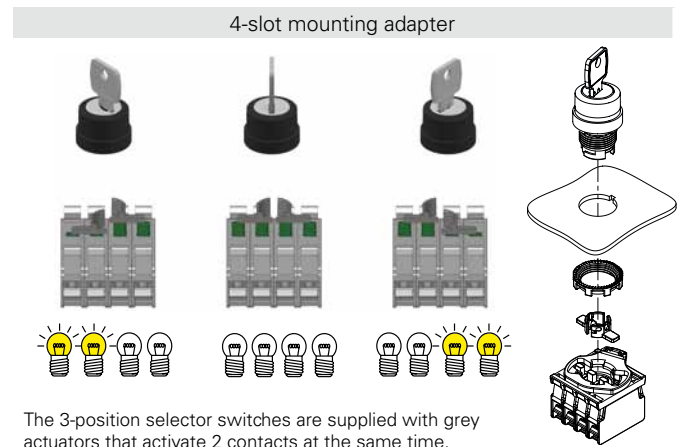
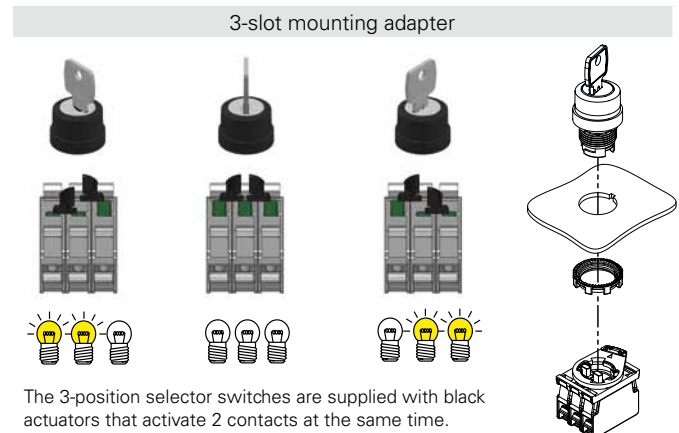
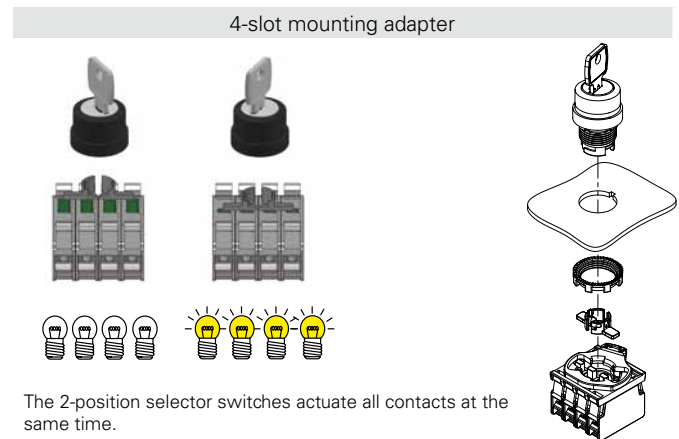
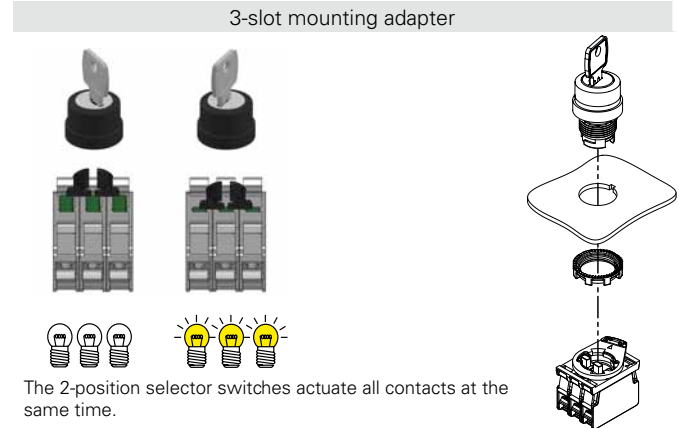
The standard colour of the selectors in the above-mentioned codes is **BLACK**. Other colours on request.  
Key selector switches can be customized with symbols and inscriptions on request.  
All keys of the selector switches have the PY333 key coding. Other codes on request.

Actuator colour and engraving	Three positions	with key	
		black bezel	Satin chrome bezel
		E2 1SC3ACE11AA	E2 1SC3ACE19AA
		E2 1SC3BCE11AA	E2 1SC3BCE19AA
		E2 1SC3CCE11AA	E2 1SC3CCE19AA
		E2 1SC3DCE11AA	E2 1SC3DCE19AA
		E2 1SC3ECE11AA	E2 1SC3ECE19AA
		E2 1SC3FCE11AA	E2 1SC3FCE19AA
		E2 1SC3GCE11AA	E2 1SC3GCE19AA
		E2 1SC3HCE11AA	E2 1SC3HCE19AA
		E2 1SC3LCE11AA	E2 1SC3LCE19AA
		E2 1SC3MCE11AA	E2 1SC3MCE19AA
		E2 1SC3NCE11AA	E2 1SC3NCE19AA
		E2 1SC3PCE11AA	E2 1SC3PCE19AA
		E2 1SC3QCE11AA	E2 1SC3QCE19AA
		E2 1SC3RCE11AA	E2 1SC3RCE19AA

The standard colour of the selectors in the above-mentioned codes is **BLACK**. Other colours on request.  
Key selectors switches can be customized with symbols and inscriptions on request.  
All keys of the selector switches have the PY333 key coding. Other codes on request.

**Legend:**  Maintained  Spring-return  Key extraction position

Items with code on **green** background are stock items





## Complete units with two- or three-position key selectors



Actuator colour and engraving	Positions	Contacts			2 positions
		pos. 2	pos. 3	pos. 1	black bezel
● black		-	1NO	-	<b>E2 AC-DXBC1601</b> E2 1SC2AVA11AA + E2 1BAC11 + E2 CP10G2V1
● black		-	1NO	-	<b>E2 AC-DXBC1605</b> E2 1SC2CVA11AA + E2 1BAC11 + E2 CP10G2V1
● black		-	1NO	-	<b>E2 AC-DXBC1606</b> E2 1SC2DVA11AA + E2 1BAC11 + E2 CP10G2V1

Other combinations on request.  
Key coding PY333

Actuator colour and engraving	Positions	Contacts			3 positions
		pos. 2	pos. 3	pos. 1	black bezel
● black		1NO	-	1NO	<b>E2 AC-DXBC1607</b> E2 1SC3DCE11AA + E2 1BAC11 + E2 CP10G2V1 + E2 CP10G2V1

Other combinations on request.  
Key coding PY333

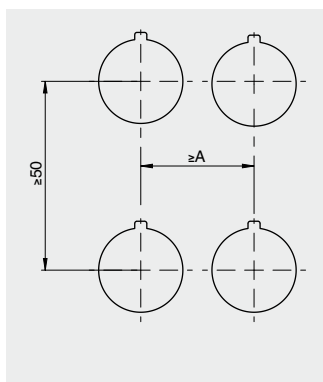
**Legend:** Maintained Spring-return Key extraction position

→ For data regarding contact blocks, please see the respective chapters.



## Minimum distances for installation

All measures in the drawings are in mm



3-slot mounting adapter

A=30 mm

4-slot mounting adapter

A=40 mm

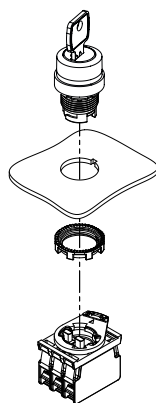
## Maximum number of contact blocks

3-slot mounting adapter

E2 •SC•••••• key selector switch

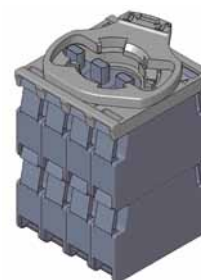


maximum number:  
6 contact blocks  
3 levels

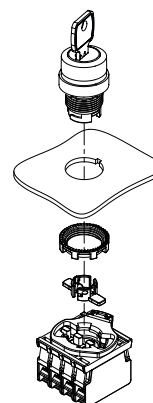


4-slot mounting adapter

E2 •SC•••••• key selector switch



maximum number:  
8 contact blocks  
2 levels



Contact  
block



Alternative  
position  
contact  
block

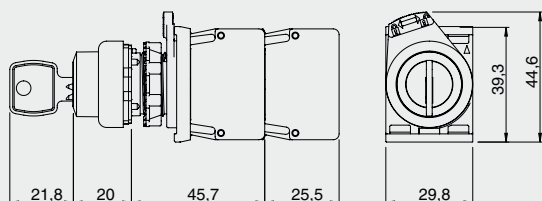
The mounting of the actuators for 4-slot base must be carried out after fixing the selector.



## Dimensions


All measures in the drawings are in mm

## Key selector switch






→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

## Locking keys

Article	Description
VE KE1A00-PY333	Locking key
 <p>Order only if further keys besides the supplied one are needed. Key with key coding PY333. Other codes on request.</p>	

## Actuators


Packs of 10 pcs.

Article	Description
	VE AS1212 Black closed actuator for 3-slot base. Actuates 2 contact blocks at the same time.
	VE AS1213 White open actuator for 3-slot base. Actuates 1 contact block.
	VE AS1216 Grey closed actuator for 4-slot base. Actuates 2 contact blocks at the same time.

Note: 2 actuators needed for each selector.


## Shaped ring

Packs of 50 pcs.

Article	Description
VE GP12H1A	Shaped ring for single device
 <p>Not applicable in presence of label holders, adapters from Ø 22 to Ø 30 mm, guards or protection caps.</p>	

## Fixing ring

Packs of 20 pcs.

Article	Description
VE GF720A	Metal fixing ring
	

## Accessories

→ More ACCESSORIES on page 135

Items with code on **green** background are stock items

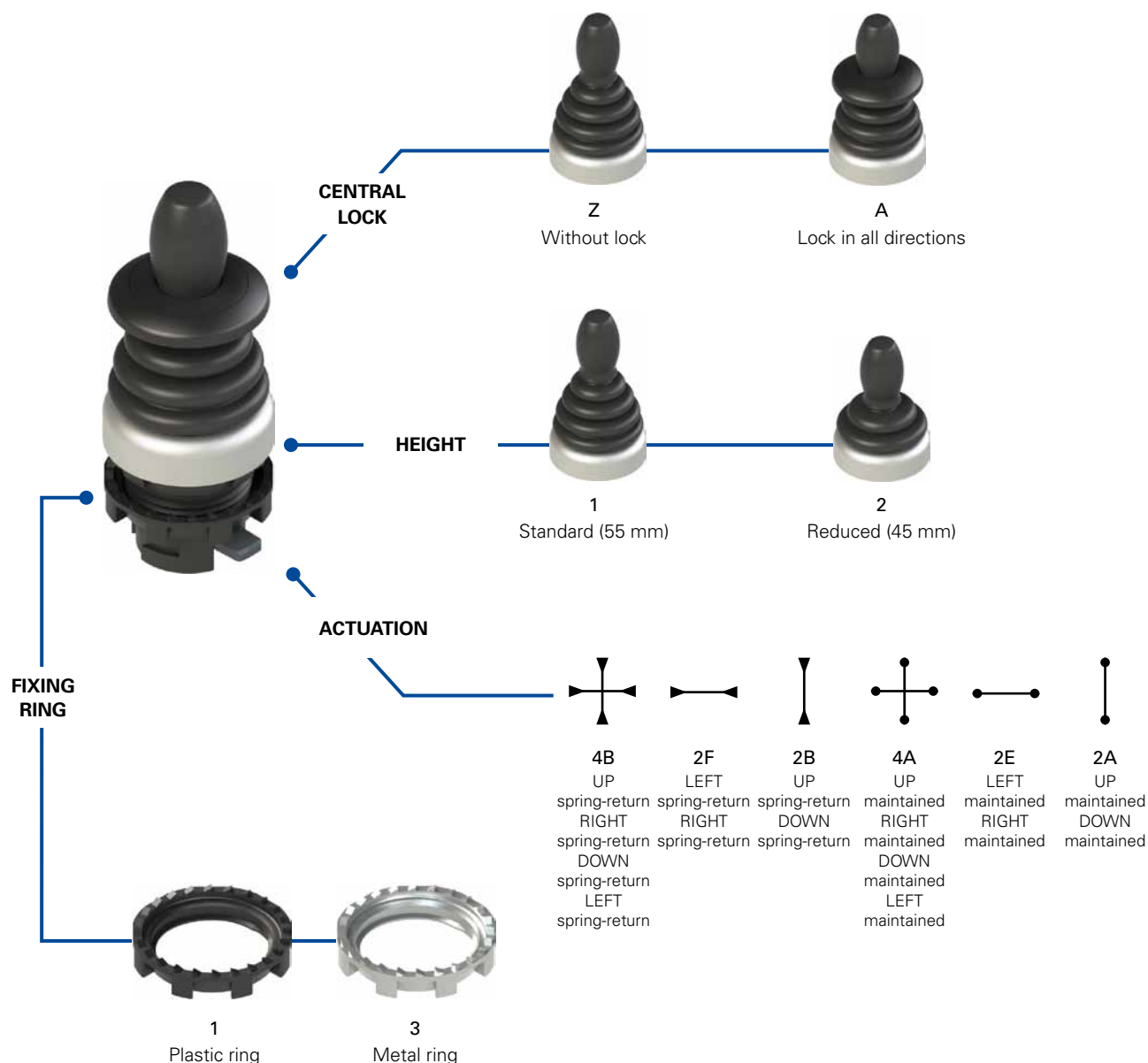


## Notes

[illegible]This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are no margins, text, or other markings on the page.



## Selection diagram



## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

# E2 1MA14BZ91

## Fixing ring and shaped ring

- |          |                                     |
|----------|-------------------------------------|
| <b>1</b> | Plastic ring (standard)             |
| <b>2</b> | Plastic fixing ring and shaped ring |
| <b>3</b> | Metal ring                          |
| <b>4</b> | Metal fixing ring and shaped ring   |

## Joystick height

- |          |                  |
|----------|------------------|
| <b>1</b> | Standard (55 mm) |
| <b>2</b> | Reduced (45 mm)  |

## Lock

- |          |                        |
|----------|------------------------|
| <b>Z</b> | Without lock           |
| <b>A</b> | Lock in all directions |

## Actuation

- |           |   |
|-----------|---|
| <b>4B</b> | UP spring-return, RIGHT spring-return, DOWN spring-return, LEFT spring-return |
| <b>2F</b> | LEFT spring-return, RIGHT spring-return                                       |
| <b>2B</b> | UP spring-return, DOWN spring-return  |
| <b>4A</b> | UP maintained, RIGHT maintained, DOWN maintained, LEFT maintained             |
| <b>2E</b> | LEFT maintained, RIGHT maintained   |
| <b>2A</b> | UP maintained, DOWN maintained  |





### Main features

- Protection degrees IP67 and IP69K
- 2 possible heights: standard (55 mm) and reduced (45 mm)
- Versions with central lock
- Versions with spring-return or maintained actuation
- Two-step actuation

### Quality marks:



UL approval: E131787  
EAC approval: RU C-IT DM94.B.01024

### Technical data


#### General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-40°C ... +80°C
Mechanical endurance:	1 million operating cycles 500,000 unblocking operating cycles
Max. actuation frequency:	3600 operating cycles/hour
Actuating force:	0.17 Nm (spring-return actuation) 0.3 Nm (maintained actuation)
Maximum travel:	35°
Tightening torque of the fixing ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14

### ⚠ Installation for safety applications:

Use only contact blocks marked with the symbol . The safety circuit must always be connected to **NC contacts** (normally closed contacts: .1-.2)

### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EC

### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### Features approved by UL

For Use on a Flat Surface of a Type 1, 4X, 12 and 13  
Tightening torque 2.0 Nm

### General data

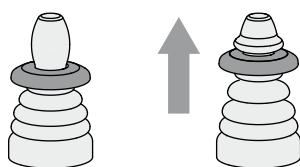
#### Protection degrees IP67 and IP69K

**IP69K**  
**IP67**

The elastic hood of the Pizzato joystick is made in a single seamless piece that completely encloses the lever, in this way without leaving the minimum aperture or junction.

This particular solution (patent pending) is present in all the versions of the joystick, including the versions with reduced height and central lock and is the most effective method for ensuring protection from all possible infiltrations of dirt and water. These devices can therefore be used in all environments where the maximum protection of the housing is required and pass both the IP67 immersion test according to EN 60529 and test IP69K according to ISO 20653 with jets of water at 100 bar and temperature 80°C.

#### Central lock



To prevent accidental operation, the E2 MA series joystick can be ordered in versions with central lock.

In these versions the lever remains fixed in the central position and can be steered in the

various directions only after being unlocked by simply pulling the release disk. The pulling release movement avoids unwanted unlocking actions.

#### Easy configuration of the contacts

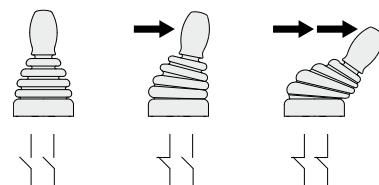
The joystick is paired with a mounting adapter with four slots, thus allowing to associate different types of contact blocks to every single direction of actuation. Single or double contact blocks, even on two levels, can be used.

There are therefore no constraints on the type of contact block, the users can freely install the standard contact block in the configuration they prefer.



#### Two-step actuation

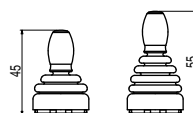
Two-step actuation in every direction is possible by connecting in series to the normal NO contact blocks additional NO contact blocks provided with early make contacts. This option can be used for example to control two-speed actuations in the same direction.



#### Maintained or spring-return actuation

Versions with 2 or 4 directions are available, and the single directions can have a maintained actuation, in which the lever remains in the tilted position, or spring-return actuation, in which the lever automatically returns to the central position.

#### Two compact forms



With the standard height version (55 mm), there is also a reduced height (45 mm) version, ideal for all situations where a low height is required. Even so, the reduced height version of the joystick does not dispense with any of

the standard version options, such as the possibility of being provided with central lock.

#### Labels for the joystick



The joystick can be paired with specific circular and rectangular labels. This accessory, available in black or grey colour, is the ideal complement for the joystick at both the functional and aesthetic level, creating an assembly of original and elegant design. The labels specify with







clear indications the functions performed by the joystick, and can be customised with symbols or written text. The laser-engraved markings are indelible. The application of the label does not alter the IP protection degree of the device.



Selection table

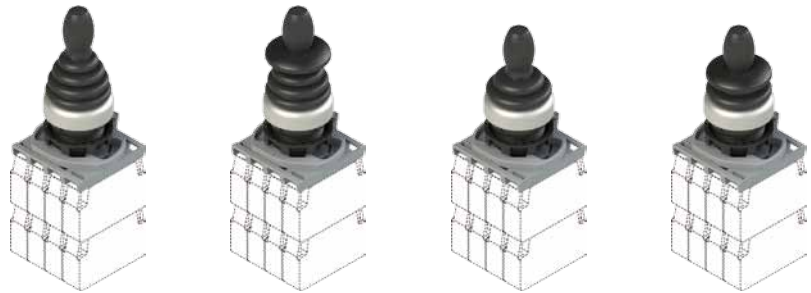
Functions		Standard height (55 mm) without lock	Standard height (55 mm) with lock	Reduced height (45 mm) without lock	Reduced height (45 mm) with lock
		Satin chrome bezel	Satin chrome bezel	Satin chrome bezel	Satin chrome bezel
	UP spring-return, RIGHT spring-return, DOWN spring-return, LEFT spring-return	E2 1MA14BZ91	E2 1MA14BA91	E2 1MA24BZ91	E2 1MA24BA91
	LEFT spring-return, RIGHT spring-return	E2 1MA12FZ91	E2 1MA12FA91	E2 1MA22FZ91	E2 1MA22FA91
	UP spring-return, DOWN spring-return	E2 1MA12BZ91	E2 1MA12BA91	E2 1MA22BZ91	E2 1MA22BA91
	UP maintained, RIGHT maintained, DOWN maintained, LEFT maintained	E2 1MA14AZ91	E2 1MA14AA91	E2 1MA24AZ91	E2 1MA24AA91
	LEFT maintained, RIGHT maintained	E2 1MA12EZ91	E2 1MA12EA91	E2 1MA22EZ91	E2 1MA22EA91
	UP maintained, DOWN maintained	E2 1MA12AZ91	E2 1MA12AA91	E2 1MA22AZ91	E2 1MA22AA91


Selection table for complete units

Functions		Contacts				Standard height (55 mm) without lock	Standard height (55 mm) with lock	Reduced height (45 mm) without lock	Reduced height (45 mm) with lock
		pos. 3	pos. 2	pos. 4	pos. 1	Satin chrome bezel	Satin chrome bezel	Satin chrome bezel	Satin chrome bezel
	UP spring-return, RIGHT spring-return, DOWN spring-return, LEFT spring-return	1NO	1NO	1NO	1NO	E2 AC-DXBC2602 E2 1MA14BZ91 + E2 1BAC21 + 4x E2 CP10G2V1	E2 AC-DXBC2604 E2 1MA14BA91 + E2 1BAC21 + 4x E2 CP10G2V1	E2 AC-DXBC2603 E2 1MA24BZ91 + E2 1BAC21 + 4x E2 CP10G2V1	E2 AC-DXBC2605 E2 1MA24BA91 + E2 1BAC21 + 4x E2 CP10G2V1
	LEFT spring-return, RIGHT spring-return	1NO			1NO	E2 AC-DXBC2601 E2 1MA12FZ91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2613 E2 1MA12FA91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2618 E2 1MA22FZ91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2622 E2 1MA22FA91 + E2 1BAC21 + 2x E2 CP10G2V1
	UP spring-return, DOWN spring-return		1NO	1NO		E2 AC-DXBC2600 E2 1MA12BZ91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2611 E2 1MA12BA91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2616 E2 1MA22BZ91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2620 E2 1MA22BA91 + E2 1BAC21 + 2x E2 CP10G2V1
	UP maintained, RIGHT maintained, DOWN maintained, LEFT maintained	1NO	1NO	1NO	1NO	E2 AC-DXBC2608 E2 1MA14AZ91 + E2 1BAC21 + 4x E2 CP10G2V1	E2 AC-DXBC2614 E2 1MA14AA91 + E2 1BAC21 + 4x E2 CP10G2V1	E2 AC-DXBC2609 E2 1MA24AZ91 + E2 1BAC21 + 4x E2 CP10G2V1	E2 AC-DXBC2623 E2 1MA24AA91 + E2 1BAC21 + 4x E2 CP10G2V1
	LEFT maintained, RIGHT maintained	1NO			1NO	E2 AC-DXBC2607 E2 1MA12EZ91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2612 E2 1MA12EA91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2617 E2 1MA22EZ91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2621 E2 1MA22EA91 + E2 1BAC21 + 2x E2 CP10G2V1
	UP maintained, DOWN maintained		1NO	1NO		E2 AC-DXBC2606 E2 1MA12AZ91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2610 E2 1MA12AA91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2615 E2 1MA22AZ91 + E2 1BAC21 + 2x E2 CP10G2V1	E2 AC-DXBC2619 E2 1MA22AA91 + E2 1BAC21 + 2x E2 CP10G2V1



## Selection table for complete units with two-step actuation



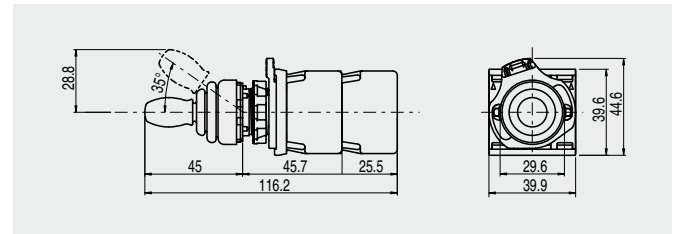
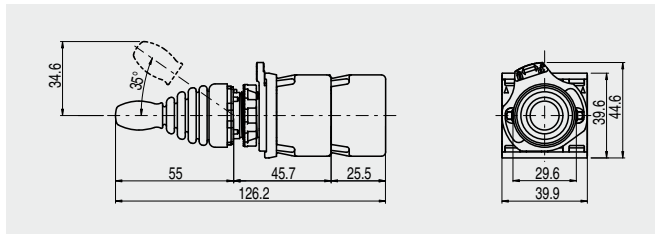
Functions		Contacts				Standard height (55 mm) without lock	Standard height (55 mm) with lock	Reduced height (45 mm) without lock	Reduced height (45 mm) with lock
		pos. 3	pos. 2	pos. 4	pos. 1	Satin chrome bezel	Satin chrome bezel	Satin chrome bezel	Satin chrome bezel
	UP spring-return, RIGHT spring-return, DOWN spring-return, LEFT spring-return	1NO + 1NO	1NO + 1NO	1NO + 1NO	1NO + 1NO	<b>E2 AC-DXBC2626</b> E2 1MA14BZ91 + E2 1BAC21 + 4x E2 CP10G2V1 + 4x E2 CP10L2V1	<b>E2 AC-DXBC2629</b> E2 1MA14BA91 + E2 1BAC21 + 4x E2 CP10G2V1 + 4x E2 CP10L2V1	<b>E2 AC-DXBC2632</b> E2 1MA24BZ91 + E2 1BAC21 + 4x E2 CP10G2V1 + 4x E2 CP10L2V1	<b>E2 AC-DXBC2635</b> E2 1MA24BA91 + E2 1BAC21 + 4x E2 CP10G2V1 + 4x E2 CP10L2V1
	LEFT spring-return, RIGHT spring-return	1NO + 1NO			1NO + 1NO	<b>E2 AC-DXBC2625</b> E2 1MA12FZ91 + E2 1BAC21 + 2x E2 CP10G2V1 + 2x E2 CP10L2V1	<b>E2 AC-DXBC2628</b> E2 1MA12FA91 + E2 1BAC21 + 2x E2 CP10G2V1 + 2x E2 CP10L2V1	<b>E2 AC-DXBC2631</b> E2 1MA22FZ91 + E2 1BAC21 + 2x E2 CP10G2V1 + 2x E2 CP10L2V1	<b>E2 AC-DXBC2634</b> E2 1MA22FA91 + E2 1BAC21 + 2x E2 CP10G2V1 + 2x E2 CP10L2V1
	UP spring-return, DOWN spring-return		1NO + 1NO	1NO + 1NO		<b>E2 AC-DXBC2624</b> E2 1MA12BZ91 + E2 1BAC21 + 2x E2 CP10G2V1 + 2x E2 CP10L2V1	<b>E2 AC-DXBC2627</b> E2 1MA12BA91 + E2 1BAC21 + 2x E2 CP10G2V1 + 2x E2 CP10L2V1	<b>E2 AC-DXBC2630</b> E2 1MA22BZ91 + E2 1BAC21 + 2x E2 CP10G2V1 + 2x E2 CP10L2V1	<b>E2 AC-DXBC2633</b> E2 1MA22BA91 + E2 1BAC21 + 2x E2 CP10G2V1 + 2x E2 CP10L2V1

### Legend:

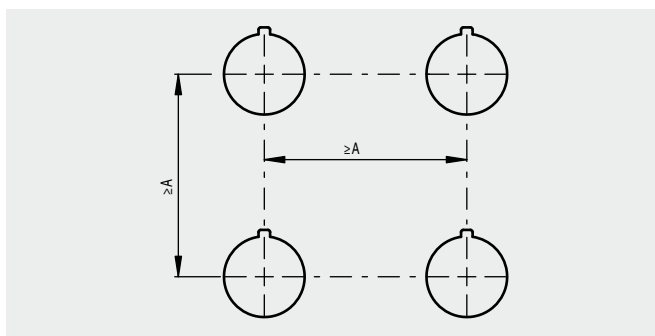
- maintained actuation
- ▶ spring-return actuation

## Dimensions

All measures in the drawings are in mm



## Minimum distances for installation



Standard height joystick

A=70 mm

Reduced height joystick

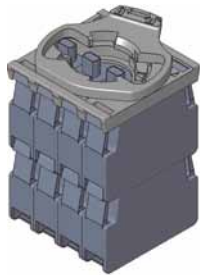
A=60 mm



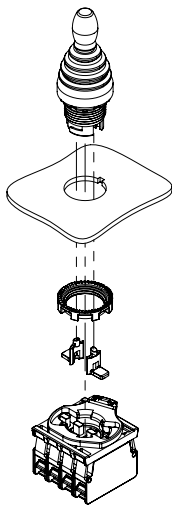
Maximum number of contact blocks

4-slot mounting adapter

Joystick E2 •MA••••••••



maximum number:  
8 contact blocks  
2 levels



The assembly of the 2 lateral actuators, supplied with the joystick, must be done after the fixing of the joystick.



Contact block

Mounting adapter

Packs of 10 pcs.



Article	Description
E2 1BAC21	4-slot mounting adapter for contact blocks E2 CP••••••

Shaped ring

Packs of 50 pcs.



Article	Description
VE GP12H1A	Shaped ring for single device
Not applicable in presence of circular and rectangular label, adapters from Ø 22 to Ø 30 mm or protection guards	

Fixing ring

Packs of 20 pcs.



Article	Description
VE GF720A	Metal fixing ring

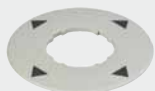



Accessories

➔ More ACCESSORIES on page 135




Labels with shaped hole

Suitable for devices E2 •MA••••••.  
Can be turned in 90° steps.  
Upon request with different engravings or inscriptions in other languages.  
It does not alter the IP67 / IP69K protection degree of the associated device.

	Article	Description
	VE TF32A9133	Label with shaped hole, circular, Ø 60 mm, grey, inscription: ▲   ▸   ▼   ◀
	VE TF12A1233	Label with shaped hole, circular, Ø 60 mm, black, inscription: ▲   ▸   ▼   ◀
	VE TF32G9134	Label with shaped hole, rectangular, 30x60 mm, grey, inscription: ▲   ▼
	VE TF12G1234	Label with shaped hole, rectangular, 30x60 mm, black, inscription: ▲   ▼

	Article	Description
	VE TF32A9130	Label with shaped hole, circular, Ø 60 mm, grey, inscription: UP ▲   R ▸   DOWN ▼   L ◀
	VE TF12A1230	Label with shaped hole, circular, Ø 60 mm, black, inscription: UP ▲   R ▸   DOWN ▼   L ◀
	VE TF32G9131	Label with shaped hole, rectangular, 30x60 mm, grey, inscription: UP ▲   DOWN ▼
	VE TF12G1231	Label with shaped hole, rectangular, 30x60 mm, black, inscription: UP ▲   DOWN ▼
	VE TF32G9132	Label with shaped hole, rectangular, 30x60 mm, grey, inscription: R ▸   L ◀
	VE TF12G1232	Label with shaped hole, rectangular, 30x60 mm, black, inscription: R ▸   L ◀

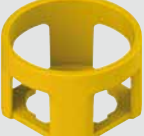
Windowed protection guard

	Article	Description
	VE GP32A5A	Cylindrical yellow protection guard with 4 windows Ø 40x20 mm

Suitable for reduced height joystick

It does not alter the IP protection degree of the associated device.

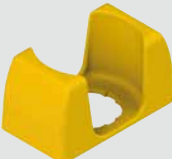
Cylindrical protection guard

	Article	Description
	VE GP32B5A	Cylindrical yellow protection guard Ø 43x27 mm

Suitable for standard height joystick

It does not alter the IP protection degree of the associated device.

Open protection guard

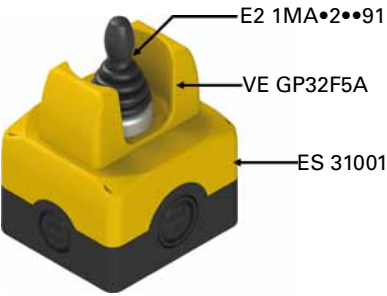
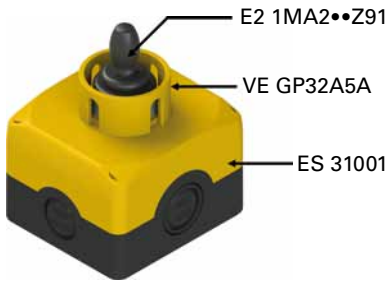
	Article	Description
	VE GP32F5A	Rectangular open yellow protection guard 66x38 mm, 35 mm high, complete with 4 screws (for panels of thickness from 1 to 3.5 mm)

Suitable for the two-direction, standard and reduced height joystick

It does not alter the IP protection degree of the associated device.

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

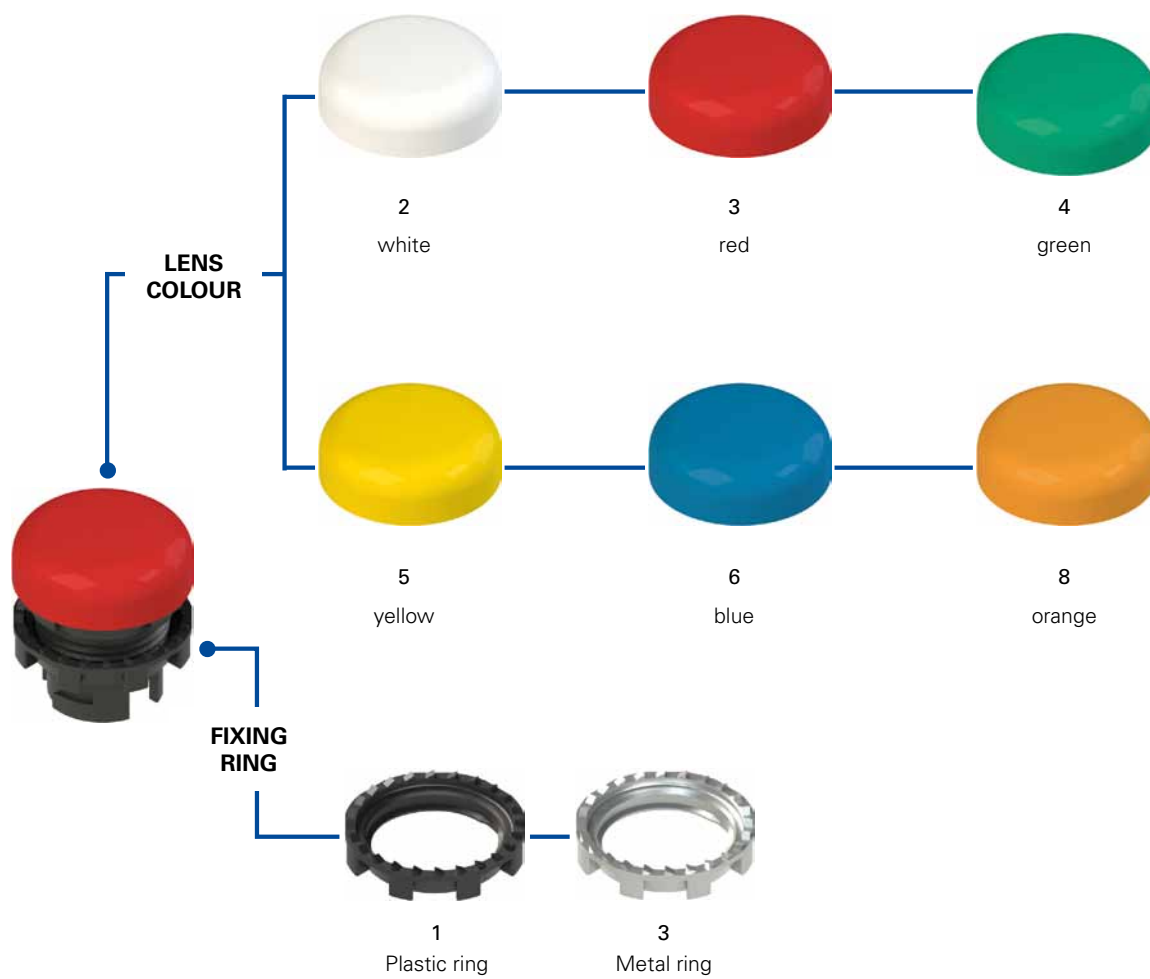
Application examples of guards



Items with code on **green** background are stock items



## Selection diagram






**Code structure**

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

# E2 1ILA210

Fixing ring and shaped ring	
<b>1</b>	Plastic ring (standard)
<b>2</b>	Plastic fixing ring and shaped ring
<b>3</b>	Metal ring
<b>4</b>	Metal fixing ring and shaped ring

Lens shape	
<b>A</b>	level, smooth

Engraving	
<b>0</b>	no engraving (standard)
<b>IT7</b>	IN SERVIZIO
<b>IT8</b>	ERRORE
<b>L54</b>	
...	.....

Other engravings on request. See page 138.

Lens colour	
<b>0</b>	without lens
<b>2</b>	white
<b>3</b>	red
<b>4</b>	green
<b>5</b>	yellow
<b>6</b>	blue
<b>8</b>	orange





### Main features

- Protection degrees IP67 and IP69K
- Customisation with symbols available
- Replaceable coloured lens

### Quality marks:



IMQ approval: CA02.04805  
 UL approval: E131787  
 EAC approval: RU C-IT DM94.B.01024

### Technical data

#### General data

Protection degree: IP67 acc. to EN 60529  
 IP69K acc. to ISO 20653  
 Ambient temperature: -25°C ... +70°C  
 Lighting type: Combined with lighting unit with LED series E2 LP●●●●, E2 LF●●●●  
 Tightening torque of the fixing ring: 2 ... 2.5 Nm  
 Utilization requirements: See page 139

#### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

### Features approved by UL

For Use on a Flat Surface of a Type 1, 4X, 12 and 13  
 Tightening torque 2.0 Nm

### General data

#### Protection degrees IP67 and IP69K

**IP69K**  
**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and a 80°C).

#### Customisable



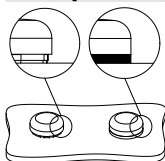
In order to suit various customer requests and different kinds of application, Pizzato Elettrica offers the possibility to customize the indicator lights with symbols, inscriptions and interchangeable lenses with different colours.

#### Metal fixing ring



The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.

#### Shaped ring



The shaped ring can be used when no label holder or other devices are applied; it prevents dirt and other residues from settling between the indicator and the panel or housing.

This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

### Combination of LED colours with lens colours

LED colour	Lens colour
white	white / yellow
red	red
green	green
blue	blue
orange	orange

Note: Combinations of LED colour with lens colour different from the recommended ones can give a different colour compared to the expected one.



## Selection table for indicator lights

Actuator colour and engraving	With lens	Without lens
without lens	-	E2 1ILA010
white	E2 1ILA210	-
red	E2 1ILA310	-
green	E2 1ILA410	-
yellow	E2 1ILA510	-
blue	E2 1ILA610	-
orange	E2 1ILA810	-

## Complete units with indicator lights



Actuator colour and engraving	LED			Article
	pos. 2	pos. 3	pos. 1	
white	-	LED	-	E2 AC-DXBC0200 E2 1ILA210 + E2 1BAC11 + E2 LP1A2V1
red	-	LED	-	E2 AC-DXBC0201 E2 1ILA310 + E2 1BAC11 + E2 LP1A3V1
green	-	LED	-	E2 AC-DXBC0202 E2 1ILA410 + E2 1BAC11 + E2 LP1A4V1
yellow	-	LED	-	E2 AC-DXBC0203 E2 1ILA510 + E2 1BAC11 + E2 LP1A5V1
blue	-	LED	-	E2 AC-DXBC0204 E2 1ILA610 + E2 1BAC11 + E2 LP1A6V1
orange	-	LED	-	E2 AC-DXBC0205 E2 1ILA810 + E2 1BAC11 + E2 LP1A8V1

→ For data regarding LED units, please see the respective chapters

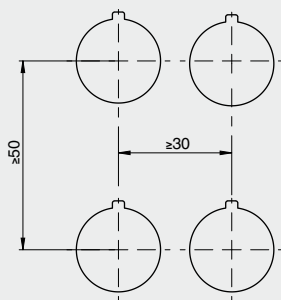
## Lenses for E2 •IL indicator lights



**For ordering engraved lenses for E2 1IL indicator lights:** replace the dots ●●● in the article codes with the engraving code reported on the table at page 138.  
Example: white lens for indicator light with "⚡" engraving, .  
VE LN2A2●●● → VE LN2A2L54

Article	Description	Colours	Pieces/package
VE LN2A20	Lens for indicator lights, white, without engraving		10
VE LN2A30	Lens for indicator lights, red, without engraving		10
VE LN2A40	Lens for indicator lights, green, without engraving		10
VE LN2A50	Lens for indicator lights, yellow, without engraving		10
VE LN2A60	Lens for indicator lights, blue, without engraving		10
VE LN2A80	Lens for indicator lights, orange, without engraving		10
VE LN2AA0	6 lenses for indicator lights, without engraving, colours: white, red, green, yellow, blue, orange		1
VE LN2A2●●●	Lens for indicator lights, white, with engraving		1
VE LN2A3●●●	Lens for indicator lights, red, with engraving		1
VE LN2A4●●●	Lens for indicator lights, green, with engraving		1
VE LN2A5●●●	Lens for indicator lights, yellow, with engraving		1
VE LN2A6●●●	Lens for indicator lights, blue, with engraving		1
VE LN2A8●●●	Lens for indicator lights, orange, with engraving		1

## Minimum distances for installation



→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

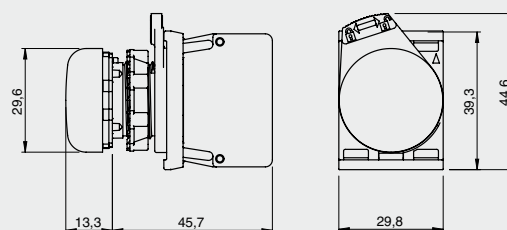
## Accessories

→ More ACCESSORIES on page 135

Items with code on **green** background are stock items

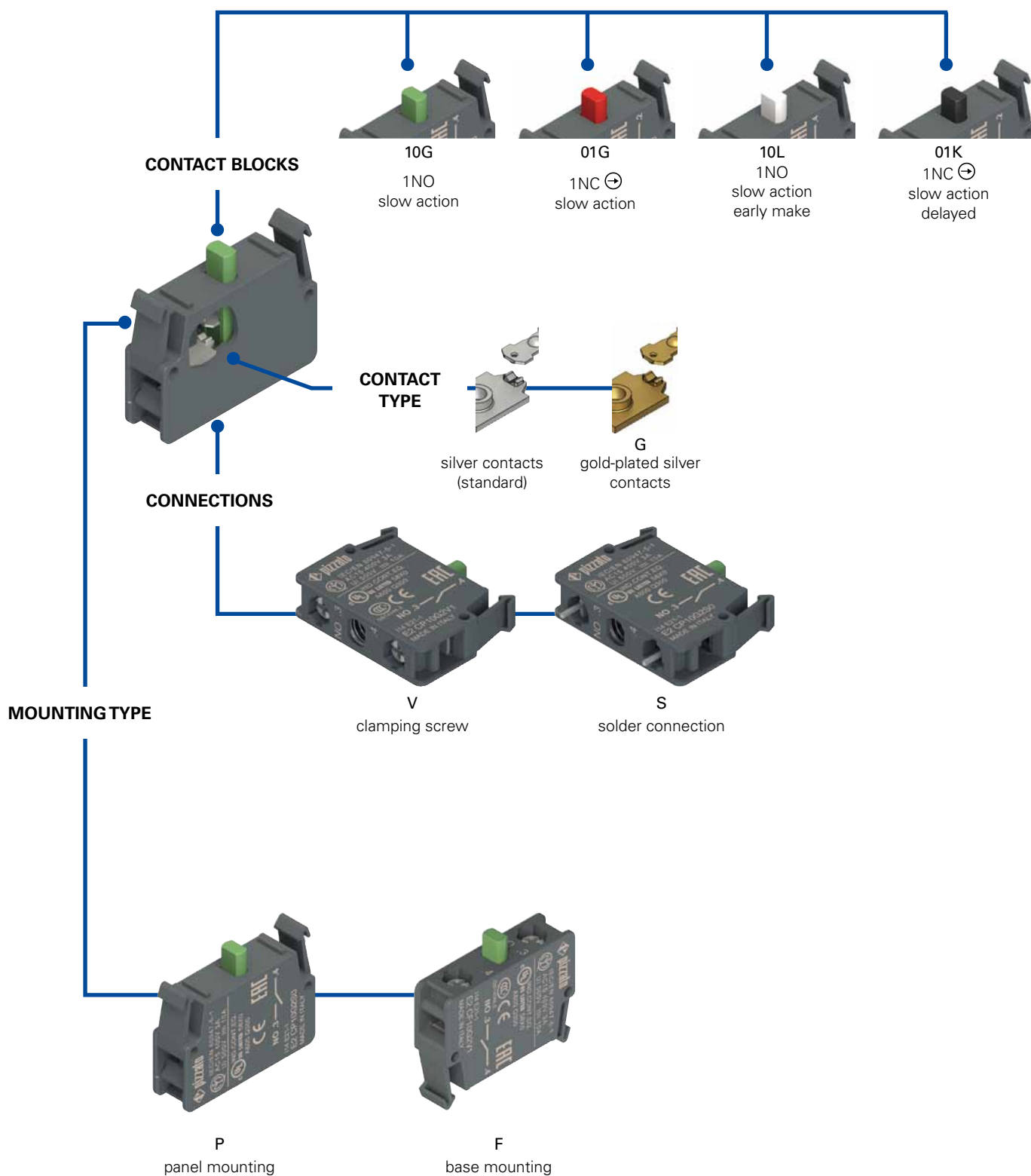
## Dimensions

All measures in the drawings are in mm





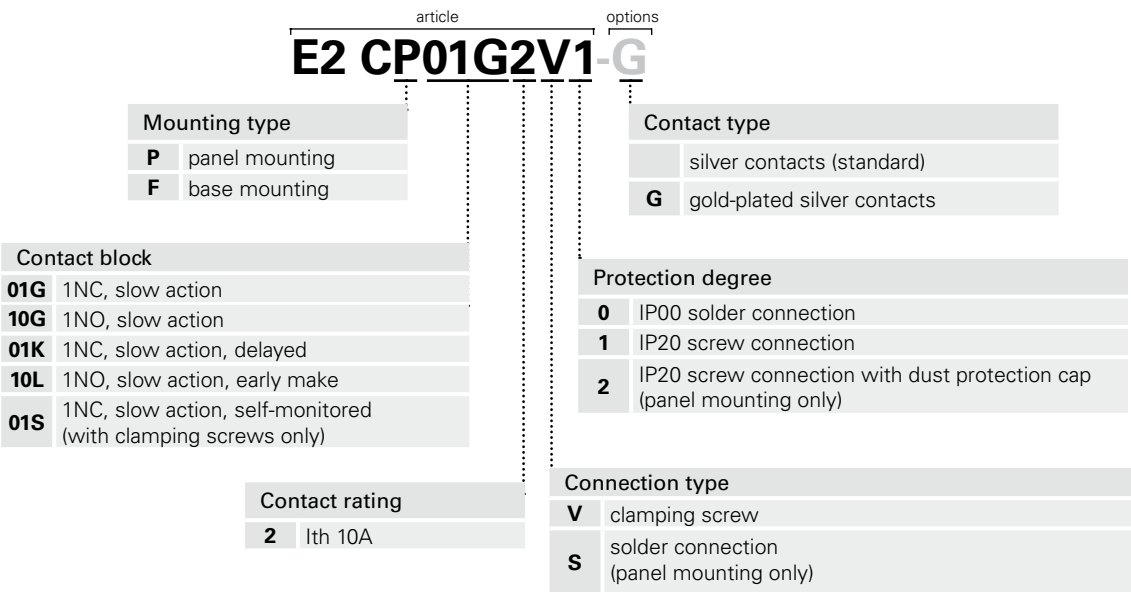
## Selection diagram



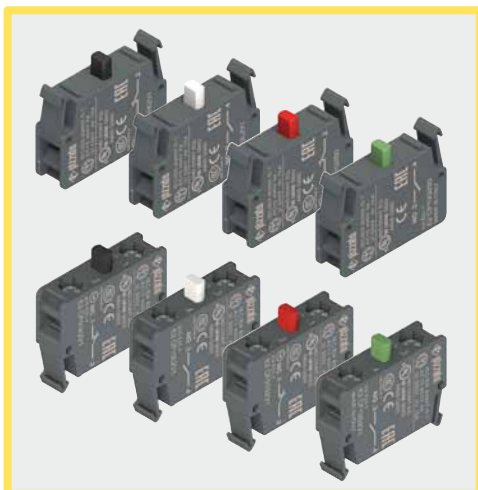


Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.







### Main features

- Highly reliable contact blocks provided with self-cleaning contacts with quadruple support point
- Versions with gold-plated contacts
- Positive opening NC contacts acc. to IEC 60947-5-1

### Quality marks:



IMQ approval: CA02.04805  
 UL approval: E131787  
 CCC approval: 2013010305631156  
 EAC approval: RU C-IT DM94.B.01024

### Technical data

#### General data

Protection degree acc. to EN 60529: IP20 with screw connection  
 IP00 with solder connection  
 Ambient temperature: -40°C ... +80°C  
 Mechanical endurance: 20 million operating cycles  
 Max. actuation frequency: 3600 operating cycles/hour  
 Utilization requirements: See page 139

#### Contact block

Switching force of the contacts: 1.8 N (NO) / 1.4 N (NC)  
 1.7 N (NO early make) / 1.4 N (NC delayed)  
 Actuating force at limit of travel: 3.5 N (NO) / 2.3 N (NC)  
 3.5 N (NO early make) / 1.9 N (NC delayed)  
 Positive opening force: 17 N  
 Actuation speed: min 1 mm/s  
 max. 0.5 m/s  
 Material of the contacts: Normal: silver contacts (standard)  
 For low current: silver contacts with 1 µm gold coating (on request)  
 Contact type: "V-shape" self-cleaning contacts with quadruple support point  
 Cable cross section for clamping screws: min 1 x 0.5 mm<sup>2</sup> (1 x AWG 20)  
 max. 2 x 2.5 mm<sup>2</sup> (2 x AWG 14)  
 Clamping screw tightening torque: 0.6 ... 0.8 Nm  
 Safety parameter B<sub>10D</sub>: 1,000,000 (NO), 40,000,000 (NC)

### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

### Installation for safety applications:

Use only contact blocks marked with the symbol The safety circuit must always be connected to **NC contacts** (normally closed contacts: .1-.2)

### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### Electrical data

Thermal current (I<sub>th</sub>): 10 A  
 Rated insulation voltage (U<sub>i</sub>): 500 Vac/dc  
 Protection against short circuits: type gG/gL fuse 10 A 500 V  
 Rated impulse withstand voltage (U<sub>imp</sub>): 8 kV  
 Pollution degree: 3

### Utilization category

Alternating current: AC15 (50 ... 60 Hz)  

U <sub>e</sub> (V)	24	48	120	250	400
I <sub>e</sub> (A)	6	6	6	6	3

 Direct current: DC13  

U <sub>e</sub> (V)	24	48	125	250
I <sub>e</sub> (A)	2.5	1.3	0.6	0.3

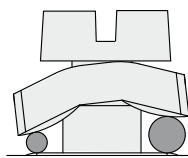
### General data

#### Positive opening



All NC contacts are suitable for safety applications.  
 The NC contacts are positive opening contacts acc. to IEC 60947-5-1.

#### Screw connection with clamping screw plates



The clamping screw plates of the contact blocks are provided with a particular "roofing tile" structure and are loosely coupled to the clamping screw. This way, during the wires fixing, the clamping screw plate is able to suit to cables of different diameters and tends to tighten the wires toward the screw instead of permitting them to escape towards the outside.

### Features approved by UL

Utilization categories: A600 pilot duty (720 VA, 120 ... 600 Vac)  
 Q300 pilot duty (69 VA, 125-250 Vdc)

Notes:  
 - Use 60° or 75°C copper (Cu) conductors, rigid or flexible, with cross-section AWG 12-20.  
 - Screw terminal tightening torque of 7.1 Lb In (0.8 Nm).

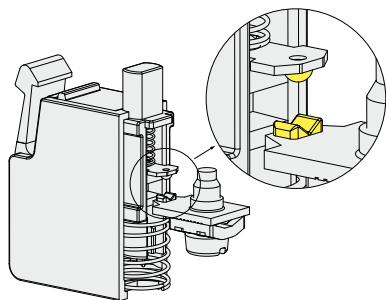
### Features approved by IMQ

Rated insulation voltage (U<sub>i</sub>): 500 V  
 Conventional free air thermal current (I<sub>th</sub>): 10 A  
 Thermal current inside housing (I<sub>the</sub>): 10 A  
 Rated impulse withstand voltage (U<sub>imp</sub>): 8 kV  
 Protection degree of the housing: IP20  
 Terminals: screw terminals  
 Utilization category: AC15  
 Operating voltage (U<sub>e</sub>): 400 Vac (50/60 Hz)

Operating current (I<sub>e</sub>): 3 A  
 Forms of the contact element: X, Y  
 Positive opening of contacts on contact blocks 01G, 01K  
 In compliance with standards: EN 60947-1, EN 60947-5-1 + A1:2009, fundamental requirements of the Low Voltage Directive 2014/35/EU.

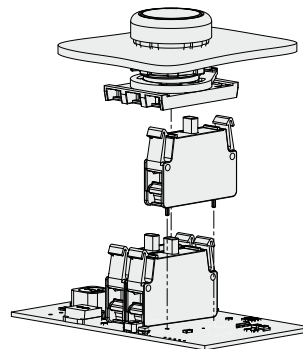


### High-reliability self-cleaning contacts



"V-shape" self-cleaning contacts with quadruple support point. This type of shape, thanks to the presence of the double support point, makes it possible to drastically reduce the probability of contact commutation failure. In addition to this, it improves considerably the reliability in the presence of dust.

### Solder connection on printed circuit



Versions with panel mounting of the EROUND series contact blocks with solder pin are available. If there is no wiring but a printed circuit, these contact blocks can be directly welded on the latter.

### Gold-plated silver contacts


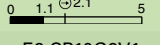
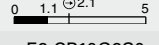

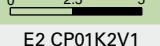
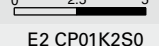

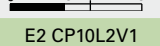
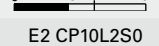






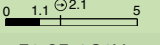

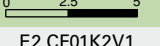

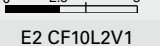

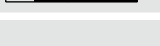
The contact blocks can be supplied with silver electric contacts with a special gold-plated surface, with total gold thickness of one micron. This type of treatment can be useful in environments which are aggressive against silver and in case of very small electric charges, usually with low voltages and supply currents.

### Selection table for contact blocks

Packs of 10 pcs.







Contact block	Panel mounting	
	Screw connection	Solder connection
1NC, slow action 	<b>E2 CP01G2V1</b> 	<b>E2 CP01G2S0</b> 
1NO, slow action 	<b>E2 CP10G2V1</b> 	<b>E2 CP10G2S0</b> 
1NC,  slow action, delayed	<b>E2 CP01K2V1</b> 	<b>E2 CP01K2S0</b> 
1NO, slow action, early make 	<b>E2 CP10L2V1</b> 	<b>E2 CP10L2S0</b> 

Contact block	Base mounting Screw connection
1NC, slow action 	<b>E2 CF01G2V1</b> 
1NO, slow action 	<b>E2 CF10G2V1</b> 
1NC,  slow action, delayed	<b>E2 CF01K2V1</b> 
1NO, slow action, early make 	<b>E2 CF10L2V1</b> 

### Complete units with contact block and mounting adapter



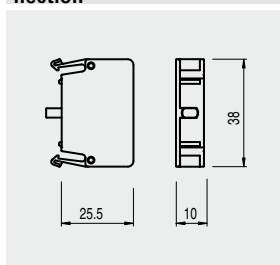
Contacts			Panel mounting
pos. 2	pos. 3	pos. 1	Screw connection
-	1NO	-	<b>E2 AC-XXBC0010</b> E2 1BAC11 + E2 CP10G2V1
-	1NC 	-	<b>E2 AC-XXBC0009</b> E2 1BAC11 + E2 CP01G2V1

Contacts			Panel mounting
pos. 2	pos. 3	pos. 1	Screw connection
1NO	-	1NO	<b>E2 AC-XXBC0012</b> E2 1BAC11 + E2 CP10G2V1 + E2 CP10G2V1
1NC 	-	1NC 	<b>E2 AC-XXBC0011</b> E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1
1NC 	-	1NO	<b>E2 AC-XXBC0028</b> E2 1BAC11 + E2 CP10G2V1 + E2 CP01G2V1

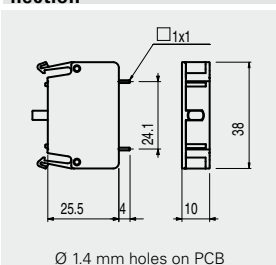
### Dimensions

All measures in the drawings are in mm

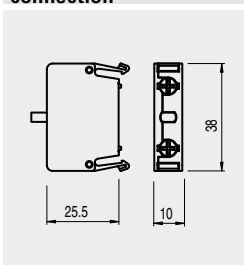
#### Contact blocks for panel mounting with screw connection



#### Contact blocks for panel mounting with solder connection



#### Contact blocks for base mounting with screw connection



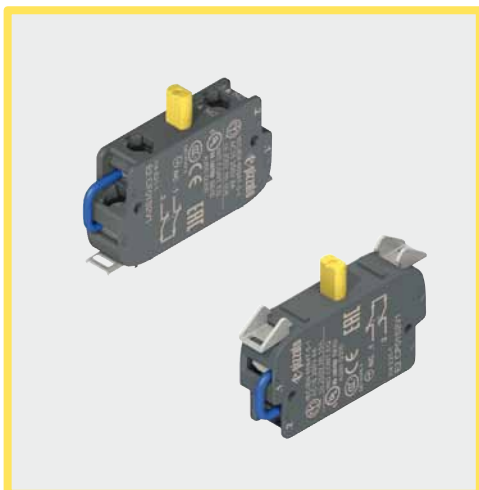
Other combinations on request.

### Dust protection

Packs of 50 pcs.

Article	Description
<b>VE PR3A70</b>	Transparent dust protection for E2 series contact blocks. Suitable for all panel mounting contact blocks.





### Main features

- Self-monitored contact block. Electrical circuit opening indicates the detachment from the device
- Versions with gold-plated contacts
- Positive opening NC contacts acc. to IEC 60947-5-1

### Quality marks:



IMQ approval: CA02.04805  
 UL approval: E131787  
 CCC approval: 2013010305631156  
 EAC approval: RU C-IT DM94.B.01024

### Technical data

#### General data

Protection degree:	IP20 acc. to EN 60529 at the terminals
Ambient temperature:	-40°C ... +80°C
Mechanical endurance:	20 million operating cycles
Max. actuation frequency:	3600 operating cycles/hour
Utilization requirements:	See page 139

#### Contact block

Switching force of the contacts:	2.9 N
Actuating force at limit of travel:	5 N
Positive opening force:	17 N
Actuation speed:	min 1 mm/s max. 0.5 m/s

Material of the contacts:

Normal: silver contacts (standard)  
 For low current: silver contacts with 1 µm gold coating (on request)

Contact type:

"V-shape" self-cleaning contacts with quadruple support point

Cable cross section:

min 1 x 0.34 mm<sup>2</sup> (1 x AWG 22)  
 max. 2 x 1.5 mm<sup>2</sup> (2 x AWG 16)

Safety parameters:

B <sub>100</sub> :	40,000,000 (NC)
Tightening torque of the terminal screws:	0.6 ... 0.8 Nm

#### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

#### ⚠ Installation for safety applications:

Use only contact blocks marked with the symbol ☺. The safety circuit must always be connected to **NC contacts** (normally closed contacts: .1-.2)

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### Electrical data

Thermal current (I <sub>th</sub> ):	10 A
Rated insulation voltage (U <sub>i</sub> ):	250 Vac/dc
Protection against short circuits:	type gG/gL fuse 10 A 500 V
Rated impulse withstand voltage (U <sub>imp</sub> ):	4 kV
Pollution degree:	3

### Utilization category

Alternating current: AC15 (50 ... 60 Hz)				
U <sub>e</sub> (V)	24	48	120	250
I <sub>e</sub> (A)	6	6	6	6
Direct current: DC13				
U <sub>e</sub> (V)	24	48	125	250
I <sub>e</sub> (A)	2.5	1.3	0.6	0.3

### General data

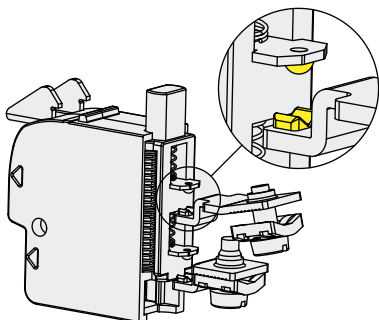
#### Positive opening



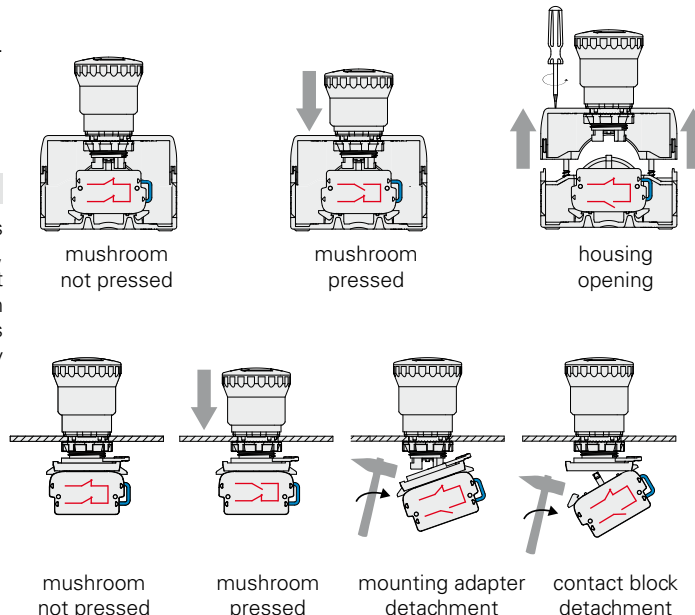
All NC contacts are suitable for safety applications. The NC contacts are positive opening contacts acc. to IEC 60947-5-1.

#### High-reliability self-cleaning contacts

"V-shape" self-cleaning contacts with quadruple support point. This type of shape, thanks to the presence of the double support point, makes it possible to drastically reduce the probability of contact commutation failure. In addition to this, it improves considerably the reliability in the presence of dust.



#### Functioning of self-monitored contact blocks





## Features approved by UL

Utilization categories	A300 pilot duty (720 VA, 120-240 V ac) Q300 pilot duty (69 VA, 125-250 V dc)
------------------------	---

Note:

- "Use 60 or 75 °C copper (CU) conductor and wire size range 12-20 AWG, stranded or solid"
- "The terminal tightening torque of 7.1 Lb In (0.8 Nm)."

Please contact our technical department for the list of approved products.

## Features approved by IMQ



Rated insulation voltage (U <sub>i</sub> ):	250 V
Conventional free air thermal current (I <sub>th</sub> ):	10 A
Rated impulse withstand voltage (U <sub>imp</sub> ):	4 kV
Protection degree of the housing:	IP20 (clamping screw), IP00 (solder connection)
Utilization category:	AC15
Operating voltage (U <sub>e</sub> ):	250 Vac (50/60 Hz)
Operating current (I <sub>e</sub> ):	6 A
Forms of the contact element:	Y, Y+Y, X+X, Zb
Positive opening of contacts on contact blocks	01S, 11G, 02G
In compliance with standards:	EN 60947-1:2007 + A1:2011, EN 60947-5-1:2004 + A1:2009, Compliance with the requirements of Low Voltage Directive 2006/95/CE.

Please contact our technical department for the list of approved products



## Selection table for contact blocks

Packs of 5 pcs.



Contact block	Panel mounting Screw connection
1NC,  , self-monitored	<b>E2 CP01S2V1</b> 2.3 1.1 0 1.1  2.1 5




Contact block	Base mounting Screw connection
1NC,  , self-monitored	<b>E2 CF01S2V1</b> 2.3 1.1 0 1.1  2.1 5

The self-monitored contact block with base mounting can be installed only in the central position under the device. The central position on the bottom of the housing is identified with number 3.

## Complete units with contact block and mounting adapter



Contacts			Panel mounting Screw connection
pos. 2	pos. 3	pos. 1	
-	1NC  SELF-MONITORED	-	<b>E2 AC-XXBC0139</b> E2 1BAC11 + E2 CP01S2V1

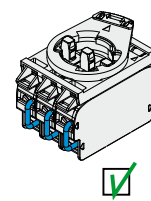
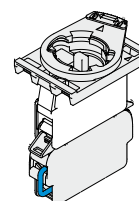
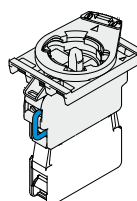
Other combinations on request.

## Installation of several single, double and self-monitored contact blocks

Always install self-monitored contact blocks directly on the mounting adapter.

Do not install self-monitored contact blocks on standard contact blocks. Forbidden application!

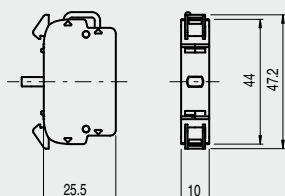
Per each emergency button no more than three self-monitored contact blocks can be installed.



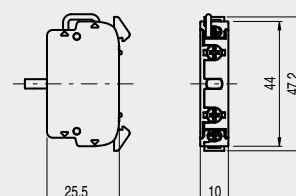
## Dimensions

All measures in the drawings are in mm

### Contact block for panel mounting E2 CP01S...




### Contact block for base mounting E2 CF01S...



## Dust protection

Packs of 50 pcs.

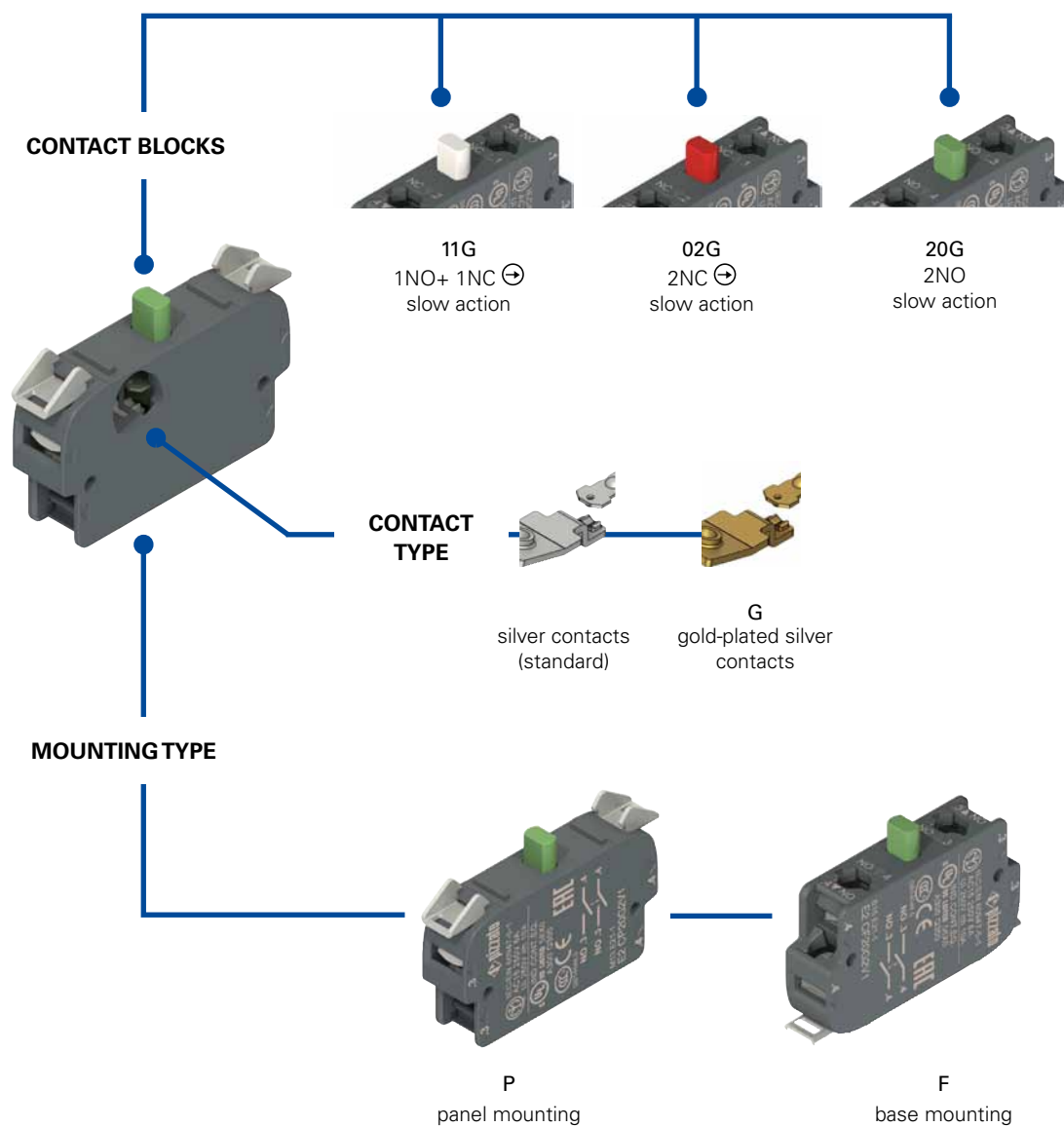
Article	Description
 <b>VE PR3A70</b>	Transparent dust protection for E2 series contact blocks. Suitable for all panel mounting contact blocks.

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

Items with code on green background are stock items



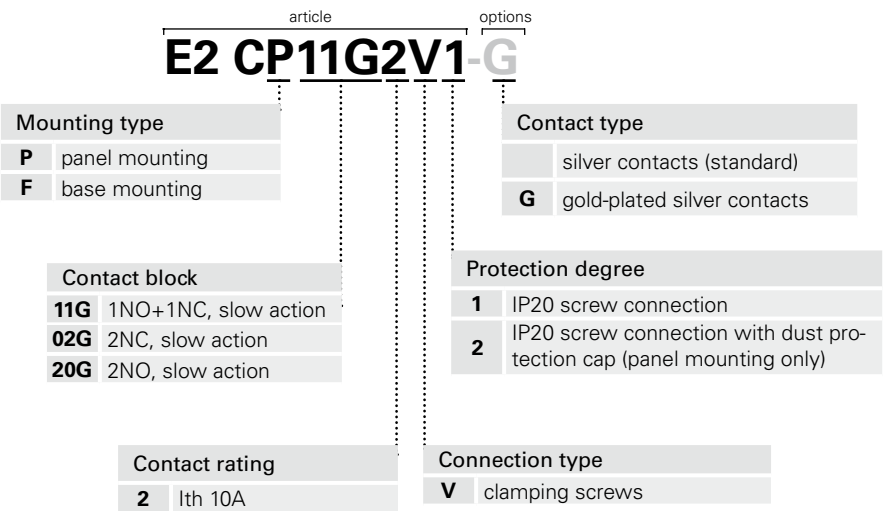
## Selection diagram



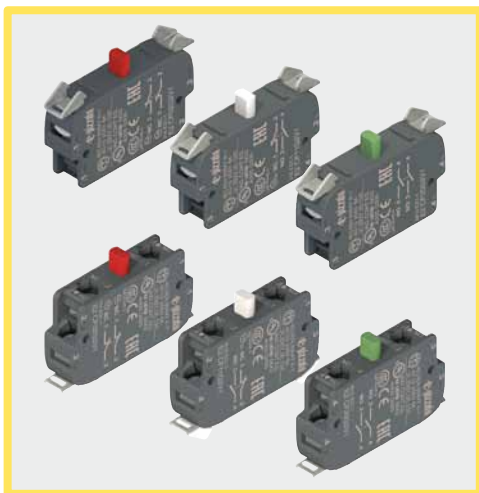


Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.







### Main features

- Highly reliable contact blocks provided with self-cleaning contacts with quadruple support point
- Versions with gold-plated contacts
- Positive opening NC contacts acc. to IEC 60947-5-1

### Quality marks:



IMQ approval:	CA02.04805
UL approval:	E131787
CCC approval:	2013010305631156
EAC approval:	RU C-IT DM94.B.01024

### Technical data

#### General data

Protection degree:	IP20 acc. to EN 60529 at the terminals
Ambient temperature:	-40°C ... +80°C
Mechanical endurance:	20 million operating cycles
Max. actuation frequency:	3600 operating cycles/hour
Utilization requirements:	See page 139

#### Contact block

Switching force of the contacts:	2NO: 1.7 N 2NC: 2 N 1NO+1NC: 2.7 N (NO) / 2.2 N (NC)
Actuating force at limit of travel:	2NO: 3.8 N 2NC: 3.8 N 1NO+1NC: 4.5 N 17 N
Positive opening force:	min 1 mm/s
Actuation speed:	max. 0.5 m/s
Material of the contacts:	Normal: silver contacts (standard) For low current: silver contacts with 1 µm gold coating (on request) "V-shape" self-cleaning contacts with quadruple support point
Contact type:	min 1 x 0.34 mm <sup>2</sup> (1 x AWG 22) max. 2 x 1.5 mm <sup>2</sup> (2 x AWG 16)
Cable cross section:	1,000,000 (NO), 40,000,000 (NC)
Safety parameter B <sub>10D</sub> :	0.6 ... 0.8 Nm
Tightening torque of the terminal screws:	

#### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

#### Installation for safety applications:

Use only contact blocks marked with the symbol ☺. The safety circuit must always be connected to **NC contacts** (normally closed contacts: .1-2)

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### Electrical data

Thermal current ( $I_{th}$ ):	10 A
Rated insulation voltage ( $U_i$ ):	250 Vac/dc
Protection against short circuits:	type gG/gL fuse 10 A 500 V
Rated impulse withstand voltage ( $U_{imp}$ ):	4 kV
Pollution degree:	3

### Utilization category

Alternating current: AC15 (50÷60 Hz)				
Ue (V)	24	48	120	250
Ie (A)	6	6	6	6
Direct current: DC13				
Ue (V)	24	48	125	250
Ie (A)	2.5	1.3	0.6	0.3

### General data

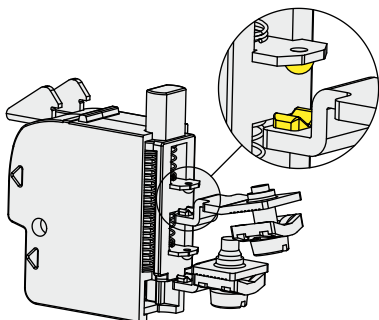
#### Positive opening



All NC contacts are suitable for safety applications. The NC contacts are positive opening contacts acc. to IEC 60947-5-1.

#### High-reliability self-cleaning contacts

"V-shape" self-cleaning contacts with quadruple support point. This type of shape, thanks to the presence of the double support point, makes it possible to drastically reduce the probability of contact commutation failure. In addition to this, it improves considerably the reliability in the presence of dust.

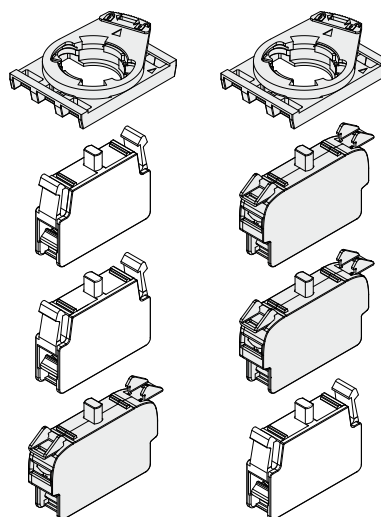


#### Modular design and compact dimensions

The double contact blocks of the EROUND series feature more compact dimensions compared to the other double contact blocks on the market.

Thanks to their compact dimensions, these versions can also be fixed on the base.

These double contact blocks have the same vertical dimensions of the single contact blocks of the EROUND series: this makes it possible to stack on more levels the single contact blocks with the double contact blocks and to interchange them during the assembly phase.





## Features approved by UL

Utilization categories      A300 pilot duty  
 (720 VA, 120-240 V ac)  
 Q300 pilot duty  
 (69 VA, 125-250 V dc)

### Note:

- "Use 60 or 75 °C copper (CU) conductor and wire size range 12-20 AWG, stranded or solid"
- "The terminal tightening torque of 7.1 Lb In (0.8 Nm)."

**Please contact our technical department for the list of approved products.**

## Features approved by IMQ


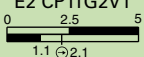

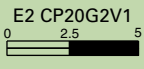


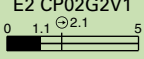
Rated insulation voltage (U<sub>i</sub>):      250 V  
 Conventional free air thermal current (I<sub>th</sub>):      10 A  
 Rated impulse withstand voltage (U<sub>imp</sub>):      4 kV  
 Protection degree of the housing:      IP20 (clamping screw), IP00 (solder connection)  
 Utilization category:      AC15  
 Operating voltage (U<sub>e</sub>):      250 Vac (50/60 Hz)  
 Operating current (I<sub>e</sub>):      6 A  
 Forms of the contact element: Y, Y+Y, X+X, Zb  
 Positive opening of contacts on contact blocks 01S, 11G, 02G  
 In compliance with standards: EN 60947-1:2007 + A1:2011, EN 60947-5-1:2004 + A1:2009, Compliance with the requirements of Low Voltage Directive 2006/95/CE.


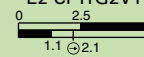

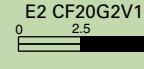


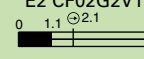
**Please contact our technical department for the list of approved products**

## Selection table for contact blocks

Packs of **5 pcs.**







Contact block	Panel mounting Screw connection
1NO+1NC, slow action 	<b>E2 CP11G2V1</b> 
2NO, slow action 	<b>E2 CP20G2V1</b> 
2NC,  slow action 	<b>E2 CP02G2V1</b> 

Contact block	Base mounting Screw connection
1NO+1NC, slow action 	<b>E2 CF11G2V1</b> 
2NO, slow action 	<b>E2 CF20G2V1</b> 
2NC,  slow action 	<b>E2 CF02G2V1</b> 

## Complete units with contact block and mounting adapter



Contacts			Panel mounting Screw connection
pos. 2	pos. 3	pos. 1	
-	1NO+ 1NC 	-	<b>E2 AC-XXBC0135</b> E2 1BAC11 + E2 CP11G2V1
-	2NO	-	<b>E2 AC-XXBC0136</b> E2 1BAC11 + E2 CP20G2V1
-	2NC 	-	<b>E2 AC-XXBC0137</b> E2 1BAC11 + E2 CP02G2V1

Contacts			Panel mounting Screw connection
pos. 2	pos. 3	pos. 1	
1NO+ 1NC 	-	1NO+ 1NC 	<b>E2 AC-XXBC0138</b> E2 1BAC11 + E2 CP11G2V1 + E2 CP11G2V1

Other combinations on request.

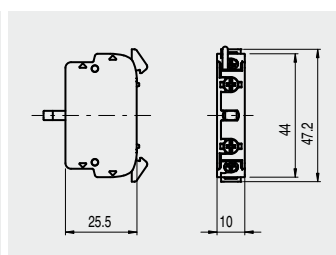
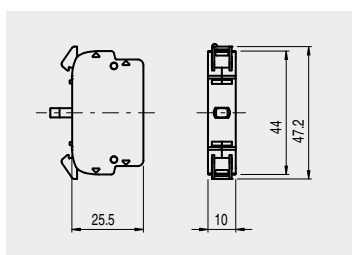
Other combinations on request.

## Dimensions

All measures in the drawings are in mm


### Contact block for panel mounting E2 CP••G•••

### Contact block for base mounting E2 CF••G•••



## Dust protection

Packs of **50 pcs.**

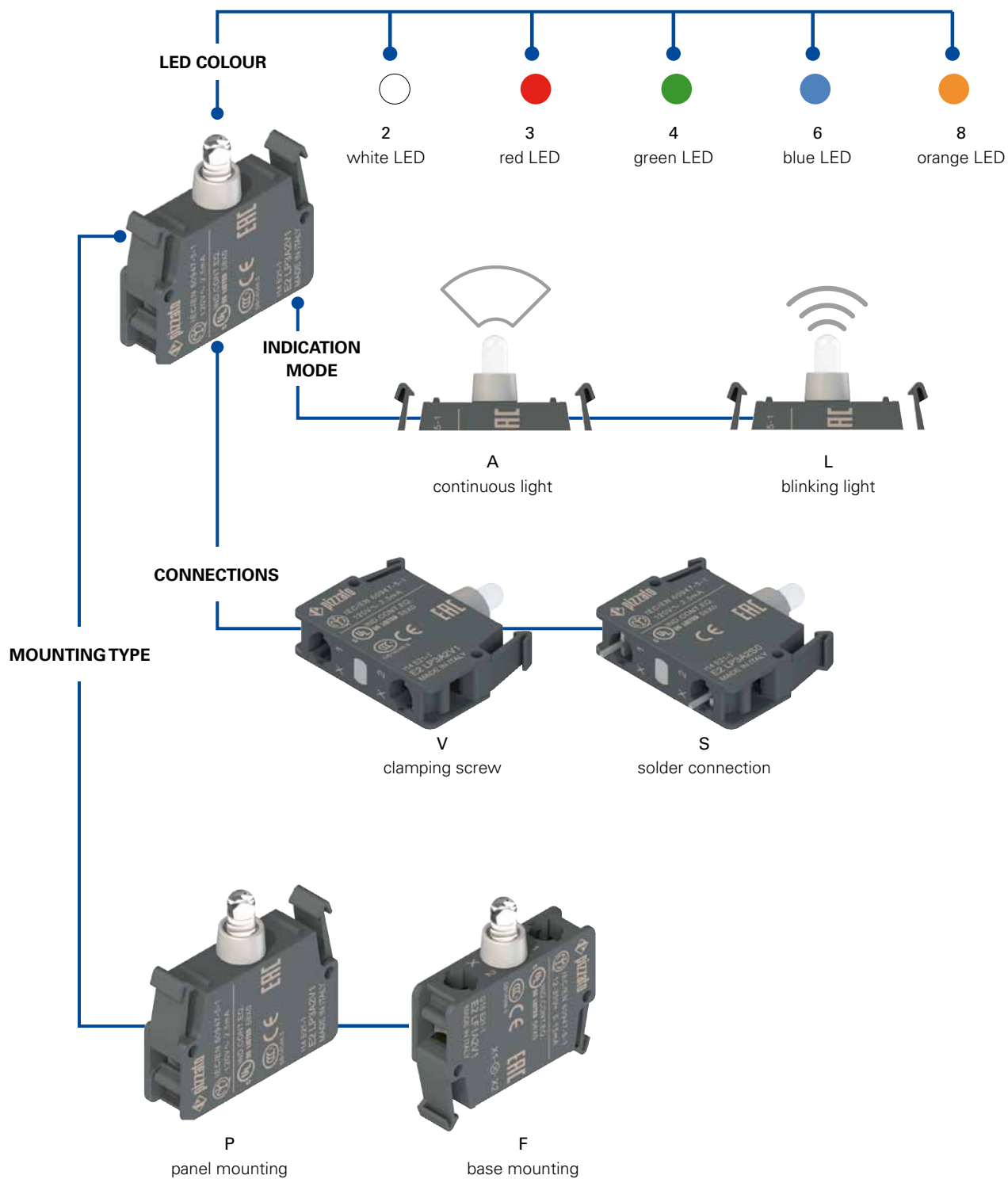
Article	Description
 <b>VE PR3A70</b>	Transparent dust protection for E2 series contact blocks. Suitable for all panel mounting contact blocks.

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

Items with code on **green** background are stock items



## Selection diagram





Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

E2 LP1A3V1

Mounting type

P

panel mounting

F

base mounting

Supply voltage

1

12 ... 30 Vac/dc (high luminosity)

3

120 Vac (high luminosity)

4

230 Vac (high luminosity)

7

120 Vac/dc (standard luminosity)

8

230 Vac/dc (standard luminosity)

Protection degree

0

IP00 solder connection

1

IP20 screw connection

Connection type

V

clamping screw (standard)

S

solder connection (panel mounting only)

LED colour

2

white

3

red

4

green

6

blue

8

orange

Indication mode

A

Continuous light (standard)

L

blinking light  
(12 ... 30 V power supply only)





#### Main features

- High luminosity LED
- Three supply voltages:
- 12 ... 30 Vac/dc, 120 Vac, 230 Vac
- Continuous or blinking light
- Panel and base mounting versions

#### Technical data

##### General data

Protection degree acc. to EN 60529:	IP20 with screw connection IP00 with solder connection
Ambient temperature:	-25°C ... +70°C
Endurance:	100,000 hours (at rated voltage and +25 °C ambient temperature)
Utilization requirements:	See page 139

##### LED unit

Cable cross section for clamping screws:	min 1 x 0.5 mm <sup>2</sup> (1 x AWG 20) max. 2 x 2.5 mm <sup>2</sup> (2 x AWG 14)
Clamping screw tightening torque:	0.6 ... 0.8 Nm
Operating voltages and currents: (high luminosity)	12 ... 30 Vac/dc; 5 ... 15 mA 102 ... 138 Vac; 10 ... 12 mA 195 ... 264 Vac; 9 ... 10 mA
Operating voltages and currents: (standard luminosity)	102 ... 138 Vac/dc; 2.5 mA 195 ... 264 Vac/dc; 2.5 mA
Blinking frequency:	1 Hz

##### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

#### Quality marks:



IMQ approval:	CA02.04806
UL approval:	E131787
CCC approval:	2013010305631156
EAC approval:	RU C-IT DM94.B.01024

##### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

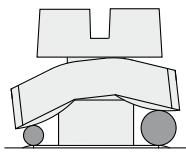
#### General data

##### Continuous or blinking light



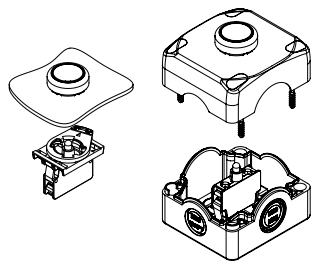
The LED units can be provided with two different lighting types: continuous or blinking light. The blinking light versions allow a faster identification on the panel of the lit device compared to the continuous light. The special internal electronic circuit autonomously alternates the ON and OFF phases without requiring any special electrical connection.

##### Clamping screw plates



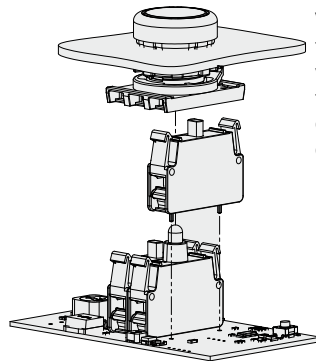
The clamping screw plates of the LED units are provided with a particular "roofing tile" structure and are loosely coupled to the clamping screw. This way, during the wires fixing, the clamping screw plate is able to suit to cables of different diameters and tends to tighten the wires toward the screw instead of permitting them to escape towards the outside.

##### Available versions



The LED units of the signalling and control devices feature two types of coupling: panel mounting and base mounting.

##### Solder connection on printed circuit



Versions with panel mounting of the EROUND series LED units with solder pin are available. If there is no wiring but a printed circuit, these LED units can be directly welded on the latter.

##### High luminosity LED

The LED units to combine with the luminous devices feature a high-intensity LED (Light Emitting Diodes), which ensures greater visibility. The use of an integrated LED gives greater benefits compared to incandescence lamps because they last longer and absorb less power than the latter. LEDs feature greater reliability, low consumption, and high resistance to vibrations.



## Features approved by UL

Voltage and rated supply current:  
 12-30 Vac/dc, 5-15mA  
 120 Vac, 10 mA  
 230 V ac, 10 mA  
 120 Vac, 2.5 mA  
 230 V ac, 2.5 mA

Notes:  
 - Use 60° or 75°C copper (Cu) conductors, rigid or flexible, with cross-section AWG 12-20.  
 - Screw terminal tightening torque of 7.1 Lb In (0.8 Nm).

## Features approved by IMQ

Rated insulation voltage (Ui): 500 V  
 Indicator light type: Incorporated LED  
 Terminals: screw terminals  
 Rated operating voltage (Ue): 12 ... 30 Vac/dc (5 ... 15 mA),  
 120 Vac (10 mA), 230 Vac (10 mA)

In compliance with standards: EN 60947-1,  
 EN 60947-5-1:2004 + A1:2009, fundamental requirements  
 of the Low Voltage Directive 2014/35/EU.

## Selection table for LED units

Packs of **5 pcs.**



LED colour	Actuator colour	Panel mounting		
		Screw connection		
		Operating voltage		
		12...30 Vac/dc	120 Vac	230 Vac
white	white / yellow	E2 LP1A2V1	E2 LP3A2V1	E2 LP4A2V1
red	red	E2 LP1A3V1	E2 LP3A3V1	E2 LP4A3V1
green	green	E2 LP1A4V1	E2 LP3A4V1	E2 LP4A4V1
blue	blue	E2 LP1A6V1	E2 LP3A6V1	E2 LP4A6V1
orange	orange	E2 LP1A8V1	E2 LP3A8V1	E2 LP4A8V1

LED colour	Actuator colour	Panel mounting		
		Solder connection		
		Operating voltage		
		12...30 Vac/dc	120 Vac	230 Vac
white	white / yellow	E2 LP1A2S0	E2 LP3A2S0	E2 LP4A2S0
red	red	E2 LP1A3S0	E2 LP3A3S0	E2 LP4A3S0
green	green	E2 LP1A4S0	E2 LP3A4S0	E2 LP4A4S0
blue	blue	E2 LP1A6S0	E2 LP3A6S0	E2 LP4A6S0
orange	orange	E2 LP1A8S0	E2 LP3A8S0	E2 LP4A8S0

We recommend to meet the colour combination of the LEDs with the actuator colours.

## Selection table for LED units

Packs of **5 pcs.**



LED colour	Actuator colour	Base mounting		
		Screw connection		
		Operating voltage		
		12...30 Vac/dc	120 Vac	230 Vac
white	white / yellow	E2 LF1A2V1	E2 LF3A2V1	E2 LF4A2V1
red	red	E2 LF1A3V1	E2 LF3A3V1	E2 LF4A3V1
green	green	E2 LF1A4V1	E2 LF3A4V1	E2 LF4A4V1
blue	blue	E2 LF1A6V1	E2 LF3A6V1	E2 LF4A6V1
orange	orange	E2 LF1A8V1	E2 LF3A8V1	E2 LF4A8V1

Items with code on **green** background are stock items



## Complete units with LED unit, contact block and mounting adapter



LED colour	Contacts			Panel mounting
	pos. 2	pos. 3	pos. 1	Operating voltage 12 ... 30 Vac/dc
white	1NC ⊕	LED	-	<b>E2 AC-XXBC0020</b> E2 1BAC11 + E2 CP01G2V1 + E2 LP1A2V1
red	1NC ⊕	LED	-	<b>E2 AC-XXBC0037</b> E2 1BAC11 + E2 CP01G2V1 + E2 LP1A3V1
green	1NC ⊕	LED	-	<b>E2 AC-XXBC0029</b> E2 1BAC11 + E2 CP01G2V1 + E2 LP1A4V1
blue	1NC ⊕	LED	-	<b>E2 AC-XXBC0045</b> E2 1BAC11 + E2 CP01G2V1 + E2 LP1A6V1
orange	1NC ⊕	LED	-	<b>E2 AC-XXBC0058</b> E2 1BAC11 + E2 CP01G2V1 + E2 LP1A8V1

Other combinations on request.



LED colour	Contacts			Panel mounting
	pos. 2	pos. 3	pos. 1	Operating voltage 12 ... 30 Vac/dc
white	-	LED	1NO	<b>E2 AC-XXBC0021</b> E2 1BAC11 + E2 LP1A2V1 + E2 CP10G2V1
red	-	LED	1NO	<b>E2 AC-XXBC0039</b> E2 1BAC11 + E2 LP1A3V1 + E2 CP10G2V1
green	-	LED	1NO	<b>E2 AC-XXBC0031</b> E2 1BAC11 + E2 LP1A4V1 + E2 CP10G2V1
blue	-	LED	1NO	<b>E2 AC-XXBC0047</b> E2 1BAC11 + E2 LP1A6V1 + E2 CP10G2V1
orange	-	LED	1NO	<b>E2 AC-XXBC0059</b> E2 1BAC11 + E2 LP1A8V1 + E2 CP10G2V1

Other combinations on request.



LED colour	Contacts			Panel mounting
	pos. 2	pos. 3	pos. 1	Operating voltage 12 ... 30 Vac/dc
white	1NC ⊕	LED	1NO	<b>E2 AC-XXBC0027</b> E2 1BAC11 + E2 CP01G2V1 + E2 LP1A2V1 + E2 CP10G2V1
red	1NC ⊕	LED	1NO	<b>E2 AC-XXBC0044</b> E2 1BAC11 + E2 CP01G2V1 + E2 LP1A3V1 + E2 CP10G2V1
green	1NC ⊕	LED	1NO	<b>E2 AC-XXBC0036</b> E2 1BAC11 + E2 CP01G2V1 + E2 LP1A4V1 + E2 CP10G2V1
blue	1NC ⊕	LED	1NO	<b>E2 AC-XXBC0052</b> E2 1BAC11 + E2 CP01G2V1 + E2 LP1A6V1 + E2 CP10G2V1
orange	1NC ⊕	LED	1NO	<b>E2 AC-XXBC0060</b> E2 1BAC11 + E2 CP01G2V1 + E2 LP1A8V1 + E2 CP10G2V1

Other combinations on request.



LED colour	LED			Panel mounting
	pos. 2	pos. 3	pos. 1	Operating voltage 12 ... 30 Vac/dc
white	-	LED	-	<b>E2 AC-XXBC0053</b> E2 1BAC11 + E2 LP1A2V1
red	-	LED	-	<b>E2 AC-XXBC0055</b> E2 1BAC11 + E2 LP1A3V1
green	-	LED	-	<b>E2 AC-XXBC0054</b> E2 1BAC11 + E2 LP1A4V1
blue	-	LED	-	<b>E2 AC-XXBC0056</b> E2 1BAC11 + E2 LP1A6V1
orange	-	LED	-	<b>E2 AC-XXBC0057</b> E2 1BAC11 + E2 LP1A8V1

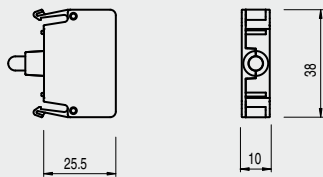
Other combinations on request.



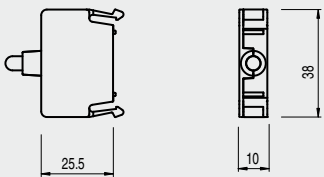
Dimensions

All measures in the drawings are in mm

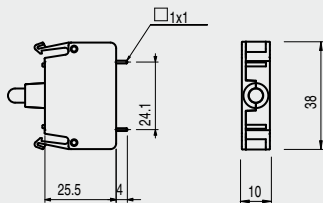
LED unit for panel mounting



LED unit for base mounting



LED unit for panel mounting, solder connection

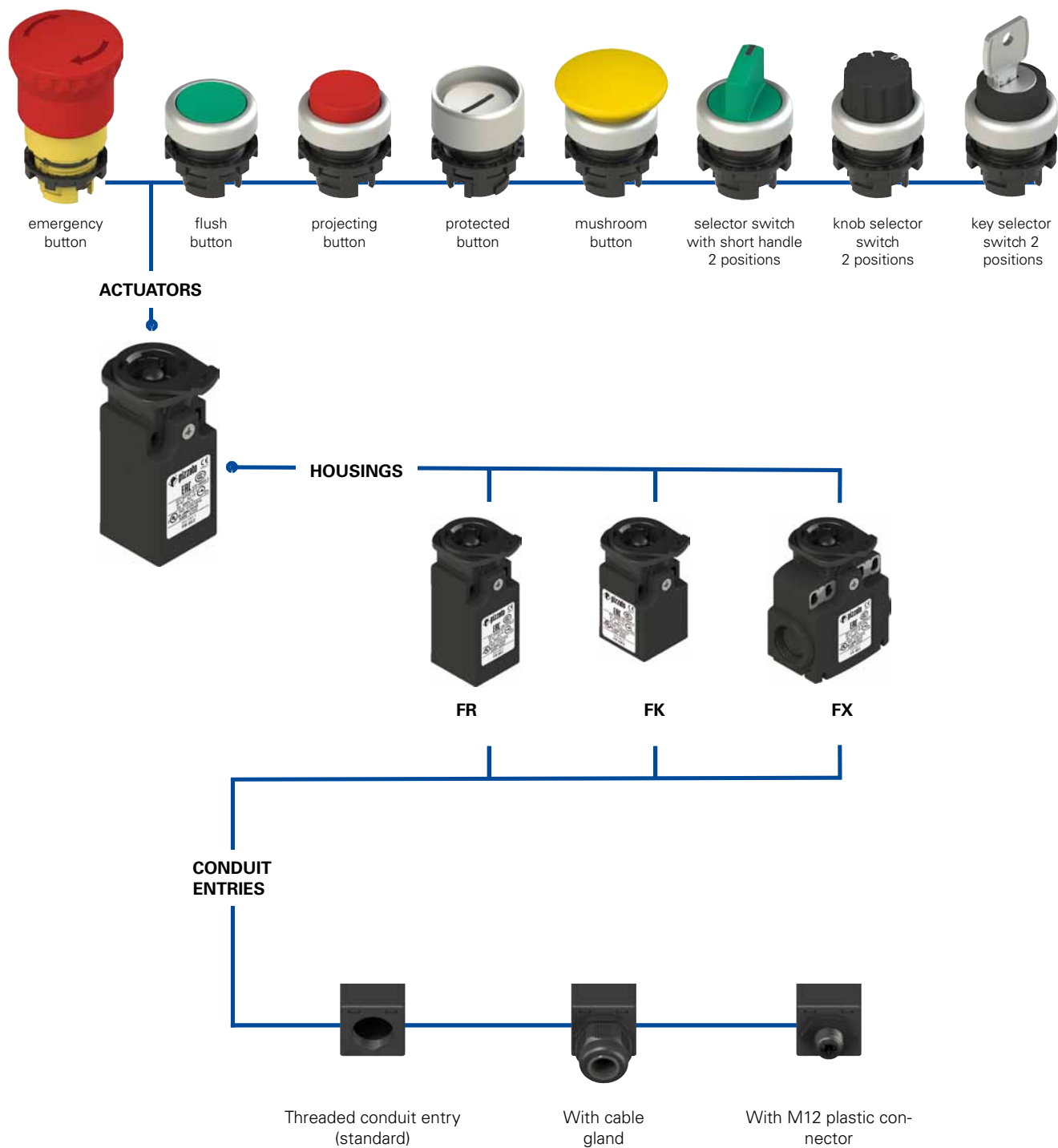


Ø 1.4 mm holes on PCB

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



## Selection diagram





## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

article option option  
**FR 6E2-GM2K23T6**

Housing	
<b>FR</b>	technopolymer, one conduit entry
<b>FX</b>	technopolymer, two conduit entries

Contact block	
<b>6</b>	1NO+1NC, slow action
<b>9</b>	2NC, slow action
<b>20</b>	1NO+2NC, slow action

Contact type	
	silver contacts (standard)
<b>G</b>	silver contacts with 1 µm gold coating
<b>G1</b>	silver contacts with 2.5 µm gold plating (not for contact block 20)

Ambient temperature	
	-25°C ... +80°C (standard)
<b>T6</b>	-40°C ... +80°C

Pre-installed cable glands or connectors	
	no cable gland or connector (standard)
<b>K23</b>	cable gland for cables Ø 6...Ø 12 mm
...	.....
<b>K70</b>	M12 plastic connector, 4 poles
...	.....

For the complete list of possible combinations please contact our technical department.

Threaded conduit entry	
<b>M2</b>	M20x1.5

article option option  
**FK 33E2-GM1K24T6**

Housing	
<b>FK</b>	technopolymer, one conduit entry

Contact block	
<b>33</b>	1NO+1NC, slow action
<b>34</b>	2NC, slow action

Contact type	
	silver contacts (standard)
<b>G</b>	silver contacts with 1 µm gold coating

Ambient temperature	
	-25°C ... +80°C (standard)
<b>T6</b>	-40°C ... +80°C

Pre-installed cable glands	
	no cable gland (standard)
<b>K24</b>	cable gland for cables Ø 5...Ø 10°mm
<b>K28</b>	cable gland for cables Ø 3...Ø 7°mm

Threaded conduit entry	
<b>M1</b>	M16x1.5





### Main features

- Protection degree IP67
- Technopolymer housing
- Versions with gold-plated silver contacts

### Quality marks:



IMQ approval: EG610  
 UL approval: E131787  
 CCC approval: 2007010305230013  
 EAC approval: RU C-IT DM94.B.01024

### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU,  
 EMC Directive 2014/30/EU.

### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

## Technical data

### General data

Housing made of glass fibre reinforced technopolymer, self-extinguishing, shock-proof and with double insulation

FR series, one conduit entry: M20x1.5

FK series, one threaded conduit entry: M16x1.5

FX series, two knock-out threaded: M20x1.5

conduit entries:

Protection degree: IP67 acc. to EN 60529 with cable gland showing equal or higher protection degree

Ambient temperature: -25°C ... +80°C

Safety parameter  $B_{10D}$ : 40,000,000

Max. actuation frequency: 3600 operating cycles/hour

Mechanical endurance: 20 million operating cycles

Utilization requirements: See page 139

### Contact block

Switching force, FR, FX series contacts

1NO+1NC: 3.3 N (NC) / 6 N (NO)

2NC: 6.5 N

1NO+2NC: 5.8 N (NC) / 6.5 N (NO)

Switching force, FK series contacts

1NO+1NC: 4.5 N (NC) / 5.3 N (NO)

2NC: 4.4 N

FR, FX series limit of travel force:

1NO+1NC: 9 N

2NC: 8.5 N

1NO+2NC: 10.3 N

FK series limit of travel force:

1NO+1NC: 9.3 N

2NC: 8 N

Positive opening force: 25 N

Actuation speed: min 1 mm/s

max. 0.5 m/s

Material of the contacts: Normal: silver contacts (standard)

Low current: silver contacts with gold plating (on request)

Cable cross section (flexible copper strands)

Contact blocks 20, 33, 34: min. 1 x 0.34 mm<sup>2</sup> (1 x AWG 22)

max. 2 x 1.5 mm<sup>2</sup> (2 x AWG 16)

Contact blocks 6, 9: min. 1 x 0.5 mm<sup>2</sup> (1 x AWG 20)

max. 2 x 2.5 mm<sup>2</sup> (2 x AWG 14)

Tightening torque of the terminal screws: 0.6 ... 0.8 Nm

### In compliance with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, UL 508, CSA 22.2 No. 14.

### ⚠ Installation for safety applications:

Use only contact blocks marked with the symbol The safety circuit must always be connected to **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32).

## Electrical data

## Utilization category

without connector	Thermal current ( $I_{th}$ ):	10 A	Alternating current: AC15 (50÷60 Hz)		
	Rated insulation voltage ( $U_i$ ):	500 Vac 600 Vdc	Ue (V)	250	400
		400 Vac 500 Vdc (contact blocks 20, 33, 34)	Ie (A)	6	4
	Rated impulse withstand voltage ( $U_{imp}$ ):	6 kV / 4 kV (contact blocks 20, 33, 34)			1
	Conditional short circuit current:	1000 A acc. to EN 60947-5-1	Direct current: DC13		
with M12 connector 4 pole	Protection against short circuits:	type aM fuse 10 A 500 V	Ue (V)	24	125
	Pollution degree:	3	Ie (A)	6	1.1
					0.4
	Thermal current ( $I_{th}$ ):	4 A	Alternating current: AC15 (50÷60 Hz)		
	Rated insulation voltage ( $U_i$ ):	250 Vac 300 Vdc	Ue (V)	24	120
with M12 connector 8 pole	Protection against short circuits:	type gG fuse 4 A 500 V	Ie (A)	4	4
	Pollution degree:	3	Direct current: DC13		
			Ue (V)	24	125
	Thermal current ( $I_{th}$ ):	2 A	Ie (A)	4	1.1
	Rated insulation voltage ( $U_i$ ):	30 Vac 36 Vdc			0.4
with M12 connector 8 pole	Protection against short circuits:	type gG fuse 2 A 500 V	Alternating current: AC15 (50÷60 Hz)		
	Pollution degree:	3	Ue (V)	24	
			Ie (A)	2	
	Thermal current ( $I_{th}$ ):	2 A	Direct current: DC13		
	Rated insulation voltage ( $U_i$ ):	30 Vac 36 Vdc	Ue (V)	24	



## Features approved by UL

Utilization categories: Q300 (69 VA, 125-250 Vdc)  
A600 (720 VA, 120-600 Vac)  
Housing features type 1, 4X "indoor use only," 12, 13  
For all contact blocks except 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size AWG 12-14. Tightening torque for terminal screws of 7.1 lb in (0.8 Nm).  
For contact blocks 2 and 3 use 60 or 75 °C copper (Cu) conductors, rigid or flexible, wire size AWG 14. Tightening torque for terminal screws of 12 lb in (1.4 Nm).

In compliance with standard: UL 508, CSA 22.2 No. 14

**Please contact our technical department for the list of approved products.**

## Features approved by IMO

Rated insulation voltage (U<sub>i</sub>): 500 Vac  
400 Vac (for contact blocks 20, 33, 34)  
Conventional free air thermal current (I<sub>th</sub>): 10 A  
Protection against short circuits: type aM fuse 10 A 500 V  
Rated impulse withstand voltage (U<sub>imp</sub>): 6 kV  
4 kV (for contact blocks 20, 33, 34)  
Protection degree of the housing: IP67  
MV terminals (screw terminals)  
Pollution degree: 3  
Utilization category: AC15  
Operating voltage (U<sub>e</sub>): 400 Vac (50 Hz)  
Operating current (I<sub>e</sub>): 3 A  
Forms of the contact element: Za, Zb, Za+Za, Y+Y, X+X, Y+Y+X, Y+Y+Y, Y+X+X  
Positive opening of contacts on contact blocks 6, 9, 20, 33, 34  
In compliance with standards: EN 60947-1, EN 60947-5-1+ A1:2009, fundamental requirements of the Low Voltage Directive 2014/35/EU.

**Please contact our technical department for the list of approved products.**

## Description



The protected contact block makes it possible to achieve an IP67 protection degree also in the contact area. This is essential if there is dust inside the panel (for example, in equipment used in the timber sector).  
The buttons, the 2-position selectors and the emergency buttons of the EROUND series can be used as normal actuators in the FR, FK, and FX protected contact blocks.

## Applications



Protected contact block for control devices fitted in switching cabinets with the presence of dust also inside the cabinet. The block ensures an IP67 protection degree for internal electric contacts.

## Extended temperature range

**-40°C**

These switches are also available in a special version suitable for an ambient operating temperature range from -40°C up to +80°C.

They can therefore be used for applications in cold stores, sterilisers and other equipment with low temperature environments. The special materials that have been used to realize these versions, maintain unchanged their features also in these conditions, widening the installation possibilities.

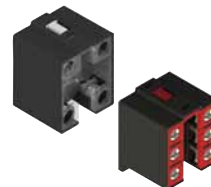
## Protection degree IP67

**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529.

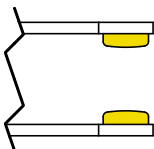
They can therefore be used in all environments where maximum protection degree of the housing is required.

## Contact block



Contact blocks with captive screws, finger protection, twin bridge contacts and double interruption for higher contact reliability. They are available in multiple variants with shifted activation travels, simultaneous or overlapping. They are suitable for many different applications.

## Gold-plated contacts



The contact blocks of these devices can be supplied gold-plated upon request. Ideal for applications with low voltages or currents; it ensures increased contact reliability. Available in two thicknesses (1 or 2.5 microns), it adapts perfectly to the various fields of application, ensuring a long endurance over time.



## Selection table for contact blocks



Contact block	Article
1NO+1NC, slow action	FR 6E2-M2 
2NC, slow action	FR 9E2-M2 
1NO+2NC, slow action	FR 20E2-M2 



Contact block	Article
1NO+1NC, slow action	FX 6E2-M2 
2NC, slow action	FX 9E2-M2 
1NO+2NC, slow action	FX 20E2-M2 

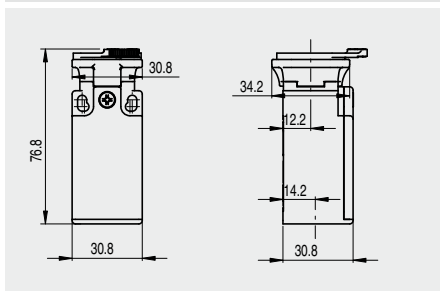


Contact block	Article
1NO+1NC, slow action	FK 33E2-M1 
2NC, slow action	FK 34E2-M1 

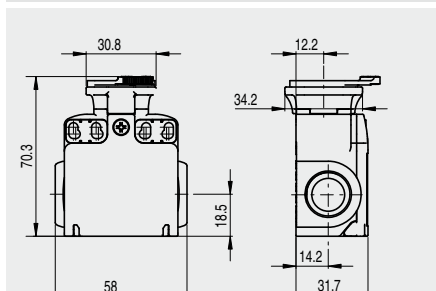
## Dimensions

All measures in the drawings are in mm

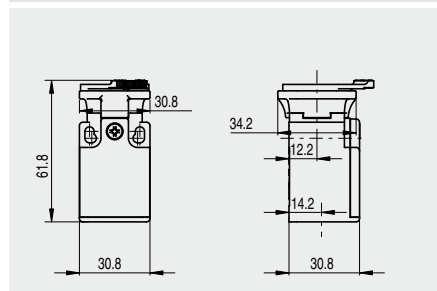
## FR series



## FX series



## FK series

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

## Use limitations

The protected contact block protects exclusively the electric contacts from fine dust or water coming from the switching cabinet.

The protected contact block can be combined only with following devices:

- E2 •PU••••• buttons
- E2 PE••••• emergency buttons
- E2 •SE•2••••• two-position selector switches
- E2 •SC2••••• two-position key selector switches.

The protected contact block must be wired before the coupling with its actuator.

After the wiring, excessive traction on the cable or impacts on the housing can cause the detachment of the contact block from the actuator.

Do not use in environments with presence of explosive or flammable gas. In these case use ATEX products (see dedicated Pizzato catalogue).



## Notes

[illegible]This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are no margins, text, or other markings on the page.



## Selection diagram



## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

## E2 1USB9CAK

## Fixing ring and shaped ring

<b>1</b>	Plastic ring (standard)
<b>2</b>	Plastic fixing ring and shaped ring
<b>3</b>	Metal ring
<b>4</b>	Metal fixing ring and shaped ring

## External bezel colour

<b>1</b>	black (standard)
<b>9</b>	satin chrome (standard)

## Rear connection

<b>AK</b>	A-type USB integrated female socket
<b>N0.8</b>	Output with PVC cable (length 0.8 m) and A-type USB male connector
<b>N1.8</b>	Output with PVC cable (length 1.8 m) and A-type USB male connector
<b>N3</b>	Output with PVC cable (length 3 m) and A-type USB male connector
<b>N5</b>	Output with PVC cable (length 5 m) and A-type USB male connector

## Front connection

<b>A</b>	A-type USB 3.0 integrated female socket
<b>C</b>	A-type USB 2.0 integrated female socket





#### Main features

- Two data transfer speeds
- Protection degree IP67
- Version with socket/socket
- Version with socket / cable with male connector

#### Quality marks:



UL approval: E131787  
EAC approval: RU C-IT DM94.B.01024

#### Technical data

##### General data

Connections:	USB 3.0 or USB 2.0
Protection degree:	IP67 acc. to EN 60529 (with closed cap)
Ambient temperature:	-25°C ... +70°C
Tightening torque of the ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

##### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14

##### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

#### Features approved by UL

Ratings: 1.8A (Supplied by class 2 or limited energy external power supply source)

Tightening torque 2.0 Nm

With port cover in open position "For Use on a Flat Surface of a Type 1," with port cover in close position "For Use on a Flat Surface of a Type 1, 4X, 12 and 13."

Please contact our technical department for the list of approved products.

#### General data

##### USB 3.0 High Speed



The USB socket for Ø 22 mm buttons uses latest-generation USB 3.0 connectors, in order to offer maximum data transfer speed. Moreover, the socket is also backward compatible with previous USB connectors.

##### USB 2.0

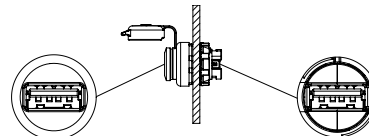


The USB socket for Ø 22 mm buttons is also available with USB 2.0 connectors and standard data transfer speed. This option offers the best value for money.

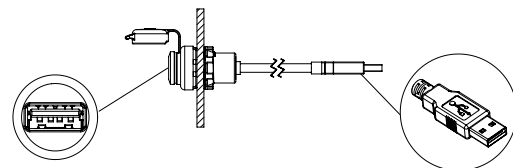
##### Versions with socket and with cable

For making device installation flexible and suitable for any situation there are two versions available:

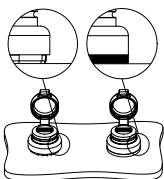
- with female socket-to-female socket connection



- with female socket / cable with male connector (available in different lengths)



##### Shaped ring



The shaped ring can be used when no plate holder or other devices are applied; it prevents dirt and other residues from settling between the connectors and the panel or housing.

This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

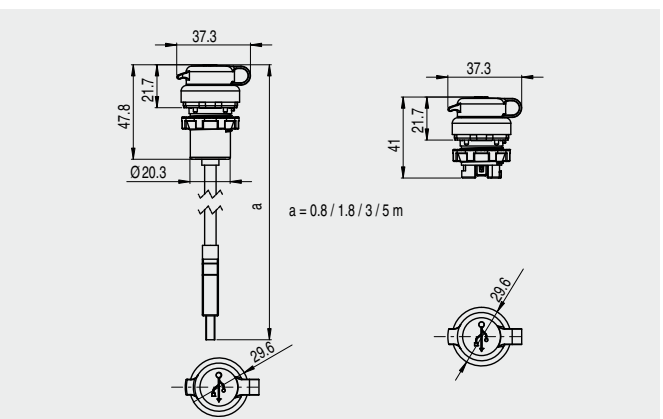
##### Integrated protection cap

The protection cap integrated in the device ensures maximum resistance, preventing any water or dirt to get inside.

The cap remains attached to the device even when it is not fastened, avoiding it to get lost; besides, its design allows the mounting of label holders.

##### Dimensions

All measures in the drawings are in mm





## Selection diagram



## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

## E2 1RJ459AAK

## Fixing ring and shaped ring

- |   |                                     |
|---|-------------------------------------|
| 1 | Plastic ring (standard)             |
| 2 | Plastic fixing ring and shaped ring |
| 3 | Metal ring                          |
| 4 | Metal fixing ring and shaped ring   |

## External bezel colour

- |   |                         |
|---|-------------------------|
| 1 | black (standard)        |
| 9 | satin chrome (standard) |

## Rear connection

- |      |  |
|------|--|
| AK   | integrated RJ45 female socket                                |
| N1   | Output with PVC cable (length 1 m) and RJ45 male connector   |
| N1.5 | Output with PVC cable (length 1.5 m) and RJ45 male connector |
| N2.5 | Output with PVC cable (length 2.5 m) and RJ45 male connector |

## Front connection

- |   |                               |
|---|-------------------------------|
| A | integrated RJ45 female socket |
|---|-------------------------------|





#### Main features

- RJ45 connectors
- Protection degree IP67
- Version with socket/socket
- Version with socket / cable with male connector

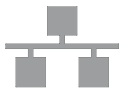
#### Quality marks:



UL approval: E131787  
EAC approval: RU C-IT DM94.B.01024

#### General data

##### RJ45



The network socket uses RJ45 connectors, for Ethernet networks. Its particular structure makes it possible to bring the Ethernet connection outside the electrical panel, without necessarily needing it to be opened.

##### Metal fixing ring



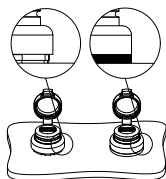
The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.

##### Protection degree IP67

**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required.

##### Shaped ring



The shaped ring can be used when no plate holder or other devices are applied; it prevents dirt and other residues from settling between the connector and the panel or housing. This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

##### Integrated protection cap

The protection cap integrated in the device ensures maximum resistance, preventing any water or dirt to get inside. The cap remains attached to the device even when it is not fastened, avoiding it to get lost; besides, its design allows the mounting of label holders.

#### Technical data

##### General data

Connections:	RJ45
Data transmission speed:	1 Gb/s category 5e
Protection degree:	IP67 acc. to EN 60529 (with closed cap)
Ambient temperature:	-25°C ... +70°C
Tightening torque of the ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

##### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14

##### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

#### Features approved by UL

Ratings: 30 Vac, 1.5 A  
(Supplied by class 2 or limited energy external power supply source)

Tightening torque 2.0 Nm

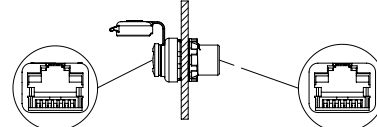
With port cover in open position "For Use on a Flat Surface of a Type 1", with port cover in close position "For Use on a Flat Surface of a Type 1, 4X, 12 and 13"

Please contact our technical department for the list of approved products.

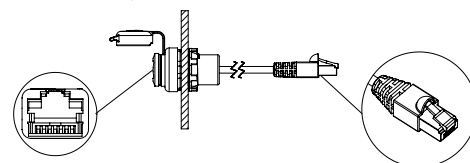
#### Versions with socket and with cable

For making device installation flexible and suitable for any situation there are two versions available:

- with female socket-to-female socket connection

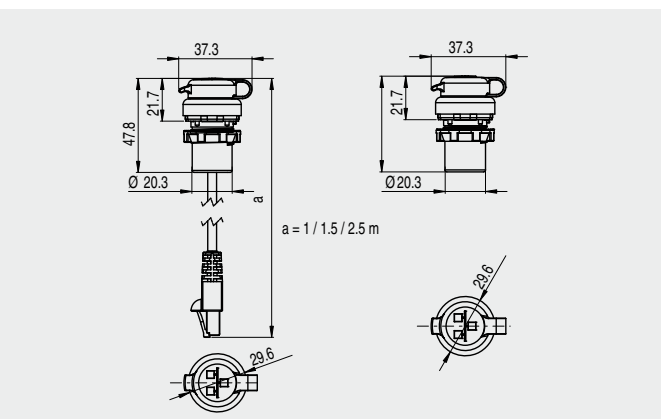


- with female socket / cable with male connector (available in different lengths)



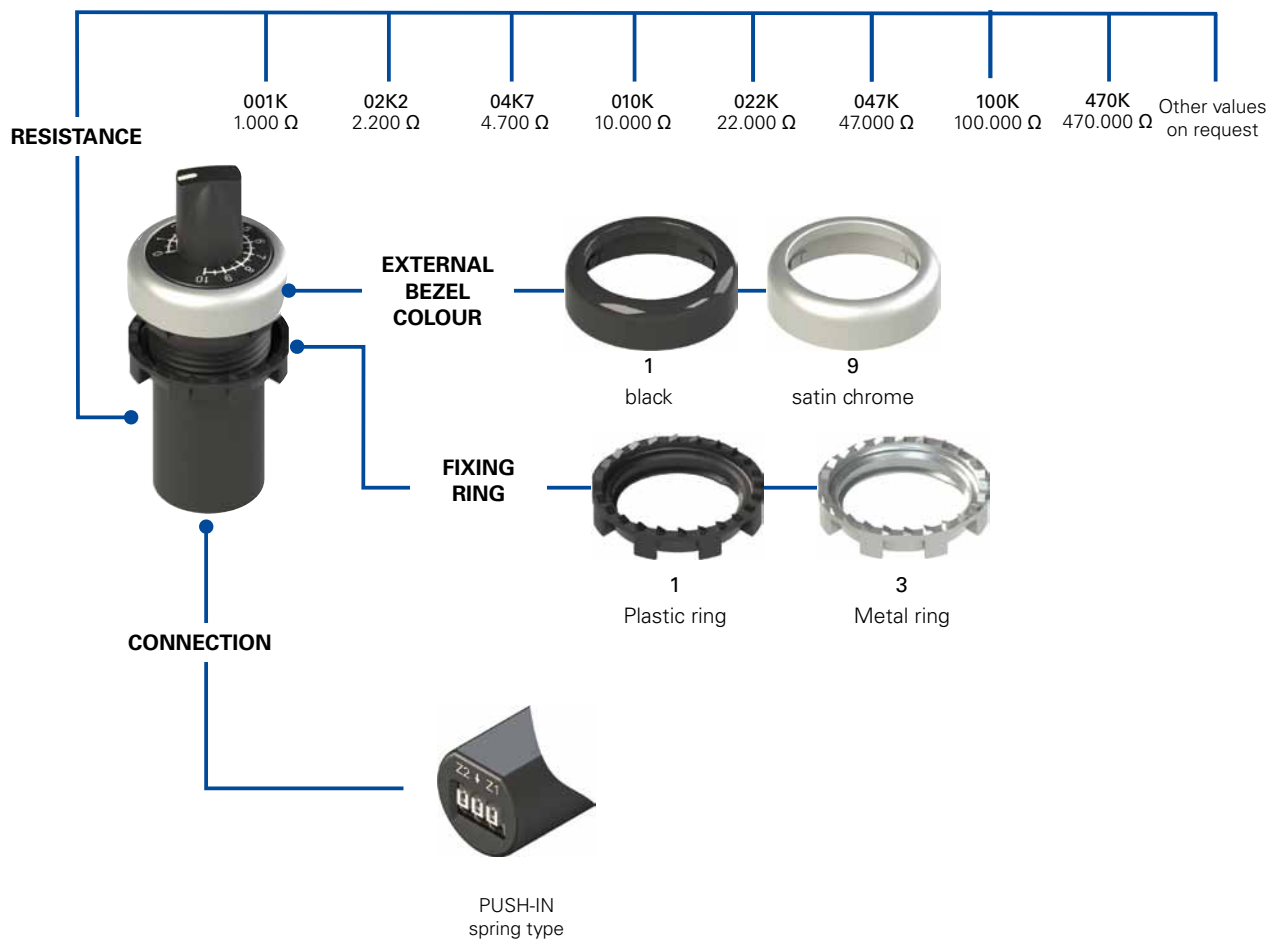
#### Dimensions

All measures in the drawings are in mm





## Selection diagram



## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

E6 1DM02K2-D111

## Fixing ring and shaped ring

- |   |                                     |
|---|-------------------------------------|
| 1 | Plastic ring (standard)             |
| 2 | Plastic fixing ring and shaped ring |
| 3 | Metal ring                          |
| 4 | Metal fixing ring and shaped ring   |

## External bezel colour

- |   |                         |
|---|-------------------------|
| 1 | black (standard)        |
| 9 | satin chrome (standard) |

## Resistance

- |      |                |
|------|----------------|
| 001K | 1 k $\Omega$   |
| 02K2 | 2,2 k $\Omega$ |
| 04K7 | 4,7 k $\Omega$ |
| 010K | 10 k $\Omega$  |
| 022K | 22 k $\Omega$  |
| 047K | 47 k $\Omega$  |
| 100K | 100 k $\Omega$ |
| 470K | 470 k $\Omega$ |

Other values on request





### Main features

- Fully integrated potentiometer in monolithic body
- Protection degrees IP67 and IP69K
- Rotary potentiometer with Cermet technology
- 3-pole PUSH-IN type spring-operated connection system
- Various resistance values

### Quality marks:



UL approval: E131787

EAC approval: RU C-IT DM94.B.01024

### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EC

## Technical data

### General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-40°C ... +80°C
Mechanical endurance:	50,000 operating cycles
Mechanical travel:	285°
Tightening torque of the fixing ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

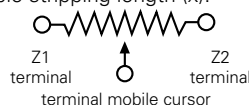
### Electrical data

Rated insulation voltage (Ui):	300 Vac/dc
Resistive material:	Cermet
Operation:	linear
Resistance tolerance:	±10%
Cross-section of rigid/flexible wires w. wire-end sleeve:	min 1 x 0.34 mm <sup>2</sup> (1 x AWG 24)

max 1 x 1.5 mm<sup>2</sup> (1 x AWG 16)  
Wire cross-section with pre-insulated wire-end sleeve: min 1 x 0.34 mm<sup>2</sup> (1 x AWG 24)

### Connection system:

Cable stripping length (x):

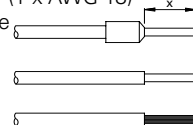


max 1 x 0.75 mm<sup>2</sup> (1 x AWG 18)

PUSH-IN spring type

min.: 8 mm

max.: 12 mm



Resistance	Rated operating voltage Ue max	Rated operating current Ie max	Power (70 °C) max.
1 kΩ	31 V	31 mA	1 W
2,2 kΩ	46 V	21 mA	1 W
4,7 kΩ	63 V	14 mA	1 W
10 kΩ	100 V	10 mA	1 W
22 kΩ	148 V	6,7 mA	1W
47 kΩ	217 V	4.6 mA	1 W
100 kΩ	300 V	3 mA	0,9 W
470 kΩ	300 V	0,75 mA	0,23 W

Other resistance values are available. Please contact our sales office.

## Features approved by UL

Operating voltage (Ue): 30 Vac, 31 mA

For Use on a Flat Surface of a Type 1, 4X, 12 and 13

Tightening torque 2.0 Nm

Note: Supply from Remote Class 2 Source or limited energy external power supply source.

## General data

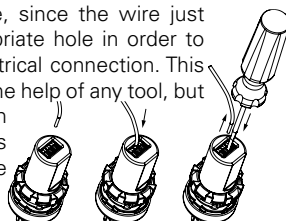
### Integrated potentiometer



Thanks to its monolithic shape, it has been possible to integrate all the mechanical and electrical components needed for its end use inside the E6 series potentiometer body; it is therefore not necessary to assemble any other parts, such as knobs or trimmers, all that is required is to insert the circuit wires into the incorporated terminal board. Moreover, the resistive element used is made of a composite ceramic and metal material, produced with the Cermet technology, which ensures remarkable stability and constancy in the set resistance value.

### PUSH-IN spring-operated connection

The potentiometer is provided with a three-pole terminal board with PUSH-IN type spring-operated connection. This technology allows a very handy quick wiring procedure, since the wire just needs to be inserted into the appropriate hole in order to be secured and to establish the electrical connection. This operation can be carried out without the help of any tool, but simply using rigid or flexible wires with a crimped wire-end sleeve. Release is obtained by pressing the appropriate wire-releasing button.

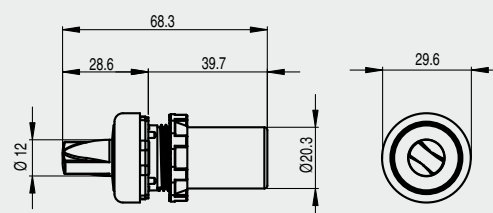


## Protection degrees IP67 and IP69K

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and a 80°C).

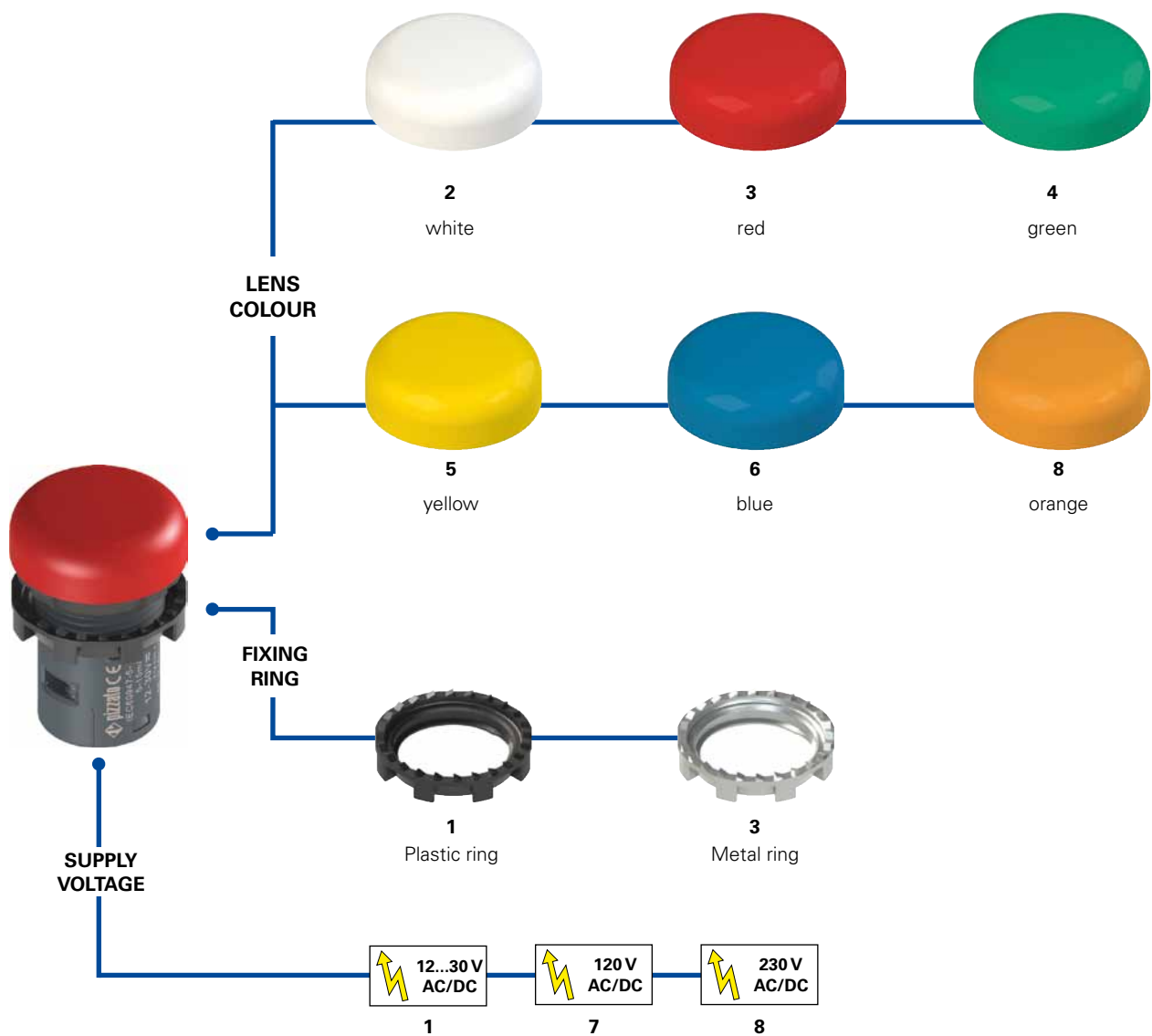
## Dimensions

All measures in the drawings are in mm






Selection diagram



**Code structure** **Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

E6 1IL1A2110

Fixing ring and shaped ring		Engraving	
1	Plastic ring (standard)	0	no engraving (standard)
2	Plastic fixing ring and shaped ring	IT7	IN SERVIZIO
3	Metal ring	L54	
4	Metal fixing ring and shaped ring	...	.....

Other engravings on request. See page 138.

Supply voltage		Lens colour	
1	12 ... 30 Vac/dc (high luminosity)	2	white
7	120 Vac/dc (standard luminosity)	3	red
8	230 Vac/dc (standard luminosity)	4	green
		5	yellow
		6	blue
		8	orange





### Main features

- Fully integrated indicator light in monolithic body
- Protection degrees IP67 and IP69K
- Three supply voltages:  
12 ... 30 Vac/dc, 120 Vac/dc, 230 Vac/dc
- Customisation with symbols available

### Quality marks:



UL approval: E131787  
EAC approval: RU C-IT DM94.B.01024

### Technical data

#### General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653 (with shaped ring VE GP12H1A or plate holder VE PT32A00A0)
Ambient temperature:	-40°C ... +70°C
Endurance:	Min. 50,000 hours (at rated voltage and +25 °C ambient temperature)
Tightening torque of the terminal screws:	0.8 ... 1 Nm
Tightening torque of the fixing ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

#### LED unit

Cable cross section:	min 1 x 0.34 mm <sup>2</sup> (1 x AWG 22) max. 2 x 1.5 mm <sup>2</sup> (2 x AWG 16)
----------------------	--

Operating voltages and currents: (high luminosity)	12 ... 30 Vac/dc; 5 ... 15 mA
---	-------------------------------

Operating voltages and currents: (standard luminosity)	102 ... 138 Vac/dc; 2.5 mA 195 ... 264 Vac/dc; 2.5 mA
---	--

#### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

### Features approved by UL

For Use on a Flat Surface of a Type 1, 4X, 12 and 13  
Pollution degree 2  
Overvoltage category 3  
Wire range 16-22 AWG  
The tightening torque of the Terminals Block is 0.8-1.0 Nm

### General data

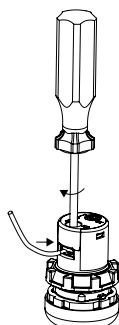
#### Protection degrees IP67 and IP69K

**IP69K**  
**IP67**

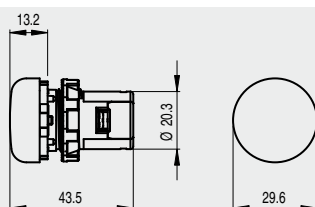
These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and a 80°C).

#### Integrated screw connection

The shape of the type E6 indicator light, though very compact, allows the integration on the device of all components for proper installation and functioning. All that is required is to wire the device by means of its screw terminals in a quick and intuitive way. There is no need to install further components.









### Dimensions



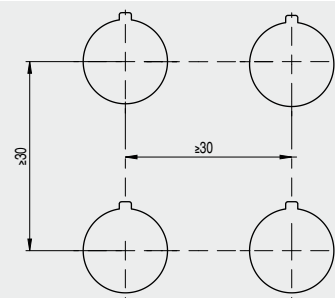
### Selection table

Packs of 10 pcs.

Colour	12 ... 30 Vac/dc	Operating voltage 120 Vac/dc	230 Vac/dc
 white	E6 1IL1A2110	E6 1IL7A2110	E6 1IL8A2110
 red	E6 1IL1A3110	E6 1IL7A3110	E6 1IL8A3110
 green	E6 1IL1A4110	E6 1IL7A4110	E6 1IL8A4110
 yellow	E6 1IL1A5110	E6 1IL7A5110	E6 1IL8A5110
 blue	E6 1IL1A6110	E6 1IL7A6110	E6 1IL8A6110
 orange	E6 1IL1A8110	E6 1IL7A8110	E6 1IL8A8110

Items with code on **green** background are stock items

### Minimum distances for installation

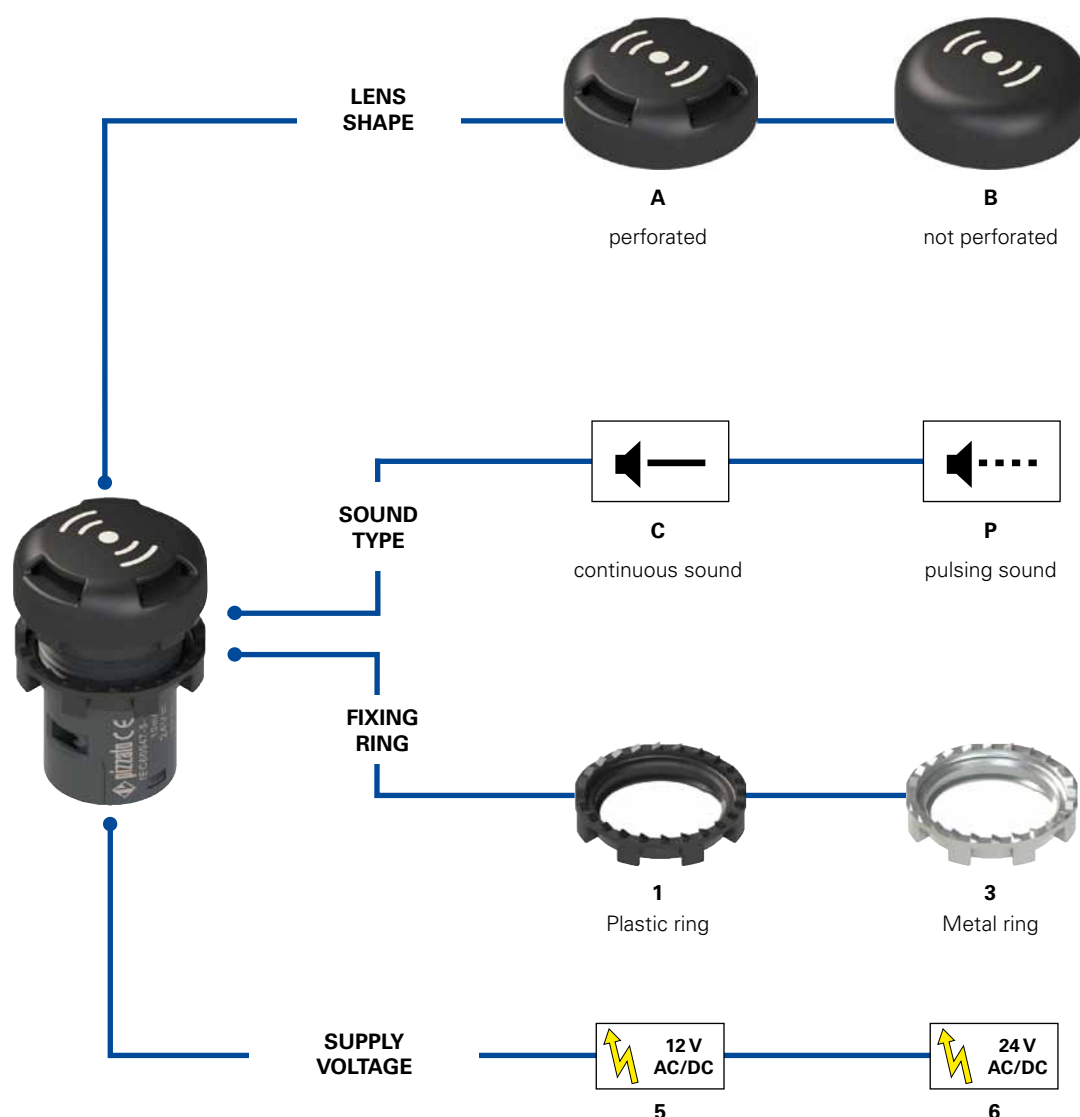


All measures in the drawings are in mm

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



# Selection diagram



## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

### E6 1IS6A1CV1B

#### Fixing ring and shaped ring

- 1** Plastic ring
- 2** Plastic fixing ring and shaped ring
- 3** Metal ring
- 4** Metal fixing ring and shaped ring

#### Sound type

- C** continuous sound
- P** pulsing sound

#### Supply voltage

- 5** 12 Vac/dc
- 6** 24 Vac/dc

#### Lens shape

- A** perforated
- B** not perforated





### Main features

- Buzzer fully integrated in a reduced-size monolithic body
- Protection degree up to IP67 and IP69K
- Continuous sound and pulsed sound versions
- High sound intensity
- 12 Vac/dc or 24 Vac/dc versions

### Quality marks:



UL approval: E131787  
EAC approval: RU C-IT DM94.B.01024

## Technical data

### General data

Protection degree:	IP40 acc. to EN 60529
Version with perforated lens:	IP67 acc. to EN 60529
Version with perforation-free lens:	IP69K acc. to ISO 20653 (with shaped ring VE GP12H1A or plate holder VE PT32A00A0)
Ambient temperature:	-20 °C ... +70 °C
Tightening torque of the terminal screws:	0.8 ... 1 Nm
Tightening torque of the fixing ring:	2 ... 2.5 Nm
Utilization requirements:	See page 139

### Electrical data

Cable cross section:	min 1 x 0.34 mm <sup>2</sup> (1 x AWG 22) max. 2 x 1.5 mm <sup>2</sup> (2 x AWG 16)
Operating voltage $U_n$ :	12 Vac/dc or 24 Vac/dc
Supply voltage tolerance:	±15% of $U_n$
Operating current:	10 mA
Level of sound intensity:	24 Vac/dc versions 90 dB at 10cm (perforated lens) 80 dB at 10cm (perforation-free lens)
	12 Vac/dc versions 90 dB at 10cm (perforated lens) 70 dB at 10cm (perforation-free lens)

Frequency of intermittence (pulsed version): 0.6 Hz (0.8 s ON, 0.8 s OFF)

### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

### Features approved by UL

Ratings: 12 V ac/dc or 24 V ac/dc (Supplied by class 2 or limited energy external power supply source)	- E6 xISxAXxxx: "For Use on a Flat Surface of a Type 1" - E6 xISxBxxx: "For Use on a Flat Surface of a Type 1, 4X, 12 and 13"	Wire range 16-22 AWG The tightening torque of the Terminals Block is 0.8-1.0 Nm
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## General data

### Protection degrees IP67 and IP69K

**IP69K**  
**IP67**

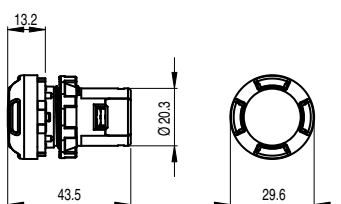
These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and a 80°C).

### Integrated screw connection

The shape of the type E6 sound indicator, though very compact, allows the integration on the device of all components for proper installation and functioning. All that is required is to wire the device by means of its screw terminals in a quick and intuitive way. There is no need to install further components.



### Dimensions





The E6 buzzer combines compact external dimensions with a high sound intensity, in particular in the versions with perforated lens. This characteristic makes the signalling clearly noticeable, even at a distance and in noisy environments.

All measures in the drawings are in mm

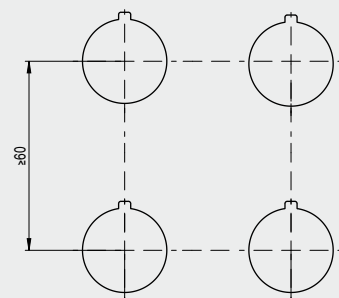
### Two sound types

— To diversify the type of indication provided, there are two different types of acoustic warning available: continuous sound or pulsing sound.

### Selection table

Lens shape	Sound type and supply voltage			
	continuous sound		pulsing sound	
	12 Vac/dc	24 Vac/dc	12 Vac/dc	24 Vac/dc
 perforated	E6 1IS5A1CV1B	E6 1IS6A1CV1B	E6 1IS5A1PV1B	E6 1IS6A1PV1B
 not perforated	E6 1IS5B1CV1B	E6 1IS6B1CV1B	E6 1IS5B1PV1B	E6 1IS6B1PV1B

### Minimum distances for installation



→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



Selection diagram



ES 31000  
grey cover  
1 hole, Ø 22 mm



ES 31001  
yellow cover  
1 hole, Ø 22 mm



ES 32000  
grey cover  
2 holes, Ø 22 mm



ES 33000  
grey cover  
3 holes, Ø 22 mm



ES 34000  
grey cover  
4 holes, Ø 22 mm



ES 36000  
grey cover  
6 holes, Ø 22 mm



Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

ES 31001

Body material

**3** polycarbonate PC (standard)

Configuration

**000** black base, grey cover

Other combinations on request.

Housing dimensions

**1** 72x80h56 mm

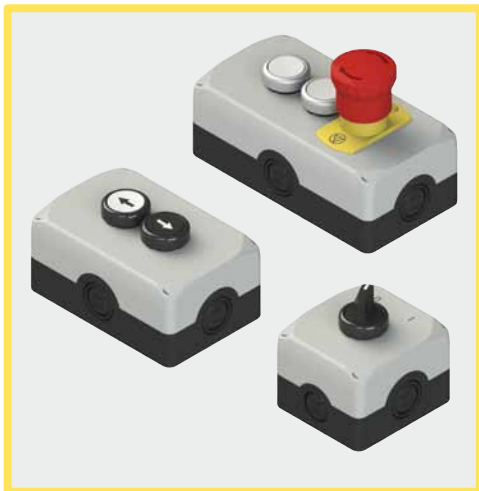
**2** 120x80h56 mm

**3** 153x80h56 mm

**4** 186x80h56 mm

**6** 252x80h56 mm





## Main features

- Protection degrees IP67 and IP69K
- Stainless steel captive screws
- 4 side cable entries
- Screw caps included in the scope of supply

## Quality marks:



EAC approval: RU C-IT DM94.B.01024

## Technical data

### Housing

Material:

Self-extinguishing shock-proof polycarbonate with double insulation, UV-resistant and glass fibre reinforced, high shock resistance.

Material of the screws:

Stainless steel

Protection degree:

IP67 acc. to EN 60529

IP69K acc. to ISO 20653 (cable gland with same or higher protection degree)

Conduit entries:

Housing (1 hole):

- 4x knock-out side entries:  
2x M20 - 1/2 NPT, 2x M20 - 1/2 NPT - M25
- 2x M16 knock-out base entries

Housings with 2-3-4-6 holes:

- 4x knock-out side entries:  
4x M20 - 1/2 NPT - M25
- 2x M20 knock-out base entries

Device installation:

Suitable for the installation of Ø 22 mm control and signalling devices.

Ø 22 mm hole acc. to EN 60947-5-1

Utilization requirements:

See page 139

## General data

Ambient temperature:

-40°C ... +80°C

Tightening torque of the cover screws: 1 ... 1.4 Nm

## In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

## Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

## General data

### Protection degrees IP67 and IP69K

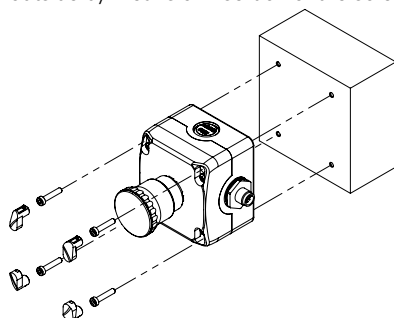
**IP69K**  
**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection

degree of the housing is required. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and a 80°C).

### Fixing of EROUND housings

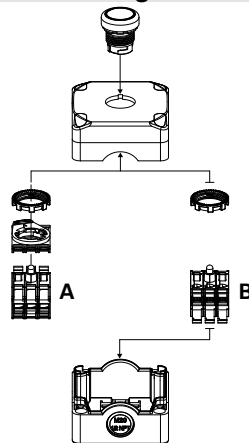
The new housings of the EROUND line by Pizzato Elettrica have 4 additional holes on the cover. The holes enable wall fixing from the outside by means of insertion of the screws, without the need to open the cover to access the holes.



The wall fixing screws and the ones for closing the housing cover can be sealed with 4 caps (supplied with the housing). The caps not only give the housing a more pleasant look, but they also prevent the accumulation of dirt inside the recesses of the screws besides making tampering more difficult.

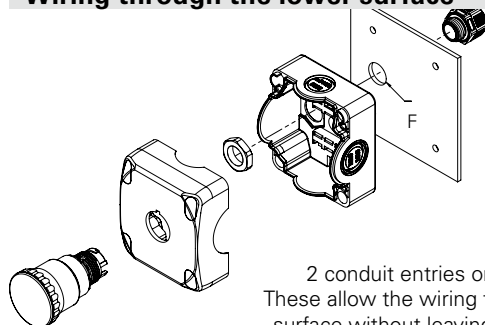
The external fixing of the housing is particularly valuable for already wired housings, since this simplifies the whole installation: you can simply fix the housing and connect the connector that, thanks to the presence of cable entries on the four sides of the housing, can be oriented in the preferred direction.

### One housing, two solutions



The housing can fit up to 3 contact blocks/LED units (E2 CP, E2 LP) for panel mounting by means of a mounting adapter (A) or up to 3 contact blocks/LED units (E2 CF, E2 LF) for base mounting directly on the bottom of the housing (B).

### Wiring through the lower surface

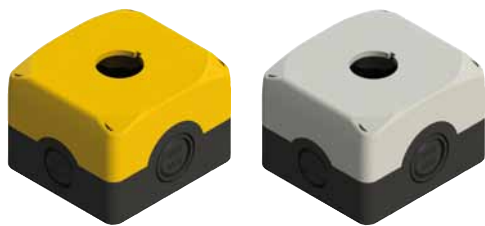




cable gland	F
M16	Ø 25
M20	Ø 28

Housings have 2 conduit entries on the lower surface. These allow the wiring through the support surface without leaving electrical cables in sight.





Selection table for housings






Cover colour	Article	Ø 22 mm hole
 yellow RAL 1003	ES 31001	1
 grey RAL 7035	ES 31000	1






Cover colour	Article	Ø 22 mm hole
 grey RAL 7035	ES 32000	2
 grey RAL 7035	ES 32002	0






Cover colour	Article	Ø 22 mm hole
 grey RAL 7035	ES 33000	3
 grey RAL 7035	ES 33002	0
 grey RAL 7035	ES 33003	2



Cover colour	Article	Ø 22 mm hole
 grey RAL 7035	ES 34000	4
 grey RAL 7035	ES 34002	0
 grey RAL 7035	ES 34003	3













Cover colour	Article	Ø 22 mm hole
 grey RAL 7035	ES 36000	6
 grey RAL 7035	ES 36002	0
 grey RAL 7035	ES 36003	5

Items with code on **green** background are stock items



## Complete units with housings





Housing cover colour	Actuator colour and engraving	Contacts			Flush button black bezel	Projecting button black bezel
		pos. 2	pos. 3	pos. 1		
 grey RAL 7035	 green	-	1NO	-	<b>ES AC31001</b> ES 31000 + E2 1PU2R421L2 + E2 CF10G2V1	-
 grey RAL 7035	 red	-	1NC 	-	<b>ES AC31002</b> ES 31000 + E2 1PU2R321L1 + E2 CF01G2V1	<b>ES AC31017</b> ES 31000 + E2 1PU2S321L1 + E2 CF01G2V1
 grey RAL 7035	 green	-	1NO	-	<b>ES AC31015</b> ES 31000 + E2 1PU2R421GB1 + E2 CF10G2V1	-
 grey RAL 7035	 red	-	1NC 	-	<b>ES AC31016</b> ES 31000 + E2 1PU2R321GB0 + E2 CF01G2V1	<b>ES AC31018</b> ES 31000 + E2 1PU2S321GB0 + E2 CF01G2V1

Other combinations on request.

→ For data regarding contact blocks, please see the respective chapters.



Housing cover colour	Positions	Contacts			Black selector switch with 2 positions black bezel
		pos. 2	pos. 3	pos. 1	
 grey RAL 7035		-	1NO	-	<b>ES AC31019</b> ES 31002 + E2 1SE12AVA11AB + E2 CF10G2V1

Housing cover colour	Positions	Contacts			Black key selector switch with 2 positions black bezel
		pos. 2	pos. 3	pos. 1	
 grey RAL 7035		-	1NO	-	<b>ES AC31020</b> ES 31000 + E2 1SC2AVA11AE + E2 CF10G2V1


















Other combinations on request.

→ For data regarding contact blocks, please see the respective chapters.

Other combinations on request.

**Legend**  Maintained  Spring-return  Key extraction position



Housing cover colour	Actuator design and colour	Contacts			Emergency button Push-Pull	Emergency button rotary release	Emergency button key release
		pos. 2	pos. 3	pos. 1			
 yellow RAL 1003	 red	-	1NC 	-	<b>ES AC31004</b> ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1	<b>ES AC31003</b> ES 31001 + E2 1PERZ4531 + E2 CF01G2V1	<b>ES AC31022</b> ES 31001 + E2 1PEBZ4531 + E2 CF01G2V1
 yellow RAL 1003	 red	-	1NC  SELF-MONITORED	-	<b>ES AC31081</b> ES 31001 + E2 1PEPZ4531 + E2 CF01S2V1	<b>ES AC31082</b> ES 31001 + E2 1PERZ4531 + E2 CF01S2V1	<b>ES AC31083</b> ES 31001 + E2 1PEBZ4531 + E2 CF01S2V1
 yellow RAL 1003	 red	1NC 	-	1NC 	<b>ES AC31009</b> ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF01G2V1	<b>ES AC31005</b> ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF01G2V1	<b>ES AC31023</b> ES 31001 + E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF01G2V1
 yellow RAL 1003	 red	1NC 	-	1NO	<b>ES AC31010</b> ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF10G2V1	<b>ES AC31006</b> ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF10G2V1	<b>ES AC31011</b> ES 31001 + E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF10G2V1
 yellow RAL 1003	 red	1NC 	1NC 	1NO	<b>ES AC31146</b> ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1	<b>ES AC31021</b> ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1	<b>ES AC31024</b> ES 31001 + E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1

Other combinations on request.










→ For data regarding contact blocks, please see the respective chapters.

Items with code on **green** background are stock items



## Complete units with housings




















Housing cover colour	Actuator design and colour	Contacts			Emergency button Push-Pull Yellow luminous disc, blinking Ø 60 mm, 24 Vac/dc	Emergency button rotary release Yellow luminous disc, blinking Ø 60 mm, 24 Vac/dc	Emergency button key release Yellow luminous disc, blinking Ø 60 mm, 24 Vac/dc
		pos. 2	pos. 3	pos. 1			
		1NO	1NC 	CONNECTION BLOCK	<b>ES AC31430</b> ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1	<b>ES AC31433</b> ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1	<b>ES AC31436</b> ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1
		1NO	1NC  SELF-MONITORED	CONNECTION BLOCK	<b>ES AC31431</b> ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1	<b>ES AC31434</b> ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1	<b>ES AC31437</b> ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1
		1NO	2NC 	CONNECTION BLOCK	<b>ES AC31432</b> ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1	<b>ES AC31435</b> ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1	<b>ES AC31438</b> ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1

Other combinations on request.

➔ For data regarding contact blocks and luminous discs, please see the respective chapters.





Housing cover colour	Actuator design and colour	Contacts			Emergency button rotary release with plastic M12 connector
		pos. 2	pos. 3	pos. 1	
		-	1NC 	-	<b>ES AC31025</b>
		-	1NC  SELF-MONITORED	-	<b>ES AC31084</b>
		1NC 	-	1NC 	<b>ES AC31026</b>
		1NC 	-	1NO	<b>ES AC31027</b>
		1NC 	1NC 	1NO	<b>ES AC31028</b>

Other combinations on request.

Wiring diagram for assembled M12 connectors, see page 150.

➔ For data regarding contact blocks, please see the respective chapters.

## Spare caps

Article	Description	
	<b>VETS35RA1</b>	4 spare caps for ES series housing cover. Colour: yellow
	<b>VETS39RA1</b>	4 spare caps for ES series housing cover. Colour: grey

## Accessories

➔ More ACCESSORIES on page 135





ES AC32012					
Description		Features			Diagram
<b>Button - 1NO</b> E2 1PU2R221L9 Contacts 1x E2 CF10G2V1		flush, spring-return, white			
		pos. 2 /	pos. 3 1NO	pos. 1 /	
<b>Button - 1NO</b> E2 1PU2R121L10 Contacts 1x E2 CF10G2V1		flush, spring-return, black			
		pos. 2 /	pos. 3 1NO	pos. 1 /	



ES AC32010					
Description		Features			Diagram
<b>Button - 1NO</b> E2 1PU2R421L35 Contacts 1x E2 CF10G2V1		flush, spring-return, green			
		pos. 2 /	pos. 3 1NO	pos. 1 /	
<b>Button - 1NC</b> E2 1PU2S321L1 Contacts 1x E2 CF01G2V1		projecting, spring-return, red			
		pos. 2 /	pos. 3 1NC ⊕	pos. 1 /	



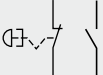



ES AC32011					
Description		Features			Diagram
<b>Button - 1NO</b> E2 1PU2R421L51 Contacts 1x E2 CF10G2V1		flush, spring-return, green			
		pos. 2 /	pos. 3 1NO	pos. 1 /	
<b>Button - 1NC</b> E2 1PU2S321L48 Contacts 1x E2 CF01G2V1		projecting, spring-return, red			
		pos. 2 /	pos. 3 1NC ⊕	pos. 1 /	



ES AC33017					
Description		Features			Diagram
<b>Button - 1NO</b> E2 1PU2R221L9 Contacts 1x E2 CF10G2V1		flush, spring-return, white			
		pos. 2 /	pos. 3 1NO	pos. 1 /	
<b>Button - 1NC</b> E2 1PU2S321L1 Contacts 1x E2 CF01G2V1		projecting, spring-return, red			
		pos. 2 /	pos. 3 1NC ☹	pos. 1 /	
<b>Button - 1NO</b> E2 1PU2R121L10 Contacts 1x E2 CF10G2V1		flush, spring-return, black			
		pos. 2 /	pos. 3 1NO	pos. 1 /	



ES AC34035				
Description	Features			Diagram
<b>Button - 1NO</b> E2 1PU2R221L9 Contacts 1x E2 CP10G2V1	flush, spring-return, white			
	pos. 2 /	pos. 3 1NO	pos. 1 /	
<b>Button - 1NO</b> E2 1PU2R121L10 Contacts 1x E2 CP01G2V1	flush, spring-return, black			
	pos. 2 /	pos. 3 1NO	pos. 1 /	
<b>Emergency button</b> E2 1PERZ4531 Contacts 1x E2 CP01G2V1+1x E2 CP10G2V1	rotary release, red			
	pos. 2 1 NO	pos. 3 /	pos. 1 1NC ⊕	
<b>Luminous disc</b> VE DL1A5L13	Yellow, continuous light 24 Vac/dc			



ES AC33016					
Description		Features			Diagram
<b>Button - 1NO</b> E2 1PU2R421L35 Contacts 1x E2 CF10G2V1		flush, spring-return, green			
		pos. 2 /	pos. 3 1NO	pos. 1 /	
<b>Button - 1NC</b> E2 1PU2S321L1 Contacts 1x E2 CF01G2V1		projecting, spring-return, red			
		pos. 2 /	pos. 3 1NC ⊖	pos. 1 /	
<b>Button - 1NO</b> E2 1PU2R421L36 Contacts 1x E2 CF10G2V1		flush, spring-return, green			
		pos. 2 /	pos. 3 1NO	pos. 1 /	

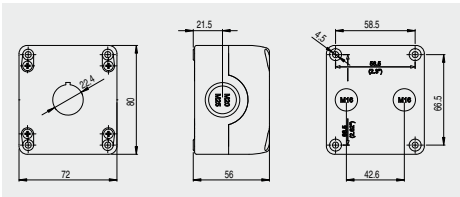
Other combinations on request.



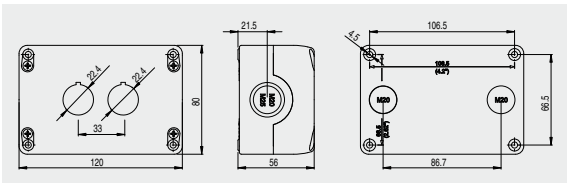
Dimensions

All measures in the drawings are in mm

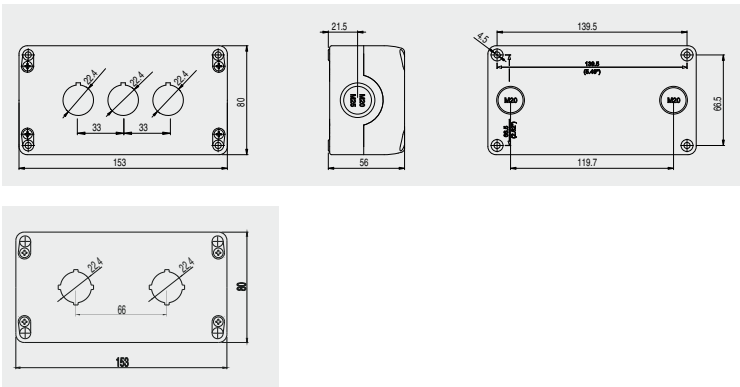
Housings (1 hole)



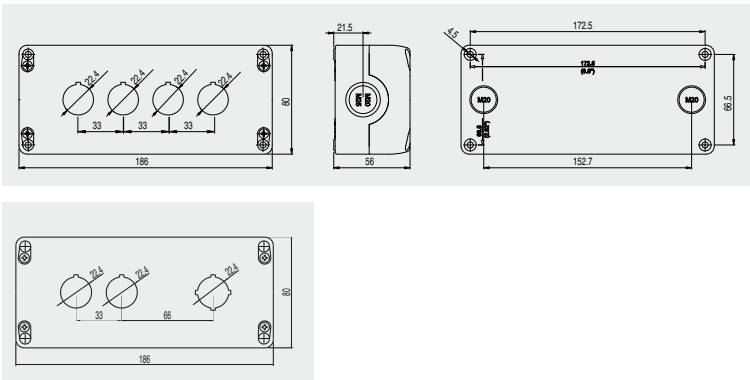
Housings (2 holes)



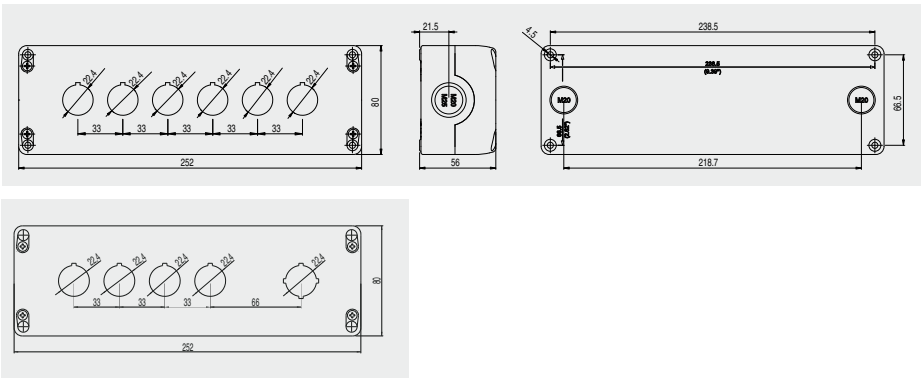
Housings (3 holes)



Housings (4 holes)



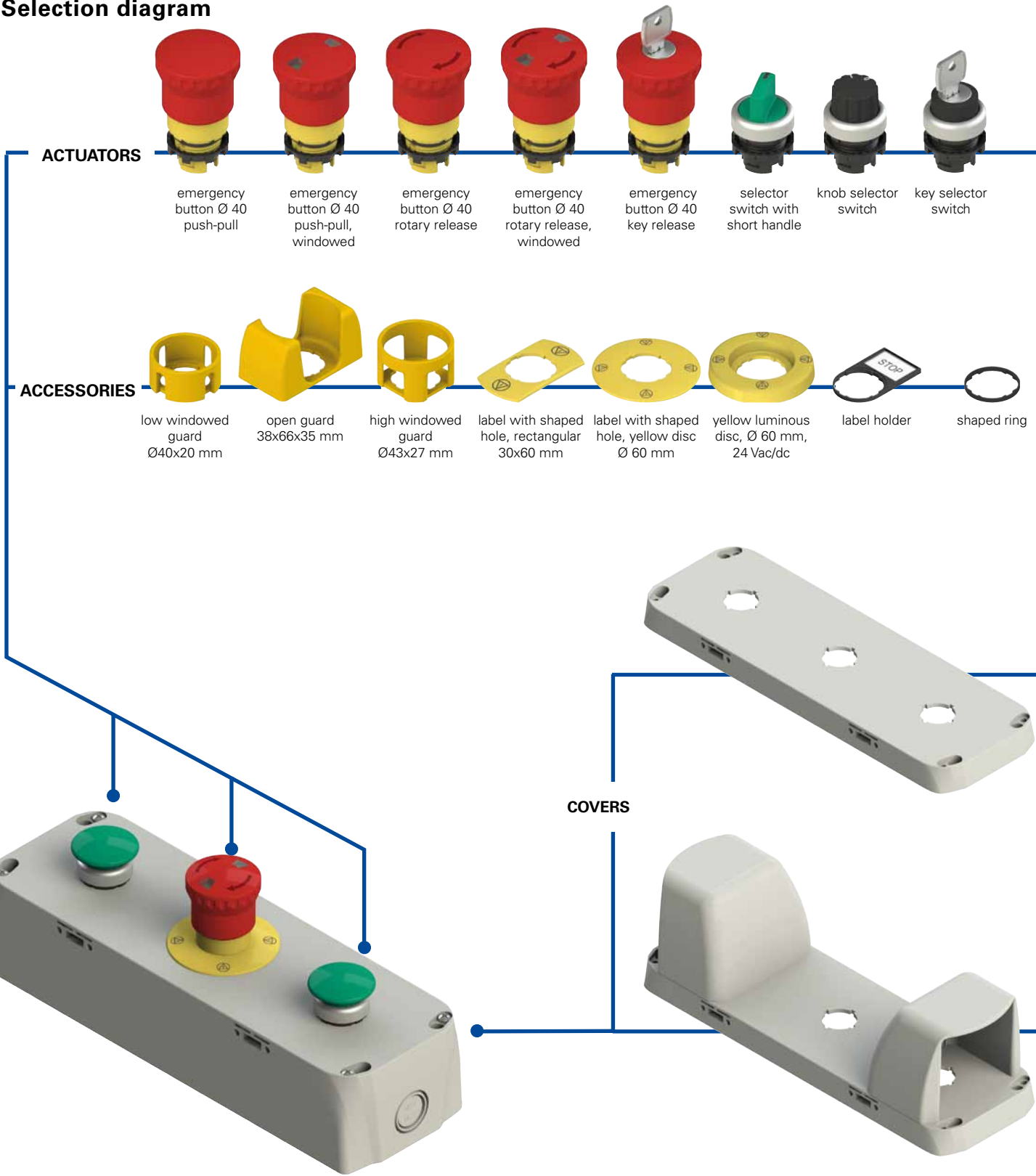
Housings (6 holes)



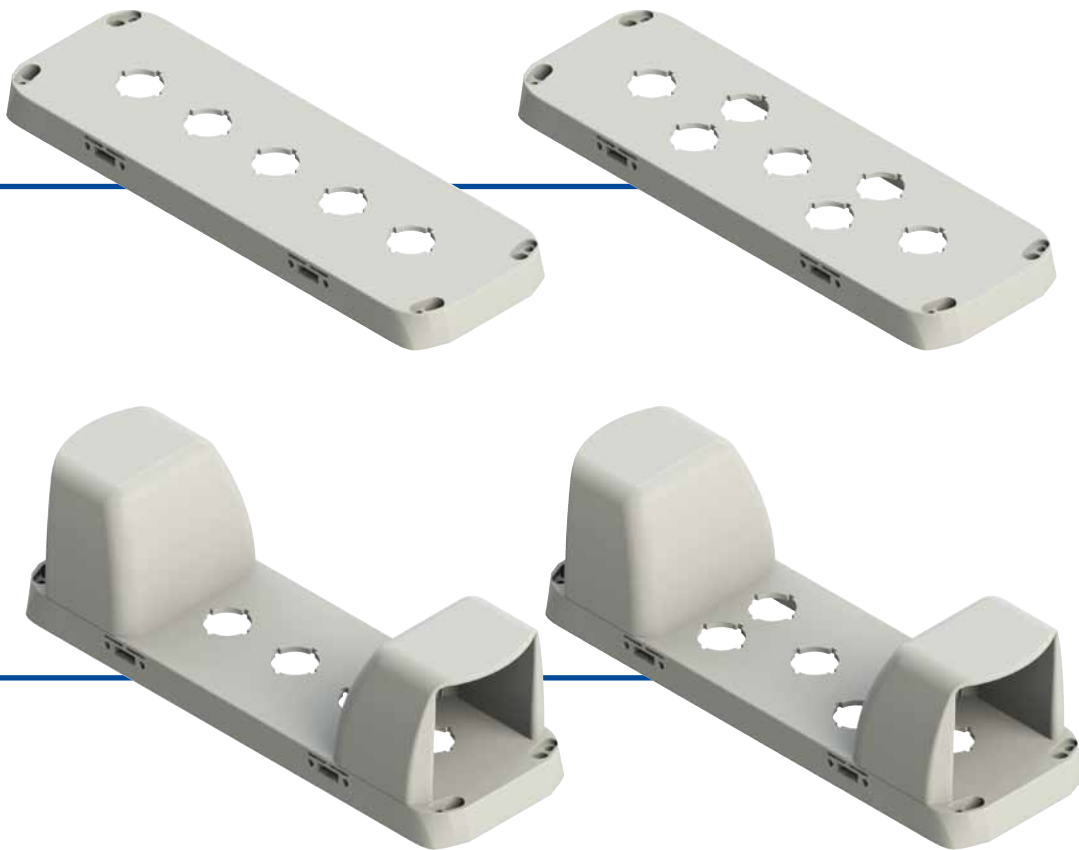
→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



Selection diagram







## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

## EA 37010

### Body material

**3** polycarbonate PC (standard)

### Configuration

**010** grey base, grey cover

... ..

### Housing dimensions

**7** 280x90 mm





**Main features**

- Protection degree IP65
- Stainless steel captive screws
- 2 x side cable entries + 2 x bottom cable entries

**Quality marks:**



EAC approval: RU C-IT DM94.B.01024

**Technical data**

**Housing**

Material:

Self-extinguishing shock-proof polycarbonate with double insulation, UV-resistant and glass fibre reinforced, high shock resistance.

Material of the screws:

Stainless steel

Protection degree:

IP65 acc. to EN 60529 (with cable gland showing equal or higher protection degree)

Conduit entries:

2 x M20 – M25 - 1/2 NPT knock-out side entries

2 x M20 – M25 - 1/2 NPT knock-out base entries

Device installation:

Suitable for the installation of Ø 22 mm control and signalling devices

Ø 22 mm hole acc. to EN 60947-5-1

Utilization requirements:

See page 139

For a correct operation in compliance with standard EN 574, the two-hand controls must be connected to a safety module for two-hand control safety device CS DM●●●●●. See Pizzato Elettrica's General Catalogue Safety.

**General data**

Ambient temperature:

-40°C ... +80°C

Tightening torque of the cover screws: 1 ... 1.4 Nm

**In compliance with standards:**

IEC 60947-1, IEC 60947-5-1, EN 574, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

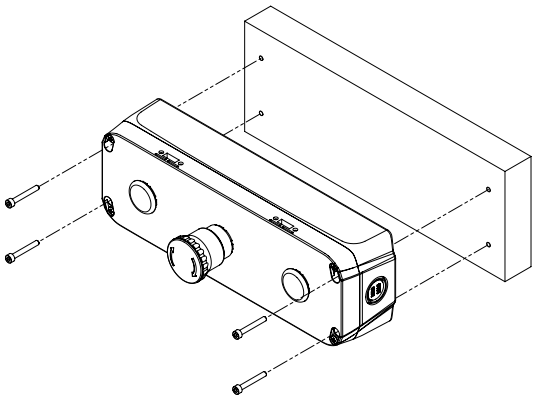
**Compliance with the requirements of:**

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

**General data**

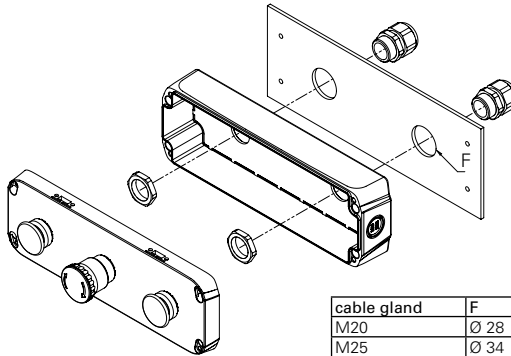
**Fixing of EROUND housings**

The new housings of the EROUND line by Pizzato Elettrica have 4 additional holes on the cover. The holes enable wall fixing from the outside by means of insertion of the screws, without the need to open the cover to access the holes. The external fixing of the housing is therefore particularly suited for already wired enclosures.



**Wiring through the lower surface**

Enclosures have 2 conduit entries on the lower surface. These allow the wiring through the support surface without leaving electrical cables in sight.






Selection table for housings




Colour	Article	Ø 22 mm hole
 grey RAL 7035	<b>EA 37014</b>	<b>3</b>




Colour	Article	Ø 22 mm hole
 grey RAL 7035	<b>EA 37015</b>	<b>3</b>



Colour	Article	Ø 22 mm hole
 grey RAL 7035	<b>EA 37010</b>	<b>5</b>



Colour	Article	Ø 22 mm hole
 grey RAL 7035	<b>EA 37011</b>	<b>5</b>



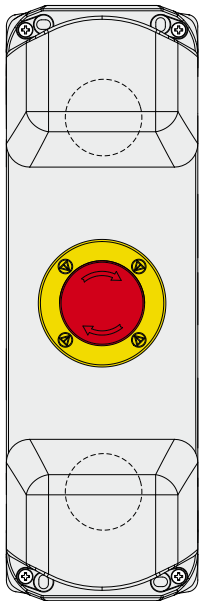
Colour	Article	Ø 22 mm hole
 grey RAL 7035	<b>EA 37012</b>	<b>7</b>



Colour	Article	Ø 22 mm hole
 grey RAL 7035	<b>EA 37013</b>	<b>7</b>



Complete units with housings

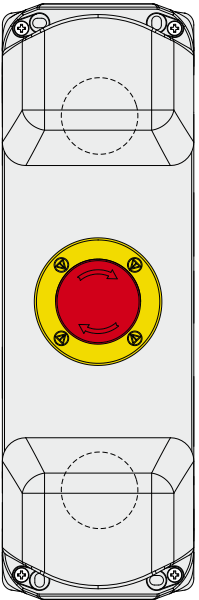


EA AC37040



Description	Features			Diagram
<b>Mushroom button - 1NO</b> E2 1PU2F4490 Guard VE GG3AA9A Contacts 1x E2 CP10G2V1	spring-return, green			
	pos. 2 /	pos. 3 1NO	pos. 1 /	
<b>Emergency button Ø 40 - 1NC</b> E2 1PERZ4531 Label VE TF32A5113 Contacts 1x E2 CP01G2V1	rotary release, 40 mm diameter, red			
	pos. 2 /	pos. 3 1NC ⊖	pos. 1 /	
<b>Mushroom button - 1NO</b> E2 1PU2F4490 Guard VE GG3AA9A Contacts 1x E2 CP10G2V1	spring-return, green			
	pos. 2 /	pos. 3 1NO	pos. 1 /	

For IIIA-cat. two-hand controls acc. to EN 574, combine with safety module or safety PLC.  
See Pizzato Elettrica's General Catalogue Safety.



EA AC37041



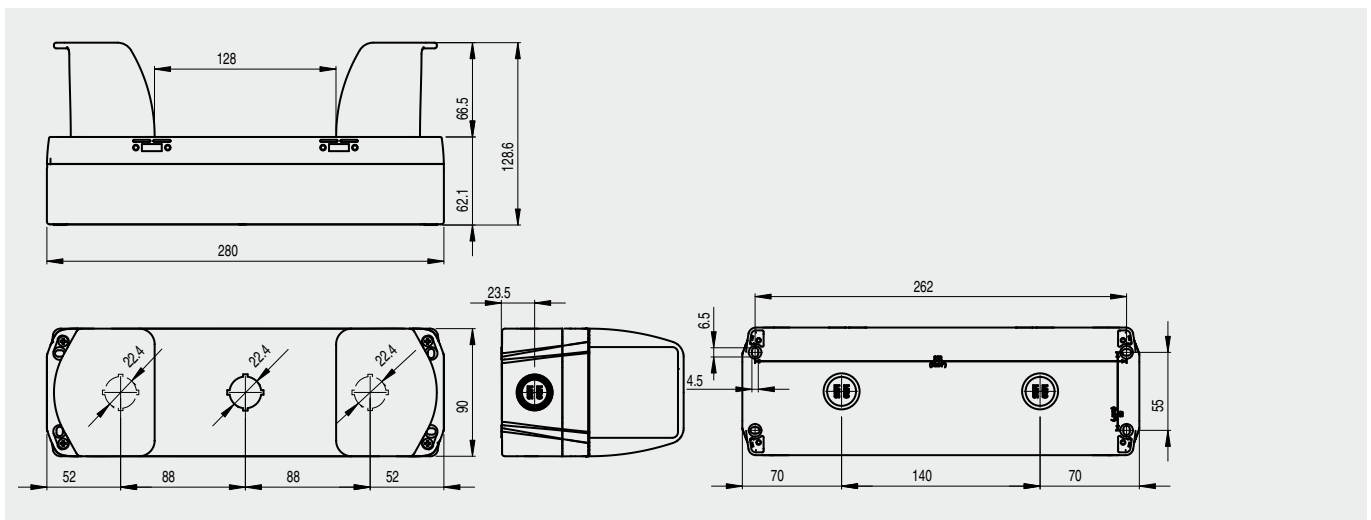
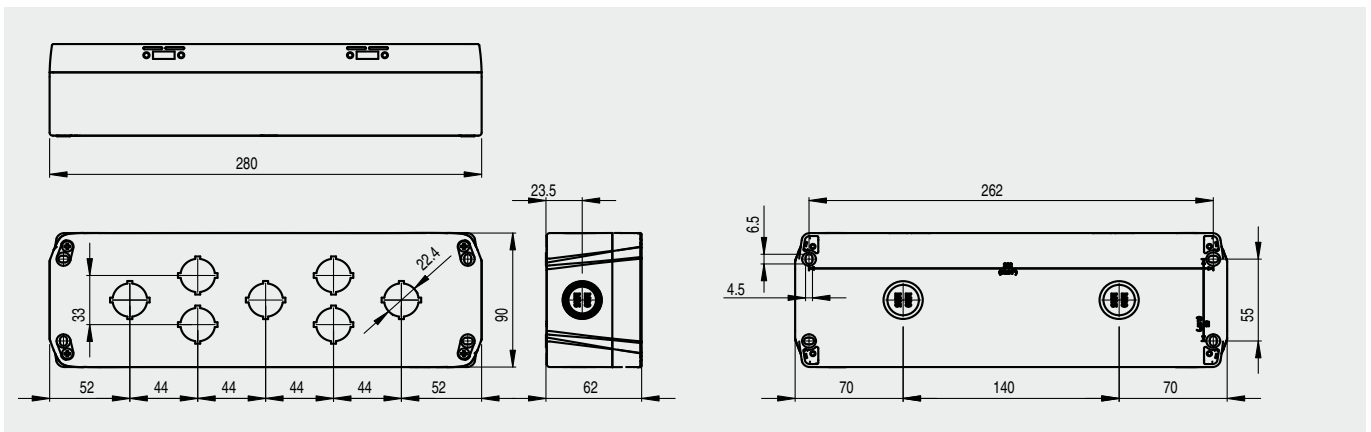
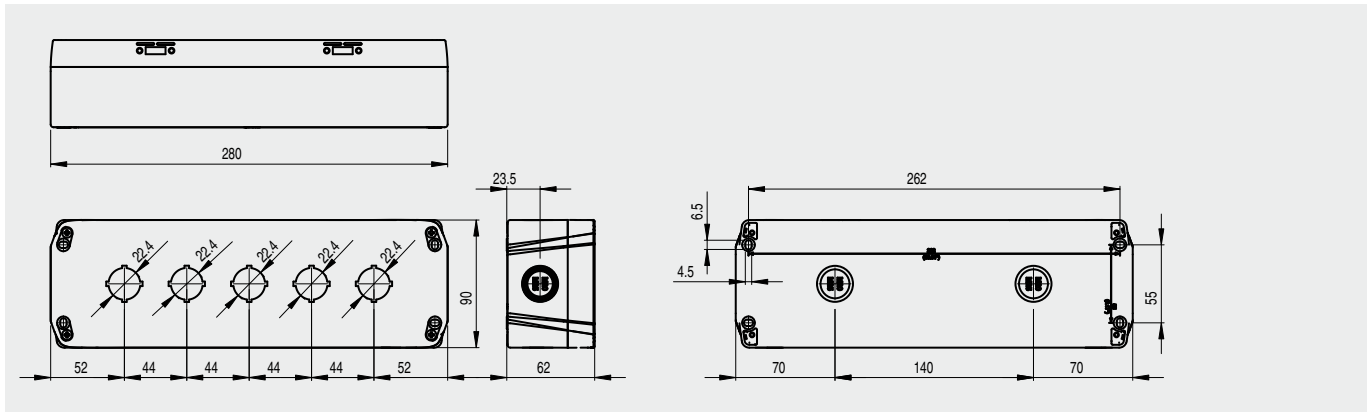
Description	Features			Diagram
<b>Mushroom button - 1NO+1NC</b> E2 1PU2F4490 Guard VE GG3AA9A Contacts E2 CP10G2V1 + E2 CP01G2V1	spring-return, green			
	pos. 2 /	pos. 3 1NO	pos. 1 1NC ⊖	
<b>Emergency button Ø 40 - 2NC</b> E2 1PERZ4531 Label VE TF32A5113 Contacts 2x E2 CP01G2V1	rotary release, 40 mm diameter, red			
	pos. 2 1NC ⊖	pos. 3 /	pos. 1 1NC ⊖	
<b>Mushroom button - 1NO+1NC</b> E2 1PU2F4490 Guard VE GG3AA9A Contacts E2 CP10G2V1 + E2 CP01G2V1	spring-return, green			
	pos. 2 /	pos. 3 1NO	pos. 1 1NC ⊖	

For IIIC-cat. two-hand controls acc. to EN 574, combine with safety module or safety PLC.  
See Pizzato Elettrica's General Catalogue Safety.



## Dimensions

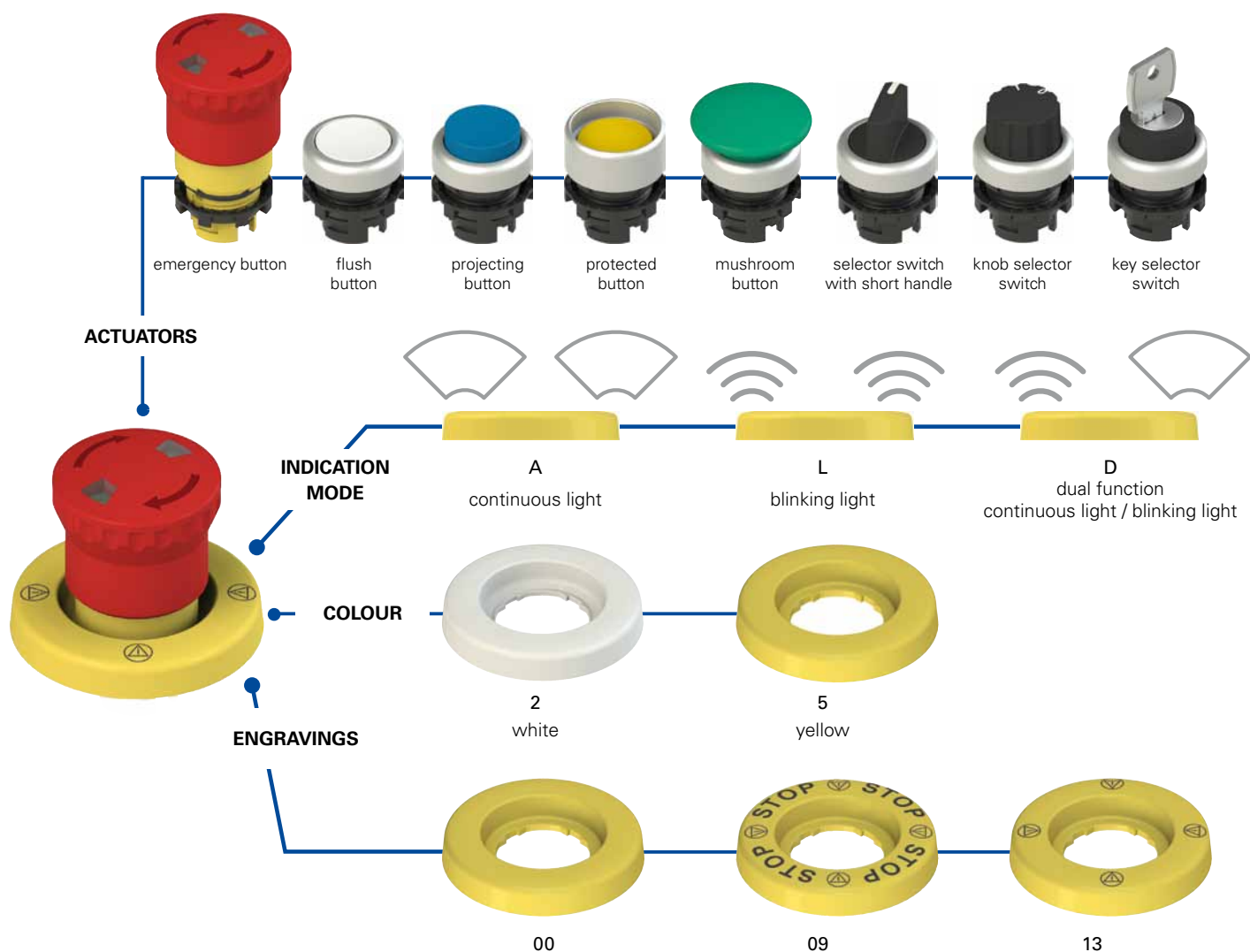
All measures in the drawings are in mm



→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)











## Selection diagram



### Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

## VE DL1A5A00

Supply voltage		Engraving	
1	24 Vac/dc	00	without engraving
5	12 Vac/dc	with engraving:	
Colour		09	STOP  STOP  STOP  STOP 
2		with engraving:	
5		13	   
Indication mode			
A		continuous light	
L		blinking light	
D		dual function continuous light / blinking light	





#### Main features

- High visibility
- Protection degree IP67
- Compact design
- Indelible laser engraving
- Customisable engravings
- Continuous, blinking or dual function light

#### Quality marks:



UL approval: E131787  
EAC approval: RU C-IT DM94.B.01024

### Technical data

#### General data

Protection degree:	IP67 acc. to EN 60529 (applied with the supplied adhesive)
Ambient temperature:	-25°C ... +70°C
Cable cross section:	0.25 mm <sup>2</sup> (AWG 24)
Cable laying:	fixed
Cable minimum bending radius:	14 mm
Cable insulation:	PVC
Operating voltage U <sub>e</sub> :	12 Vac/dc or 24 Vac/dc
Operating voltage tolerance:	±15% of U <sub>e</sub>
Operating current at U <sub>e</sub> voltage:	45 mA (12 Vac/dc version) 25 mA (24 Vac/dc version)
Blinking frequency (if present):	1 Hz
Utilization requirements:	See page 139

#### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 No. 14.

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU

### General data

#### Continuous or blinking light



The luminous disc can be supplied with two different lighting modes: continuous or blinking light. The blinking light versions allow a faster identification on the panel of

the lit device compared to the continuous light. The internal electronic circuit autonomously alternates the ON and OFF phases without requiring any special electrical connection.

#### Dual function luminous disc



This version of the luminous disc enables the device to be lit with a continuous or blinking light using a simple wiring system. The dual function luminous disc is fitted with three wires: depending on the

electrical connection, the light can be continuous or blinking.

#### Sticking

The luminous disc can also be installed using the supplied adhesive: simply remove the adhesive protective film placed under the disc. Thanks to this sticking, it is possible to get the perfect adhesion to the surface and the IP67 protection degree.

#### Customisable

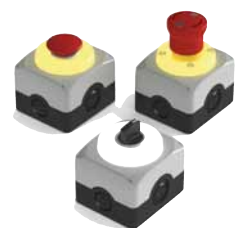


In order to satisfy various customer requests and demands, Pizzato Elettrica offers the possibility to customize the luminous discs with engravings that are extremely visible thanks to the uniform lightning of the device.

#### High visibility

Thanks to internal high luminosity LEDs the emergency button can be immediately recognized and located. This ensures a safer use in scarcely illuminated environments, or when the device is placed at distance, or in case of scarce visibility.

The ideal way to highlight also normal buttons or selectors.



#### Protection degree IP67

**IP67** These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required.












#### White lens version



The luminous disc can be purchased in the version with white lens and in the standard version with yellow lens. The white lens enables the luminous disc to make use of new signalling possibilities and also allows the device to be used as a point of light. The white lens version can also be personalised by way of laser engraving.



Selection table

Colour and engraving	Description	Type	Operating voltage	
			12 Vac/dc	24 Vac/dc
	Yellow luminous disc, Ø 60 mm, without engraving, acc. to ISO 13850	continuous light	VE DL5A5A00	VE DL1A5A00
		blinking light	VE DL5A5L00	VE DL1A5L00
		dual function	/	VE DL1A5D00
	Yellow luminous disc, Ø 60 mm, with engraving: STOP  STOP  STOP  STOP 	continuous light	VE DL5A5A09	VE DL1A5A09
		blinking light	VE DL5A5L09	VE DL1A5L09
		dual function	/	VE DL1A5D09
	Yellow luminous disc, Ø 60 mm, with engraving:     , acc. to ISO 13850	continuous light	VE DL5A5A13	VE DL1A5A13
		blinking light	VE DL5A5L13	VE DL1A5L13
		dual function	/	VE DL1A5D13

To purchase the white luminous disc replace number 5 with number 2 in the codes shown above. Example: VE DL1A5A00 → VE DL1A2A00

Electrical connection of the dual function luminous disc



Cable colour	Description
white (J1)	Blinking light power supply
grey (J2)	Power supply 0 V
yellow (J3)	Continuous light power supply

Application example of the dual function luminous disc

It is possible to obtain a continuous or blinking light device depending on the wiring. For example, this opportunity can be exploited on a series of emergency buttons connected in chain formation (figure 1). The luminous disc can pass from the continuous light mode to the blinking light mode when the respective emergency button is pressed: this way the luminous disc of the selected emergency button begins to blink while all the others switch off, making it easy to identify the point where the emergency button was pressed (figure 2). Figure 3 indicates an example of the electrical diagram for the connection in series of three or more emergency buttons fitted with dual function luminous disc.

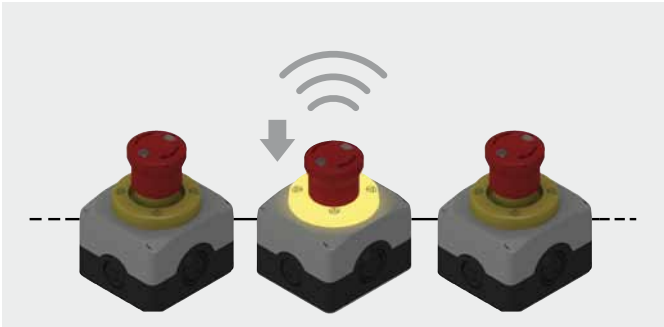
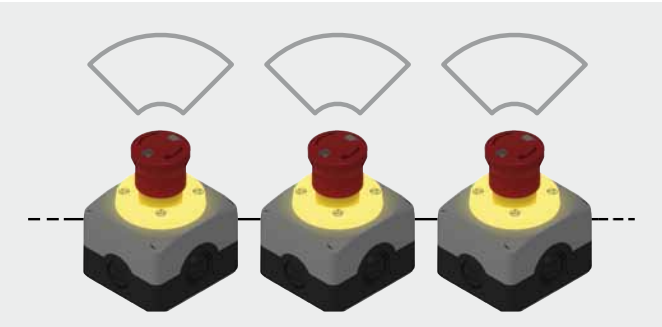


Figure 1

Figure 2

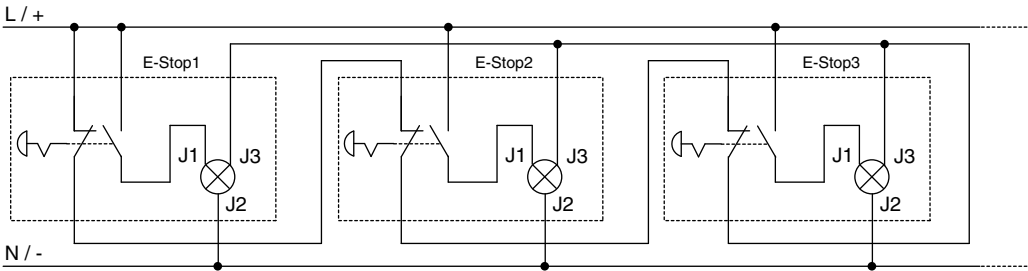
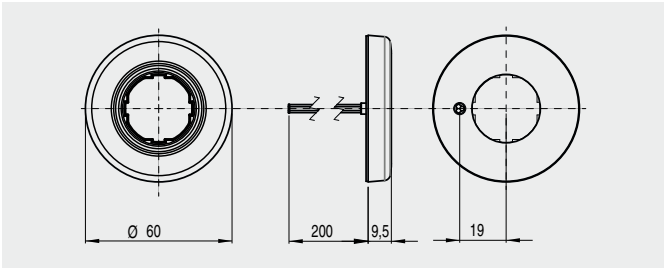


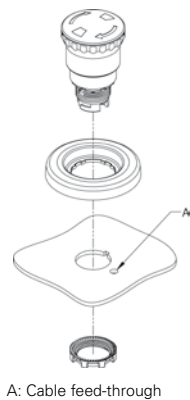
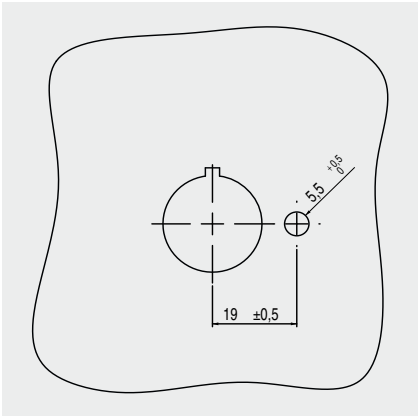
Figure 3



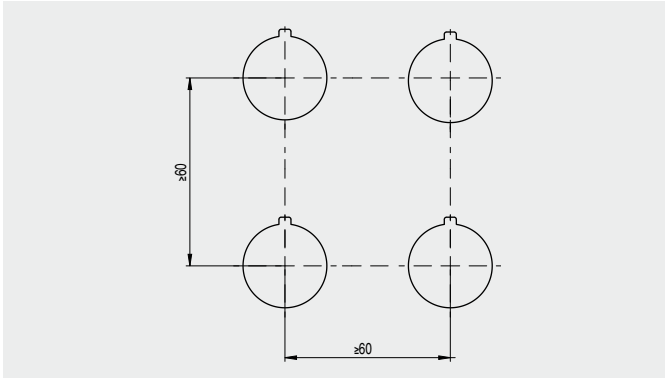
Dimensions



Drilling and mounting



Minimum distances for installation



All measures in the drawings are in mm

Connection block

Packs of 10 pcs.



Connection blocks without electrical contacts and dimensions identical to those of the contact blocks. Fitted with two electrically separated terminals to enable the VE DL series luminous disc to be installed without any additional terminals or crimp connections.

Article	Description
VE BC2PV1	Connection block with 2 terminals on a panel
VE BC2FV1	Connection block with 2 terminals on a base mounting



Traditional wiring



Wiring with connection block



Accessories

➔ More ACCESSORIES on page 135




## Fixing ring

Packs of 20 pcs.

	Article	Description
	VE GF121A	Technopolymer fixing ring
	VE GF720A	Metal fixing ring

## Fixing key

	Article	Description
	VE CH121A1	Technopolymer fixing key for VE GF•••• fixing rings

## Ø 22 ... Ø 30 mm adapter

Packs of 10 pcs.



## Technical data:

Body and ring material: technopolymer      Tightening torque: 2 ... 2.5 Nm  
 Protection degree: IP67 and IP69K      Dowel can be removed with a simple screwdriver

Article	Description
VE GF151A	Adapter with ring for panel fixing for Ø 22 devices on Ø 30 holes compliant with EN 60947-5-1

Not applicable on E2 •PD••••• - E2 •PT••••• - E2 •PQ••••• double, triple, and quadruple buttons. Not applicable in presence of shaped rings, label holders, guards or protection caps. It does not alter the IP protection degree of the associated device.

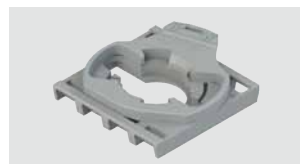
## Mounting adapter

Packs of 10 pcs.



Article	Description
E2 1BAC11	3-slot mounting adapter for E2 CP contact blocks and E2 LP LED units
E2 1BAC12	3-slot mounting adapter, oriented, for E2 CP contact blocks and E2 LP LED units

Not combinable with E2 •PQ••••• quadruple buttons.



Article	Description
E2 1BAC21	4-slot mounting adapter for E2 CP contact blocks
E2 1BAC22	4-slot mounting adapter, oriented, for E2 CP contact blocks

Combinable only with selectors E2 •SE•••••, key selector switches E2 •SC•••••, buttons E2 •PU•••••, double buttons E2 •PD•••••, emergency buttons E2 •PE•••••, configured in the appropriate versions for 4-slot adapter. Combinable with quadruple buttons E2 •PQ•••••.

## Plate holder

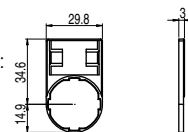


Plate holder for single device. Can be turned in 90° steps.

The switch labels of other manufacturers can be used (for example: 3M article KE-7270-2691-3 or GRAFOPLAST article SITM612X) as long as they have the following dimensions: base 27 +0/-0.4 mm, height 18+0/-0.4 mm, thickness 0.8 ±0.4 mm.

Not applicable on E2 •PD••••• - E2 •PT••••• -

E2 •PQ••••• double, triple, and quadruple buttons. **It does not alter the IP protection degree of the associated device.**



Article	Description	Pieces/pack.
VE PT32A00A0	Label holder provided with shaped hole, for 18x27 mm plate, without label	10
VE PT32A10A0	Label holder provided with shaped hole, for 18x27 mm label, and transparent protection label without engraving	10
VE PT32A09A•••	Label holder provided with shaped hole, for 18x27 mm label, and glossy aluminium-coloured label with black engraving	1

Not applicable in presence of shaped rings, adapters from Ø 22 to Ø 30 mm, guards or protection caps.

**For ordering engraved labels:** replace the dots ••• in the article code with the engraving code reported on the table at page 137. Example: Label holder provided with label, "STOP" engraving.

VE PT32A09A••• → VE PT32A09AGB0

## Plates



Article	Description
VE TR3A770	Protective label for VE PT label holders without engraving. Packs of 100 pcs.

Rectangular label 18x27 mm, thickness 0.4 mm, transparent anti-glare polycarbonate. Ideal for protecting the label below



Article	Description
VE TR4A970	Label for VE PT label holders without engraving, for cutter or laser engraving. Packs of 100 pcs.
VE TR4A91•••	Label for VE PT label holders with black indelible laser engraving

Rectangular label 18x27 mm, thickness 0,8 mm, white aluminium RAL 9006

## Adapter for DIN rail

Packs of 10 pcs.



Brevetto depositato

Article	Description
VE AD3PF9A0	Support with Ø22 hole for fixing on DIN rail of the signalling and control devices of the EROUND line

Not suitable for joysticks and quadruple buttons

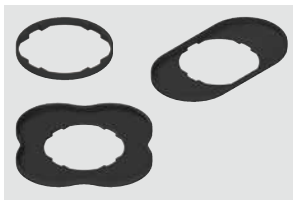


**For ordering engraved labels:** replace the dots ••• in the article code with the engraving code reported on the table at page 137.

Example: Label with "STOP" engraving. VE TR4A91••• → VETR4A91GB0



## Shaped ring



Article	Description	Pieces/pack.
VE GP12H1A	Shaped ring for single device	50
VE GP12L1A	Shaped ring for E2 •PD•••••• - E2 •PT••••••double and triple button	50
VE GP12M1A	Shaped ring for E2 •PQ••••••quadruple button	10

Not applicable in presence of label holders, adapters from Ø 22 to Ø 30 mm, guards or protection caps.  
It does not alter the IP protection degree of the associated device.

## Windowed protection guard



Article	Description
VE GP32A5A	Cylindrical yellow protection guard with 4 windows Ø 40x20 mm

It does not alter the IP protection degree of the associated device.

## Connection block

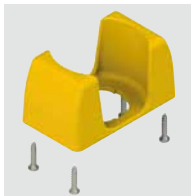
Packs of 10 pcs.



Connection blocks without electrical contacts and dimensions identical to those of the contact blocks. If combined with the VE DL series luminous disc it can be mounted without using terminals or crimping.

Article	Description
VE BC2PV1	Panel mounting connection block
VE BC2FV1	Connection block for base mounting

## Open protection guard

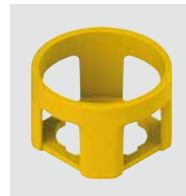


Article	Description
VE GP32F5A	Rectangular open yellow protection guard 66x38 mm, 35 mm high, complete with 4 screws (for panels of thickness from 1 to 3.5 mm)

It does not alter the IP protection degree of the associated device.

Not applicable in presence of shaped rings, label holders, adapters from Ø 22 to Ø 30 mm or protection caps.

## Cylindrical protection guard

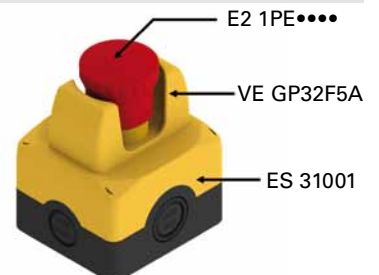
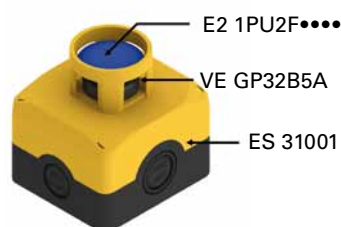
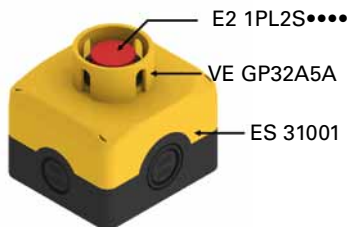


Article	Description
VE GP32B5A	Cylindrical yellow protection guard Ø 43x27 mm

Not applicable on emergency buttons of the E2 •PE••••• series

It does not alter the IP protection degree of the associated device.

## Application examples of guards



## Protection cap

Packs of 10 pcs.



### Technical data:

Material: silicon suitable for contact with food  
Protection degree: IP67  
Ambient temperature: 40°C ... +80°C  
Ideal for dusty food environments or in presence of water and sand.

Article	Description
VE CA1A1	Protection cap for single flush button (panel width from 1 to 5 mm)
VE CA1B1	Protection cap for single projecting button (panel width from 1 to 5 mm)
VE CA1C1	Protection cap for double and triple projecting buttons (panel width from 1 to 6 mm)
VE CA1D1	Protection cap for double flush button (panel width from 1 to 6 mm)

Not applicable in presence of shaped rings, label holders, adapters from Ø 22 to Ø 30 mm or protection guards.

## Closing cap

Packs of 10 pcs.



**Technical data:**  
Body and ring material: technopolymer  
Protection degree: IP67 and IP69K  
Tightening torque: 2 ... 2.5 Nm

Article	Description
E2 1TA1A110	Black closing cap for Ø 22 mm holes

## Dust protection

Packs of 50 pcs.



Article	Description
VE PR3A70	Transparent dust protection for E2 series contact blocks. Suitable for all panel mounting contact blocks.

Items with code on **green** background are stock items





















ENGRAVINGS table (text)

Code	Symbol	Code	Symbol	Code	Symbol	Code	Symbol
		GB0	STOP	FR0	ARRÊT	DE0	HALT
IT1	AVVIO	GB1	START	FR1	MARCHE	DE1	START
IT2	CHIUSO	GB2	CLOSE	FR2	FERMÉ	DE2	ZU
IT3	SU	GB3	UP	FR3	MONTÉE	DE3	AUF
IT4	GIÙ	GB4	DOWN	FR4	DESCENTE	DE4	AB
IT5	SPENTO	GB5	OFF	FR5	ARRÊT	DE5	AUS
IT6	ACCESO	GB6	ON	FR6	MARCHE	DE6	EIN
IT7	IN SERVIZIO	GB7	RUN	FR7	EN SERVICE	DE7	BETRIEB
IT8	ERRORE	GB8	FAULT	FR8	PANNE	DE8	STÖRUNG
IT9	TEST	GB9	TEST	FR9	ESSAI	DE9	PRÜFUNG
IT10	SPENTO ACCESO	GB10	OFF ON	FR10	ARRÊT MARCHE	DE10	AUS EIN
IT11		GB11	MAN. AUTO	FR11	MAN. AUTO	DE11	HAND AUTO
IT12		GB12	MAN. 0 AUTO	FR12	MAN. 0 AUTO	DE12	HAND 0 AUTO
IT13		GB13		FR13		DE13	ANTRIEB
IT14	RIAVVIA	GB14	RESET	FR14	REARM.	DE14	ENTSPERREN
IT15	AVANTI	GB15	FORWARD	FR15	AVANT	DE15	VORWÄRTS
IT16	INDIETRO	GB16	REVERSE	FR16	ARRIÈRE	DE16	RÜCKWÄRTS
IT17	AUMENTA	GB17	RAISE	FR17	MONTER	DE17	HEBEN
IT18	DIMINUISCI	GB18	LOWER	FR18	DESCENDRE	DE18	SENKEN
IT19	SINISTRA	GB19	LEFT	FR19	GAUCHE	DE19	LINKS
IT20	DESTRA	GB20	RIGHT	FR20	DROITE	DE20	RECHTS
IT21	FRENO	GB21	BRAKE	FR21	FERMER/OUVRIR	DE21	BREMSEN
IT22	ALTO	GB22	HIGH	FR22		DE22	HOCH
IT23	BASSO	GB23	LOW	FR23		DE23	NIEDRIG
IT24	VELOCE	GB24	FAST	FR24		DE24	SCHNELL
IT25	LENTO	GB25	SLOW	FR25		DE25	LANGSAM
IT26	PIÙ VELOCE	GB26	FASTER	FR26		DE26	
IT27	PIÙ LENTO	GB27	SLOWER	FR27		DE27	
IT32	APRIRE	GB32	OPEN	FR32		DE32	ÖFFNEN
IT63	CHIAMATA	GB63	CALL	FR63		DE63	
IT64	OCCUPATO	GB64	OCCUPIED	FR64		DE64	
IT99	ARRESTO D'EMERGENZA	GB99	EMERGENCY-STOP	FR99	ARRÊT D'URGENCE	DE99	NOT-AUS






























Other engravings on request
































ENGRAVINGS table (symbols)

Code	Standard	Symbol
L1	IEC 60417-2	
L2	IEC 60417-2	
L3	-	
L4	-	
L7	-	
L8	-	
L9	-	
L10	-	
L11	IEC 60417-2	
L12	IEC 60417-2	
L14	IEC 60417-2	
L15	-	<b>R</b>
L16	IEC 60417-2	
L17	ISO 7000	
L18	ISO 7000	
L19	-	0 I
L20	-	0 I
L21	-	I 0 II
L22	-	I 0
L24	-	
L25	-	
L27	ISO 7000	
L30	-	
L31	-	
L54	-	
L59	-	
L60	-	
L61	-	
L65	-	1
L66	-	2
L67	-	3
L68	-	4
L69	-	5
L70	-	6
L71	-	7

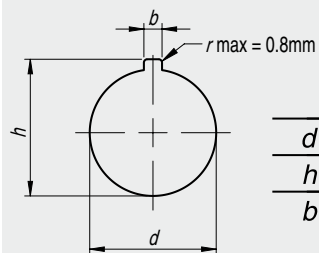
Other engravings on request

Code	Standard	Symbol
L72	-	8
L73	-	9
L74	-	0
L76	-	
L77	-	
L78	-	
L83	-	
L84	-	
L86	-	
L91	-	
L96	-	(  )
L130	-	100%
L140	-	
L142	ISO 7000	
L143	ISO 7000	
L145	-	
L146	ISO 7000	
L147	ISO 7000	
L148	-	
L153	-	
L157	-	
L161	-	
L162	-	
L165	-	
L170	-	
L172	-	
L188	-	
L213	-	
L226	-	
L227	EN 1501	
L230	-	
L236	-	
L240	-	

Code	Standard	Symbol
L241	-	
L242	-	
L243	-	
L244	-	
L245	-	
L246	-	
L247	-	
L248	-	
L249	-	
L250	-	<b>POWER</b>
L251	-	
L252	-	
L253	-	
L254	-	
L260	-	
L262	-	
L276	-	<b>START STOP</b>
L277	-	
L278	-	
L279	-	
L280	-	
L287	-	
L293	-	
L295	-	
L304	-	
L305	-	
L311	-	
L312	-	
L315	-	<b>24V=</b>
L316	-	
L317	-	
L319	-	



### Panel drilling according to EN 60947-5-1

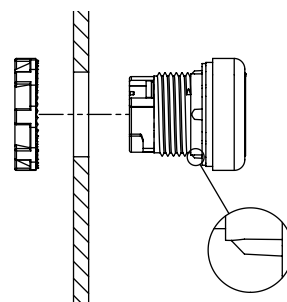


	Ø 22	Ø 30
d	22,3 <sup>+0,4</sup> -0	30,5 <sup>+0,5</sup> -0
h	24,1 <sup>+0,4</sup> -0	33,0 <sup>+0,5</sup> -0
b	3,2 <sup>+0,2</sup> -0	4,8 <sup>+0,2</sup> -0

### Seal gasket

Thanks to its design, the seal gasket ensures a pre-fixing on the panel.

This allows to mount the ring without having to hold the device in position.

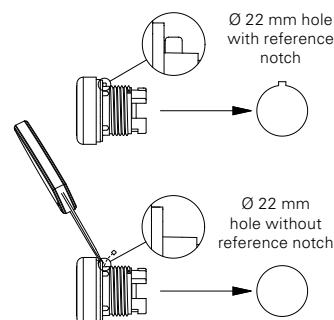


### Reference dowel

The mounting reference dowel on the external diameter of all EROUND line devices enables perfect device alignment and mounting on the panel, while avoiding rotations.

In case of use on holes without reference notches, simply remove the dowel with a slight leverage effect using a screwdriver, making sure that the seal gasket does not get damaged.

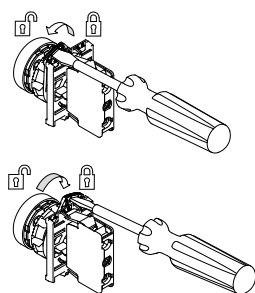
The removal of the reference dowel, is not advisable for the selectors (series E2 •SE, E2 •SL, E2 •SC) and emergency buttons (series E2 •PE) with rotary release, as these devices are subject to rotary-type actuation.



### Device connection to mounting adapter

After its installation on the panel using the special ring, the control device can be fixed to the mounting adapter by turning the locking lever. The lever reports the free position (lock open) and locked position (lock closed) indications.

The locking lever rotation can be made smoother by using a flat-head screwdriver.

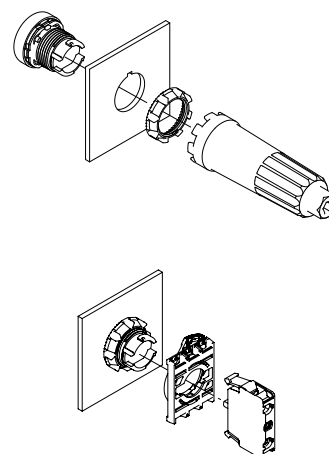


### Panel fixing

The control and signalling devices have to be fixed on the rear of the panel with a fixing ring. This has to be tightened with the special fixing key which is supplied as an accessory.

The tightening torque for a correct fixing must be between 2 and 2.5 Nm.

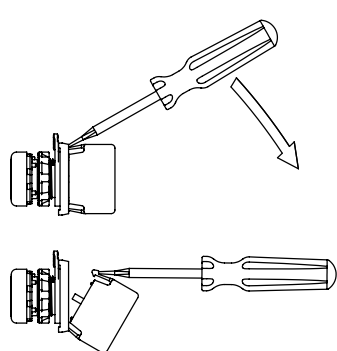
Once the fixing ring has been tightened, the mounting adapter and then the contact blocks or LED units can be mounted on the panel.



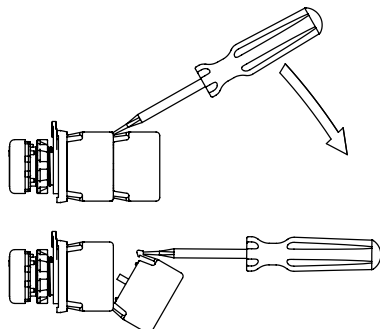
### Mounting of contact blocks and LED units

Contact blocks and LED units are provided with two snap-in mounting flaps that ensure a stable fixing between them and the mounting adapter (in the panel mounting version), or between them and the base of the housing (in the base mounting version). The panel contact blocks can be connected to each other, up to three, in observance of the limits specified for each actuator in the respective chapter.

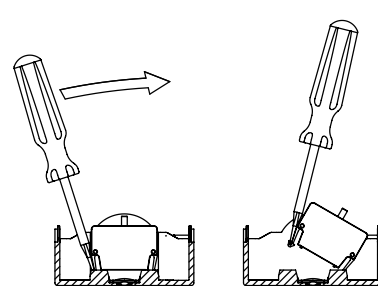
Contact blocks and LED units can be quickly disassembled by using a flat-head screwdriver to leverage on the connection flaps.



Release of the contact block from the base



Release of the contact block from another unit



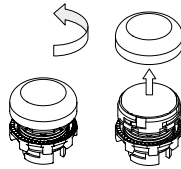
Release of the contact block from the base



### Lenses for E2 indicator lights

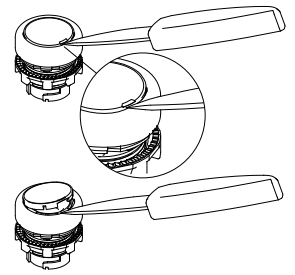
The E2 indicator lights are provided with interchangeable lenses in different colours. The lenses can be removed and mounted by simply turning them clockwise and anticlockwise respectively, without using tools.

For a correct colour rendering, it is necessary to use the correct combination between colour of the indicator light lens and colour of the LED unit applied to it.



### Lenses for buttons and illuminated buttons

The buttons and the illuminated buttons feature replaceable lenses. To remove the lenses, leverage them with a pointed object near the reference notch on the external diameter of the lens itself.



### Screw caps insertion / removal

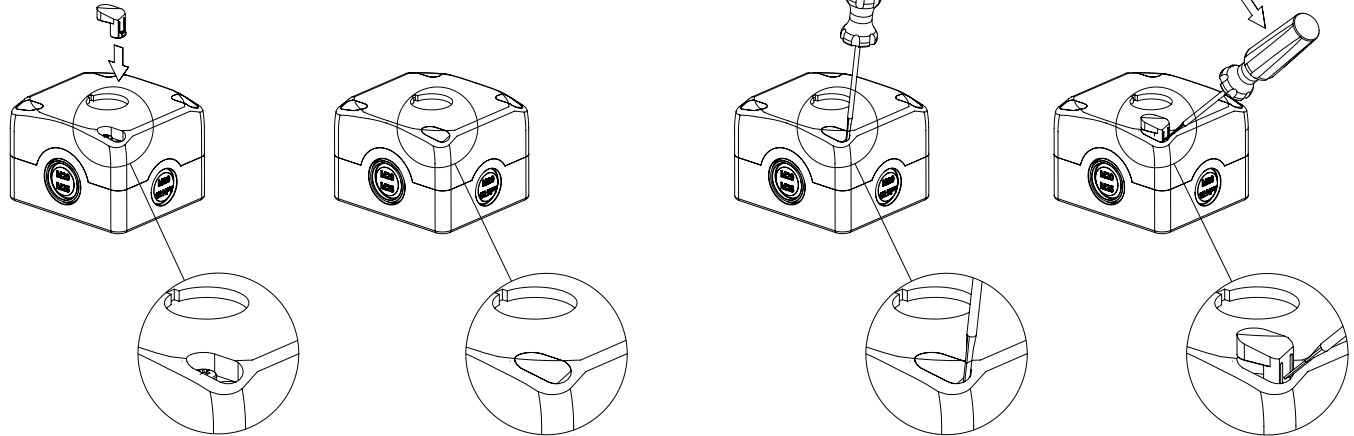
The cover caps supplied for housings of the EROUND series make it possible to close the screws seats, preventing thus the accumulation of dirt and tampering.

These caps are connected to surfaces of the housing. This creates thus a monolithic block showing no visible screws, making it aesthetically pleasing too.

The caps engage to the cover with a simple pressure until the flexible flap snaps in.

For their removal it is necessary to insert the point of a tool (e.g. a

small screwdriver) in the special slot on each cap and to leverage on the coupling flap to open it.



### General prescriptions

The product was designed to be installed on switching cabinets or housings containing electrical circuits. All electrical components and devices of the EROUND series that are to be installed inside switching cabinets or enclosures (e.g. E2 CP, E2 CF, E2 LP, E2 LF), are not provided with suitable protections against: water, high quantities of dust, condensation, humidity, steam, corrosive agents, explosive gases, flammable gases or other polluting agents. The protection degree of switching cabinets or enclosures shall ensure the necessary protection to the electrical components of the EROUND series inside them, depending on the application area.

### Device utilization

- All devices of the EROUND series are hand operated.
- Do not apply excessive force to the device once it has reached the end of its actuation travel.
- Do not exceed the maximum actuation travel.
- Do not disassemble or try to repair the device, in case of defect or fault replace the entire device.
- In case the device is deformed or damaged it must be entirely replaced. Correct operation cannot be guaranteed when the device is deformed or damaged.
- Always attach the following instructions to the manual of the machine in which the device is installed.
- These operating instructions must be kept available for consultation at any time and for the whole period of use of the device.

### Shock and vibrations

- Avoid collisions with the devices. Excessive shock and vibrations may affect correct operation of the device.



### Wiring and installation

- Installation must be carried out by qualified staff only.
- Observe minimum distances between devices.
- Observe the tightening torques.
- Keep the electrical load below the value specified by the utilization category.
- Disconnect the power before to work on the contacts, also during the wiring.
- Do not paint or varnish the devices.
- Devices can only be installed on perforated surfaces with a thickness of between 1 mm and 6 mm that comply with the IEC 60947-5-1 standard.
- The protection degree and the correct operation are only guaranteed if the product is installed on a level and smooth surface and if the diameter of the holes is compliant with the IEC 60947-5-1 standard.
- After and during the installation do not pull the electrical cables connected to the contact blocks. Due to high traction on the electrical cables, the contact blocks could detach from the actuator.
- During the coupling and uncoupling of the contact blocks from the mounting adapter or from the base, do not deform or put excessive stress on the coupling flaps. A possible deformation of the flaps could cause the detachment of the contact blocks from their mounting adapter.
- The housings in the EA and ES series are fitted with knock-out holes for the passage of electrical cables. Open these holes using a suitable tool to avoid damaging the housing. Refrain from using housings damaged or cracked as a result of erroneous manoeuvres performed when opening the knock-out holes. After opening the hole, remove any plastic residues and insert a cable gland (or similar device) into the hole with a degree of protection equal or superior to that of the housing.
- After installation and before commissioning of the machine, verify:
  - the correct operation of the device;
  - the correct and full locking of the E2 1BAC•• mounting adapter to the device;
  - the correct coupling of the contact blocks.
- Periodically check for correct device operation.
- Do not deform or modify the device for any reason.
- Before installation, make sure the device is not damaged in any part.
- Refrain from opening, disassembling or attempting to repair the device and replace it immediately if it appears to be damaged.
- Should the installer be unable to fully understand the utilization requirements, the product must not be installed and the necessary assistance may be requested.

### Do not use in following environments:

- Environments where dust and dirt can cover the device and by sedimentation stop its correct working.
- Environment where sudden temperature changes cause condensation.
- Environments where coatings of ice may form on the device.
- Environments where the application causes knocks or vibrations that could damage the device.
- In environments with the presence of explosive or flammable gases.
- In environments containing strongly aggressive chemicals, where the products used coming into contact with the device may impair its physical or functional integrity.

### Use limitations

- Use the devices following the instructions, complying with their operation limits and the standards in force.
- The devices have specific application limits (min. and max. ambient temperature, mechanical endurance, protection degree, etc.) These limits are met by the different devices only if considered individually and not if combined with each other. For further information contact our technical department.
- The utilization implies knowledge of and compliance with following standards: IEC 60204-1, IEC 60947-5-1, ISO 12100.
- Please contact our technical department for information and assistance (phone +39.0424.470.930 / fax +39.0424.470.955 / e-mail tech@pizzato.com) in the following cases:
  - Cases not mentioned in the present utilization requirements.
  - In nuclear power stations, trains, air planes, cars, incinerators, medical devices or any application where the safety of two or more persons depends on the correct operation of the device.

### Additional prescriptions for safety applications

Provided that all previous requirements for the devices installed with operator protection function are fulfilled, further additional prescriptions have to be observed:

- The utilization implies knowledge of and compliance with following standards: IEC 60204-1, IEC 60947-5-1, EN 60954-1, EN ISO 13849-1, EN 62061, EN ISO 12100.
- In emergency buttons the safety circuit must be connected to the .1-.2 NC contacts with the actuator in rest position. The auxiliary contacts NO .3-.4 must be used in signalling circuits only.
- The protection fuse (or equivalent device) must be always connected in series with the NC .1-.2 contacts of the safety circuit.
- Periodically verify the correct working of the safety devices; the periodicity of this verification is settled by the machine manufacturer based on the machine danger degree and it does not have to be less than one a year.
- After installation and before commissioning of the machine, verify:
  - the correct operation of the device;
  - the correct and full locking of the E2 1BAC•• mounting adapter;
  - the correct coupling of the contact blocks.
- For the E2 •PEBZ•••• emergency buttons with key release do not leave the key inserted. A possible sudden activation of the emergency button with the key inserted could cause injuries to the operator.



- All the safety devices installed on the machine (e.g. emergency button, stop button, automatic/manual mode selector etc...) have a limited endurance. Although still functioning, after 20 years from the date of manufacture the device must be replaced completely. The date of manufacture is placed next to the product code, on the label attached to the packing. In case of particularly adverse weather conditions, the endurance of the device can be drastically reduced over time. Regularly check that the safety devices are working properly and if required, replace them, even prior to the above-mentioned expiry date.
- The device is provided with external marking on its packaging. Marking includes: Producer trademark, product code, batch number and date of manufacture. The batch's first letter refers to the month of manufacture (A=January, B=February, etc.). The second and third digits refer to the year of manufacture (17=2017, 18=2018, etc...).
- If the device is used for safety applications, inadequate installation or tampering can cause people serious injuries and even death.
- These devices must not be bypassed, removed, turned or disabled in any other way.
- If the machine where the device is installed is used for a purpose other than that specified by the producer, the device may not provide the operator with efficient protection.
- The safety category of the system comprising the safety device also depends on external devices and their connection. Check that the device is capable of performing the safety function envisaged by the risk analysis of the machine, as provided by EN ISO 13849-1.



## M12 male connectors

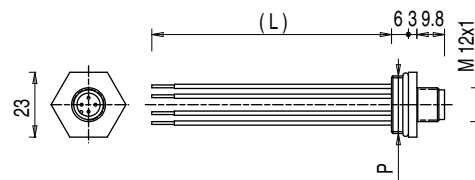
All measures in the drawings are in mm



These standard M12 connectors are ready for the installation on the switches. Their wires have the right length for the connection to the contact blocks and are provided with wire-end sleeves. On request they can be delivered already wired to the switch. The connectors are used where a very short machine down time is required (e.g. in big plants). The connector-provided switch can be replaced very quickly with an identical one with no chance of incorrect wiring.

**Technical data:**

Max. operating voltage:	250 Vac / 300 Vdc (4 and 5 poles) 30 Vac / 36 Vdc (8 and 12 poles)
Max. operating current:	4 A (4 and 5 poles) 2 A (8 poles) 1.5 A (12 poles)
Protection degree:	IP67 acc. to EN 60529
Ambient temperature:	-25°C ... +80°C
Tightening torque:	1 ... 1.5 Nm
Wire cross-section:	0.5 mm <sup>2</sup> (20 AWG) for 4 and 5 poles 0.25 mm <sup>2</sup> (23 AWG) for 8 poles 0.14 mm <sup>2</sup> (26 AWG) for 12 poles
Contact type:	gold-plated

**Pin assignment**

4 poles		5 poles		8 poles		12 poles	
Pin	Colour	Pin	Colour	Pin	Colour	Pin	Colour
1	Brown	1	Brown	1	White	1	Brown
2	White	2	White	2	Brown	2	Blue
3	Blue	3	Blue	3	Green	3	White
4	Black	4	Black	4	Yellow	4	Green
		5	Grey	5	Grey	5	Pink
				6	Pink	6	Yellow
				7	Blue	7	Black
				8	Red	8	Grey
						9	Red
						10	Purple
						11	Grey-Pink
						12	Red-Blue

**Code structure****Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

article		options	
<b>VF CNM5MM</b>		<b>-L100</b>	
<b>Body material</b>		<b>Cable length (L)</b>	
<b>M</b>	metal		8.5 cm (standard)
<b>P</b>	plastic	<b>L16</b>	16 cm
		<b>L100</b>	100 cm
		<b>L200</b>	200 cm
<b>No. of poles</b>		<b>Connection type</b>	
<b>4</b>	4 poles	<b>M</b>	M12x1
<b>5</b>	5 poles	<b>Connector thread (P)</b>	
<b>8</b>	8 poles	<b>M</b>	M20 x 1.5 (standard)
<b>12</b>	12 poles	<b>P</b>	PG 13.5

**Stock items**

VF CNP8MM  
VF CNP5PM  
VF CNP5MM  
VF CNM8PM  
VF CNM8MM  
VF CNP4MM  
VF CNM4PM  
VF CNP4PM  
VF CNM5MM  
VF CNM5PM  
VF CNM12MM-L16  
VF CNM4MM

**ATTENTION:** always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.  
**Note:** the 12-pole connector is only available in metal with M20x1.5 thread and 16 cm cables.

Items with code on **green** background are stock items→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



## M12 female connectors with cable

All measures in the drawings are in mm



### Technical data:

- Polyurethane connector body
- Class 6 copper conductors acc. to IEC 60228 - mobile installation
- Gold-plated contacts (resistance < 5 mΩ)
- Self locking ring nut
- High flexibility cable suitable to be used in drag chains, with PVC sheath conforming to IEC 60332-3 and CEI 20-22II. Polyurethane sheath available on request

### Technical data:

Max. operating voltage:

250 Vac / 300 Vdc (4 and 5 poles)

30 Vac / 36 Vdc (8 and 12 poles)

Max. operating current:

4 A (4-5 poles), 2 A (8 poles), 1.5 A (12 poles)

Protection degree:

IP67 acc. to EN 60529

IP69K acc. to ISO 20653

(Protect the cables from direct high-pressure and high-temperature jets)

Ambient temperature:

-25°C ... +80°C - fixed installation

-15°C ... +80°C - mobile installation

Wire cross-section:

0.34 mm<sup>2</sup> (22 AWG) for 4 poles

0.25 mm<sup>2</sup> (23 AWG) for 5 and 8 poles

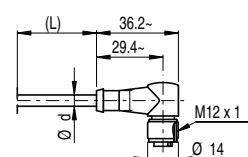
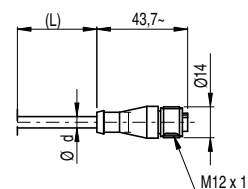
0.14 mm<sup>2</sup> (26 AWG) for 12 poles

Minimum bending radius:

> cable diameter x 15

### Pin assignment

4 poles		5 poles		8 poles		12 poles	
Pin	Colour	Pin	Colour	Pin	Colour	Pin	Colour
1	Brown	1	Brown	1	White	1	Brown
2	White	2	White	2	Brown	2	Blue
3	Blue	3	Blue	3	Green	3	White
4	Black	4	Black	4	Yellow	4	Green
		5	Grey	5	Grey	5	Pink
				6	Pink	6	Yellow
				7	Blue	7	Black
				8	Red	8	Grey
						9	Red
						10	Purple
						11	Grey-Pink
						12	Red-Blue



Ø d: 5 mm for 4 and 5 poles  
6 mm for 8 and 12 poles

### Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

# VF CA4PD3M

No. of poles	
<b>4</b>	4 poles
<b>5</b>	5 poles
<b>8</b>	8 poles
<b>12</b>	12 poles

Cable sheath	
<b>P</b>	PVC (standard)
<b>U</b>	PUR

Connector type	
<b>D</b>	straight (standard)
<b>G</b>	angled

Connection type	
<b>M</b>	M12x1

Cable length (L)		No. of poles			
		4	5	8	12
<b>1</b>	1 metre				
<b>2</b>	2 metres				
<b>3</b>	3 metres (standard)	•	•		
<b>4</b>	4 metres				
<b>5</b>	5 metres (standard)	•	•	•	•
<b>...</b>					
<b>0</b>	10 metres (standard)	•	•	•	•

Other lengths on request

### Stock items

VF CA4PD3M  
VF CA4PD5M  
VF CA4PD0M  
VF CA5PD3M  
VF CA5PD5M  
VF CA5PD0M  
VF CA8PD5M  
VF CA8PD0M  
VF CA12PD5M  
VF CA12PD0M

**Attention!** No stock items, minimum order quantity 100 pcs.

**ATTENTION:** always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.

Items with code on **green** background are stock items

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



## M12 extension cable

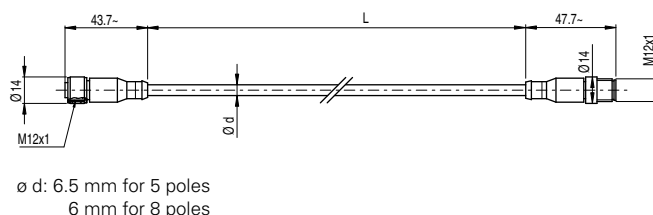


## Technical data:

Polyurethane connector body  
Class 6 copper conductors acc. to IEC 60228  
Gold-plated contacts (resistance < 5 mΩ)  
Self-locking ring nut  
High flexibility cable suitable to be used in drag chains, with PVC sheath conforming to IEC 60332-3 and CEI 20-22II.

## Technical data:

Max. operating voltage: 250 Vac / 300 Vdc (5 poles)  
30 Vac / 36 Vdc (8 poles)  
Max. operating current: 4 A (5 poles), 2 A (8 poles)  
Protection degree: IP67 acc. to EN 60529  
Ambient temperature: -25°C ... +80°C - fixed installation  
-15°C ... +80°C - mobile installation  
Wire cross-section: 0.5 mm<sup>2</sup> (20 AWG) (5 poles)  
0.25 mm<sup>2</sup> (24 AWG) (8 poles)  
Minimum bending radius: > cable diameter x 15

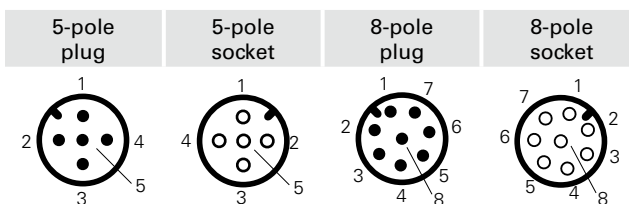


## Code structure

VF CA5PD3M-MD

No. of poles		Connection type	
5	5 poles	M	M12x1
8	8 poles		
Cable sheath		Cable length (L)	
P	PVC	3	3 metres (standard)
		5	5 metres (standard)
		0	10 metres (standard)
		Other lengths on request	
Connector type		No. of poles	
D	straight	5	• •
		8	• •

## Pin assignment



## Stock items

VF CA5PD3M-MD  
VF CA5PD5M-MD  
VF CA5PD0M-MD  
VF CA8PD3M-MD  
VF CA8PD5M-MD

**Attention!** No stock items, minimum order quantity 100 pcs.

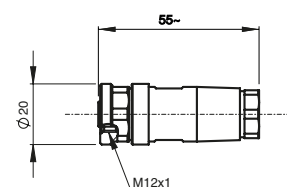
## Field wireable M12 female connectors

All measures in the drawings are in mm



## General data

Technopolymer connector body  
Gold-plated contacts  
Screw terminals for cable screw fittings  
Max. operating voltages: 250 Vac/dc (4 and 5 poles)  
30 Vac/dc (8 poles)  
Maximum current: 4 A (4 and 5 poles)  
2 A (8 poles)  
Protection degree: IP67 acc. to EN 60529  
Ambient temperature: -25°C ... +85°C  
Wire cross-section: from 0.25 mm<sup>2</sup> (23 AWG) to 0.5 mm<sup>2</sup> (20 AWG)



Article	Description	no. of poles
VF CBMP4DM04	Field wireable M12 female connector, straight, for Ø 4 ... Ø 6.5 mm multipolar cables	4
VF CBMP5DM04	Field wireable M12 female connector, straight, for Ø 4 ... Ø 6.5 mm multipolar cables	5
VF CBMP8DM04	Field wireable M12 female connector, straight, for Ø 4 ... Ø 7 mm multipolar cables	8

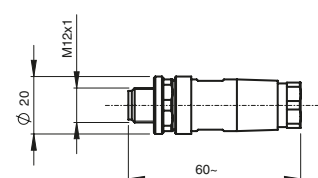
## Field wireable M12 male connectors

All measures in the drawings are in mm



## General data

Technopolymer connector body  
Gold-plated contacts  
Screw terminals for cable screw fittings  
Max. operating voltages: 250 Vac/dc (5 poles)  
30 Vac/dc (8 poles)  
Maximum current: 4 A (5 poles)  
2 A (8 poles)  
Protection degree: IP67 acc. to EN 60529  
Ambient temperature: -25°C ... +85°C  
Wire cross-section: from 0.25 mm<sup>2</sup> (23 AWG) to 0.5 mm<sup>2</sup> (20 AWG)



Article	Description	no. of poles
VF CCMP5DM04	Field wireable M12 male connector, straight, for Ø 4 ... Ø 6.5 mm multipolar cables	5
VF CCMP8DM04	Field wireable M12 male connector, straight, for Ø 4 ... Ø 7 mm multipolar cables	8

**ATTENTION:** always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.

Items with code on green background are stock items

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



## Strain relief cable glands

Packs of **10 pcs.**

This particular design ensures high resistance to traction of the cable glands. All cable glands are also suitable for a wide range of cable diameters.

Suitable for circular cross-section cables only.

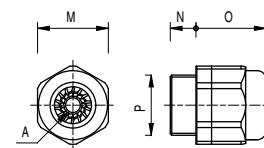
**Technical data:**

Body and ring material: technopolymer without halogen

Protection degree: IP67 acc. to EN 60529

Tightening torque: 3 ... 4 Nm (PG 13.5/M20)

2 ... 2.5 Nm (PG 11/M16)



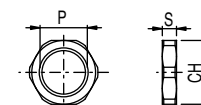
	Article	Description	A	ØM	N	O	P
Metric threads	VF PAM25C7N	Cable gland M25x1.5 for a cable from Ø 10 to Ø 17 mm		30	10	28	M25x1.5
	VF PAM20C6N	M20x1.5 cable gland for one cable Ø 6 ... 12 mm		24	9	24	M20x1.5
	VF PAM20C5N	M20x1.5 cable gland for one cable from Ø 5 ... 10 mm		24	9	24	M20x1.5
	VF PAM20C3N	M20x1.5 cable gland for one cable Ø 3 ... 7 mm		24	9	24	M20x1.5
	VF PAM16C5N	M16x1.5 cable gland for one cable Ø 5 ... 10 mm		22	7.5	23	M16x1.5
	VF PAM16C4N	M16x1.5 cable gland for one cable Ø 4 ... 8 mm		22	7.5	23	M16x1.5
	VF PAM16C3N	M16x1.5 cable gland for one cable Ø 3 ... 7 mm		22	7.5	23	M16x1.5
	VF PAM20CBN	M20x1.5 multi-hole cable gland for 2 cables Ø 3 ... 5 mm		24	9	23	M20x1.5
	VF PAM20CDN	M20x1.5 multi-hole cable gland for 3 cables Ø 1 ... 4 mm		24	9	23	M20x1.5
	VF PAM20CEN	M20x1.5 multi-hole cable gland for 3 cables Ø 3 ... 5 mm		24	9	23	M20x1.5
	VF PAM20CFN	M20x1.5 multi-hole cable gland for 4 cables Ø 1 ... 4 mm		22	9	23	M20x1.5
	VF PAM20CFN	M20x1.5 multi-hole cable gland for 4 cables Ø 1 ... 4 mm		22	9	23	M20x1.5
PG threads	VF PAP13C6N	PG 13.5 cable gland for one cable from Ø 6 ... 12 mm		24	9	24	PG 13.5
	VF PAP13C5N	PG 13.5 cable gland for one cable from Ø 5 ... 10 mm		24	9	24	PG 13.5
	VF PAP13C3N	PG 13.5 cable gland for one cable from Ø 3 ... 7 mm		24	9	24	PG 13.5
	VF PAP11C5N	PG 11 cable gland for one cable from Ø 5 ... 10 mm		22	7.5	23	PG 11
	VF PAP11C4N	PG 11 cable gland for one cable from Ø 4 ... 8 mm		22	7.5	23	PG 11
	VF PAP11C3N	PG 11 cable gland for one cable from Ø 3 ... 7 mm		22	7.5	23	PG 11

## Threaded nuts

Packs of **10 pcs.****Technical data:**

Body material: technopolymer

Tightening torque: 1.2 ... 2 Nm



	Article	Description	S	CH	P
Plastic	VF DFPM25	Plastic nut, threaded, M25x1.5	6	32	M25x1.5
	VF DFPM20	Plastic nut, threaded, M20x1.5	6	27	M20x1.5
	VF DFPM16	Plastic nut, threaded, M16x1.5	5	22	M16x1.5
	VF DFPP13	Plastic nut, threaded, PG13.5	6	27	PG 13.5
Metal	VF DFMM20	M20x1.5 threaded nut in nickel-plated brass	3	23	M20x1.5



## LED signalling lights

Packs of 5 pcs.



These signalling lights with high luminosity LEDs are used for signalling that an electric contact has changed its state inside the switch. They can be installed only on switches of the FL, FX, FZ, FW, FG, NG or FS series by screwing them on one of the conduit entries not used for electric cables. They can be used for many different purposes: for example, in combination with a rope switch (e.g. FL 1878-M2) they can be used to signal (also at a certain distance) if the switch has been actuated.

In combination with safety switches with separate actuator (e.g. FL 693-M2), they can instead be used to signal if the protection is closed correctly or not. In combination with solenoid safety switches (FS, FG or NG series), they can signal if the protection is locked or unlocked. If they are combined with any switch of the FL, FX, FW or FZ series they can be used to calibrate the actuator. Their inner part can rotate in such a way that it can be wired and screwed on the switch without any risk of kinking the wires.

**Technical data:**

Protection degree:

IP67 acc. to EN 60529 and IP69K acc. to ISO 20653

Ambient temperature:

-25°C ... +70°C

Operating voltage Un:

24 Vac/dc

120 Vac

230 Vac

Tolerance on the supply voltages:

±15% of Un

Operating current:

10 mA

Connection system:

PUSH-IN spring type

Cross-section of rigid/flexible wires w. wire-end sleeve:

min. 1 x 0.34 mm<sup>2</sup> (1 x AWG 24)max 1 x 1.5 mm<sup>2</sup> (1 x AWG 16)

Wire cross-section with pre-insulated wire-end sleeve:

min. 1 x 0.34 mm<sup>2</sup> (1 x AWG 24)max 1 x 0.75 mm<sup>2</sup> (1 x AWG 18)

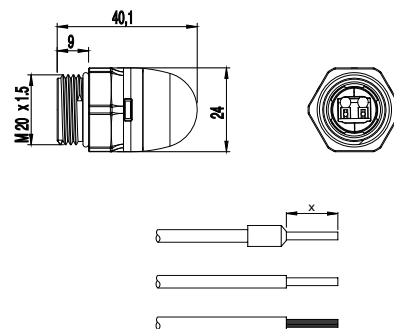
Cable stripping length (x):

min.: 8 mm

max.: 12 mm

Tightening torque:

1.2 ... 2 Nm



## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

## VF SL1A3PA1

## Operating voltage

<b>1</b>	24 Vac/dc
<b>3</b>	120 Vac
<b>4</b>	230 Vac

## Lens colour

<b>2</b>	White
<b>3</b>	Red
<b>4</b>	Green
<b>5</b>	Yellow

## Type of light source

**A** standard LED with continuous light

## Connection type

**P** PUSH-IN terminal strip

## Body design

**A** Total height 40 mm, spherical lens, threading M20x1.5mm

## Stock items

VF SL1A3PA1  
VF SL1A5PA1



## Notes

This image shows a full page of blank graph paper. It features a consistent grid of small squares across the entire area, with no margins or additional markings. The grid is composed of thin, dark lines on a white background.



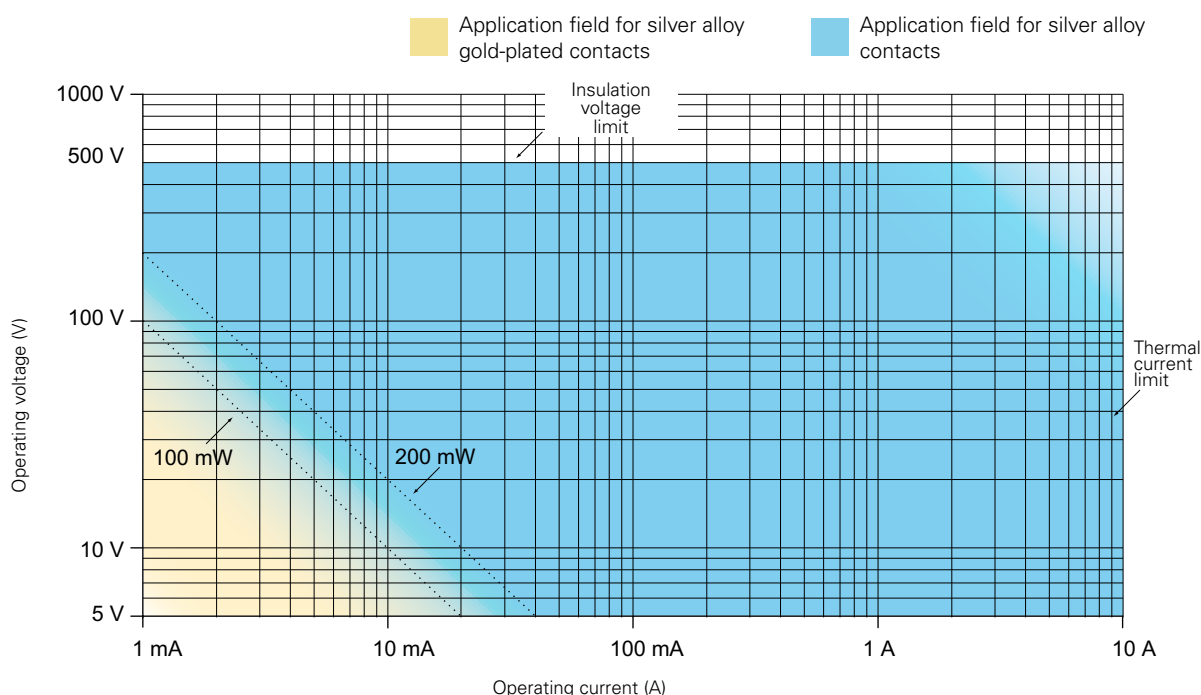
### Minimum operating voltages and currents for reliable switching

The reliability of an electric contact depends on several factors, whose influence varies depending on the type of load. For high power loads is necessary for the contact to be able to dissipate the heat generated during switching. For low power loads, instead, it is important that it oxides and other impurities do not obstruct the passing of the electric signal. As a result, the material chosen for the electric contacts is a compromise among different and sometimes contrasting needs. In position switches contacts are usually made of a silver that has proved to be suitable for the switching of loads in the range of approximately 1 kW to 0.1 W. However, at lower loads, the effects of the oxide, which silver naturally develops upon contact with air, may occur; additionally to be taken into account are possible contaminations or impurities in the contact switching chamber (for example the talc powder in the cable sheaths that an installer could accidentally insert in the switch may have a similar effect).

It is impossible to define a fix threshold above which the “missing switching phenomenon” does not appear, because there are a lot of mechanical and electric parameters that influence this value. For example, in laboratory environment a good twin bridge electric contact is able to switch loads in the  $\mu\text{W}$  range for dozens of millions of handling operations, without losing signals. However, this does not mean that the same contact will have the same performance when the switch operates in environments with sudden changes of temperature (condensation) or where few switching occur (oxidation).

In order to avoid this kind of problem, gold plated contacts are used for very low loads profiting from the non-oxidability of this material. The gold-plating layer should be thick enough to be mechanically resistant to switching as well as electrically resistant to possible sparks that may vaporize it. For this reason Pizzato Elettrica use micron thickness gold plating suitable for millions of working cycles. Thinner gold plating layers have often a purely aesthetic function and are only suitable to protect the product against oxidation during long time storage.

The minimum current and voltage values recommended by Pizzato Elettrica are shown in the diagram below, that is divided into two areas defined by a steady power limit. These values identify voltage and current combinations with high commutation reliability in most industrial fields. The lower voltage and current limits shown in the diagram are typical minimum values for industrial applications. They may also be reduced in non typical conditions. It is recommended, however, to always evaluate that the signal power to be switched is at least one magnitude order higher than the noise produced in the electric circuit, in particular when circuit cables are long and pass through areas with high electromagnetic fields and especially for powers lower than 10 mW.



**100 mW** Recommended limit for general applications with snap action contact blocks with silver alloy contacts.

**200 mW** Recommended limit for general applications with slow action contact blocks with silver alloy contacts.



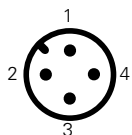
## Wiring diagram for assembled connectors

### For FR - FX series with technopolymer housing

Contact block 2 1NO-1NC+1NO-1NC	Contact block 5 1NO+1NC	Contact block 6 1NO+1NC	Contact block 7 1NO+1NC	Contact block 9 2NC	Contact block 10 2NO	Contact block 11 2NC	Contact block 12 2NO	Contact block 13 2NC
<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.
NO 3-4	NC 1-2	NC 1-2	NC 1-2	NC 1-2	NO 1-2	NC 1-2	NO 1-2	NC (1°) 1-2
NC 5-6	NO 3-4	NO 3-4	NO 3-4	NC 3-4	NO 3-4	NC 3-4	NO 3-4	NC (2°) 3-4
NC 7-8								
NO 1-2								

Contact block 14 2NC	Contact block 15 2NO	Contact block 16 2NC	Contact block 18 1NO+1NC	Contact block 20 2NC+1NO	Contact block 21 3NC	Contact block 22 1NC+2NO	Contact block 33 1NC+1NO	Contact block 34 2NC
<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.
NC (1°) 1-2	NO (1°) 1-2	NC, lever right 1-2	NC 1-2	NC 3-4	NC 3-4	NC 3-4	NC 1-2	NC 1-2
NC (2°) 3-4	NO (2°) 3-4	NC, lever left 3-4	NO 3-4	NC 5-6	NC 5-6	NO 5-6	NO 3-4	NC 3-4
				NO 7-8	NC 7-8	NO 7-8		

Contact block E1  
PNP



M12 connector, 4 poles

Contacts	Pin no.
+	1
-	3
NC	2
NO	4

### For ES series housings

ES AC31025 1NC	ES AC31084 1NC SELF-MONITORED	ES AC31026 2NC	ES AC31027 1NO+1NC	ES AC31028 1NO+2NC
<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.	<b>Contacts</b> Pin no.
NC 1-2	NC 1-2	NC 1-2	NC 1-2	NC 3-4
		NC 3-4	NO 3-4	NC 5-6
				NO 7-8



## Definitions according to the EN 60947-1 and EN 60947-5-1 standards

### Control switches

Devices or operating mechanism for controlling the operation of equipment, including signalling, interlocking, etc.

### Utilization category

Combination of specified requirements related to the conditions in which the switching device fulfils its purpose.

### Operating cycle

Sequence of two operations, one for opening and one for closing.

### Rated current $I_e$

This current depends on the rated operating voltage, the rated frequency, the utilization category and the type of protective enclosure, if present.

### Thermal current $I_{th}$

Maximum current for heating tests on equipment without enclosure, in free air. Its value shall be least to equal to the maximum value of the rated operational current  $I_e$  of the equipment without enclosure, in eight-hour duty.

### Electrical endurance

Number of on-load operating cycles, under the conditions defined by the corresponding product standard, which can be carried out without repair or replacement.

### Mechanical endurance

Number of no-load operating cycles (i.e. without current on the main contacts), under the conditions defined by the corresponding product standard, which can be carried out without repair or replacement of mechanical parts.

### Contact elements

The parts, fixed or movable, conducting or insulating, of a control switch necessary to close and open one single conducting path of a circuit.

### Single interruption contact elements

Contact element opening or closing the circuit's conducting path at one point only.

### Double interruption contact elements

Contact element opening or closing the circuit's conducting path at two points in series.

### Make-contact elements (normally open)

Contact element closing a circuit's conducting path when the control switch is actuated.

### Break-contact elements (normally closed)

Contact element opening a circuit's conducting path when the control switch is actuated.

### Change-over contact elements

Contact element combination including one make-contact element and one break-contact element.

### Electrically separated contact elements

Contact elements of the same control switch which are well isolated from each other and therefore can be connected to electric circuits with different voltages.

### Contact elements with independent action (snap action)

Contact element of a manual or automatic device for control circuits where the motion speed of the contact is substantially independent from the motion speed of the actuator.

### Contact elements with dependent action (slow action)

Contact element of a manual or automatic device for control circuits where the motion speed of the contact depends on the motion speed of the actuator.

### Minimum actuating force

Minimum force to be applied to the actuator that will cause all contacts to reach their switched position.

### Position switch

Control switch whose controller is actuated by a moving part of the machine, when this part arrives to a set position.

### Foot switch

Control switch whose actuator is actuated by exerting force with a foot on the pedal.

### Pre-travel of the actuator

The maximum travel of the actuator which does not cause any travel of the contact elements.

### Ambient temperature

The air temperature surrounding the complete switching device, under prescribed conditions.

### Rated operating voltage $U_e$

Voltage which, combined with the rated operational current  $I_e$ , determinates the application of the equipment and the referred utilization categories.

### Rated insulation voltage $U_i$

Reference voltage for the dielectric test voltage and the creepage distances along surfaces.

### Rated impulse withstand voltage $U_{imp}$

The highest peak value of an impulse voltage, of a prescribed shape and polarity, which does not cause destructive discharge under the specified test conditions.

### Contact block

Contact element or contact elements combination which can be combined with similar units, operated by a common actuating system



## Markings and quality marks

### CE marking



The CE marking is a mandatory declaration made by the manufacturer of a product in order to indicate that the product satisfies all requirements foreseen by the directives (regulated by the European Community) in terms of safety and quality. Therefore, it ensures National bodies of the EU countries about the fulfilment of obligations laid down in the agreements.

### IMQ mark



The IMQ (Italian Institute of the Quality Mark) is an association in Italy (independent third body) whose task is to check and certify the compliance of materials and equipment with safety standards (CEI standards in the electric and electronic sector). This voluntary conformity certification is a guarantee of quality, safety and technical value.

### UL mark



UL (Underwriters Laboratories Inc.) is an independent non-profit body that tests materials, devices, products, equipment, constructions, methods and systems with regard to their risk for human life and goods according to the standard in force in the United States and Canada. Decisions made by UL are often recognized by many governing authorities concerning the compliance with local safety regulations.

### CCC mark



The CQC is the organization in the Chinese Popular Republic whose task is to check and certify the low voltage electrical material.

This organization issues the product mark CCC which certifies the passing of electrical/mechanical conformity tests by products and the compliance of the company quality system with required standards. To obtain the mark, the Chinese body makes preliminary company visits as well as periodical check inspections. Position switches cannot be sold in the Chinese territory without this mark.



### TÜV SÜD mark

TÜV SÜD is an international authority claiming long-standing experience in the certification of operating safety for electrical, electromechanical and electronic products. In the course of type approval, TÜV SÜD closely inspects the quality throughout all the stages concerning product development, from software design and completion, to production and to the tests conducted according to ISO/IEC standards. The operating safety certification is obtained voluntarily and has a high technical value, since it not only certifies the electrical safety of the product, but also its specific operating suitability for use in safety applications according to the IEC 61508 standard.

### EAC mark



The EAC certificate of conformity is a certificate issued by a Customs Union certification body formed by Russia, Belarus and Kazakhstan, with which the conformity of a product is certified with the essential safety requirements laid down by one or more Technical Regulations (Directives) of the Customs Union.

## International and European Standards

**EN 50041:** Low voltage switchgear and controlgear for industrial use. Control switches. Position switches 42.5x80 mm. Dimensions and features

**EN 50047:** Low voltage switchgear and controlgear for industrial use. Control switches. Position switches 30x55 mm. Dimensions and features

**EN ISO 14119:** Safety of machinery. Interlocking devices associated with guards. Design and selection principles.

**EN ISO 12100:** Safety of machinery. General design principles. Risk assessment and risk reduction.

**EN ISO 13849-1:** Safety of machinery. Safety-related parts of control systems. Part 1: General principles for design.

**EN ISO 13850:** Safety of machinery. Emergency stop devices, functional aspects. Design principles.

**EN 61000-6-3 (equivalent to IEC 61000-6-3):** Electromagnetic compatibility. Generic emission standard. Part 1: residential, commercial and light-industrial environments.

**EN 61000-6-2 (equivalent to IEC 61000-6-2):** Electromagnetic compatibility. Generic immunity standard. Part 2: Industrial environments.

**EN ISO 13855:** Safety of machinery. Positioning of safeguards with respect to the approach speeds of parts of the human body.

**EN 1037:** Safety of machinery. Prevention of unexpected start-up.

**EN 574:** Safety of machinery. Two-hand control devices. Functional aspects. Principles for design.

**EN 60947-1 (equivalent to IEC 60947-1):** Low-voltage switchgear and controlgear. Part 1: General rules.

**EN 60947-5-1 (equivalent to IEC 60947-5-1):** Low-voltage switchgear and controlgear. Part 5: Devices for control and operation circuits. Section 1: Electromechanical control circuit devices.

**EN 60947-5-2:** Low-voltage switchgear and controlgear. Part 5-2: Control circuit devices and switching elements - Proximity switches

**EN 60947-5-3:** Low-voltage switchgear and controlgear. Part 5-3: Control circuit devices and switching elements - Requirements for proximity devices with defined behaviour under fault conditions (PDF)

**EN 60204-1 (equivalent to IEC 60204-1):** Safety of machinery. Electrical equipment of machines. Part 1: General rules.

**EN 60529 (equivalent to IEC 60529):** Protection degree of the housings (IP codes).

**ISO 20653:** Road vehicles-degrees of protection (IP CODE)

**EN 62326-1 (equivalent to IEC 62326-1):** Printed boards. Part 1: Generic specification

**EN 60664-1 (equivalent to IEC 60664-1):** Insulation coordination for equipment within low-voltage systems

Part 1: Principles, requirements and tests.

**EN 61508 (equivalent to IEC 61508):** Functional safety of electrical, electronic and programmable electronic systems for safety applications.

**EN 62061 (equivalent to IEC 62061):** Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems.

**EN 60079-0 (equivalent to IEC 60079-0):** Electrical devices for potentially explosive atmospheres. General rules

**EN 60079-11 (equivalent to IEC 60079-11):** Electrical apparatus for potentially explosive atmospheres. Intrinsic safety "i"

**EN 60079-31 (equivalent to IEC 60079-31):** Electrical apparatus for potentially explosive atmospheres. Type of protection: "n"

**EN 60079-28 (equivalent to IEC 60079-28):** Electrical apparatus for use in the presence of combustible dust. Part 1-1: Construction and testing

**BG-GS-ET-15:** Prescriptions about how to test switches with forced contact opening to be used in safety applications (German standard).

**UL 508:** Standards for industrial control equipment. (American standard).

**CSA 22-2 No.14:** Standards for industrial control equipment. (Canadian standard).



## European directives

<b>2014/35/EU</b>	Directive on low-voltage switchgear and controlgear
<b>2006/42/EC</b>	Machinery Directive
<b>2014/30/EU</b>	Directive on electromagnetic compatibility
<b>94/9/EC</b>	ATEX Directive

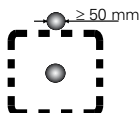
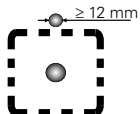
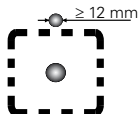
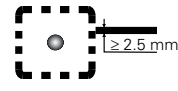
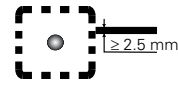
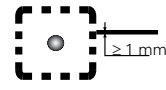
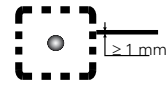
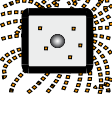
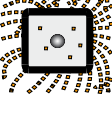
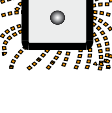
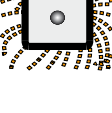



## Regulatory Organisations

<b>CEI</b>	Comitato Elettrotecnico Italiano (IT)	<b>NF</b>	Normes Françaises (FR)
<b>CSA</b>	Canadian Standard Association (CAN)	<b>VDE</b>	Verband Deutscher Elektrotechniker (DE)
<b>CENELEC</b>	European Committee for Electrotechnical Standardisation	<b>UNI</b>	Ente Nazionale Italiano di Unificazione (IT)
<b>CEN</b>	European Committee for Standardisation	<b>UL</b>	Underwriter's Laboratories (USA)
<b>IEC</b>	International Electrotechnical Commission	<b>TÜV</b>	Technischer Überwachungs-Verein (DE)

## Protection degree of housings for electrical material according to EN 60529

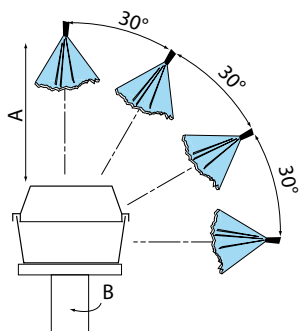
The table reports the required protection degrees according to the IEC 60529, EN 60529, CEI 70-1 standards.

The protection degrees are indicated by the abbreviation IP and 2 following digits. 2 additional letters can be reported indicating protection of persons or other features. The first digit shows the degree of protection against penetration of external solid materials. The second digit identifies instead the protection degree against liquid penetration.

1st digit	Description	Protection for the machine	Protection for persons	2nd digit	Description	Protection for the machine
<b>0</b>		Not protected	Not protected	<b>0</b>		Not protected
<b>1</b>		Protected against solid objects greater than 50 mm	Against access to hazardous parts with the back of a hand (Ø 50 mm)	<b>1</b>		Protected against vertically falling water drops
<b>2</b>		Protected against solid objects greater than 12 mm	Against access to hazardous parts with a finger (Ø 12 mm)	<b>2</b>		Protected against water drops falling at max. 15° angle
<b>3</b>		Protected against solid objects greater than 2.5 mm	Against access to hazardous parts with a tool (Ø 2.5 mm)	<b>3</b>		Protected against rain drops falling at max. 60° angle
<b>4</b>		Protected against solid objects greater than 1 mm	Against access to hazardous parts with a wire (Ø 1 mm)	<b>4</b>		Protected against splash water from any direction
<b>5</b>		Protected against dust	Against access to hazardous parts with a wire (Ø 1 mm)	<b>5</b>		Protected against powerful water jets from any direction (e.g. waves)
<b>6</b>		Totally protected against dust	Against access to hazardous parts with a wire (Ø 1 mm)	<b>6</b>		Protected against temporary water immersion (30 minutes at one-meter depth)
				<b>7</b>		Protected against continuous immersion in water
				<b>8</b>		Protected against continuous immersion in water



### Protection degree IP69K according to ISO 20653



ISO 20653 envisages a particularly strenuous test. This test simulates the conditions of pressure washing in industrial environments with water jets having pressure between 80 and 100 bar, flow rate between 14 and 16 l/min. and a temperature of 80°C.

Test specifications:

Rotation speed (B):	5 ± 1 rpm
Distance from water jet (A):	100 +50/-0 mm
Water flow rate:	15 ± 1 l/min
Water pressure:	9000 ± 1000 kPa
Water temperature:	80 ± 5 °C
Test duration:	30 s per position

### Housing data in accordance with UL (UL 508) and CSA (C22-2 no.14) approvals

The features required for a housing are determined by a specific environmental designation and other features such as the kind of gasket or the use of solvent materials.

Type	Intended use and description
1	Mainly for indoor utilization, supplied with protection against contact with the internal mechanism and against a limited quantity of falling dirt.
4X	Suitable for both indoor and outdoor use, provided with protection degree against falling rain, water splashes and direct coming water from a pipe. No damage caused by ice formation on the housing. Corrosion-resistant.
12	Indoor utilization, provided with a protection degree against dust, dirt, flying fibres, dripping water and outside condensation of non-corrosive fluids.
13	Indoor utilization, supplied with a protection degree against gauze, dust penetration, outside condensation and sprinkling of water, oil and non-corrosive fluids.

### Pollution degree (of environmental conditions) according to EN 60947-1

According to the EN 60947-1 standard, the pollution degree is a conventional number based on the quantity of conducting hygroscopic dust, ionized gas or salt, and on the relative humidity and its frequency of occurrence resulting in hygroscopic absorption or condensation of moisture leading to reduction in dielectric strength and/or surface resistivity. In equipment to be used inside a housing or having an integral enclosure as part of the device, the pollution degree applies to the inner part of housing. With the purpose of evaluating the air and surface insulation distances, the following four pollution degrees are defined:

Degree	Description
1	No pollution or only dry and non-conductive pollution occurs.
2	Normally, only non-conductive pollution is present. Occasionally some temporary conductivity caused by condensation may occur.
3	Some conductive pollution is present, or some dry non-conductive pollution that becomes conductive because of condensation.
4	Pollution causes persistent conductivity, for instance due to conductive dust or rain or snow.

Where not otherwise specified by the applicable standards for the product, equipment for industrial applications are generally intended for their use in environment with pollution degree 3. Nevertheless, other degrees can be considered, depending on the micro-environment or on particular applications.

### Use in alternating and direct current of auxiliary devices acc. to EN 60947-5-1

Alternating current use

Utilization category	Description
AC12	Control of resistive loads and solid state loads with insulation by optocouplers.
AC13	Control of solid state loads with transformer isolation
AC14	Control of electromagnetic loads, power ≤ 72 VA
AC15	Control of electromagnetic loads, power ≥ 72 VA

Direct current use

Utilization category	Intended use
DC12	Control of resistive loads and solid state loads with insulation by optocouplers.
DC13	Control of electromagnetic loads without economy resistors in circuit
DC14	Control of electromagnetic loads with economy resistors in circuit



Legend:

E2 1PU●●●●●●

The dots indicate a generic alphanumeric character

Article	Page
E2 1BAC11	135
E2 1BAC12	135
E2 1BAC21	135
E2 1BAC22	135
E2 ●IL●●1●	81
E2 ●PD●●●●●●	39
E2 ●PE●●●●●●	49
E2 ●PL●●●●●●	31
E2 ●PQ●A●●●●●	45
E2 ●PT●●●●●●	39
E2 ●PU●●●●●●	31
E2 ●RJ45●●●●	109
E2 ●SE●●●●●●●●	55
E2 ●SL●●●●●●●●	55
E2 ●SC●●●●●●●●	67
E2 ●USB●●●●●	107
E2 1TA1A110	135
E2 C●●●●●●●	85
E2 L●●●●●	95
E2 ●MA●●●91	75
E6 ●DM●●●●-D11●	111
E6 ●IL●A●11●	113
E6 ●IS●●1●V1B	115
EA ●●●●●	125
EA AC●●●●●	125
ES ●●●●●	117
ES AC●●●●●	117
FK ●E2-M1	101
FR ●E2-M2	101
FX ●E2-M2	101
PA ●●●●●-M2	13
PC ●●●●●	21
PX ●●●●●-M2	13
VE AD3PF9A0	135
VE AS1211	31
VE AS1212	55
VE AS1213	55
VE AS1216	55
VE AS1218	31
VE BC●●●●	131
VE CA1A1	135
VE CA1B1	135
VE CA1C1	135
VE CA1D1	135
VE CH121A1	135
VE DL●A●●●●●	131
VE GF121A	135
VE GF151A	135
VE GF720A	135
VE GG3AA9A	125
VE GP●●●●●	135
VE KE1A00-PY333	49
VE LN2A●●	81
VE LP2●●●●	31
VE PR3A70	135
VE PT●●●●●●	135
VE TF12●●●●●	75
VE TF32●●●●●	49
VE TR●●●●●●	135
VE TS3●●●●	117
VF B●●●	27
VF CA●●●●●	143
VF CBMP●●●●●	143
VF CN●●●●	143
VF DFP●●●	143
VF KIT●●	21
VF PA●●●●●●	143
VF SL●●●●●●	143



## Changed article codes

Legend:

CC 01AAB00AB → ES AC31003

The codes in grey have been replaced by the code after the arrow

Old Article	New Article
CC 01AAB00AB →	ES AC31003
CC 01AAB00AC →	ES AC31005
CC 01AAB00AD →	ES AC31006
CC 01AAB01AB →	ES AC31029
CC 01AAB01AC →	ES AC31031
CC 01AAB01AD →	ES AC31030
CC 01AAB02AB →	ES AC31035
CC 01AAB02AC →	ES AC31037
CC 01AAB02AD →	ES AC31038
EB AC211001 →	ES AC31001
EB AC211002 →	ES AC31002
EB AC211003 →	ES AC31003
EB AC211004 →	ES AC31004
EB AC211005 →	ES AC31005
EB AC211006 →	ES AC31006
EB AC211011 →	ES AC31011
EB AC211015 →	ES AC31015
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EB AC211022 →	ES AC31022
EB AC211023 →	ES AC31023
EB AC211024 →	ES AC31024
EB AC211025 →	ES AC31025
EB AC211026 →	ES AC31026
EB AC211027 →	ES AC31027
EB AC211028 →	ES AC31028
EB 21AA151AA →	ES 31001
EB 21AA191AA →	ES 31000
EB 21BA151AA →	ES 31001
EB 21BA191AA →	ES 31000
VF IL●●●●●● →	VF SL●●●●●●



**Order procedures:**

Purchasing orders must always be sent in writing (fax, e-mail). We reserve the right to not accept e-mail orders in case of missing characteristics necessary to correctly identify the sender or to not process them in case of virus infected attachments or attachments of dubious origin.

**Minimum order amount:**

Unless specifically agreed, the minimum order amount for deliveries in Italy is EUR 200 net (VAT excluded). For orders of less than EUR 200, a EUR 10 fee will be deducted towards the costs if the delivery occurs in Italy and San Marino; for deliveries abroad, the fee will be EUR 30.

**Prices:**

The prices quoted in the price list do not include VAT, custom taxes or any other charges. Unless otherwise agreed, the prices quoted in the price list are not binding and may undergo changes without prior notice.

**Order quantities:**

Some products are shipped in packs. The ordered quantities of these items must be multiples of the quantities contained in the packages.

**Order cancellation/changes:**

Order changes might be accepted depending on the job order status. Changes or cancellation of special article orders will not be accepted.

**Supply:**

The supply includes only what is expressly stated in the order confirmation. As per article 1461 of the Civil Code, we reserve the right to stop supply in case of changes in the customer's financial standing.

**Delivery:**

The delivery is indicated in the order confirmation and reports the period in which the goods can be available at the factories of Pizzato Elettrica and not the date of arrival at the customer's premises. This date is an approximate value and cannot be used as a reason of the order non-fulfilment.

**Packaging:**

Packaging is free. For more than six boxes pallets can be necessary for the transport.

**Shipment:**

Goods always travel at risk of the buyer, even if the goods are sold carriage paid. The customer must check that the forwarder delivers the number of boxes indicated in the delivery note, that the boxes are intact and that the weight corresponds to what is stated in the documents. In case of any inconsistencies, always accept the goods SUBJECT TO VERIFICATION, clearly specifying the type of damage. Any discrepancy or mistakes should be reported in writing within 8 days of receipt of the goods at [info@pizzato.com](mailto:info@pizzato.com).

**Warranty:**

The warranty has a validity of 12 months starting from the delivery date of the material. The warranty does not cover improper use of the material, negligence or wrong installation/assembling. The warranty does not cover parts subjected to wear or products used beyond the technological limits described in the catalogue, or items that have not received the right maintenance. Pizzato Elettrica engage themselves to repair or replace, in whole or in part, products which present evident manufacturing defects, provided that they are still covered by warranty. Pizzato Elettrica are only responsible for the value of the product and requests for compensation due to machine downtime, repairs or costs for direct or indirect damages resulting from product malfunctions will not be accepted, even if these occur during the warranty period. It is the responsibility of the manufacturer to evaluate the importance of the products used and the possible damage caused by their malfunction and to adopt the necessary technical measures to minimize consequences on machines also for personal safety purposes (redundancy systems, self-controlled systems, etc). The warranty will be subject to the customer's compliance with the payment terms.

Any samples provided free of charge or bearing the phrase "SAMPLE" must be considered as purely demonstrative and are not covered by the guarantee.

**Products:**

Products can be subjected to technical improvements in any moment without prior notice.

**Payment terms:**

Payments should be settled within the terms agreed in the order confirmation. The payment method is always at the risk of the buyer, regardless of the means chosen. In case of delayed payment, Pizzato Elettrica reserve the right to stop the delivery of any current orders and charge interest at the rate envisaged by European Directive 2011/7/EU. Any technical or commercial complaints do not entitle the claimant to suspend the due payments.

**Returned goods:**

Any products returned for any reason will not be accepted unless they are previously APPROVED and AUTHORISED in writing. Otherwise, Pizzato Elettrica reserve the right to reject the goods and return them "freight collect" at the expense of the buyer, in the same way by which they were forwarded. Returns have to be sent back within 3 months from the authorization date and no later. After this period, returns will not be accepted. The request to return goods will lead to their sales price being devalued and will be considered if relative to standard items and materials delivered no more than 12 months ago. The returned goods and the relative packaging must be intact and free from damage.

**Ownership:**

The delivered products remain property of Pizzato Elettrica until full settlement of the invoices.

**Proper Law:**

The Court of Vicenza shall have jurisdiction in any disputes.

For the updated terms of sale, please consult the website [www.pizzato.com](http://www.pizzato.com)



## Notes

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[illegible]This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are 20 columns and 20 rows of squares, creating a total of 400 square units. The grid covers the entire area of the page, leaving no margins or other markings.



## Notes

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[illegible]This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are no margins, text, or other markings on the page.



## Notes

[illegible]A full-page sheet of white graph paper featuring a uniform grid of thin black horizontal and vertical lines. The grid consists of small squares covering the entire area of the page.



Any information or application example, connection diagrams included, described in this document are to be intended as purely descriptive.  
The choice and application of the products in conformity with the standards, in order to avoid damage to persons or goods, is the user's responsibility.

The drawings and data contained in this catalogue are not binding and we reserve the right, in order to improve the quality of our products, to modify them at any time without prior notice.

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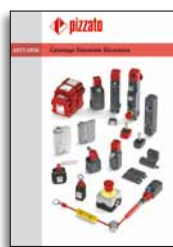




General Catalogue  
Detection



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HMI



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Safety



General Catalogue  
LIFT



DVD



Web site  
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