pizzato

2021-2022

General Catalogue HMI

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Notes

MORE THAN 300 PROFESSIONALS WITH PASSION

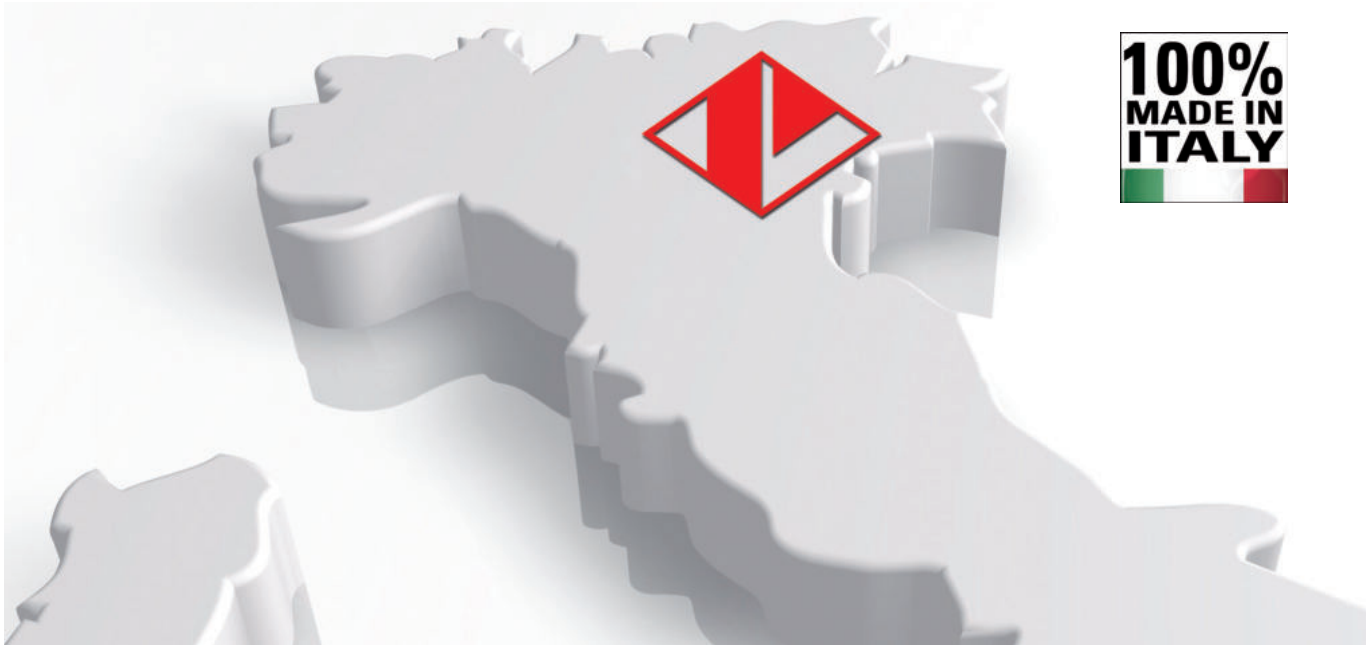
It is people, with their professionalism and dedication that make a great company. This profound conviction has always guided Pizzato Elettrica in their choice of employees and partners.

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 over the last 10 years and has achieved a considerable increase in sales 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 lifts.
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 it 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 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.
The first company-owned plant (P1) geared towards mechanical processing was built.

1990 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 (P3) 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 (P4), housing the assembly department.

2002 Achievement of the ISO 9001:2000 certification. Launching of the first safety modules. The new factory headquarters and logistics centre (P5) is built and will remain the company's headquarters for many years. Continued expansion of the industrial safety and automation product range.

2007 Pizzato Elettrica faces its 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 (P8) dedicated to switches and automatic machines is opened, spanning a surface area of 6000 m².

2016 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.
Foundation of second subsidiary of Pizzato Elettrica, Pizzato France SARL, in France.

2017 The company continues to expand and achieves the quality certification based on the more recent version of standard ISO 9001 of 2015.
In Spain, the third Pizzato Elettrica subsidiary is founded: Pizzato Iberica SL.
The foundation stone is laid for the new factory (P6), which is to become the company's headquarters.

2018 The safety handle P-KUBE Krome is launched, a brand new product in the market, confirming that Pizzato Elettrica thrives on innovation in the sectors of automation and industrial safety.
Foundation of fourth subsidiary of Pizzato Elettrica, Pizzato USA Inc, in the United States.

2019 The new factory (P6) is opened, a modern building of 28,000 m² realized with the most advanced Industry 4.0 technologies, where all offices and production divisions are transferred, allowing to further improve the flow of material and information.
The logistics and shipment department is optimised with the introduction of a new completely automated warehouse.

Today, Giuseppe and Marco Pizzato lead a company in constant growth in terms of new product launches, number of employees, turnover, and new markets. Pizzato Elettrica is continuing its new product internationalisation and development process.

90 MILLION PARTS SOLD WORLDWIDE

Pizzato Elettrica's product catalogue contains more than 7,000 articles, with more than 1,500 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 vast range of products aimed specifically at the safety of machinery, fully designed and assembled at the Marostica (VI) company premises, includes not only more traditional safety switches with separate actuator (with or without locking mechanism) and hinge switches but also state-of-the-art anti-tampering devices with RFID technology, such as the ST series sensors, and NG and NS series locking devices.

The product range is complemented by safety handles for guards, with the innovative P-KUBE Krome model whose handle can be illuminated with multicolour signalling LEDs, as well as by the CS series safety modules, available in single function versions, or user-programmable with the use of the Gemnis Studio software; fully implemented by Pizzato Elettrica and distributed with a free licence.

MAN-MACHINE INTERFACE.
Pizzato Elettrica's control and signalling devices of the EROUND line are designed for the use in the man-machine interface sector. Thanks to the elegant 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.

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

MILLIONS OF 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 several 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 is compliant with the international ISO 9001 standard, in its most recent 2015 revision. 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.
The Pizzato Elettrica quality management system ensures that all sensitive company processes – from component design to implementation, from materials provisioning to verification of non-compliant products – are carried out according to the procedures laid down, with the aim of providing our customers with continuously improved and reliable products.

• 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.

GLOBAL SUBSIDIARIES

Pizzato Deutschland GmbH
Munich
Founding year: 2013
info@pizzato.com

Pizzato France Sarl
Villeurbanne - Lyon
Founding year: 2016
info@pizzato.com

Pizzato Iberica SL
Barcelona
Founding year: 2017
info@pizzato.com

Pizzato USA
East Syracuse, NY
Founding year: 2018
info@pizzatousa.com

The purpose of these subsidiaries is to coordinate and support the activities of representative agencies, or distributors, present in the various countries, managing marketing and sales activities, with further objectives of increasing brand visibility and penetration capacity of Pizzato Elettrica products in markets considered strategic.

Products from Pizzato Elettrica are currently used in over 80 countries: The commercial support network, which is made up of local professional and experienced representatives, combined with the productive capacity of the headquarters in Italy, are the basis for the formation of a group that, together with its partners, has all the necessary requirements to become one of the most important companies in the field of automation and industrial safety.

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
Telephone: +39.0424.470.930
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
Telephone: +39.0424.470.930
E-mail: info@pizzato.com

Spoken languages:

TRADE FAIRS AND EVENTS

TRADE FAIRS

Pizzato Elettrica regularly participate 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.

WEBSITE WWW.PIZZATO.IT

PRODUCT NEWS
Visit the website at www.pizzato.com to stay updated on all the news regarding product launches, to view the entire range of products created by Pizzato Elettrica, and to consult all the documentation provided.

SEARCH USING FILTERS
You can find the product you want by entering the relative item code, or use the filters provided to create the item most adapted to your particular requirements, by choosing the features it needs to offer.

BROWSABLE, DOWNLOADABLE CATALOGUE
Users can download the complete catalogue or alternatively browse it directly online, an extremely handy solution for those wishing to consult the range of products simply and rapidly.

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

USAGE INSTRUCTIONS
You can download product usage or installation instructions, in PDF format, to your computer.

2D AND 3D FILES
2D and 3D drawings are available for every item; in formats that are compatible with the widest variety of drawing programs.

CERTIFICATES AND EC DECLARATIONS OF CONFORMITY
The latest product type approval certificates, and EC declarations of conformity in accordance with applicable European product directives, are published on the website.

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

MULTILINGUAL TRANSLATIONS
The website's multilingual versions allow the clients of the global market to find all the information they need in one place.

BN series control device units

- Modular technopolymer housing for 3 to 8 devices
- Wide range of available control devices
- Rotatable modules for the greatest installation flexibility
- Can be configured with various types of connection output
- Min. dimensions 40x40 mm

▸ 141

PUSH-IN spring-operated connection
ERGOUND **line**

- Fast, simple conductor insertion, no tooling required
- Quick release, with the grey button provided to release the wire
- For 0.25 mm² to 1.5 mm² conductors, with or without wire-end sleeve
- 1NO and 1NC contact blocks, with base or panel mounting
- 12-30 Vac, 120 Vac, 230 Vac LED units, with base or panel mounting

▸ 87

Dual function luminous disc
ERGOUND **line**

- High visibility
- Protection degree IP67
- Versions with supply voltage of 12 Vac/dc and 24 Vac/dc
- Versions with dual function, that allow to change the lighting from continuous light to blinking light, by simple wiring
- Available in yellow and white
- Customisable using indelible symbols and texts with laser engraving

▸ 151

Diode unit

- Same shapes and sizes of the contact unit
- To be used in those circuits where it must be ensured that the current flow respects the prescribed polarity
- Panel or base mounting versions
- Screw or push-in spring-operated connections

▸ 157

High luminosity monolithic indicator lights
ERGOUND **line**

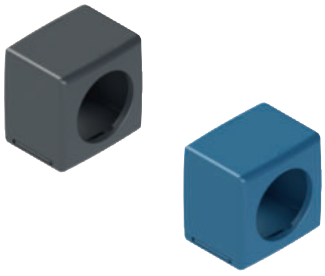
- New 120 Vac and 230 Vac high luminosity versions
- Same luminosity level as in 24 V ac/dc versions
- Highly visible and effective indicator light
- Available in various colours
- Customised laser engraving option

▸ 119

Potentiometer 0.5 W
ERGOUND **line**

- Same shape, and same technical configuration as existing 1 W potentiometer
- Cermet technology integrated in monolithic body
- Protection degrees IP67 and IP69K
- 3-pole PUSH-IN type spring-operated connection
- Available with various resistance values
- Optimised and advantageous solution for standard applications

▸ 115



Tampering protection for M12 connectors, VF PC series

- Protection against tampering with electrical connections
- Quick assembly with two interlocking shells
- Removal possible only by breaking the shells
- Different versions available for connector - device and male connector - female connector connections
- Versions available in detectable blue plastic, suitable for the food industry

▸ 181

Stock items

An overview of stock items is available at www.pizzato.com

Single foot switches - **PX** and PA **series**

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

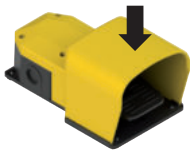
These devices are designed to be used in the toughest environmental conditions and they pass the tests required for IP65 acc. to EN 60529. They can therefore be used in all environments in which the wrapping must present a high degree of protection. Available also with IP53 for applications requiring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

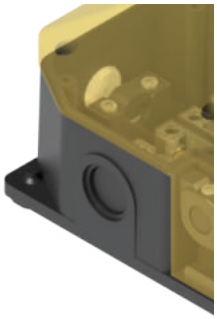
Sturdy cap

800 N



Foots 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.

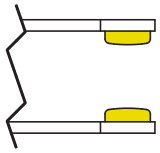
Contact block

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

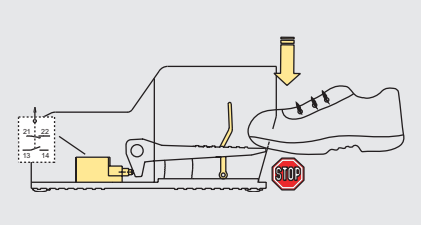
All foot switches are provided with four dedicated non-slip feet. Being hollow in the middle, these feet guarantee smaller contact surface and greater friction coefficient. This way the actuation of the foot switch is simple and practical, preventing its sliding away on very smooth and polished floors.

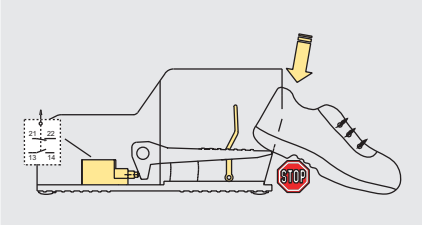
Gold-plated contacts



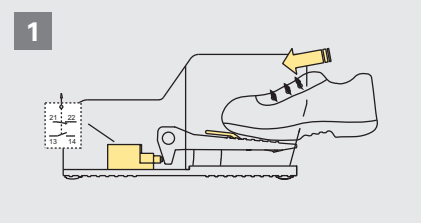
The contact blocks of these devices can be supplied gold-plated upon request. Ideal for applications with low voltages or currents; it ensures increased contact reliability. Available in two thicknesses (1 or 2.5 microns), it adapts perfectly to the various fields of application, ensuring a long endurance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

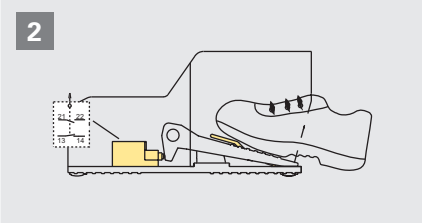
Safety lever





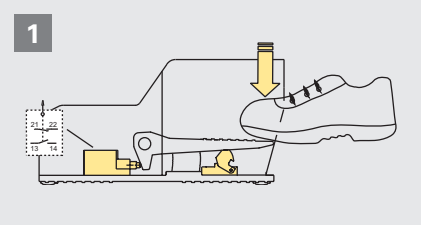
The safety lever prevents the lowering of the pedal actuator in case the foot is not fully inserted into the pedal. This prevents the accidental activation of the pedal.



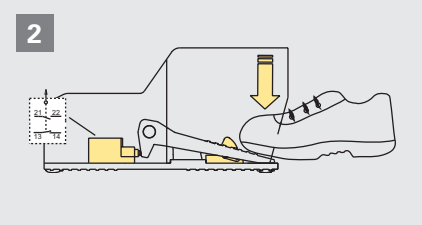


Only if the foot is completely inserted it is possible to lower the safety lever and push down the pedal actuator.

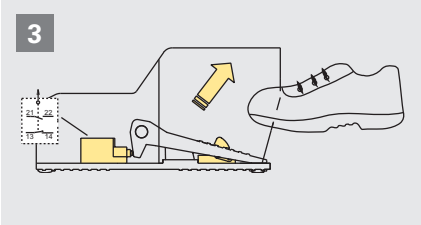
Lock of the pedal actuator



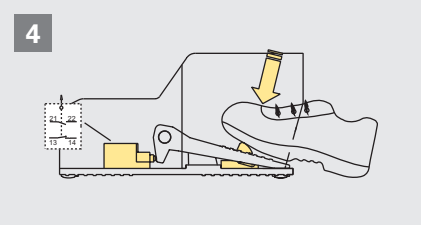
Insertion of the foot into the pedal



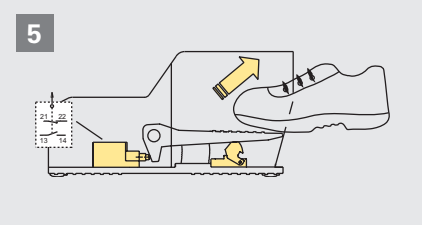
Pushing down the pedal actuator, the contacts switch and the locking device locks the actuator



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

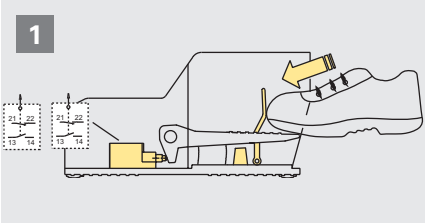


To unlock the pedal actuator push on the locking device.

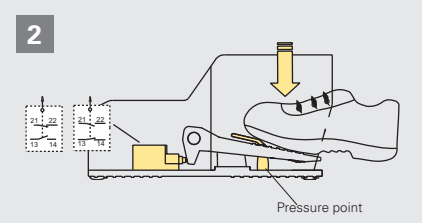


Removing the foot from the foot switch, the pedal actuator and the contacts return to their initial positions.

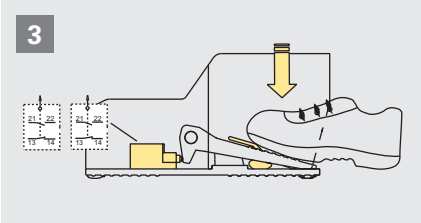
2-stage actuating force



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

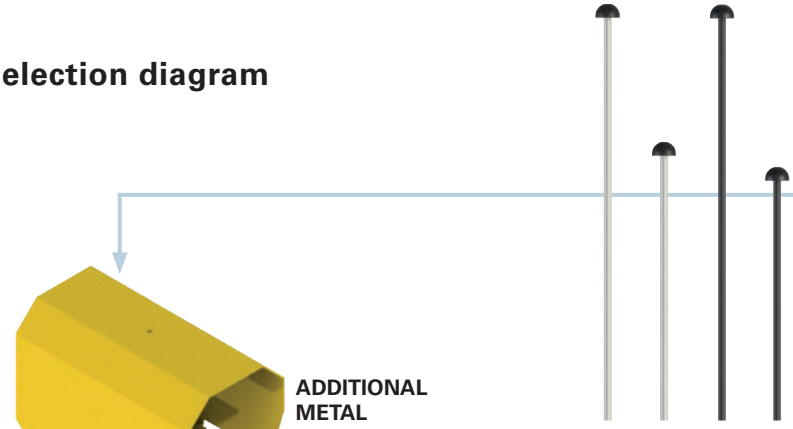


With a light pressure (~19 N) on the pedal actuator, one of the two contact blocks switches while the second keeps its state. The pedal actuator stops at pressure point.



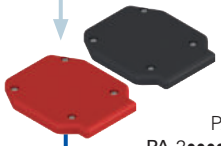
By pushing down with higher force (~180 N) on the pedal actuator, the second contact block switches as well. In this position, both contact blocks are switched.

Selection diagram



CARRYING RODS
See page 26

ADDITIONAL METAL PROTECTION



OPEN PROTECTIONS

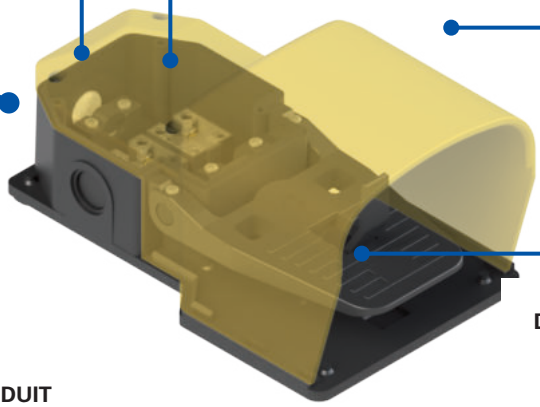
PA 5••••
PA 2••••

CONTACT BLOCK COMBINATIONS

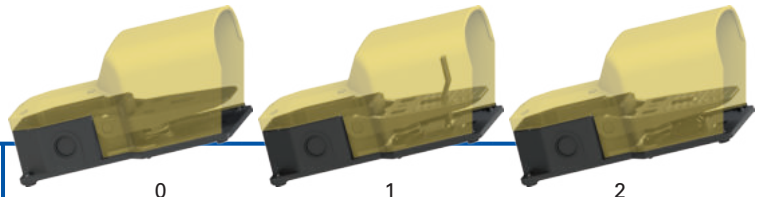
01
1NO+1NC
snap action

02
2NO+2NC
snap action

CLOSED PROTEC-TIONS



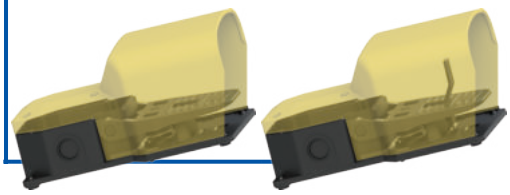
PEDAL DEVICES



0
no device

1
with safety lever

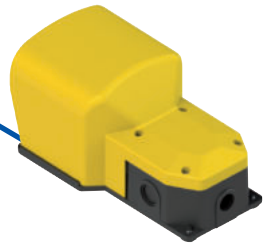
2
lock of the pedal actuator



3
two-stage

4
two-stage
with safety lever

CONDUIT ENTRY



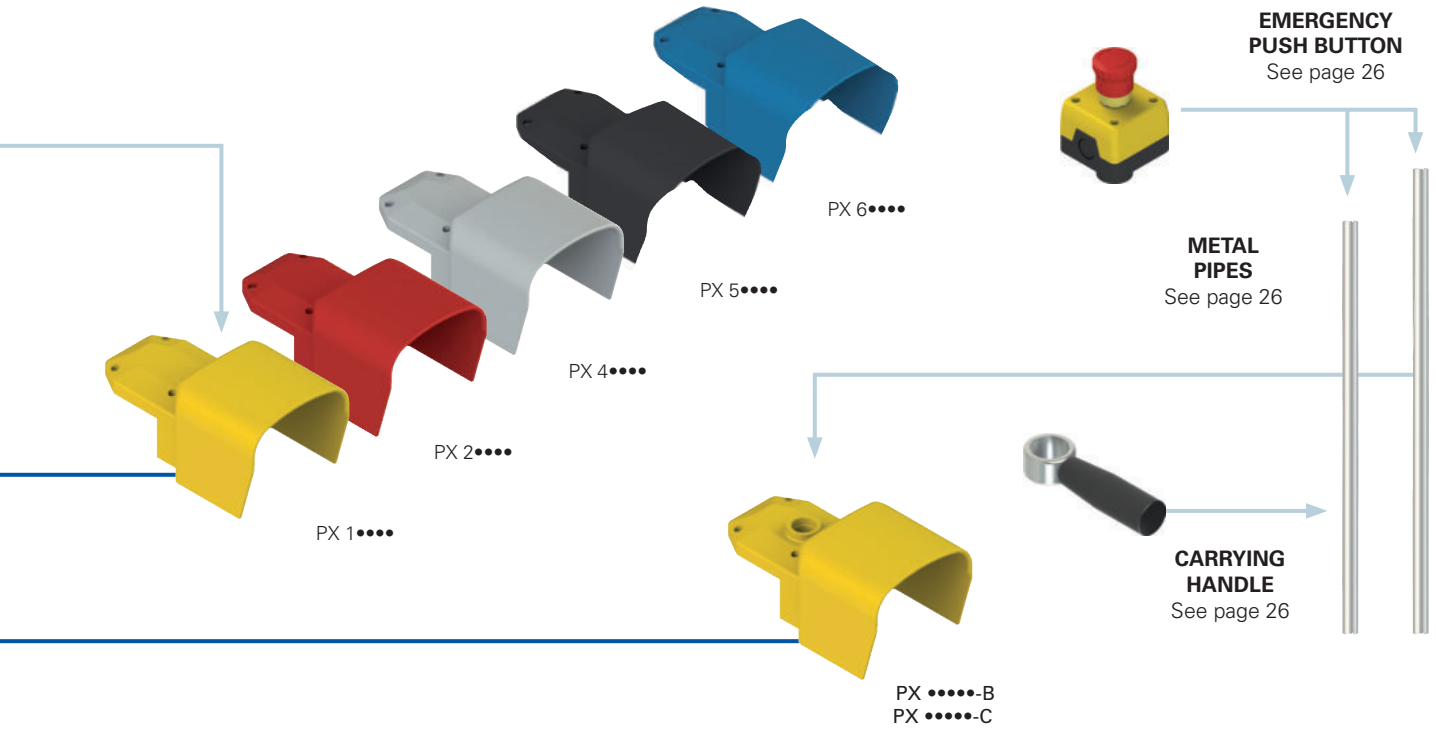
Threaded conduit entry

M2	M20x1.5 (standard)
	PG 13.5

STABILIZING PLATE

Product options

Sold separately as accessory



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	
PX	closed version
PA	open version

Threaded conduit entry	
M2	M20x1.5 (standard)
	PG 13.5

Protection colour	
1	yellow RAL 1023 (standard)
2	red RAL 3020
4	grey RAL 7035
5	black RAL 9017
6	blue RAL 5017

Contact type	
	silver contacts (standard)
G	silver contacts with 1 µm gold coating
G1	silver contacts with 2.5 µm gold coating

Accessories (PX series only)	
	no accessories
A	with technopolymer carrying rod (400 mm)
B	with M25 hole for VF KIT31
C	with M25 hole for VF KIT31 with stabilizing plate
D	with technopolymer carrying rod (660 mm)

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

Other combinations on request.
For contact block data see page 29.

Protection degree	
0	IP53
1	IP65

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

Quality marks:

complete foot switch

EAC approval: RU C-IT.УТ03.B.00035/19

Internal contact block

IMQ approval: CA02.06217
UL approval: E131787
CCC approval: 2020970305002285
EAC approval: RU C-IT.УТ03.B.00035/19

Technical data

Housing

Housing with double insulation:	⧈
Base:	glass fibre reinforced technopolymer, self-extinguishing and shock-proof
Cap:	technopolymer, self-extinguishing and shock-proof
External metallic parts:	stainless steel
Cap screw tightening torque:	0.8 … 1.2 Nm
Actuating force:	16 N
One threaded conduit entry:	M20x1.5 (standard)
Cable clamp screw tightening torque:	0.8 … 1 Nm
Protection degree:	IP53 (P• ••••0-M2) or IP65 (P• ••••1-M2) acc. to EN 60529 with cable gland of equal or higher protection degree
Utilization requirements:	See page 166

General data

Ambient temperature:	-25°C … +80°C
Safety parameter B_{10D}:	20,000,000 for NC contacts
Max. operating frequency:	3600 operating cycles/hour
Mechanical endurance:	10 million operating cycles

Cable cross section (flexible copper strands)

Contact block combinations (all):	min. 1 x 0.5 mm²	(1 x AWG 20)
	max. 2 x 2.5 mm²	(2 x AWG 14)
Terminal screw tightening torque:	0.6 … 0.8 Nm	
Cable stripping length (x):	8 mm	

In compliance with standards:
IEC 60947-5-1, EN 60947-5-1, IEC 60947-1, EN 60947-1, EN 60529, EN IEC 63000, UL 508, CSA 22.2 No. 14, GB/T14048.5

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/EU.
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.

Electrical data

Thermal current (I_{th}):	10 A
Rated insulation voltage (U_i):	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)	3	0.55	0.3

Dimensional drawings

Contact type:
R = snap action
L = slow action
LO = slow action, make before break
RS = snap action, shifted

Contact block combinations	Contact type	Actuation stages	Open version, without safety lever		Closed version, with safety lever		Closed version, with safety lever, with M25 hole for VF KIT31		Travel diagram
			Article	Contacts	Article	Contacts	Article	Contacts	
01	R	1	PA 20100-M2	1NO+1NC	PX 10110-M2	1NO+1NC	PX 10110-BM2	1NO+1NC	
02	R	1	PA 20200-M2	1NO+1NC 1NO+1NC	PX 10210-M2	1NO+1NC 1NO+1NC	PX 10210-BM2	1NO+1NC 1NO+1NC	
03	L	1	PA 20300-M2	1NO+1NC	PX 10310-M2	1NO+1NC	PX 10310-BM2	1NO+1NC	
04	L	1	PA 20400-M2	1NO+1NC 1NO+1NC	PX 10410-M2	1NO+1NC 1NO+1NC	PX 10410-BM2	1NO+1NC 1NO+1NC	
05	L	1	PA 20500-M2	2NO 2NO	PX 10510-M2	2NO 2NO	PX 10510-BM2	2NO 2NO	
06	L	1	PA 20600-M2	2NC 2NC	PX 10610-M2	2NC 2NC	PX 10610-BM2	2NC 2NC	
07	L	1	PA 20700-M2	2NC	PX 10710-M2	2NC	PX 10710-BM2	2NC	
08	L	1	PA 20800-M2	2NO	PX 10810-M2	2NO	PX 10810-BM2	2NO	
09	LO	1	PA 20900-M2	1NO+1NC	PX 10910-M2	1NO+1NC	PX 10910-BM2	1NO+1NC	
14	R	1	PA 21400-M2	2NO	PX 11410-M2	2NO	PX 11410-BM2	2NO	
15	R	1	PA 21500-M2	2NC	PX 11510-M2	2NC	PX 11510-BM2	2NC	
20	RS	2	PA 22030-M2	1NO+1NC 1NO+1NC	PX 12040-M2	1NO+1NC 1NO+1NC	PX 12040-BM2	1NO+1NC 1NO+1NC	
24	RS	2	PA 22430-M2	1NO+1NC 2NC	PX 12440-M2	1NO+1NC 2NC	PX 12440-BM2	1NO+1NC 2NC	

For contact block data see page 29

Key to travel diagrams

- Closed contact
- Open contact
- Positive opening travel
- ▶ Pressing the pedal
- ◀ Releasing the pedal

All values in the drawings are in mm

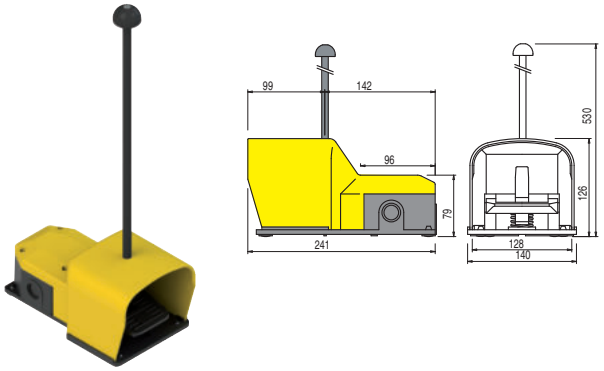
Accessories See page 167

➔ The 2D and 3D files are available at **www.pizzato.com**

Combination examples

All values in the drawings are in mm

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

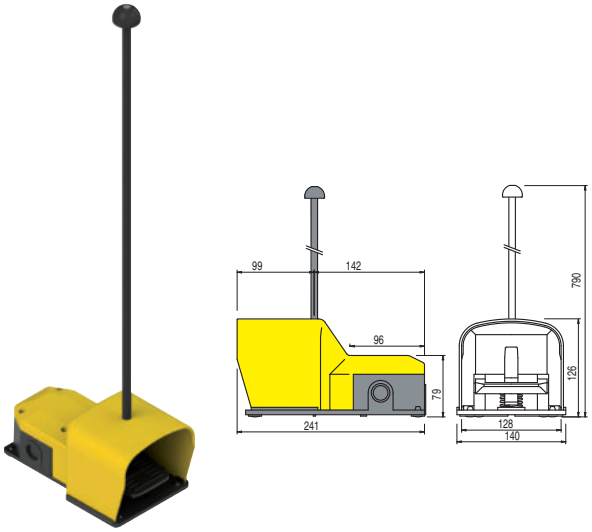


Ordering example:

			
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

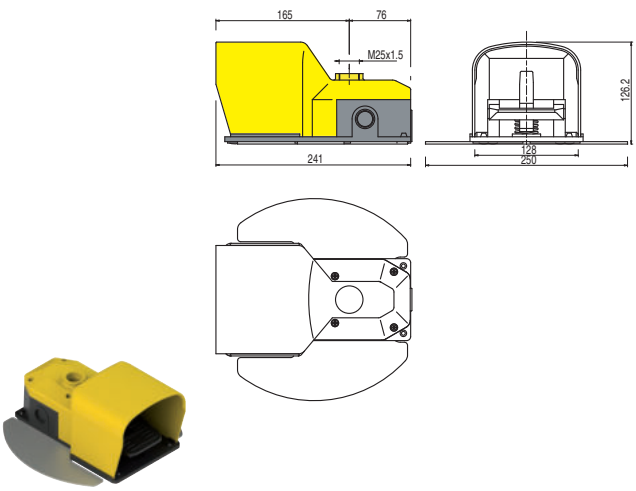


Ordering example:

			
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

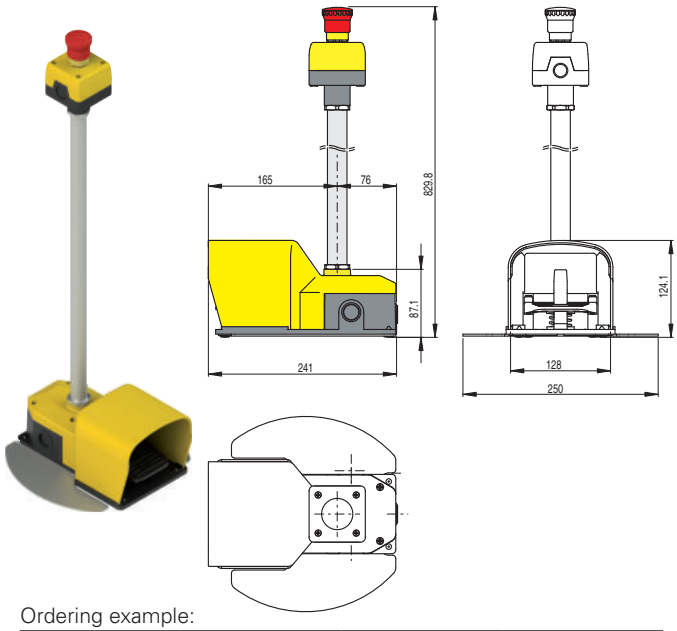


Ordering example:

			
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 stop button 1NC

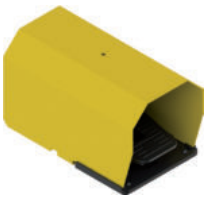


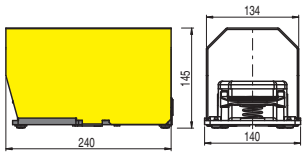
Ordering example:

			
PX 10110-BM2	VF KIT60	VF KIT31	VF KIT32

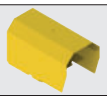
Combination examples

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

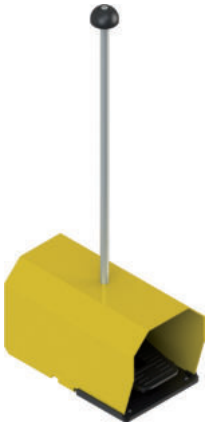


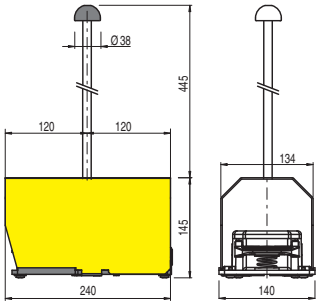


Ordering example:

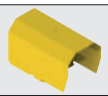
			
PA 20100-M2	VF KIT71		

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.

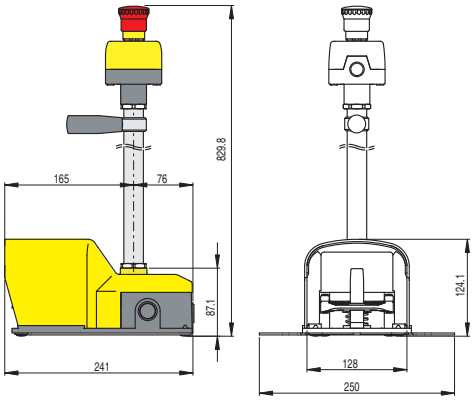


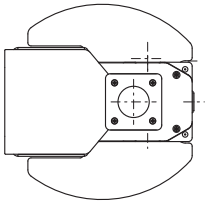


Ordering example:

			
PA 20100-M2	VF KIT71	VF KIT25	

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

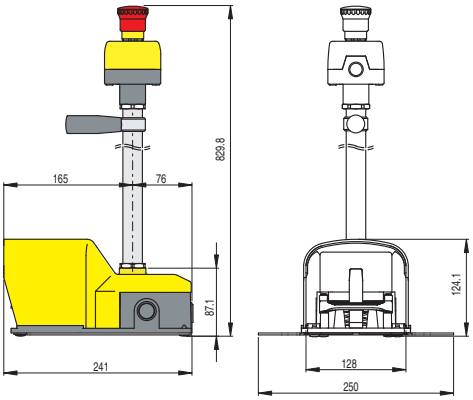


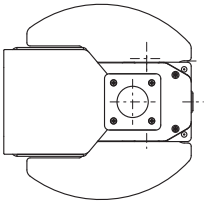


Ordering example:

				
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 stop button 1NC

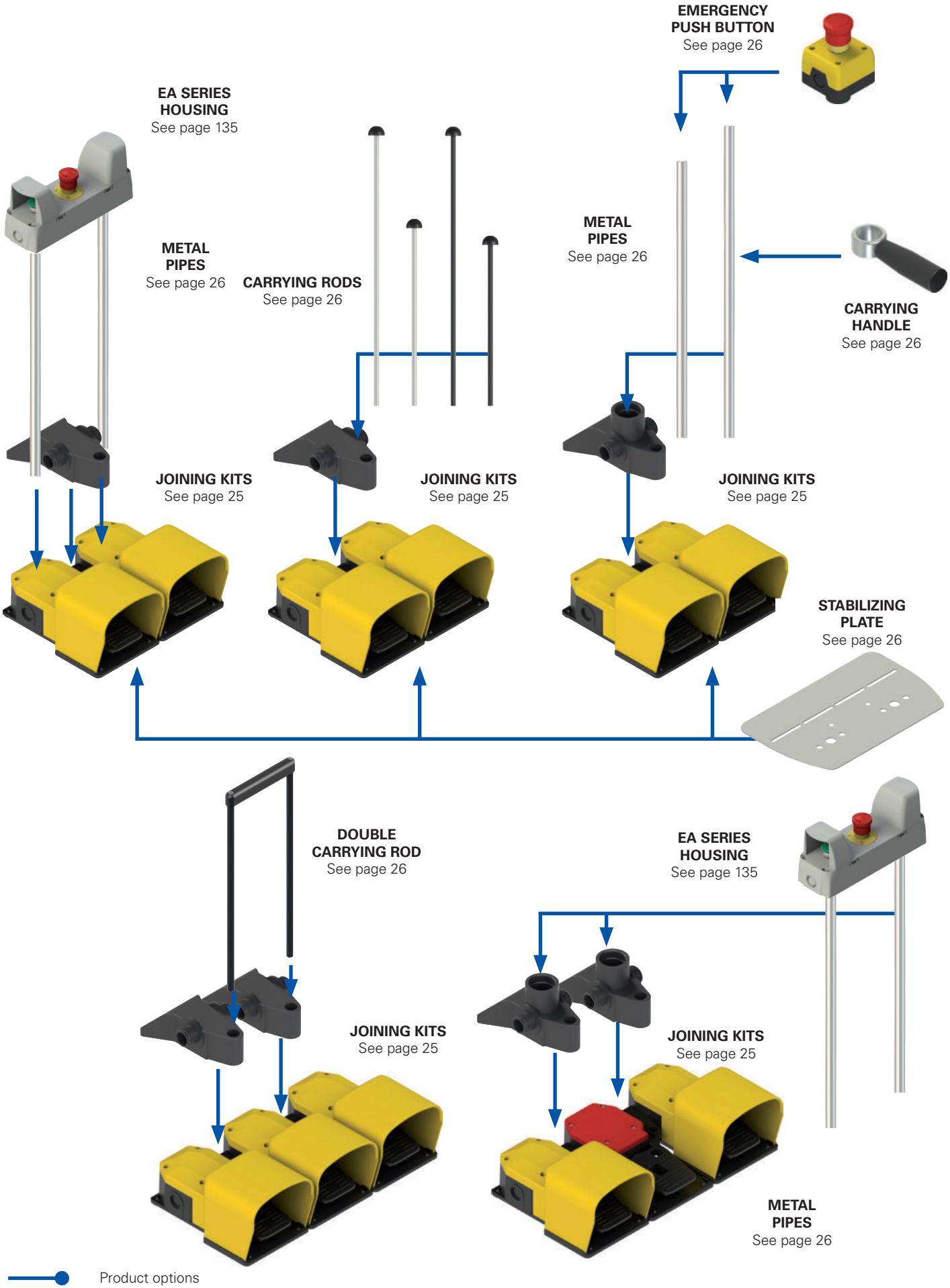




Ordering example:

				
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

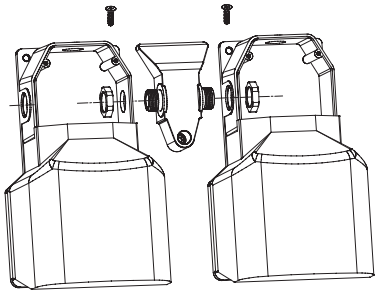
Code	Left foot switch	Joining element	Central foot switch	Joining element	Right foot switch	Additional sets
PC 3-11	PX 10110-M2	VF KIT20	PA 20100-M2	VF KIT20	PX 10110-M2	
PC 3-12	PX 10100-M2	VF KIT20	PX 10100-M2	VF KIT20	PX 10100-M2	
PC 3-13	PX 10110-M2	VF KIT20	PA 20100-M2	VF KIT20	PX 10110-M2	VF KIT40
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.

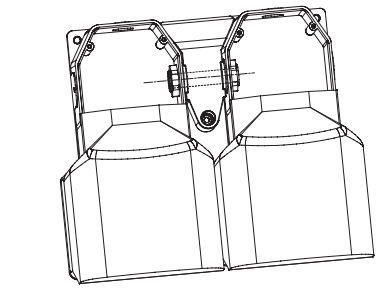
How to combine the modular foot switches

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.

1



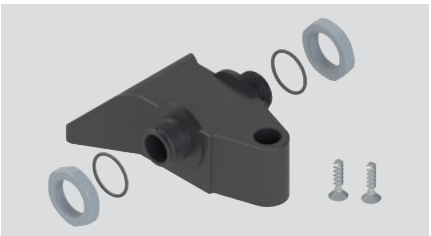
2



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.

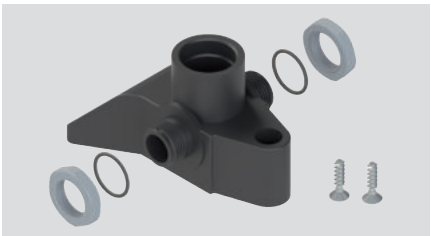
Joining elements for modular foot switches

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.

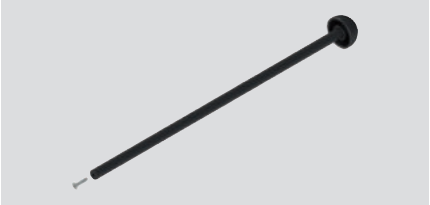
Article	Description
VF KIT30	Joining element



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.

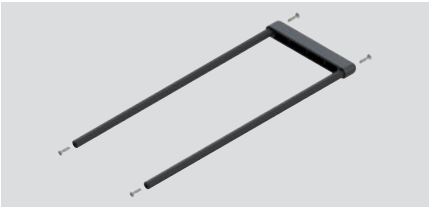
Auxiliary elements for modular foot switches

Article	Description
VF KIT21	Carrying rod set, L=400 mm
VF KIT22	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
VF KIT40	Double carrying rod set, L=400 mm
VF KIT41	Double carrying rod set, L=600 mm



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

Article	Description
VF KIT18	Metal nut

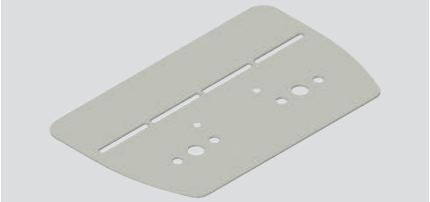
Metal nut M25x1.5 to combine with VF KIT31 or VF KIT29 if housings of the EA series are used.

Packs of 10 pcs.

Article	Description
VF KIT50	Carrying handle

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

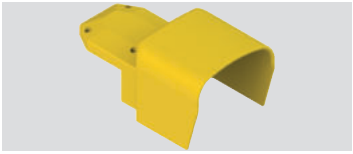
Article	Description
VF KIT61	Metal stabilizing plate



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
AC 1270	Closed protection, yellow technopolymer
AC 1027	Closed protection, red technopolymer
AC 1271	Closed protection, grey technopolymer
AC 1275	Closed protection, black technopolymer
AC 1276	Closed protection, blue technopolymer

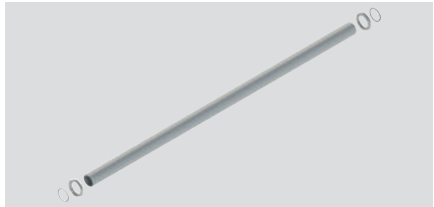


Ideal as a spare part, in case of damage to the one provided with the foot switch.

Article	Description
VF KIT25	Metal carrying rod set, L=400 mm
VF KIT26	Metal carrying rod set, L=660 mm

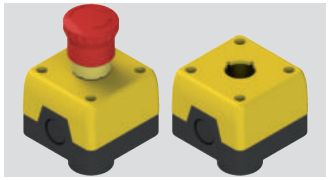
Metal carrying rod set (can be connected to VF KIT20) with self-tapping screw for rod fixing.

Article	Description
VF KIT31	Ø 25 mm metal tube set, L=660 mm
VF KIT29	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.

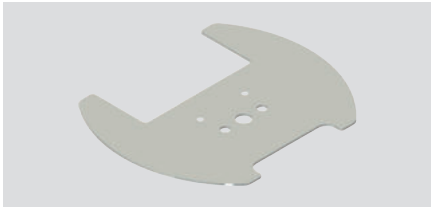
Article	Description
VF KIT32	Emergency stop button kit, 1NC
VF KIT33	Emergency stop button kit, 1NC+1NO
VF KIT34	Emergency stop button kit, 2NC
VF KIT35	Housing set for Ø 22 mm buttons



Emergency stop 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.

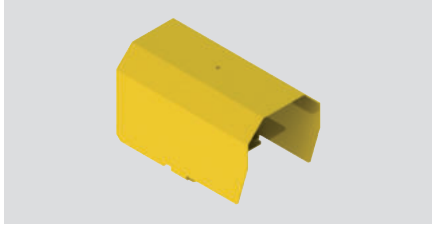
Additional contacts on page 87.

Article	Description
VF KIT60	Metal stabilizing plate



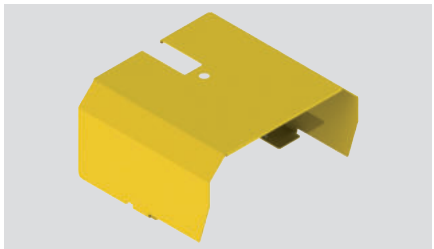
Metal stabilizing plate for single pedal.

Article	Description
VF KIT71	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.

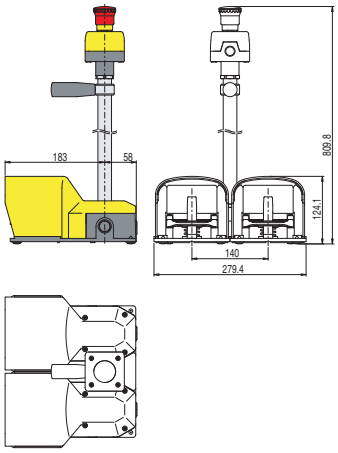
Article	Description
VF KIT81	Yellow double metal protection



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

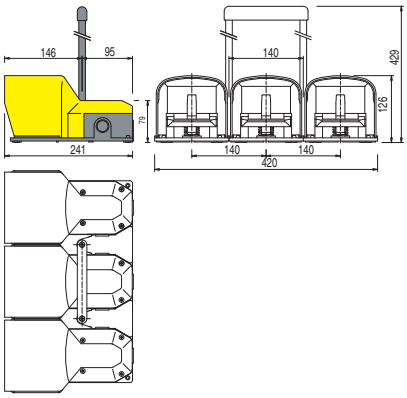
Double foot switches with joining device, metal tube and 1NC emergency stop button



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



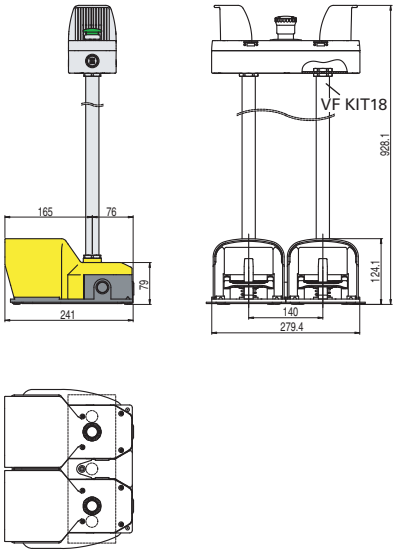
Ordering example:

	
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 135



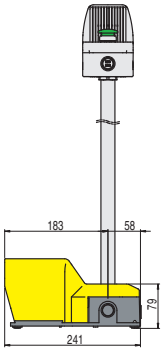
Ordering example:

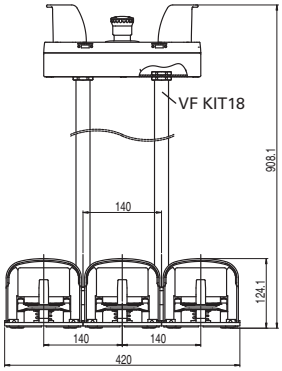
	
2x PX 10110-BM2	VF KIT20
	
2x VF KIT29	*2x* VF KIT18
	
VF KIT61	EA AC37041

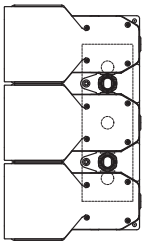
Triple foot switches with two joining devices, two metal tubes and EA series housing

EA SERIES HOUSING

See page 135



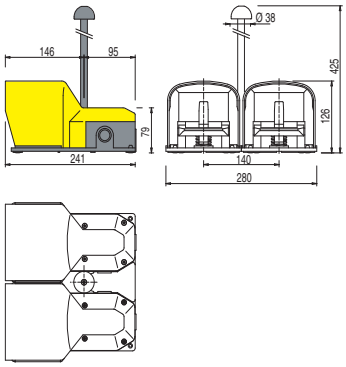




Ordering example:

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

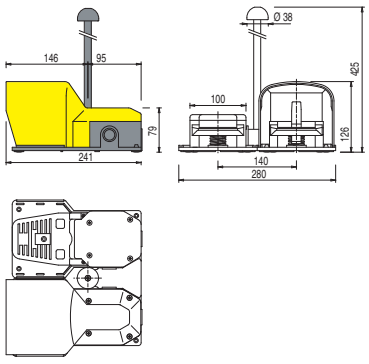
Double foot switches with joining device and carrying rod



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

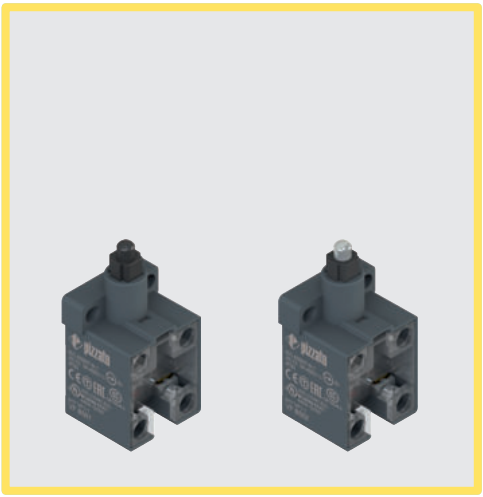


Ordering example:

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

All values in the drawings are in mm

Position switches with **open design**



Main features

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

Quality marks:

IMQ approval:	CA02.06217
UL approval:	E131787
CCC approval:	2020970305002285
EAC approval:	RU C-IT.УТ03.B.00035/19

Technical data

Housing

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

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

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 torque of the terminal screws:	0.6 … 0.8 Nm
Wire cross-sections and wire stripping lengths:	see page 247 of the General Catalogue Detection 2021-2022

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, EN IEC 63000, UL 508, CSA 22.2 No.14, GB/T14048.5

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,
RoHS Directive 2011/65/EU.

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. Actuate the switch **at least up to the positive opening travel** reported in the travel diagrams. Actuate the switch **at least with the positive opening force**, reported in brackets below each article, next to 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 225 to page 240 of the 2021-2022 catalogue Detection.

Electrical data

Thermal current (I_{th}):	10 A
Rated insulation voltage (U_i):	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)	3	0.55	0.3

Features approved by IMQ

Rated insulation voltage (Ui):
500 Vac (for contact blocks [B] 5, 6, 7, 9, 10, 12, 13, 14, 15, 17, 18, 19, 66, 67)
400 Vac (for contact blocks [B] 11, 37)

Conventional free air thermal current (Ith):	10 A
Protection against short circuits:	type aM fuse 10 A 500 V
Rated impulse withstand voltage (U_{imp}):	6 kV
Protection degree of the housing:	IP20
MV terminals (screw terminals)	
Pollution degree:	3
Utilization category:	AC15
Operating voltage (Ue):	400 Vac (50/60 Hz)
Operating current (Ie):	4 A

Forms of the contact element: Zb, Y+Y, X+X, Y, X
Positive opening contacts on contact blocks [B] 5, 6, 7, 9, 11, 13, 14, 17, 18, 19, 37, 66
In compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

Features approved by UL

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

Housing features: open type.
For all contact blocks use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 12, 14 AWG.
Tightening torque for terminal screws of 7.1 lb in (0.8 Nm).

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

Description

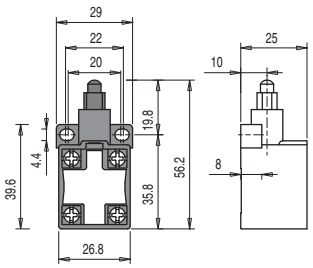
Contact block with captive screws, finger protection and self-lifting clamping screw plates. Provided with positive opening NC contacts for safety applications. Provided with twin bridge contacts, they are particularly suitable for high-reliability applications. Suitable for installation inside PA, PX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

Dimensional drawings

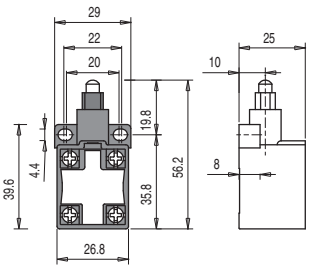
All values in the drawings are in mm

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, close

Technopolymer plunger



Metal plunger



Contact type	Article	Contacts	Article	Contacts	Travel diagram
R	VF B501	1NO+1NC	VF B502	1NO+1NC	
L	VF B601	1NO+1NC	VF B602	1NO+1NC	
LO	VF B701	1NO+1NC	VF B702	1NO+1NC	
L	VF B901	2NC	VF B902	2NC	
L	VF B1001	2NO	VF B1002	2NO	
R	VF B1101	2NC	VF B1102	2NC	
R	VF B1201	2NO	VF B1202	2NO	
LV	VF B1301	2NC	VF B1302	2NC	
LS	VF B1401	2NC	VF B1402	2NC	
LS	VF B1501	2NO	VF B1502	2NO	
LA	VF B1801	1NO+1NC	VF B1802	1NO+1NC	
L	VF B3701	1NO+1NC	VF B3702	1NO+1NC	
L	VF B6601	1NC	VF B6602	1NC	
L	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
- ▶ Pressing the switch
- ◀ Releasing the switch

Code structure

article | options

VF B501-G

Contact block	
5	1NO+1NC, snap action
6	1NO+1NC, slow action
7	1NO+1NC, slow action, make before break
9	2NC, slow action
10	2NO, slow action
11	2NC, snap action
12	2NO, snap action
...	.....

Contact type	
	silver contacts (standard)
G	silver contacts with 1 µm gold coating
G1	silver contacts with 2.5 µm gold coating

Actuators	
01	with technopolymer plunger (standard)
02	with metal plunger

➔ The 2D and 3D files are available at **www.pizzato.com**

Design and maximum reliability

Pizzato Elettrica's innovative EROUND control and signalling devices combine elegance and functionality in a single product.
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 complete range 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 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.

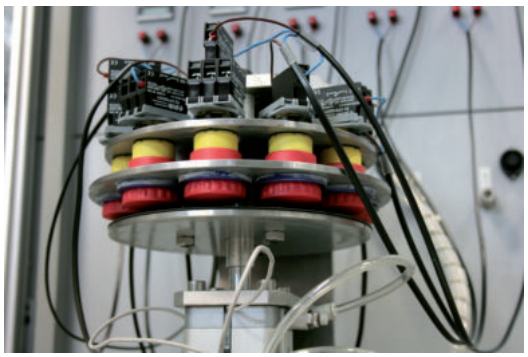
Laser engraving

Pizzato Elettrica introduced a laser engraving system for the control and signalling devices of the EROUND line, where the use of pad printing has been eliminated to guarantee that the marking on the product is 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.

Maximum protection

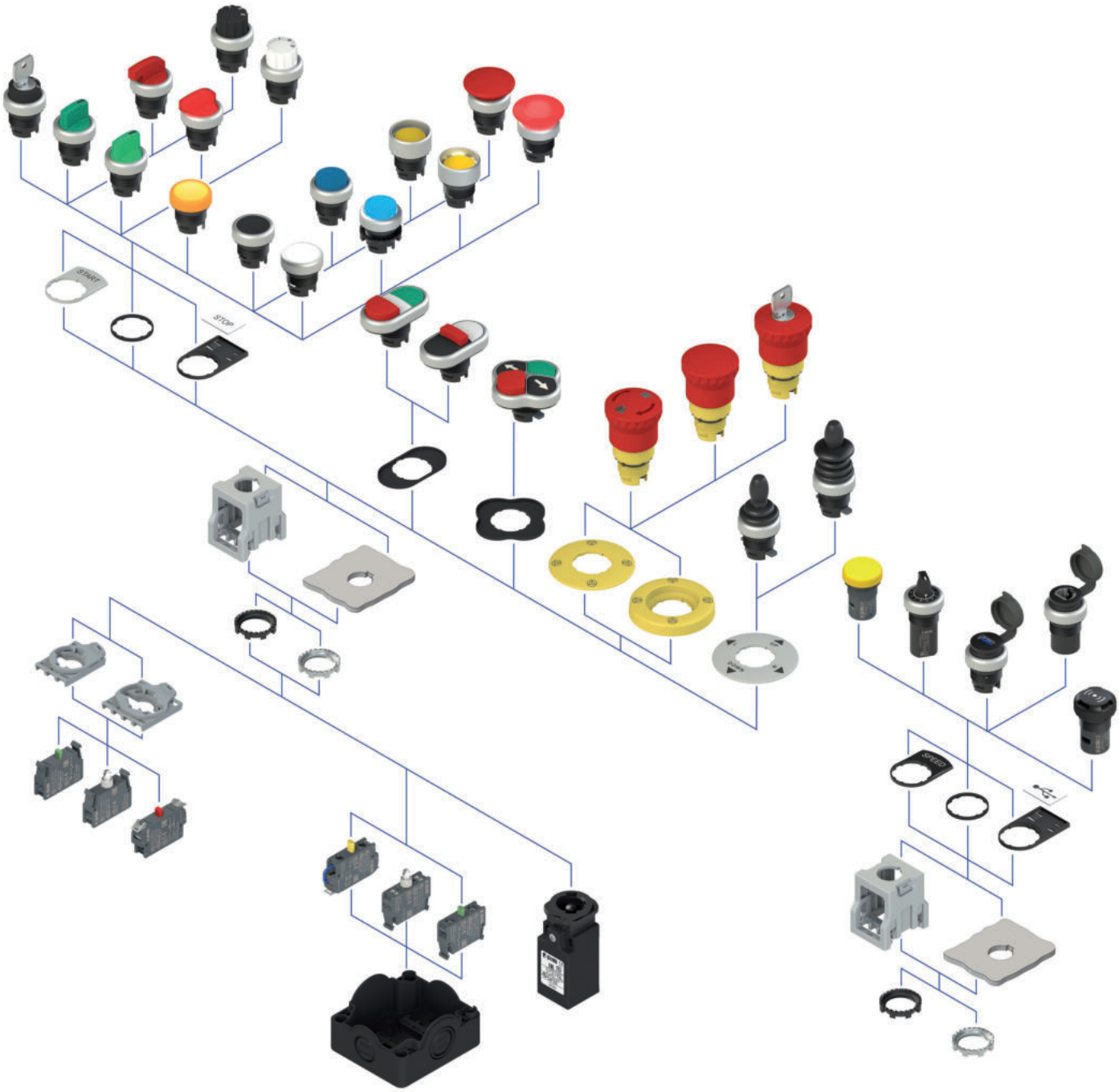
All control and signalling devices of the EROUND line are provided with an IP67 protection degree. This makes it possible to install them in any type of application, also in the most difficult environment conditions.
Most devices, not only have an IP67 protection degree, but have also passed the test 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.

Guaranteed resistance

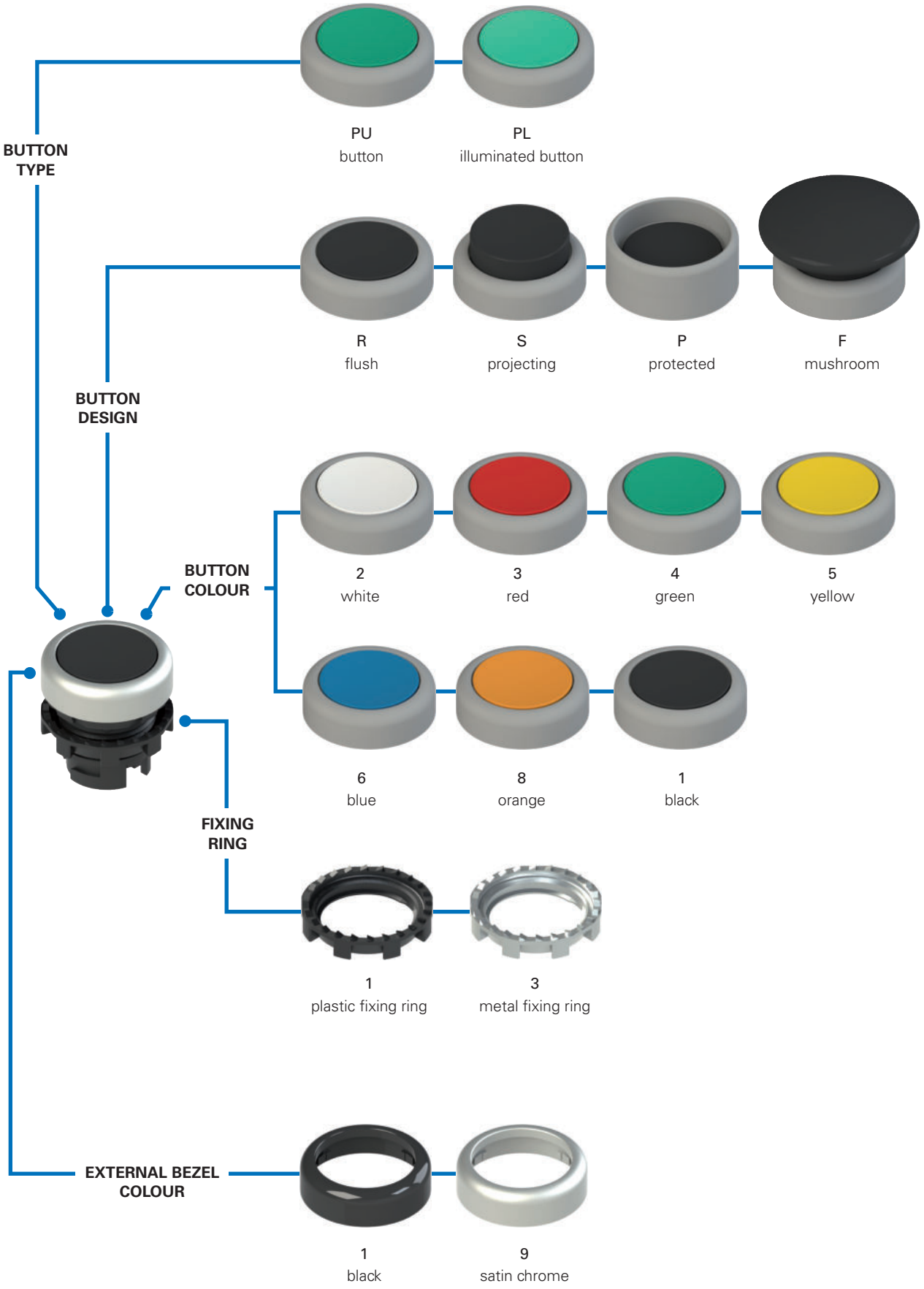


Pizzato Elettrica has tested the control and signalling devices of the EROUND line according to the specific tests of the EN 60947-5-1 standard.
The particular design and the choice of employed materials made it possible to achieve considerable mechanical durability, which is expressed in number of cycles 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 stop 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: E2 1PU2R1210 — options: -T6

Fixing ring and shaped ring

1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Ambient temperature

	-25°C … +80°C (standard), spring-return button -25°C … +50°C (standard), maintained button
T6	-40°C … +80°C spring-return button -40°C … +50°C maintained button

Button function

1	maintained
2	spring-return (standard)
4	spring-return for 4-slot base

Button engraving

0	no engraving
L1	O
L2	I
...	.....

Other engravings on request. See page 159

Button design

R	flush
S	projecting
P	protected
F	mushroom

External bezel colour

1	black
9	satin chrome

Button colour

0	without lens
1	black
2	white
3	red
4	green
5	yellow
6	blue
8	orange

Button diameter

2	Ø 20 mm
4	Ø 36 mm (mushroom only)

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: E2 1PL2R2210 — options: -T6

Fixing ring and shaped ring

1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Ambient temperature

	-25°C … +80°C (standard), spring-return button -25°C … +50°C (standard), maintained button
T6	-40°C … +80°C spring-return button -40°C … +50°C maintained button

Button function

1	maintained
2	spring-return (standard)

Button engraving

0	no engraving
L1	O
L2	I
...	.....

Other engravings on request. See page 159.

Button design

R	flush
S	projecting
P	protected
F	mushroom

External bezel colour

1	black
9	satin chrome

Button colour

0	without lens
2	white
3	red
4	green
5	yellow
6	blue
8	orange

Button diameter

2	Ø 20 mm
4	Ø 36 mm (mushroom only)

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.УТ03.B.00035/19

Technical data

General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	
Spring-return button	-25°C … +80°C (standard) -40°C … +80°C (T6 option)
Maintained button	-25°C … +50°C (standard) -40°C … +50°C (T6 option)
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 163

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000 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, RoHS Directive 2011/65/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

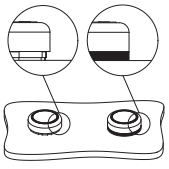
IP69K
IP67

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 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.

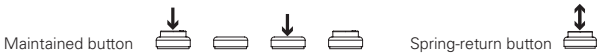
Shaped ring



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

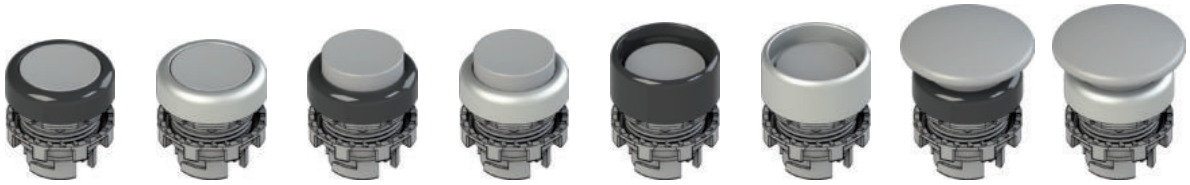
In order to satisfy various customer requests and demands, Pizzato Elettrica offers the possibility to customize the control and signalling devices of the EROUND line: the bezels can be requested with different colours (black and satin chrome), whereas the lenses can be customized with a wide range of 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 used to produce these versions retain their characteristics even under these conditions, thereby expanding 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 **1PU2**R0210 → E2 **1PU1**R0210

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 1PL2S5290	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 **1PL2**R0210 → E2 **1PL1**R0210

Single buttons

Complete units with buttons

Colour and engraving actuator	Contacts			Flush	Projecting
	pos. 2	pos. 3	pos. 1	black bezel	black bezel
black	-	1NO	-	**E2 AC-DXBC1204** E2 1PU2R1210 + E2 1BAC11 + E2 CP10G2V1	
white	-	1NO	-	**E2 AC-DXBC1200** E2 1PU2R2210 + E2 1BAC11 + E2 CP10G2V1	
red	-	1NC ⊖	-	**E2 AC-DXBC1208** E2 1PU2R3210 + E2 1BAC11 + E2 CP01G2V1	**E2 AC-DXBC1209** E2 1PU2S3210 + E2 1BAC11 + E2 CP01G2V1
green	-	1NO	-	**E2 AC-DXBC1201** E2 1PU2R4210 + E2 1BAC11 + E2 CP10G2V1	
yellow	-	1NO	-	**E2 AC-DXBC1206** E2 1PU2R5210 + E2 1BAC11 + E2 CP10G2V1	
blue	-	1NO	-	**E2 AC-DXBC1207** E2 1PU2R6210 + E2 1BAC11 + E2 CP10G2V1	
red	-	1NC ⊖	-	**E2 AC-DXBC1211** E2 1PU2R321L1 + E2 1BAC11 + E2 CP01G2V1	**E2 AC-DXBC1212** E2 1PU2S321L1 + E2 1BAC11 + E2 CP01G2V1
green	-	1NO	-	**E2 AC-DXBC1210** E2 1PU2R421L2 + E2 1BAC11 + E2 CP10G2V1	
black	-	1NC ⊖	-	**E2 AC-DXBC1227** E2 1PU2R121L1 + E2 1BAC11 + E2 CP01G2V1	
white	-	1NO	-	**E2 AC-DXBC1226** E2 1PU2R221L2 + 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

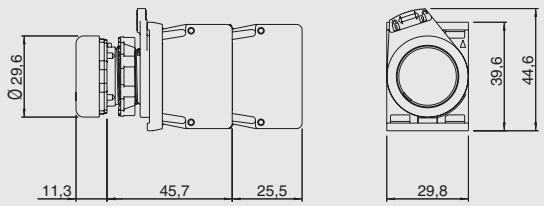
Colour and engraving actuator	Contacts			Flush
	pos. 2	pos. 3	pos. 1	black bezel
white	1NC ⊖	LED	1NO	**E2 AC-DXBC0400** E2 1PL2R2210 + E2 1BAC11 + E2 CP01G2V1 + E2 LP1A2V1 + E2 CP10G2V1
red	1NC ⊖	LED	1NO	**E2 AC-DXBC0402** E2 1PL2R3210 + E2 1BAC11 + E2 CP01G2V1 + E2 LP1A3V1 + E2 CP10G2V1
green	1NC ⊖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

Other combinations on request.

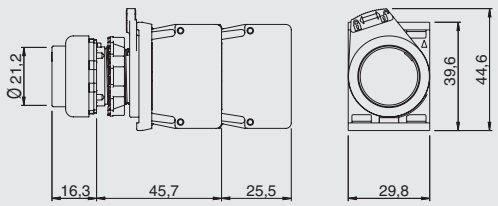
Dimensions

All values in the drawings are in mm

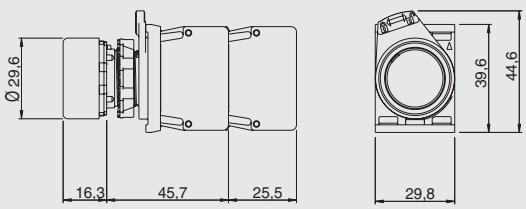
Flush button



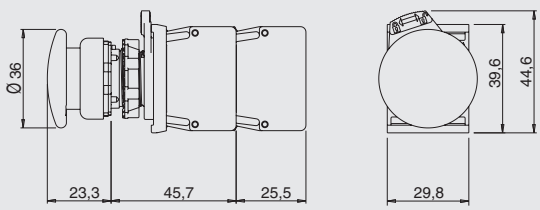
Projecting button



Protected button

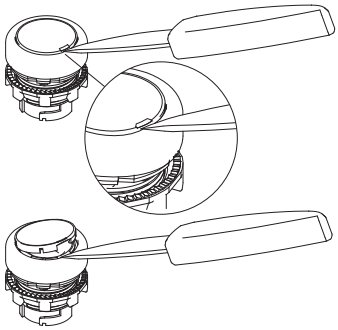


Mushroom button



➔ The 2D and 3D files are available at **www.pizzato.com**

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

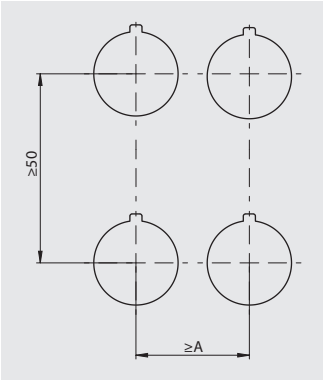
Article	Type	Description	Colours	Pieces/ package
VE LP21R1●●●		Lens for flush button, black, with engraving	●	1
VE LP22R2●●●		Lens for flush button, white, with engraving	○	1
VE LP22R3●●●		Lens for flush button, red, with engraving	●	1
VE LP22R4●●●		Lens for flush button, green, with engraving	●	1
VE 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 159.
Example: white lens for flush button with "O" engraving.
VE LP22R2●●● → VE LP22R2L1

Minimum distances for installation

All values 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

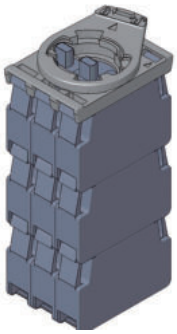
4-slot mounting adapter

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

Maximum number of contact blocks

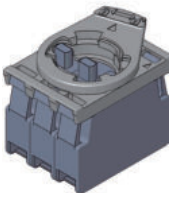
3-slot mounting adapter

Spring-return buttons
E2 •PU2•••••



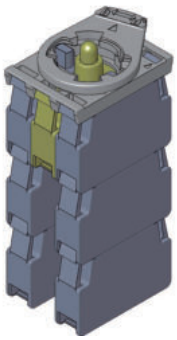
maximum number:
9 contact blocks
3 levels

Maintained buttons
E2 •PU1•••••



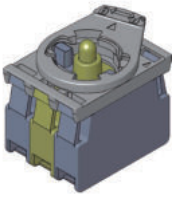
maximum number:
3 contact blocks
1 level

Illuminated spring-return buttons
E2 •PL2•••••

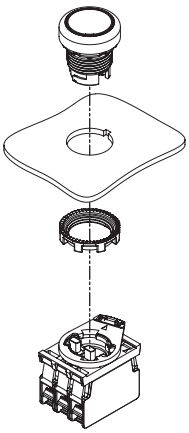


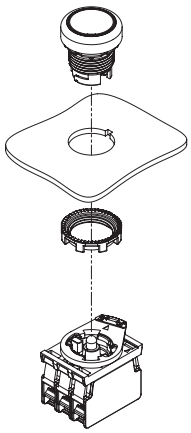
maximum number:
6 contact blocks
3 levels

Illuminated maintained buttons
E2 •PL1•••••



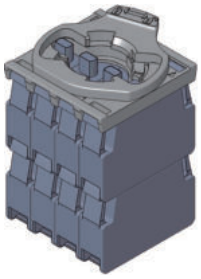
maximum number:
2 contact blocks
1 level



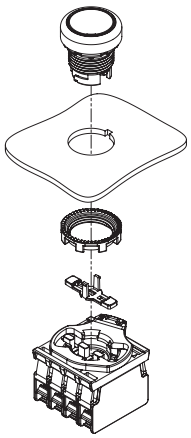


4-slot mounting adapter

Spring-return buttons
E2 •PU4•••••



maximum number:
8 contact blocks
2 levels



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

contact block

LED unit

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.

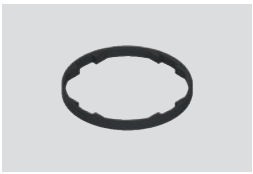
Actuator for 4-slot base

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.**

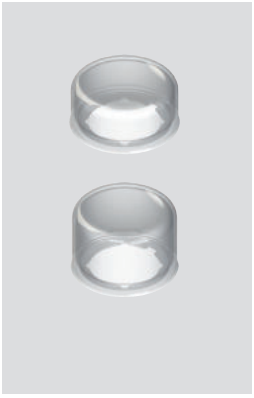


Article	Description
VE GP12H1A	Shaped ring for single device

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	Protection cap 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

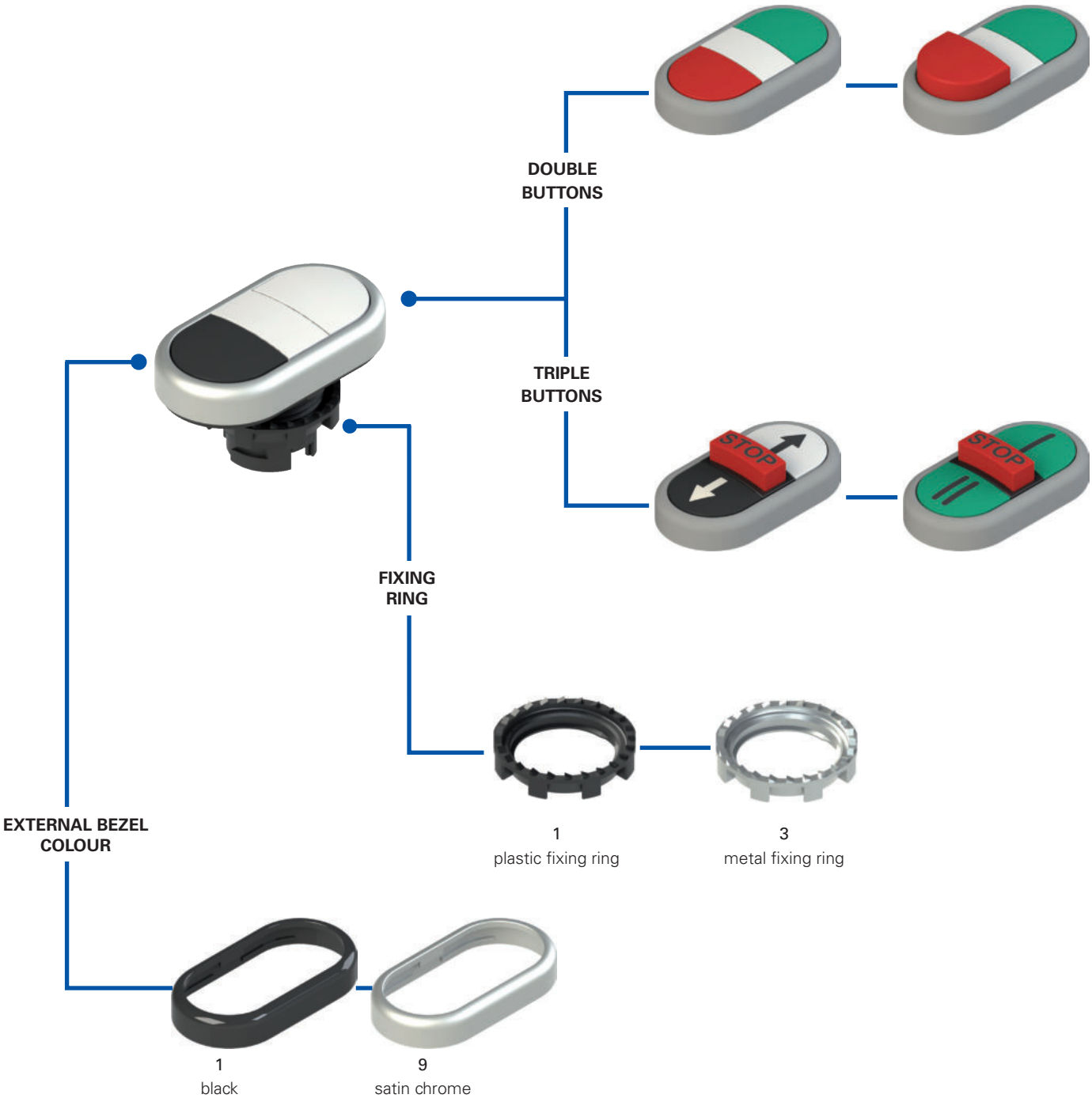
Packs of **20 pcs.**

Article	Description
VE GF720A	Metal fixing ring

Accessories

➔ More ACCESSORIES on page 155

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: **E2 1PDRL10423** options: **-T6**

Fixing ring and shaped ring

1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

No. of functions

D	Double button
T	triple button

Upper and lower button

A	upper projecting, lower flush
B	upper projecting, lower projecting
R	upper flush, lower flush
S	upper flush, lower projecting

Intermediate element

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

Bezel colour

1	black (standard)
9	satin chrome (standard)

Ambient temperature

	-25°C … +80°C (standard)
T6	-40°C … +80°C

Colours and symbols

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

Other combinations on request.

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

Other combinations on request.

	upper button		central button projecting		lower button	
	colour	symbol	colour	symbol	colour	symbol
AAAY	green	**I**	red	**STOP**	green	**II**
AAAZ	green	←	red	**STOP**	green	→
AABD	white	→	red	**STOP**	black	←
AABA	green	↑	red	**STOP**	green	↓
AABE	white	↑	red	**STOP**	black	↓
AABF	black	↑	red	**STOP**	black	↓
AABB	green	+	red	**STOP**	green	-
AABC	white	+	red	**STOP**	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.УТ03.B.00035/19

Technical data

General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C … +80°C (standard) -40°C … +80°C (T6 option)
Safety parameter B_{10D}:	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 163

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, 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,
RoHS Directive 2011/65/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 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.

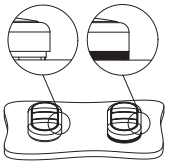
Illuminated version

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 or 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 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 used to produce these versions retain their characteristics even under these conditions, thereby expanding 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	E2 1PDRL10423	E2 1PDRL90423	E2 1PDSL10423	E2 1PDSL90423
	"I" green button white cap, illuminated "O" red button	E2 1PDRL1AAAD	E2 1PDRL9AAAD	E2 1PDSL1AAAD	E2 1PDSL9AAAD
START STOP	"START" green button white cap, illuminated "STOP" red button	E2 1PDRL1AAAP	E2 1PDRL9AAAP	E2 1PDSL1AAAP	E2 1PDSL9AAAP
	white button white cap, illuminated black button	E2 1PDRL10221	E2 1PDRL90221	E2 1PDSL10221	E2 1PDSL90221
	"I" white button white cap, illuminated "O" black button	E2 1PDRL1AAAA	E2 1PDRL9AAAA	E2 1PDSL1AAAA	E2 1PDSL9AAAA
START STOP	"START" white button white cap, illuminated "STOP" black button	E2 1PDRL1AAAN	E2 1PDRL9AAAN	E2 1PDSL1AAAN	E2 1PDSL9AAAN
	"↑" black button white cap, illuminated "↓" black button	E2 1PDRL1AAAB	E2 1PDRL9AAAB	E2 1PDSL1AAAB	E2 1PDSL9AAAB

Other combinations on request.

Selection table for triple buttons

Actuator colour and engraving		upper button flush central button projecting lower button flush	
		black bezel	Satin chrome bezel
I STOP II	"I" green button "STOP" red button "II" green button	E2 1PTRS1AAAY	E2 1PTRS9AAAY
← STOP →	"←" green button "STOP" red button "→" green button	E2 1PTRS1AAAZ	E2 1PTRS9AAAZ
→ STOP ←	"→" white button "STOP" red button "←" black button	E2 1PTRS1AABD	E2 1PTRS9AABD
↑ STOP ↓	"↑" green button "STOP" red button "↓" green 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
↑ STOP ↓	"↑" white button "STOP" red button "↓" black button	E2 1PTRS1AABE	E2 1PTRS9AABE
↑ STOP ↓	"↑" black button "STOP" red button "↓" black button	E2 1PTRS1AABF	E2 1PTRS9AABF
+ STOP −	"+" green button "STOP" red button "-" green button	E2 1PTRS1AABB	E2 1PTRS9AABB
+ STOP −	"+" white button "STOP" red button "-" white button	E2 1PTRS1AABC	E2 1PTRS9AABC

Other combinations on request.

Double and triple buttons

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	black bezel
	"I" green button			1NO	E2 AC-DXBC0625 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	black bezel
	"I" green button			1NO	E2 AC-DXBC0801 E2 1PTRS1AAAY + E2 1BAC11 + E2 CP10G2V1 + E2 CP01G2V1 + E2 CP10G2V1
STOP	"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	black bezel
	"I" green button			1NO	E2 AC-DXBC0602 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

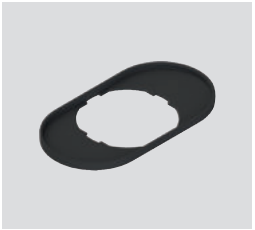
Packs of **10 pcs.**

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

With the protection cap it is not possible to apply the shaped ring

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 protection cap

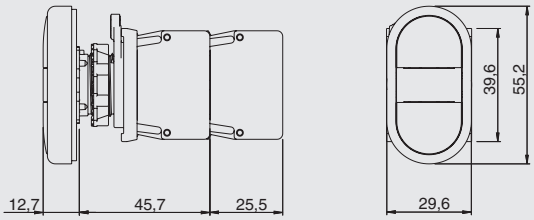
Accessories

➔ More ACCESSORIES on page 155

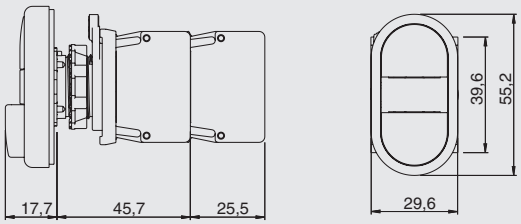
Dimensions

All values in the drawings are in mm

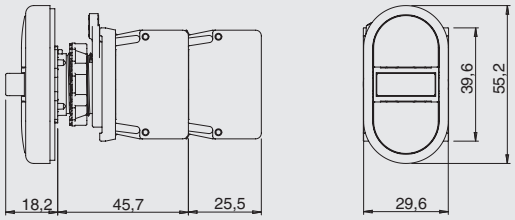
Flush double button



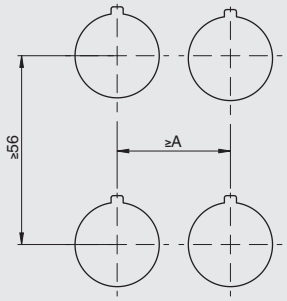
Projecting double button



Triple button



Minimum distances for installation

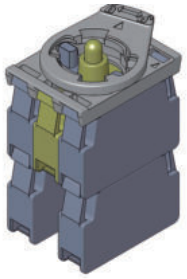
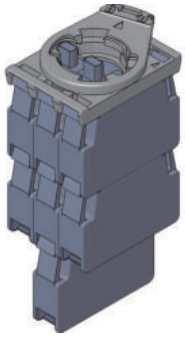
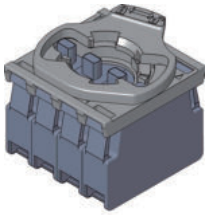


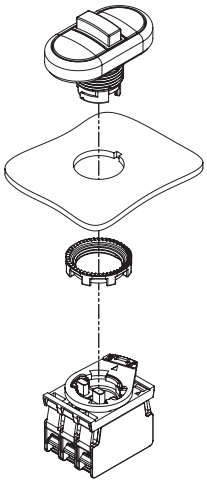
3-slot mounting adapter
A=30 mm

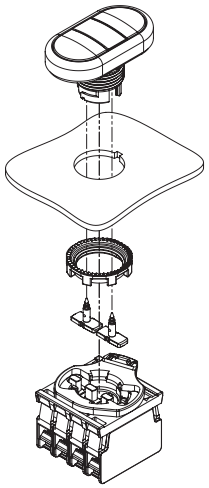
4-slot mounting adapter
A=40 mm

➔ The 2D and 3D files are available at **www.pizzato.com**

Maximum number of contact blocks

3-slot mounting adapter		4-slot mounting adapter
Double buttons E2 •PD•••••••	Triple buttons E2 •PT•••••••	Double buttons E2 •PD•Q•••••
		
maximum number: 4 contact blocks 2 levels	maximum number: 7 contact blocks 3 levels	maximum number: 4 contact blocks 1 level



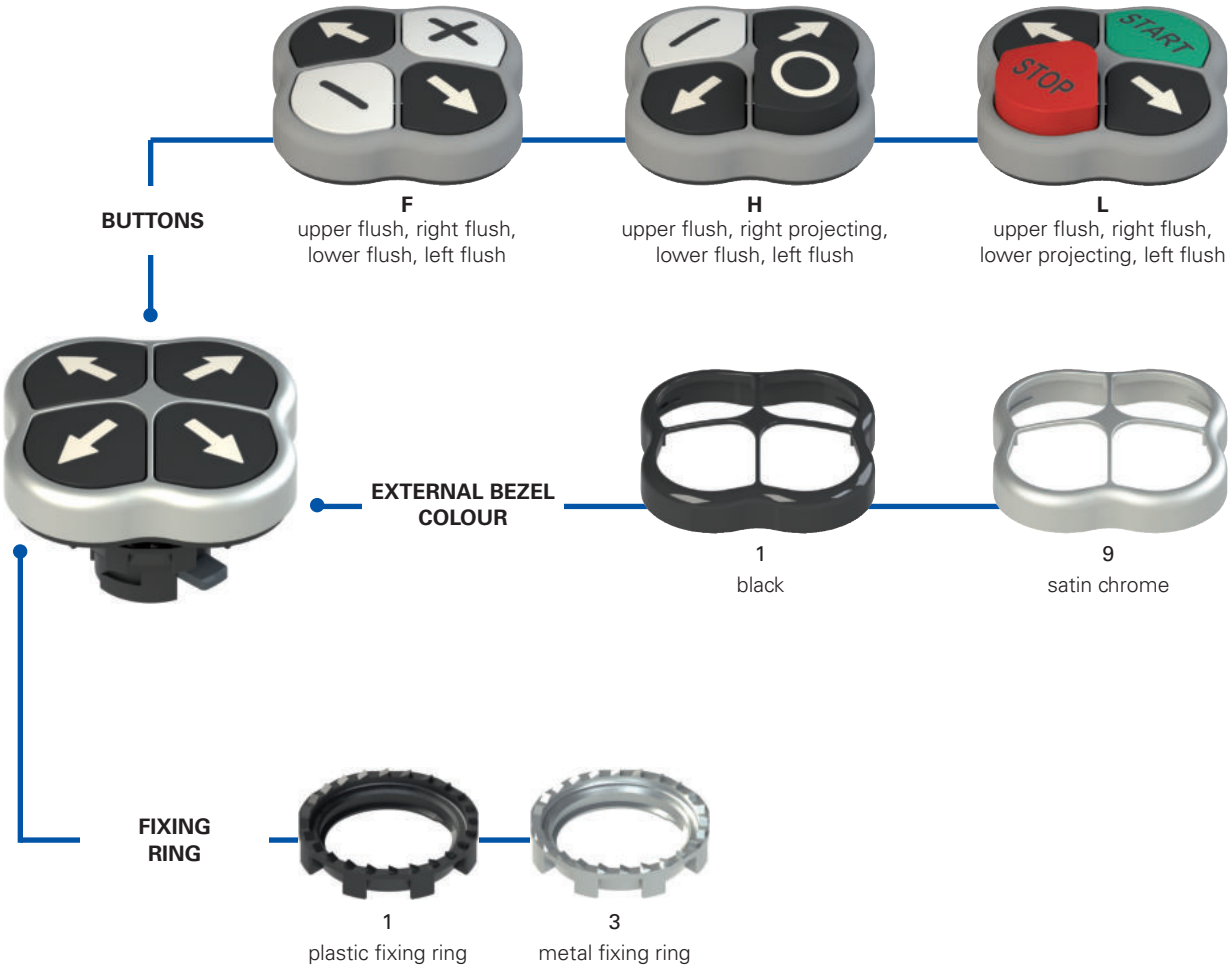


Contact block

LED unit

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 fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Buttons	
F	upper flush, right flush, lower flush, left flush
H	upper flush, right projecting, lower flush, left flush
L	upper flush, right flush, lower projecting, left flush

Other combinations on request.

Bezel colour	
1	black (standard)
9	satin chrome (standard)

Colours and symbols

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

Other combinations on request.

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

Quality marks:

IMQ approval: CA02.04805
UL approval: E131787
EAC approval: RU C-IT.УТ03.B.00035/19

Technical data

General data

Protection degree:	IP67 acc. to EN 60529
Ambient temperature:	-25°C … +80°C
Safety parameter B_{10D}:	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 163

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, 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,
RoHS Directive 2011/65/EU.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1.

Features approved by UL

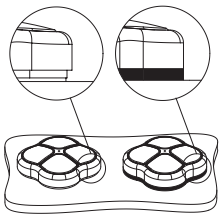
For Use on a Flat Surface of a Type 1, 4X, 12 and 13
Tightening torque 2.0 Nm

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 cleanness 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

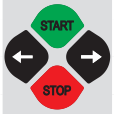
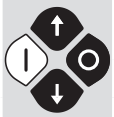
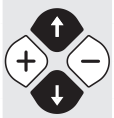
In order to suit the various requests and needs of the customers, Pizzato Elettrica offers the possibility to customize the quadruple buttons with indelible laser inscriptions and symbols.

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.

Quadruple buttons

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	-	-	-	-
	"START" green button "→" black button "STOP" red button "←" black button	E2 1PQFA1QAAB	E2 1PQFA9QAAB	-	-	E2 1PQLA1QAAB	E2 1PQLA9QAAB
	"START" white button "→" black button "STOP" black button "←" black button	E2 1PQFA1QAAC	E2 1PQFA9QAAC	-	-	E2 1PQLA1QAAC	E2 1PQLA9QAAC
	"I" green button "→" black button "O" red button "←" black button	E2 1PQFA1QAAD	E2 1PQFA9QAAD	-	-	E2 1PQLA1QAAD	E2 1PQLA9QAAD
	"I" white button "→" black button "O" black button "←" black button	E2 1PQFA1QAAE	E2 1PQFA9QAAE	-	-	E2 1PQLA1QAAE	E2 1PQLA9QAAE
	"+" white button "→" black button "-" white button "←" black button	E2 1PQFA1QAAF	E2 1PQFA9QAAF	-	-	-	-
	"↑" black button "STOP" red button "↓" black button "START" green button	E2 1PQFA1QAAH	E2 1PQFA9QAAH	E2 1PQHA1QAAH	E2 1PQHA9QAAH	-	-
	"↑" black button "STOP" black button "↓" black button "START" white button	E2 1PQFA1QAAJ	E2 1PQFA9QAAJ	E2 1PQHA1QAAJ	E2 1PQHA9QAAJ	-	-
	"↑" black button "O" red button "↓" black button "I" green button	E2 1PQFA1QAAK	E2 1PQFA9QAAK	E2 1PQHA1QAAK	E2 1PQHA9QAAK	-	-
	"↑" black button "O" black button "↓" black button "I" white button	E2 1PQFA1QAAL	E2 1PQFA9QAAL	E2 1PQHA1QAAL	E2 1PQHA9QAAL	-	-
	"↑" black button "-" white button "↓" black button "+" white button	E2 1PQFA1QAAM	E2 1PQFA9QAAM	-	-	-	-

Other combinations on request.

Complete units

Actuator colour and engraving (starting from the top and clockwise)		Contacts pos. 3	pos. 2	pos. 4	pos. 1	upper button flush right button flush lower button flush left button flush Satin chrome bezel
	"↑" black button			1NO		E2 AC-DXBC2000 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.

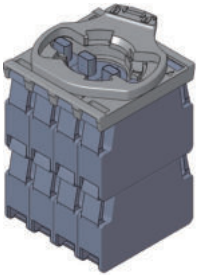
Actuator colour and engraving (starting from the top and clockwise)		Contacts pos. 3	pos. 2	pos. 4	pos. 1	upper button flush right button projecting lower button flush left button flush Satin chrome bezel
	"↑" black button			1NO		E2 AC-DXBC2001 E2 1PQHA9QAAH + E2 1BAC21 + E2 CP10G2V1 + E2 CP10G2V1+ E2 CP10G2V1 + E2 CP01G2V1
	"STOP" red button				1NC ⊖	
	"↓" black button		1NO			
	"START" green button	1NO				

Other combinations on request.

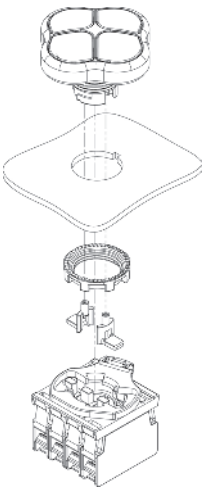
Maximum number of contact blocks

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**

Mounting adapter

Packs of **10 pcs.**

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

Shaped ring

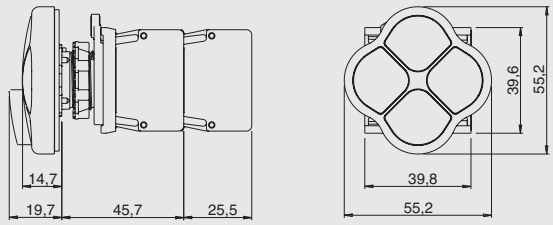
Packs of **10 pcs.**

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

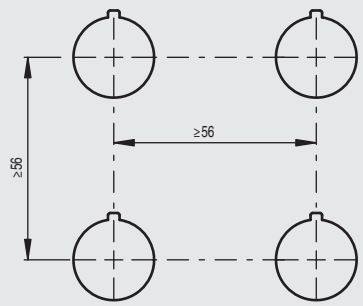
Dimensions

All values in the drawings are in mm

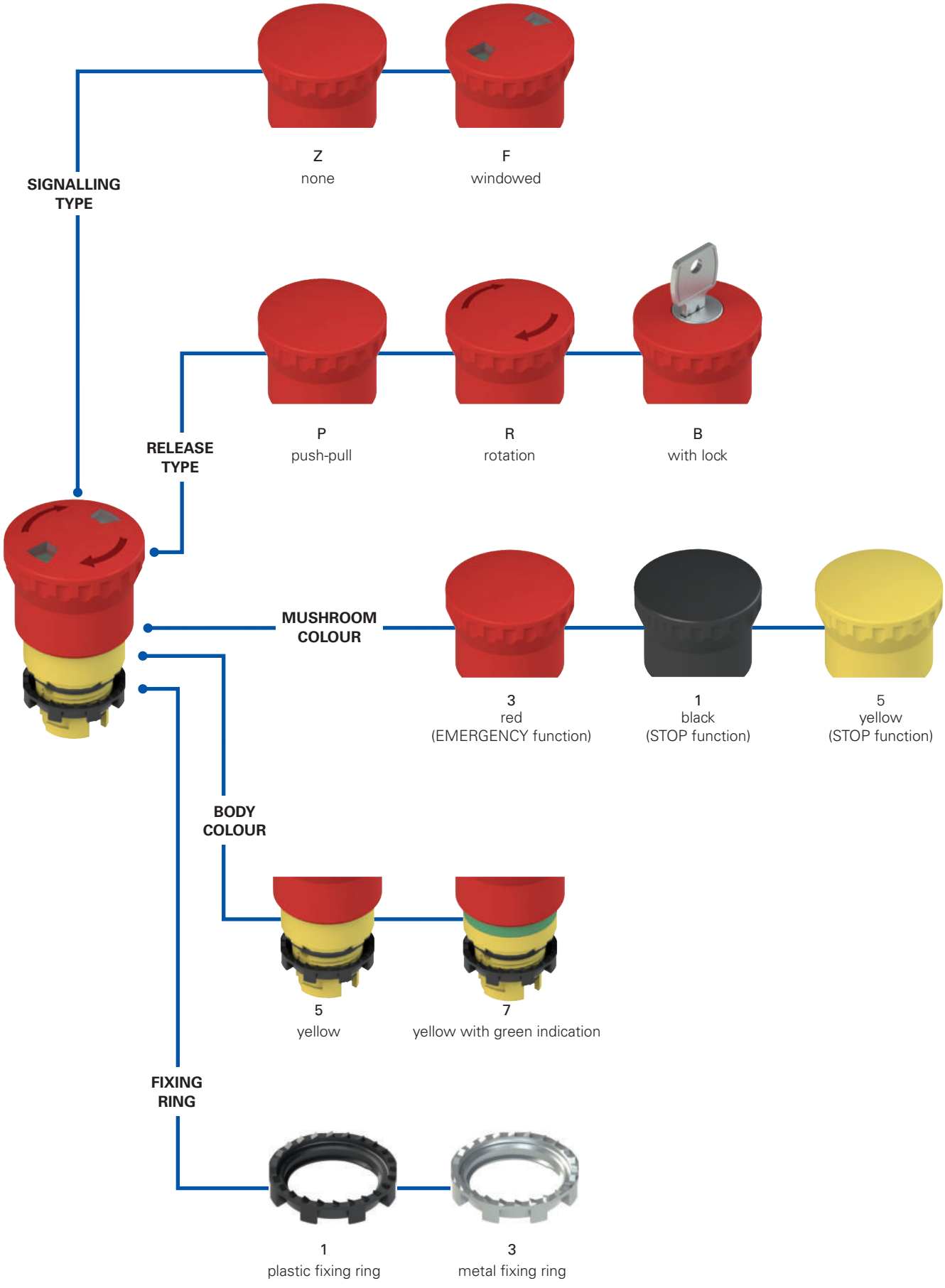
Quadruple button



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.

article: **E2 1PERZ4531** — options: **-T6**

Fixing ring and shaped ring	
1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Release type	
P	push-pull
R	rotary release
B	key release with key 333 (standard) (1)
C	key release with key 335 (1)
D	key release with key 336 (1)
...	.....
M	key release with key 455 (1)

Other key codes on request.
(1) Not available with windowed signalling

Signalling type	
Z	none
F	windowed

Mushroom diameter	
4	Ø 40 mm mushroom

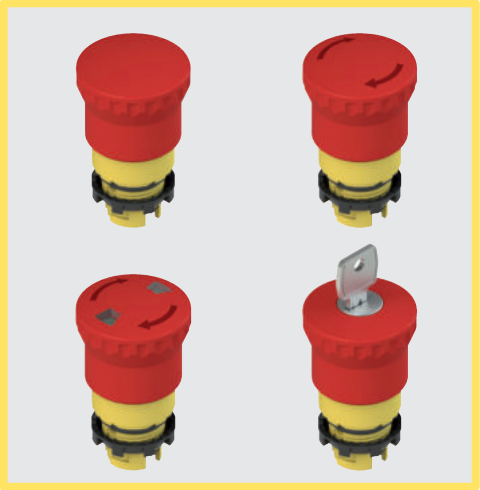
Body colour	
5	yellow (standard)
7	yellow with green indication

Mushroom button colour	
1	black (1)
3	red (standard)
5	yellow (1) (2)

(1) Not available with windowed signalling
(2) Available with a rotary release or push-pull

Actuator type	
1	for 3-slot base
4	for 4-slot base

Ambient temperature	
	-25°C ... +80°C (standard)
T6	-40°C ... +80°C



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.УТ03.B.00035/19

Technical data

General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C … +80°C (standard) -40°C … +80°C (T6 option)
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 163

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 IEC 63000, EN ISO 13850, UL 508, CSA 22-2 N°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).

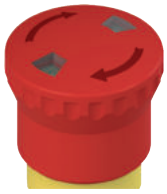
Compliance with the requirements of:
Machinery Directive 2006/42/EC, RoHS Directive 2011/65/EU.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1.

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

Visual signalling

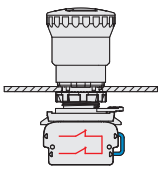


The versions of the emergency stop buttons with pull or rotary release can also visually signal the status with a mechanical indicator. The signalling windows change from green to red to signal the change of status of the button, namely from idle to actuated respectively.

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 151.

Self-monitored contact



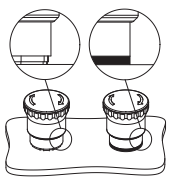
Specially designed for emergency mushroom buttons, the self-monitored contact makes it possible to reach a high level of self-control. Possible anomalies, such as the detachment from the emergency mushroom button, are immediately signalled by the opening of the safety circuit. This makes immediately 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 93.

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 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 cleanness and hygiene are required.

Extended temperature range

-40°C

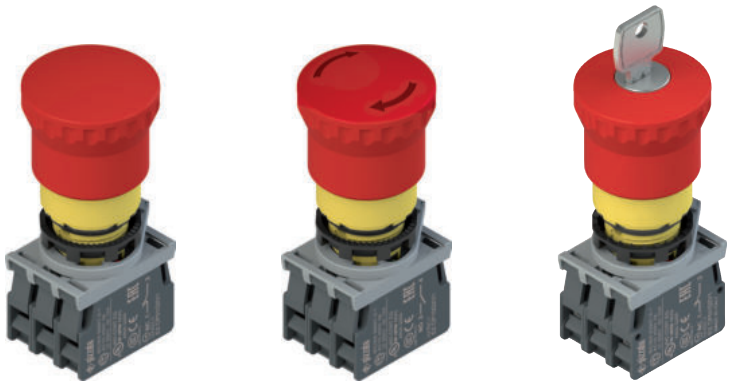
These devices are also available in a special version suitable for an ambient operating temperature range from -40°C up to +80°C. They can therefore be used for applications in cold stores, sterilisers and other equipment with low temperature environments. The special materials used to produce these versions retain their characteristics even under these conditions, thereby expanding the installation possibilities.

Selection table for emergency stop buttons

Body and actuator colour		Push-pull	Rotary release	Windowed push-pull	Windowed rotary release	Key release Key coding 333
	Red mushroom Yellow body	E2 1PEPZ4531	E2 1PERZ4531	E2 1PEPF4531	E2 1PERF4531	E2 1PEBZ4531
	Red mushroom Yellow body with green indication	E2 1PEPZ4731	E2 1PERZ4731	E2 1PEPF4731	E2 1PERF4731	E2 1PEBZ4731
	Black mushroom Yellow body	E2 1PEPZ4511	E2 1PERZ4511	-	-	E2 1PEBZ4511
	Yellow mushroom Yellow body	E2 1PEPZ4551	E2 1PERZ4551	-	-	-

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

Complete units with emergency stop buttons



Body and actuator colour		Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	Push-pull	Rotary release	Key release Key coding 333
	Red mushroom Yellow body	-	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
	Red mushroom Yellow body	-	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
	Red mushroom Yellow body	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
	Red mushroom Yellow body	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 87.

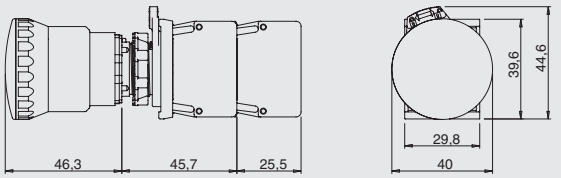
Locking keys

Article	Description
VE KE1A00-PY333	Locking key
	Order only if further keys besides the supplied one are needed. Key with key coding 333. Other codes on request.

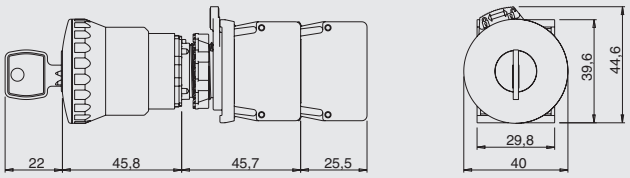
Dimensions

All values in the drawings are in mm

Emergency stop button



Emergency stop button with key release

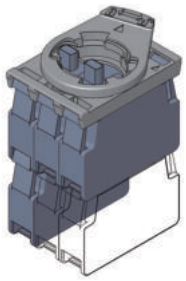


➔ The 2D and 3D files are available at **www.pizzato.com**

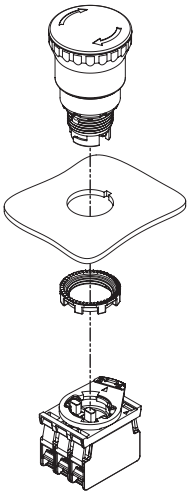
Maximum number of contact blocks

3-slot mounting adapter

Emergency stop buttons E2 •PE•••••1

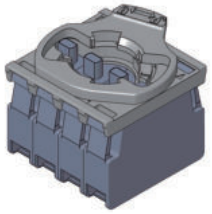


maximum number:
4 contact blocks
2 levels

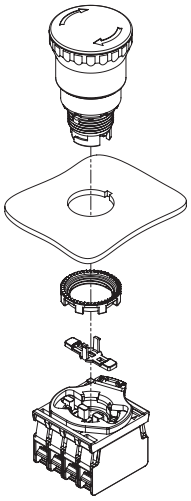


4-slot mounting adapter

Emergency stop 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.

contact block

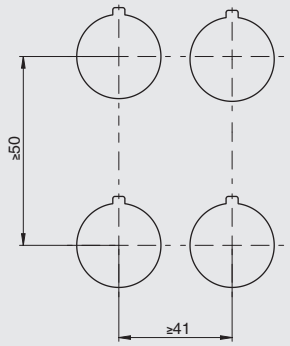
Alternative position contact block

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 155

Labels with shaped hole

Packs of **5 pcs.**

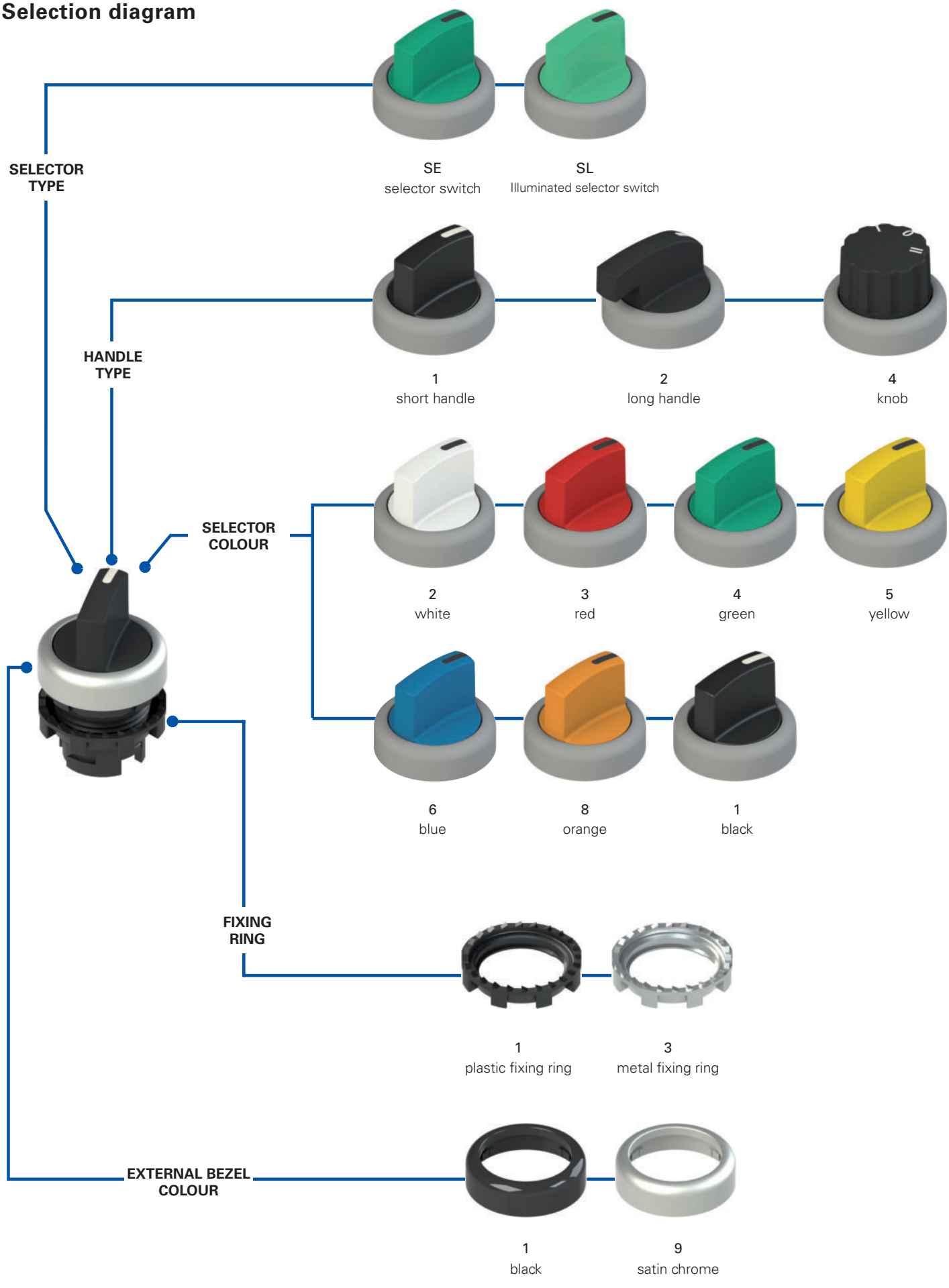
Suitable for devices E2 •PE••••••.
In compliance with EN ISO 13850.
Can be turned in 90° steps.
Inscriptions in other languages available on request.
It does not alter the IP67 / IP69K protection degree of the associated device.

Article		Description
	VE TF32A5700	Label with shaped hole, Ø 60 mm yellow disc, no inscription, acc. to ISO 13850
	VE TF32D5700	Label with shaped hole, Ø 90 mm yellow disc, no inscription, acc. to ISO 13850
	VE TF32A5113	Label with shaped hole, Ø 60 mm yellow disc, inscription: Ⓥ, acc. to ISO 13850
	VE TF32D5113	Label with shaped hole, Ø 90 mm yellow disc, inscription: Ⓥ, 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 Ⓥ

Luminous disc

Yellow luminous disc, Ø 60 mm.
Data at page 151

Selection diagram



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.

article: **E2 1SE13ACE11AB** options: **-T6**

Fixing ring and shaped ring

1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Handle type

1	short handle
2	long handle
4	knob

Positions

2AV		2AC		3GC	
2EV		2EC			
2FV		3AC			
2FC		3EC			
2BC		3FC			

4-position selector switches see p. 64

Legend: Maintained, Spring-return

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

Ambient temperature

	-25°C … +80°C (standard)
T6	-40°C … +80°C

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)

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.

article: **E2 1SL13ACH21AB** options: **-T6**

Fixing ring and shaped ring

1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Handle type

1	short handle
2	long handle
4	knob

Positions

2AV		2AC		3GC	
2EV		2EC			
2FV		3AC			
2FC		3EC			
2BC		3FC			

4-position selector switches see p. 64

Legend: Maintained, Spring-return

Cams and actuators

D	Cam for 2-position selector switch
H	cam for 3-position selector switch

Selector colour

2	white
3	red
4	green
5	yellow
6	blue
8	orange

Ambient temperature

	-25°C … +80°C (standard)
T6	-40°C … +80°C

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)

Main features
- Protection degrees IP67 and IP69K
- 3 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.УТ03.B.00035/19

Technical data

General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C … +80°C (standard) -40°C … +80°C (T6 option)
Safety parameter B_{10D}:	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 163

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, 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,
RoHS Directive 2011/65/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

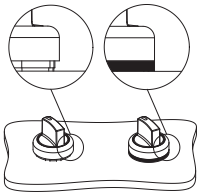
These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required. Due to their special design, these devices are suitable for 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 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 used to produce these versions retain their characteristics even under these conditions, thereby expanding the installation possibilities.

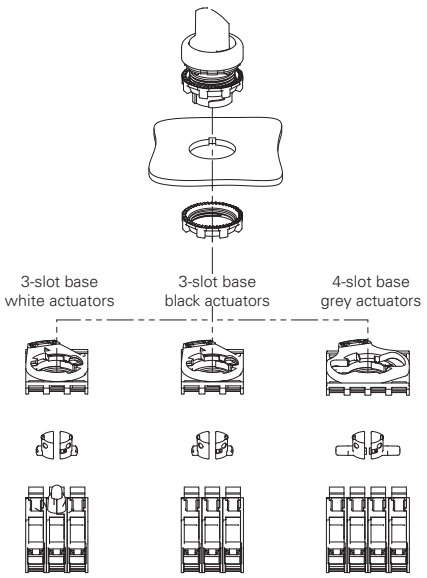
Shaped ring



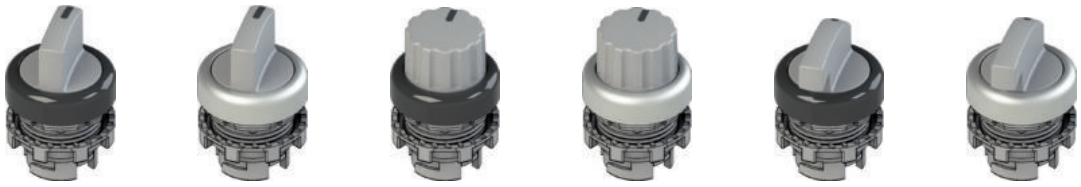
The shaped ring can be used when no label holder or other devices are applied; it prevents dirt and other residues from settling between the selector switch and the panel or housing. This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

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

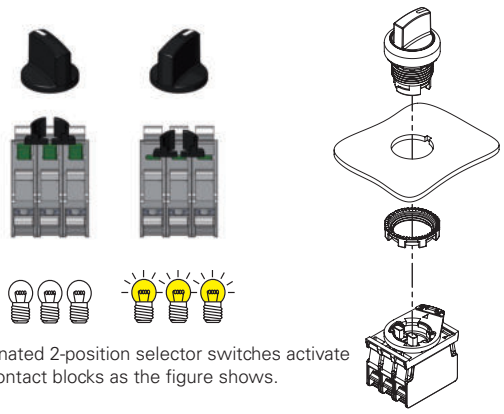


Actuator colour and engraving	Two positions	short handle		knob		long handle	
		black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
black		E2 1SE12AVA11AB	E2 1SE12AVA19AB	E2 1SE42AVA11AB	E2 1SE42AVA19AB	E2 1SE22AVA11AB	E2 1SE22AVA19AB
white		E2 1SE12AVA21AB	E2 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

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

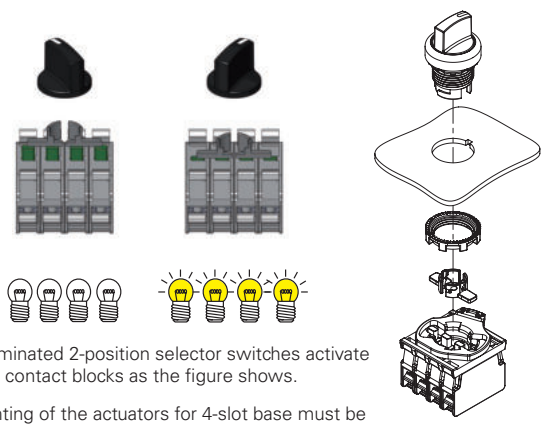
3-slot mounting adapter



The non-illuminated 2-position selector switches activate the contact blocks as the figure shows.

Other combinations on request

4-slot mounting adapter



The non-illuminated 2-position selector switches activate the contact blocks as the figure shows.

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

Other combinations on request

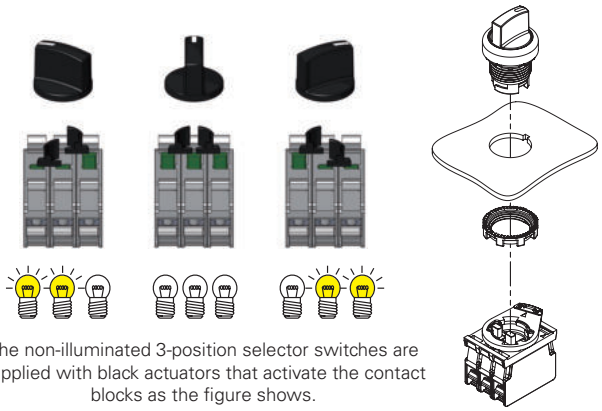
Selection table for selector switches

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

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

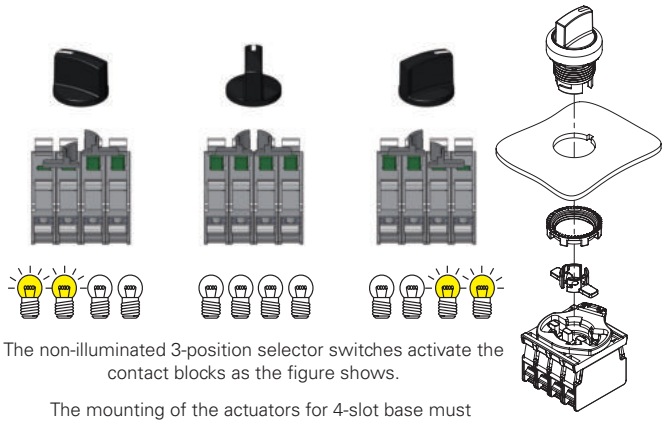
3-slot mounting adapter



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

Other combinations on request

4-slot mounting adapter

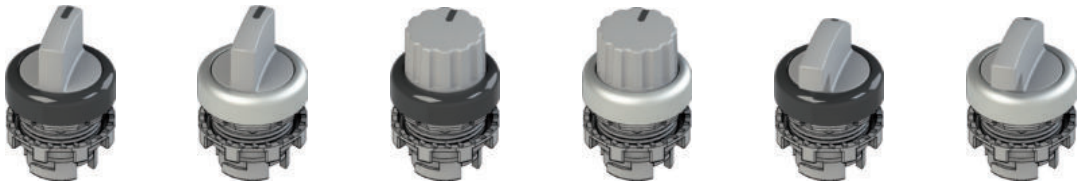


The non-illuminated 3-position selector switches activate the contact blocks as the figure shows.

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

Other combinations on request

Selection table for illuminated selector switches

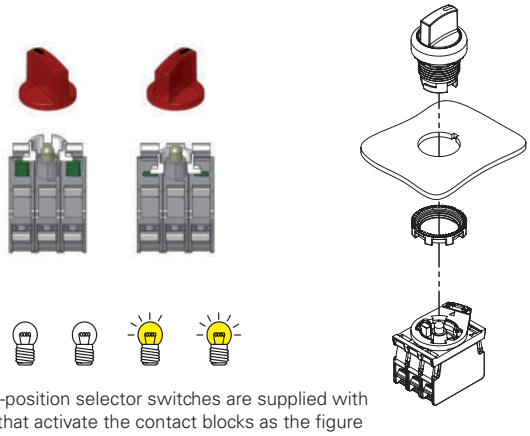


Actuator colour and engraving	Two positions	short handle		knob		long handle	
		black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
white		E2 1SL12AVD21AB	E2 1SL12AVD29AB	E2 1SL42AVD21AB	E2 1SL42AVD29AB	E2 1SL22AVD21AB	E2 1SL22AVD29AB
red		E2 1SL12AVD31AB	E2 1SL12AVD39AB	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.

3-slot mounting adapter



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

Other combinations on request

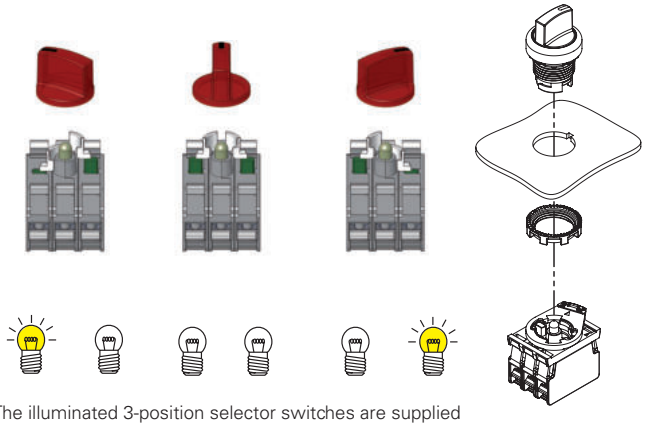
Selection table for illuminated selector switches

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.

3-slot mounting adapter



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

Other combinations on request

Selection table for complete units with four-position selectors

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

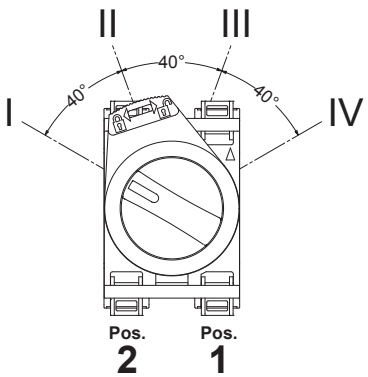
Legend: Maintained Spring-return

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

Contact diagram

	contacts	Selector position I	II	III	IV
pos. 2	.1 .2 / .3 .4	□	■	□	□
		■	□	□	□
pos. 1	.1 .2 / .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 selectors

Actuator colour and engraving	Positions	Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	2 positions black bezel
black		-	1NO	-	**E2 AC-DXBC1401** E2 1SE12AVA11AB + E2 1BAC11 + E2 CP10G2V1
black		-	1NO	-	**E2 AC-DXBC1402** E2 1SE12EVA11AB + E2 1BAC11 + E2 CP10G2V1

Other combinations on request.

Actuator colour and engraving	Positions	Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	3 positions black bezel
black		1NO	-	1NO	**E2 AC-DXBC1405** E2 1SE13ACE11AB + E2 1BAC11 + E2 CP10G2V1 + E2 CP10G2V1
black		1NO	-	1NO	**E2 AC-DXBC1406** E2 1SE13GCE11AB + E2 1BAC11 + E2 CP10G2V1 + E2 CP10G2V1

Other combinations on request.

Complete units with two- or three-position illuminated selectors

Actuator colour and engraving	Positions	Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	2 positions black bezel
white		1NO	LED	1NC	**E2 AC-DXBC1805** E2 1SL12AVD21AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A2V1 + E2 CP01G2V1
green		1NO	LED	1NC	**E2 AC-DXBC1801** E2 1SL12AVD41AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A4V1 + E2 CP01G2V1

Other combinations on request.

Actuator colour and engraving	Positions	Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	3 positions black bezel
white		1NO	LED	1NC	**E2 AC-DXBC1806** E2 1SL13ACH21AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A2V1 + E2 CP01G2V1
green		1NO	LED	1NC	**E2 AC-DXBC1803** E2 1SL13ACH41AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A4V1 + E2 CP01G2V1

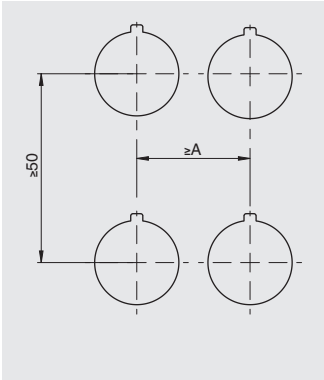
Other combinations on request.

Legend: Maintained Spring-return

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

Minimum distances for installation

All values in the drawings are in mm



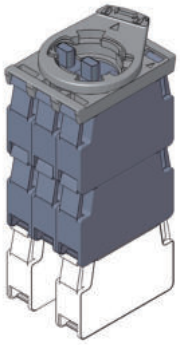
3-slot mounting adapter
A=30 mm

4-slot mounting adapter
A=40 mm

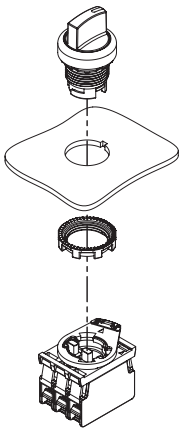
Maximum number of contact blocks

3-slot mounting adapter

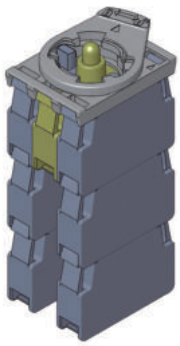
Selector switches
E2 •SE•••••••••



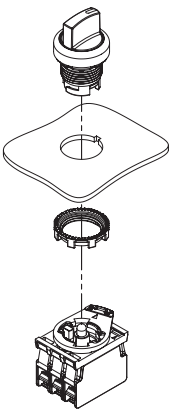
maximum number:
6 contact blocks
3 levels



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

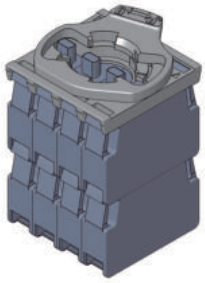


maximum number:
6 contact blocks
3 levels

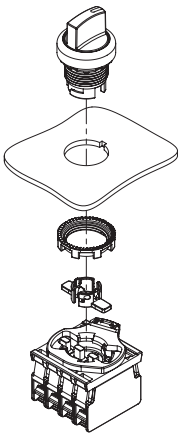


4-slot mounting adapter

Selector switches
E2 •SE•••••••••



maximum number:
8 contact blocks
2 levels




contact block


Alternative position contact block

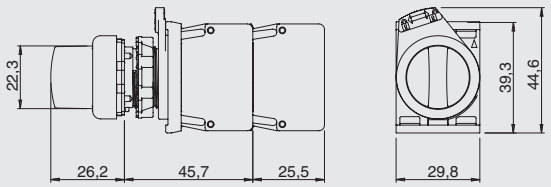

LED unit

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

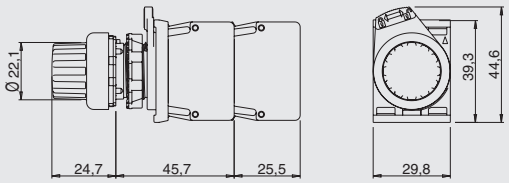
Dimensions

All values in the drawings are in mm

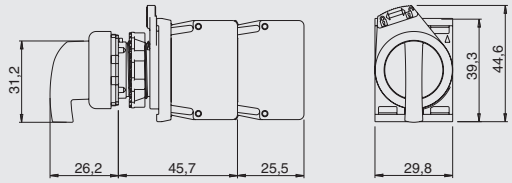
Selector switch with short handle



Knob selector switch



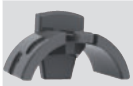
Selector switch with long handle



➔ The 2D and 3D files are available at **www.pizzato.com**

Actuators

Packs of **10 pcs.**

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

Fixing ring

Packs of **20 pcs.**

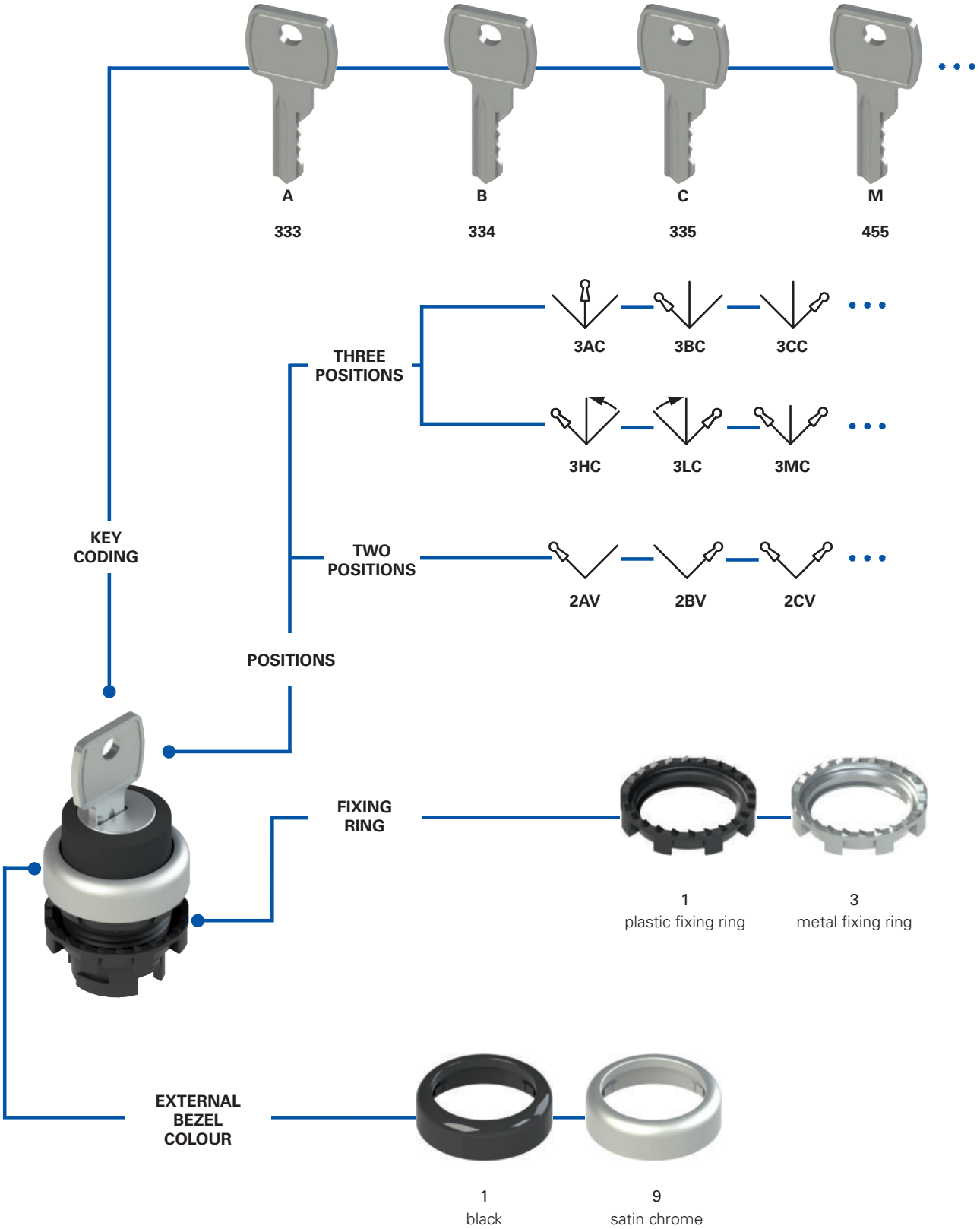
Article	Description
VE GF720A	Metal fixing ring

Accessories

➔ More ACCESSORIES on page 155

Notes

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 1SC2ACA11AA-T6

Fixing ring and shaped ring

1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Ambient temperature

	-25°C … +80°C (standard)
T6	-40°C … +80°C

Marking type

A	no inscription (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.

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

Key coding

A	Key coding 333 (standard)
B	Key coding 334
C	Key coding 335
...	...
M	Key coding 455

Other key codes on request.

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

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.УТ03.B.00035/19

Technical data

General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C … +80°C (standard) -40°C … +80°C (T6 option)
Safety parameter B_{10D}:	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 163

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, 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, RoHS Directive 2011/65/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

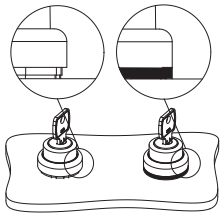
IP69K
IP67

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 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.

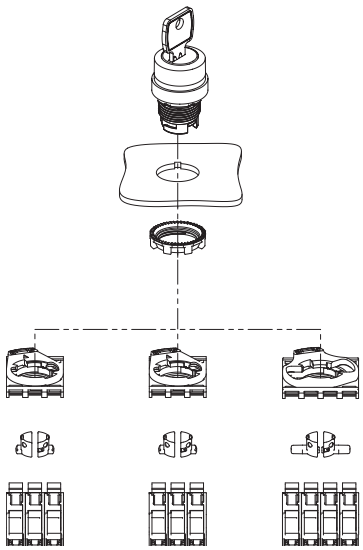
Shaped ring



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.

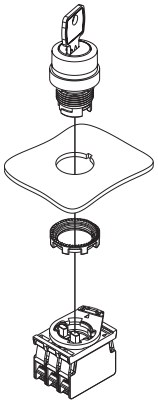


Selection table for key selector switches

Actuator colour and engraving	Two positions	with key	
		black bezel	Satin chrome bezel
black		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

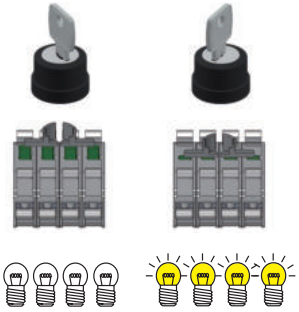
The standard colour of the selectors in the above-mentioned codes is **BLACK**. Other colours on request.
Key selectors switches can be customized with symbols and inscriptions on request.
All keys of the selector switches have the 333 key coding. Other codes on request.

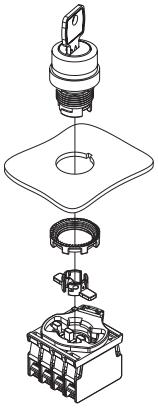
3-slot mounting adapter



The 2-position selector switches actuate all contacts at the same time.

4-slot mounting adapter





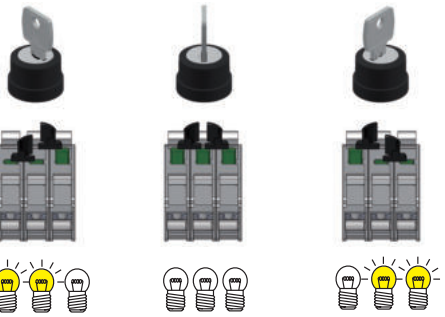
The 2-position selector switches actuate all contacts at the same time.

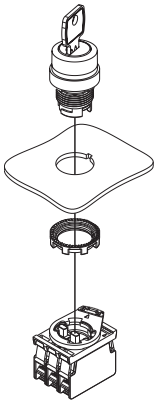
Actuator colour and engraving	Three positions	with key	
		black bezel	Satin chrome bezel
black		E2 1SC3ACE11AA	E2 1SC3ACE19AA
		E2 1SC3BCE11AA	E2 1SC3BCE19AA
		E2 1SC3CCE11AA	E2 1SC3CCE19AA
		E2 1SC3DCE11AA	E2 1SC3DCE19AA
		E2 1SC3ECE11AA	E2 1SC3ECE19AA
		E2 1SC3FCE11AA	E2 1SC3FCE19AA
		E2 1SC3GCE11AA	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 333 key coding. Other codes on request.

Legend: Maintained Spring-return Key extraction position

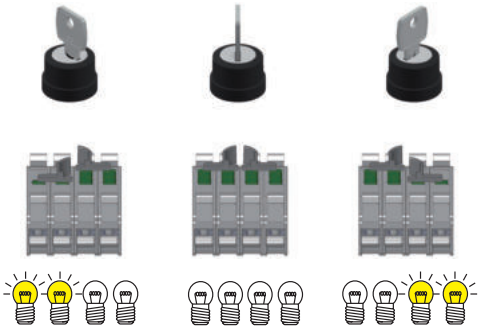
3-slot mounting adapter

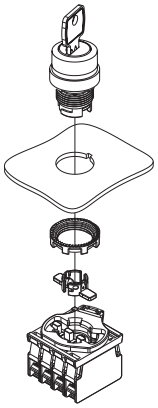




The 3-position selector switches are supplied with black actuators that activate 2 contacts at the same time.

4-slot mounting adapter





The 3-position selector switches are supplied with grey actuators that activate 2 contacts at the same time.

Complete units with two- or three-position key selectors

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

Other combinations on request.
Key with key coding 333.

Actuator colour and engraving	Positions	Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	3 positions black bezel
black		1NO	-	1NO	**E2 AC-DXBC1607** E2 1SC3DCE11AA + E2 1BAC11 + E2 CP10G2V1 + E2 CP10G2V1

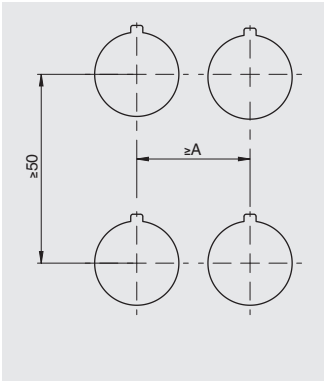
Other combinations on request.
Key with key coding 333.

Legend: Maintained Spring-return Key extraction position

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

Minimum distances for installation

All values in the drawings are in mm

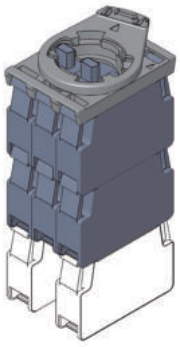


3-slot mounting adapter
A=30 mm

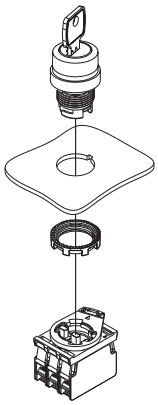
4-slot mounting adapter
A=40 mm

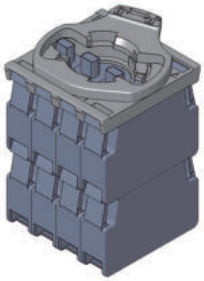
Maximum number of contact blocks

3-slot mounting adapter	4-slot mounting adapter
E2 •SC•••••••• key selector switch	E2 •SC•••••••• key selector switch

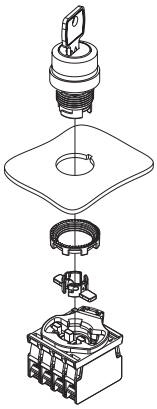


maximum number:
6 contact blocks
3 levels





maximum number:
8 contact blocks
2 levels



Contact block

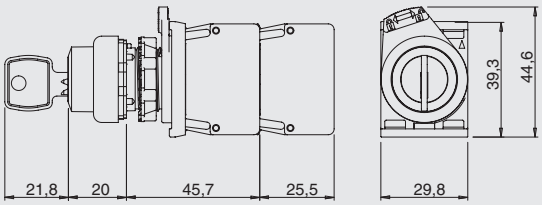
Alternative position contact block

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

Dimensions

All values in the drawings are in mm

Key selector switch



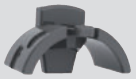
➔ The 2D and 3D files are available at **www.pizzato.com**

Locking keys

Article	Description
VE KE1A00-PY333	Locking key Order only if further keys besides the supplied one are needed. Key with key coding 333. Other codes on request.

Actuators

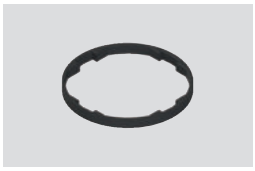
Packs of **10 pcs.**

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

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.**

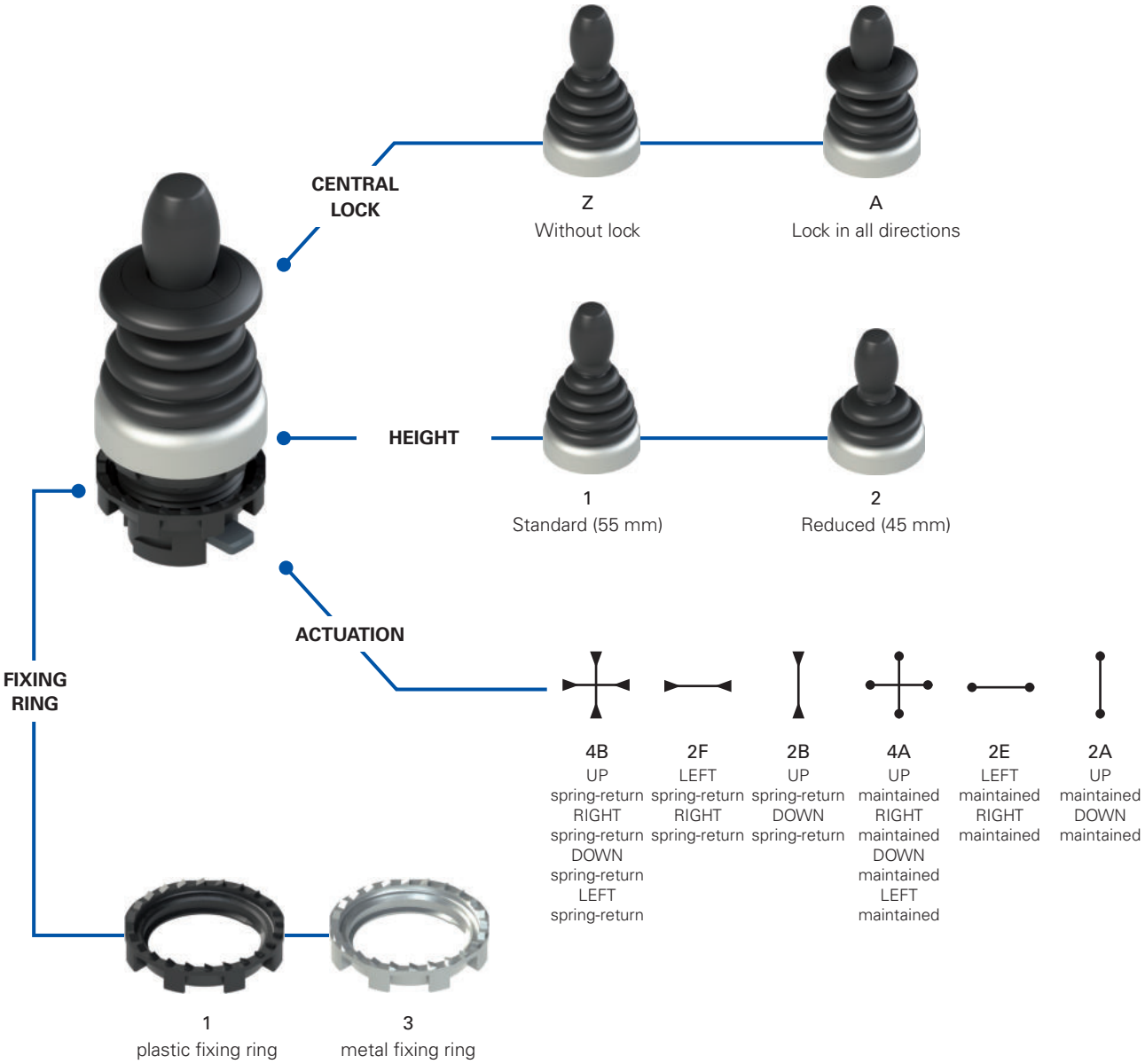
Article	Description
VE GF720A	Metal fixing ring

Accessories

➔ More ACCESSORIES on page 155

Notes

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	
1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Joystick height	
1	Standard (55 mm)
2	Reduced (45 mm)

Lock	
Z	Without lock
A	Lock in all directions

Actuation	
4B	UP spring-return, RIGHT spring-return, DOWN spring-return, LEFT spring-return
2F	LEFT spring-return, RIGHT spring-return
2B	UP spring-return, DOWN spring-return
4A	UP maintained, RIGHT maintained, DOWN maintained, LEFT maintained
2E	LEFT maintained, RIGHT maintained
2A	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:

IMQ approval: CA02.04805
UL approval: E131787
EAC approval: RU C-IT.УТ03.B.00035/19

Technical data

General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-40°C … +80°C
Safety parameter B_{10D}:	2,000,000
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 163

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, 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,
RoHS Directive 2011/65/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

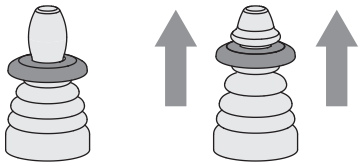
General data

Protection degrees IP67 and IP69K

IP69K
IP67

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



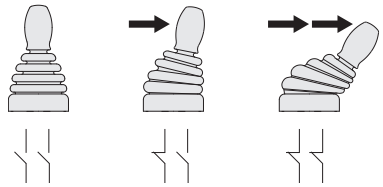
To prevent accidental operation, the joystick can be ordered in versions with central lock.
In these versions the lever remains fixed in the central position and can be steered in the various directions only after being unlocked by simply pulling the release disk. The pulling release movement avoids 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

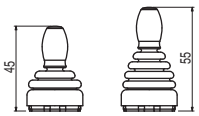
Two-step actuation in every direction is possible by connecting in series to the normal NO contact blocks additional NO contact blocks provided with early make contacts. This option can be used for example to control two-speed actuations in the same direction.



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

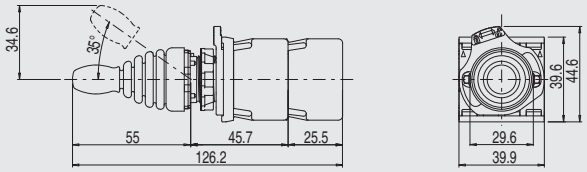


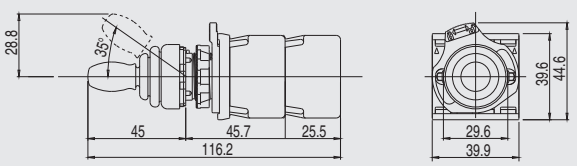

Functions		Contacts				Standard height (55 mm) without lock	Standard height (55 mm) with lock	Reduced height (45 mm) without lock	Reduced height (45 mm) with lock
		pos. 3	pos. 2	pos. 4	pos. 1	Satin chrome bezel	Satin chrome bezel	Satin chrome bezel	Satin chrome bezel
	UP spring-return, RIGHT spring-return,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

Legend:
● maintained actuation
► spring-return actuation

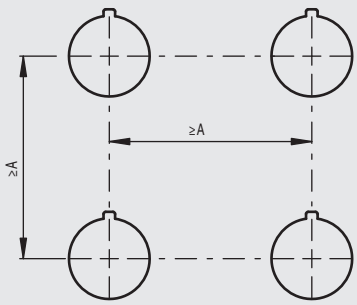
Dimensions

All values in the drawings are in mm





Minimum distances for installation



Standard height joystick
A=70 mm

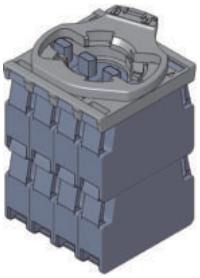
Reduced height joystick
A=60 mm

➔ The 2D and 3D files are available at **www.pizzato.com**

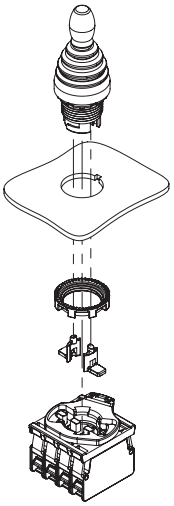
Maximum number of contact blocks

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 or rectangular label, adapters from Ø 22 to Ø 30 mm or protection guards

Fixing ring

Packs of **20 pcs.**

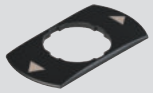
Article	Description
VE GF720A	Metal fixing ring

Accessories

➔ More ACCESSORIES on page 155

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 ◀

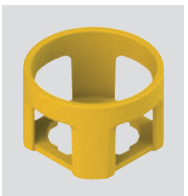
Windowed protection guard

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

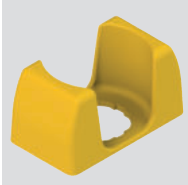


Article	Description
VE GP32B5A	Cylindrical yellow protection guard Ø 43x27 mm

Suitable for standard height joystick.
Available in various colours. See page 158.

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

Open protection guard



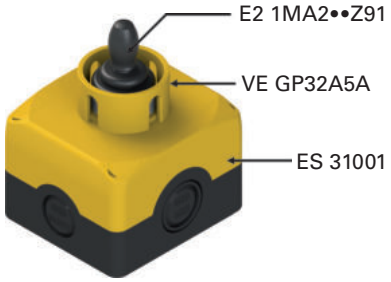
Article	Description
VE GP32F5A	Rectangular open yellow protection guard 66x38 mm, 35 mm high, complete with 4 screws (for panels of thickness from 1 to 3.5 mm)

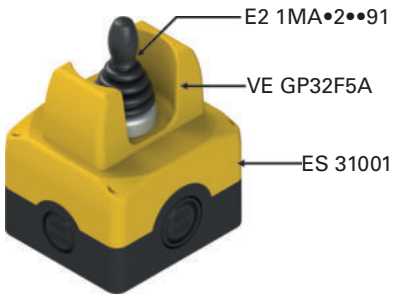
Suitable for the two-direction, standard and reduced height joystick.

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

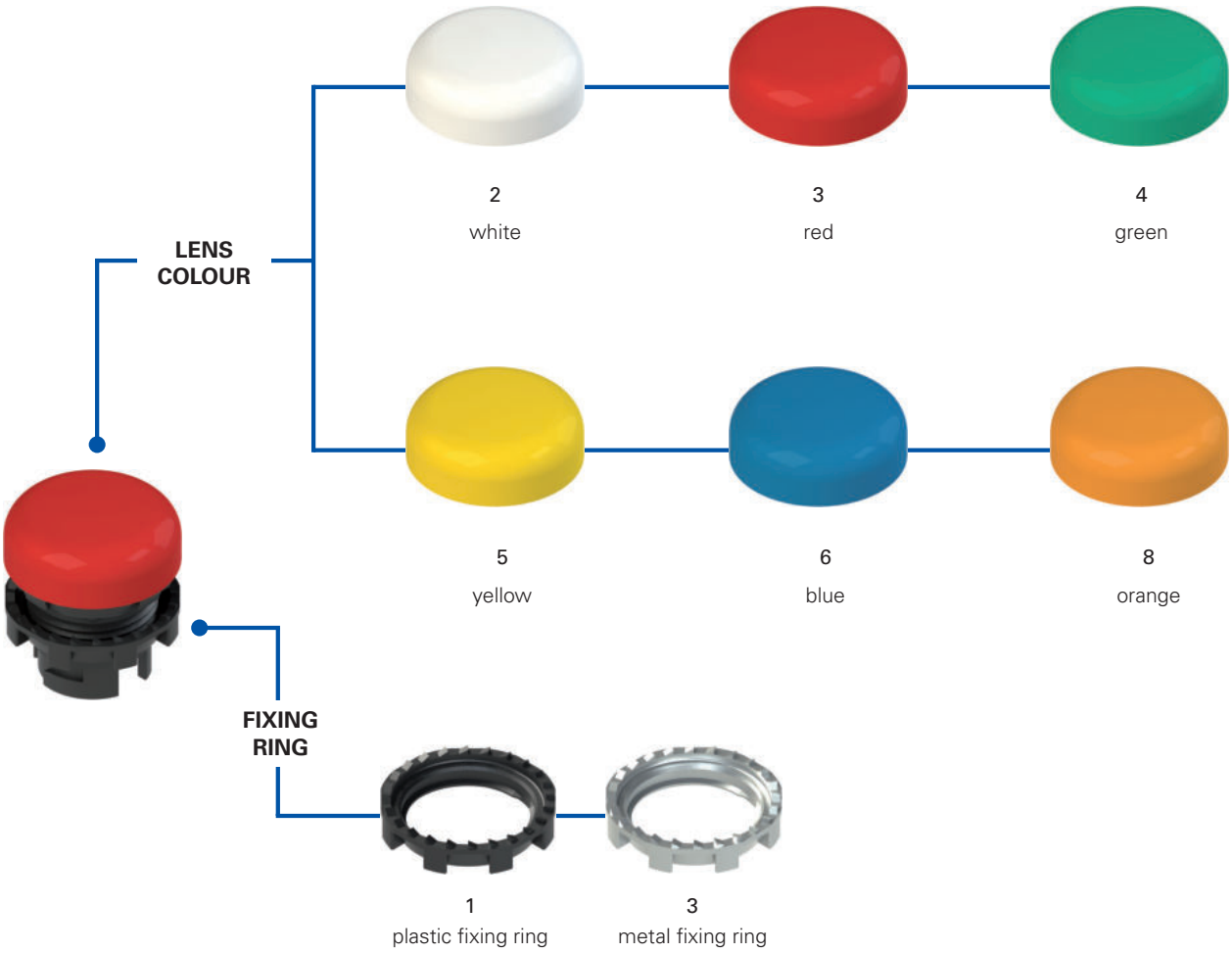
➔ The 2D and 3D files are available at **www.pizzato.com**

Application examples of guards





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	
1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Engraving	
0	no engraving (standard)
IT7	IN SERVIZIO
IT8	ERROR
L54	↯
...	.....

Other engravings on request. See page 159.

Lens shape	
A	level, smooth

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

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

Quality marks:

IMQ approval: CA02.04806
UL approval: E131787
EAC approval: RU C-IT.УТ03.B.00035/19

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 163

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, UL 508, CSA 22-2 No. 14.

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/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 80°C).

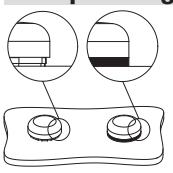
Customisable

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 pos. 2	LED pos. 3	LED pos. 1	Article
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 LP1A2V1
blue	-	LED	-	E2 AC-DXBC0204 E2 1ILA610 + E2 1BAC11 + E2 LP1A6V1
orange	-	LED	-	E2 AC-DXBC0205 E2 1ILA810 + E2 1BAC11 + E2 LP1A8V1

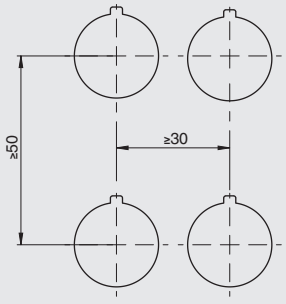
➔ For data regarding LED units, please see the respective chapters

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 159.
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

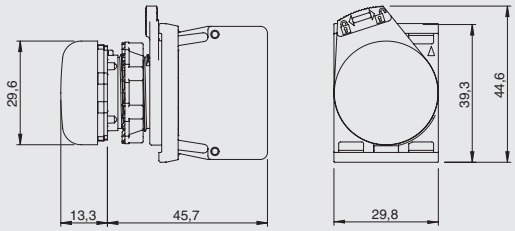
Minimum distances for installation



➔ The 2D and 3D files are available at **www.pizzato.com**

Dimensions

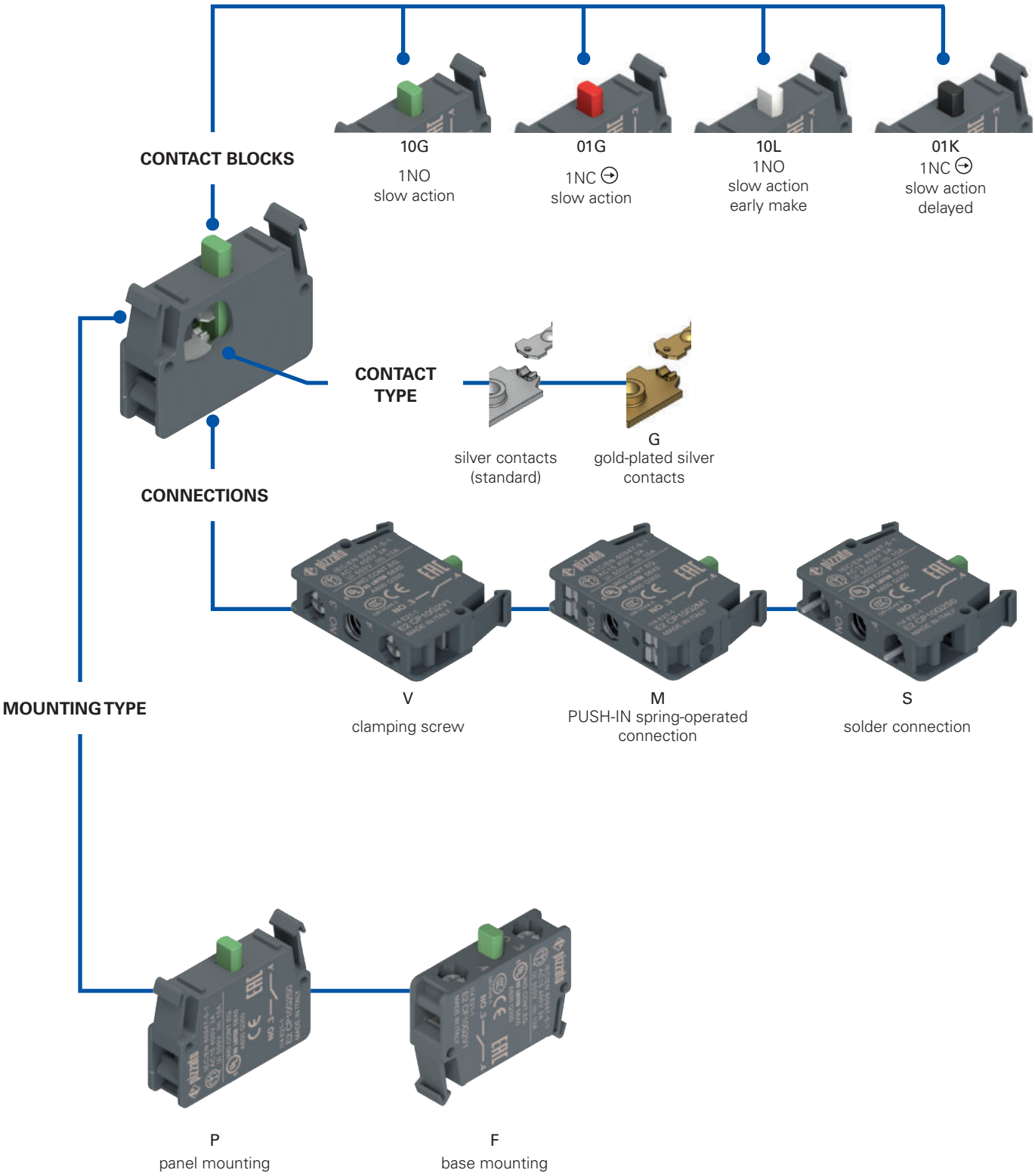
All values in the drawings are in mm



Accessories

➔ More ACCESSORIES on page 155

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 CP01G2V1-G

Mounting type	
P	panel mounting
F	base mounting

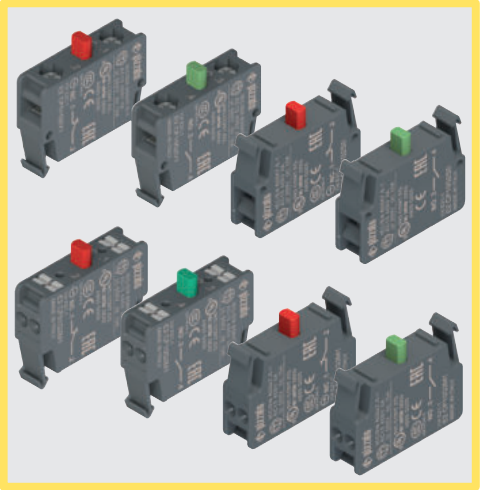
Contact type	
	silver contacts (standard)
G	gold-plated silver contacts

Contact block	
01G	1NC, slow action
10G	1NO, slow action
01K	1NC, slow action, delayed
10L	1NO, slow action, early make
01S	1NC, slow action, self-monitored (with clamping screw only)

Protection degree	
0	IP00 solder connection
1	IP20 screw connection and PUSH-IN spring-operated connection
2	IP20 screw connection andPUSH-IN spring-operated connection, with dust protection cap (panel mounting only)

Contact rating	
2	Ith 10A

Connection type	
V	clamping screw
M	PUSH-IN spring-operated connection
S	solder connection (panel mounting only)



Main features

- Highly reliable contact blocks provided with self-cleaning contacts with quadruple contact point
- Versions with gold-plated contacts
- Positive opening NC contacts acc. to IEC 60947-5-1
- Screw, PUSH-IN spring, or solder connections.

Quality marks:

IMQ approval:	CA02.04805
UL approval:	E131787
CCC approval:	2020970305002289
EAC approval:	RU C-IT.УТ03.B.00035/19

Technical data

General data

Protection degree acc. to EN 60529:	IP20 with screw connection IP20 with PUSH-IN spring-operated 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 163

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
Safety parameter B_{10D}:	1,000,000 (NO), 40,000,000 (NC)
Material of the contacts:	Silver contacts (standard) For low current: silver contacts with 1 µm gold coating (on request)
Contact type:	"V-shape" self-cleaning contacts with quadruple contact point

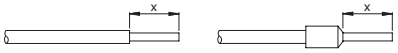
Clamping screw connection

Cable cross section:	min 1 x 0.5 mm² (1 x AWG 20) max 2 x 2.5 mm² (2 x AWG 14)
Tightening torque:	0.6 … 0.8 Nm
Cable stripping length (x):	8 mm

PUSH-IN spring-operated connection

Cable cross section (flexible conductors, with or without wire-end sleeve):

	min. 1 x 0.25 mm² (1 x AWG 24) max. 2 x 1.5 mm² (2 x AWG 16)
Cable stripping length (x):	min. 8 mm, max. 10 mm



In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, UL 508, CSA 22-2 No. 14, GB/T14048.5

⚠ **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,
RoHS Directive 2011/65/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):	500 Vac/dc
Protection against short circuits:	type gG/gL fuse 10 A 500 V
Rated impulse withstand voltage (U_{imp}):	8 kV screw and solder connection 6 kV PUSH-IN spring-operated connection
Pollution degree:	3

Utilization category

Alternating current: AC15 (50 … 60 Hz)

Ue (V)	24	48	120	250	400
Ie (A)	6	6	6	6	3

Direct current: DC13

Ue (V)	24	48	125	250
Ie (A)	2.5	1.3	0.6	0.3

Features approved by UL

Electrical ratings: A600 pilot duty (720 VA, 120-600 Vac) Q300 pilot duty (69 VA, 125-250 Vdc)

Note:
For contact block series E2 C provided with clamping screw terminals: use 60 or 75 °C copper (Cu) conductor and wire size range 14-20 AWG, stranded or solid. The terminal tightening torque of 7.1 Lb In (0.8 Nm).

For contact block series E2 C provided with screw less type terminals: use 60 or 75 °C copper (Cu) conductor and wire size range 16-24 AWG, stranded. These terminals are suitable also for stranded conductors prepared with ZMLF ferrules. Recommended stripping length: 8 mm.

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

Features approved by IMQ

Rated insulation voltage (Ui):	500 V
Conventional free air thermal current (Ith):	10 A
Thermal current inside housing (Ithe):	10 A
Rated impulse withstand voltage (Uimp):	
screw terminals or solder terminals	8 kV
terminals without screw	6 kV
Protection degree of the housing:	
screw terminals or terminals without screw	IP20
solder terminals	IP00
screw terminals with dust protection cap, panel mounting only	IP20
Terminals: screw terminals, solder terminals, without screw	
Utilization category:	AC15
Operating voltage (Ue):	400 Vac (50/60 Hz)
Operating current (Ie):	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, fundamental requirements of the Low Voltage Directive 2014/35/EU.

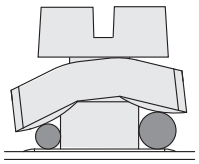
Please contact our technical department for the list of approved products.

General data

Positive opening

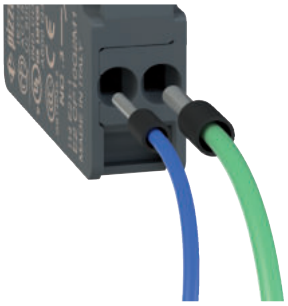
All NC contacts are suitable for safety applications. The NC contacts are positive opening contacts acc. to IEC 60947-5-1.

Screw connection with clamping screw plates

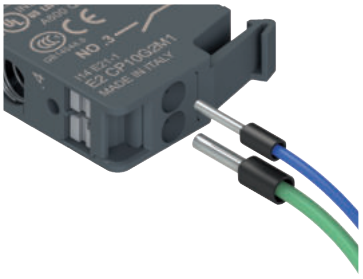


The clamping screw plates of the contact blocks are provided with a particular "roofing tile" structure and are loosely coupled to the clamping screw. This way, during the wires fixing, the clamping screw plate is able to suit to cables of different diameters and tends to tighten the wires toward the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

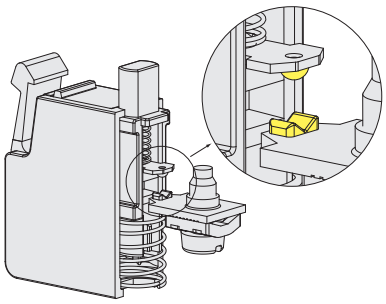
PUSH-IN spring-operated connection



The PUSH-IN spring connection allows quick and simple wiring, as the wire just needs to be inserted into the appropriate hole in order to establish the electrical connection and automatically secure the wire.
The reduced force required to insert the wire allows completely tool-free connection by using wires with crimped wire-end sleeves. They are released by pressing a special wire release button - including individually - with any tool, without the need to use a screwdriver of a predefined size.
In addition, the contact block has holes for insertion of tester tips, so that electrical measurements can be carried out, without having to remove the connecting cables.

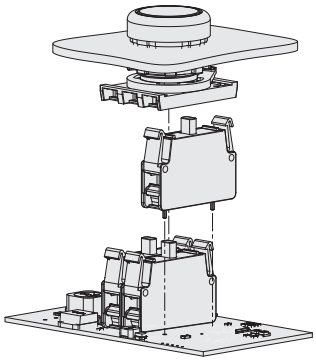


High-reliability self-cleaning contacts



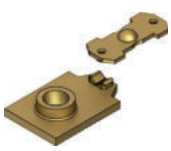
"V-shape" self-cleaning contacts with quadruple contact point. This type of shape, thanks to the presence of the double contact point, makes it possible to drastically reduce the probability of contact commutation failure. In addition to this, it improves considerably the reliability in the presence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



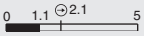
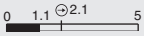
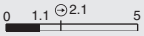
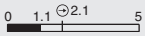
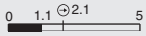
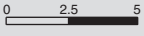
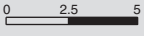
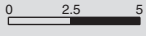
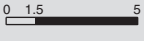
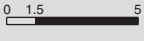
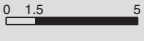
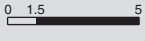
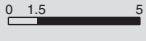
The contact blocks can be supplied with silver electric contacts with a special gold-plated surface, with total gold thickness of one micron. This type of treatment can be useful in environments which are aggressive against silver and in case of very small electric charges, usually with low voltages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

Selection table for contact blocks

Packs of **10 pcs.**





Contact block	Panel mounting			Base mounting	
	Screw connection	PUSH-IN spring-operated connection	Solder connection	Screw connection	PUSH-IN spring-operated connection
1NC, ⊖ slow action 	E2 CP01G2V1 	E2 CP01G2M1 	E2 CP01G2S0 	E2 CF01G2V1 	E2 CF01G2M1 
1NO, slow action 	E2 CP10G2V1 	E2 CP10G2M1 	E2 CP10G2S0 	E2 CF10G2V1 	E2 CF10G2M1 
1NC, ⊖ slow action, delayed 	E2 CP01K2V1 	E2 CP01K2M1 	E2 CP01K2S0 	E2 CF01K2V1 	E2 CF01K2M1 
1NO, slow action, early make 	E2 CP10L2V1 	E2 CP10L2M1 	E2 CP10L2S0 	E2 CF10L2V1 	E2 CF10L2M1 

Complete units with contact block and mounting adapter

Contacts			Panel mounting	
pos. 2	pos. 3	pos. 1	Screw connection	PUSH-IN spring-operated connection
-	1NO	-	E2 AC-XXBC0010 E2 1BAC11 + E2 CP10G2V1	E2 AC-XXBC0147 E2 1BAC11 + E2 CP10G2M1
-	1NC ⊖	-	E2 AC-XXBC0009 E2 1BAC11 + E2 CP01G2V1	E2 AC-XXBC0146 E2 1BAC11 + E2 CP01G2M1

Other combinations on request.

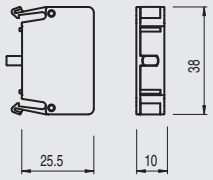
Contacts			Panel mounting	
pos 2	pos 3	pos 1	Screw connection	PUSH-IN spring-operated
1NO	-	1NO	E2 AC-XXBC0012 E2 1BAC11 + E2 CP10G2V1 + E2 CP10G2V1	E2 AC-XXBC0149 E2 1BAC11 + E2 CP10G2M1 + E2 CP10G2M1
1NC ⊖	-	1NC ⊖	E2 AC-XXBC0011 E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1	E2 AC-XXBC0148 E2 1BAC11 + E2 CP01G2M1 + E2 CP01G2M1
1NC ⊖	-	1NO	E2 AC-XXBC0028 E2 1BAC11 + E2 CP10G2V1 + E2 CP01G2V1	E2 AC-XXBC0150 E2 1BAC11 + E2 CP10G2M1 + E2 CP01G2M1

Other combinations on request.

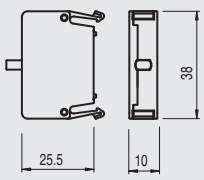
Dimensions

All values in the drawings are in mm

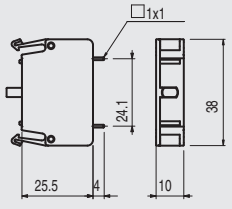
Contact blocks for panel mounting with screw connection, PUSH-IN spring-operated connection



Contact blocks for base mounting, with screw connection, PUSH-IN spring-operated connection



Contact blocks for panel mounting with solder connection



Ø 1.4 mm holes on PCB

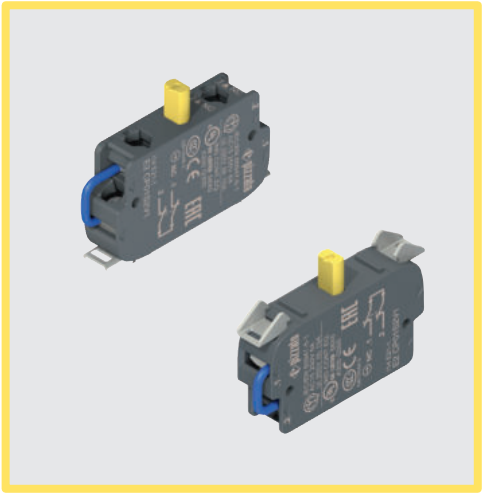
Dust protection

Packs of **50 pcs.**

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

➔ The 2D and 3D files are available at **www.pizzato.com**

Notes



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: 2020970305002289
EAC approval: RU C-IT.УТ03.B.00035/19

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 163

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
Safety parameter B_{10D}:	40,000,000 (NC)
Material of the contacts:	Silver contacts (standard) For low current: silver contacts with 1 µm gold coating (on request)
Contact type:	"V-shape" self-cleaning contacts with quadruple contact point
Cable cross section:	min 1 x 0.34 mm^2 (1 x AWG 22) max. 2 x 1.5 mm^2 (2 x AWG 16)
Cable stripping length:	7 mm
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, EN IEC 63000, UL 508, CSA 22-2 No. 14, GB/T14048.5

⚠ **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, RoHS Directive 2011/65/EU.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1.

Electrical data

Thermal current (Ith):	10 A
Rated insulation voltage (Ui):	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

Functioning of self-monitored contact blocks

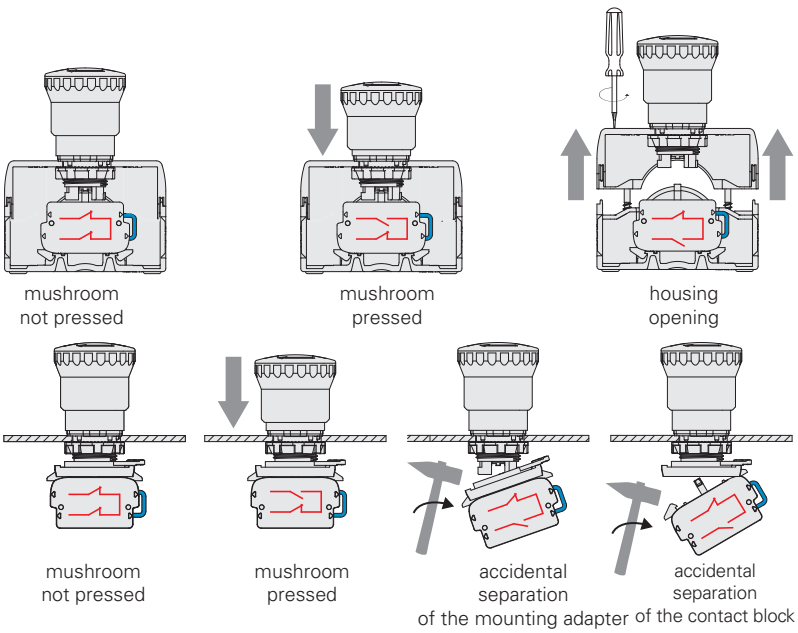
The operating principle of the self-monitoring contact blocks ensures that their associated control devices are free from faults and malfunctions caused by contacts separating, and that the safety function remains permanently available during machine operation.

Characterised by two NC contacts connected in series; during normal operation, both contacts are in the closed position.

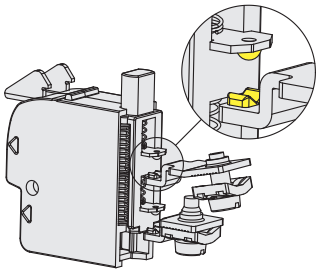
If the emergency stop button is pressed, the direct action of the force exerted on the control device opens the first contact (positive opening); this interrupts the safety circuit, while the second contact remains closed.

If the housing cover is removed (in the case of base-mounted contact blocks), or if the contact block or mounting adapter becomes unintentionally separated (in the case of panel-mounted contact blocks), the second contact opens, which always interrupts the same safety circuit.

When using the machine in this way, the operator can always identify any hidden faults that have occurred internally to the electrical enclosures.



High-reliability self-cleaning contacts



"V-shape" self-cleaning contacts with quadruple contact point. This type of shape, thanks to the presence of the double contact 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.

Positive opening

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

Features approved by UL

Electrical ratings: 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 16-22 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_i): 250 V
Conventional free air thermal current (I_{th}): 10 A
Rated impulse withstand voltage (U_{imp}): 4 kV
Protection degree of the housing: IP20
Utilization category: AC-15
Operating voltage (Ue): 250 Vac (50/60 Hz)
Operating current (Ie): 6 A

Forms of the contact element: Y
Positive opening of contacts on contact blocks 01S
In compliance with standards: EN 60947-1 + A1:2011 + A2:2014, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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, ⊖ slow action, self-monitored 	E2 CP01S2V1

The self-monitoring contact block with panel mounting can be installed to any position on the 3-slot mounting adapter, and in the two central positions only on the 4-slot mounting adapter.

Contact block	Base mounting Screw connection
1NC, ⊖ slow action, self-monitored 	E2 CF01S2V1

The self-monitoring 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	-	E2 AC-XXBC0139 E2 1BAC11 + E2 CP01S2V1

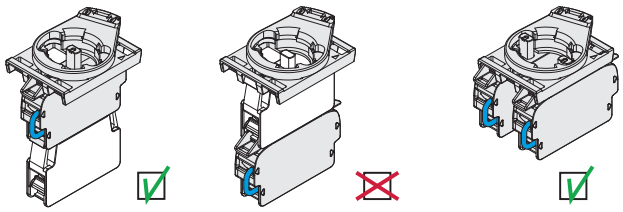
Other combinations on request.

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 stop button no more than two self-monitored contact blocks can be installed.



Dust protection

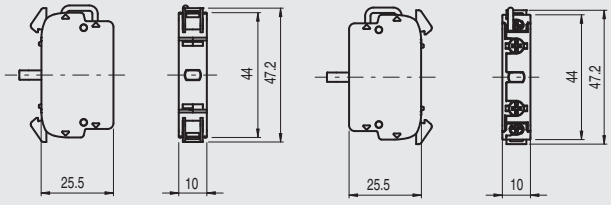
Packs of **50 pcs.**

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

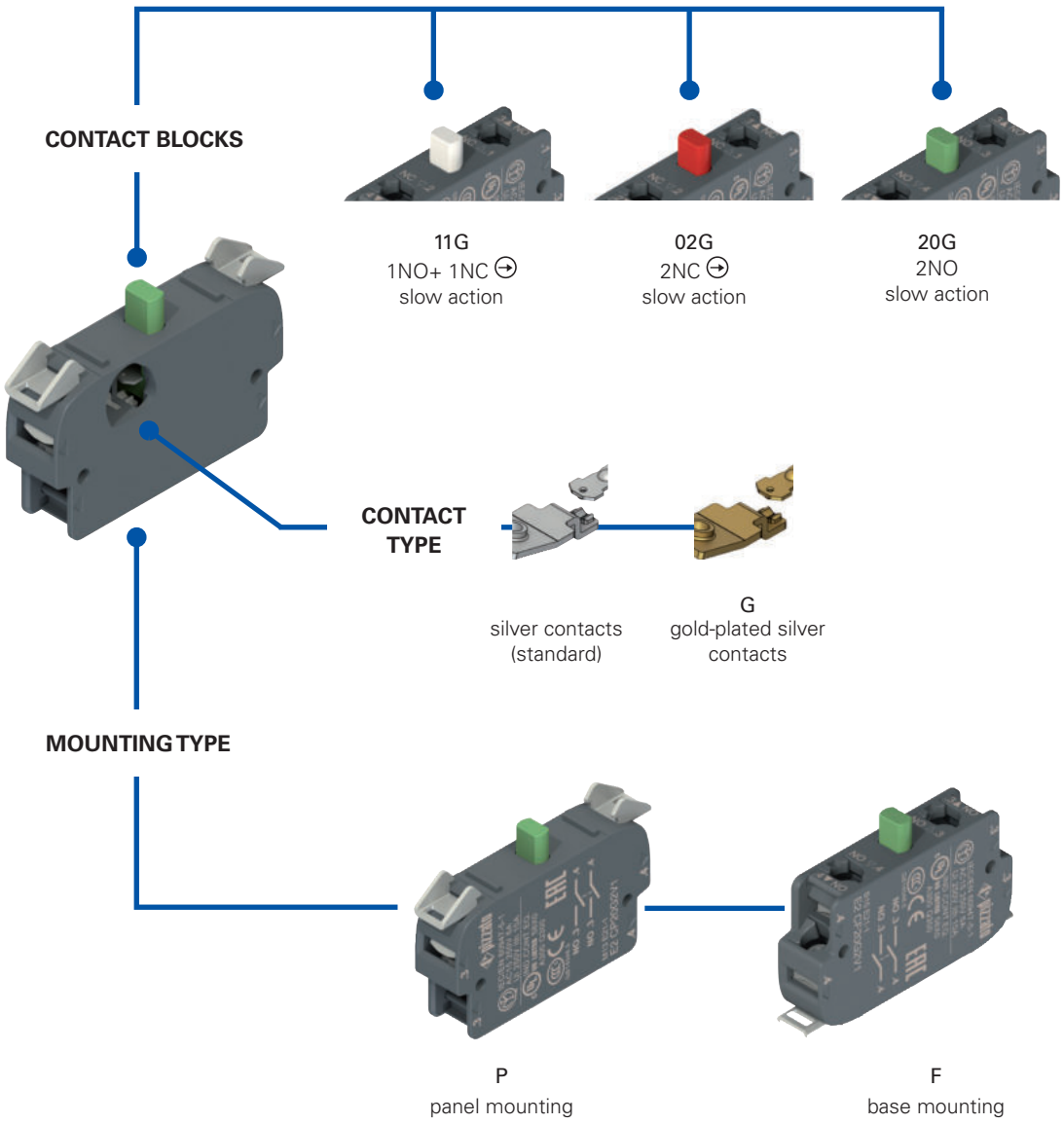
➔ The 2D and 3D files are available at **www.pizzato.com**

Contact block dimensions

All values 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.

article options

E2 CP11G2V1-G

Mounting type	
P	panel mounting
F	base mounting

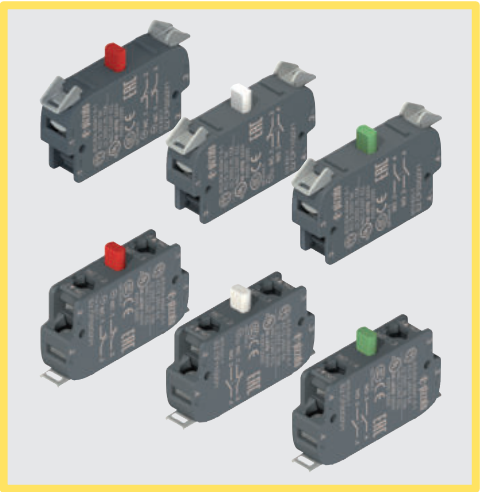
Contact type	
	silver contacts (standard)
G	gold-plated silver contacts

Contact block	
11G	1NO+1NC, slow action
02G	2NC, slow action
20G	2NO, slow action

Protection degree	
1	IP20 screw connection
2	IP20 screw connection with dust protection cap (panel mounting only)

Contact rating	
2	Ith 10A

Connection type	
V	clamping screws



Main features

- Highly reliable contact blocks provided with self-cleaning contacts with quadruple contact 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:	2020970305002289
EAC approval:	RU C-IT.УТ03.B.00035/19

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 163

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
Positive opening force:	17 N
Actuation speed:	min 1 mm/s max. 0.5 m/s
Safety parameter B_{10D}:	1,000,000 (NO), 40,000,000 (NC)
Material of the contacts:	Silver contacts (standard) For low current: silver contacts with 1 µm gold coating (on request)
Contact type:	"V-shape" self-cleaning contacts with quadruple contact point
Cable cross section:	min 1 x 0.34 mm² (1 x AWG 22) max. 2 x 1.5 mm² (2 x AWG 16)
Cable stripping length:	7 mm
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, EN IEC 63000, UL 508, CSA 22-2 No. 14, GB/T14048.5

⚠ **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, RoHS Directive 2011/65/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

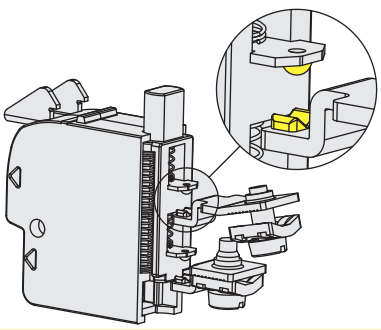
General data

Positive opening

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

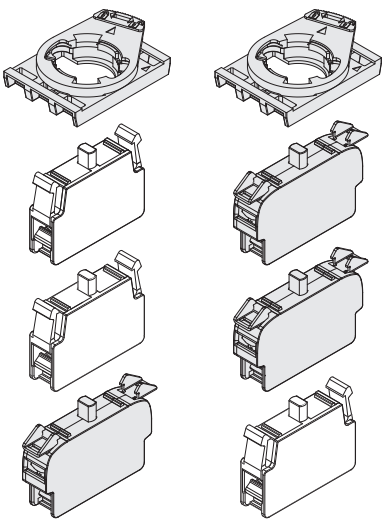
High-reliability self-cleaning contacts

"V-shape" self-cleaning contacts with quadruple contact point. This type of shape, thanks to the presence of the double contact 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

Electrical ratings: 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 16-22 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_i): 250 V
Conventional free air thermal current (I_{th}): 10 A
Rated impulse withstand voltage (U_{imp}): 4 kV
Protection degree of the housing: IP20
Utilization category: AC-15
Operating voltage (Ue): 250 Vac (50/60 Hz)
Operating current (Ie): 6 A

Forms of the contact element: Y+Y, X+X, Zb
Positive opening of contacts on contact blocks 11G, 02G
In compliance with standards: EN 60947-1 + A1:2011 + A2:2014, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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	Base mounting Screw connection
1NO+1NC, slow action ⊕	E2 CP11G2V1	E2 CF11G2V1
2NO, slow action	E2 CP20G2V1	E2 CF20G2V1
2NC, slow action ⊕	E2 CP02G2V1	E2 CF02G2V1

Complete units with contact block and mounting adapter

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

Other combinations on request.

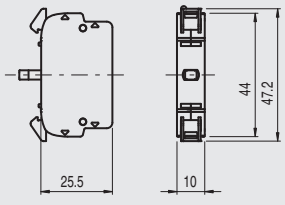
Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	Panel mounting Screw connection
1NO+ 1NC ⊕	-	1NO+ 1NC ⊕	E2 AC-XXBC0138 E2 1BAC11 + E2 CP11G2V1+ E2 CP11G2V1

Other combinations on request.

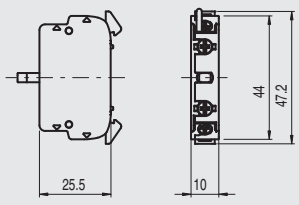
Dimensions

All values in the drawings are in mm

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



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



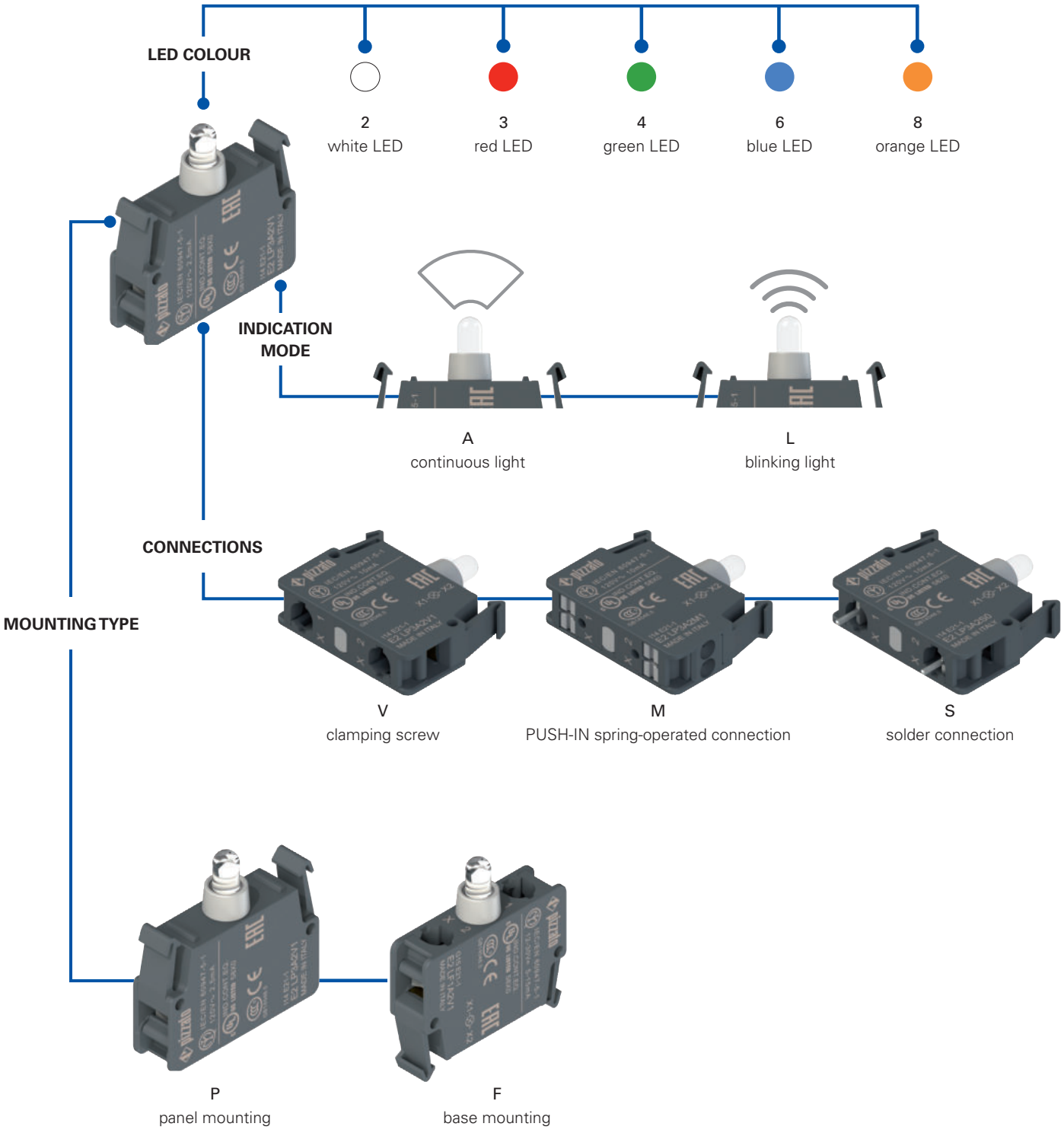
Dust protection

Packs of **50 pcs.**

Article	Description
VE PR3A70	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**

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

Protection degree	
0	IP00 solder connection
1	IP20 screw connection and PUSH-IN spring-operated connection

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)

Connection type	
V	clamping screw (standard)
M	PUSH-IN spring-operated connection
S	solder connection (panel mounting only)

Indication mode	
A	Continuous light (standard)
L	blinking light (12 … 30 V power supply only)

LED colour	
2	white
3	red
4	green
6	blue
8	orange

Main features
- High luminosity LED
- Three supply voltages:
- 12 … 30 Vac/dc, 120 Vac, 230 Vac
- Screw, PUSH-IN spring, or solder connections.
- Continuous or blinking light
- Panel or base mounting versions

Quality marks:

IMQ approval:	CA02.04806
UL approval:	E131787
CCC approval:	2020970305002289
EAC approval:	RU C-IT.УТ03.B.00035/19

Technical data

General data

Protection degree acc. to EN 60529:	IP20 with screw connection IP20 with PUSH-IN spring-operated 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 163

LED units

Operating voltages and currents (high luminosity versions):
12 … 30 Vac/dc; 5 … 20 mA
102 … 138 Vac; 20 mA max.
195 … 264 Vac; 20 mA max.

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

Blinking frequency: 1 Hz

Clamping screw connection

Cable cross section:	min 1 x 0.5 mm² (1 x AWG 20) max 2 x 2.5 mm² (2 x AWG 14)
Tightening torque:	0.6 … 0.8 Nm
Cable stripping length (x):	8 mm

PUSH-IN spring-operated connection

Cable cross section (flexible conductors, with or without wire-end sleeve):
min. 1 x 0.25 mm² (1 x AWG 24)
max. 2 x 1.5 mm² (1 x AWG 16)

Cable stripping length (x): min. 8 mm, max. 10 mm

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, UL 508, CSA 22-2 No. 14, GB/T14048.5

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/EU.

Features approved by UL

Electrical ratings:
12-30 V ac/dc, 5-20 mA
120 V ac, 20 mA max
230 V ac, 20 mA max
120 V ac/dc, 2.5 mA
230 V ac/dc, 2.5 mA

Note:
For LED holder series E2 L provided with clamping screw terminals: use 60 or 75 °C copper (Cu) conductor and wire size range 14-20 AWG, stranded or solid. The terminal tightening torque of 7.1 Lb In (0.8 Nm).

For LED holder series E2 L provided with screw less type terminals: use 60 or 75 °C copper (Cu) conductor and wire size range 16-24 AWG, stranded. These terminals are suitable also for stranded conductors prepared with ZMLF ferrules. Recommended stripping length: 8 mm.

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

Features approved by IMQ

Rated insulation voltage (Ui): 500 V
Indicator light type: Incorporated LED
Terminals: screw terminals, terminals without screw, solder terminals
Rated operating voltage (Ue):
12 … 30 Vac/dc (5 … 20 mA), 120 Vac (20 mA), 230 Vac (20 mA)
120 Vac/dc (2.5 mA), 230 Vac/dc (2.5 mA)

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

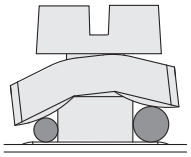
Please contact our technical department for the list of approved products.

General data

Continuous or blinking light

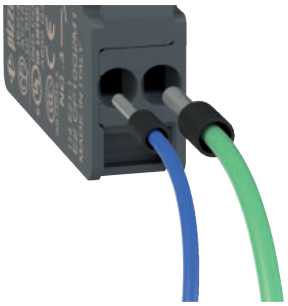
The LED units can be provided with two different lighting types: continuous or blinking light. The blinking light versions allow a faster identification on the panel of the lit device compared to the continuous light. The special internal electronic circuit autonomously alternates the ON and OFF phases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

Screw connection with clamping screw plates

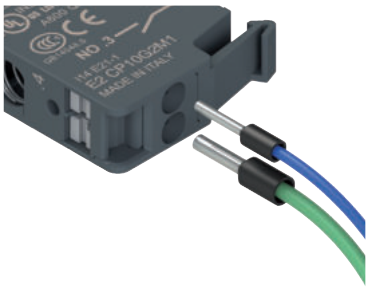


The clamping screw plates of the LED units are provided with a particular "roofing tile" structure and are loosely coupled to the clamping screw. This way, during the wires fixing, the clamping screw plate is able to suit to cables of different diameters and tends to tighten the wires toward the screw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

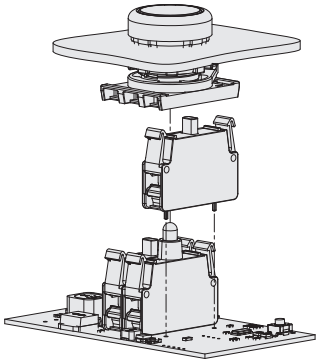
PUSH-IN spring-operated connection



The PUSH-IN spring connection allows quick and simple wiring, as the wire just needs to be inserted into the appropriate hole in order to establish the electrical connection and automatically secure the wire.
The reduced force required to insert the wire allows completely tool-free connection by using wires with crimped wire-end sleeves. They are released by pressing a special wire release button - including individually - with any tool, without the need to use a screwdriver of a predefined size.
In addition, the contact block has holes for insertion of tester tips, so that electrical measurements can be carried out, without having to remove the connecting cables.



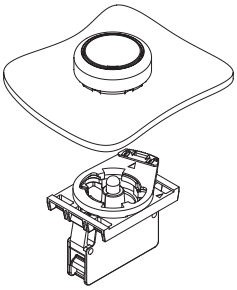
Solder connection on printed circuit

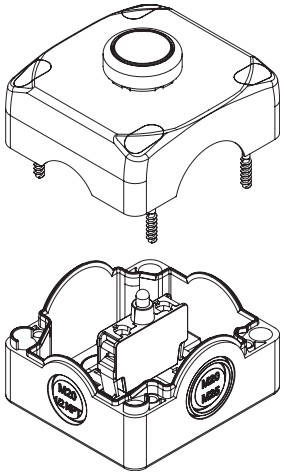


Versions with panel mounting of the EROUND series LED units with solder pin are available. If there is no wiring but a printed circuit, these LED units can be directly welded on the latter.

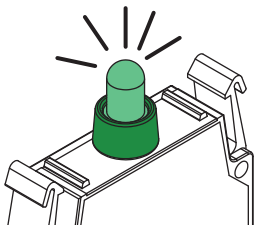
Available versions

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



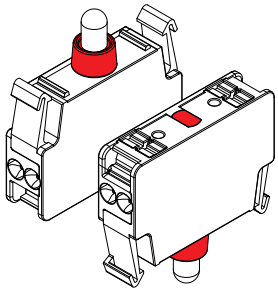


High luminosity LED



The LED units to combine with the luminous devices feature a high-intensity LED, 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.

Immediate recognition of the colour



The unit has a coloured plastic ring that extends from the led bulb to the bottom of the unit.
Thanks to this device, recognising the LED colour is easier and more immediate even in those situations where the LED is not directly visible (for example: in panel mounting) or when there are many units side by side.
Unlike other solutions on the market, it is not necessary to look for markings on the body of the item.

Selection table for LED units

Packs of **5 pcs.**



LED colour	Available device colour	Panel mounting								
		Screw connection			PUSH-IN spring-operated connection			Solder connection		
		Operating voltage								
		12 ... 30 Vac/dc	120 Vac	230 Vac	12 ... 30 Vac/dc	120 Vac	230 Vac	12 ... 30 Vac/dc	120 Vac	230 Vac
white	white / yellow	E2 LP1A2V1	E2 LP3A2V1	E2 LP4A2V1	E2 LP1A2M1	E2 LP3A2M1	E2 LP4A2M1	E2 LP1A2S0	E2 LP3A2S0	E2 LP4A2S0
red	red	E2 LP1A3V1	E2 LP3A3V1	E2 LP4A3V1	E2 LP1A3M1	E2 LP3A3M1	E2 LP4A3M1	E2 LP1A3S0	E2 LP3A3S0	E2 LP4A3S0
green	green	E2 LP1A4V1	E2 LP3A4V1	E2 LP4A4V1	E2 LP1A4M1	E2 LP3A4M1	E2 LP4A4M1	E2 LP1A4S0	E2 LP3A4S0	E2 LP4A4S0
blue	blue	E2 LP1A6V1	E2 LP3A6V1	E2 LP4A6V1	E2 LP1A6M1	E2 LP3A6M1	E2 LP4A6M1	E2 LP1A6S0	E2 LP3A6S0	E2 LP4A6S0
orange	orange	E2 LP1A8V1	E2 LP3A8V1	E2 LP4A8V1	E2 LP1A8M1	E2 LP3A8M1	E2 LP4A8M1	E2 LP1A8S0	E2 LP3A8S0	E2 LP4A8S0

We recommend to match the colours of the LEDs to the colours of the devices.


LED colour	Available device colour	Base mounting					
		Screw connection			PUSH-IN spring-operated connection		
		Operating voltage					
		12 ... 30 Vac/dc	120 Vac	230 Vac	12 ... 30 Vac/dc	120 Vac	230 Vac
white	white / yellow	E2 LF1A2V1	E2 LF3A2V1	E2 LF4A2V1	E2 LF1A2M1	E2 LF3A2M1	E2 LF4A2M1
red	red	E2 LF1A3V1	E2 LF3A3V1	E2 LF4A3V1	E2 LF1A3M1	E2 LF3A3M1	E2 LF4A3M1
green	green	E2 LF1A4V1	E2 LF3A4V1	E2 LF4A4V1	E2 LF1A4M1	E2 LF3A4M1	E2 LF4A4M1
blue	blue	E2 LF1A6V1	E2 LF3A6V1	E2 LF4A6V1	E2 LF1A6M1	E2 LF3A6M1	E2 LF4A6M1
orange	orange	E2 LF1A8V1	E2 LF3A8V1	E2 LF4A8V1	E2 LF1A8M1	E2 LF3A8M1	E2 LF4A8M1

We recommend to match the colours of the LEDs to the colours of the devices.

Complete units with LED unit, contact block and mounting adapter

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

Other combinations on request.

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

Other combinations on request.

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

Other combinations on request.

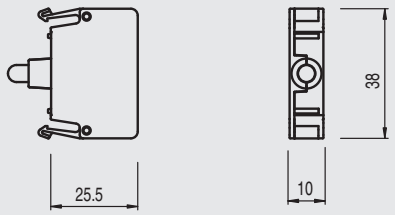
LED colour	Contacts			Panel mounting
				Operating voltage
	pos. 2	pos. 3	pos. 1	12 … 30 Vac/dc
white	-	LED	-	**E2 AC-XXBC0053** E2 1BAC11 + E2 LP1A2V1
red	-	LED	-	**E2 AC-XXBC0055** E2 1BAC11 + E2 LP1A3V1
green	-	LED	-	**E2 AC-XXBC0054** E2 1BAC11 + E2 LP1A4V1
blue	-	LED	-	**E2 AC-XXBC0056** E2 1BAC11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

Other combinations on request.

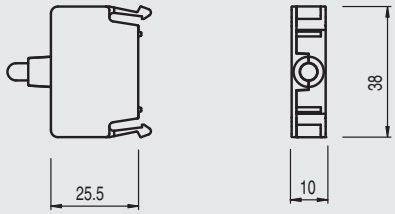
Dimensions

All values in the drawings are in mm

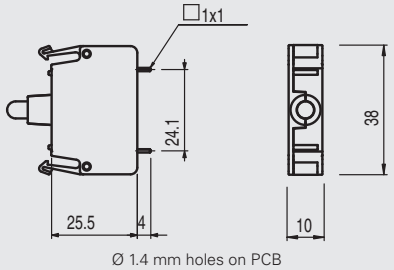
LED units for panel mounting with screw connection, PUSH-IN spring-operated connection



LED units for base mounting with screw connection, push-in spring-operated connection



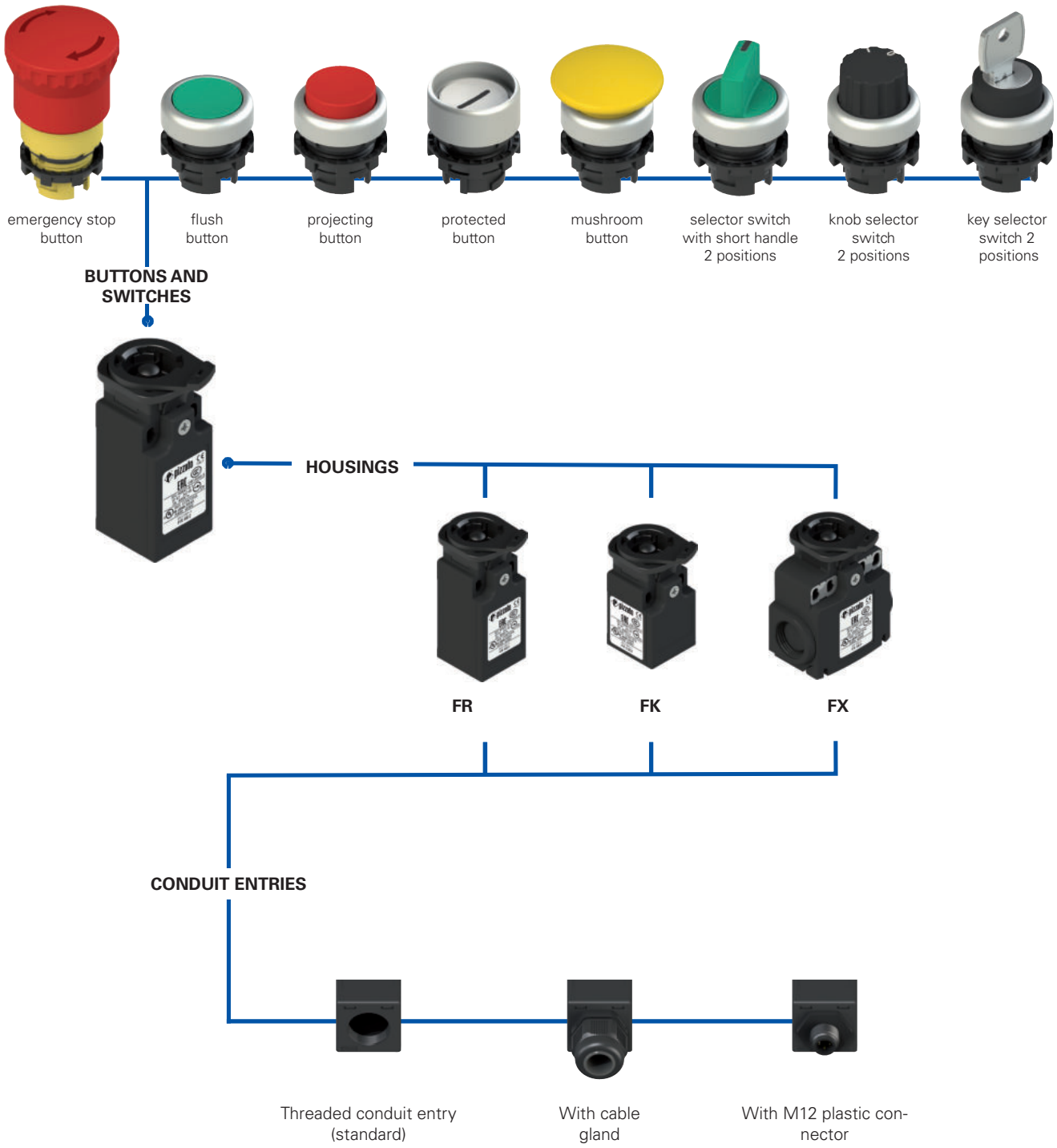
LED units for panel mounting with solder connection



Ø 1.4 mm holes on PCB

➔ The 2D and 3D files are available at **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	
FR	technopolymer, one conduit entry
FX	technopolymer, two conduit entries

Contact block	
6	1NO+1NC, slow action
9	2NC, slow action
20	1NO+2NC, slow action

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

Threaded conduit entry	
M2	M20x1.5

Pre-installed cable glands or connectors	
	no cable gland or connector (standard)
K23	cable gland for cables Ø 6 … 12 mm
...	.....
K70	M12 plastic connector, 4-pole
...	.....

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

Ambient temperature	
	-25°C … +80°C (standard)
T6	-40°C … +80°C

article option option

FK 33E2-GM1K24T6

Housing	
FK	technopolymer, one conduit entry

Contact block	
33	1NO+1NC, slow action
34	2NC, slow action

Contact type	
	silver contacts (standard)
G	silver contacts with 1 µm gold coating

Threaded conduit entry	
M1	M16x1.5

Pre-installed cable glands	
	no cable gland (standard)
K24	cable gland for cables Ø 5 … 10°mm
K28	cable gland for cables Ø 3 … 7°mm

Ambient temperature	
	-25°C … +80°C (standard)
T6	-40°C … +80°C

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

Quality marks:

IMQ approval: EG610
UL approval: E131787
CCC approval: 2020970305002284
EAC approval: RU C-IT.УТ03.B.00035/19

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/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 conduit entries:	M20x1.5
Protection degree:	IP67 acc. to EN 60529 with cable gland of equal or higher protection degree
Ambient temperature:	-25°C … +80°C (standard) -40°C … +80°C (T6 option)
Safety parameter B_{10D}:	40,000,000
Max. actuation frequency:	3600 operating cycles/hour
Mechanical endurance:	20 million operating cycles
Utilization requirements:	See page 163

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 mm² (1 x AWG 22) max. 2 x 1.5 mm² (2 x AWG 16)
Contact blocks 6, 9:	min. 1 x 0.5 mm² (1 x AWG 20) max. 2 x 2.5 mm² (2 x AWG 14)
Cable stripping length:	7 mm for contact blocks 20, 33, 34 8 mm for contact blocks 6, 9
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, EN IEC 63000, UL 508, CSA 22.2 No. 14, GB/T14048.5

⚠ **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) Ue (V) 250 400 500 Ie (A) 6 4 1 Direct current: DC13 Ue (V) 24 125 250 Ie (A) 3 0.55 0.3
	Rated insulation voltage (U_i):	500 Vac 600 Vdc 400 Vac 500 Vdc (contact blocks 20, 33, 34)	
	Rated impulse withstand voltage (U_{imp}):	6 kV / 4 kV (contact blocks 20, 33, 34)	
	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	
with M12 connector, 4-pole	Thermal current (I_{th}):	4 A	Alternating current: AC15 (50÷60 Hz) Ue (V) 24 120 250 Ie (A) 4 4 4 Direct current: DC13 Ue (V) 24 125 250 Ie (A) 3 0.55 0.3
	Rated insulation voltage (U_i):	250 Vac 300 Vdc	
	Protection against short circuits:	type gG fuse 4 A 500 V	
	Pollution degree:	3	
with M12 connector, 8-pole	Thermal current (I_{th}):	2 A	Alternating current: AC15 (50÷60 Hz) Ue (V) 24 Ie (A) 2 Direct current: DC13 Ue (V) 24 Ie (A) 2
	Rated insulation voltage (U_i):	30 Vac 36 Vdc	
	Protection against short circuits:	type gG fuse 2 A 500 V	
	Pollution degree:	3	

Features approved by UL

Electrical ratings: 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 12, 14 AWG. 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 14 AWG. 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 IMQ

Rated insulation voltage (U_i):	500 Vac 400 Vac (for contact blocks 20, 33, 34)
Conventional free air thermal current (I_{th}):	10 A
Protection against short circuits:	type aM fuse 10 A 500 V
Rated impulse withstand voltage (U_{imp}):	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 (Ue):	400 Vac (50 Hz)
Operating current (Ie):	3 A

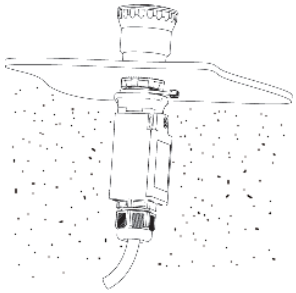
Forms of the contact element: Za, Zb, Za+Za, Y+Y, X+X, Y+Y+X, Y+Y+Y, Y+X+X
Positive opening of contacts on contact blocks 6, 9, 20, 33, 34
In compliance with standards: EN 60947-1, EN 60947-5-1+ A1:2009, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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 stop 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

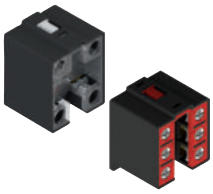
These devices are also available in a special version suitable for an ambient operating temperature range from -40°C up to +80°C.
They can therefore be used for applications in cold stores, sterilisers and other equipment with low temperature environments. The special materials used to produce these versions retain their characteristics even under these conditions, thereby expanding the installation possibilities.

Protection degree IP67

IP67

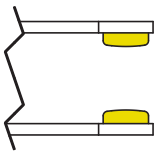
These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529.
They can therefore be used in all environments where maximum protection degree of the housing is required.

Contact block



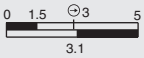
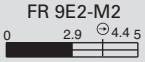
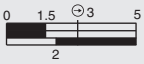
Contact blocks with captive screws, finger protection, twin bridge contacts and double interruption for higher contact reliability. They are available in multiple variants with shifted activation travels, simultaneous or overlapping. They are suitable for many different applications.

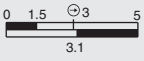
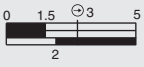
Gold-plated contacts

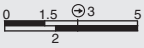
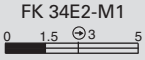


The contact blocks of these devices can be supplied gold-plated upon request. Ideal for applications with low voltages or currents; it ensures increased contact reliability. Available in two thicknesses (1 or 2.5 microns), it adapts perfectly to the various fields of application, ensuring a long endurance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

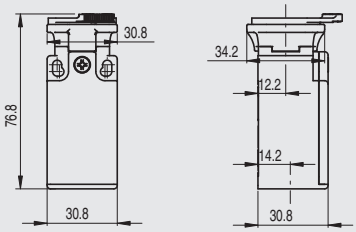
Contact block	Article
1NO+1NC, slow action ⊖	FX 6E2-M2 
2NC, slow action ⊖	FX 9E2-M2 
1NO+2NC, slow action ⊖	FX 20E2-M2 

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

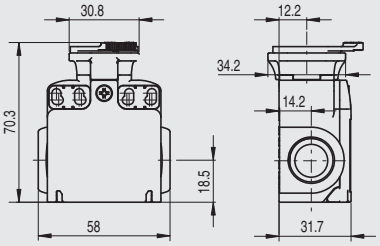
Dimensions

All values in the drawings are in mm

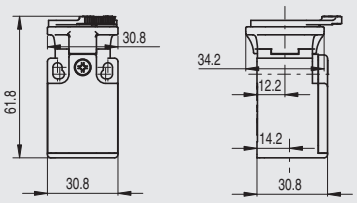
FR series



FX series



FK series



➔ The 2D and 3D files are available at **www.pizzato.com**

Limits of use

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 stop 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 cases, use ATEX products (see dedicated Pizzato catalogue).

Notes

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	
1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

External bezel colour	
1	black (standard)
9	satin chrome (standard)

Rear connection	
AK	A-type USB integrated socket
N0.8	Output with PVC cable (length 0.8 m) and A-type USB male connector
N1.8	Output with PVC cable (length 1.8 m) and A-type USB male connector
N3	Output with PVC cable (length 3 m) and A-type USB male connector
N5	Output with PVC cable (length 5 m) and A-type USB male connector (available only via USB 2.0)

Front connection	
A	A-type USB 3.0 integrated socket
C	A-type USB 2.0 integrated 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.УТ03.B.00035/19

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 163

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, UL 508, CSA 22-2 No. 14

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

Features approved by UL

Ratings: 1.8 A (Supplied by class 2 or limited energy external power supply source)
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".
Tightening torque 2.0 Nm.

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

General data

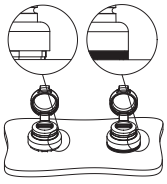
USB 3.0 High Speed

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.
The data transfer speed depends on the chain of devices connected to the USB port, and the operating system used.

USB 2.0

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

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

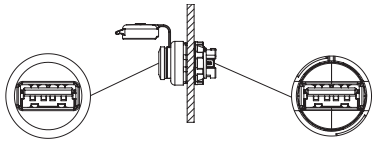
Integrated protection cap

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.

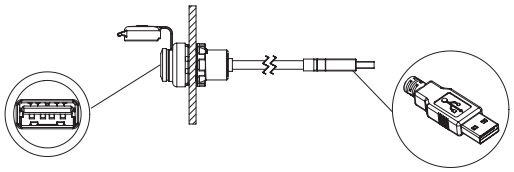
Versions with socket and with cable

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

- with socket-to-socket connection

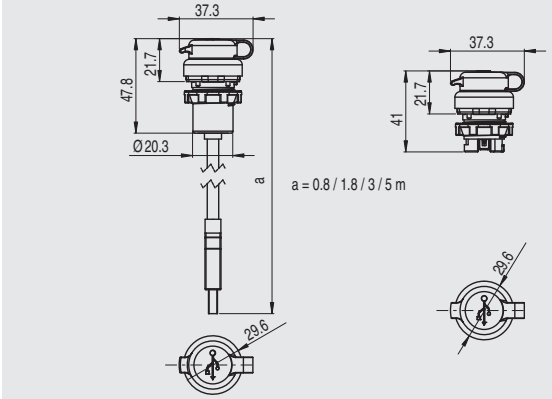


- with female connector / cable with male connector (available in different lengths)



Dimensions

All values 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 ring and shaped ring

Rear connection	
AK	integrated RJ45 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

External bezel colour	
1	black (standard)
9	satin chrome (standard)

Front connection	
A	integrated RJ45 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.УТ03.B.00035/19

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 163

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN 50581, UL 508, CSA 22-2 N°14

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

Features approved by UL

Ratings: 30 Vac, 1.5 A (Supplied by class 2 or limited energy external power supply source)
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".
Tightening torque 2.0 Nm.

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

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

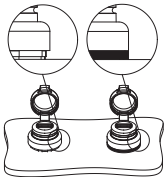
The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.

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 label holder or other devices are applied; it prevents dirt and other residues from settling between the socket and the panel or housing.
This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

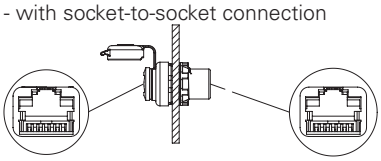
Integrated protection cap

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.

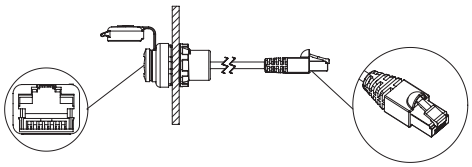
Versions with socket and with cable

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

- with socket-to-socket connection

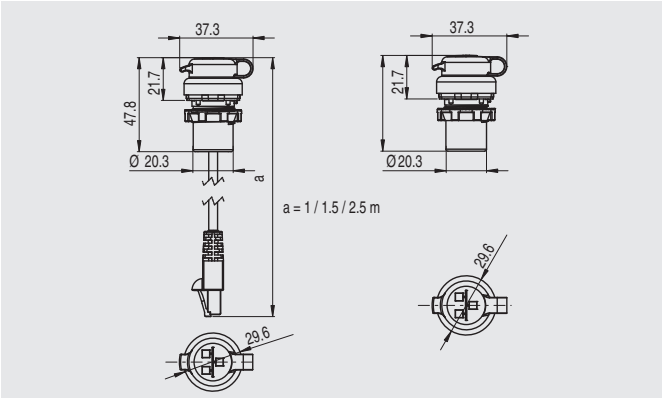


- with female connector / cable with male connector (available in different lengths)

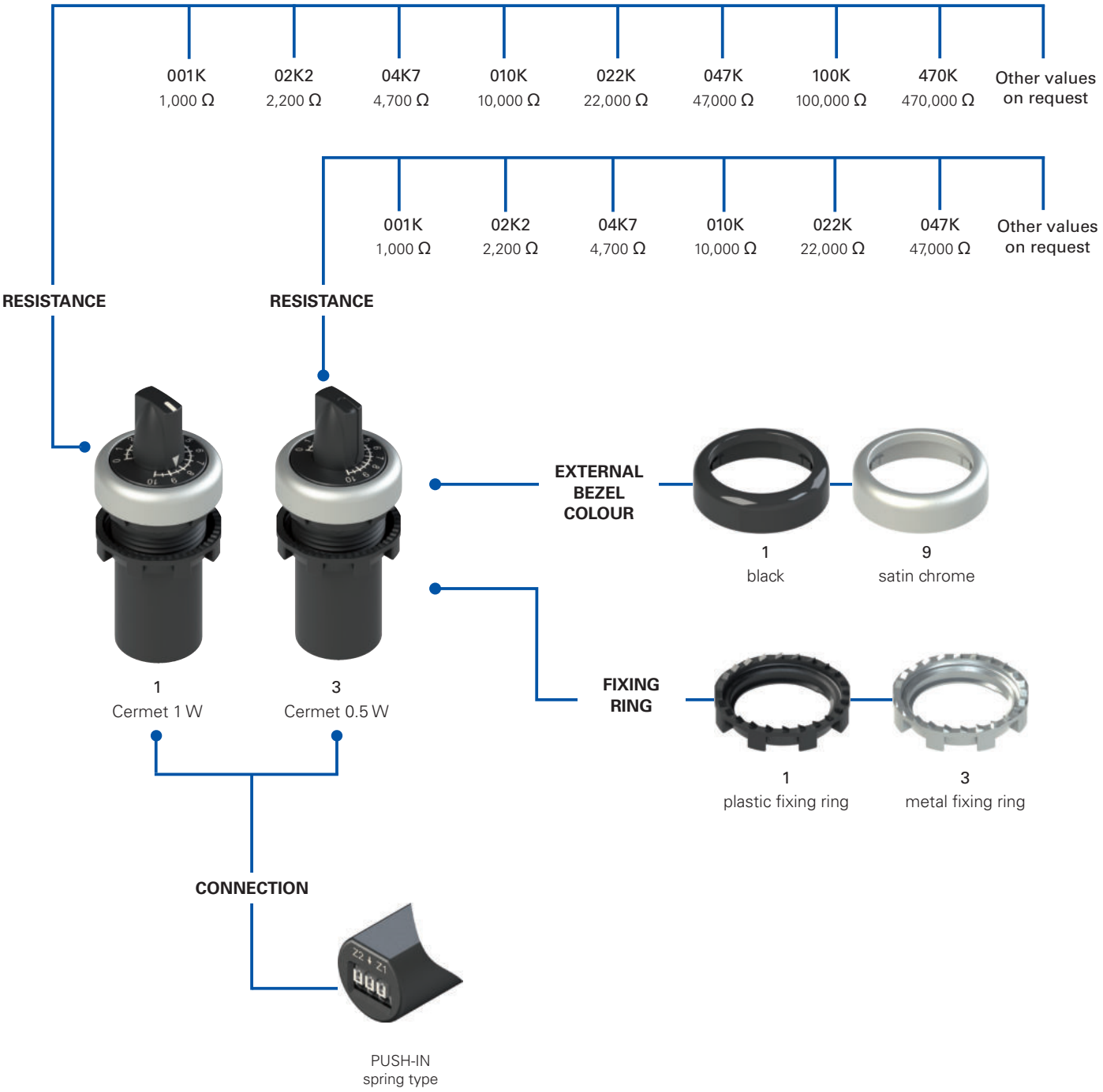


Dimensions

All values 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 fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Resistance	
001K	1 kΩ
02K2	2.2 kΩ
04K7	4.7 kΩ
010K	10 kΩ
022K	22 kΩ
047K	47 kΩ
100K	100 kΩ (for 1 W versions only)
470K	470 kΩ (for 1 W versions only)

Other values on request

Potentiometer type	
1	Cermet 1 W
3	Cermet 0.5 W

External bezel colour	
1	black (standard)
9	satin chrome (standard)

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.УТ03.B.00035/19

Features approved by UL

Ratings: 30 Vac, 31 mA (Supplied by class 2 or limited energy external power supply source).
For Use on a Flat Surface of a Type 1, 4X, 12 and 13.
Tightening torque 2.0 Nm.

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

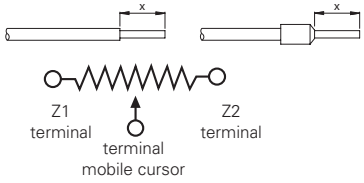
Technical data

General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-40°C … +80°C
Mechanical endurance:	
1 W version	50,000 operating cycles
0.5 W version	10,000 operating cycles
Tightening torque of the fixing ring:	2 … 2.5 Nm
Utilization requirements:	See page 163

Electrical data

Rated insulation voltage (Ui):	
1 W version	300 Vac/dc
0.5 W version	200 Vac
Resistive material:	Cermet
Operation:	linear
Resistance tolerance:	±10%
Cross-section of rigid/flexible wires w. wire-end sleeve:	min. 1 x 0.34 mm² (1 x AWG 24) max 1 x 1.5 mm² (1 x AWG 16)
Wire cross-section with pre-insulated wire-end sleeve:	min. 1 x 0.34 mm² (1 x AWG 24) max. 1 x 0.75 mm² (1 x AWG 18)
Connection system:	PUSH-IN spring type
Cable stripping length (x):	min.: 8 mm, max: 12 mm



Pin assignment:

Application features, 1 W version:

Resistance	Rated operating voltage Ue max	Rated operating current Ie max	Max power (70 °C)
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

Application features, 0.5 W version:

Resistance	Rated operating voltage Ue max	Rated operating current Ie max	Max power (70 °C)
1 kΩ	21 V	23.8 mA	0.5 W
2.2 kΩ	31 V	16.1 mA	0.5 W
4.7 kΩ	46 V	10.8 mA	0.5 W
10 kΩ	67 V	7.4 mA	0.5 W
22 kΩ	99 V	5.0 mA	0.5 W
47 kΩ	145 V	3.4 mA	0.5 W

Other resistance values are available. Please contact our sales office

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, UL 508, CSA 22-2 No. 14.

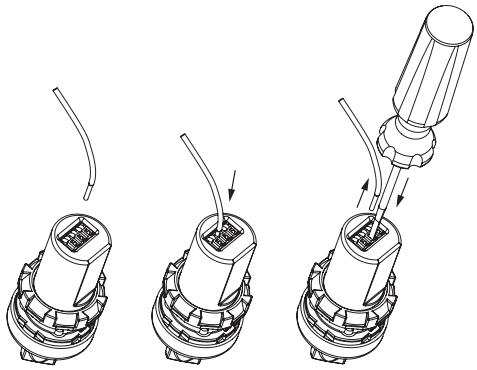
Compliance with the requirements of:
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

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



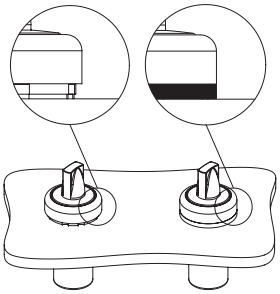
The potentiometer is provided with a three-pole terminal board with PUSH-IN type spring-operated connection. This technology allows a very handy quick wiring procedure. The wire is simply inserted into the appropriate hole, without the need for any auxiliary tooling, through the use of rigid or flexible wires with crimped wire-end sleeve. Release is obtained by pressing the appropriate wire-releasing button.

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 80°C).

Shaped ring



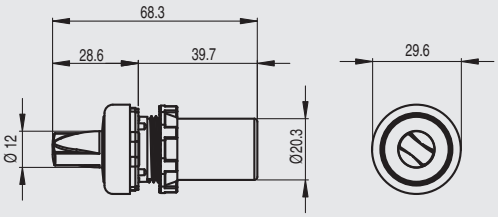
The shaped ring can be used when no label holder or other devices are applied; it prevents dirt and other residues from settling between the potentiometer and the panel or housing.
This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

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.

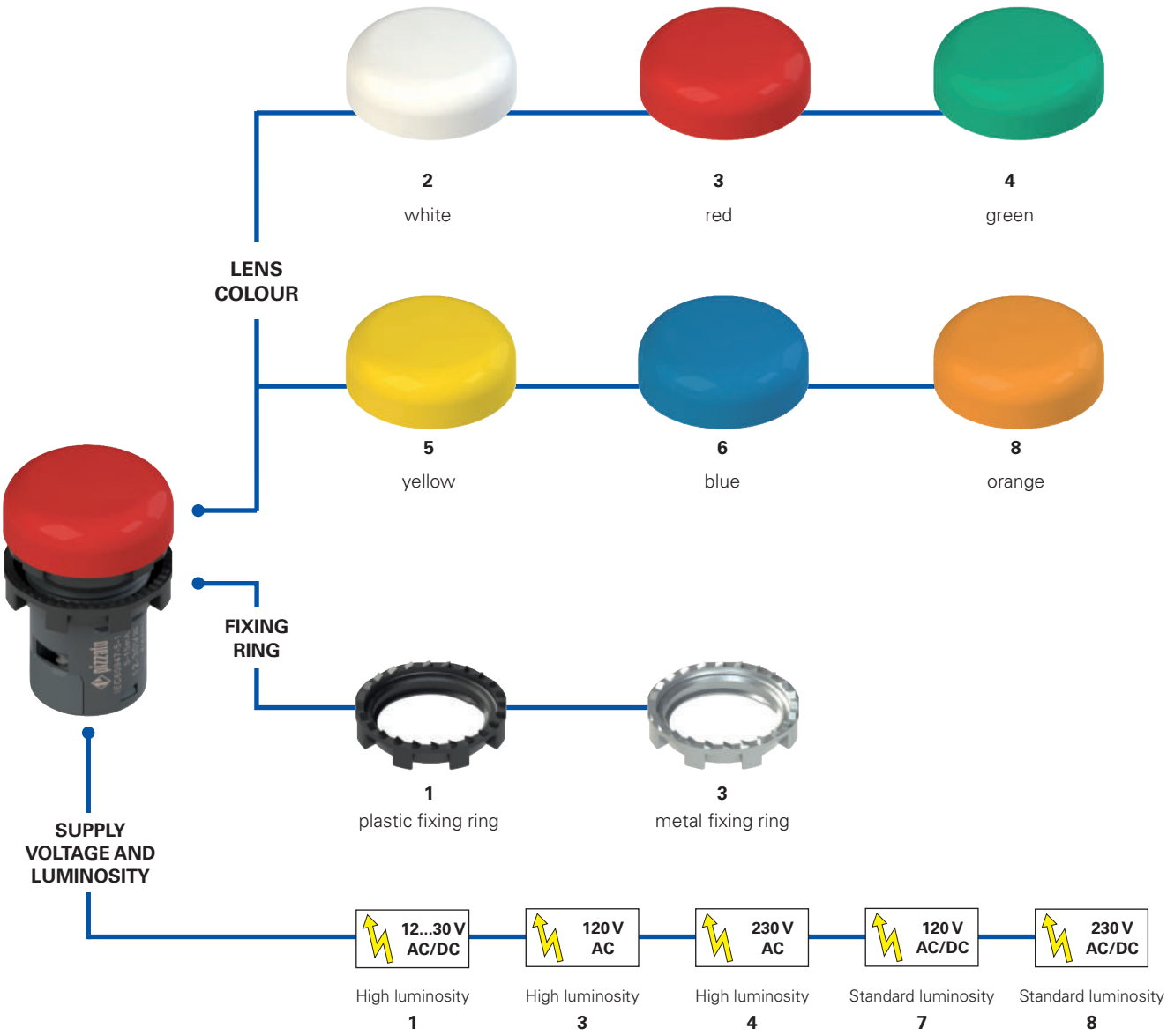
Dimensions

All values in the drawings are in mm



Potentiometer version 0.5 W
Package with **50 pc**

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	
1	plastic fixing ring (standard)
2	plastic fixing ring and shaped ring
3	metal fixing ring
4	metal fixing ring and shaped ring

Engraving	
0	no engraving (standard)
IT7	IN SERVIZIO
L54	ϟ
...	.....

Other engravings on request. See page 159.

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

Lens colour	
2	white
3	red
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.УТ03.B.00035/19

Technical data

General data

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653 (with shaped ring VE GP12H1A or label 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 163

LED units

Operating voltages and currents (high luminosity versions):
12 … 30 Vac/dc; 5 … 15 mA
102 … 138 Vac; 20 mA max.
195 … 264 Vac; 20 mA max.

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

Cable cross section: min 1 x 0.34 mm^2 (1 x AWG 22)
max. 2 x 1.5 mm^2 (2 x AWG 16)

Cable stripping length (x): 6 mm

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, UL 508, CSA 22-2 No. 14.

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/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

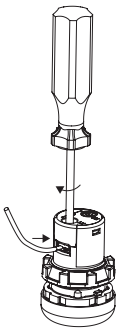
Protection degrees IP67 and IP69K

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 80°C).

Integrated screw connection

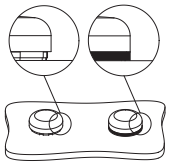
The shape of the type E6 indicator light, though very compact, allows the integration on the device of all components for proper installation and functioning. All that is required is to wire the device by means of its screw terminals in a quick and intuitive way. There is no need to install further components.



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.

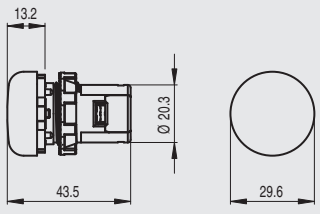
Selection table

Packs of **10 pcs.**

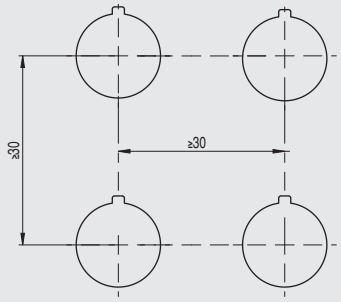
Colour	Operating voltage				
	12 - 30 Vac/dc High luminosity	**120 Vac** High luminosity	**230 Vac** High luminosity	**120 Vac/dc** Standard luminosity	**230 Vac/dc** Standard luminosity
white	E6 1IL1A2110	E6 1IL3A2110	E6 1IL4A2110	E6 1IL7A2110	E6 1IL8A2110
red	E6 1IL1A3110	E6 1IL3A3110	E6 1IL4A3110	E6 1IL7A3110	E6 1IL8A3110
green	E6 1IL1A4110	E6 1IL3A4110	E6 1IL4A4110	E6 1IL7A4110	E6 1IL8A4110
yellow	E6 1IL1A5110	E6 1IL3A5110	E6 1IL4A5110	E6 1IL7A5110	E6 1IL8A5110
blue	E6 1IL1A6110	E6 1IL3A6110	E6 1IL4A6110	E6 1IL7A6110	E6 1IL8A6110
orange	E6 1IL1A8110	E6 1IL3A8110	E6 1IL4A8110	E6 1IL7A8110	E6 1IL8A8110

Dimensions

All values in the drawings are in mm

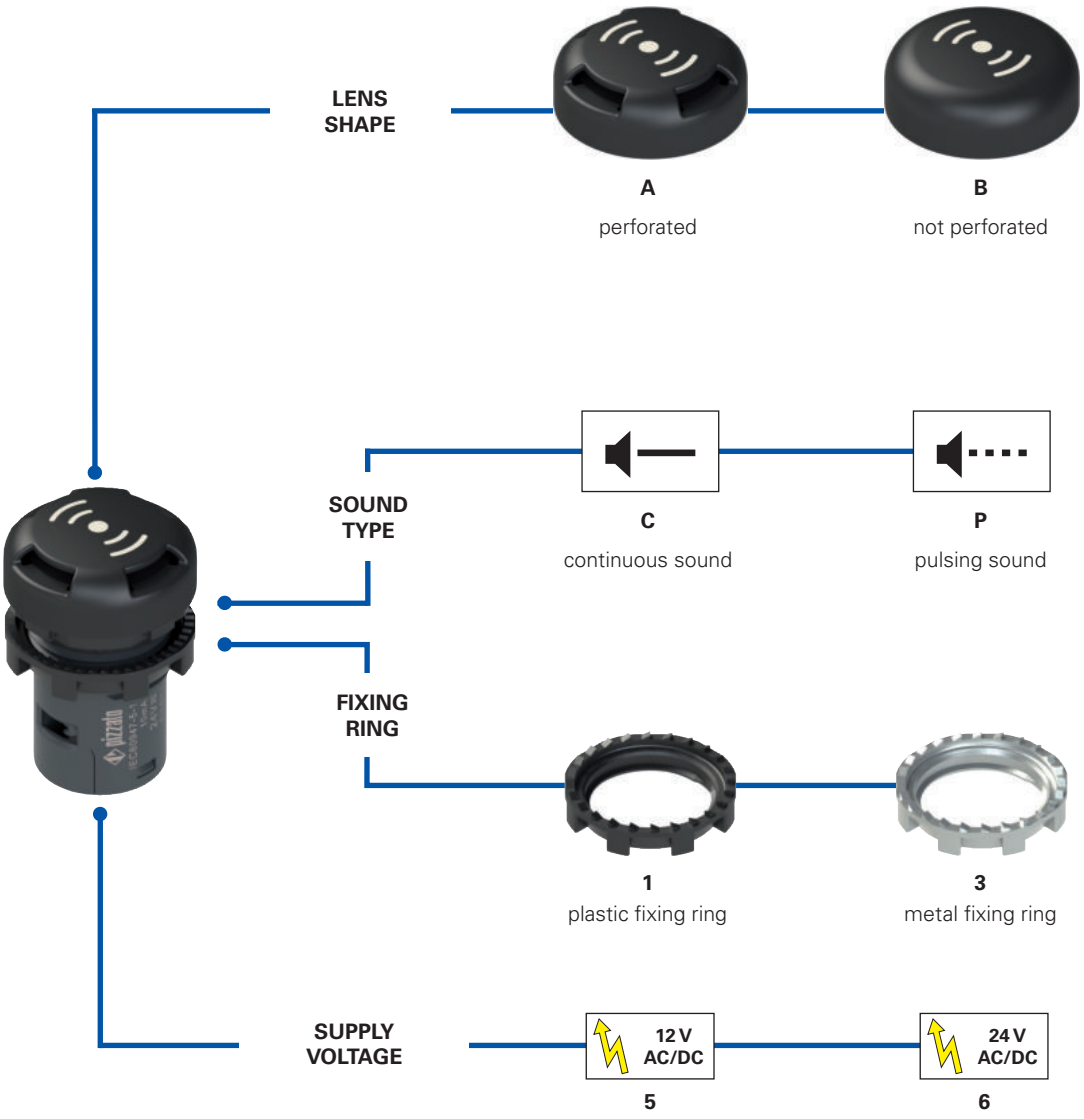


Minimum distances for installation



→ The 2D and 3D files are available at **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 fixing ring
2	plastic fixing ring and shaped ring
3	metal fixing 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.УТ03.B.00035/19

Technical data

General data

Protection degree:	
Version with perforated lens:	IP40 acc. to EN 60529
Version with perforation-free lens:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653 (with shaped ring VE GP12H1A or label 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 163

Electrical data

Operating voltage U_n:	12 Vac/dc or 24 Vac/dc
Supply voltage tolerance:	±15% of U_n
Operating current:	10 mA
Minimum level of sound intensity:	
24 Vac/dc versions:	95 dB at 10cm (perforated lens) 80 dB at 10cm (perforation-free lens)
12 Vac/dc versions:	90 dB at 10cm (perforated lens) 75 dB at 10cm (perforation-free lens)
Frequency of intermittence (pulsed version):	0.6 Hz (0.8 s ON, 0.8 s OFF)
Cable cross section:	min 1 x 0.34 mm² (1 x AWG 22) max. 2 x 1.5 mm² (2 x AWG 16)
Cable stripping length (x):	6 mm

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000, UL 508, CSA 22-2 No. 14.

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

Features approved by UL

Ratings: 12 Vac/dc or 24 V ac/dc (Supplied by class 2 or limited energy external power supply source)
- E6 xISxAxxxxx "For Use on a Flat Surface of a Type 1"
- E6 xISxBxxxxx "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

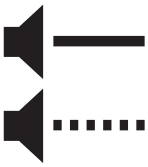
General data

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 80°C).

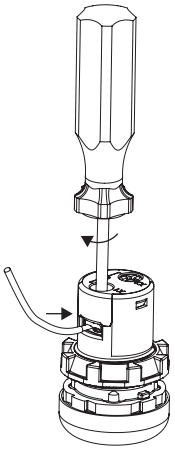
Two sound types



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

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.

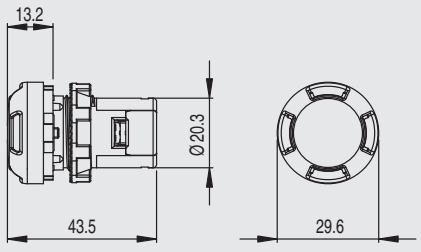


Selection table

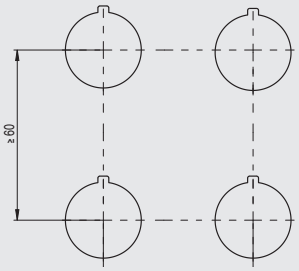
Lens shape	Sound type and supply voltage			
	Continuous sound —		Pulsing sound - -	
	12 Vac/dc	24 Vac/dc	12 Vac/dc	24 Vac/dc
perforated	E6 1IS5A1CV1B	E6 1IS6A1CV1B	E6 1IS5A1PV1B	E6 1IS6A1PV1B
not perforated	E6 1IS5B1CV1B	E6 1IS6B1CV1B	E6 1IS5B1PV1B	E6 1IS6B1PV1B

Dimensions

All values in the drawings are in mm

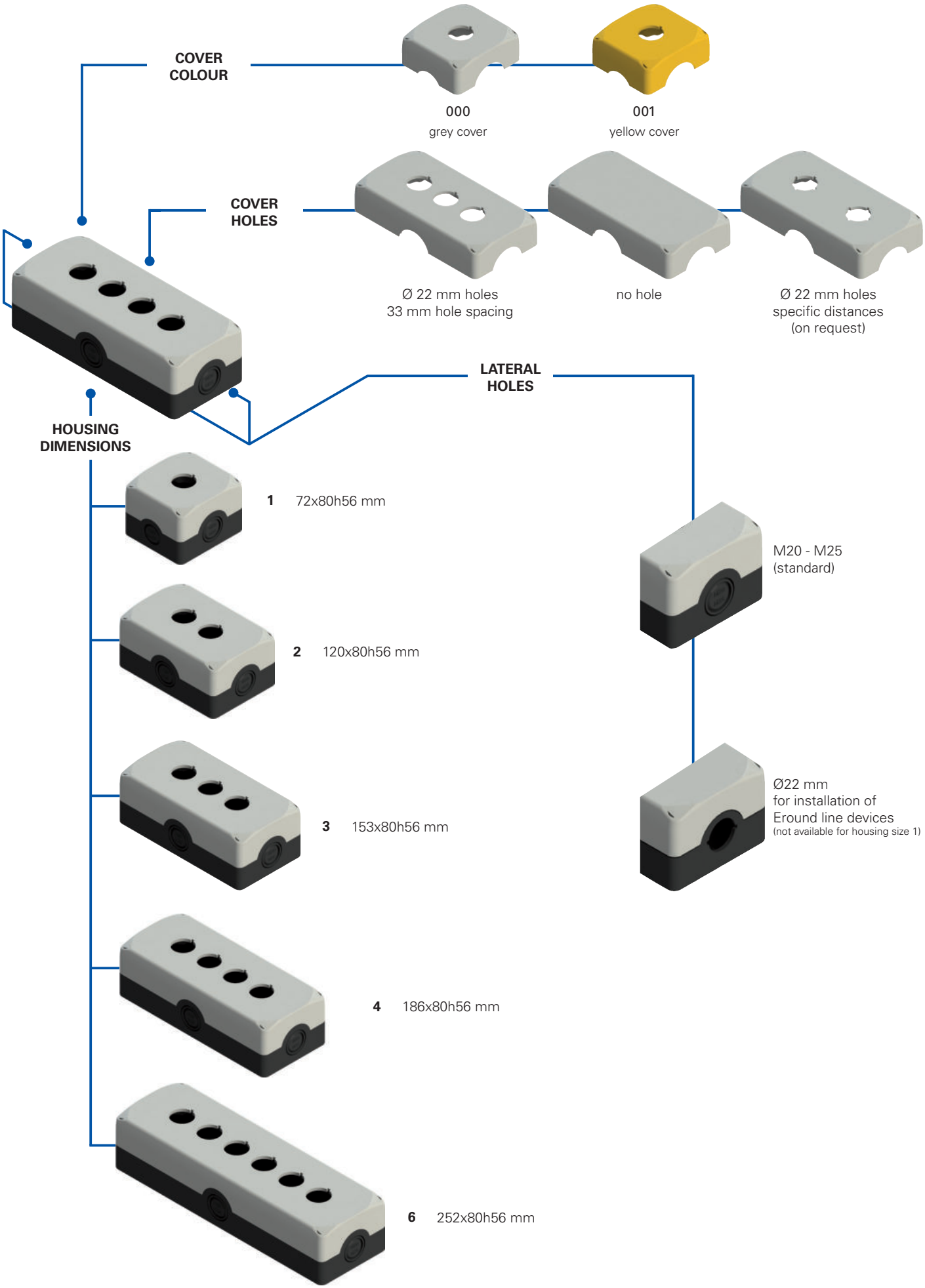


Minimum distances for installation



→ The 2D and 3D files are available at **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.

ES 31000

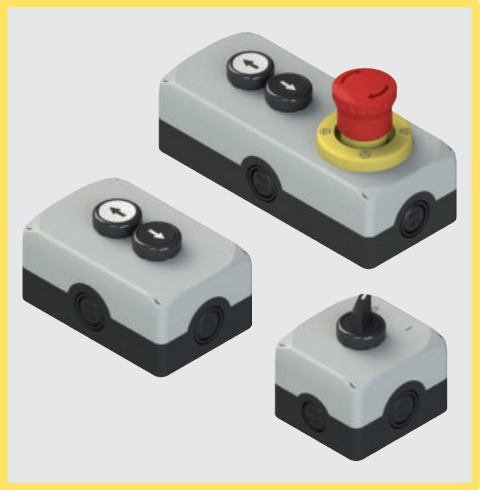
Body material	
3	polycarbonate PC (standard)

Housing dimensions	
1	72x80h56 mm
2	120x80h56 mm
3	153x80h56 mm
4	186x80h56 mm
6	252x80h56 mm

Configuration	
000	black base, grey cover
001	black base, yellow cover
...	.....

Other combinations on request.

ES series housings



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.УТ03.B.00035/19

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 of equal 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 163

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, EN IEC 63000.

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

General data

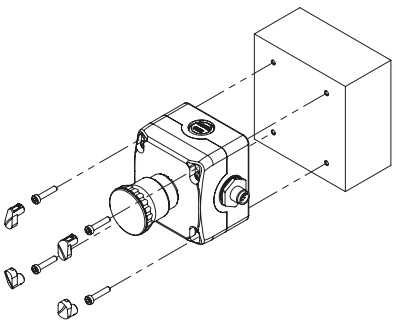
Protection degrees IP67 and IP69K

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 80°C).

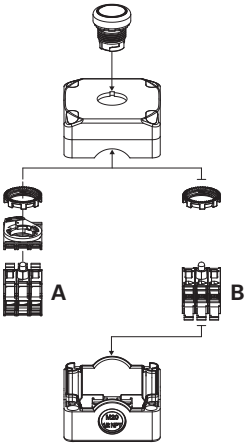
Fixing of EROUND housings

The 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 housings 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.

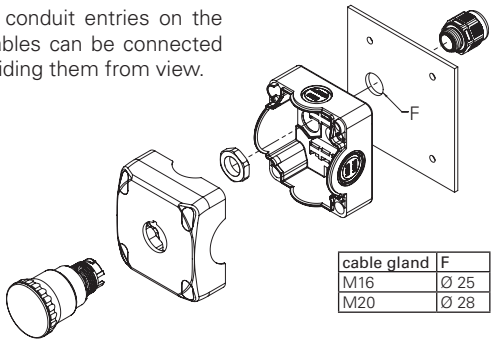
One housing, two solutions



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).

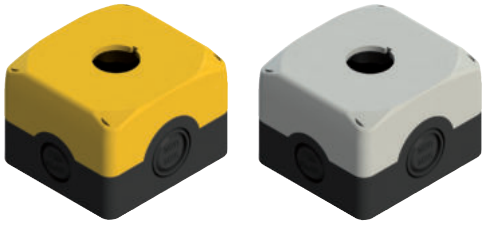
Wiring through the lower surface

Housings have 2 conduit entries on the lower surface. Cables can be connected via this surface, hiding them from view.



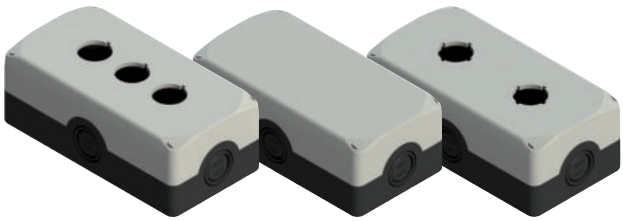
cable gland	F
M16	Ø 25
M20	Ø 28

Selection table for housings



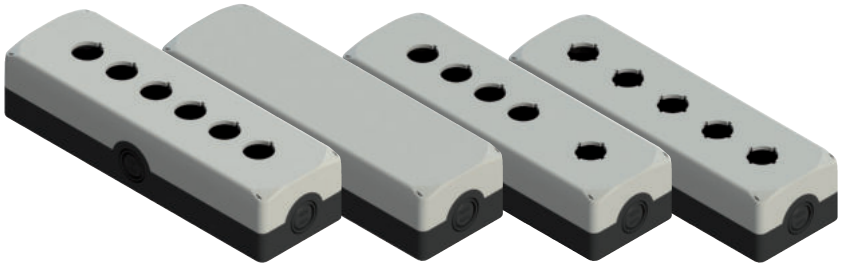
Cover colour	Article	Ø 22 mm hole
yellow RAL 1003	ES 31001	1
grey RAL 7035	ES 31000	1

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
grey RAL 7035	ES 36012	5 equidistant

Note: Item ES 36012 compatible with panel-mounted contact blocks only.

Complete control device units ES AC31•••

Housing cover colour	Actuator colour and engraving	Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	Flush button black bezel	Projecting button black bezel
grey RAL 7035	green	-	1NO	-	**ES AC31001** ES 31000 + E2 1PU2R421L2 + E2 CF10G2V1	-
grey RAL 7035	red	-	1NC ⊖	-	**ES AC31002** ES 31000 + E2 1PU2R321L1 + E2 CF01G2V1	**ES AC31017** ES 31000 + E2 1PU2S321L1 + E2 CF01G2V1
grey RAL 7035	green (START)	-	1NO	-	**ES AC31015** ES 31000 + E2 1PU2R421GB1 + E2 CF10G2V1	-
grey RAL 7035	red (STOP)	-	1NC ⊖	-	**ES AC31016** ES 31000 + E2 1PU2R321GB0 + E2 CF01G2V1	**ES AC31018** 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 pos. 2	Contacts pos. 3	Contacts pos. 1	Black selector switch with 2 positions black bezel
grey RAL 7035	⟋	-	1NO	-	**ES AC31019** ES 31002 + E2 1SE12AVA11AB + E2 CF10G2V1

Other combinations on request.
➔ For data regarding contact blocks, please see the respective chapters.

Housing cover colour	Positions	Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	Black key selector switch with 2 positions black bezel
grey RAL 7035	⟋	-	1NO	-	**ES AC31020** ES 31000 + E2 1SC2AVA11AE + E2 CF10G2V1

Other combinations on request.

Legend ⟋ Maintained ⟋ Spring-return ⚷ Key extraction position

Housing cover colour	Actuator design and colour	Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	Emergency stop button Push-Pull	Emergency stop button rotary release	Emergency stop button, key release
yellow RAL 1003	red	-	1NC ⊖	-	**ES AC31004** ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1	**ES AC31003** ES 31001 + E2 1PERZ4531 + E2 CF01G2V1	**ES AC31022** ES 31001+ E2 1PEBZ4531 + E2 CF01G2V1
yellow RAL 1003	red	-	1NC ⊖ SELF-MONITORED	-	**ES AC31081** ES 31001 + E2 1PEPZ4531 + E2 CF01S2V1	**ES AC31082** ES 31001 + E2 1PERZ4531 + E2 CF01S2V1	**ES AC31083** ES 31001+ E2 1PEBZ4531 + E2 CF01S2V1
yellow RAL 1003	red	1NC ⊖	-	1NC ⊖	**ES AC31009** ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF01G2V1	**ES AC31005** ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF01G2V1	**ES AC31023** ES 31001+ E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF01G2V1
yellow RAL 1003	red	1NC ⊖	-	1NO	**ES AC31010** ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF10G2V1	**ES AC31006** ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF10G2V1	**ES AC31011** ES 31001+ E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF10G2V1
yellow RAL 1003	red	1NC ⊖	1NC ⊖	1NO	**ES AC31146** ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1	**ES AC31021** ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1	**ES AC31024** ES 31001+ E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1

Other combinations on request.
➔ For data regarding contact blocks, please see the respective chapters.



Housing cover colour	Actuator design and colour	Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	Emergency stop button Push-Pull Yellow luminous disc, blinking Ø 60 mm, 24 Vac/dc	Emergency stop button rotary release Yellow luminous disc, blinking Ø 60 mm, 24 Vac/dc	Emergency stop button, key release Yellow luminous disc, blinking Ø 60 mm, 24 Vac/dc
grey RAL 7035	red	1NO	1NC CONNECTION BLOCK		**ES AC31430** ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1	**ES AC31433** ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1	**ES AC31436** ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1
grey RAL 7035	red	1NO	1NC SELF-MONITORED CONNECTION BLOCK		**ES AC31431** ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1	**ES AC31434** ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1	**ES AC31437** ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1
grey RAL 7035	red	1NO	2NC CONNECTION BLOCK		**ES AC31432** ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1	**ES AC31435** ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1	**ES AC31438** ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1

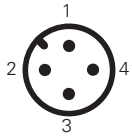
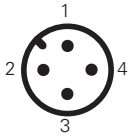
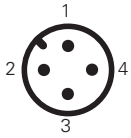
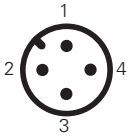
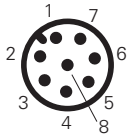
Other combinations on request.
➔ For data regarding contact blocks and luminous discs, please see the respective chapters.

Complete control device units ES AC31••• with wired M12 connector

Housing cover colour	Actuator design and colour	Contacts pos. 2	Contacts pos. 3	Contacts pos. 1	Emergency stop button rotary release with plastic M12 connector
yellow RAL 1003	red	-	1NC	-	**ES AC31025**
yellow RAL 1003	red	-	1NC SELF-MONITORED	-	**ES AC31084**
yellow RAL 1003	red	1NC	-	1NC	**ES AC31026**
yellow RAL 1003	red	1NC	-	1NO	**ES AC31027**
yellow RAL 1003	red	1NC	1NC	1NO	**ES AC31028**

Other combinations on request.
➔ For data regarding contact blocks, please see the respective chapters.

Wiring diagram for assembled connectors

ES AC31025 1NC	ES AC31084 1NC SELF-MONITORED	ES AC31026 2NC	ES AC31027 1NO+1NC	ES AC31028 1NO+2NC
 M12 connector, 4-pole	 M12 connector, 4-pole	 M12 connector, 4-pole	 M12 connector, 4-pole	 M12 connector, 8-pole

Contacts	Pin no.	Contacts	Pin no.	Contacts	Pin no.	Contacts	Pin no.	Contacts	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

Spare caps

Article		Description
	VETS35RA1	4 spare caps for ES series housing cover. Colour: yellow
	VETS39RA1	4 spare caps for ES series housing cover. Colour: grey

Accessories

➔ More ACCESSORIES on page 155

➔ The 2D and 3D files are available at **www.pizzato.com**

ES AC32012

Description	Features			Diagram
Button - 1NO E2 1PU2R221L9 Contacts 1x E2 CF10G2V1	flush, spring-return, white pos. 2 /	pos. 3 1NO	pos. 1 /	
Button - 1NO E2 1PU2R121L10 Contacts 1x E2 CF10G2V1	flush, spring-return, black pos. 2 /	pos. 3 1NO	pos. 1 /	

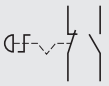
ES AC32010

Description	Features			Diagram
Button - 1NO E2 1PU2R421L35 Contacts 1x E2 CF10G2V1	flush, spring-return, green pos. 2 /	pos. 3 1NO	pos. 1 /	
Button - 1NC E2 1PU2S321L1 Contacts 1x E2 CF01G2V1	projecting, spring-return, red pos. 2 /	pos. 3 1NC ⊖	pos. 1 /	

ES AC33017

Description	Features			Diagram
Button - 1NO E2 1PU2R221L9 Contacts 1x E2 CF10G2V1	flush, spring-return, white pos. 2 /	pos. 3 1NO	pos. 1 /	
Button - 1NC E2 1PU2S321L1 Contacts 1x E2 CF01G2V1	projecting, spring-return, red pos. 2 /	pos. 3 1NC ⊖	pos. 1 /	
Button - 1NO E2 1PU2R121L10 Contacts 1x E2 CF10G2V1	flush, spring-return, black pos. 2 /	pos. 3 1NO	pos. 1 /	

ES AC34035

Description	Features			Diagram
Button - 1NO E2 1PU2R221L9 Contacts 1x E2 CP10G2V1	flush, spring-return, white pos. 2 /	pos. 3 1NO	pos. 1 /	
Button - 1NO E2 1PU2R121L10 Contacts 1x E2 CP01G2V1	flush, spring-return, black pos. 2 /	pos. 3 1NO	pos. 1 /	
Emergency stop button E2 1PERZ4531 Contacts 1x E2 CP01G2V1+1x E2 CP10G2V1	rotary release, red pos. 2 1 NO	pos. 3 /	pos. 1 1NC ⊖	
Luminous disc VE DL1A5L13	Yellow, continuous light 24 Vac/dc			

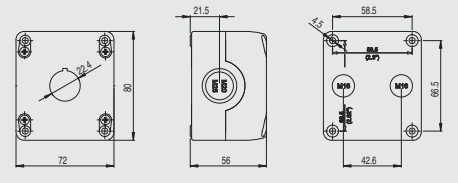
ES AC36041

Description	Features			Diagram
Button - 1NO E2 1PU2F4410 Protection guard 1x VE GP32B1A Contacts 1x E2 CP10G2V1	mushroom, spring-return, green cylindrical, black pos. 2 /	pos. 3 1NO	pos. 1 /	
Emergency stop button - 1NC E2 1PERZ4531 Contacts 1x E2 CP01G2V1	rotary release, red pos. 2 /	pos. 3 1NC ⊖	pos. 1 /	
Button - 1NO E2 1PU2F4410 Protection guard 1x VE GP32B1A Contacts 1x E2 CP10G2V1	mushroom, spring-return, green cylindrical, black pos. 2 /	pos. 3 1NO	pos. 1 /	

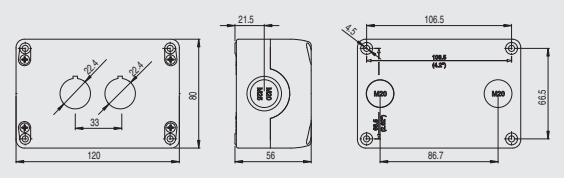
Other combinations on request.

Dimensions

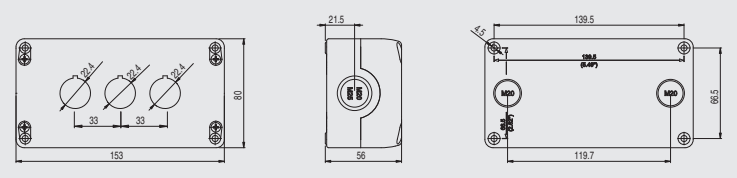
Housings (72 x 80 h 56)

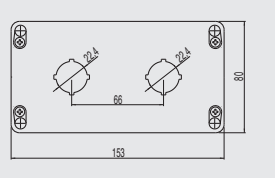


Housings (120 x 80 h 56)

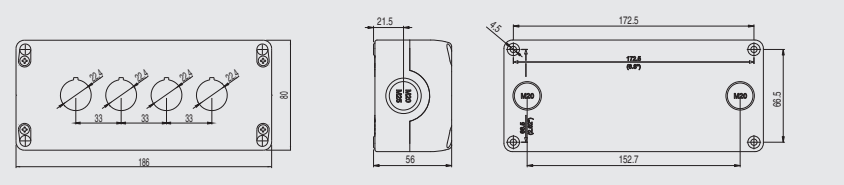


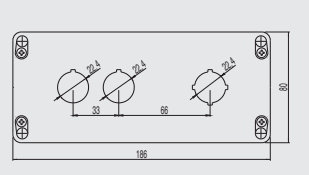
Housings (153 x 80 h 56)



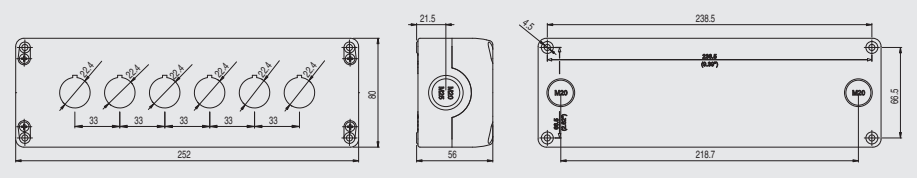


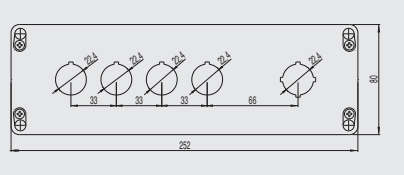
Housings (186 x 80 h 56)

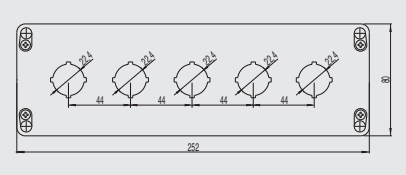




Housings (252 x 80 h 56)





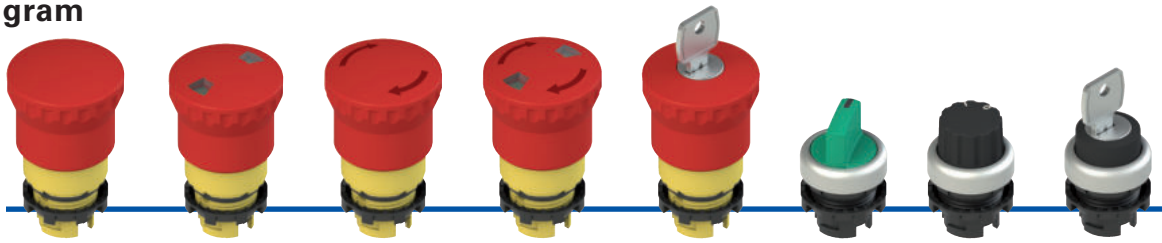


All values in the drawings are in mm

➔ The 2D and 3D files are available at **www.pizzato.com**

Selection diagram

BUTTONS AND SWITCHES



emergency stop button Ø 40 push-pull

emergency stop button Ø 40 push-pull, windowed

emergency stop button Ø 40 rotary release

emergency stop button Ø 40 rotary release, windowed

emergency stop button Ø 40 key release

selector switch with short handle

knob selector switch

key selector switch

ACCESSORIES

low windowed guard Ø40x20 mm

open guard 38x66x35 mm

high windowed guard Ø43x27 mm

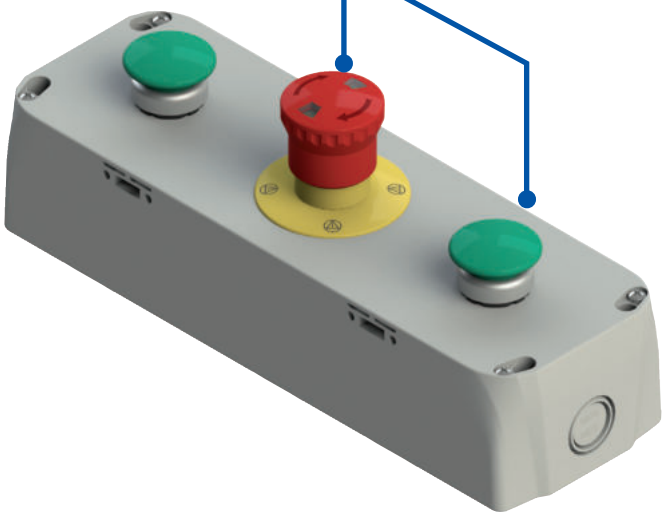
Label with shaped hole, rectangular 30x60 mm

Label with shaped hole, yellow disc Ø 60 mm

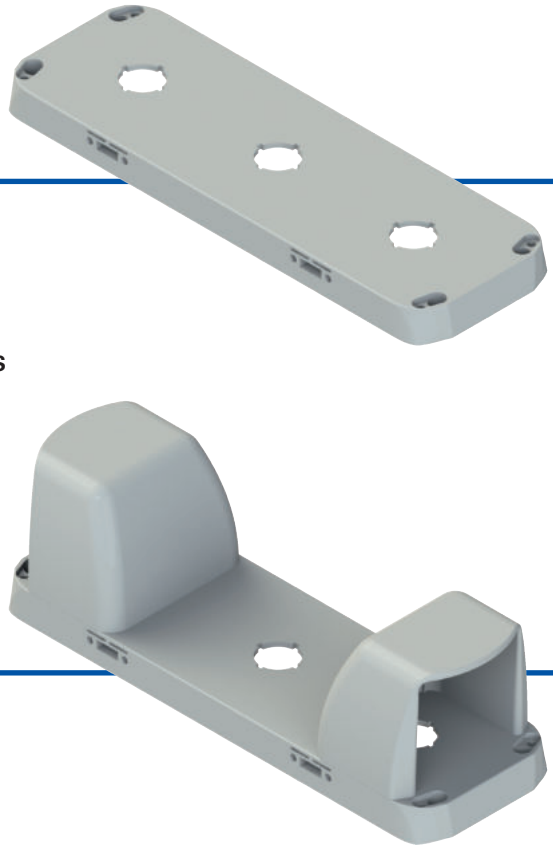
yellow luminous disc, Ø 60 mm, 24 Vac/dc

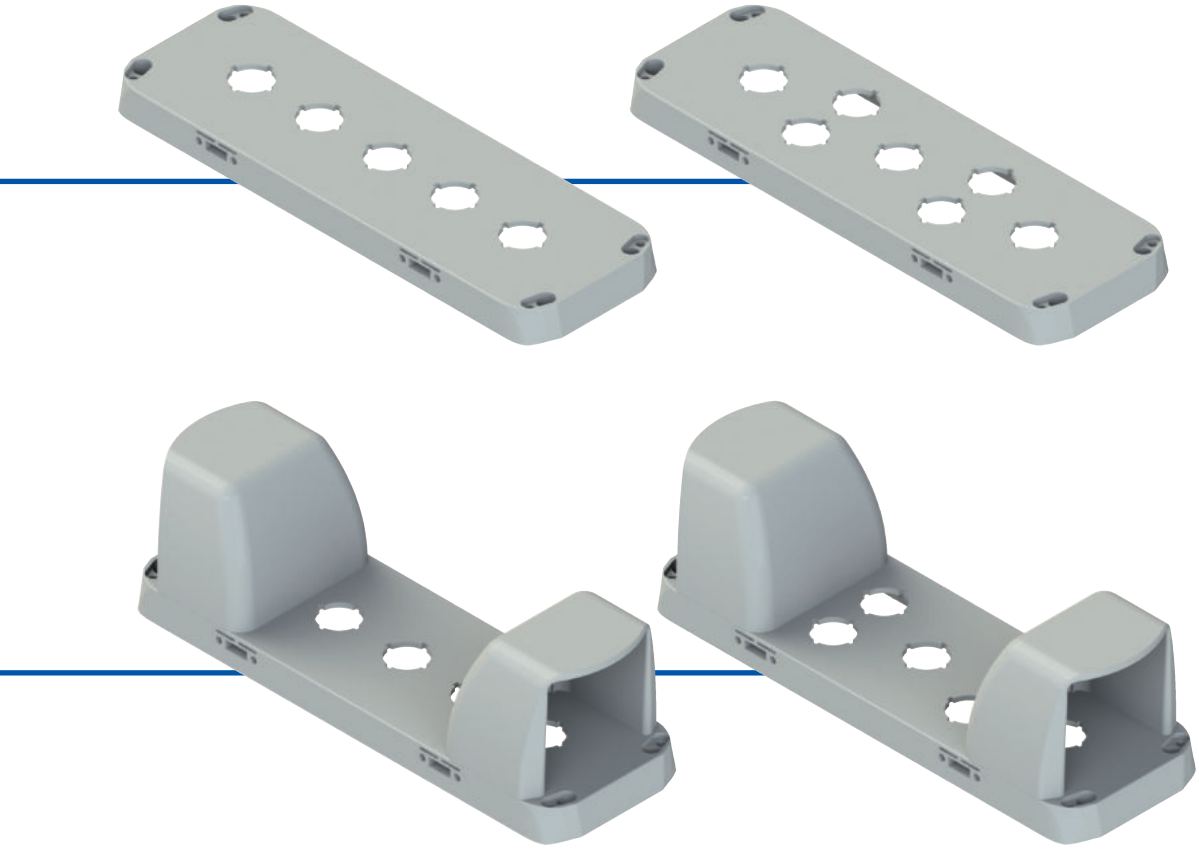
label holder

shaped ring



COVERS





Code structure

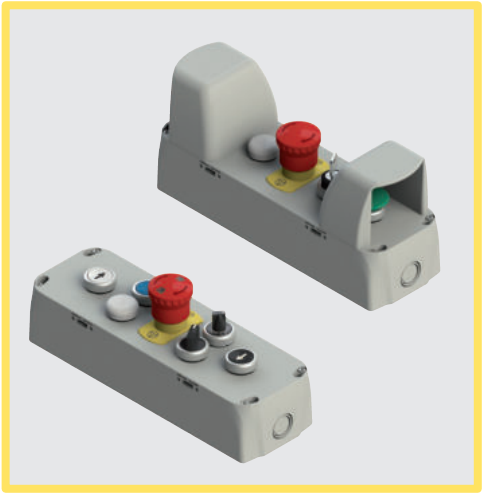
Attention! The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

EA 37010

Body material	
3	polycarbonate PC (standard)

Housing dimensions	
7	280x90 mm

Configuration	
010	grey base, grey cover
...	.....



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.УТ03.B.00035/19

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 of 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 163

For a correct operation in compliance with standard EN ISO 13851, 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

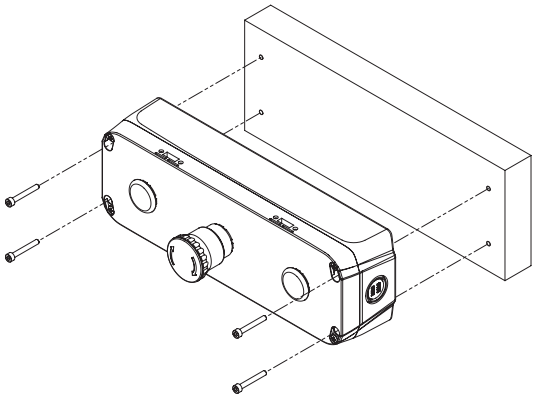
In compliance with standards:
IEC 60947-1, IEC 60947-5-1, EN ISO 13851, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000.

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/EU.

General data

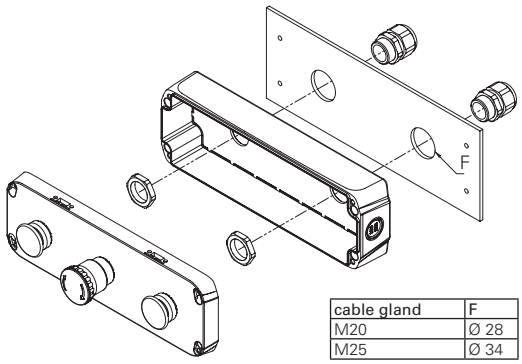
Fixing of EROUND housings

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. Cables can be connected via this surface, hiding them from view.



cable gland	F
M20	Ø 28
M25	Ø 34

Selection table for housings

Colour	Article	Ø 22 mm hole
grey RAL 7035	EA 37014	3

Colour	Article	Ø 22 mm hole
grey RAL 7035	EA 37015	3

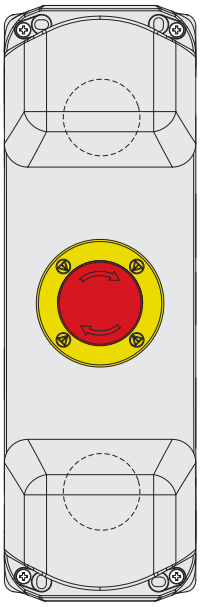
Colour	Article	Ø 22 mm hole
grey RAL 7035	EA 37010	5

Colour	Article	Ø 22 mm hole
grey RAL 7035	EA 37011	5

Colour	Article	Ø 22 mm hole
grey RAL 7035	EA 37012	7

Colour	Article	Ø 22 mm hole
grey RAL 7035	EA 37013	7

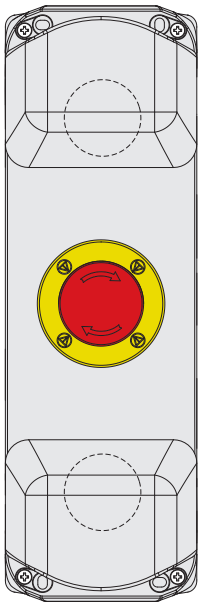
Complete control device units EA AC37•••



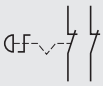
EA AC37040

Description	Features			Diagram
Mushroom button - 1NO E2 1PU2F4490	spring-return, green			
Guard VE GG3AA9A				
Contacts 1x E2 CP10G2V1	pos. 2 /	pos. 3 1NO	pos. 1 /	
Emergency stop button Ø 40 - 1NC E2 1PERZ4531	rotary release, 40 mm diameter, red			
Label VE TF32A5113				
Contacts 1x E2 CP01G2V1	pos. 2 /	pos. 3 1NC ⊖	pos. 1 /	
Mushroom button - 1NO E2 1PU2F4490	spring-return, green			
Guard VE GG3AA9A				
Contacts 1x E2 CP10G2V1	pos. 2 /	pos. 3 1NO	pos. 1 /	

For IIIA-cat. two-hand controls acc. to EN ISO 13851, combine with safety module or safety PLC.
See Pizzato Elettrica's General Catalogue Safety.

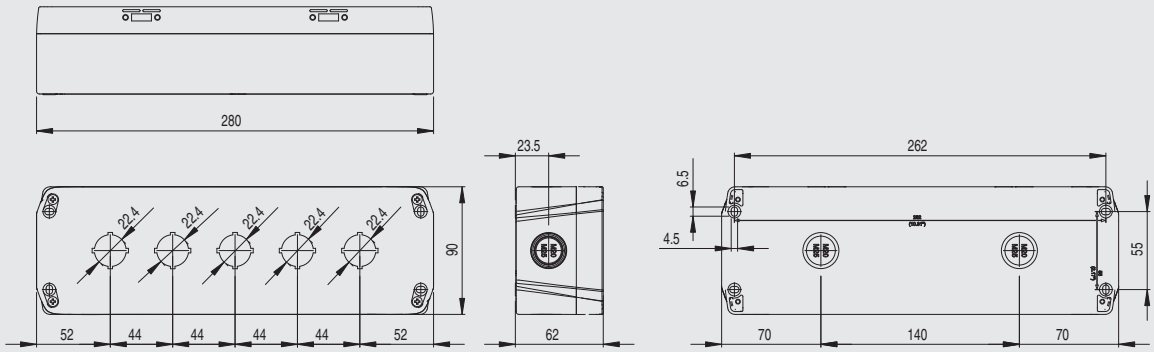


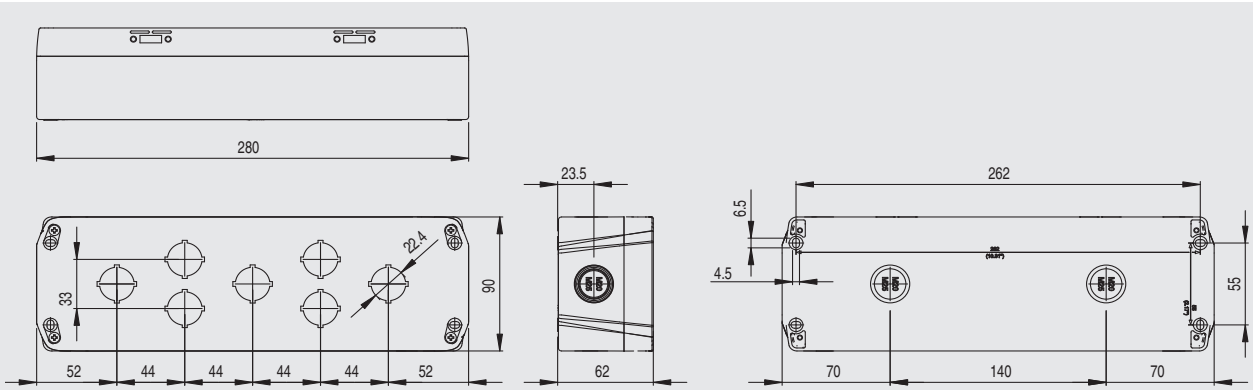
EA AC37041

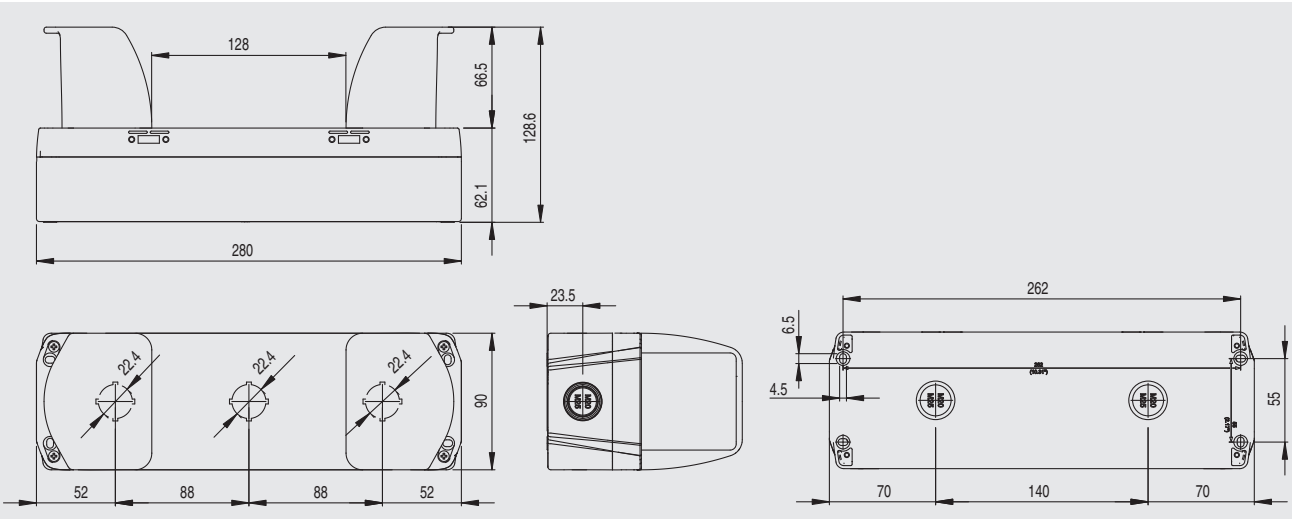
Description	Features			Diagram
Mushroom button - 1NO+1NC E2 1PU2F4490	spring-return, green			
Guard VE GG3AA9A				
Contacts E2 CP10G2V1 + E2 CP01G2V1	pos. 2 /	pos. 3 1NO	pos. 1 1NC ⊖	
Emergency stop button Ø 40 - 2NC E2 1PERZ4531	rotary release, 40 mm diameter, red			
Label VE TF32A5113				
Contacts 2x E2 CP01G2V1	pos. 2 1NC ⊖	pos. 3 /	pos. 1 1NC ⊖	
Mushroom button - 1NO+1NC E2 1PU2F4490	spring-return, green			
Guard VE GG3AA9A				
Contacts E2 CP10G2V1 + E2 CP01G2V1	pos. 2 /	pos. 3 1NO	pos. 1 1NC ⊖	

For IIIC-cat. two-hand controls acc. to EN ISO 13851, combine with safety module or safety PLC.
See Pizzato Elettrica's General Catalogue Safety.

Dimensions



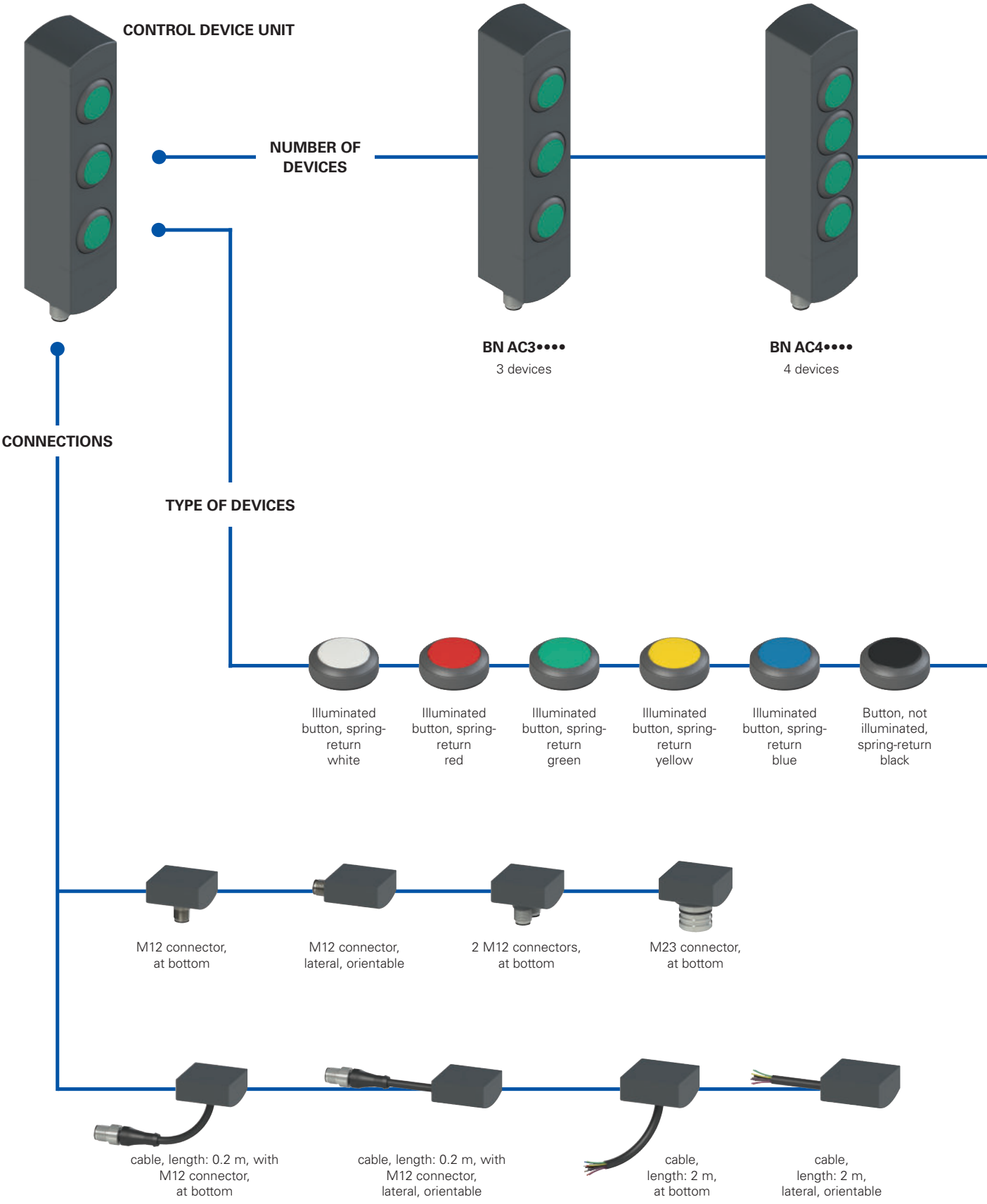




All values in the drawings are in mm

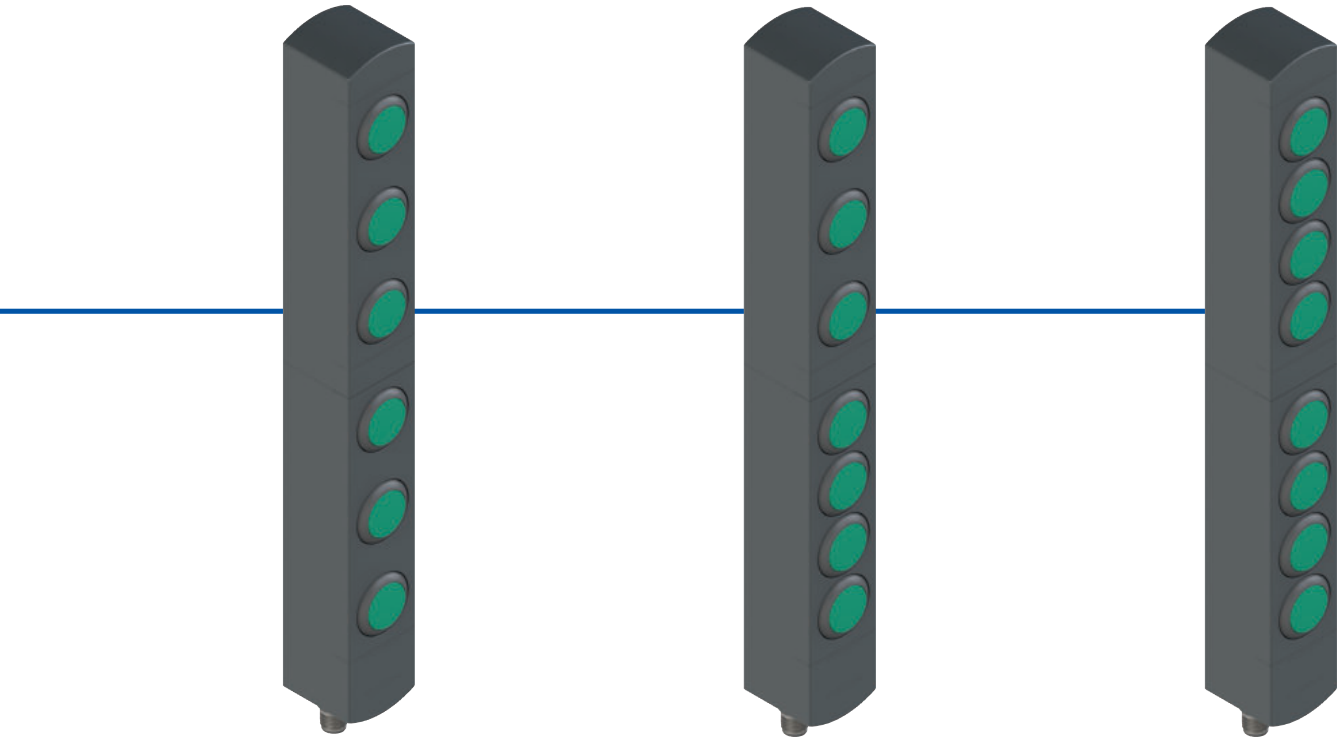
➔ The 2D and 3D files are available at **www.pizzato.com**

Selection diagram



product option

Sold separately as accessory



BN AC6••••
6 devices

BN AC7••••
7 devices

BN AC8••••
8 devices

Indicator light, white

Indicator light, red

Indicator light, green

Selector switch with handle, illuminated 2 or 3 positions

Key selector switch, 2 positions

Closing cap

Emergency stop button with rotary release

Emergency stop button with push-pull release

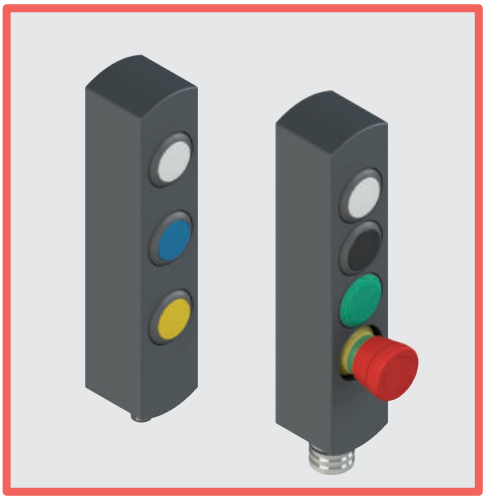
Code structure

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

BN AC3ZA01

Number of devices	
3	3 devices
4	4 devices
6	6 devices
7	7 devices
8	8 devices

Button configuration	
A01	A01 configuration
A02	A02 configuration
A03	A03 configuration
...	other configurations on request



Main features

- Modular control device unit for 3 to 8 devices.
- Can be fixed in various positions.
- Flush-mounted control devices.
- Compact dimensions, minimal housing width.
- Numerous control devices available.

Quality marks:

UL approval: E131787

Features approved by UL

Electrical ratings: 24 Vdc Class 2, 0,1 A

Input Supplied by 24 V dc, Class 2 Source or limited voltage limited energy, 0,096 A max. (maximum eight leds).

Output 24 Vac/dc Class 2 0,25 A Pilot Duty (maximum eight actuators, with maximum twelve contacts, NO or NC or both) or 0,18 A Pilot Duty (maximum eight actuators, with maximum sixteen contacts, NO or NC or both).

Environmental ratings: Type 1

Technical data

Housing made of glass fibre reinforced technopolymer, self-extinguishing and shock-proof.
Versions with integrated cable 12 x 0.14 mm², length 2 m, other lengths from 0.5 m to 10 m on request.
Versions with integrated M23 or M12 stainless steel connector.
Versions with 2 integrated M12 stainless steel connectors.
Versions with 0.2 m cable and M12 connector, other lengths from 0.1 … 3 m on request.

Protection degree:	IP65 acc. to EN 60529

General data

Ambient temperature:	-25°C … +70°C	
Fixing screws for the housing:	2xM5, tightening torque 3 Nm	
Fixing screws for turnable modules:	Tightening torque of 0.8 … 1.2 Nm	
Mechanical endurance:		
Spring-return button:	1 million operating cycles	
Emergency stop button:	50,000 operating cycles	
Selector switch:	300,000 operating cycles	
Key selector switch:	50,000 operating cycles 30,000 operating cycles including removal of the key	
Safety parameter B_{10D}:	100,000 (emergency stop button)	
Actuating force:		
Spring-return button:	4 N min	100 N max.
Emergency stop button:	20 N min	100 N max.
Selector switch:	0.1 Nm min	1.5 Nm max.
Key selector switch:	0.1 Nm min	1.3 Nm max.

Electrical data of the devices

Rated operating voltage U_e:	24 Vdc ±10% SELV
Thermal current I_{th}:	1 A
Rated insulation voltage U_i:	32 Vac/dc
Rated impulse withstand voltage U_{imp}:	1.5 kV
Material of the contacts:	silver contacts
Contact type:	Self-cleaning contacts with double interruption
Utilization category of the contact block:	DC13; U_e = 24 V; I_e = 0.55 A
LED supply voltage:	24 Vdc ±15%
Single LED supply current:	12 mA

M12 connector electrical data

Max. operating voltage:	32 Vac/dc
Max. operating current:	1.5 A max.

M23 connector electrical data

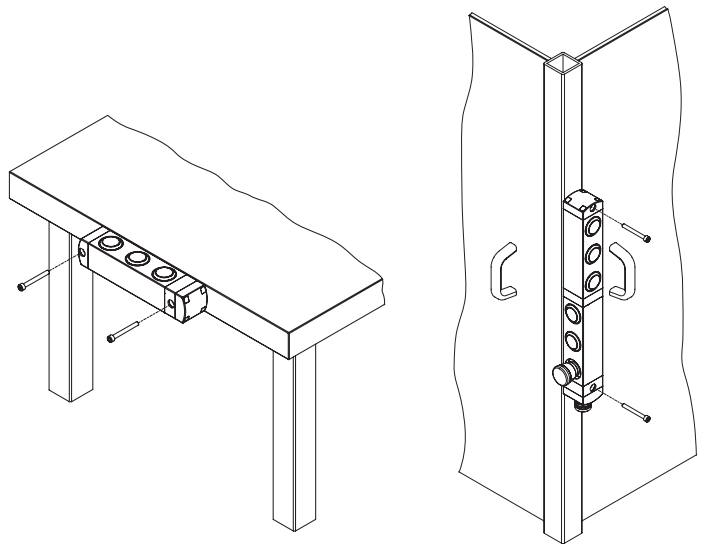
Max. operating voltage:	32 Vac/dc
Max. operating current:	3 A max.

In compliance with standards:
IEC 60947-5-1, IEC 60947-5-5, EN ISO 13850, UL 508, CSA 22.2 No. 14, EN IEC 63000.

Compliance with the requirements of:
Machinery Directive 2006/42/EC, Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

⚠ **Installation for safety applications:**
Always connect the safety circuit to the **NC contacts** (normally closed contacts) as stated in standard EN 60947-5-1.

Actuation of the control devices from various directions



Thanks to the design with turnable modules, the control device units of the BN series offer the user many different options for fixing to the machine.

The orientation of the control devices can be selected independent of the fastening.

With the configurations for 6, 7 and 8 devices, the upper and lower part can be oriented independent of one another. This is especially useful if it should be possible to achieve a command state from two different sides of the machine. In these cases, a single device and single wiring harness can be used, thereby saving time and money.

General data

The new modular control device units of the BN series from Pizzato Elettrica can be combined perfectly with the RFID safety switches with lock of the NS series. Machine manufacturers who already use these products thereby have the possibility to attach a control device unit directly next to the safety switch that is identical in shape and dimensions.
The control device units of the BN series are available in configurations with 3 to 8 devices.
The unique design with individually turnable modules allows the user to select from a number of combinations. He receives a very versatile product that is immediately ready for use.

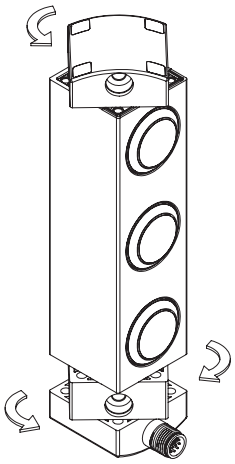
Compatibility with NS series switches

The control device units of the BN series have the same dimensions as the RFID safety switches with lock of the NS series. When mounted directly to the side of the switch, one obtains an integrated safety device whose components are made of the same material and have identical dimensions.

Minimal dimensions

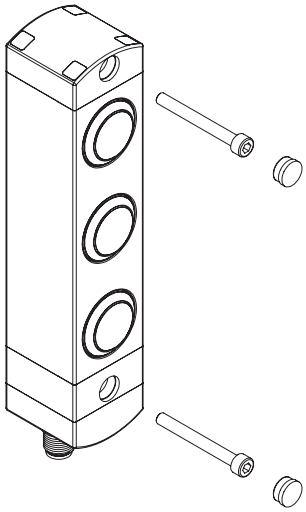
One special feature of the control device units of the BN series is the slim thickness of just 40 mm.
The control devices are embedded in the housing of the unit and protrude only slightly out of the front.
This protects the control devices from unintended impacts, thereby increasing the service life of the devices and, at the same time, giving the devices an attractive design, making them predestined for use on modern machines in which this aspect is also given special consideration.

Turnable and non-detachable modules



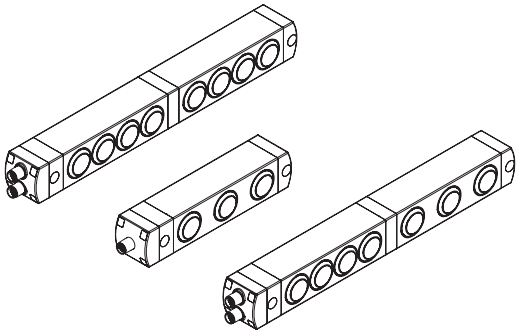
During installation, the fixing modules can be turned on the top and bottom of the device to enable variable orientation of the control devices.
Operation is very simple: after loosening the fixing screws, the device body can be turned in steps of 90° and fixed in the desired position. Another advantage for the installer is that the fixing modules cannot be detached from the device body. Disassembly of the individual parts is not necessary and there is no risk of losing parts or reassembling incorrectly.

Protection against tampering



Each control device unit of the BN series is supplied complete with snap-on protection caps to be applied on the holes of the fixing screws. Not only do the caps prevent deposits of dirt from accumulating and simplify cleaning, they also prevent access to the fixing screws of the device, thereby offering increased protection against tampering.

Individually and freely configurable



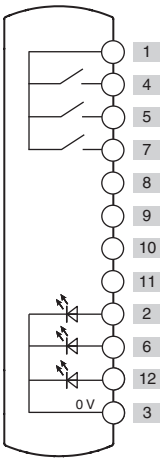
The control device unit is available in various configurations: for standard applications there are configurations with 3 or 4 devices, while configurations with 6, 7 or 8 devices are available for more complex applications that allow a larger number of control and signalling devices to be attached at the same location for the user.
With all product configurations, a number of devices can be installed that can also be illuminated via LEDs integrated in the device.

Examples of available configurations

BN AC3ZA01

	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 4 2 3 LED
Device 2	Illuminated button, spring-return 1NO	blue	1 5 6 3 LED
Device 3	Illuminated button, spring-return 1NO	yellow	1 7 12 3 LED
Connector	M12, 12-pole, at bottom	/	

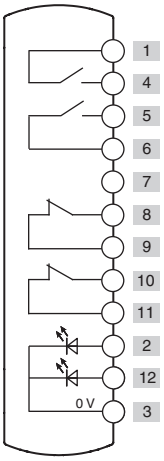
Connections



BN AC3ZA02

	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 4 2 3 LED
Device 2	Illuminated button, spring-return 1NO	blue	5 6 12 3 LED
Device 3	Emergency stop button with rotary release 2NC	red	8 9 10 11
Connector	M12, 12-pole, at bottom	/	

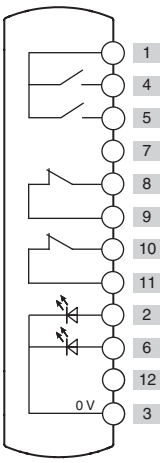
Connections



BN AC3ZA03

	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 4 2 3 LED
Device 2	Illuminated button, spring-return 1NO	yellow	1 5 6 3 LED
Device 3	Emergency stop button with rotary release 2NC	red	8 9 10 11
Connector	M12, 12-pole, at bottom	/	

Connections

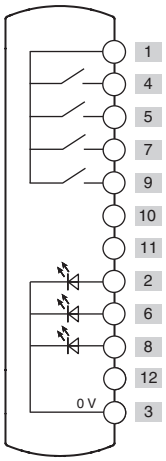


For pin assignments of the connectors, see page 149

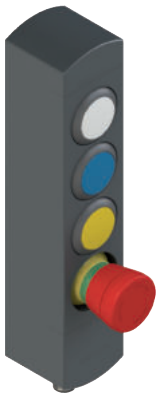
BN AC4ZA01

	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	green	1 — 4, 2 — 3 LED
Device 2	Illuminated button, spring-return 1NO	red	1 — 5, 6 — 3 LED
Device 3	Illuminated button, spring-return 1NO	white	1 — 7, 8 — 3 LED
Device 4	Two-position key selector switch 1NO	black	1 — 9
Connector	M12, 12-pole, at bottom	/	

Connections

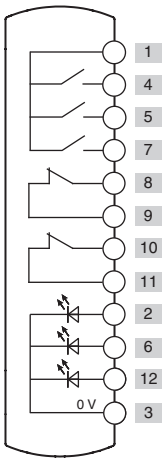


BN AC4ZA02



	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 — 4, 2 — 3 LED
Device 2	Illuminated button, spring-return 1NO	blue	1 — 5, 6 — 3 LED
Device 3	Illuminated button, spring-return 1NO	yellow	1 — 7, 12 — 3 LED
Device 4	Emergency stop button with rotary release 2NC	red	8 — 9, 10 — 11
Connector	M12, 12-pole, at bottom	/	

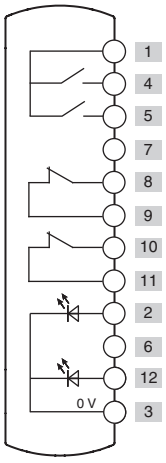
Connections



BN AC4ZA03

	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 — 4, 2 — 3 LED
Device 2	Spring-return button 1NO	black	1 — 5
Device 3	Indicator light	green	12 — 3 LED
Device 4	Emergency stop button with rotary release 2NC	red	8 — 9, 10 — 11
Connector	M23, 12-pole, at bottom	/	

Connections

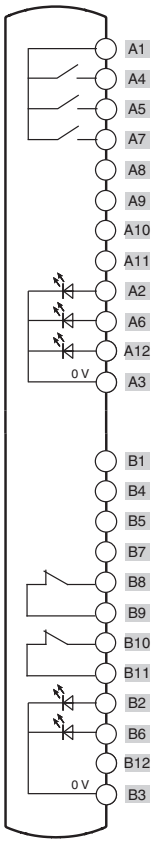


For pin assignments of the connectors, see page 149

BN AC6ZA01

	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	A1 — A4, A2 — A3, LED
Device 2	Illuminated button, spring-return 1NO	blue	A1 — A5, A6 — A3, LED
Device 3	Illuminated button, spring-return 1NO	yellow	A1 — A7, A12 — A3, LED
Device 4	Indicator light	green	B2 — B3, LED
Device 5	Indicator light	white	B6 — B3, LED
Device 6	Emergency stop button with rotary release 2NC	red	B8 — B9, B10 — B11
Connector	Two M12, 12-pole, at bottom	/	A, B

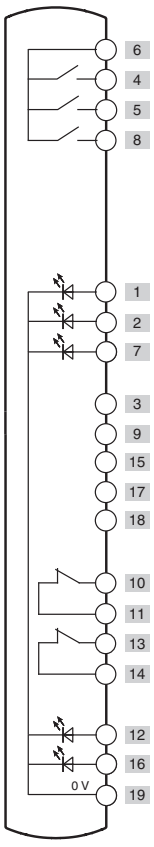
Connections



BN AC6ZA02

	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	6 — 4, 1 — 19, LED
Device 2	Illuminated button, spring-return 1NO	blue	6 — 5, 2 — 19, LED
Device 3	Illuminated button, spring-return 1NO	yellow	6 — 8, 7 — 19, LED
Device 4	Indicator light	green	12 — 19, LED
Device 5	Indicator light	white	16 — 19, LED
Device 6	Emergency stop button with rotary release 2NC	red	10 — 11, 13 — 14
Connector	M23, 19-pole, at bottom	/	

Connections

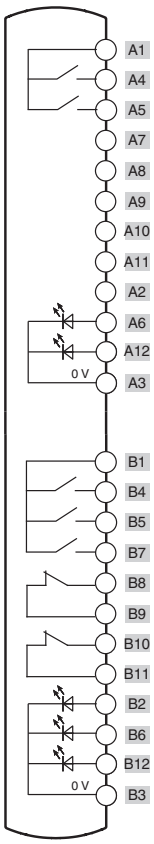


For pin assignments of the connectors, see page 149

BN AC7ZA01

	Description	Colour	Diagram
Device 1	Two-position key selector switch 1NO	black	A1 — A4
Device 2	Illuminated selector switch with handle with two positions 1NO	black	A1 — A5; A6 — A3 (LED)
Device 3	Indicator light	green	A12 — A3 (LED)
Device 4	Illuminated button, spring-return 1NO	white	B1 — B4; B2 — B3 (LED)
Device 5	Illuminated button, spring-return 1NO	blue	B1 — B5; B6 — B3 (LED)
Device 6	Illuminated button, spring-return 1NO	yellow	B1 — B7; B12 — B3 (LED)
Device 7	Emergency stop button with rotary release 2NC	red	LED; B8 — B9; B10 — B11
Connector	Two M12, 12-pole, at bottom	/	A B

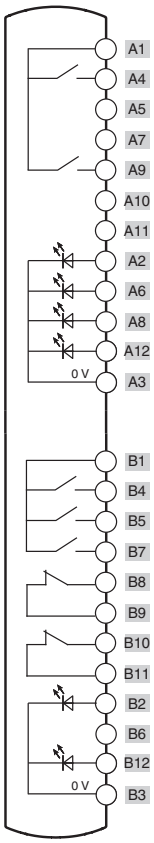
Connections



BN AC8ZA01

	Description	Colour	Diagram
Device 1	Illuminated selector switch with handle with two positions 1NO	black	A1 — A4; A2 — A3 (LED)
Device 2	Indicator light	red	A6 — A3 (LED)
Device 3	Indicator light	green	A8 — A3 (LED)
Device 4	Illuminated button, spring-return 1NO	yellow	A1 — A9; A12 — A3 (LED)
Device 5	Illuminated button, spring-return 1NO	white	B1 — B4; B2 — B3 (LED)
Device 6	Spring-return button 1NO	black	B1 — B5
Device 7	Illuminated button, spring-return 1NO	blue	B1 — B7; B12 — B3 (LED)
Device 8	Emergency stop button with rotary release 2NC	red	LED; B8 — B9; B10 — B11
Connector	Two M12, 12-pole, at bottom	/	A B

Connections



For pin assignments of the connectors, see page 149

Available integrated devices

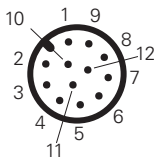
	Description	Colour	Article	Combinable with contacts [1]	Protrusion (x) mm
	Illuminated button, spring-return	White Red Green Yellow Blue	VN NG-AC26005 VN NG-AC26001 VN NG-AC26003 VN NG-AC26002 VN NG-AC26004	1NO (2NO) (1NO+1NC)	3
	Non-illuminated button, spring-return	Black	VN NG-AC26007	1NO (2NO) (1NO+1NC)	3
	Indicator light	White Red Green	VN NG-AC26064 VN NG-AC26060 VN NG-AC26062	/	2,7
	Emergency stop button acc. to. EN ISO 13850 Rotary release Push-pull release	 Red Red	 VN NG-AC26052 VN NG-AC26055	2NC (2NC+1NO)	26,4
	Illuminated selector switch with handle, with transparent lens for LED  	 Black Black	 VN NG-AC26033 VN NG-AC26034	1NO (2NO) (1NO+1NC)	16,8
	Key selector switch, 2 positions  	 Black Black	 VN NG-AC26040 VN NG-AC26043	1NO (2NO) (1NO+1NC)	39 (a) 14 (b)
	Closing cap	Black	VN NG-AC26090	/	0
	Fixing key	Black	VN NG-AC26080	/	/

Legend: Maintained Spring-return Key extraction position (a) with key (b) without key

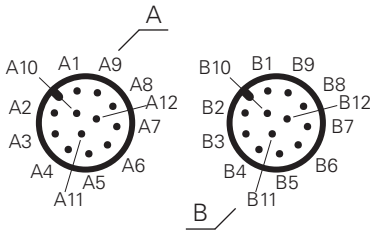
[1] The contacts in brackets are on request. Please contact our technical department in order to verify the effective feasibility of the control device unit with the chosen combination of control devices.

Electrical connections

M12 connector, 12-pole



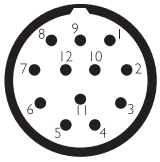
Two M12 connectors, 12-pole



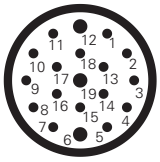
Cable

Pin No.	Cable colour	Pin No.	Cable colour
1	brown	7	black
2	blue	8	grey
3	white	9	red
4	green	10	purple
5	pink	11	grey-pink
6	yellow	12	red-blue

M23 connector, 12-pole

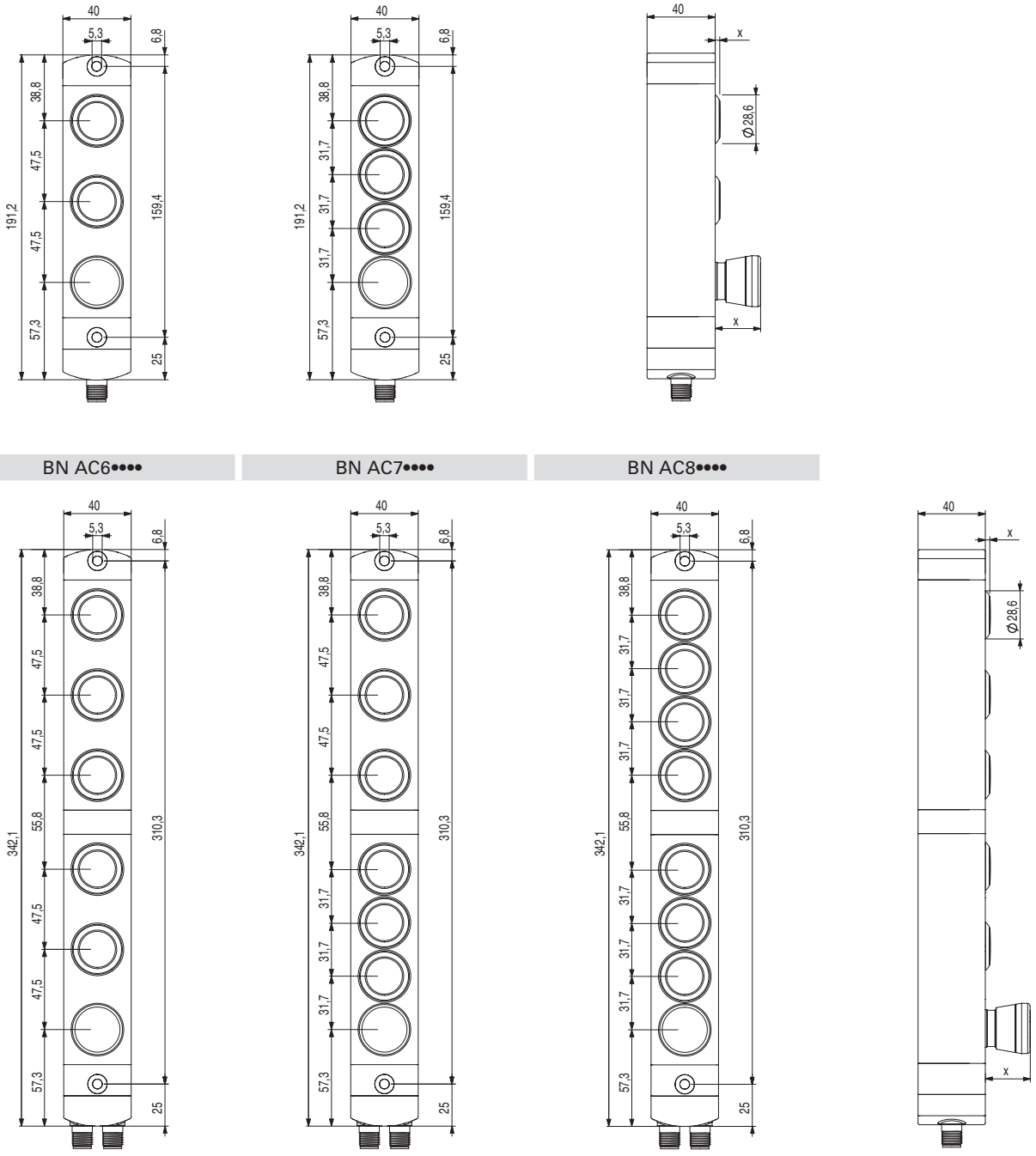


M23 connector, 19-pole



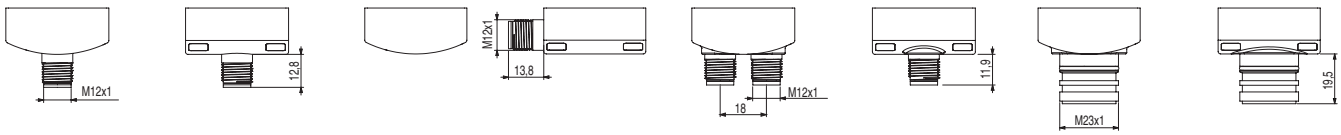
Dimensional drawings

BN AC3•••• | BN AC4•••• | BN AC6•••• | BN AC7•••• | BN AC8••••



Output with connector

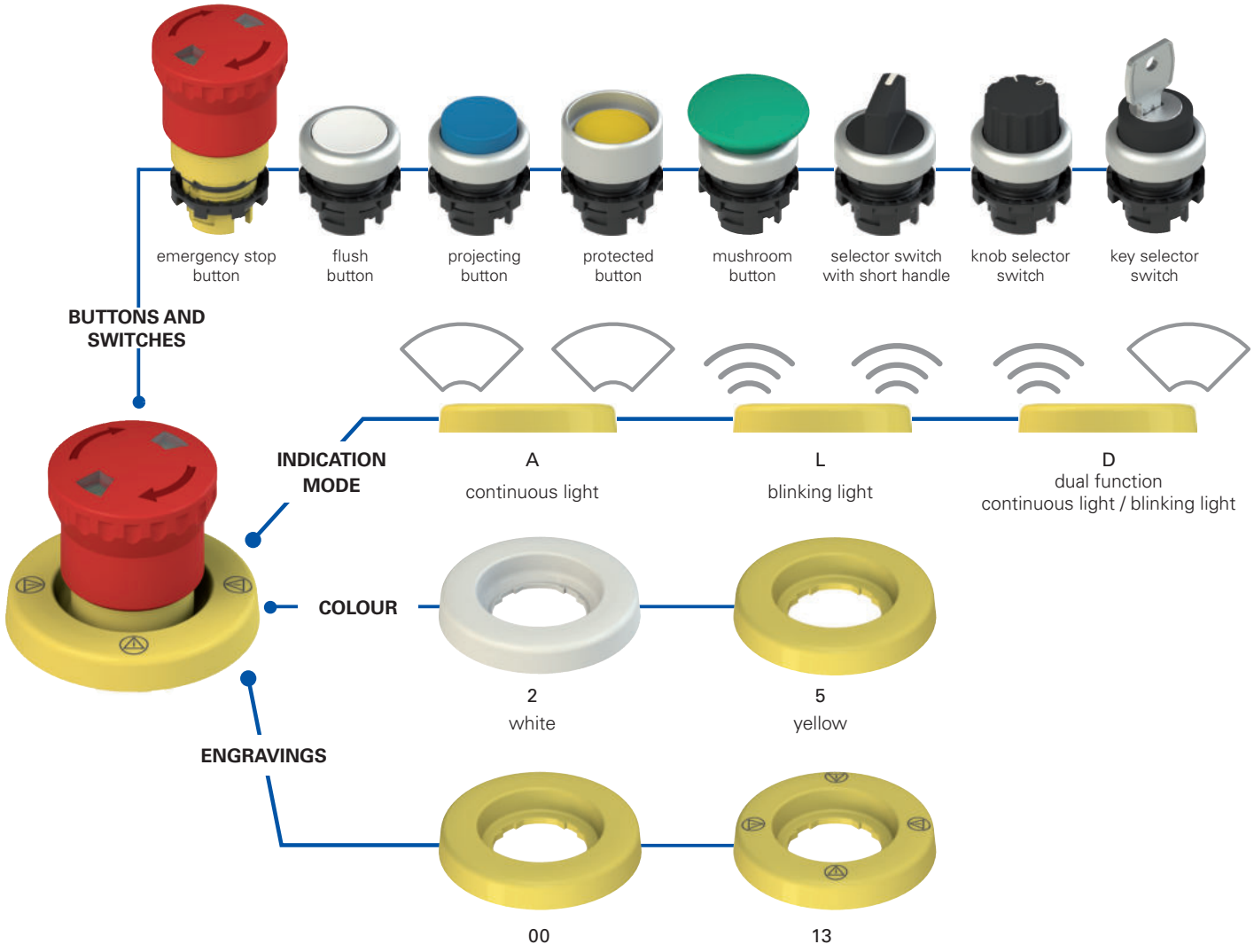
M12 connector, at bottom	M12 connector, lateral	Two M12 connectors, at bottom	M23 connector, at bottom



All values in the drawings are in mm

➔ The 2D and 3D files are available at **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

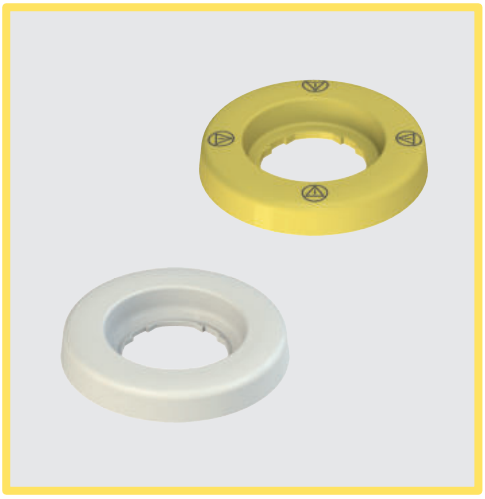
Supply voltage	
1	24 Vac/dc
5	12 Vac/dc

Engraving	
00	without engraving
13	with engraving:

Other engravings on request.

Colour	
2	white
5	yellow

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:

EAC approval: RU C-IT.УТ03.B.00035/19

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 mm² (AWG 24)
Cable laying:	fixed
Cable minimum bending radius:	14 mm
Cable insulation:	PVC
Operating voltage U_e:	12 Vac/dc or 24 Vac/dc
Operating voltage tolerance:	±15% of U_e
Operating current at U_e voltage:	65 mA (12 Vac/dc version) 25 mA (24 Vac/dc version)
Blinking frequency (if present):	1 Hz
Utilization requirements:	See page 163

In compliance with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000.

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/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

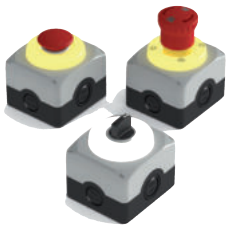
The luminous disc can also be installed using the supplied adhesive: simply remove the adhesive protective film placed under the disc. Thanks to this sticking, it is possible to get the perfect adhesion to the surface and the IP67 protection degree.

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 stop 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 DL5A5D00	VE DL1A5D00
	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 DL5A5D13	VE DL1A5D13
	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 DL5A5D09	VE DL1A5D09

To purchase the white luminous disc replace number 5 with number 2 in the codes shown above. Example: VE DL1A**5**A00 → VE DL1A**2**A00

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 stop 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 stop button is pressed: this way the luminous disc of the selected emergency stop button begins to blink while all the others switch off, making it easy to identify the point where the emergency stop button was pressed (figure 2).
Figure 3 indicates an example of the electrical diagram for the connection in series of three or more emergency stop buttons fitted with dual function luminous disc.

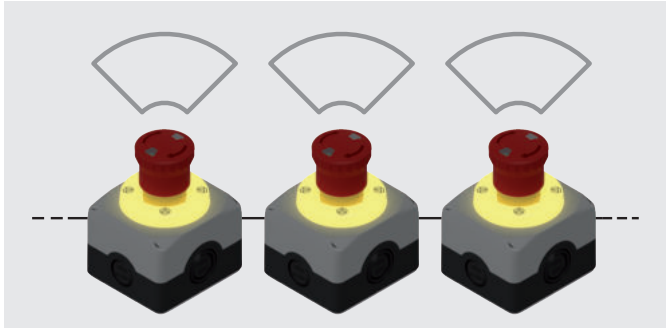


Figure 1

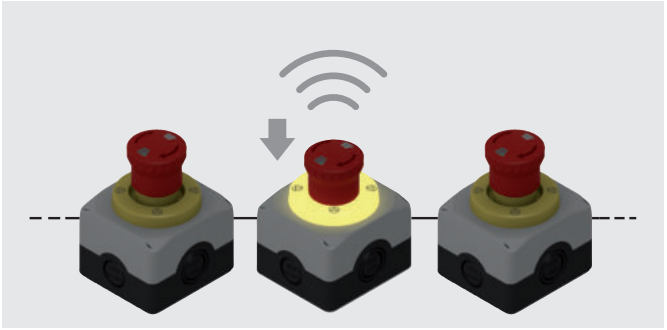


Figure 2

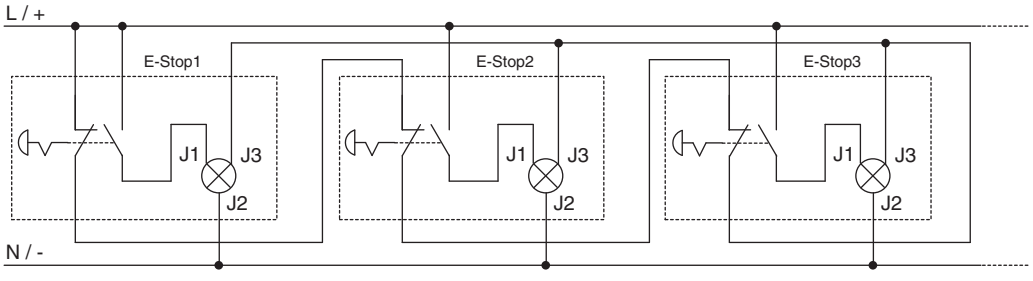
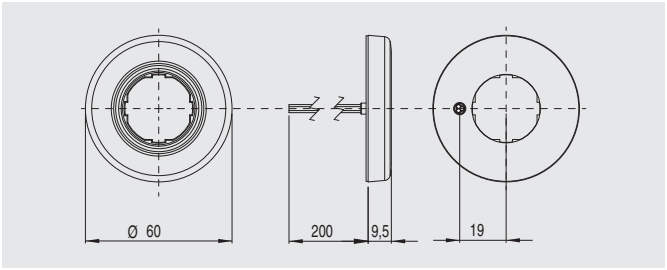
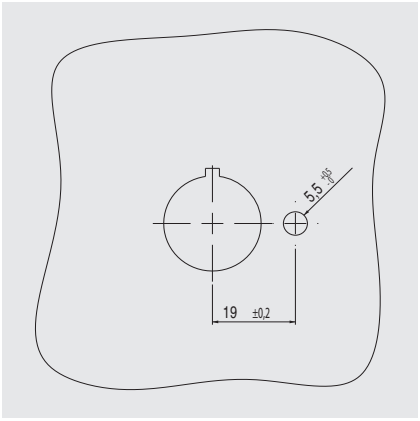


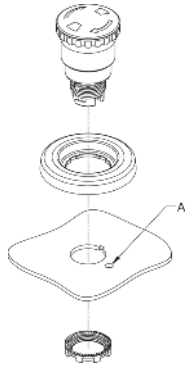
Figure 3

Dimensions



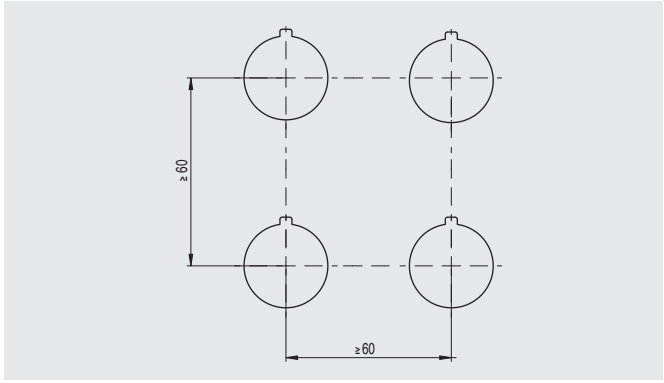
Drilling and mounting





A: Cable feed-through

Minimum distances for installation



All values 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 155

Fixing ring

Packs of **20 pcs.**

Article	Description
VE GF121A	Technopolymer fixing ring

Article	Description
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:

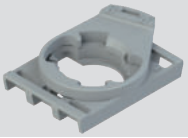
Body and ring material:	technopolymer	Tightening torque:	2 ... 2.5 Nm
Protection degree:	IP67 and IP69K	Dowel can be removed with a simple screwdriver	

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

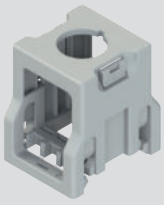
Not combinable with E2 •PQ••••••• quadruple buttons and E2 •MA•••••• joysticks.

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 stop buttons E2 •PE••••••, configured in the appropriate versions for 4-slot adapter.
Combinable with E2 •PQ••••••• quadruple buttons and E2 •MA•••••• joysticks.

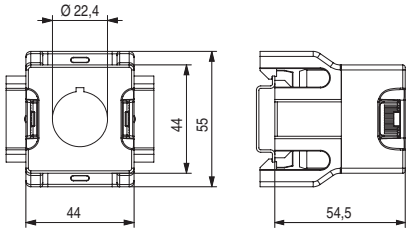
Adapter for DIN rail

Packs of **10 pcs.**



Patent pending

Article	Description
VE AD3PF9A0	Support with Ø22 hole for fixing on DIN rail of the signalling and control devices of the EROUND line

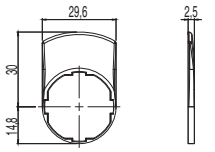


Not suitable for joysticks and quadruple buttons

All values in the drawings are in mm

Labels with laser engraving

Labels for single EROUND line devices, adjustable by 90° in 90° increments.
Available in black, grey, and yellow; the engraving is via laser, directly on the label itself. This avoids having to apply additional labels, and the command description remains permanent and indelible, for the entire lifetime of the label.
Labels are customisable with various laser engraving types, according to customer requirements.



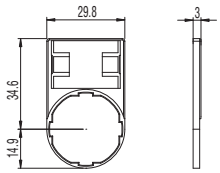
Article	Description	Pieces/pack.
VE TF32H9700	Grey label, without engraving	10
VE TF12H1700	Black label, without engraving	10
VE TF32H5700	Yellow label, without engraving	10
VE TF32H91••	Grey label, with indelible laser engraving	1
VE TF12H12••	Black label, with indelible laser engraving	1
VE TF32H51••	Yellow label, with indelible laser engraving	1

It does not alter the IP protection degree of the associated device.
Not applicable on E2 •PD•••••••, E2 •PT•••••••, E2 •PQ••••••• double, triple, and quadruple buttons.

For ordering engraved labels:
Replace the dots •• in the article codes with the engraving code reported on the table at page 159.
Example: Black label with "STOP" engraving. VE TF12H12•• → VE TF12H12GB0

Label holder

Label holders for single device, adjustable by 90° in 90° increments.
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.



Article	Description	Pieces/pack.
VE PT32A00A0	Label holder provided with shaped hole, for 18x27 mm label, 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

It does not alter the IP protection degree of the associated device.
Not applicable on E2 •PD•••••••, E2 •PT•••••••, E2 •PQ••••••• double, triple, and quadruple buttons.
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 codes with the engraving code reported on the table at page 159.
Example: Label holder provided with label, "STOP" engraving. VE PT32A09A••• → VE PT32A09AGB0

Plates

Article	Description
VE TR3A770	Protective plate for VE PT label holders without engraving. Packs of **100 pcs.**

Rectangular plate 18x27 mm, thickness 0.4 mm, transparent anti-glare polycarbonate. Ideal for protecting the label below

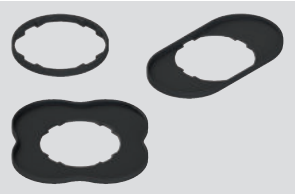
Article	Description
VE TR4A970	Label for VE PT label holders without engraving, for cutter or laser engraving. Packs of **100 pcs.**
VE TR4A91•••	Label for VE PT label holders with black indelible laser engraving.

Rectangular label 18x27 mm, thickness 0,8 mm, white aluminium RAL 9006

For ordering engraved labels:
Replace the dots ••• in the article codes with the engraving code reported on the table at page 159.
Example: Label with "STOP" engraving. VE TR4A91••• → VE TR4A91GB0

All values in the drawings are in mm

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 quadruple button E2 •PQ•••••••	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.

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	Protective 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.

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

Diode unit

Packs of **10 pcs.**

Diode blocks of the same size as contact blocks, containing a 3 A 1800 V diode inside.
To be used in sections of circuits where it is necessary to ensure that the direction of current flow respects the prescribed polarity.

Article	Description
VE BD1PV1	Diode unit, with panel mounting and screw connections
VE BD1PM1	Diode unit, with panel mounting and PUSH-IN spring connections
VE BD1FV1	Diode unit, with base mounting and screw connections
VE BD1FM1	Diode unit, with base mounting and PUSH-IN spring connections

Closing cap

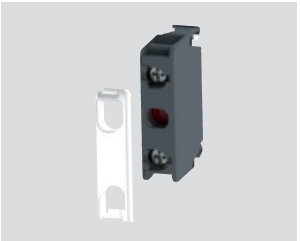
Packs of **10 pcs.**

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.**

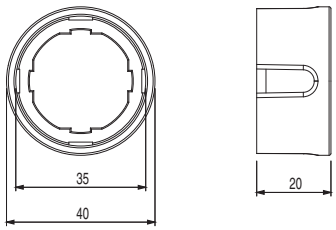


Article	Description
VE PR3A70	Transparent dust protection for E2 series contact blocks. Suitable for all panel mounting contact blocks.

All values in the drawings are in mm

Windowed protection guard

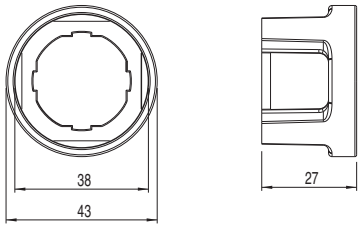
Article	Description
VE GP32A5A	Cylindrical yellow protection guard with 4 windows



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.

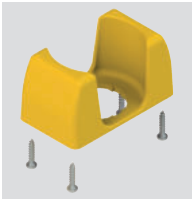
Cylindrical protection guard

Article	Description	Colour
VE GP32B5A	Cylindrical yellow protection guard	
VE GP32B1A	Cylindrical black protection guard	
VE GP32B4A	Cylindrical green protection guard	
VE GP32B6A	Cylindrical blue protection guard	

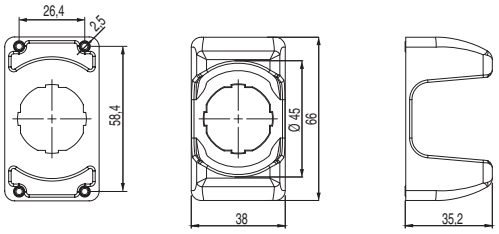


It does not alter the IP protection degree of the associated device.
Not applicable on emergency stop buttons of the E2 •PE•••••• **series.**
Not applicable in presence of shaped rings, label holders, adapters from Ø 22 to Ø 30 mm or protection caps.

Open protection guard



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

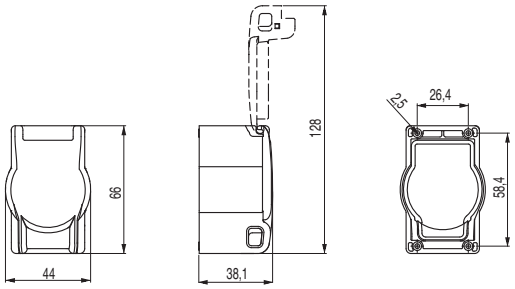


It does not alter the IP protection degree of the associated device.
Not applicable in presence of shaped rings, label holders, adapters from Ø 22 to Ø 30 mm or protection caps.

Lockable guard

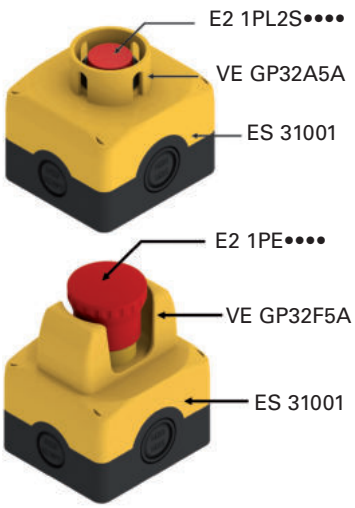
Article	Description
VE GG3EA7A	Lockable guard complete with 4 screws (for panel thicknesses between 1 and 3.5 mm)

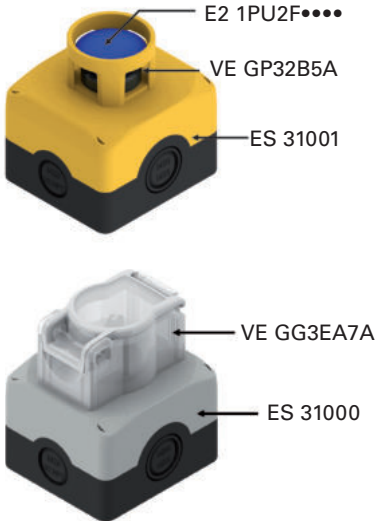
Ideal for protecting devices which must not be actuated involuntarily.



It does not alter the IP protection degree of the associated device.
Not applicable with attached label holder.

Application examples of guards





All values in the drawings are in mm

List of available engravings

Code	Symbol
L1	
L287	
L413	
L2	
L3	
L4	
L35	
L36	
L37	
L11	
L12	
L412	
L188	
L14	
L32	
L33	
L34	
L240	
L16	
L41	

Code	Symbol
L42	
L43	
L213	
L254	
L17	
L44	
L45	
L46	
L60	
L191	
L193	
L308	
L61	
L153	
L194	
L309	
L408	
L145	
L336	
L96	

Code	Symbol
L27	
L147	
L148	
L162	
L172	
L220	
L277	
L226	
L142	
L54	
L56	
L57	
L55	
L146	
L293	
L304	
L305	
L470	
L317	
L319	

Code	Symbol
L330	
L455	
L456	
L369	
L426	
L59	
L64	
L62	
L63	
L86	
L88	
L89	
L87	
L76	
L77	
L78	
L190	
L416	
L417	
L189	

Code	Symbol
L187	
L230	
L249	
L376	
L102	
L103	
L139	
L140	
L141	
L157	
L381	
L445	
L278	
L323	
L362	
L380	
L382	
L383	
L384	
L385	

Code	Symbol
L386	
L395	
L411	
L414	
L415	
L418	
L419	
L420	
L80	
L374	
L476	
L472	
L473	
L474	
L475	

Other engravings on request

Code	Symbol
L7	
L8	
L9	
L10	
L18	
L143	
L24	
L310	

Code	Symbol
L25	
L30	
L31	
L58	
L75	
L425	
L454	
L83	

Code	Symbol
L84	
L90	
L91	
L312	
L311	
L442	
L443	
L170	

Code	Symbol
L174	
L175	
L176	
L294	
L313	
L314	
L227	
L228	

Code	Symbol
L316	
L394	
L399	
L436	
L437	
L438	
L439	
L440	

Code	Symbol
L441	
L295	

Code	Symbol
L234	
L235	
L236	
L237	
L238	
L239	

Code	Symbol
L241	
L242	
L243	
L244	
L245	
L246	

Code	Symbol
L247	
L248	
L251	
L252	
L253	
L260	

Code	Symbol
L279	L
L280	R
L375	
L389	
L390	
L391	

Code	Symbol
L392	
L393	
L463	
L464	
L465	
L466	

Code	Symbol
L467	
L468	

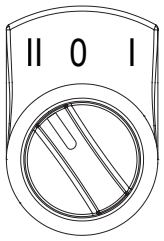
Code	Symbol
L19	0 I
L20	0 I
L21	II 0 I
L22	I 0
L219	o —

Code	Symbol
L185	1 2 3
L259	1 2 3 4
L452	STOP START
L156	
L262	0

Code	Symbol
L155	AUTO 0 MAN.
L164	AUTO. MAN.
L377	AUTOMATIC 0 1
L342	MAN OFF AUTO
L266	AUTO-0-MAIN

Code	Symbol
L359	START AUTO
L360	STOP AUTO
L163	SLOW FAST
L404	
L171	HIGH LOW

Code	Symbol
L232	R 0 F
L307	FWD 0 REV
L469	FWD REV
L144	BARRIER BY-PASS & RESET 0 1
L217	CLOSE OPEN



Example of 3-position selector with VE TF••H•••• label and L21 engraving.

Other engravings on request

Code	Symbol
L28	STOP
L50	STOP
L48	STOP
L49	STOP
L113	STOP
L29	START
L53	START
L51	START
L52	START
L218	START
L276	START STOP
L410	PAUSE (START)
L65	1
L66	2

Code	Symbol
L67	3
L68	4
L69	5
L70	6
L71	7
L72	8
L73	9
L74	0
L450	-1
L451	-2
L129	3/4
L15	R
L40	R
L38	R

Code	Symbol
L39	R
L114	RESET
L306	RESET
L130	100%
L315	24V=
L82	GROUND
L199	SPEED
L233	CAUTION
L250	POWER
L332	ALLOW IN
L334	SYSTEM START
L335	SYSTEM STOP
L333	CYCLE STOP
L281	DEFAULT

Code	Symbol
L289	BOOST
L292	MONO / TRI
L327	ENABLE DISABLE
L222	ACCESS DENIED
L223	ACCESS ALLOWED
L224	ACCESS REQUEST
L225	ACCESS RESET
L215	INIT
L216	C / C
L370	UNLOCK DOOR
L371	REQUEST / RESET ACCESS TO AREA
L205	Y+
L206	
L207	

Code	Symbol
L208	
L117	POMPA FILTRO 0 - 1
L118	FILTER PUMP 0 - 1
L119	RISCALDAMENTO 0 - 1
L120	HEATING 0 - 1
L121	SCATTO TERMICO
L122	CIRCUIT BREAKER
L123	MAN. - AUT.
L124	START CICLO
L125	RADDRIZZATORE 0 - 1
L126	STOP CICLO
L127	BY-PASS EMERGENZE 0 - 1
L131	AZIONAMENTO 0 - 1
L132	TACITAZIONE SIRENA

Code	Symbol
L135	AVANTI - INDIETRO
L104	24V 电源指示 24V Power
L105	220V电源指示 220V Power
L106	选择开关 Selector
L107	启动按钮 START
L108	停止按钮 STOP
L109	电源指示 Power
L110	合闸指示 Ready
L111	故障指示 Stoppage

Other engravings on request

List of available engravings – TEXTS

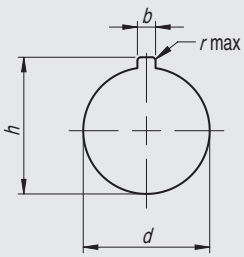
Code	Text	Code	Text	Code	Text	Code	Text
IT0	ARRESTO	GB0	STOP	FR0	ARRÊT	DE0	HALT
IT1	AVVIO	GB1	START	FR1	MARCHE	DE1	START
IT2	CHIUSO	GB2	CLOSE	FR2	FERMÉ	DE2	ZU
IT3	SU	GB3	UP	FR3	MONTÉE	DE3	AUF
IT4	GIÚ	GB4	DOWN	FR4	DESCENTE	DE4	AB
IT5	SPENTO	GB5	OFF	FR5	ARRÊT	DE5	AUS
IT6	ACCESO	GB6	ON	FR6	MARCHE	DE6	EIN
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	MAN. AUTO	GB11	MAN. AUTO	FR11	MAN. AUTO	DE11	HAND AUTO
IT12	MAN. 0 AUTO	GB12	MAN. 0 AUTO	FR12	MAN. 0 AUTO	DE12	HAND 0 AUTO
IT13	MARCIA	GB13	DRIVE	FR13	MARCHE	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	HAUT	DE22	HOCH
IT23	BASSO	GB23	LOW	FR23	BAS	DE23	NIEDRIG
IT24	VELOCE	GB24	FAST	FR24	RAPIDE	DE24	SCHNELL
IT25	LENTO	GB25	SLOW	FR25	LENT	DE25	LANGSAM
IT26	PIÚ VELOCE	GB26	FASTER	FR26	PLUS RAPIDE	DE26	SCHNELLER
IT27	PIÚ LENTO	GB27	SLOWER	FR27	PLUS LENT	DE27	LANGSAMER
IT32	APRIRE	GB32	OPEN	FR32	OUVRIR	DE32	ÖFFNEN
IT63	CHIAMATA	GB63	CALL	FR63	APPEL	DE63	ANRUF
IT64	OCCUPATO	GB64	OCCUPIED	FR64	OCCUPÉ	DE64	BESETZT
IT99	ARRESTO D'EMERGENZA	GB99	EMERGENCY STOP	FR99	ARRÊT D'URGENCE	DE99	NOT-AUS

Other engravings on request

General requirements

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.

Panel drilling according to EN 60947-5-1



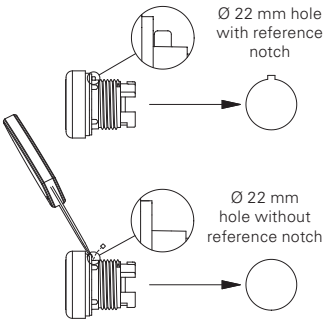
	Ø 22	Ø 30
d	22,3 +0,4 -0	30,5 +0,5 -0
h	24,1 +0,4 -0	33,0 +0,5 -0
b	3,2 +0,2 -0	4,8 +0,2 -0

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.

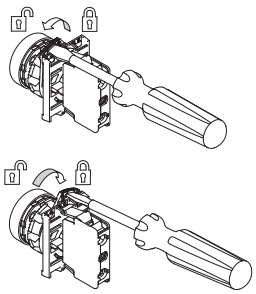
In case of use on holes without reference notches, simply remove the dowel with a slight leverage effect using a screwdriver, making sure that the seal gasket does not get damaged.

The removal of the reference dowel, is not advisable for the selectors (series E2 •SE, E2 •SL, E2 •SC) and emergency stop buttons (series E2 •PE) with rotary release, as these devices are subject to rotary-type actuation.



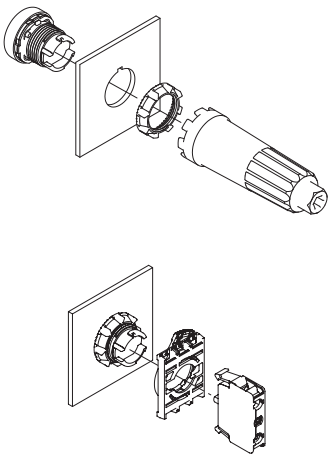
Device connection to mounting adapter

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.



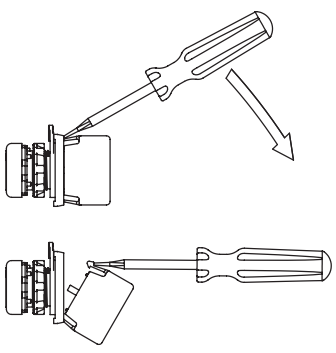
Panel fixing

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.

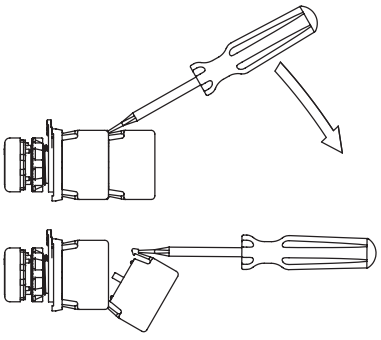


Mounting of contact blocks and LED units

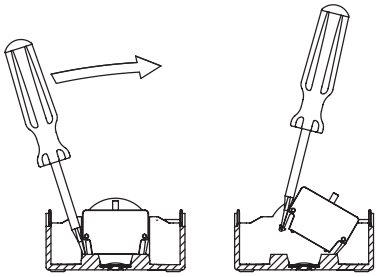
Contact blocks and LED units are provided with two snap-in mounting flaps that ensure a stable fixing between them and the mounting adapter (in the panel mounting version), or between them and the base of the housing (in the base mounting version). The panel contact blocks can be connected to each other, 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



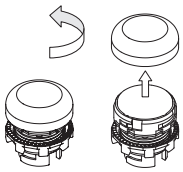
Release of the contact block from another unit



Release of the contact block from the base

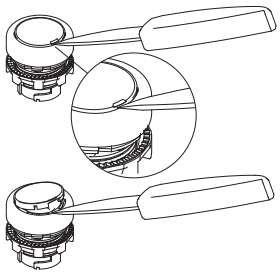
Lenses for E2 indicator lights

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.



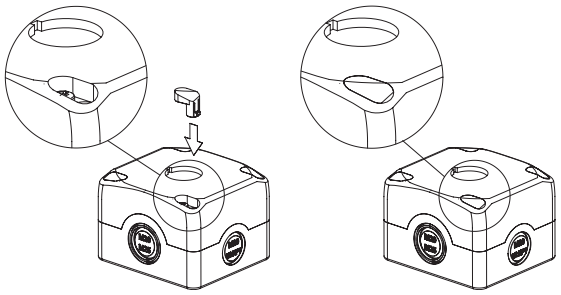
Lenses for buttons and illuminated buttons

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.

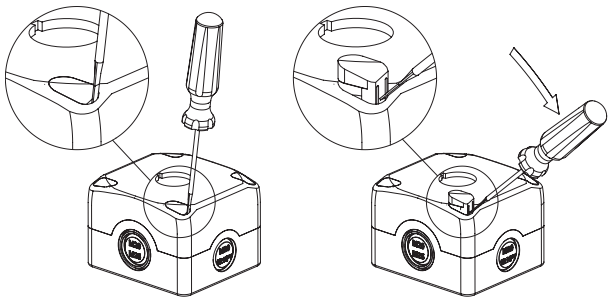


Screw caps insertion / removal

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.

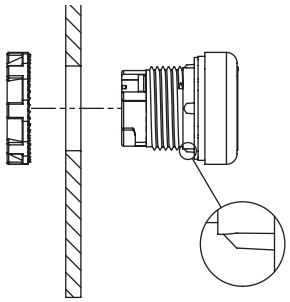


The caps engage to the cover with a simple pressure until the flexible flap snaps in.
For their removal it is necessary to insert the point of a tool (e.g. a small screwdriver) in the special slot on each cap and to leverage on the coupling flap to open it.



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.



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 containing explosive or inflammable gases or dusts.
- In environments containing strongly aggressive chemicals, where the products used coming into contact with the device may impair its physical or functional integrity.
- Prior to installation, the installer must ensure that the device is suitable for use under the ambient conditions on site.

Using the devices

- 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.
- Before installation, make sure the device is not damaged in any part.
- 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.

Limits of use

- 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 / e-mail tech@pizzato.com) in the following cases:
  - cases not mentioned in the present utilization requirements.
  - In nuclear power stations, trains, airplanes, cars, incinerators, medical devices or any application where the safety of two or more persons depend on the correct operation of the devices.

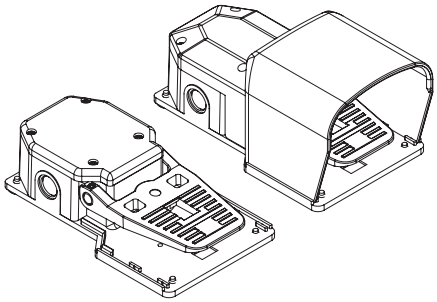
Wiring and installation

- Installation must be carried out by qualified staff only.
- Observe minimum distances between devices (if provided).
- 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. If excessive tension is applied to 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.
- No work that can cause high-intensity electrostatic discharges (e.g. stripping or rubbing plastic surfaces or other materials that can be electrostatically charged) may be carried out in the vicinity of devices that are supplied with electrical energy, even if they are switched off or not wired.
- 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.

Additional requirements for safety applications

Provided that all previous requirements for the devices are fulfilled, for installations with operator protection function additional requirements must be observed.

- The utilization implies knowledge of and compliance with following standards: IEC 60204-1, IEC 60947-5-1, EN ISO 13849-1, EN 62061, EN ISO 12100.
- For emergency stop 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 stop 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 stop 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. The 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 letters refer to the year of manufacture (21 = 2021, 22 = 2022, 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.



General requirements

- The device is designed to be installed on industrial machineries.
- The installation must be performed only by qualified staff aware of the regulations in force in the country of installation.
- The device must be used exactly as supplied and properly wired.
- It is not allowed to disassemble the product and use only parts of the same, the device is designed to be used in its assembly. It is prohibited to modify the device, even slightly e.g.: replace parts of it, drill it, lubricate it, clean it with gasoline or gas oil or any aggressive chemical agents.
- The protection degree of the device refers to the electrical contacts only.
- Carefully evaluate all the polluting agents present in the application before installing the device, since the IP protection degree refers exclusively to agents such as dust and water according to EN 60529. Thus the device may not be suitable for installation in environments with dust in high quantity, condensation, humidity, steam, corrosive and chemical agents, flammable or explosive gas, flammable or explosive dust or other polluting agents.
- Some devices are provided with a housing with openings for connecting the electrical cables. To guarantee an adequate protection degree of the device, the opening that the wiring passes through must be protected against the penetration of harmful materials by means of an appropriate seal. Proper wiring therefore requires the use of cable glands, connectors or other devices with IP protection degree that is equal to or greater than that of the device.
- Store the products in their original packaging, in a dry place with temperature between -40° C and +70°C
- Failure to comply with these requirements or incorrect use during operation can lead to the damage of the device and the loss of the function performed by the device itself. This will result in termination of the warranty on the item and will release the manufacturer from any liability.

Using the devices

- Before use, check if the national rules provide for further requirements in addition to those given here.
- Avoid contact of the device with corrosive fluids.
- Do not stress the device with bending and torsion.
- 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.
- If specific operating instructions exist for a device (supplied or downloadable from www.pizzato.com), they must always be included with the machine manual and be available for the entire service life of the machine.
- If the pedal has one or more metallic tubes, with a housing equipped with EROUND devices connected to their ends, the utilization requirements indicated on pages 163 to 165 of this catalogue apply.

Wiring and installation

- Installation must be carried out by qualified staff only.
- Use of the device is limited to function as a control switch.
- The product can only be used on flat surfaces.
- Never use the device as support for other machine components (cable ducts, tubes, etc.)
- 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.
- Before installation, make sure the device is not damaged in any part.
- During wiring comply with the following requirements.
  - Comply with the minimum and maximum sections of electrical conductors admitted by terminals.
  - Tighten the electrical terminals with the torque indicated in this catalogue.
  - Do not introduce polluting agents into the device as: talc, lubricants for cable sliding, powder separating agents for multipolar cables, small strands of copper and other pollutants that could affect the proper functioning of the device.
  - Before closing the device cover (if present) verify the correct positioning of the gaskets.
  - Verify that the electrical cables, wire-end sleeves, cable numbering systems and any other parts do not obstruct the cover from closing correctly or if pressed between them do not damage or compress the internal contact block.
  - For devices with integrated cable, the free end of the cable must be properly connected inside a protected housing. The electrical cable must be properly protected from cuts, impacts, abrasion, etc.
- Check that the device application meets the requirements described in paragraph "Do not use in following environments" and "Limits of use" on page 164.
- After installation and before commissioning of the machine, verify:
  - the correct operation of the device and all its parts;
  - the correct wiring and tightening of all screws.
- Perform the following sequence of checks before the machine is commissioned and at least once a year (or after a prolonged shutdown).
  1. The pedal must run freely, and the actuation travel must be linear. No objects or foreign bodies may be present beneath the pedal, which would impede its actuation.
  2. Check that the actuating force is compatible with factory defaults.
  3. Check that the safety lever is functioning correctly: it must not be possible to actuate the pedal, without first having lowered the safety lever (where present).
  4. Check that the locking mechanism of the pedal actuator (where present) is functioning correctly.
  5. Check that the electrical connecting cable and associated cable gland are in good condition, and firmly attached to the device.
  6. Check that, when the pedal is actuated, the machine behaves as expected.
  7. All external parts must be undamaged.
  8. If the device is damaged, replace it completely.
- Should the installer be unable to fully understand the utilization requirements, the product must not be installed and the necessary assistance may be requested.

M12 connectors

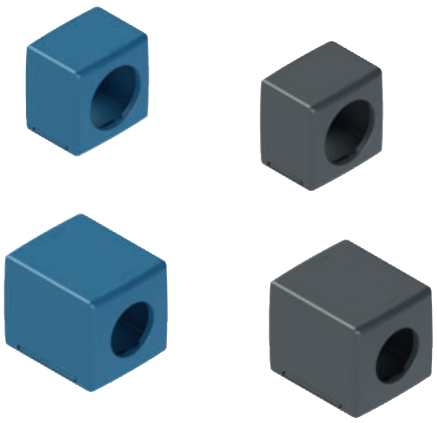
M12 connectors, for series connections

M23 connectors

M8 connectors

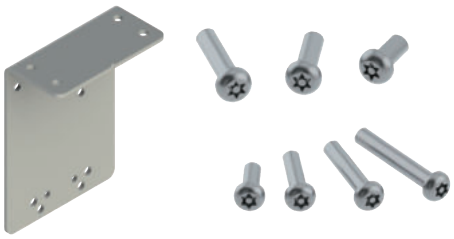
Cable glands and adapters

Tampering protection for M12 connectors



LED signalling lights

Fixing screws and plates



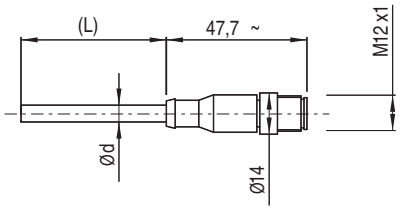
Junction box for series connections

M12 male connectors with cable

Features:

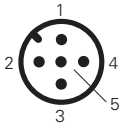
- Polyurethane connector body
- Class 6 copper conductors acc. to IEC 60228 - mobile installation
- Gold-plated contacts
- Self-locking ring nut
- High flexibility cable with oil resistant PVC or PUR sheath suitable to be used in drag chains, acc. to IEC 60332-1-2

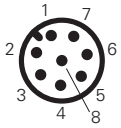
Max. operating voltage:	250 Vac / 300 Vdc (5-pole) 30 Vac / 36 Vdc (8-pole)
Max. operating current:	4 A (5-pole) 2 A (8-pole)
Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653 (Protect the cables from direct high-pressure and high-temperature jets)
Ambient temperature:	-25°C … +80°C for fixed installation -15°C … +80°C for mobile installation
Wire cross-sections:	0.25 mm2 (23 AWG)
Minimum bending radius:	> cable diameter x 15
Tightening torque of the ring:	0.6 … 0.8 Nm



ø d: 6 mm for 5-pole
6 mm for 8-pole

Pin assignment





5 poles		8 poles	
Pin	Colour	Pin	Colour
1	Brown	1	White
2	White	2	Brown
3	Blue	3	Green
4	Black	4	Yellow
5	Grey	5	Grey
		6	Pink
		7	Blue
		8	Red

Code structure

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

VF CF5PD3M

No. of poles	
5	5 poles
8	8 poles

Connection type	
M	M12x1

Cable length (L)	
3	3 metres (standard)
5	5 metres
0	10 metres

Other lengths on request

Cable sheath	
P	PVC (standard)
U	PUR

Connector type	
D	straight

Stock items

VF CF5PD3M
VF CF8PD3M

Attention! For items not in stock the minimum order quantity is 100 pcs.

ATTENTION: always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.

All values in the drawings are in mm

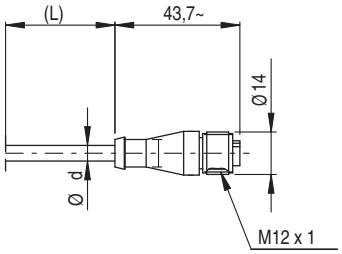
→ The 2D and 3D files are available at **www.pizzato.com**

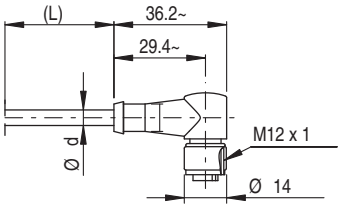
M12 female connectors with cable

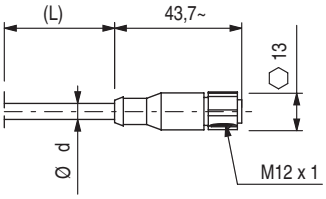
Features:

- Polyurethane connector body
- Class 6 copper conductors acc. to IEC 60228 - mobile installation
- Gold-plated contacts
- Self-locking ring nut made of nickel-plated brass, available on request in AISI 316L stainless steel hex version.
- High flexibility cable with oil resistant PVC or PUR sheath suitable to be used in drag chains, acc. to IEC 60332-1-2

Max. operating voltage:	250 Vac / 300 Vdc (4/5-pole) 30 Vac / 36 Vdc (8/12-pole)
Max. operating current:	4 A (4-5-pole); 2 A (8-pole); 1.5 A (12-pole)
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, PVC sheath, fixed installation -15°C … +80°C, PVC sheath, mobile installation -40°C … +80°C, PUR sheath, fixed installation -25°C … +80°C, PUR sheath, mobile installation
Wire cross-sections:	0.34 mm² (22 AWG) for 4-pole 0.25 mm² (23 AWG) for 5/8-pole 0.14 mm² (26 AWG) for 12-pole
Minimum bending radius:	> cable diameter x 15
Tightening torque of the ring:	0.6 … 0.8 Nm

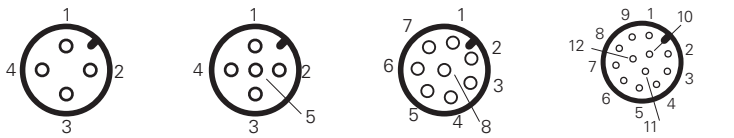






ø d: 5 mm for 4 and 5-pole
6 mm for 8 and 12 poles

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: **VF CA4PD3M** — options: **-X**

No. of poles	
4	4 poles
5	5 poles
8	8 poles
12	12 poles

Cable sheath	
P	PVC (standard)
U	PUR

Connector type	
D	straight (standard)
G	angled

Connection type	
M	M12x1

Fixing ring	
	knurled ring (standard)
X	stainless steel hex ring nut

Cable length (L)		4 poles	5 poles	8 poles	12 poles
1	1 metre				
2	2 metres				
3	3 metres (standard)	•	•		
4	4 metres				
5	5 metres (standard)	•	•	•	•
...					
0	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 CA12PD20M
VF CA12PD30M
VF CA12PD0M
VF CA8UD5M-X
VF CA8UD0M-X
VF CA12UD0M-X

Attention! For items not in stock the minimum order quantity is 100 pcs.

ATTENTION: always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.

All values in the drawings are in mm

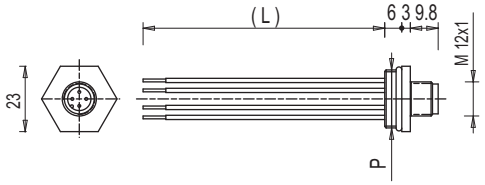
➔ The 2D and 3D files are available at **www.pizzato.com**

M12 male connectors

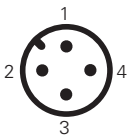
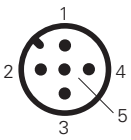
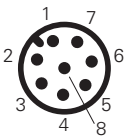
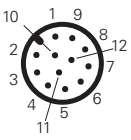
Features:

- Technopolymer or metal connector body
- Gold-plated contacts
- Wires with crimped ferrules
- Directly installable on the device, these ensure quick replacement, reducing machine down time

Max. operating voltage:	250 Vac / 300 Vdc (4/5-pole) 30 Vac / 36 Vdc (8/12-pole)
Max. operating current:	4 A (4/5-pole) 2 A (8-pole) 1.5 A (12-pole)
Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C … +80°C
Tightening torque:	1 … 1.5 Nm
Wire cross-sections:	0.5 mm² (20 AWG) for 4/5-pole 0.25 mm² (23 AWG) for 8-pole 0.14 mm² (26 AWG) for 12-pole
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

VF CNM5MM-L100

Body material	
M	metal
P	plastic

No. of poles	
4	4 poles
5	5 poles
8	8 poles
12	12 poles

Connection type	
M	M12x1

Connector thread (P)	
M	M20 x 1.5 (standard)
P	PG 13.5

Wire length (L)	
	8.5 cm (standard)
L16	16 cm
L100	100 cm
L200	200 cm

Stock items

VF CNP4MM
VF CNP4PM
VF CNP5MM
VF CNP5PM
VF CNP8MM
VF CNM4MM
VF CNM4PM
VF CNM5MM
VF CNM5PM
VF CNM8MM
VF CNM8PM
VF CNM12MM-L16

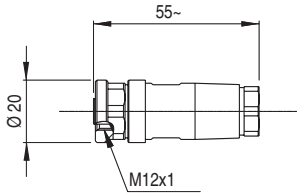
ATTENTION: always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.
Note: the 12-pole connector is only available in metal with M20x1.5 thread and 16 cm wires.

All values in the drawings are in mm

→ The 2D and 3D files are available at **www.pizzato.com**

Field wireable M12 female connectors

Features:
- Technopolymer connector body
- Gold-plated contacts
- Screw terminals for cable screw fittings

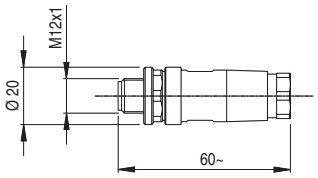


Max. operating voltage:	250 Vac/dc (4 and 5-pole) 30 Vac/dc (8-pole)
Max. operating current:	4 A (4 and 5-pole) 2 A (8-pole)
Protection degree:	IP67 acc. to EN 60529
Ambient temperature:	-25°C ... +85°C
Wire cross-sections:	0.25 mm² (23 AWG) … 0.5 mm² (20 AWG)
Tightening torque of the ring:	0.6 … 0.8 Nm

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

Features:
- Technopolymer connector body
- Gold-plated contacts
- Screw terminals for cable screw fittings



Max. operating voltage:	250 Vac/dc (5-pole) 30 Vac/dc (8-pole)
Max. operating current:	4 A (5-pole) 2 A (8-pole)
Protection degree:	IP67 acc. to EN 60529
Ambient temperature:	-25°C ... +85°C
Wire cross-sections:	0.25 mm² (23 AWG) … 0.5 mm² (20 AWG)
Tightening torque of the ring:	0.6 … 0.8 Nm

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.

All values in the drawings are in mm

➔ The 2D and 3D files are available at **www.pizzato.com**

Series connection with Y-shaped M12 connectors

To facilitate and simplify the series wiring of the safety devices, a variety of accessories designed specifically for this purpose are available. With the help of the proven M12 round connector, safety equipment of Category 4, SIL3 and PL e with up to 32 elements connected in series is possible. All of which is possible without the risk of connection errors and with a high IP67 protection degree.

The safety circuits consist of a 24 Vdc power supply unit, a number of extensions to the installed devices, Y connectors for branching out from the chain to each individual device and a terminating plug.

In addition to the power supply unit, a suitable safety module is used to assess the state of the safety outputs within the safety chain.

Devices suitable for series connection

The series may consist both of devices that are identical to one another (homogeneous series) or that belong to different series (mixed series).

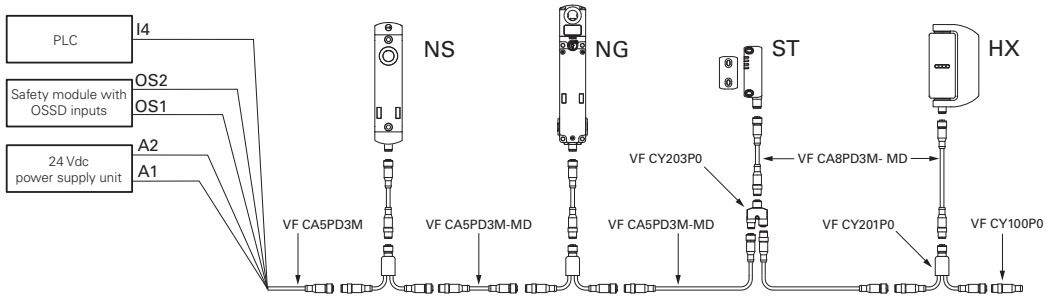
The following Pizzato Elettrica devices may be connected in series using the Y connectors.

- ST series RFID safety sensors: ST ••31•M•, ST ••71•M•.
- NG series RFID safety switches with lock: NG ••••••••-K950, NG ••••••••-K951, NG ••••••••-K952.
- NS series RFID safety switches with lock: NS ••••••Q•.
- HX series safety hinge switches: HX BEE1-••M.

Electrical connection of the chain

Pin	Colour	Connection	
1	Brown	A1	Supply input +24 Vdc
2	White	OS1	Safety output
3	Blue	A2	Supply input 0 V
4	Black	OS2	Safety output
5	Grey	I4	Solenoid activation input

Note: By activating/deactivating input I4, all switches of the NG and NS series in the chain simultaneously block/open all guards. Activation and deactivation of input I4 has no effect on the ST sensors and HX hinges in the chain.



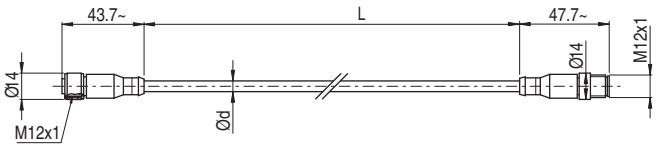
- **Attention!** For proper operation of the devices connected in series via cables or Y connectors, it is necessary to pay particular attention to the voltage drop that occurs in the circuit. Pay particular attention to the currents and cross-sections/lengths of the used cables to ensure that the supply voltage of the components at the end of the series connection remains within the specified limit values during effective operation.

M12 male-female connectors with cable

Features:

- Polyurethane connector body
- Class 6 copper conductors acc. to IEC 60228
- Gold-plated contacts
- Self-locking ring nut
- High flexibility cable with oil resistant PVC sheath suitable to be used in drag chains, acc. to IEC 60332-1-2

Max. operating voltage:	250 Vac / 300 Vdc (5-pole) 30 Vac / 36 Vdc (8-pole)
Max. operating current:	4 A (5-pole), 2 A (8-pole)
Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 2653 (Protect the cables from direct high-pressure and high-temperature jets)
Ambient temperature:	-25°C … +80°C for fixed installation -15°C … +80°C for mobile installation
Wire cross-sections:	0.5 mm² (20 AWG) (5-pole) 0.25 mm² (23 AWG) (8-pole)
Minimum bending radius:	> cable diameter x 15
Tightening torque of the ring:	0.6 … 0.8 Nm



ø d: 6.4 mm for 5-pole
6 mm for 8-pole

Code structure

VF CA5PD3M-MD

No. of poles	
5	5 poles
8	8 poles

Connection type	
M	M12x1

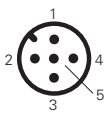
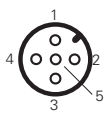
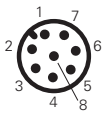
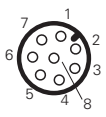
Cable length (L)		No. of poles 5	8
3	3 metres (standard)	•	•
5	5 metres (standard)	•	•
0	10 metres (standard)	•	

Other lengths on request

Cable sheath	
P	PVC

Connector type	
D	straight

Pin assignment

5 poles male	5 poles female
	
8 poles male	**8 poles female**
	

Stock items

VF CA5PD3M-MD
VF CA5PD5M-MD
VF CA5PD0M-MD
VF CA8PD3M-MD
VF CA8PD5M-MD

Attention! For items not in stock the minimum order quantity is 100 pcs.

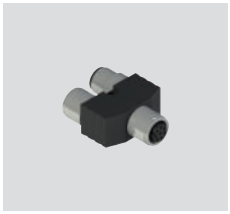
ATTENTION: always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.

All values in the drawings are in mm

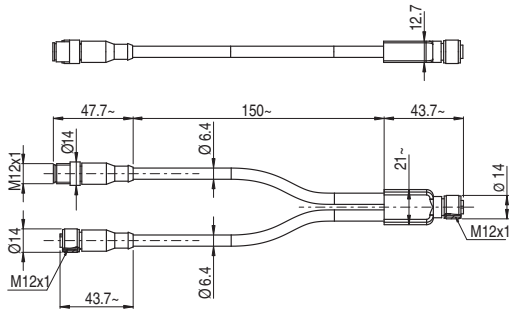
→ The 2D and 3D files are available at **www.pizzato.com**

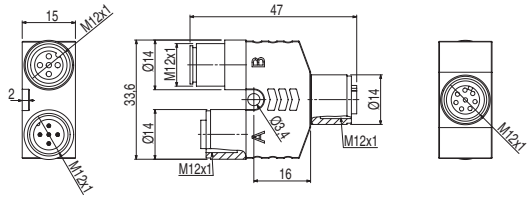
M12 connectors, Y-shaped, for series connections

Article	Description
VF CY201P0	M12 connector, Y-shaped, for series connections with 150 mm cable length



Article	Description
VF CY203P0	M12 connector, Y-shaped, for series connections without cable



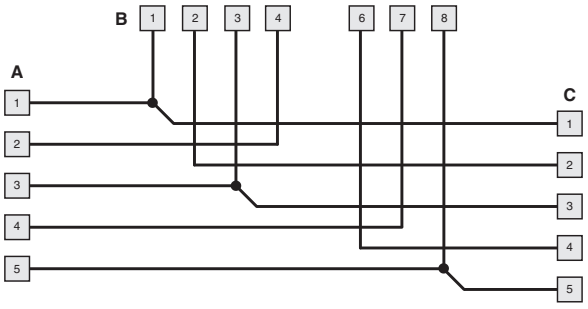


Features:

- Polyurethane connector body
- Gold-plated contacts
- Self-locking ring nut
- Class 6 copper conductors acc. to IEC 60228
- High flexibility cable with oil resistant PVC sheath suitable to be used in drag chains, acc. to IEC 60332-1-2

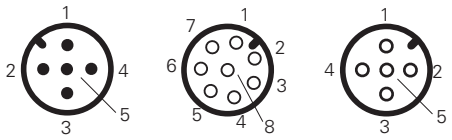
Max. operating voltage:	30 Vac / 36 Vdc
Max. operating current:	4 A (5-pole) 2 A (8-pole)
Protection degree:	IP67 acc. to EN 60529
Ambient temperature:	-25°C … +80°C for fixed installation -15°C … +80°C for mobile installation
Wire cross-sections:	0.5 mm² (20 AWG)
Minimum bending radius:	> cable diameter x 15
Tightening torque of the ring:	0.6 … 0.8 Nm

Internal block diagram, Y-shaped connector



Pin assignment

(A) M12, 5-pole male	(B) M12, 8-pole female	(C) M12, 5-pole female



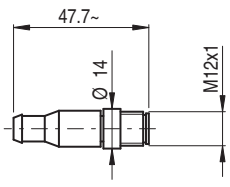
IMPORTANT: When used in safety applications, the Y connectors must be installed in a location that is not directly accessible, so as to avoid shocks or tampering.

M12 terminating plugs for series connections

Features:

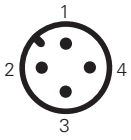
- Polyurethane connector body
- Gold-plated contacts
- Self-locking ring nut

Max. operating voltage:	250 Vac / 300 Vdc
Max. operating current:	4 A
Protection degree:	IP67 acc. to EN 60529
Tightening torque of the ring:	0.6 … 0.8 Nm

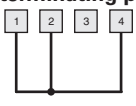


Pin assignment

4-pole male



Internal block diagram of the terminating plug



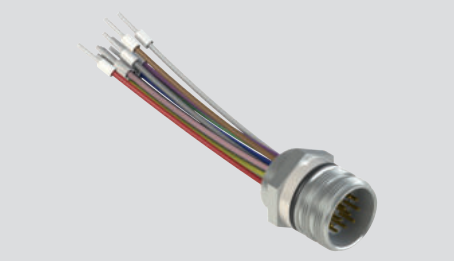
Article	Description
VF CY100P0	M12 terminating plugs for series connections, 4-pole

ATTENTION: always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.

All values in the drawings are in mm

➔ The 2D and 3D files are available at **www.pizzato.com**

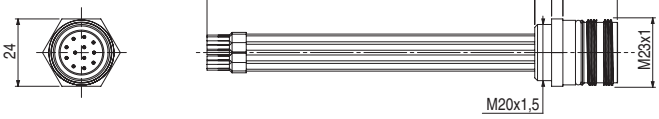
M23 male connectors



Features:

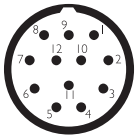
- Threaded connection M20 for installation on switches with M20 cable entry (for example: FG series and NG series)
- Nickel-plated metal connector body
- Gold-plated contacts
- 12-pole or 19-pole versions
- Wires with pre-insulated ferrules
- Directly installable on the device, these ensure quick replacement, reducing machine down time

Max. operating voltage:	250 Vac (12-pole) 100 Vac (19-pole)
Max. operating current:	3 A
Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C … +80°C
Tightening torque:	1 … 1.5 Nm
Wire cross-section:	0.34 mm² (22 AWG)
Contact type:	gold-plated



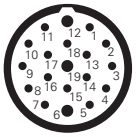
Pin assignment

12 poles



Pin	Colour
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red
9	Black
10	Purple
11	Grey-Pink
12	Red-Blue

19-pole



Pin	Colour
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red
9	Black
10	Purple
11	Grey-Pink
12	Red-Blue
13	White-Green
14	Brown-Green
15	White-Yellow
16	Yellow-Brown
17	White-Grey
18	Grey-Brown
19	White-Pink

Code structure

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

VF CNM12MT-L10

Body material	
M	metal

No. of poles	
12	12 poles
19	19-pole

Wire length (L)	
L10	10 cm
L16	16 cm

Note
For applications with NG series switches, use connectors with L10 wire length.
For applications with FG series switches, use connectors with L16 wire length.

ATTENTION: always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.

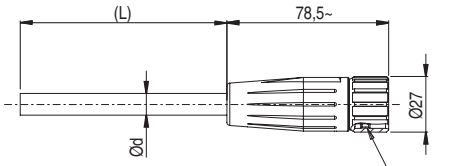
All values in the drawings are in mm

→ The 2D and 3D files are available at **www.pizzato.com**

M23 female connectors with cable

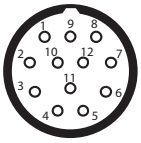
Features:
- Polyurethane connector body
- Class 5 copper conductors acc. to VDE 0295 (12-pole)
- Class 2 copper conductors acc. to VDE 0295 (19-pole)
- Gold-plated contacts
- Self-locking ring nut
- Cable with PVC sheath acc. to IEC 60332-3, CEI 20-22 II e CEI 20-35/1-2 (flame retarding)

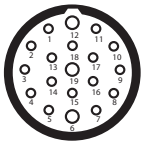
Max. operating voltage:	250 Vac (12-pole) 100 Vac (19-pole)
Max. operating current:	3 A
Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653 (Protect the cables from direct high-pressure and high-temperature jets)
Ambient temperature:	-5°C ... +70°C
Wire cross-sections:	0.5 mm² (20 AWG) (12-pole) 0.34 mm² (22 AWG) (19-pole)
Minimum bending radius:	> cable diameter x 15
Tightening torque of the ring:	1 ... 1.5 Nm



ø d: 9 mm for 12-pole
8.6 mm for 19 poles

Pin assignment





12 poles		19-pole			
Pin	Colour	Pin	Colour	Pin	Colour
1	White	1	White	13	White-Green
2	Brown	2	Brown	14	Brown-Green
3	Green	3	Green	15	White-Yellow
4	Yellow	4	Yellow	16	Yellow-Brown
5	Grey	5	Grey	17	White-Grey
6	Pink	6	Pink	18	Grey-Brown
7	Blue	7	Blue	19	White-Pink
8	Red	8	Red		
9	Black	9	Black		
10	Purple	10	Purple		
11	Grey-Pink	11	Grey-Pink		
12	Red-Blue	12	Red-Blue		

Code structure

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VF CA12PD20S

No. of poles	
12	12 poles
19	19-pole

Cable sheath	
P	PVC

Connector type	
D	straight

Connection type	
S	M23x1

Cable length (L)	
0	10 metres
20	20 metres

Other lengths on request

Stock items

VF CA12PD0S
VF CA12PD20S
VF CA19PD0S
VF CA19PD20S

Attention! For items not in stock the minimum order quantity is 50 pcs.

ATTENTION: always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.

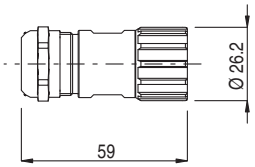
All values in the drawings are in mm

➔ The 2D and 3D files are available at **www.pizzato.com**

Field wireable M23 female connectors

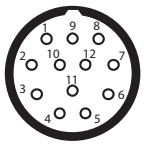
Features:
- Nickel-plated metal connector body
- Gold-plated contacts
- 12-pole or 19-pole versions

Max. operating voltage:	250 Vac (12-pole) 100 Vac (19-pole)
Max. operating current:	8 A
Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-40°C ... +125°C
Tightening torque of the ring:	1 … 1.5 Nm
Pollution degree:	3
Switching cycles:	> 1000

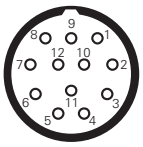


Pin configuration

12 poles

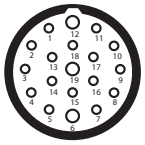


clockwise numbering



counterclockwise numbering

19-pole



clockwise numbering

Article	Description
VF AC2205	Mounting key

Note: Article required for opening and wiring the connector

Code structure

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

VF CBSM12TC07

Connection type	
S	M23x1

Body material	
M	metal

No. of poles	
12	12 poles
19	19-pole

Connector type	
T	clockwise numbering (standard)
D	counterclockwise numbering

Cable diameter	
07	Ø 7 … Ø 12 mm

Pin connection type	
C	crimp connection (standard) 0.34 … 1 mm²
S	solder connection 0.34 … 1 mm²

Note: Use appropriate crimp pliers for crimp connections (e.g., Knipex, article number 97 52 63).

Stock items

VF CBSM12TC07
VF CBSM19TC07
VF CBSM12TS07

ATTENTION: always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.

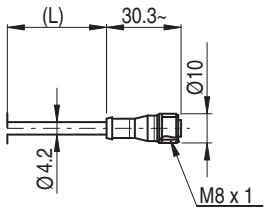
All values in the drawings are in mm

→ The 2D and 3D files are available at **www.pizzato.com**

M8 female connectors with cable

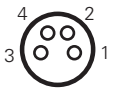
Features:
- Polyurethane connector body
- Class 6 copper conductors acc. to IEC 60228
- Gold-plated contacts
- Self-locking ring nut
- High flexibility cable with oil resistant PVC or PUR sheath suitable to be used in drag chains, acc. to IEC 60332-1-2

Max. operating voltage:	60 Vac / 75 Vdc
Max. operating current:	4 A
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 for fixed installation -15°C … +80°C for mobile installation
Wire cross-sections:	0.25 mm2 (23 AWG)
Minimum bending radius:	> cable diameter x 15
Tightening torque of the ring:	0.3 … 0.5 Nm



Pin assignment

4 poles



Pin	Colour
1	Brown
2	White
3	Blue
4	Black

Code structure

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

VF CA4PD3K

No. of poles	
4	4 poles

Cable sheath	
P	PVC (standard)
U	PUR

Connector type	
D	straight

Connection type	
K	M8x1

Cable length (L)	
1	1 metre
2	2 metres
3	3 metres (standard)
4	4 metres
5	5 metres (standard)
...	
0	10 metres

Other lengths on request

Stock items

VF CA4PD3K
VF CA4PD5K

Attention!
For items not in stock the minimum order quantity is 100 pcs.

ATTENTION: always disconnect the power supply before removing the connector. The connector is not suitable for separation of electrical loads.

All values in the drawings are in mm

➔ The 2D and 3D files are available at **www.pizzato.com**

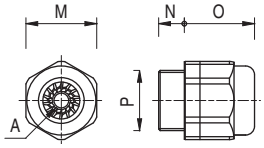
Strain relief cable glands

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.

Features:

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	⬡M	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 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
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

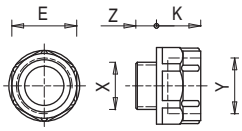
Thread adapters

Packs of **100 pcs.**

Thread adapters make it possible to fulfil requests for switches with a different thread to those generally found in stock. This means it is possible to offer customers a single product type with various threaded connections, while only having to stock the product itself and many kinds of adapters.

Features:

Body material:	glass fibre reinforced technopolymer
Tightening torque:	3 … 4 Nm



Article	Description	X	Y	Z	K	⬡E
VF ADPG13-PG11	Adapter from PG 13.5 to PG 11	PG 13.5	PG 11	9	12	22
VF ADPG13-M20	Adapter from PG 13.5 to M20x1.5	PG 13.5	M20x1.5	9	14	24
VF ADPG13-1/2NPT	Adapter from PG 13.5 to 1/2 NPT	PG 13.5	1/2 NPT	9	14	24
VF ADPG11-1/2NPT	Adapter from PG 11 to 1/2 NPT	PG 11	1/2 NPT	7	14	24
VF ADPG11-PG13	Adapter from PG 11 to PG 13.5	PG 11	PG 13.5	7	14	24
VF ADM20-1/2NPT	Adapter from M20 x 1.5 to 1/2 NPT	M20 x 1.5	1/2 NPT	9	14	24

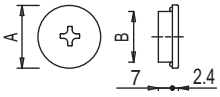
All values in the drawings are in mm

→ The 2D and 3D files are available at **www.pizzato.com**

Protection caps

Packs of **10 pcs.**

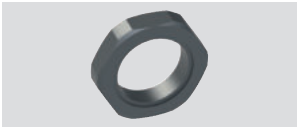
Features:
Body material: technopolymer, self-extinguishing
Protection degree: IP67 acc. to EN 60529
IP69K acc. to ISO 20653
Tightening torque: 1.2 … 1.6 Nm
Cross-recessed screw: PH3



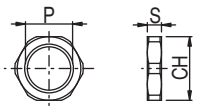
Article	Description	A	B
VF PTM20	Protection cap M20x1.5	24	M20x1.5
VF PTG13.5	Protection cap PG13.5	24	PG 13.5

Threaded nuts

Packs of **10 pcs.**



Features:
Tightening torque: 1.2 … 2 Nm



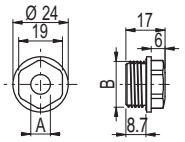
	Article	Description	S	CH	P
Plastic	VF DFPM25	M25x1.5 threaded technopolymer nut	6	32	M25x1.5
	VF DFPM20	M20x1.5 threaded technopolymer nut	6	27	M20x1.5
	VF DFPM16	M16x1.5 threaded technopolymer nut	5	22	M16x1.5
	VF DFPP13	PG13.5 threaded technopolymer nut	6	27	PG 13.5
Metal	VF DFMM20	M20x1.5 threaded nut in nickel-plated brass	3	23	M20x1.5

Chock plugs

Packs of **100 pcs.**

Features:
Body material: technopolymer
Protection degree: IP54 acc. to EN 60529
Tightening torque: 0.8 … 1 Nm

Notes: Use a socket wrench for tightening.



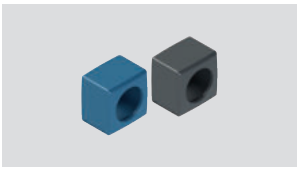
Article	Description	A	B
VF PFM20C8N	M20x1.5 chock plug for cables from Ø 8…Ø 12 mm	7.5	M20x1.5
VF PFM20C4N	M20x1.5 chock plug for cables from Ø 4…Ø 8 mm	3.5	M20x1.5

All values in the drawings are in mm

➔ The 2D and 3D files are available at **www.pizzato.com**

Tampering protection for M12 connectors

Packs of **10 pcs.**



Features:

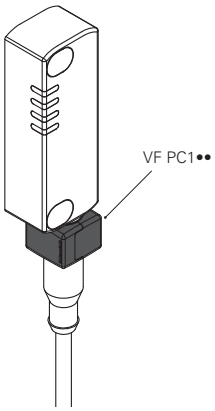
These tampering protections are composed of two identical snap-on shells. They are applied to the device connectors, thereby making them inaccessible. The shells can only be removed by breaking them. Thus, any attempt to tamper with them will be immediately evident.

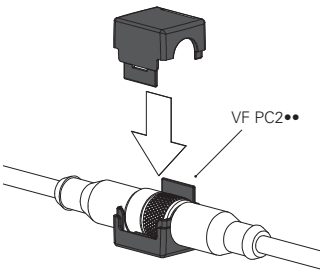
The protection can be installed quickly and easily by pressing the two shells lightly into place.

The protections are suitable for all devices with an M12 connector (e.g. NS, ST, SR series) but they can also be used for junctions between cables with male - female connectors.

A version made of detectable plastic is available for the food industry, and it can easily be detected during the process using common optical vision technologies, X-rays or metal detectors.

Installation:





Article	Description	Colour / material
VF PC1A9	Tamper-proof protection for device-side connector	Grey technopolymer
VF PC2A9	Tamper-proof protection for male - female connector	Grey technopolymer
VF PC1B6	Tamper-proof protection for device-side connector	Blue detectable technopolymer
VF PC2B6	Tamper-proof protection for male - female connector	Blue detectable technopolymer

All values in the drawings are in mm

→ The 2D and 3D files are available at **www.pizzato.com**

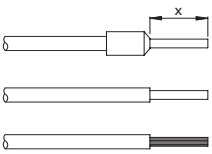
LED signalling lights

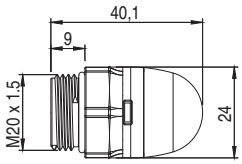
Packs of **5 pcs.**

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 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, to signal, from a distance, whether the switch has been actuated; whether the guard has closed correctly; or whether the guard is locked or unlocked.
The inner part can rotate in such a way that it can be wired and screwed on the switch without any risk of twisting the wires.

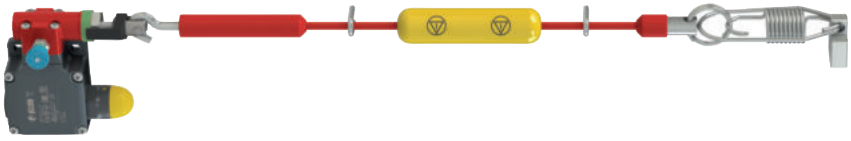
Features:

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653
Ambient temperature:	-25°C … +70°C
Operating voltage U_n:	24 Vac/dc (10 mA) 120 Vac (20 mA) 230 Vac (20 mA)
Tolerance on the supply voltages:	±15% of U_n
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 mm² (1 x AWG 24) max. 1 x 1.5 mm² (1 x AWG 16)
Wire cross-section with pre-insulated wire-end sleeve:	min. 1 x 0.34 mm² (1 x AWG 24) max. 1 x 0.75 mm² (1 x AWG 18)
Tightening torque.	1.2 … 2 Nm
Wire stripping length (x):	min.: 8 mm max.: 12 mm

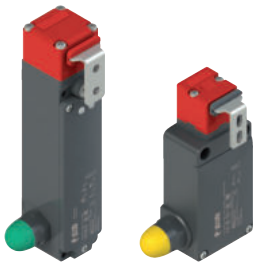




Application examples



Status indicator for safety rope switches



Indication of unlocked door

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	
1	24 Vac/dc
3	120 Vac
4	230 Vac

Type of light source	
A	standard LED with continuous light

Body design	
A	Total height 40 mm, spherical lens, threading M20x1.5mm

Connection type	
P	PUSH-IN terminal strip

Lens colour	
2	White
3	Red
4	Green
5	Yellow

Stock items

- VF SL1A3PA1
- VF SL1A5PA1

All values in the drawings are in mm

➔ The 2D and 3D files are available at **www.pizzato.com**

Fixing plates

Metal fixing plate, for fixing rope switches on the ceiling.
The plate is provided with bore holes for fasting switches of the FD, FL, FC, FP, FR, FM, FZ, FX, FK series. It is supplied without screws.

Article	Description
VF SFP2	Ceiling fixing plate

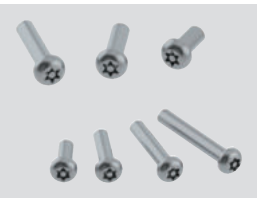
Fixing plates

Fixing plate (complete with fastening screws) provided with long slots for adjusting the operating point.
Each plate is provided with two pairs of mounting holes, one for standard switches and one for switches with reset device. The actuator thus always has the same actuating point.

Article	Description
VF SFP1	Fixing plate (FR series)
VF SFP3	Fixing plate (FX series)

Torx safety screws

Packs of **10 pcs.**



Pan head screws with Torx fitting and pin, stainless steel.
Use a thread locker where required for applications acc. to. EN ISO 14119.

Article	Description
VF VAM4X10BX-X	M4x10 screw, with Torx T20 fitting, AISI 304
VF VAM4X15BX-X	M4x15 screw, with Torx T20 fitting, AISI 304
VF VAM4X20BX-X	M4x20 screw, with Torx T20 fitting, AISI 304
VF VAM4X25BX-X	M4x25 screw, with Torx T20 fitting, AISI 304
VF VAM4X30BX-X	M4x30 screw, with Torx T20 fitting, AISI 304
VF VAM5X10BX-X	M5x10 screw, with Torx T25 fitting, AISI 304
VF VAM5X15BX-X	M5x15 screw, with Torx T25 fitting, AISI 304
VF VAM5X20BX-X	M5x20 screw, with Torx T25 fitting, AISI 304
VF VAM5X25BX-X	M5x25 screw, with Torx T25 fitting, AISI 304
VF VAM5X35BX-X	M5x35 screw, with Torx T25 fitting, AISI 304
VF VAM5X45BX-X	M5x45 screw, with Torx T25 fitting, AISI 304

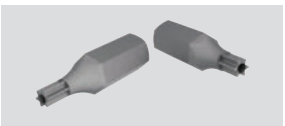
OneWay safety screws

Packs of **10 pcs.**

Pan head screws with OneWay fitting in stainless steel.
This screw type cannot be removed or tampered with using common tools. Ideal for fixing safety device actuators in accordance with EN ISO 14119.

Article	Description
VF VAM4X10BW-X	M4x10 screw, with OneWay fitting, AISI 304
VF VAM4X15BW-X	M4x15 screw, with OneWay fitting, AISI 304
VF VAM4X20BW-X	M4x20 screw, with OneWay fitting, AISI 304
VF VAM4X25BW-X	M4x25 screw, with OneWay fitting, AISI 304
VF VAM5X10BW-X	M5x10 screw, with OneWay fitting, AISI 304
VF VAM5X15BW-X	M5x15 screw, with OneWay fitting, AISI 304
VF VAM5X20BW-X	M5x20 screw, with OneWay fitting, AISI 304
VF VAM5X25BW-X	M5x25 screw, with OneWay fitting, AISI 304

Bits for Torx safety screws

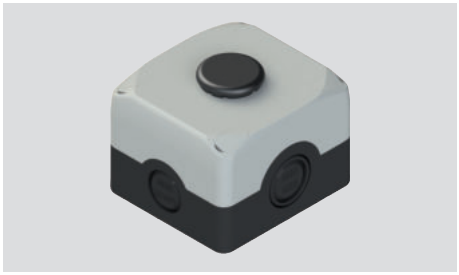


Bits for Torx safety screws with pin, with ¼" hexagonal connection.

Article	Description
VF VAIT1T20	Bits for M4 screws with Torx T20 fitting
VF VAIT1T25	Bits for M5 screws with Torx T25 fitting
VF VAIT1T30	Bits for M6 screws with Torx T30 fitting

→ The 2D and 3D files are available at **www.pizzato.com**

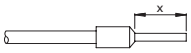
Junction box for series connection of up to 4 devices



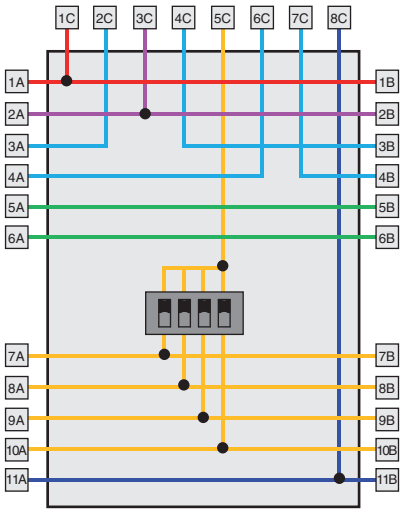
This accessory allows easy and precise series connection of up to 4 devices. Thanks to the numbered terminals and to the internal circuit, it is sufficient to connect the conductors in the slots provided with the practical and fast PUSH-IN spring connections.
Thanks to the four internal microswitches, it is possible to easily and immediately direct the device signalling outputs (open or closed, locked or unlocked) to one of the four available auxiliary channels and then manage the information independently for each channel through a PLC.

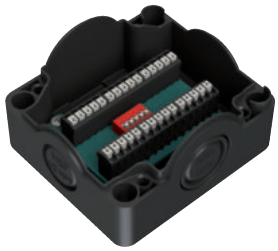
Features:

Material:	Self-extinguishing shock-proof polycarbonate with double insulation, UV-resistant and glass fibre reinforced
Material of the screws:	Stainless steel
Protection degree:	IP67 acc. to EN 60529, IP69K acc. to ISO 20653, with cable gland of equal or higher protection degree
Conduit entries:	2x M20 - 1/2 NPT knock-out side entries 2x M20 - 1/2 NPT - M25 knock-out side entries 2x M16 knock-out base entries
Ambient temperature:	-40°C … +80°C
Tightening torque of the cover screws:	1 … 1.4 Nm
Connection system:	PUSH-IN spring type
Cross-section of rigid/flexible wires w. wire-end sleeve:	min. 1 x 0.34 mm² (1 x AWG 24) max. 1 x 1.5 mm² (1 x AWG 16)
Wire cross-section with pre-insulated wire-end sleeve:	min. 1 x 0.34 mm² (1 x AWG 24) max. 1 x 0.75 mm² (1 x AWG 18)
Wire stripping length (x):	min.: 8 mm max.: 12 mm



Pin assignment



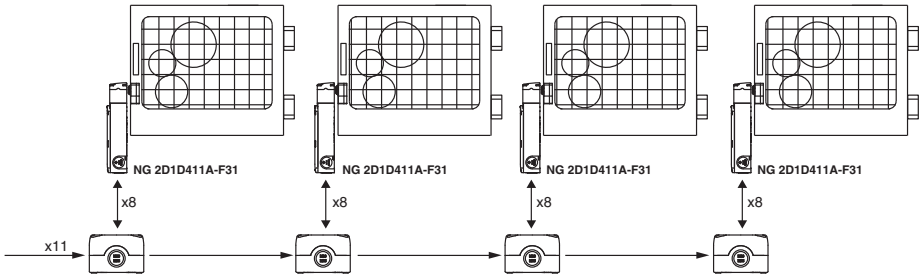


Article	Description
VF CY302P0	Junction box for series connection of up to 4 devices

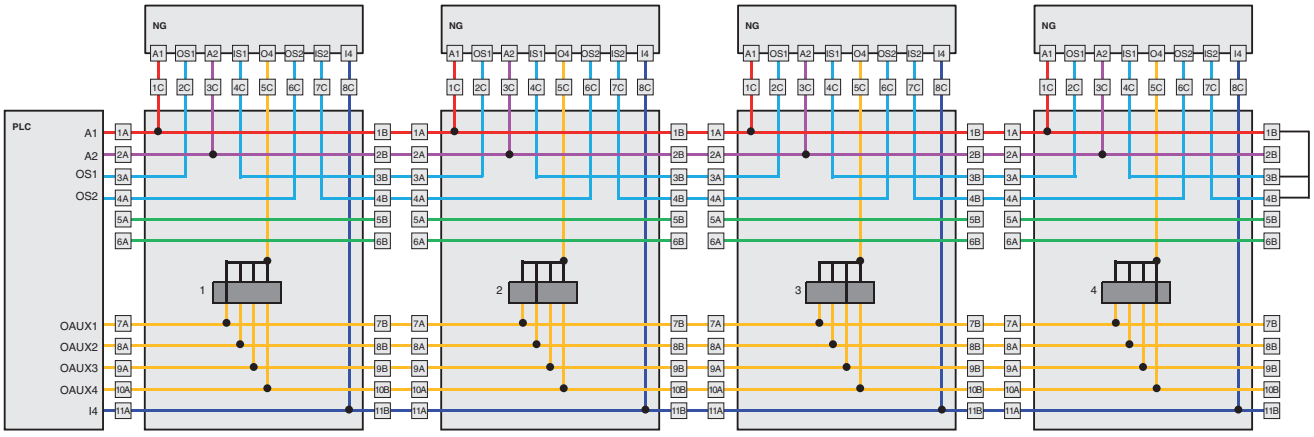
Terminal box	Connection	
1A / 1B	A1	Supply input +24 Vdc
2A / 2B	A2	Supply input 0 V
3A / 3B	OS1 / IS1	Safety output / safety input
4A / 4B	OS2 / IS2	Safety output / safety input
5A / 5B		Auxiliary connection
6A / 6B		Auxiliary connection
7A / 7B	OAUX1	Auxiliary output Oaux1
8A / 8B	OAUX2	Auxiliary output Oaux2
9A / 9B	OAUX3	Auxiliary output Oaux3
10A / 10B	OAUX4	Auxiliary output Oaux4
11A / 11B	I4	Solenoid activation input

Terminal box	Connection	
1C	A1	Supply input +24 Vdc
2C	OS1	Safety output
3C	A2	Supply input 0 V
4C	IS1	Safety input
5C	O3	Signalling output, actuator inserted
	O4	Signalling output, actuator inserted and locked
6C	OS2	Safety output
7C	IS2	Safety input
8C	I4	Solenoid activation input

Example of series connection of 4 NG series switches



Wiring diagram



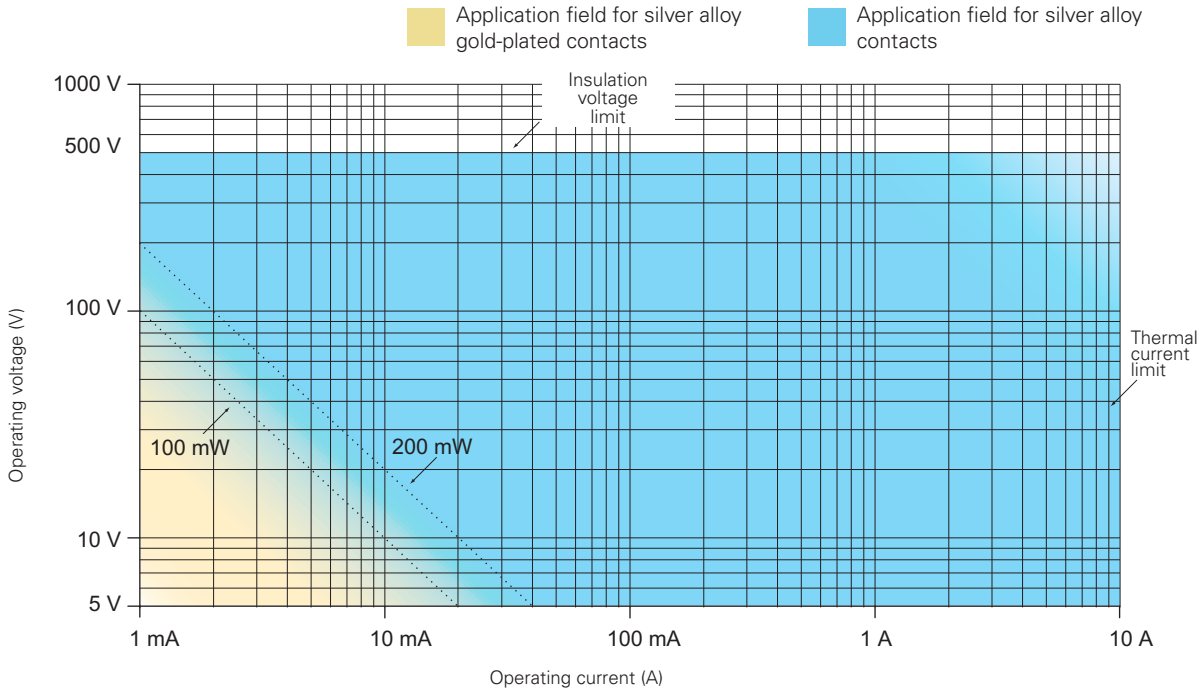
Minimum operating voltages and currents for reliable switching

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 end electric parameters that influence this value. For example, in laboratory environment a good twin bridge electric contact is able to switch loads in the µW 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 uses 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.



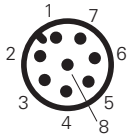
100 mW Recommended limit for general applications with snap action contact blocks with silver alloy contacts.

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

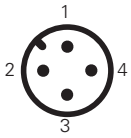
Contact block 2
1NO-1NC+1NO-1NC



M12 connector, 8-pole

Contacts	Pin no.
NO	3-4
NC	5-6
NC	7-8
NO	1-2

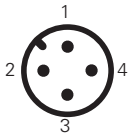
Contact block 5
1NO+1NC



M12 connector, 4-pole

Contacts	Pin no.
NC	1-2
NO	3-4

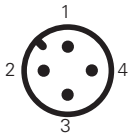
Contact block 6
1NO+1NC



M12 connector, 4-pole

Contacts	Pin no.
NC	1-2
NO	3-4

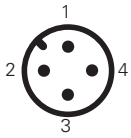
Contact block 7
1NO+1NC



M12 connector, 4-pole

Contacts	Pin no.
NC	1-2
NO	3-4

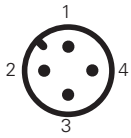
Contact block 9
2NC



M12 connector, 4-pole

Contacts	Pin no.
NC	1-2
NC	3-4

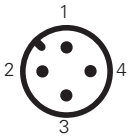
Contact block 10
2NO



M12 connector, 4-pole

Contacts	Pin no.
NO	1-2
NO	3-4

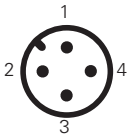
Contact block 11
2NC



M12 connector, 4-pole

Contacts	Pin no.
NC	1-2
NC	3-4

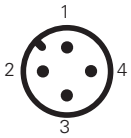
Contact block 12
2NO



M12 connector, 4-pole

Contacts	Pin no.
NO	1-2
NO	3-4

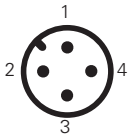
Contact block 13
2NC



M12 connector, 4-pole

Contacts	Pin no.
NC (1°)	1-2
NC (2°)	3-4

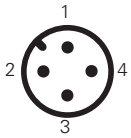
Contact block 14
2NC



M12 connector, 4-pole

Contacts	Pin no.
NC (1°)	1-2
NC (2°)	3-4

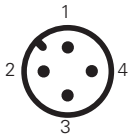
Contact block 15
2NO



M12 connector, 4-pole

Contacts	Pin no.
NO (1°)	1-2
NO (2°)	3-4

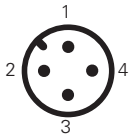
Contact block 16
2NC



M12 connector, 4-pole

Contacts	Pin no.
NC, lever to the right	1-2
NC, lever to the left	3-4

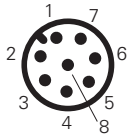
Contact block 18
1NO+1NC



M12 connector, 4-pole

Contacts	Pin no.
NC	1-2
NO	3-4

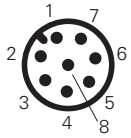
Contact block 20
2NC+1NO



M12 connector, 8-pole

Contacts	Pin no.
NC	3-4
NC	5-6
NO	7-8

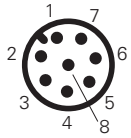
Contact block 21
3NC



M12 connector, 8-pole

Contacts	Pin no.
NC	3-4
NC	5-6
NC	7-8

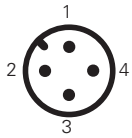
Contact block 22
1NC+2NO



M12 connector, 8-pole

Contacts	Pin no.
NC	3-4
NO	5-6
NO	7-8

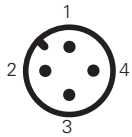
Contact block 33
1NC+1NO



M12 connector, 4-pole

Contacts	Pin no.
NC	1-2
NO	3-4

Contact block 34
2NC



M12 connector, 4-pole

Contacts	Pin no.
NC	1-2
NC	3-4

Definitions according to the EN 60947-1 and EN 60947-5-1 standards

Control switches
Devices or operating mechanisms 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 Ie
This current depends on the rated operating voltage, the rated frequency, the utilization category and the type of protective enclosure, if present.

Thermal current Ith
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 Ie 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 Ue
Voltage which, combined with the rated operational current Ie, determinates the application of the equipment and the referred utilization categories.

Rated insulation voltage Ui
Reference voltage for the dielectric test voltage and the creepage distances along surfaces.

Rated impulse withstand voltage Uimp
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.

ECOLAB mark

ECOLAB is one of the world's leading providers of technologies and services for hygiene in food processing. ECOLAB CERTIFIES THE COMPATIBILITY OF TESTED ELECTRICAL DEVICES IN ITS OWN LABORATORIES, USING DISINFECTANTS AND CLEANING AGENTS USED IN THE AREA OF FOOD PROCESSING WORLDWIDE.

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 ISO 13851: Safety of machinery. Two-hand control devices. Principles for design and choice.
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 apparatus 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.
EN IEC 63000: Technical documentation for the evaluation of electrical and electronic products in relation to the restriction of hazardous substances.
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

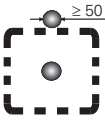
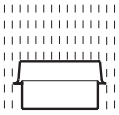
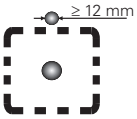
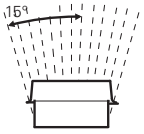
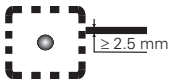
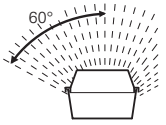
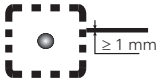
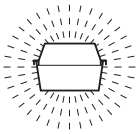
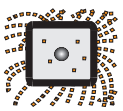
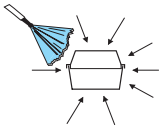
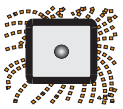
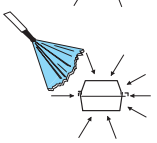
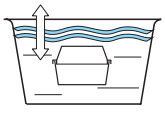
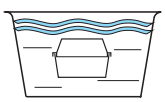
2014/35/EU	Directive on low-voltage switchgear and controlgear
2006/42/EC	Machinery Directive
2014/30/EU	Directive on electromagnetic compatibility
2014/34/EU	ATEX Directive
2011/65/UE	RoHS Directive

Regulatory Organisations

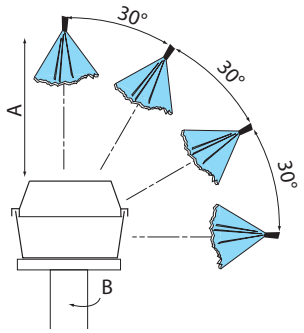
CEI	Comitato Elettrotecnico Italiano (IT)	**NF**	Normes Françaises (FR)
CSA	Canadian Standard Association (CAN)	**VDE**	Verband Deutscher Elektrotechniker (DE)
CENELEC	European Committee for Electrotechnical Standardisation	**UNI**	Ente Nazionale Italiano di Unificazione (IT)
CEN	European Committee for Standardisation	**UL**	Underwriter's Laboratories (USA)
IEC	International Electrotechnical Commission	**TÜV**	Technischer Überwachungs-Verein (DE)

Protection degree of housings for electrical material according to EN 60529

The following 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
0		Not protected	Not protected	**0**		Not protected
1		Protected against solid objects greater than 50 mm	Against access to hazardous parts with the back of a hand (Ø 50 mm)	**1**		Protected against vertically falling water drops
2		Protected against solid objects greater than 12 mm	Against access to hazardous parts with a finger (Ø 12 mm)	**2**		Protected against water drops falling at max. 15° angle
3		Protected against solid objects greater than 2.5 mm	Against access to hazardous parts with a tool (Ø 2.5 mm)	**3**		Protected against rain drops falling at max. 60° angle
4		Protected against solid objects greater than 1 mm	Against access to hazardous parts with a wire (Ø 1 mm)	**4**		Protected against splash water from any direction
5		Protected against dust	Against access to hazardous parts with a wire (Ø 1 mm)	**5**		Protected against water jets from any direction
6		Totally protected against dust	Against access to hazardous parts with a wire (Ø 1 mm)	**6**		Protected against powerful water jets from any direction (e.g. waves)
				7		Protected against temporary water immersion (30 minutes at one-meter depth)
				8		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 hosing. 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		Direct current use	
Utilization category	Intended use	Utilization category	Intended use
AC12	Control of resistive loads and solid state loads with insulation by optocouplers.	DC12	Control of resistive loads and solid state loads with insulation by optocouplers.
AC13	Control of solid state loads with transformer isolation.	DC13	Control of electromagnetic loads without economy resistors in circuit.
AC14	Control of electromagnetic loads, power ≤ 72 VA.	DC14	Control of electromagnetic loads with economy resistors in circuit.
AC15	Control of electromagnetic loads, power ≥ 72 VA.		

Changed article codes

Legend:

CC 01AAB00AB → ES AC31003

The codes in grey indicate obsolete items no longer in production, replaced with new items indicated beside them.

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
EB AC211016 →	ES AC31016
EB AC211017 →	ES AC31017
EB AC211018 →	ES AC31018
EB AC211019 →	ES AC31019
EB AC211020 →	ES AC31020
EB AC211021 →	ES AC31021
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 (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 billing amount:
Unless specifically agreed, the minimum billing amount is EUR 200 net (VAT excluded). For invoices of less than 200 Euro, a fee of 10 Euro will be charged if delivery is within the EU, or 30 Euro if delivery is outside the EU.
Invoices are issued weekly.

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. All terms and conditions stated in the order confirmation shall be deemed to be accepted without reservation after 2 working days from the date of the confirmation. What is stated in the customer's purchase order is not binding.

Supply:
The supply includes only what is expressly stated in the order confirmation. As per article 1461 of the Italian 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.
A list of items in stock can be found at www.pizzato.com

Packaging:
Packaging is free. For more than six boxes pallets can be necessary for the transport.

Shipment:
Unless expressly agreed between the parties, Pizzato Elettrica ships goods X works, in accordance with Incoterms® 2020 (published by the ICC). In the event that the customer requests transport against payment on the invoice, all parties agree that the goods always travel at the risk and peril of the customer. 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.

Warranty:
The warranty has a validity of 12 months starting from the shipping 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 engages itself to repair and/or replace parts or the complete product for those elements that present evident manufacturing defects, provided that they are still covered by warranty. Pizzato Elettrica is 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 reserves 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.

Returns:
Any products returned for any reason will not be accepted unless they are previously APPROVED and AUTHORISED in writing.
Otherwise, Pizzato Elettrica reserves 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 shipped no more than 12 months ago. The returned goods and the relative packaging must be intact and free from damage. The customer shall bear the packaging costs for returns.

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.it

Notes

Notes

Notes

Notes

Notes

General Catalogue
Detection

General Catalogue
HMI

General Catalogue
Safety

General Catalogue
Lift

Website
www.pizzato.com

PASSION FOR QUALITY

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E-mail: info@pizzato.com
Website: www.pizzato.com

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