

2023-2024 General Catalogue HMI



Company Profile



▶ 5

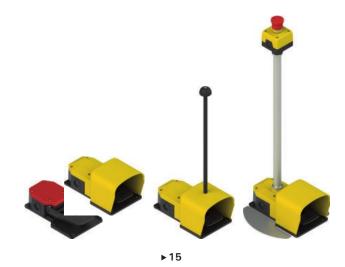
Single foot switches - PA-PX series



▶13

Modular foot switches - PC series

New products





E2 PU-PL series single buttons



▶33

E2 PD-PT series double and triple buttons



E2 PQ series quadruple buttons



▶47

E2 PE series emergency stop buttons



▶51

E2 SE-SL series selector switches



▶57

E2 SC series key selector switches



▶69

10 E2 MA series joysticks



▶77

E2 IL series indicator lights



▶83

E2 CP-CF series double contact blocks

E2 CP-CF series single contact blocks





E2 LP-LF series LED units



E2 series RJ45 and USB sockets



▶111

Protected contact blocks - FR, FK, FX series



E6 DM series potentiometers



▶115

18 Monolithic indicator lights - E6 IL series



▶ 119

19 Buzzers series E6 IS



▶123

20 ES series housings



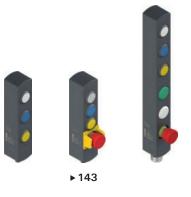
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21 EA series housings



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22 BN series control device units



23 VE DL series luminous discs



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Utilization requirements for EROUND line Utilization requirements for PA, PX, PC series foot switches

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MORE THAN 300 PROFESSIONALS WITH PASSION

It is people, with their professionalism and dedication that make a great company. This profound con viction 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.

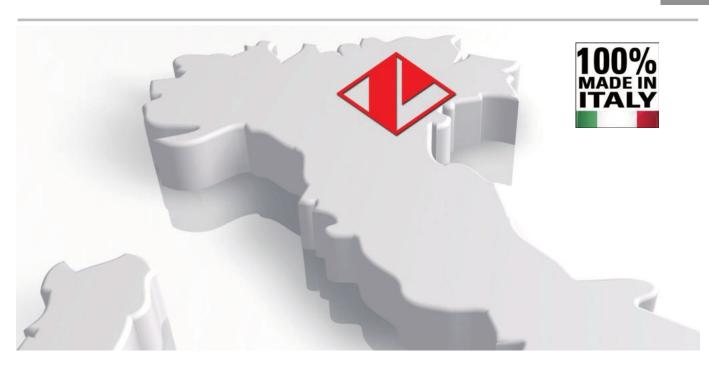
The various strategic sectors of the business are headed by professionals with significant experience and expertise. Many of these people have developed over years with the company.



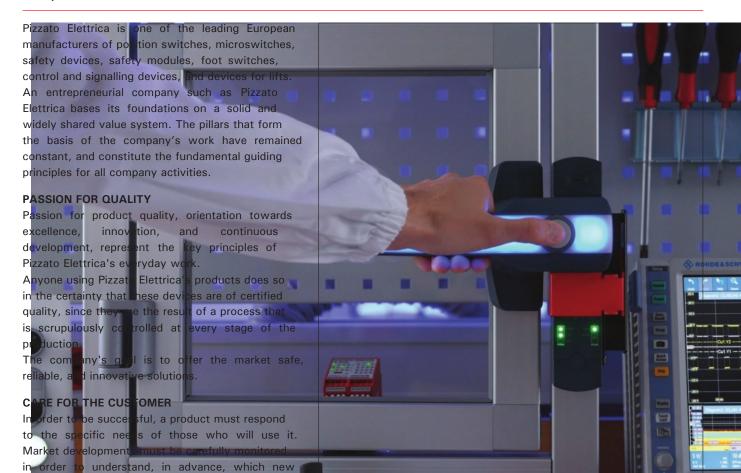


Others are experts in their specific field and have integrated personal experience with the Pizzato Elettrica ethos to extend the company's capability and knowledge.

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



is why Pizzato Elettrica has always cultivated close synergies with the companies that have chosen it

lications will prove themselves truly useful. This

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 2014 A new production facility (P8) dedicated to switches and automatic position switches is founded. machines is opened, spanning a surface area of 6000 m².
- 1988 The company becomes a limited liability partnership, al 2016 The new NS series of safety switches with electromagnets 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, Pizza2017 The company continues to expand and achieves the quality 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.
- 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 The new factory (P6) is opened, a modern building of 28,000 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 2021 Pizzato Elettrica India Ltd. and Pizzato Korea Ltd., commercial signalling devices. This product range accompanies position switches and safety devices, thus offering complete solutions to customers.
- 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 f first subsidiary of Pizzato Elettrica, Pizzato Deutschland GmbH, in Germany.

- 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.
- 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.

- 1998 Construction of the third plant (P4), housing the assembly 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.
 - 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.
 - branches of Pizzato Elettrica, are established in India and South Korea, respectively.
- 2012 Introduction of Gemnis Studio, the first software produced by 2022 Foundation of Pizzato Academy, Pizzato Elettrica's new training site for getting better acquainted with our products and following the constant regulatory developments in the sector.
 - 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.



100 MILLION PARTS SOLD WORLDWIDE

Pizzato Elettrica's product catalogue contains more than 10,000 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, Elettrica offers a lot of accessories purposely designed not only medicinal, naval, etc.

In order to be used in a such wide variety of sectors and countries, installation on machineries. 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 antitampering 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 grip 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 human-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 cuttingedge on the market.

In order to satisfy its customers' needs and requests, Pizzato to complete its wide range of products, but also to help device



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MILLIONS OF CERTIFIED PRODUCT CODES

A simple brand isn't enough: the company is aiming for the Pizzatotechnical, purchasing and commercial department activities, Elettrica brand to be widely recognised as a synonym for absolute manufacturing operations assessments, final pre-shipping product quality and certainty. tests and checks, equipment reviews and the management of the metrological lab.

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 seven accredited external bodies: IMQ, UL, CCC, TÜV SÜD, EAC, BSI, BV. These bodies lay out high technical and qualitative standards for the company to achieve and improved and reliable products. maintain, verified yearly with several inspections: these are performed, without prior notice, by qualified inspectors, who extract • CERTIFICATION OF COMPANY QUALITY SYSTEMS. Pizzato 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.
- UKCA MARK. All Pizzato Elettrica products bear the UKCA marking in conformity with the United Kingdom directives in force.
- ISO 9001 CERTIFICATION. The company's production system plants and their production and managerial activities: entry checks,tification organs in as many countries.

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

- 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 is compliant with the international ISO 9001 standard, in its most IQNet, the biggest international Quality Systems and Company recent 2015 revision. The certification covers all of the company's Management certification network, which is adhered to by 25 cer-







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.



RJ45 sockets, category 6

- The new RJ45 sockets designed in accordance with cat. 6 permit speeds of up to 10 Gb/s.
- Degree of protection IP67 through integrated protection cap.
- Available in two connection versions: socket-socket with integrated RJ45 socket on the front and rear side or socket-cable with integrated RJ45 socket on the front side and cable with connector on the rear side.
- Available in version with shielding to protect against electromagnetic interference.

▶ 113



ES series housings with modular cover 72x80 mm

- The new covers offer the option of using two devices within the compact 72 x 80 mm housing.
- New cover configurations available, including a version with integrated protection guard that
 protects the emergency stop button from shocks.
- Protection degrees IP67 and IP69K.

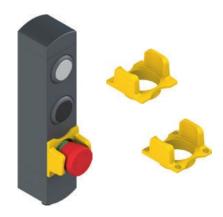
▶ 127



BN series control device units

- The BN series of control device units has been further expanded with the new versions with 1 and 2 devices: 1 to 8 devices now fit into the modular technopolymer housings.
- New laser-markable lenses are available: the desired markings are permanently applied directly to the lenses by means of lasers.
- Wide range of available control devices.
- Rotatable modules for the greatest installation flexibility.
- Configurable with various types of connection output.
- Min. dimensions 40x40 mm.

▶ 143



Protective cover for emergency stop buttons for the BN series

- \bullet Protective cover that absorbs undesired shocks on the emergency stop button.
- Suitable for all BN versions with emergency stop button.
- Laser-markable in compliance with EN ISO 13850.

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PUSH-IN spring-operated connection

EROUND line

- Fast, simple conductor insertion, no tooling required.
- Quick release, with the grey button provided to release the wire.
- For 0.25 mm to 1.5 mm 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.

▶ 90



Connectors M8, M12 with new fixing ring, M23

- Large selection of connectors for cables and switch panels: optimal solution for use in combination with Pizzato switches.
- M12 connectors with new fixing ring with grooved circular and hexagonal attachment for tightening with torque-controlled tools. Available in male and female versions.
- Gold-plated contacts for increased reliability.
- Anti-vibration self-locking ring nuts.
- Highly flexible cables, suitable for use in drag chains, with oil-resistant PVC or PUR sheath acc. to IEC 60332-1-2.

▶ 175



New tamper-proof protections for M12 connectors, VF PC series

- New version ensuring additional protection against tampering with the 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.

▶ 189



UKCA declaration of conformity

- Following the withdrawal of the United Kingdom from the European Union, the UKCA mark (UK Conformity Assessment) for products that are placed on the market in Great Britain must be used instead of the European CE marking. For products that previously required a CE marking, the new UKCA mark for Great Britain (England, Scotland and Wales), in effect since 1 January 2021, is required.
- At the time of printing this catalogue, the British government specified 1 January 2025 as the date from which the UKCA mark will be mandatory for products that are placed on the market in Great Britain; the UKCA mark can also be used prior to this date.
- Pizzato Elettrica has already started to update the mark and will mark its own products with the newly required mark within the time frame specified in the last legislative changes.

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

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

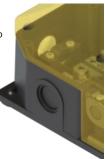
N 008



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 treadproof. 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 of the AISI 300 series. All the

screws, springs and external metal sliding pivots are made of stainless steel. Ideal for applications used in presence of corrosive elemen such as in the food and pharmaceutical sectors.

Contact blocks



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.

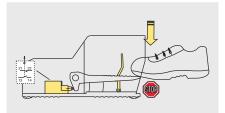
Gold-plated contacts

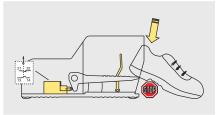


The contact blocks of these devices can be supplied gold-plated upon request. Ideal for applications with low voltages or currents; it ensures increased contact reliability. Available in two thicknesses (1 or 2.5 microns), it adapts perfectly to the various fields of application, ensuring a long endurance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

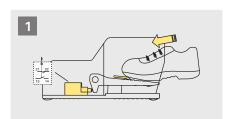
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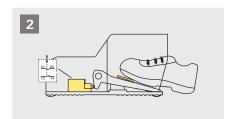
Safety lever





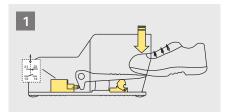
The safety lever prevents the lowering of the pedal actuator in case the foot is not fully inserted into the pedal. This prevents the accidental activation of the pedal.



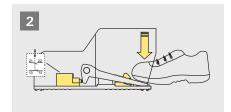


Only if the foot is completely inserted it is possible to lower the safety lever and push down the pedal actuator.

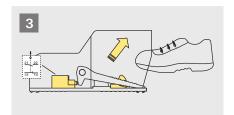
Lock of the pedal actuator



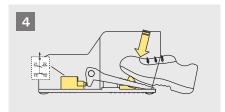
Insertion of the foot into the pedal.



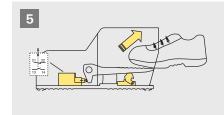
Pushing down the pedal actuator, the contacts switch and the locking device locks the actuator.



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

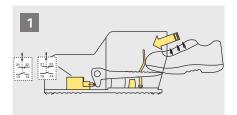


To unlock the pedal actuator push on the locking device.

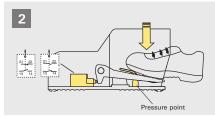


Removing the foot from the foot switch, the pedal actuator and the contacts return to their initial positions.

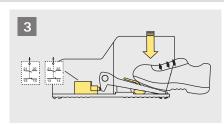
2-stage actuating force



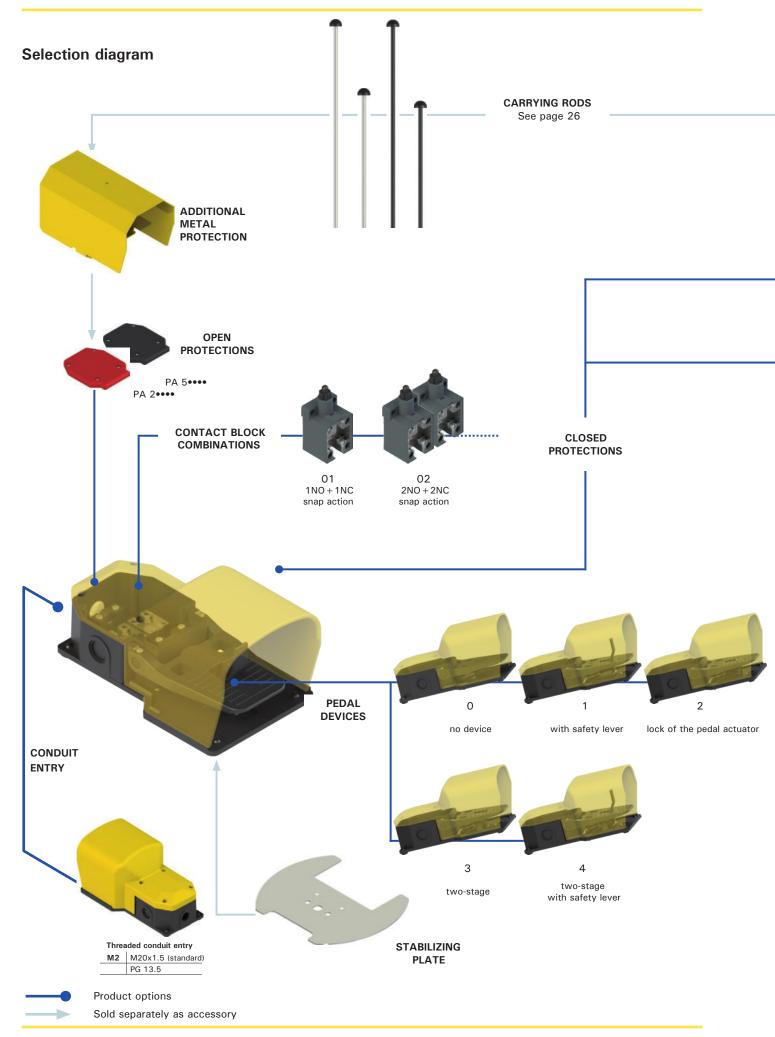
PX pedal with two shifted, snap action contact blocks (2x 1NO+1NC), 2-step actuation force and safety lever.

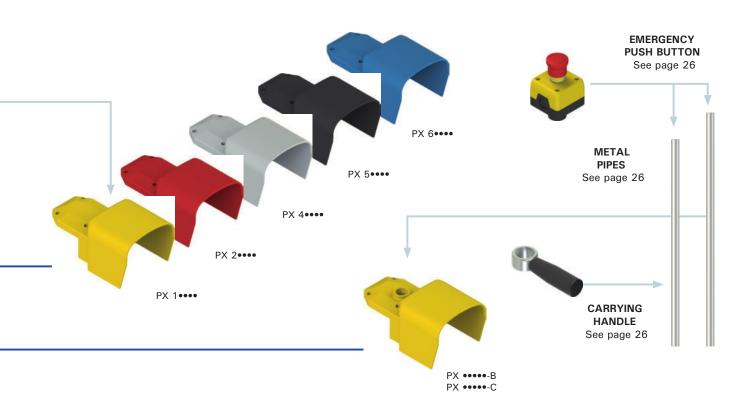


actuator, one of the two contact blocks



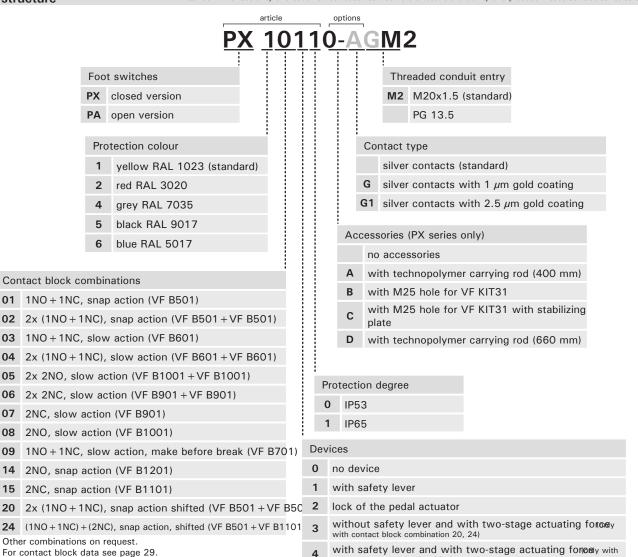
With a light pressure (~19 N) on the peday pushing down with higher force (~180 N) on the pedal actuator, the second contact block switches while the second keeps its state switches as well. In this position, both contact The pedal actuator stops at pressure point. blocks are switched.





Code structure

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



contact block combination 20, 24)

Single foot switches - PX and PA series



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.YT03.B.00035/19

Internal contact block







IMQ approval: CA02.06217 E131787 UL approval:

CCC approval: 2021000305000102 RU C-IT.YT03.B.00035/19 EAC approval:

Technical data

Housing

Housing with double insulation: glass fibre reinforced technopolymer,

self-extinguishing and shock-proof technopolymer, self-extinguishing and Cap:

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 172

General data

-25°C ... +80°C Ambient temperature:

Safety parameter Bon: 20,000,000 for NC contacts 3600 operating cycles/hour Max. operating frequency: 10 million operating cycles Mechanical endurance:

Cable cross section (flexible copper strands)

min. 1 x 0.5 mm (1 x AWG 20) Contact block combinations (all):

max. 2 x 2.5 mm (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 C22.2 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 beside 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		Utilizatio	n catego	r y		
Thermal current (إ):	10 A	Alternati	ng currer	it: AC15	(50 ÷ 60 Hz)	
Rated insulation voltage (W:	500 Vac 600 Vdc	Ue (V)	250	400	500	
Rated impulse withstand voltage (Un):	6 kV	le (A)	6	4	1	
Conditional short circuit current:	1000 A acc. to EN 60947-5-1	Direct current: DC13				
Protection against short circuits:	type aM fuse 10 A 500 V	Ue (V)	24	125	250	
Pollution degree:	3	le (A)	3	0.55	0.3	

Dimensional drawings

L = sl	nap action ow action	make befor	without safet	Open version, without safety lever		sion, lever	Closed vers with safety with M25 hole fo	lever,	
RS = sr	nap action,	shifted							
s s	Φ		230	100	241	126		241 M25x1,5 76	
Contact block combinations	Contact type	Actuation stages	والمتحدي	140		128	H		
Con	Co	Act	Article	Contacts	Article	Contacts	Article	Contacts	Travel diagram
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	PX 10210-M2 →	1NO + 1NC	PX 10210-BM2	1NO + 1NC	
				1NO + 1NC		1NO + 1NC		1NO + 1NC	₹
03	L	1	PA 20300-M2 🕣	1NO + 1NC	PX 10310-M2 🕣	1NO + 1NC	PX 10310-BM2	1NO + 1NC	<u> </u>
04		1	PA 20400-M2 →	1NO + 1NC	PX 10410-M2 🕣	1NO + 1NC	PX 10410-BM2	1NO + 1NC	•
			177 20 100 MIZ ()	1NO + 1NC	7X 10110 III.2 ()	1NO + 1NC	TX TO TTO BINIZE	1NO + 1NC	⊕
05	L	1	PA 20500-M2	2NO	PX 10510-M2	2NO	PX 10510-BM2	2NO	
				2NO		2NO		2NO	
06	L	1	PA 20600-M2 →	2NC	PX 10610-M2 (-)	2NC	PX 10610-BM2	2NC	→
				2NC		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

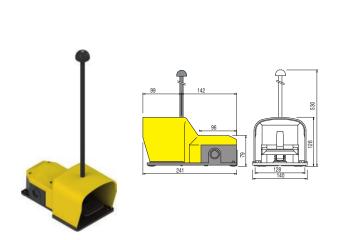
Single foot switches - PX and PA series

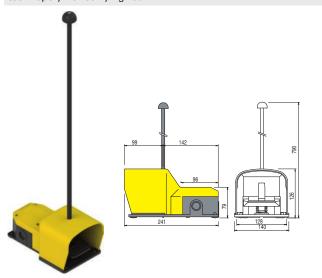
Combination examples

All values in the drawings are in mm

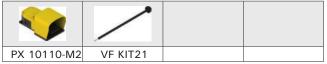
Foot switch, closed version, provided with a 400 mm technopolymer carrying rod

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



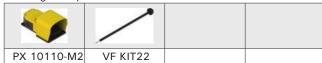


Ordering example:



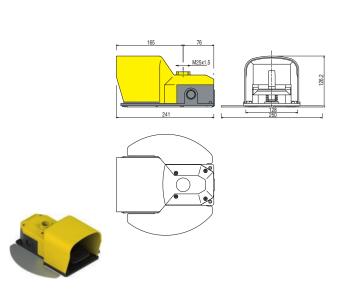
This article can also be purchased with single code PX 10110-AM2. In this case the cap is supplied already perforated for the carrying rod fixing.

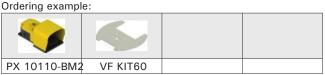
Ordering example:



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.

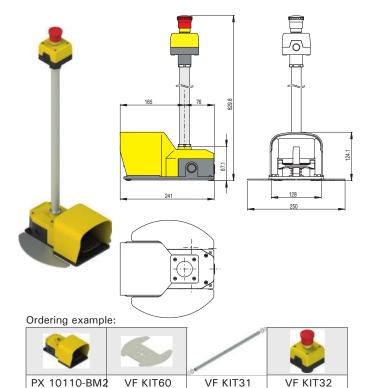
Foot switch, closed version, provided with metal pipe, stabilizing plate and emergency stop button 1NC





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

21

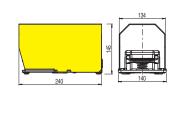


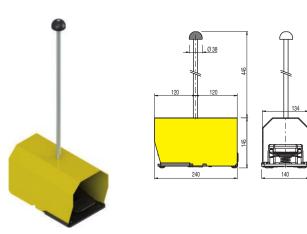
Combination examples

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

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:

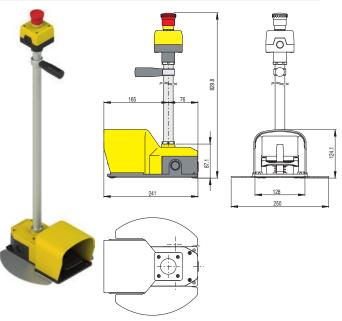
PA 20100-M2	VF KIT71	

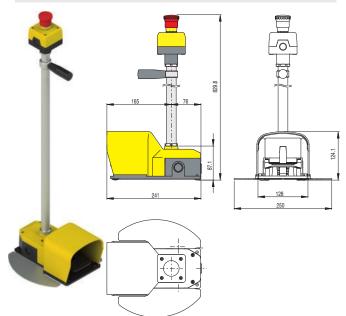
Ordering example:

-		/	
PA 20100-M2	VF KIT71	VF KIT25	

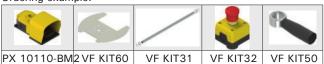
Foot switch, closed version, provided with metal pipe, stabilizing plate, carrying handle and emergency stop button 1NC

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

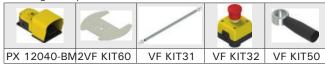




Ordering example:



Ordering example:



Selection diagram **EMERGENCY PUSH BUTTON** See page 26 **EA SERIES** HOUSING See page 137 METAL **PIPES** METAL See page 26 **PIPES** See page 26 CARRYING RODS See page 26 **CARRYING** HANDLE See page 26 JOINING KITS JOINING KITS JOINING KITS See page 25 See page 25 See page 25 **STABILIZING PLATE** See page 26 DOUBLE CARRYING ROD **EA SERIES** HOUSING See page 26 See page 137 JOINING KITS JOINING KITS See page 25 See page 25 **METAL PIPES** See page 26 Product options Sold separately as accessory

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	n 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:

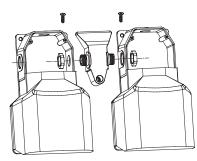
VF KIT21, 22, 26, 29, 31, 32, 33, 34, 35, 40, 50 sets are not supplied assembled because, in order to be wired, kits should be first disassemin any case.

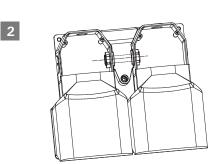
How to combine the modular foot switches

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













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

VF KIT20 Joining element

Description

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.

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000	

Description

VF KIT30 Joining element

Article

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.

Article

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

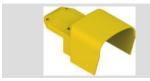


Carrying handle kit for metal tube Ø 25 mm (VF KIT31 - VF KIT29).

Article	Description	
VF KIT61	Metal stabilizing plate	
		Metal stabilizing plate fo 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.

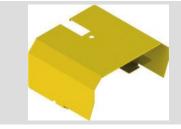
Article Description

VF KIT71 Yellow single metal protection



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

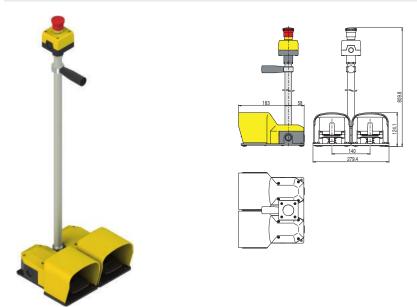
Article	Description		
VF KIT81	Yellow double metal prote	ection	
		A statistic and	



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

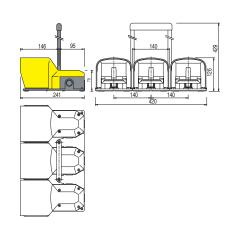
Double foot switches with joining device, metal tube and 1NC emergency stop button

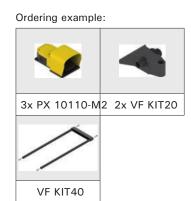




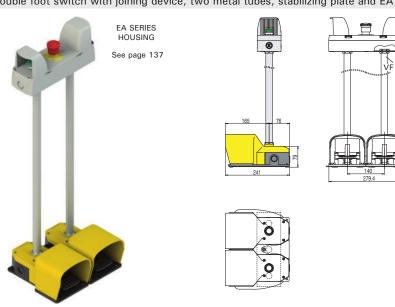
Triple foot switches with two joining devices and double carrying rod



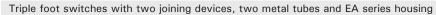


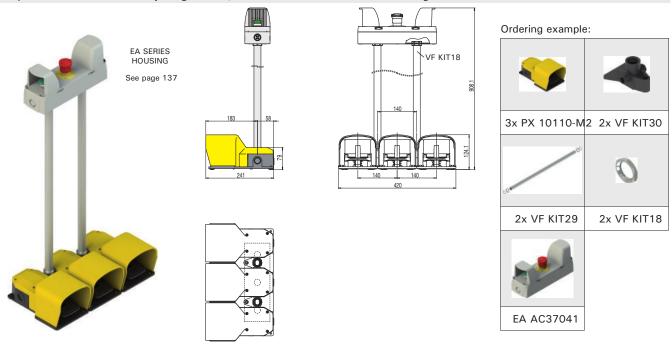


Double foot switch with joining device, two metal tubes, stabilizing plate and EA series housing

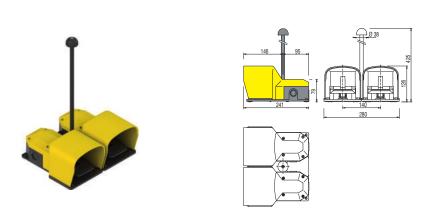








Double foot switches with joining device and carrying rod

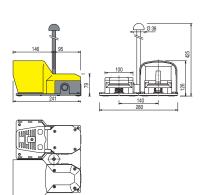






Double foot switches (available with or without pedal actuator protection) with joining device and carrying rod





PX 10110-M2 PA 20100-M2

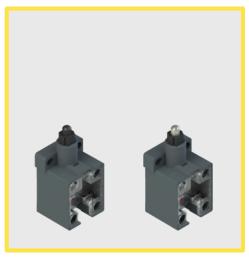
VF KIT21

Ordering example:

VF KIT20

All values in the drawings are in mm

Position switches with open design



Main features

- Technopolymer housing
- Protection degree IP20 (terminals), IP40 (contacts) GB/T14048.5.
- 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:



CA02.06217 IMO approval: UL approval: E131787

CCC approval: 2021000305000102 EAC approval: RU C-IT.YT03.B.00035/19

Installation for safety applications:

Use only switches marked with the symbol beside 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 227 to page 242 of the General Catalogue Detection 2023-2024.

Electrical data Utilization category Alternating current: AC15 (50 ÷ 60 Hz) Thermal current ([): 10 A 500 Vac 600 Vdc Ue (V) 250 400 Rated insulation voltage (W: 500 Rated impulse withstand voltage (Un): le (A) 6 6 kV Conditional short circuit current: 1000 A acc. to EN 60947-5-1 Direct current: DC13 Protection against short circuits: type aM fuse 10 A 500 V Ue (V) 24 125 250 Pollution degree: 0.3 le (A) 3 0.55

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 (Um): Protection degree of the housing: MV terminals (screw terminals) IP20

Pollution degree: Utilization category: **ΔC15**

Operating voltage (Ue): Operating current (Ie): 400 Vac (50/60 Hz)

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 Please contact our technical department for the list of approved 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.

Technical data

Housing

Housing made of glass fibre reinforced technopolymer, self-extinguishing and shock-proof IP20 (terminals)

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

General data

-40°C ... +80°C Ambient temperature:

Safety parameter B₀₀: 40,000,000 for NC contacts Max. actuation frequency: 3600 operating cycles/hour Mechanical endurance: 20 million operating cycles

Max. actuation speed:

Min. actuation speed: 1 mm/s (slow action) 0.01 mm/s (snap action)

Tightening torque of the terminal screws:

Wire cross-sections and

see page 249 of the General Catalowire stripping lengths:

Features approved by UL

or flexible, wire size 12, 14 AWG.

Housing features: open type.

Q300 (69 VA. 125-250 Vdc)

For all contact blocks use 60 or 75°C copper (Cu) conductors, rigid

Tightening torque for terminal screws of 7.1 lb in (0.8 Nm).

A600 (720 VA, 120-600 Vac)

Electrical ratings:

gue Detection 2023-2024

0.6 ... 0.8 Nm

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 C22.2 No. 14,

Approvals:

UL 508, CSA C22.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.



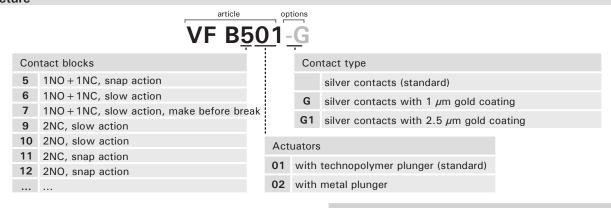
Description



Contact block with captive screws, finger protection and self-lifting clamping screw plates. Provided with positive opening 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 Technopolymer plunger Metal plunger R = snap action Legend = slow action = slow action, make before Closed contact LO □ Open contact → Positive opening travel acc. to IEC 60947-5-1 break = slow action shifted Pressing the switch LV = slow action Releasing the switch 曲 shifted and spaced LA = slow action, close 4.4 type Contact Article Contacts Article Contacts Contact diagrams Travel diagram R VF B501 \odot VF B502 \odot 1NO + 1NC 1NO + 1NC 7 22 23 1 1 7 1 2 L VF B601 1NO + 1NC VF B602 1NO + 1NC \odot \odot 23 LO VF B701 \odot VF B702 \odot 1NO + 1NC 1NO + 1NC21 7 22 L VF B901 \odot VF B902 \odot 2NC 2NC 13 L VF B1001 2NO VF B1002 2NO 21 -7 22 R VF B1101 2NC VF B1102 2NC 13 R VF B1201 2NO VF B1202 2NO 24 11 21 -7 22 LV VF B1301 2NC VF B1302 2NC 11 -12 21 7 22 LS VF B1401 \odot 2NC VF B1402 2NC 23 13 \ 14 LS VF B1501 VF B1502 2NO 1 1 7 23 LA VF B1801 \odot 1NO + 1NC VF B1802 \odot 1NO + 1NC 1 1 7 -L VF B3701 \odot 1NO + 1NC VF B3702 \odot 1NO + 1NC L \odot Θ VF B6601 1NC VF B6602 1NC L VF B6701 1NO VF B6702 1NO 0,5 m/s 0.5 m/sMax. speed 8 N (20 N-) 8 N (20 N) Actuating force

Code structure



EROUND line introduction

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

Safety at a glance



Thanks to the chosen shapes, the employed materials and the use of high luminosity LEDs, the illuminated and signalling devices of the 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 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



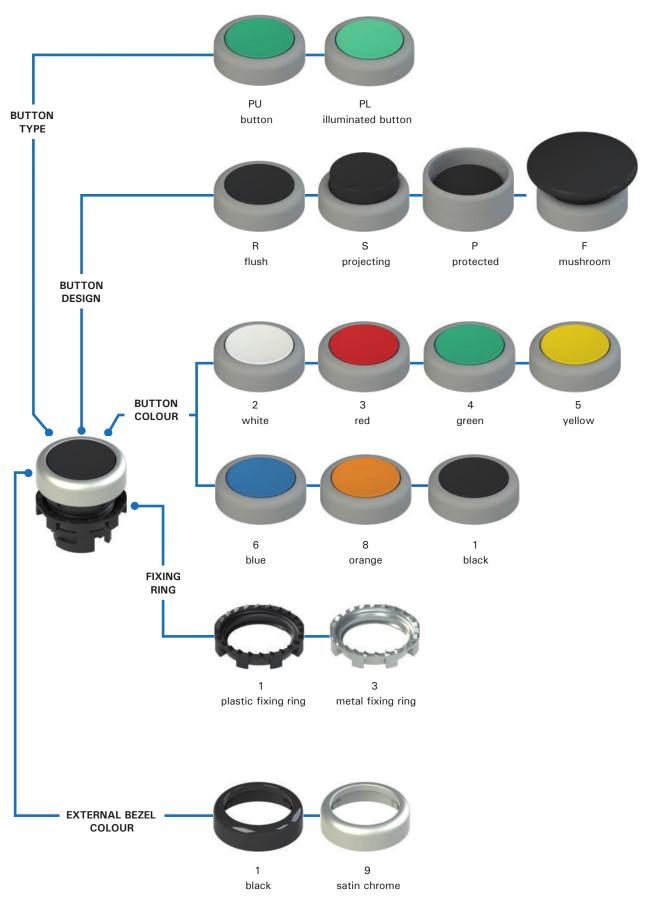
Pizzato Elettrica has tested the control and signalling devices of the EROUND line according to the specific tests of the EN 60947-5-1 standard.

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.

E2 1PU2R1210-T6

Fixing ring and shaped ring

plastic fixing ring (standard)

plastic fixing ring and shaped ring

metal fixing ring

metal fixing ring and shaped ring

Button function

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

Button design

R flush

S projecting

P protected

F mushroom

Button colour

0 without lens

1 black

2 white

3 red

4 green

5 yellow

6 blue

orange

Ambient temperature

-25°C ... +80°C (standard), spring-return button -25°C ... +50°C (standard), maintained button

-40°C ... +80°C spring-return button -40°C ... +50°C maintained button

Button engraving

O no engraving

L1 O

L2 I
...

Other engravings on request. See page 165

External bezel colour

1 black

9 satin chrome

Button diameter

2 Ø 20 mm4 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.

E2 1PL2R2210-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

Button function

- 1 maintained
- 2 spring-return (standard)

Button design

- R flush
- S projecting
- P protected
- F mushroom

Ambient temperature

-25°C ... +80°C (standard), spring-return button -25°C ... +50°C (standard), maintained button

-40°C ... +80°C spring-return button -40°C ... +50°C maintained button

Button engraving

0 no engraving L1 0 L2 |

Other engravings on request. See page 165

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: F131787

RU C-IT.YT03.B.00035/19 EAC approval:

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 Bon: 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)

5 mm Maximum travel: Tightening torque of the fixing ring: 2 ... 2.5 Nm Utilization requirements: see page 169

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 C22.2 No. 14.

⚠ Installation for safety applications:

Use only contact blocks marked with the symbor. 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

These devices are designed to be used under the toughest environmental conditions, and they pass the IP67 immersion test acc. to environments where the maximum degree of protection is required for the housing. 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).

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 EN 60529. They can therefore be used in allnecessary 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,

Spring-return button €

Metal fixing ring



those applications which require tighter fitting of the panel-mounted device, such as for example in metal

The fixing ring in metal is particularly suitable for

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.

hygiene are required.

Extended temperature range

symbols, and colours.

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 This turns out to be particularly useful in the and other equipment with low temperature environments. The special sectors where high standards of cleanness andmaterials used to produce these versions retain their characteristics even under these conditions, thereby expanding the installation possibilities.



Selection table for buttons

















Colour and engraving	Flu	ısh	Proje	cting	Prote	ected	Mush	room
actuator	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 1PU2P221L2	E2 1PU2P229L2	E2 1PU2F241L2	E2 1PU2F249L2

For ordering a maintained button replace 1PU2 with 1PU1 in the respective article code. Example: E2 1PU2R0210→ E2 1PU1R0210

Selection table for illuminated buttons

















Actuator colour and	Flu	ısh	Proje	cting	Prote	ected	Mush	room
engraving	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 1PL2R0210→ E2 1PL1R0210

Complete units with buttons



Colour and				Flush	Projecting
engraving actuator	pos. 2	pos. 3	pos. 1	black bezel	black bezel
black	-	1NO	-	E2 AC-DXBC1204 E2 1PU2R1210 + E2 1BAC11 + E2 CP10G2	V1
white	-	1NO	-	E2 AC-DXBC1200 E2 1PU2R2210 + E2 1BAC11 + E2 CP10G2	V1
red	-	1NC →	-	E2 AC-DXBC1208 E2 1PU2R3210 + E2 1BAC11 + E2 CP01G2	E2 AC-DXBC1209 E2 1PU2S3210 + ¥2 1BAC11 + E2 CP01G2V1
green	-	1NO	-	E2 AC-DXBC1201 E2 1PU2R4210 + E2 1BAC11 + E2 CP10G2	V1
yellow	-	1NO	-	E2 AC-DXBC1206 E2 1PU2R5210 + E2 1BAC11 + E2 CP10G2	V1
blue	-	1NO	-	E2 AC-DXBC1207 E2 1PU2R6210 + E2 1BAC11 + E2 CP10G2	V1
red	-	1NC →	٠	E2 AC-DXBC1211 E2 1PU2R321L1 + E2 1BAC11 + E2 CP01G2	E2 AC-DXBC1212 E2 1PU2S321L1 + ¥2 1BAC11 + E2 CP01G2V1
green	-	1NO	-	E2 AC-DXBC1210 E2 1PU2R421L2 + E2 1BAC11 + E2 CP10G2	V1
O black	-	1NC →	-	E2 AC-DXBC1227 E2 1PU2R121L1 + E2 1BAC11 + E2 CP01G2	V1
white	-	1NO	-	E2 AC-DXBC1226 E2 1PU2R221L2 + E2 1BAC11 + E2 CP10G2	V1

Other combinations on request.

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

Complete units with illuminated buttons



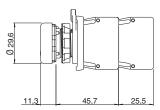
Colour and		Contacts	Flush	
engraving actuator	pos. 2	pos. 3	pos. 1	black bezel
white	1NC →	LED	1NO	E2 AC-DXBC0400 E2 1PL2R2210 + E2 1BAC11 + E2 CP01G2V1 + E2 LP1A2V1 + E2 CP10G2V1
red	1NC →	LED	1NO	E2 AC-DXBC0402 E2 1PL2R3210 + E2 1BAC11 + E2 CP01G2V1 + E2 LP1A3V1 + E2 CP10G2V1
green	1NC →	LED	1NO	E2 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.

Dimensional drawings

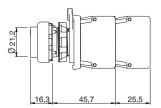
All values in the drawings are in mm

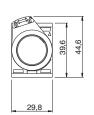
Flush button



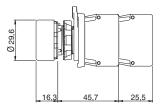


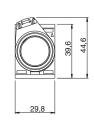
Projecting button



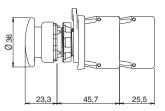


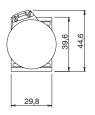
Protected button





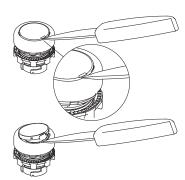
Mushroom button





[→] 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	Туре	Description	Colours	Pieces/ package
	VE LP21R10		Lens for flush button, black, without engraving		10
)	VE LP22R20		Lens for flush button, white, without engraving	0	10
	VE LP22R30		Lens for flush button, red, without engraving		10
	VE LP22R40		Lens for flush button, green, without engraving		10
	VE LP22R50	(\bigcirc)	Lens for flush button, yellow, without engraving		10
ı	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	0	10
	VE LP22S30		Lens for projecting button, red, without engraving		10
	VE LP22S40		Lens for projecting button, green, without engraving		10
	VE LP22S50	(\bigcirc)	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/ Pack	
VE LP21R1●●●		Lens for flush button, black, with engraving		1	
VE LP22R2●●●		Lens for flush button, white, with engraving	0	1	
VE LP22R3•●●		Lens for flush button, red, with engraving		1	
VE LP22R4●●●	(\smile)	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	\bigcirc	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 marking:

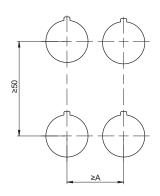
replace the dots●●● in the article codes with the marking code reported on the table at page 165. Example: white lens for flush button with "O" engraving.

VE LP22R2•●● → VE LP22R2.1

General Catalogue HMI 2023-2024

All values in the drawings are in mm

Minimum distances for installation



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

Maximum number of contact blocks

3-slot mounting adapter

mushroom

...

40 mm

Illuminated springreturn buttons ma E2 •PL2•••••



maximum number:

Illuminated maintained buttons



maximum number:

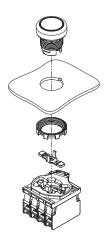


Spring-return buttons E2 •PU4•••••

4-slot mounting adapter



maximum number: 8 contact blocks 2 levels



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

maximum number:

9 contact blocks

3 levels

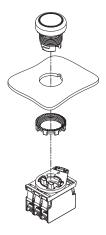
Spring-return buttons

E2 •PU2••••

maximum number: 3 contact blocks 1 level

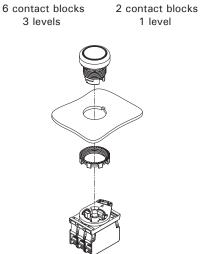
Maintained buttons

E2 •PU1••••









Closing cap Packs of 10 pcs. Article Description Central closing cap for illuminated button E2

VE AS1211 •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	Packs of 10 pcs.	
	Article	Description
J.	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.

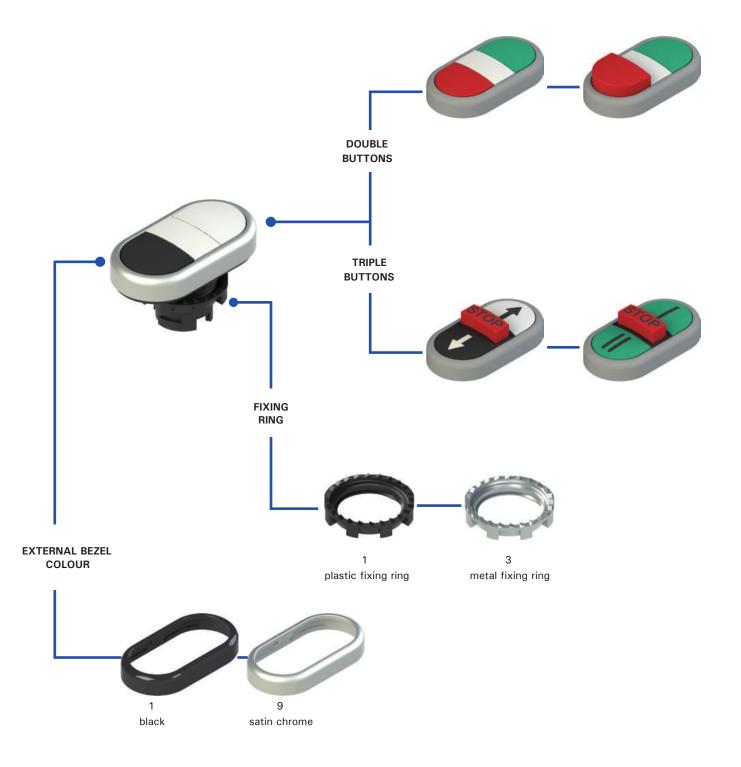
Protection cap		Packs of 10 pcs.
	Article	Description
	VE CA1A1	Protection cap for flush button (panel width from 1 to 5 mm)
	VE CA1B1	Protection cap for single projecting button (panel width from 1 to 5 mm)
	Not applicable in presence of shaped rings, label holders, adapters from Ø 22 to Ø 30 mm or protection guards.	

Fixing ring		Packs of 20 pcs .
The state of the s	Article	Description
	VE GF720A	Metal fixing ring

Accessories

→ More ACCESSORIES on page 161

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 1PDRL10423-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)
- 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	hlack	_	white	_	hlack	_	

Other combinations on request.

	upper button		central cap		lower button	
	colour	symbol	colour	symbol	colour	symbol
AAAD	green	- 1	white	-	red	0
AAAP	green	START	white	-	red	STOP
AAAA	white	1	white	-	black	0
AAAN	white	START	white	-	black	STOP
AAAB	black	†	white	-	black	+
AAAC	black	+	white	-	black	-

Other combinations on request.

		per tton	but	ntral tton ecting		wer tton
	colour	symbol	colour	symbol	colour	symbol
AAAY	green	1	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	-



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 E131787 UL approval:

RU C-IT.YT03.B.00035/19 EAC approval:

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 Bop: 2,000,000

1 million operating cycles Mechanical endurance: 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 169

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 C22.2 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.

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.

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 degrees IP67 and IP69K

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

of protection is required for the housing. 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.

hygiene are required.

Extended temperature range

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 This turns out to be particularly useful in the and other equipment with low temperature environments. The special sectors where high standards of cleanness andmaterials used to produce these versions retain their characteristics even under these conditions, thereby expanding the installation possibilities.



Selection table for double buttons



		A	A	a.	-
	Actuator colour and engraving	central c	tton flush cap, flush tton flush Satin chrome bezel	central c	tton flush cap, flush on projecting Satin chrome bezel
	green button				
	white cap, illumi- nated	E2 1PDRL10423	E2 1PDRL90423	E2 1PDSL10423	E2 1PDSL90423
	red button " " green button white cap, illuminated "O" red button	E2 1PDRL1AAAD	E2 1PDRL9AAAD	E2 1PDSL1AAAD E	2 1PDSL9AAAD
STOP	"START" green button white cap, illumi- nated "STOP" red button	E2 1PDRL1AAAP	E2 1PDRL9AAAP	E2 1PDSL1AAAP	E2 1PDSL9AAAP
	white button white cap, illumi- nated black button	E2 1PDRL10221	E2 1PDRL90221	E2 1PDSL10221	E2 1PDSL90221
	" " white button white cap, illumi- nated "O" black button	E2 1PDRL1AAAA	E2 1PDRL9AAAA	E2 1PDSL1AAAA E	2 1PDSL9AAAA
START	"START" white button white cap, illumi- nated "STOP" black button	E2 1PDRL1AAAN	E2 1PDRL9AAAN I	E2 1PDSL1AAAN E	2 1PDSL9AAAN
T T	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	
STOP	" " 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 "\tilde{-}" 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	

Complete units with double buttons



	Actuator colour and engraving		Contacts	S	upper button flush central cap, flush lower button projecting
			pos. 3	pos. 1	black bezel
	"I" green button			1NO	E2 AC-DXBC0625
	white cap, illuminated		-		E2 1PDSL1AAAD + E2 1BAC11 + E2 CP01G2V1 +
	"O" red button	1NC →			E2 CP10G2V1

Other combinations on request.



	ctuator colour nd 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
	white cap, illuminated		LED		E2 1BAC11 + E2 CP01G2V1 +
	"O" red button	1NC →			E2 LP1A2V1 + E2 CP10G2V1

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 apply the shaped ri	cap it is not possible to

Complete units with triple buttons



	tuator colour d engraving		Contacts	6	upper button flush central button projecting lower button flush
		pos. 2	pos. 3	pos. 1	black bezel
	"I" green button			1NO	E2 AC-DXBC0801
STOP	"STOP" red button		1NC →		E2 1PTRS1AAAY + E2 1BAC11 + E2 CP10G2V1 +
	"II" green button	1NO			E2 CP01G2V1 + E2 CP10G2V1

Other combinations on request.



General Catalogue HMI 2023-2024

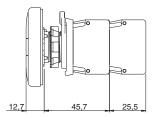
Accessories

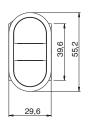
→ More ACCESSORIES on page 161

Dimensional drawings

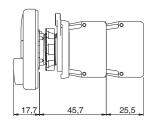
All values in the drawings are in mm

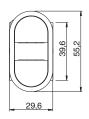
Flush double button



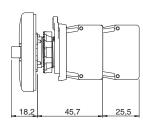


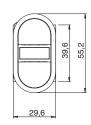
Projecting double button



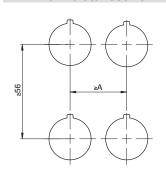


Triple button





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

Double buttons E2 •PD••••••

maximum number: 4 contact blocks 2 levels





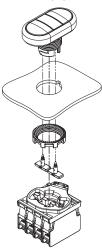
maximum number: 7 contact blocks 3 levels

4-slot mounting adapter

Double buttons E2 •PD•Q•••••



maximum number: 4 contact blocks 1 level



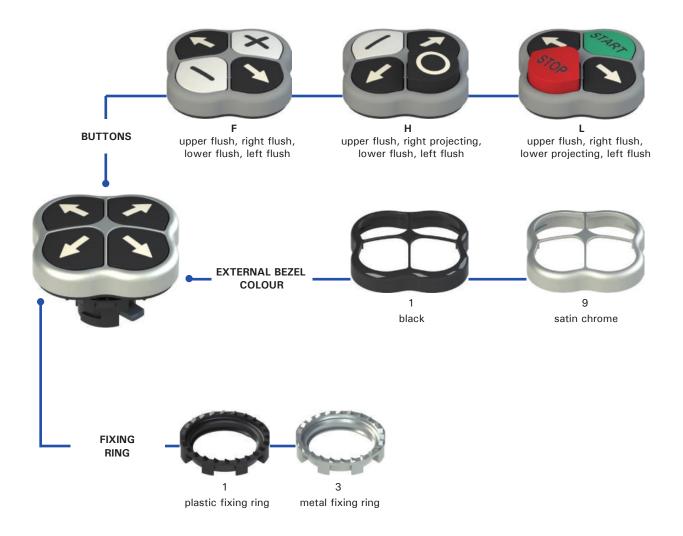
The actuators, with the specific button for 4-slot base, can be mounted only after fixing the button.







Selection diagram



Code structure

47

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

E2 1PQFA1QAAA

		LZ 1 Q 7							
Fixi	ng ring :	and shaped ring							
1	plastic	plastic fixing ring (standard)							
2	plastic	fixing ring and shaped ring							
3	metal f	fixing ring							
4	metal f	fixing ring and shaped ring							
	Buttons								
	F	upper flush, right flush, lower flush, left flush							
	Н	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)							

Colour	lours and symbols								
		per	-	ght		wer	left		
	bu	tton	but	tton	but	tton	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	1	black	→	red	0	black	+	
QAAE	white	- 1	black	→	black	0	black	+	
QAAF	white	+	black	→	white	-	black	+	
QAAH	black	†	red	STOP	black	+	green	START	
QAAJ	black	†	black	STOP	black	+	white	START	
QAAK	black	†	red	0	black	+	green	- 1	
QAAL	black	†	black	0	black	+	white	- 1	
QAAM	black	†	white	-	black	+	white	+	
QAAN	black	†	white	A	black	+	white	12	
Other combinations on request.									



Technical data

General data

Protection degree: IP67 acc. to EN 60529 Ambient temperature: $-25 \,^{\circ}\text{C} \dots + 80 \,^{\circ}\text{C}$ Safety parameter β_{on} : 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 169

In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 602 EN IEC 63000, UL 508, CSA C22.2 No. 14.

211 120 00000, 02 000, 0071 022.2

A Installation for safety applications:
Use only contact blocks marked with the symbor. 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

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.YT03.B.00035/19

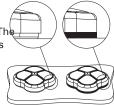
General data

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

P67

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

environments where the maximum degree of protection is required for the housing.

Customisable

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

Metal fixing ring



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



Selection table for quadruple buttons



		6	6 6	610	6	6	6
colour a	ctuator nd engraving ne top and clockwise	right but lower but	tton flush ton flush tton flush on flush	right butto lower bu	tton flush n projecting tton flush on flush	right but lower butto	tton flush ton flush n projecting on flush
		black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
	black button black button black button " black button " black button	E2 1PQFA1QAAA	E2 1PQFA9QAAA		-		-
START	"START" green button "> "> " black button "STOP" red button "E" black button	E2 1PQFA1QAAB	E2 1PQFA9QAAB	-	-	E2 1PQLA1QAAB	E2 1PQLA9QAAB
START	"START" white button ">" black button "STOP" black button "-" black button	E2 1PQFA1QAAC	E2 1PQFA9QAAC	-	-	E2 1PQLA1QAAC	E2 1PQLA9QAAC
	green button ">" black button "O" red button "←" black button	E2 1PQFA1QAAD	E2 1PQFA9QAAD	-	-	E2 1PQLA1QAAD	E2 1PQLA9QAAD
	white button ">" black button "O" black button " black button " black button	E2 1PQFA1QAAE	E2 1PQFA9QAAE	-	-	E2 1PQLA1QAAE	E2 1PQLA9QAAE
+	"+" white button ">" black button "-" white button "-" black button	E2 1PQFA1QAAF	E2 1PQFA9QAAF				
START STOP	"A" black button "STOP" red button "\\" black button "START" green button	E2 1PQFA1QAAH	E2 1PQFA9QAAH	E2 1PQHA1QAAH	E2 1PQHA9QAAH	-	
START STOP	black button "STOP" black button "\u00cm" black button "START" white button	E2 1PQFA1QAAJ	E2 1PQFA9QAAJ	E2 1PQHA1QAAJ	Е2 1РОНА9ОААЈ	-	
100	"A" black button "O" red button "\\ "black button "I" green button	E2 1PQFA1QAAK	E2 1PQFA9QAAK	E2 1PQHA1QAAK	E2 1PQHA9QAAK	-	-
	black button black button black button black button "" black button "" white button	E2 1PQFA1QAAL	E2 1PQFA9QAAL	E2 1PQHA1QAAL	E2 1PQHA9QAAL	-	
+	black button "-" white button black button "+" white button	E2 1PQFA1QAAM	E2 1PQFA9QAAM	-	-	-	

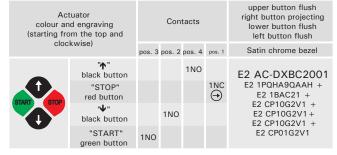


Complete units



Ac colour ar (starting fro		Con	tacts		upper button flush right button flush lower button flush left button flush	
Cloc	kwise)	pos. 3	pos. 2	pos. 4	pos. 1	Satin chrome bezel
000	black button black button black button black button characteristics	1NO	1NO	1NO	1NO	E2 AC-DXBC2000 E2 1PQFA9QAAA + E2 1BAC21 + E2 CP10G2V1 + E2 CP10G2V1 + E2 CP10G2V1 + E2 CP10G2V1

Other combinations on request.



Other combinations on request.

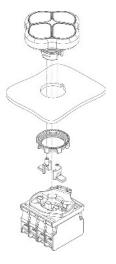
Maximum number of contact blocks

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.



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

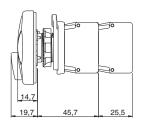
Mounting adapter Packs of 10 pcs.

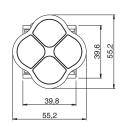


Shaped ring Packs of 10 pcs.



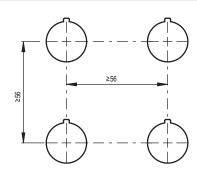
Dimensional drawings All values in the drawings are in mm Quadruple button



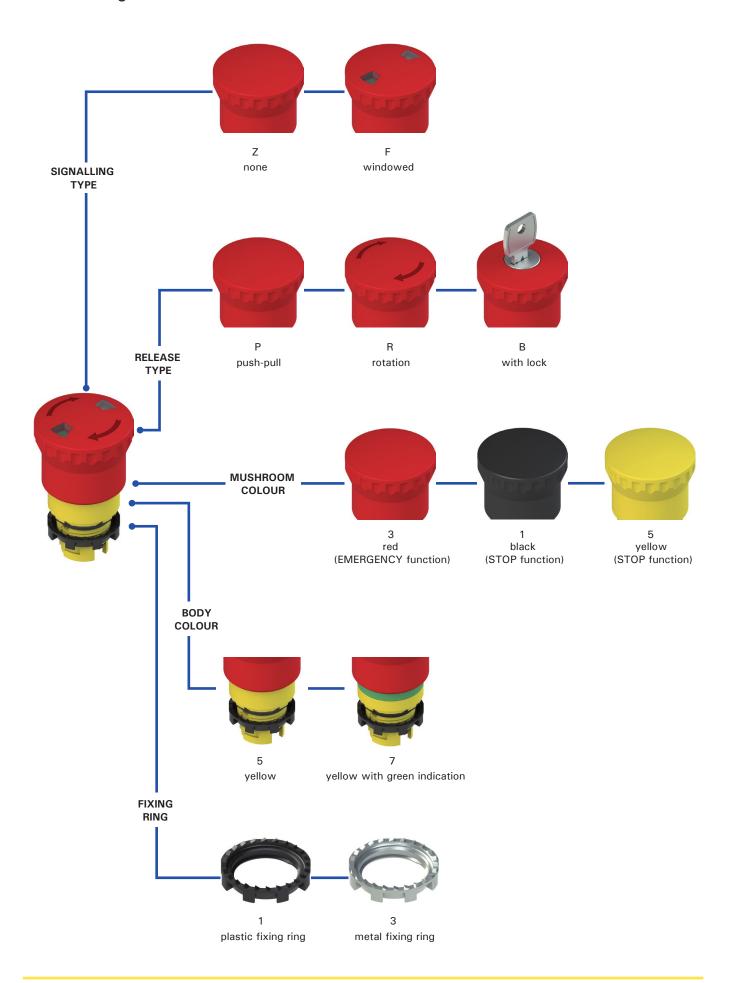


50

Minimum distances for installation

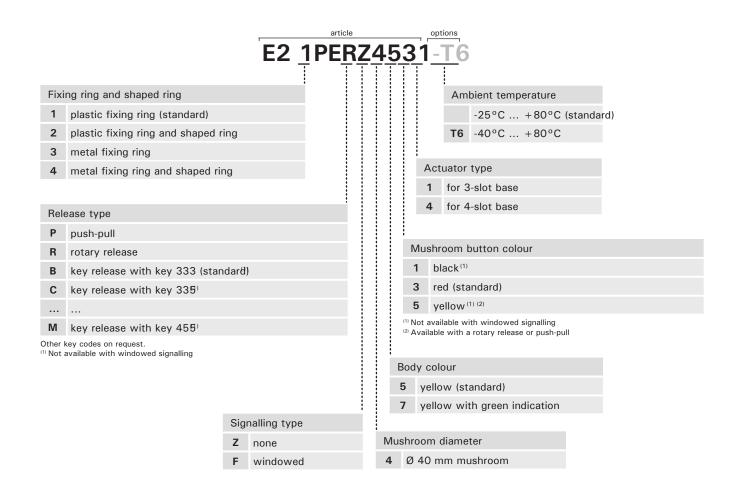


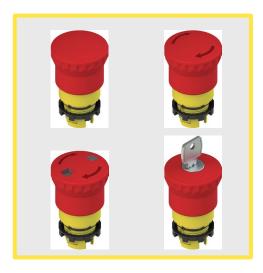
Selection diagram



Code structure

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





Main features

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

Quality marks:







CA02.04805 IMO approval: UL approval: F131787

EAC approval: RU C-IT.YT03.B.00035/19

Technical data

General data

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

Safety parameter Bon: 600,000

Mechanical endurance: 300,000 operating cycles 3600 operating cycles/hour Max. actuation frequency: Actuation travel: 4 mm (NO contact), 4 mm (NC contact)

Actuating force: 30 N

Actuating force at limit of travel: Push-pull 18.5 Nwithout contacts)

Rotary release, 35 Nwithout contacts)

Maximum travel: 9 mm Tightening torque of the fixing ring: 2,5 ... 3 Nm Utilization requirements: see page 169

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 C22.2 No. 14.

⚠ Installation for safety applications:

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

Compliance with the requirements of:

Machinery Directive 2006/42/EC, 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 stop 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 157.

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 of protection is required for the housing. Due to their special design,

the machine to continue to function and makes the emergency stop 80°C). unusable. For details see page 93.

Protection degrees IP67 and IP69K



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

circuit. This makes immediately evident failures these devices are suitable for use in equipment subjected to cleaning that will be otherwise difficult to detect. Indeed, with high pressure hot water jets. These devices meet the IP69K test the detachment of a normal NC contact from the mushroom allows requirements according to ISO 20653 (water jets with 100 bar and

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.

required.

Extended temperature range

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 This turns out to be particularly useful in sectoænd other equipment with low temperature environments. The special where high standards of cleanness and hygiene are 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	d 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	-	1	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







			Contacts				Key release	
Body and actuator colour		d actuator colour	pos. 2	pos. 3	pos. 1	Push-pull	Rotary 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
	State 1.	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.

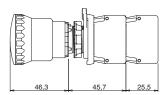
Locking keys	
Article	Description
VE KE1A00-PY333	Locking key
	Order only if further keys besides the supplied one are needed. Key with key coding 333. Other codes on request.

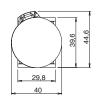
Dimensional drawings

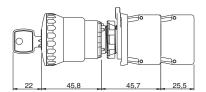
All values in the drawings are in mm

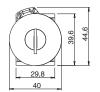
Emergency stop button

Emergency stop button with key release







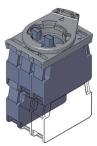


→ The 2D and 3D files are available at www.pizzato.com

Maximum number of contact blocks

3-slot mounting adapter

Emergency stop buttons E2 •PE••••1



maximum number: 4 contact blocks 2 levels





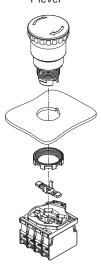


4-slot mounting adapter

Emergency stop buttons E2 •PE•••••4



maximum number: 4 contact blocks 1 level



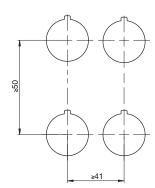
The mounting of the actuator for 4-slot base must be carried out after fixing the button.

Actuator for 4-slot base

Packs of 10 pcs.

Article Description 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 161

Labels with shaped hole

Packs of 5 pcs.

Suitable for devices E2PE•••••.
In compliance with EN ISO 13850.
Can be turned in 90° steps.

Inscriptions in other languages available on request.

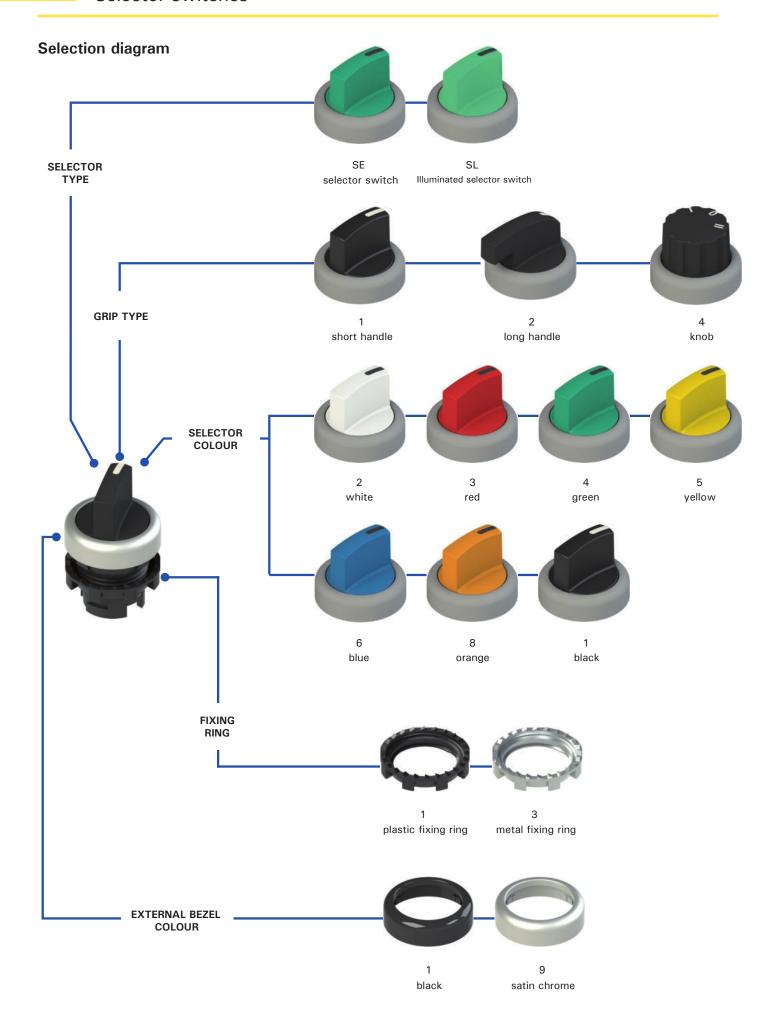
It does not alter the IP67 / IP69K protection degree of the associated device.

Art	•	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
D STOP	VE TF32A5101	Label with shaped hole, Ø 60 mm yellow disc, inscription: ST EMERGENZA
MERGENZA D	VE TF32D5101	Label with shaped hole, Ø 90 mm yellow disc, inscription: ST EMERGENZA
DEMERGIE	VE TF32A5102	Label with shaped hole, Ø 60 mm yellow disc, inscription: EMERGEN® STOP®
STOP OF	VE TF32D5102	Label with shaped hole, Ø 90 mm yellow disc, inscription: EMERGEN® STOP®
SOP W STOP	VE TF32A5109	Label with shaped hole, \emptyset 60 mm yellow disc, inscription: STOP $\widehat{\mathbb{W}}$ STOP $\widehat{\mathbb{W}}$ STOP $\widehat{\mathbb{W}}$
2012 @ 9012	VE TF32D5109	Label with shaped hole, Ø 90 mm yellow disc, inscription: $STOP $ $STOP $ $STOP $ $STOP $
Service Veneral Services	VE TF32A5120	Label with shaped hole, Ø 60 mm yellow disc, inscription: STOP EMERGENZA ARRET D'URGENCE NOT AUS EMERGENCY STOP
SALTON (IN CONFERENCE OF STREET	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
	VE TF32G5121	Label with shaped hole, yellow, 30x60 mm rectangular, engra , acc. to ISO 13850
® sioa	VE TF32G5103	Label with shaped hole, yellow, 30x60 mm rectangular, engraving: STOP
a do	VE TF32G5110	Label with shaped hole, yellow, 30x60 mm rectangular, engraving: STOP

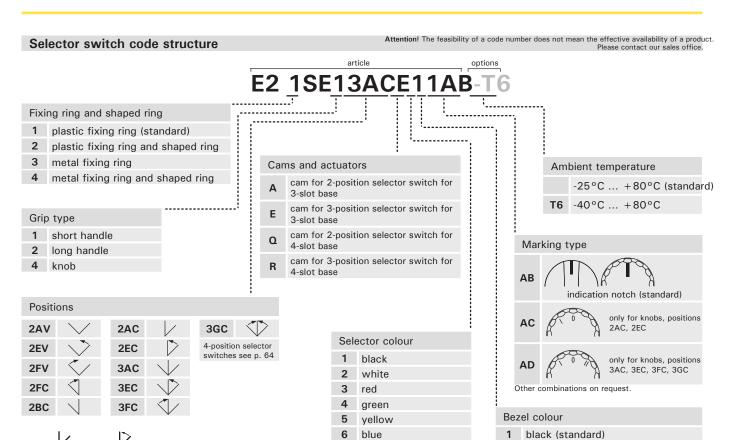
Luminous disc



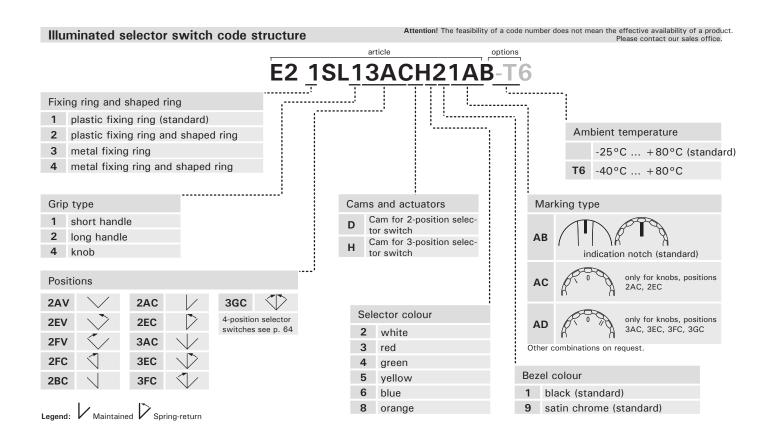
Yellow luminous disc, \emptyset 60 mm. Data at page 157.



9 satin chrome (standard)



orange





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: F131787

RU C-IT.YT03.B.00035/19 EAC approval:

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 Bop: 2,000,000

1 million operating cycles Mechanical endurance: Max. actuation frequency: 3600 operating cycles/hour Actuating force at limit of travel: 0.07 Nm (without contacts) 60° (2 stable positions) Maximum travel: 40° (2 momentary positions)

±60° (3 stable positions) $\pm\,40^{\,\rm o}$ (3 momentary positions)

Tightening torque of the fixing ring: 2 ... 2.5 Nm Utilization requirements: see page 169

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 C22.2 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

These devices are designed to be used under environments where the maximum degree

of protection is required for the housing. Due to their special design, with high pressure hot water jets. These devices meet the IP69K test the switching type executed by the selector on the contacts. requirements according to ISO 20653 (water jets with 100 bar and 80°C).

Actuators for selector switches

Three types of actuators are available, which activate the cursors of the toughest environmental conditions, and the contacts combined with the selector: a white actuator allowing they pass the IP67 immersion test acc. to the commutation of a single contact block, and a black or grey actuator EN 60529. They can therefore be used in allowing the simultaneous commutation of two contact blocks next to each other.

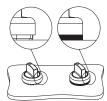
The white, black (3-slot base) and grey (4-slot base) actuators can be these devices are suitable for use in equipment subjected to cleaning removed and replaced at any moment. This allows to configure at will

Extended temperature range

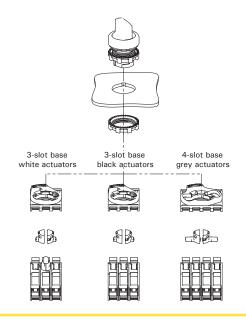
These devices are also available in a special version suitable for an ambient operating temperature range from -40°C up to +80°C.

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.



Selection table for selector switches













Actuator colour	Two	short h	nandle	kno	b	long handle		
and engraving	positions	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	
black	\vee	E2 1SE12AVA11AB	E2 1SE12AVA19AB	E2 1SE42AVA11AB	E2 1SE42AVA19AB	E2 1SE22AVA11AB	E2 1SE22AVA19A	
white	\vee	E2 1SE12AVA21AB	E2 1SE12AVA29AB	E2 1SE42AVA21AB	E2 1SE42AVA29AB	E2 1SE22AVA21AB	E2 1SE22AVA29A	
red	\vee	E2 1SE12AVA31AB	E2 1SE12AVA39AB	E2 1SE42AVA31AB	E2 1SE42AVA39AB	E2 1SE22AVA31AB	E2 1SE22AVA39A	
green	\bigvee	E2 1SE12AVA41AB	E2 1SE12AVA49AB	E2 1SE42AVA41AB	E2 1SE42AVA49AB	E2 1SE22AVA41AB	E2 1SE22AVA49A	
yellow	\bigvee	E2 1SE12AVA51AB	E2 1SE12AVA59AB	E2 1SE42AVA51AB	E2 1SE42AVA59AB	E2 1SE22AVA51AB	E2 1SE22AVA59A	
blue	\bigvee	E2 1SE12AVA61AB	E2 1SE12AVA69AB	E2 1SE42AVA61AB	E2 1SE42AVA69AB	E2 1SE22AVA61AB	E2 1SE22AVA69A	
orange	\searrow	E2 1SE12AVA81AB	E2 1SE12AVA89AB	E2 1SE42AVA81AB	E2 1SE42AVA89AB	E2 1SE22AVA81AB	E2 1SE22AVA89A	
black	\searrow	E2 1SE12EVA11AB	E2 1SE12EVA19AB	E2 1SE42EVA11AB	E2 1SE42EVA19AB	E2 1SE22EVA11AB	E2 1SE22EVA19A	
white	\searrow	E2 1SE12EVA21AB	E2 1SE12EVA29AB	E2 1SE42EVA21AB	E2 1SE42EVA29AB	E2 1SE22EVA21AB	E2 1SE22EVA29A	
red	\searrow	E2 1SE12EVA31AB	E2 1SE12EVA39AB	E2 1SE42EVA31AB	E2 1SE42EVA39AB	E2 1SE22EVA31AB	E2 1SE22EVA39A	
green	\searrow	E2 1SE12EVA41AB	E2 1SE12EVA49AB	E2 1SE42EVA41AB	E2 1SE42EVA49AB	E2 1SE22EVA41AB	E2 1SE22EVA49A	
yellow	\searrow	E2 1SE12EVA51AB	E2 1SE12EVA59AB	E2 1SE42EVA51AB	E2 1SE42EVA59AB	E2 1SE22EVA51AB	E2 1SE22EVA59	
blue	\searrow	E2 1SE12EVA61AB	E2 1SE12EVA69AB	E2 1SE42EVA61AB	E2 1SE42EVA69AB	E2 1SE22EVA61AB	E2 1SE22EVA69A	
orange	\searrow	E2 1SE12EVA81AB	E2 1SE12EVA89AB	E2 1SE42EVA81AB	E2 1SE42EVA89AB	E2 1SE22EVA81AB	E2 1SE22EVA89	
black		E2 1SE12ACA11AB	E2 1SE12ACA19AB	E2 1SE42ACA11AB	E2 1SE42ACA19AB	E2 1SE22ACA11AB	E2 1SE22ACA19	
white		E2 1SE12ACA21AB	E2 1SE12ACA29AB	E2 1SE42ACA21AB	E2 1SE42ACA29AB	E2 1SE22ACA21AB	E2 1SE22ACA29	
red		E2 1SE12ACA31AB	E2 1SE12ACA39AB	E2 1SE42ACA31AB	E2 1SE42ACA39AB	E2 1SE22ACA31AB	E2 1SE22ACA39	
green		E2 1SE12ACA41AB	E2 1SE12ACA49AB	E2 1SE42ACA41AB	E2 1SE42ACA49AB	E2 1SE22ACA41AB	E2 1SE22ACA49	
yellow		E2 1SE12ACA51AB	E2 1SE12ACA59AB	E2 1SE42ACA51AB	E2 1SE42ACA59AB	E2 1SE22ACA51AB	E2 1SE22ACA59	
blue		E2 1SE12ACA61AB	E2 1SE12ACA69AB	E2 1SE42ACA61AB	E2 1SE42ACA69AB	E2 1SE22ACA61AB	E2 1SE22ACA69	
orange		E2 1SE12ACA81AB	E2 1SE12ACA89AB	E2 1SE42ACA81AB	E2 1SE42ACA89AB	E2 1SE22ACA81AB	E2 1SE22ACA89	
black		E2 1SE12ECA11AB	E2 1SE12ECA19AB	E2 1SE42ECA11AB	E2 1SE42ECA19AB	E2 1SE22ECA11AB	E2 1SE22ECA19A	
white		E2 1SE12ECA21AB	E2 1SE12ECA29AB	E2 1SE42ECA21AB	E2 1SE42ECA29AB	E2 1SE22ECA21AB	E2 1SE22ECA29A	
red		E2 1SE12ECA31AB	E2 1SE12ECA39AB	E2 1SE42ECA31AB	E2 1SE42ECA39AB	E2 1SE22ECA31AB	E2 1SE22ECA39A	
green		E2 1SE12ECA41AB	E2 1SE12ECA49AB	E2 1SE42ECA41AB	E2 1SE42ECA49AB	E2 1SE22ECA41AB	E2 1SE22ECA49A	
yellow		E2 1SE12ECA51AB	E2 1SE12ECA59AB	E2 1SE42ECA51AB	E2 1SE42ECA59AB	E2 1SE22ECA51AB	E2 1SE22ECA59A	
blue		E2 1SE12ECA61AB	E2 1SE12ECA69AB	E2 1SE42ECA61AB	E2 1SE42ECA69AB	E2 1SE22ECA61AB	E2 1SE22ECA69A	
orange		E2 1SE12ECA81AB	E2 1SE12ECA89AB	E2 1SE42ECA81AB	E2 1SE42ECA89AB	E2 1SE22ECA81AB	E2 1SE22ECA89A	

Legend: Maintained Spring-return

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

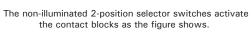
4-slot mounting adapter

3-slot mounting adapter The non-illuminated 2-position selector switches activat the contact blocks as the figure shows.

Other combinations on request







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

Other combinations on request

pizzato General Catalogue HMI 2023-2024

Selection table for selector switches







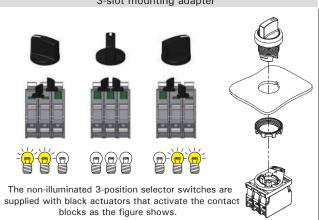


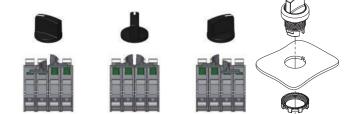




Actuator co	lour Three	short I	nandle	kno	ob	long handle			
and engravi	ing positions	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel		
black	\vee	E2 1SE13ACE11AB	E2 1SE13ACE19AB	E2 1SE43ACE11AB	E2 1SE43ACE19AB	E2 1SE23ACE11AB	E2 1SE23ACE19AB		
white	\downarrow	E2 1SE13ACE21AB	E2 1SE13ACE29AB	E2 1SE43ACE21AB	E2 1SE43ACE29AB	E2 1SE23ACE21AB	E2 1SE23ACE29AB		
red	\downarrow	E2 1SE13ACE31AB	E2 1SE13ACE39AB	E2 1SE43ACE31AB	E2 1SE43ACE39AB	E2 1SE23ACE31AB	E2 1SE23ACE39AB		
green	\downarrow	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	\downarrow	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	\checkmark	E2 1SE13ECE11AB	E2 1SE13ECE19AB	E2 1SE43ECE11AB	E2 1SE43ECE19AB	E2 1SE23ECE11AB	E2 1SE23ECE19AB		
white	\checkmark	E2 1SE13ECE21AB	E2 1SE13ECE29AB	E2 1SE43ECE21AB	E2 1SE43ECE29AB	E2 1SE23ECE21AB	E2 1SE23ECE29AB		
red	\checkmark	E2 1SE13ECE31AB	E2 1SE13ECE39AB	E2 1SE43ECE31AB	E2 1SE43ECE39AB	E2 1SE23ECE31AB	E2 1SE23ECE39AB		
green	\checkmark	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	\checkmark	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	\checkmark	E2 1SE13FCE11AB	E2 1SE13FCE19AB	E2 1SE43FCE11AB	E2 1SE43FCE19AB	E2 1SE23FCE11AB	E2 1SE23FCE19AB		
white	\checkmark	E2 1SE13FCE21AB	E2 1SE13FCE29AB	E2 1SE43FCE21AB	E2 1SE43FCE29AB	E2 1SE23FCE21AB	E2 1SE23FCE29AB		
red	1	E2 1SE13FCE31AB	E2 1SE13FCE39AB	E2 1SE43FCE31AB	E2 1SE43FCE39AB	E2 1SE23FCE31AB	E2 1SE23FCE39AB		
green	1	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	1	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	\bigcirc	E2 1SE13GCE11AB	E2 1SE13GCE19AB	E2 1SE43GCE11AB	E2 1SE43GCE19AB	E2 1SE23GCE11AB	E2 1SE23GCE19AE		
white	\bigcirc	E2 1SE13GCE21AB	E2 1SE13GCE29AB	E2 1SE43GCE21AB	E2 1SE43GCE29AB	E2 1SE23GCE21AB	E2 1SE23GCE29AE		
red	\bigcirc	E2 1SE13GCE31AB	E2 1SE13GCE39AB	E2 1SE43GCE31AB	E2 1SE43GCE39AB	E2 1SE23GCE31AB	E2 1SE23GCE39AB		
green	\bigcirc	E2 1SE13GCE41AB	E2 1SE13GCE49AB	E2 1SE43GCE41AB	E2 1SE43GCE49AB	E2 1SE23GCE41AB	E2 1SE23GCE49AE		
yellow		E2 1SE13GCE51AB	E2 1SE13GCE59AB	E2 1SE43GCE51AB	E2 1SE43GCE59AB	E2 1SE23GCE51AB	E2 1SE23GCE59AB		
blue	\bigcirc	E2 1SE13GCE61AB	E2 1SE13GCE69AB	E2 1SE43GCE61AB	E2 1SE43GCE69AB	E2 1SE23GCE61AB	E2 1SE23GCE69AE		
orange	• 💎	E2 1SE13GCE81AB	E2 1SE13GCE89AB	E2 1SE43GCE81AB	E2 1SE43GCE89AB	E2 1SE23GCE81AB	E2 1SE23GCE89AB		
egend /	Maintained	Spring-return		On r	equest, knob selector swi	tches can be customized v	vith symbols and inscript		

3-slot mounting adapter





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









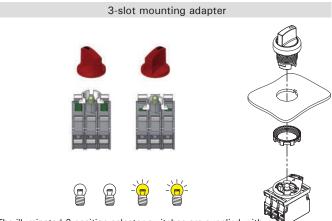




Actuator colour	Two	short I	nandle	kne	ob	long h	andle
and engraving	positions	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
white	\vee	E2 1SL12AVD21AB	E2 1SL12AVD29AB	E2 1SL42AVD21AB	E2 1SL42AVD29AB	E2 1SL22AVD21AB	E2 1SL22AVD29AB
red	\vee	E2 1SL12AVD31AB	E2 1SL12AVD39AB	E2 1SL42AVD31AB	E2 1SL42AVD39AB	E2 1SL22AVD31AB	E2 1SL22AVD39AB
green	\vee	E2 1SL12AVD41AB	E2 1SL12AVD49AB	E2 1SL42AVD41AB	E2 1SL42AVD49AB	E2 1SL22AVD41AB	E2 1SL22AVD49AB
yellow	\vee	E2 1SL12AVD51AB	E2 1SL12AVD59AB	E2 1SL42AVD51AB	E2 1SL42AVD59AB	E2 1SL22AVD51AB	E2 1SL22AVD59AE
blue	\bigvee	E2 1SL12AVD61AB	E2 1SL12AVD69AB	E2 1SL42AVD61AB	E2 1SL42AVD69AB	E2 1SL22AVD61AB	E2 1SL22AVD69AE
orange	\vee	E2 1SL12AVD81AB	E2 1SL12AVD89AB	E2 1SL42AVD81AB	E2 1SL42AVD89AB	E2 1SL22AVD81AB	E2 1SL22AVD89AE
white	\searrow	E2 1SL12EVD21AB	E2 1SL12EVD29AB	E2 1SL42EVD21AB	E2 1SL42EVD29AB	E2 1SL22EVD21AB	E2 1SL22EVD29AB
red	\searrow	E2 1SL12EVD31AB	E2 1SL12EVD39AB	E2 1SL42EVD31AB	E2 1SL42EVD39AB	E2 1SL22EVD31AB	E2 1SL22EVD39AB
green	\searrow	E2 1SL12EVD41AB	E2 1SL12EVD49AB	E2 1SL42EVD41AB	E2 1SL42EVD49AB	E2 1SL22EVD41AB	E2 1SL22EVD49AE
yellow		E2 1SL12EVD51AB	E2 1SL12EVD59AB	E2 1SL42EVD51AB	E2 1SL42EVD59AB	E2 1SL22EVD51AB	E2 1SL22EVD59AB
blue	\searrow	E2 1SL12EVD61AB	E2 1SL12EVD69AB	E2 1SL42EVD61AB	E2 1SL42EVD69AB	E2 1SL22EVD61AB	E2 1SL22EVD69AE
orange		E2 1SL12EVD81AB	E2 1SL12EVD89AB	E2 1SL42EVD81AB	E2 1SL42EVD89AB	E2 1SL22EVD81AB	E2 1SL22EVD89AE
white		E2 1SL12ACD21AB	E2 1SL12ACD29AB	E2 1SL42ACD21AB	E2 1SL42ACD29AB	E2 1SL22ACD21AB	E2 1SL22ACD29AE
red		E2 1SL12ACD31AB	E2 1SL12ACD39AB	E2 1SL42ACD31AB	E2 1SL42ACD39AB	E2 1SL22ACD31AB	E2 1SL22ACD39AE
green		E2 1SL12ACD41AB	E2 1SL12ACD49AB	E2 1SL42ACD41AB	E2 1SL42ACD49AB	E2 1SL22ACD41AB	E2 1SL22ACD49AE
yellow		E2 1SL12ACD51AB	E2 1SL12ACD59AB	E2 1SL42ACD51AB	E2 1SL42ACD59AB	E2 1SL22ACD51AB	E2 1SL22ACD59AE
blue		E2 1SL12ACD61AB	E2 1SL12ACD69AB	E2 1SL42ACD61AB	E2 1SL42ACD69AB	E2 1SL22ACD61AB	E2 1SL22ACD69AE
orange		E2 1SL12ACD81AB	E2 1SL12ACD89AB	E2 1SL42ACD81AB	E2 1SL42ACD89AB	E2 1SL22ACD81AB	E2 1SL22ACD89AE
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.



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

Selection table for illuminated selector switches









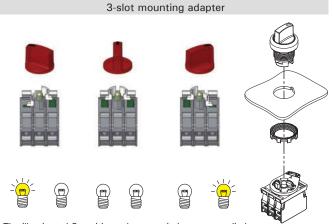




Actuator colour	Three	short h	nandle	kno	ob	long h	andle
and engraving	positions	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel	black bezel	Satin chrome bezel
white	\bigvee	E2 1SL13ACH21AB	E2 1SL13ACH29AB	E2 1SL43ACH21AB	E2 1SL43ACH29AB	E2 1SL23ACH21AB	E2 1SL23ACH29AB
red	\forall	E2 1SL13ACH31AB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



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

Selection table for complete units with four-position selectors

Four-position selector switches

Illuminated four-position selector switches





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

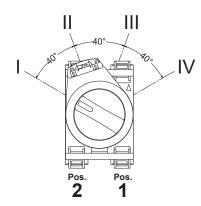
Legend: Maintained Spring-return

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

Contact diagram

			Selector	position	
	contacts	1	II	III	IV
pos. 2	.12				
sod	.34				
. 1	.12				
bos.	.34				

■ 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.

Grip type

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







with long handle



with knob

Complete units with two- or three-position selectors



Actuator			Contacts	6	2 positions	
	colour and Positions engraving		pos. 2	pos. 3	pos. 1	black bezel
	black	\vee	-	1NO	÷	E2 AC-DXBC1401 E2 1SE12AVA11AB + E2 1BAC11 + E2 CP10G2V1
	black	\checkmark	-	1NO	-	E2 AC-DXBC1402 E2 1SE12EVA11AB + E2 1BAC11 + E2 CP10G2V1





Actuator colour and Positions engraving			Contacts	3	3 positions	
		pos. 2	pos. 3	pos. 1	black bezel	
black	\downarrow	1NO	-	1NO	E2 AC-DXBC1405 E2 1SE13ACE11AB + E2 1BAC11 + E2 CP10G2V1 + E2 CP10G2V1	
black	\Diamond	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	Positions	Contacts			2 positions	
engraving	FUSITIONS	pos. 2	pos. 3	pos. 1	black bezel	
white	\vee	1NO	LED	1NC →	E2 AC-DXBC1805 E2 1SL12AVD21AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A2V1 + E2 CP01G2V1	
green	\vee	1NO	LED	1NC →	E2 AC-DXBC1801 E2 1SL12AVD41AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A4V1 + E2 CP01G2V1	

Other combinations on request.





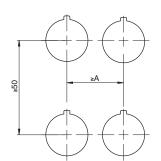
Actuato		Contacts			3 positions		
	colour and Positions engraving		pos. 3	pos. 1	black bezel		
white	\downarrow	1NO	LED	1NC →	E2 AC-DXBC1806 E2 1SL13ACH21AB + E2 1BAC11 + E2 CP10G2V1 + E2 LP1A2V1 + E2 CP01G2V1		
green	\downarrow	1NO	LED	1NC →	E2 AC-DXBC1803 E2 1SL13ACH41AB + E2 1BAC11 + E2 CP10G2V1 +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

Other combinations on request.

→ 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

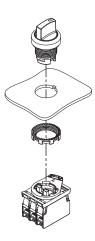
Maximum number of contact blocks

3-slot mounting adapter

Selector switches E2 •SE••••••



maximum number: 6 contact blocks 3 levels



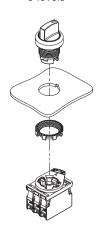
Contact



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



maximum number: 6 contact blocks 3 levels

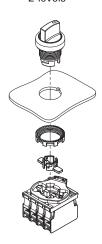


4-slot mounting adapter

Selector switches E2 •SE••••••



maximum number: 8 contact blocks 2 levels



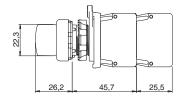
The mounting of the actuators for 4-slot base must be carried out after fixing the selector.

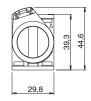
Dimensional drawings

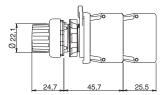
All values in the drawings are in mm

Selector switch with short handle

Knob selector switch

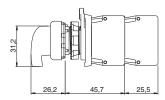








Selector switch with long handle





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

Actuators Packs of 10 pcs. Article Description

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

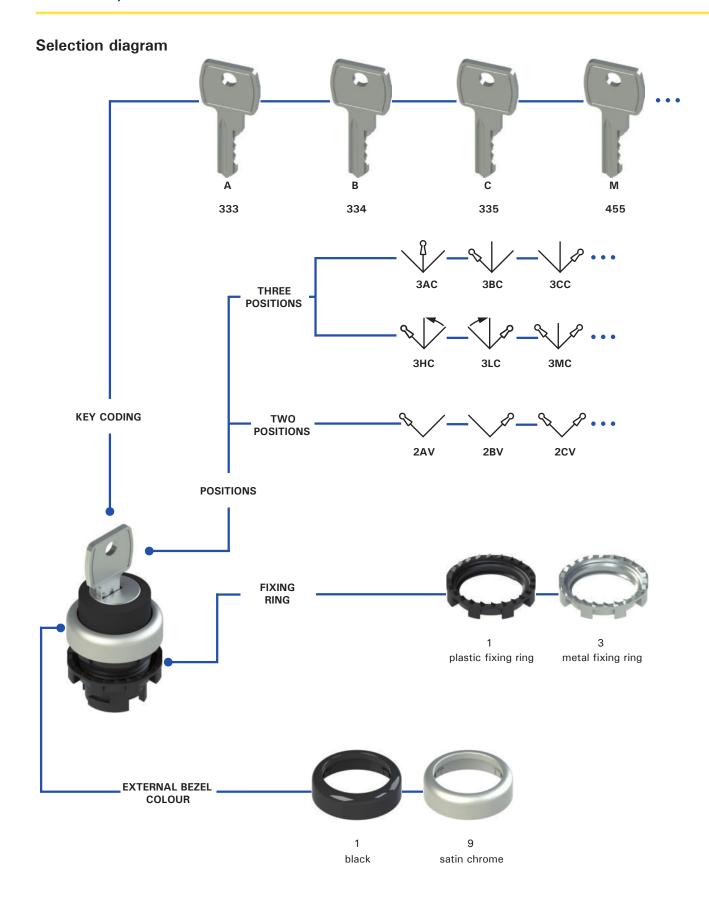
Fixing ring		Packs of 20 pcs .
A STATE OF THE STA	Article	Description
	VE GF720A	Metal fixing ring

Accessories

→ More ACCESSORIES on page 161



							No	ote	es							
															—	
															-	
																_
															-	



Code structure

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

E2 1SC2ACA11AA-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

Positions and key removal

2AV	\	ЗАС	N. C.	ЗНС				
2BV		3BC	V	3LC				
2CV		3CC		змс				
2DV		3DC	SIP	3NC	N.			
2AC	8	3EC	13	3PC	R			
2BC	P	3FC	₹ N	30C				
2DC	8	3GC		3RC	P			
Legend: V Maintained V Spring-return & Key extraction position								

Cams and actuators

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

Ambient temperature

-25°C ... +80°C (standard)

T6 -40°C ... +80°C

Marking type

- A no inscription (standard)
- for selector switches only, positions 2AC, 2BC, 2DC
- for three-position selector switches only
- for selector switches only, positions 2AV, 2BV, 2CV, 2DV

Other combinations on request.

Key coding

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

Other key codes on request.

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

RU C-IT.YT03.B.00035/19 EAC approval:

Technical data

General data

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

-40°C ... +80°C (T6 option)

Safety parameter Bon: 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 169

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 C22.2 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

These devices are designed to be used under

environments where the maximum degree of protection is required for the housing. Due to

subjected to cleaning with high pressure hot water jets. Thesethe switching type executed by the selector on the contacts. devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and 80°C).

Actuators for selector switches

Three types of actuators are available, which activate the cursors of the toughest environmental conditions, and the contacts combined with the selector: a white actuator allowing they pass the IP67 immersion test acc. to the commutation of a single contact block, and a black or grey actuator EN 60529. They can therefore be used in allowing the simultaneous commutation of two contact blocks next to each other.

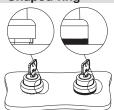
The white, black (3-slot base) and grey (4-slot base) actuators can be their special design, these devices are suitable for use in equipment removed and replaced at any moment. This allows to configure at will

Metal fixing ring

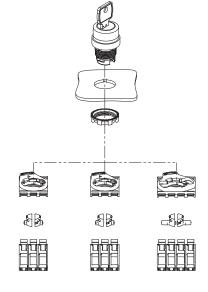


The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.

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.



Selection table for key selector switches

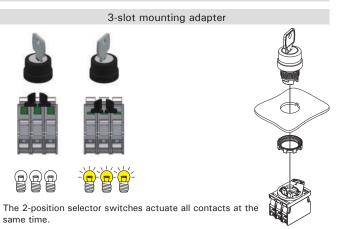




Actuator colour and	Two	with key								
engraving	positions	black bezel	Satin chrome bezel							
	\	E2 1SC2AVA11AA	E2 1SC2AVA19AA							
		E2 1SC2BVA11AA	E2 1SC2BVA19AA							
		E2 1SC2CVA11AA	E2 1SC2CVA19AA							
	\checkmark	E2 1SC2DVA11AA	E2 1SC2DVA19AA							
black	8	E2 1SC2ACA11AA	E2 1SC2ACA19AA							
	P	E2 1SC2BCA11AA	E2 1SC2BCA19AA							
	8	E2 1SC2DCA11AA	E2 1SC2DCA19AA							

The standard colour of the selectors in the above-mentioned codes is BLACK. Other colours on

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.

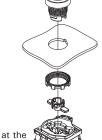


4-slot mounting adapter









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



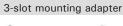


Actuator colour and	Three	with	key
engraving	positions	black bezel	Satin chrome bezel
	Ů,	E2 1SC3ACE11AA	E2 1SC3ACE19AA
	V	E2 1SC3BCE11AA	E2 1SC3BCE19AA
		E2 1SC3CCE11AA	E2 1SC3CCE19AA
	VI P	E2 1SC3DCE11AA	E2 1SC3DCE19AA
		E2 1SC3ECE11AA	E2 1SC3ECE19AA
	\$\sqrt{1}	E2 1SC3FCE11AA	E2 1SC3FCE19AA
		E2 1SC3GCE11AA	E2 1SC3GCE19AA
black		E2 1SC3HCE11AA	E2 1SC3HCE19AA
		E2 1SC3LCE11AA	E2 1SC3LCE19AA
		E2 1SC3MCE11AA	E2 1SC3MCE19AA
	VI/	E2 1SC3NCE11AA	E2 1SC3NCE19AA
	1	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.





















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	Docitions		Contacts	3	2 positions		
engraving	FUSILIONS	pos. 2	pos. 3	pos. 1	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.



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

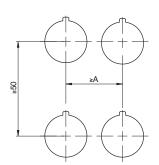


Actuator	Docitions		Contacts	3	3 positions			
colour and Positions engraving		pos. 2	pos. 3	pos. 1	black bezel			
black		1NO	-	1NO	E2 AC-DXBC1607 E2 1SC3DCE11AA + E2 1BAC11 + E2 CP10G2V1 + E2 CP10G2V1			

Other combinations on request. Key with key coding 333.

Minimum distances for installation

All values in the drawings are in mm



3-slot mounting adapter A = 30 mm4-slot mounting adapter

A = 40 mm

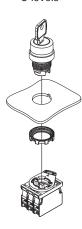
Maximum number of contact blocks

3-slot mounting adapter

E2 •SC•••••• key selector switch



maximum number: 6 contact blocks 3 levels

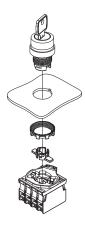


4-slot mounting adapter

E2 •SC•••••• key selector switch



maximum number: 8 contact blocks 2 levels



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

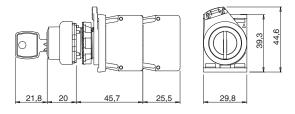




Dimensional drawings

All values in the drawings are in mm

Key selector switch



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

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

 $\textbf{Note: 2} \ \, \textbf{actuators needed for each selector}.$

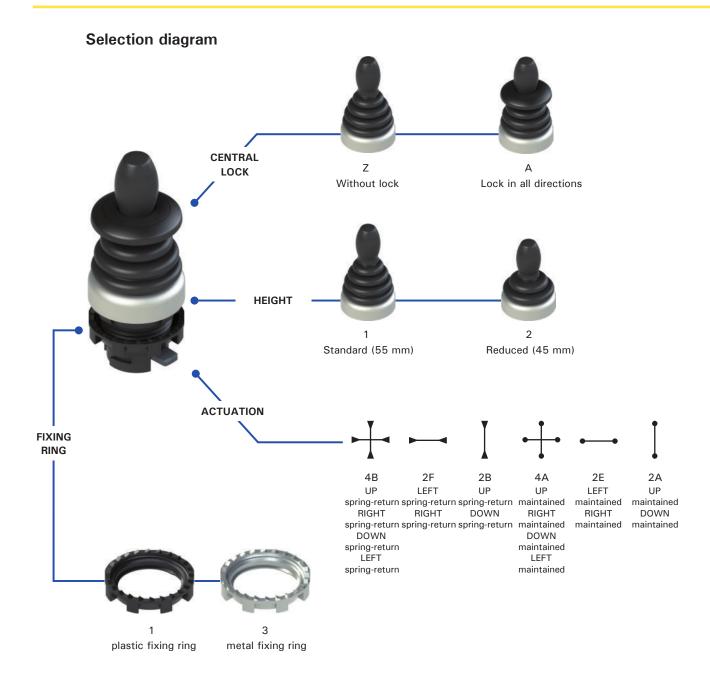
Shaped ring		Packs of 50 pcs.
	Article	Description
	VE GP12H1A	Shaped ring for single device
		oresence of label holders, 22 to Ø 30 mm, guards or

Accessories

→ More ACCESSORIES on page 161

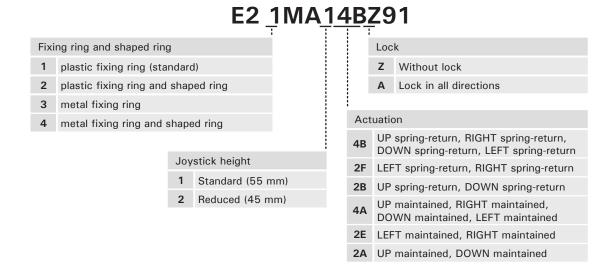
Fixing ring		Packs of 20 pcs.
The same of the sa	Article	Description
	VE GF720A	Metal fixing ring

							No	ote	es							



Code structure

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





- 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: E131787 UL approval:

EAC approval: RU C-IT.YT03.B.00035/19

Technical data

General data

Protection degree: IP67 acc. to EN 60529 IP69K acc. to ISO 20653 -40°C ... +80°C

Ambient temperature: 2,000,000 Safety parameter B_{op}:

1 million operating cycles Mechanical endurance:

500,000 unblocking operating cycles Max. actuation frequency: 3600 operating cycles/hour

0.17 Nm (spring-return actuation) Actuating force: 0.3 Nm (maintained actuation)

Maximum travel: 35°

Tightening torque of the fixing ring: 2 ... 2.5 Nm Utilization requirements: see page 169

In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 602 EN IEC 63000, UL 508, CSA C22.2 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

encloses the lever, in this way without leaving provided with early make the minimum aperture or junction.

This particular solution (patent pending) is present in all the versions of the joystick, two-speed actuations in

including the versions with reduced height and central lock and the same direction. 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 Maintained or spring-return actuation and temperature 80°C.

Two-step actuation

The elastic hood of the Pizzato joystick is made Two-step actuation in every direction is possible by connecting in in a single seamless piece that completely series to the normal NO contact blocks additional NO contact blocks

contacts. This option can be used for example to control









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.

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.

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.

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 contact block, the users can freely install the standar contact block in the configuration they prefer.

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-returr RIGHT spring-retu DOWN spring-retu LEFT spring-retu	rn, E2 1MA14BZ91	E2 1MA14BA91	E2 1MA24BZ91	E2 1MA24BA91
LEFT spring-return RIGHT spring-return		E2 1MA12FA91	E2 1MA22FZ91	E2 1MA22FA91
UP spring-return DOWN spring-ret		E2 1MA12BA91	E2 1MA22BZ91	E2 1MA22BA91
UP maintained RIGHT maintaine DOWN maintaine LEFT maintaine	d, E2 1MA14AZ91	E2 1MA14AA91	E2 1MA24AZ91	E2 1MA24AA91
LEFT maintained		E2 1MA12EA91	E2 1MA22EZ91	E2 1MA22EA91
UP maintained, DOWN maintaine		E2 1MA12AA91	E2 1MA22AZ91	E2 1MA22AA91

Selection table for complete units









		The state of the s	1	1	1
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. 3pos. 2pos. 4pos. 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	^{1,} 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		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		Con	tacts		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-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	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
X	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

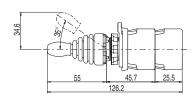
- Legend:

 maintained actuation

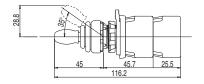
 ➤ spring-return actuation

Dimensional drawings

All values in the drawings are in mm

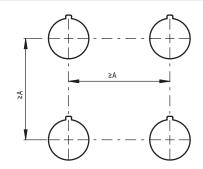








Minimum distances for installation



Standard height joystick

A = 70 mm

Reduced height joystick

A = 60 mm

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

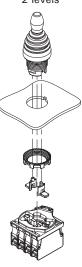
Maximum number of contact blocks

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.



Mounting adapter Packs of 10 pcs.



Shaped ring		Packs of 50 pcs.
	Article	Description
	VE GP12H1A	Shaped ring for single device
		oresence of circular or adapters from Ø 22 to Ø 30 guards.

Fixing ring		Packs of 20 pcs.
A STATE OF THE STA	Article	Description
	VE GF720A	Metal fixing ring

Accessories

→ More ACCESSORIES on page 161

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:
0	VE TF12A123	Label with shaped hole, 3circular, 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◀
in it	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▼
7.	VE TF32G9132	Label with shaped hole, prectangular, 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 164.

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

Open protection guard



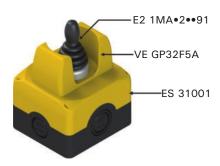
n gaara	
Article	Description
VE GP32F5A	Rectangular open yellow protection guard 66x38 mm, 35 mm high, complete with 4 screws (for panels of thickness from 1 to 3.5 mm)

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

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

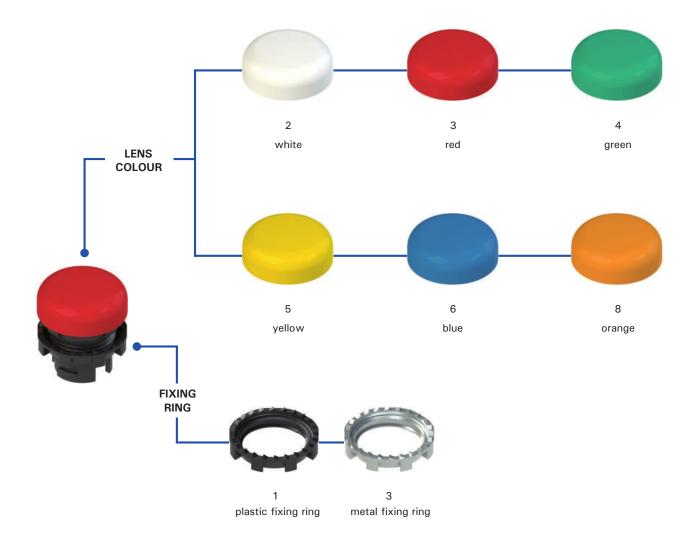
Application examples of guards





[→] 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 1ILA210

				TT	T T	Γ		
Fixi	ng ring and shaped ri	ng				Engi	raving	
1	plastic fixing ring (st	anda	ird)			0	no engraving (star	ndard)
2	plastic fixing ring an	d sha	aped ring			IT7	IN SERVIZIO	
3	metal fixing ring					IT8	ERROR	
4	metal fixing ring and	l sha	ped ring			L54	4	
						Other e	ngravings on request. See	e page 165.
		Lon	s shape	•	Lon	s colo	ur	
		Len	s snape		Len			
		Α	level, smooth	h	0	with	out lens	
					2	white	е	
					3	red		
					4	greei	า	
					5	yello	w	
					6	blue		
					8	oran	ge	



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

Quality marks:

CA02.04806 IMQ approval: UL approval: E131787

EAC approval: RU C-IT.YT03.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 169

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 C22.2 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

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

of protection is required for the housing. 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

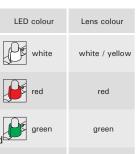


85

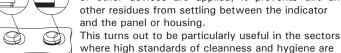
The shaped ring can be used when no label holder or other devices are applied; it prevents dirt and and the panel or housing.

where high standards of cleanness and hygiene are required.

Combination of LED colours with lens colours



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





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		LED		Article
engraving	pos. 2	pos. 3	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



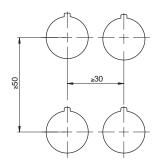
For ordering engraved lenses for E2 1IL indicator lights: replace the dots ••• in the article codes with the engraving code reported on the table at page 165.

Example: white lens for indicator light with 4" 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	0	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



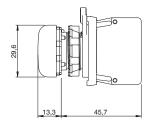
→ The 2D and 3D files are available at www.pizzato.com

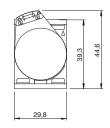
Accessories

→ More ACCESSORIES on page 161

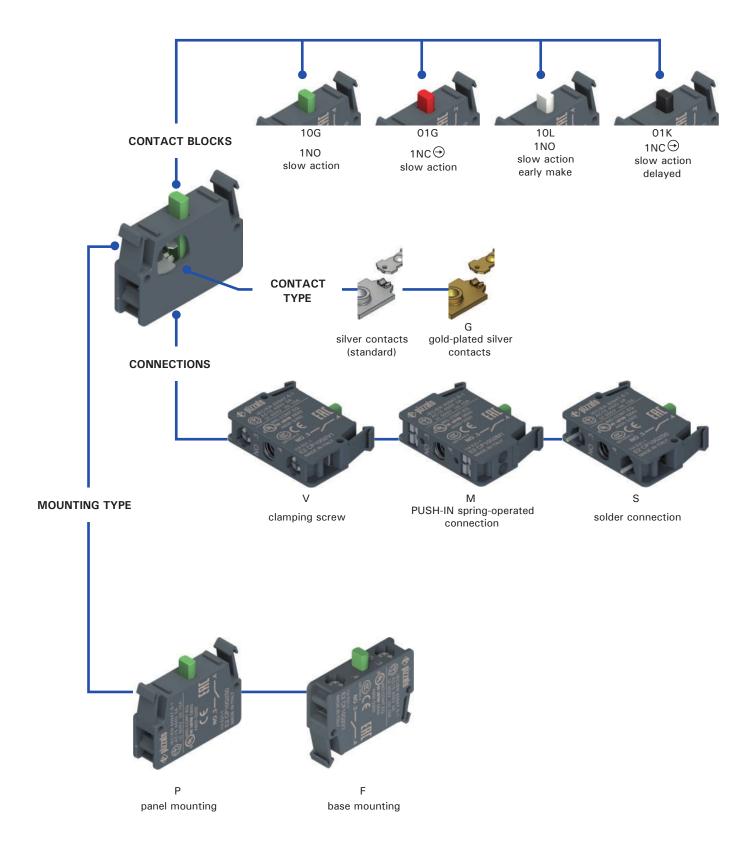
Dimensional drawings

All values in the drawings are in mm





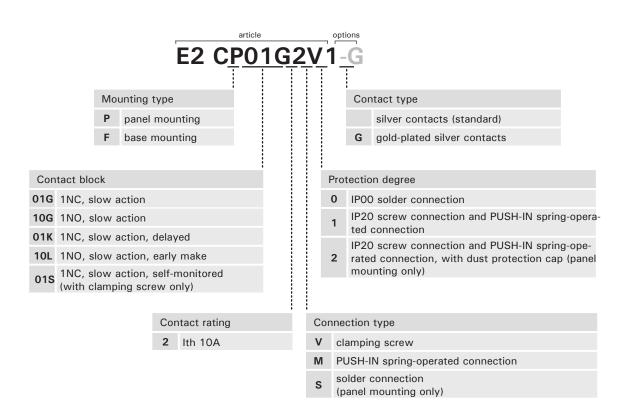
Selection diagram

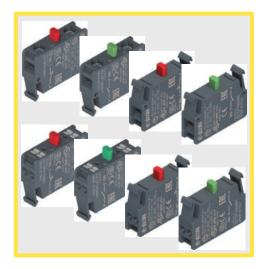


General Catalogue HMI 2023-2024

Code structure

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





- 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: 2021000305000106 EAC approval: RU C-IT.YT03.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 169

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_{0D} : 1,000,000 (NO), 40,000,000 (NC)

Material of the contacts: Silver contacts (standard)

For low current: silver contacts with 1 μ m

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 mm (1 x AWG 20)

max 2 x 2.5 mm(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 mm(1 x AWG 24) max. 2 x 1.5 mm(2 x AWG 16) min. 8 mm. max. 10 mm

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 C22.2 No. 14, GB/T14048.5.

⚠ Installation for safety applications:

Use only contact blocks marked with the symb. 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

Pollution degree:

Thermal current (||):
Rated insulation voltage (||):
Protection against short circuits:
Rated impulse withstand voltage (|||,|):

500 ts: typ: ge (∪,): 8 k

3

10 A 500 Vac/dc type gG/gL fuse 10 A 500 V 8 kV screw and solder connection 6 kV PUSH-IN spring-operated

connection

Utilization category

Alternating current: AC15 (50 ... 60 Hz)
Ue (V) 24 48 120 250 400
le (A) 6 6 6 6 3

Direct current: DC13

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

89 General Catalogue HMI 2023-2024

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):

Conventional free air thermal current (Ith):

Thermal current inside housing (Ithe):

Rated impulse withstand voltage (Uimp):

screw terminals or solder terminals

8 kV

terminals without screw

Protection degree of the housing:
screw terminals or terminals without screw

IP20

screw terminals or terminals without screw 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 (le): 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.

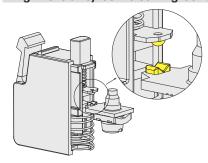
PUSH-IN spring-operated connection



The PUSH-IN spring connection allows quick and simple wiring, as the wire just needs to be inserted into the appropriate hole in order t 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.

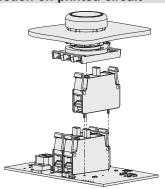
In addition, the contact block has holes for insertion of tester tips, so that electrical measurements can be carried out, without having to remove the connecting cables.

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







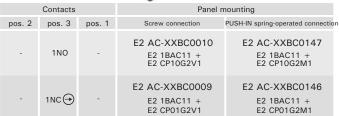




			Panel mounting		Base me	ounting
Contact blo	ck	Screw connection	PUSH-IN spring-operated connection	Solder connection	Screw connection	PUSH-IN spring-operated connection
1NC→ slow action	9 0	E2 CP01G2V1	E2 CP01G2M1	E2 CP01G2S0	E2 CF01G2V1	E2 CF01G2M1
1NO slow action	5 °	E2 CP10G2V1	E2 CP10G2M1	E2 CP10G2S0	E2 CF10G2V1	E2 CF10G2M1
1NC → slow action, delayed	9 °	E2 CP01K2V1	E2 CP01K2M1	E2 CP01K2S0	E2 CF01K2V1	E2 CF01K2M1
1NO slow action, early make	S	E2 CP10L2V1	E2 CP10L2M1	E2 CP10L2S0	E2 CF10L2V1	E2 CF10L2M1

Complete units with contact block and mounting adapter





Other combinations on request.



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

Other combinations on request.

Dimensional drawings		All values in the drawings are in mm
Contact block for panel mounting with screw connection, PUSH-IN spring-operated connection	Contact block for base mounting , with screw connection, PUSH-IN spring-operated connection	Contact block for panel mounting with solder connection
25.5	25.5	25.5 4 10
		Ø 1.4 mm holes on PCB

Dust protect	ion	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

							No	ote	es							
															$\mid \cdot \mid$	
															H	



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

Quality marks:



CA02.04805 IMQ approval: UL approval: F131787

CCC approval: 2021000305000106 EAC approval: RU C-IT.YT03.B.00035/19

Technical data

General data

Protection degree: IP20 acc. to EN 60529 at the terminals

-40°C ... +80°C Ambient temperature: Mechanical endurance: 20 million operating cycles Max. actuation frequency: 3600 operating cycles/hour

Utilization requirements: see page 169

Contact block

Switching force of the contacts: 2.9 N Actuating force at limit of travel: 5 N 17 N Positive opening force: Actuation speed: min 1 mm/s max. 0.5 m/s Safety parameter Bop: 40.000.000 (NC)

Material of the contacts: Silver contacts (standard) For low current: silver contacts with 1

> um gold coating (on request)

"V-shape" self-cleaning contacts with Contact type:

quadruple contact point

Cable cross section: min 1 x 0.34 mm (1 x AWG 22)

max. 2 x 1.5 m² (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 C22.2 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

10 A Thermal current (Ith): Rated insulation voltage (Ui): Protection against short circuits:

Rated impulse withstand voltage (U_n) :

Pollution degree:

250 Vac/dc

type gG/gL fuse 10 A 500 V

4 kV 3

Utilization category

Alternating current: AC15 (50 ... 60 Hz) Ue (V) 24 48 120 250 le (A) 6 6 Direct current: DC13

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

Functioning of self-monitored contact blocks

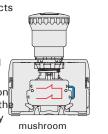
The operating principle of the self-monitoring contact blocks ensures that their associated control devices are free from faults and malfunctions caused by contacts separating, and that the safety function remains permanently available during machine operation.

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

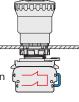
If the emergency stop button is pressed, the direct action of the force exerted on the control device opens th first contact (positive opening); this interrupts the safety circuit, while the second contact remains closed.

If the housing cover is removed (in the case of basemounted 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.

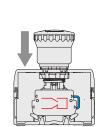
When using the machine in this way, the operator can always identify any hidden faults that have occurred internally to the electrical enclosures.



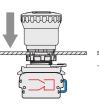
not pressed



mushroom not pressed



mushroom pressed



mushroom

pressed

10000001

housing

opening

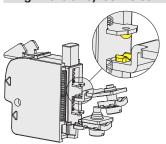
10000001

accidental separation accidental of the mounting adapter

separation of the contact block



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: 250 V Conventional free air thermal current (): 10 A Rated impulse withstand voltage (Um): 4 kV Protection degree of the housing: IP20 Utilization category:

Operating voltage (Ue): 250 Vac (50/60 Hz)

Operating current (le): 6 A

Forms of the contact element: Y

Positive opening of contacts on contact blocks O1S

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.

Selection table for contact blocks



Contact block	Panel mounting Screw connection
1NC → slow action self-monitored	E2 CP01S2V1



Packs of 5 pcs.

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

The self-monitoring contact block with panel mounting can be installed to any position on The self-monitoring contact block with base mounting can be installed only in the central position the 3-slot mounting adapter, and in the two central positions only on the 4-slot mounting 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
pos. 2	pos. 3	pos. 1	Screw connection
-	1NC SELF-MONITORED	-	E2 AC-XXBC0139 E2 1BAC11 + E2 CP01S2V1

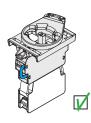
Other combinations on request

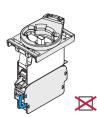
Installation of several single, double and self-monitored contact blocks

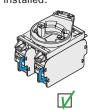
Always install self- Do not install selfmonitored contact blocks directly on the mounting adapter.

monitored contact blocks on standard no more than two contact blocks. For- self-monitored

Per each emergency stop button bidden application! contact blocks can be installed.







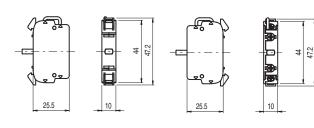
Dust protection Packs of 50 pcs.

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

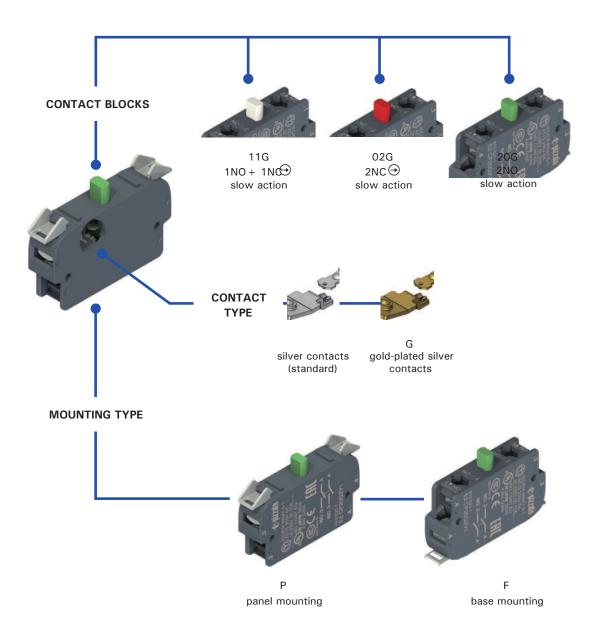
→ The 2D and 3D files are available at www.pizzato.com

Dimensional drawings

All values in the drawings are in mm

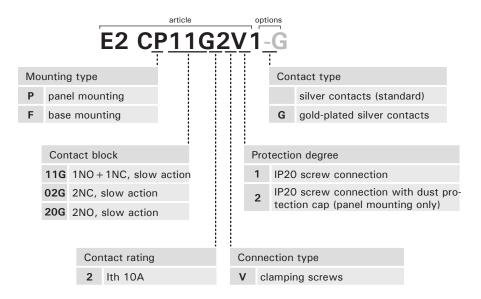


Selection diagram



Code structure

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





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

Quality marks:



IMQ approval: CA02.04805 UL approval: E131787

2021000305000106 CCC approval: EAC approval: RU C-IT.YT03.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 169

Contact block

Switching force of the contacts: 2NO: 1.7 N 2NC: 2 N

1NO + 1NC2.7 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 Bon: 1,000,000 (NO), 40,000,000 (NC)

Material of the contacts: Silver contacts (standard)

For low current: silver contacts with 1

 μ m gold coating (on request)

"V-shape" self-cleaning contacts with Contact type:

quadruple contact point min 1 x 0.34 mm (1 x AWG 22) max. 2 x 1.5 mm(2 x AWG 16)

Cable stripping length: 7 mm

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

In compliance with standards:

Cable cross section:

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 C22.2 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/

Positive contact opening in conformity with standards:

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

Electrical data

Utilization category Alternating current: AC15 (50 ÷ 60 Hz) 10 A Thermal current ([): Ue (V) 24 48 120 250 Vac/dc Rated insulation voltage (V): le (A) 6 6 Protection against short circuits: type gG/gL fuse 10 A 500 V Direct current: DC13 Rated impulse withstand voltage (U): 4 kV Ue (V) 24 48 125 Pollution degree: 3 le (A) 2.5 1.3 0.6

General data

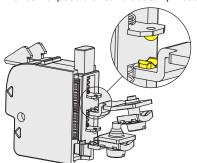
Positive opening



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 hese



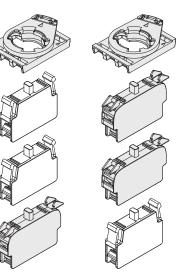
commutation failure. In addition to this, it improves considerably the reliability in the presence of dust.

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.

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.



250

250

0.3

6

Features approved by UL

A300 pilot duty Electrical ratings:

(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: 250 V Conventional free air thermal current (): 10 A Rated impulse withstand voltage (Ump): 4 kV Protection degree of the housing: IP20 Utilization category: AC-15

Operating voltage (Ue): 250 Vac (50/60 Hz)

Operating current (le):

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, 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	50	E2 CP11G2V1 0 2.5 5 1.1 <u>©</u> 2.1	E2 CF11G2V1 0 2.5 5 1.1 \odot 2.1
2NO, slow action	9 0	E2 CP20G2V1 0 2.5 5	E2 CF20G2V1 0 2.5 5
2NC, slow action	5 0	E2 CP02G2V1 0 1.1 ⊙2.1 5	E2 CF02G2V1 0 1.1 ⊕2.1 5

Complete units with contact block and mounting adapter



E2 AC-XXBC0137 E2 1BAC11 + E2 CP020





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

Other combinations on request.

Other combinations on request.

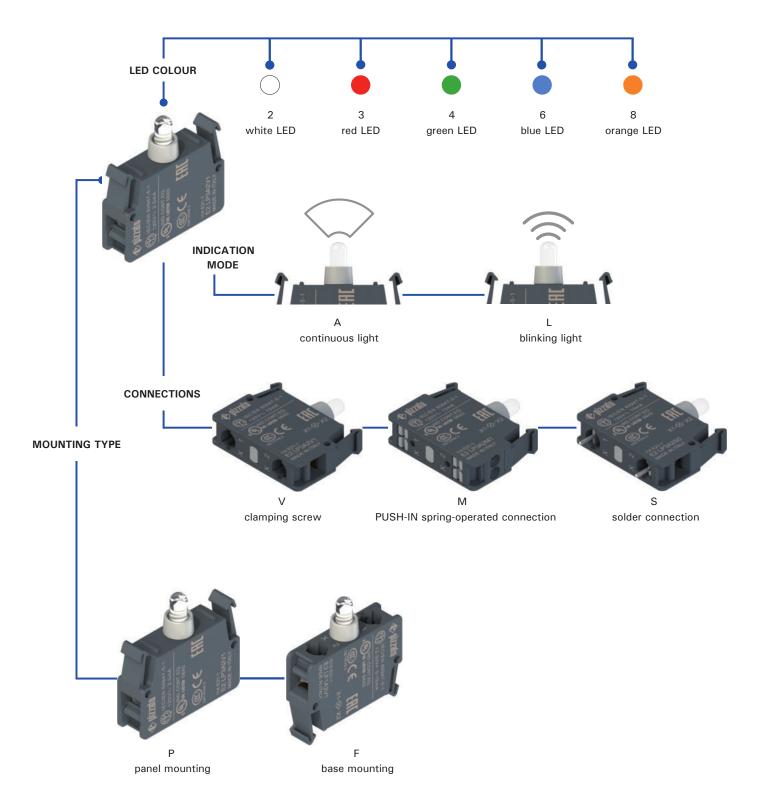
2NC (+)

Dimensional drawings	All values in the drawings are in mm
Contact block for panel mounting E2 CP••G•••	Contact block for base mounting E2 CF••G•••
25.5	4 4 22.2 25.5

Dust protect	ion	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



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

base mounting

Supply voltage

- 1 12 ... 30 Vac/dc (high luminosity)
- 120 Vac (high luminosity)
- 230 Vac (high luminosity)
- 120 Vac/dc (standard luminosity)
- 230 Vac/dc (standard luminosity)

Indication mode

- A Continuous light (standard)
- blinking light
 - (only with 12 ... 30 V supply voltage)

Protection degree

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

Connection type

- clamping screw (standard)
- PUSH-IN spring-operated connection
- solder connection (panel mounting only)

LED colour 2 white 3 red green

6

blue 8 orange



- 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:



CA02.04806 IMO approval: UL approval: E131787

2021000305000106 CCC approval: RU C-IT.YT03.B.00035/19 EAC approval:

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

100,000 hour\$at rated voltage and +25°C Endurance:

ambient temperature) Utilization requirements: see page 169

LED unit

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 mm (1 x AWG 20) max 2 x 2.5 mm (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 mm(1 x AWG 24) max. 2 x 1.5 m² (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 C22.2 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

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)

For LED holder series E2 L provided with clamping screw terminals: use 60 or 75 och compliance with standards: EN 60947-1, EN 60947-5-1, fundamental copper (Cu) conductor and wire size range 14-20 AWG, stranded or solid. The terminal equirements of the Low Voltage Directive 2014/35/EU. 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 'Rease contact our technical department for the list of approved products. 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:

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

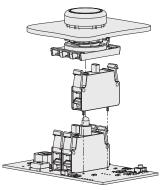


The PUSH-IN spring connection allows quick and simple wiring, as the wire just needs to be inserted into the appropriate hole in order t establish the electrical connection and automatically secure the wire. The reduced force required to insert the wire allows completely toolfree connection by using 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.



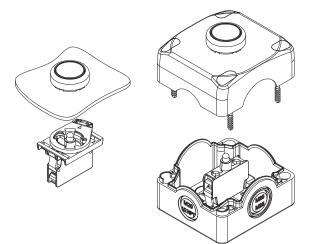
Solder connection on printed circuit



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

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

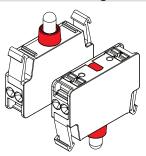


High luminosity LED



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.







		Panel mounting									
LED	Available	So	crew connectio	n	PUSH-IN spring-operated connection			Solder connection			
colour	device colour				0	perating voltag	e				
		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 / yellov	v 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.





				Base mo	ounting				
LED	Available device		Screw connection		PUSH-IN s	pring-operated con	nection		
colour	colour			Operating	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



		Contacts		Panel mounting	
LED colour		Contact	S	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.



		Contacts		Panel mounting	
LED colour	Contacts			Operating voltage	
Colodi	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.



. 55		Contact		Panel mounting
LED colour		Contacts	5	Operating voltage
001001	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.



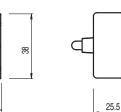
	Contacts			Panel mounting		
LED colour				Operating voltage		
001001	pos. 2	pos. 3	pos. 1	12 30 Vac/dc		
white	-	LED	-	E2 AC-XXBC0053 E2 1BAC11 + E2 LP1A2V1		
red	-	LED	-	E2 AC-XXBC0055 E2 1BAC11 + E2 LP1A3V1		
green	-	LED	-	E2 AC-XXBC0054 E2 1BAC11 + E2 LP1A4V1		
blue	-	LED	-	E2 AC-XXBC0056 E2 1BAC11 + E2 LP1A6V1		
orange	-	LED	-	E2 AC-XXBC0057 E2 1BAC11 + E2 LP1A8V1		

Other combinations on request.

Dimensional drawings

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

25.5

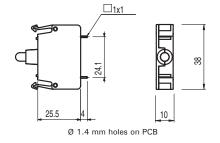


10 S

LED unit for panel mounting

with solder connection

All values in the drawings are in mm



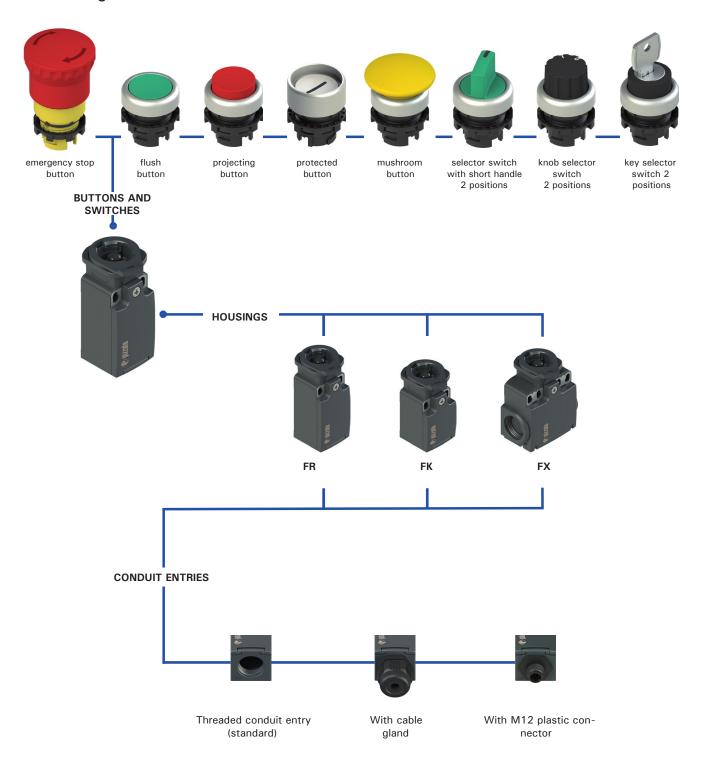
→ The 2D and 3D files are available at www.pizzato.com

LED unit for base mounting

spring-operated connection

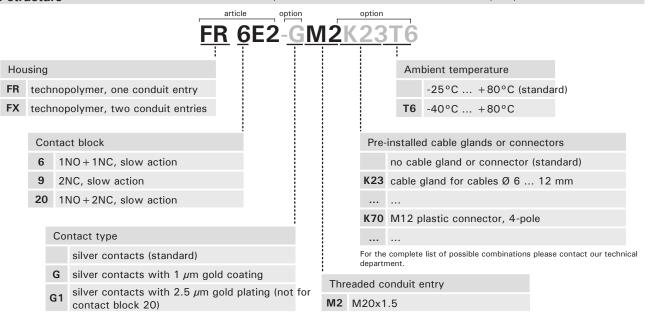
with screw connection, PUSH-IN

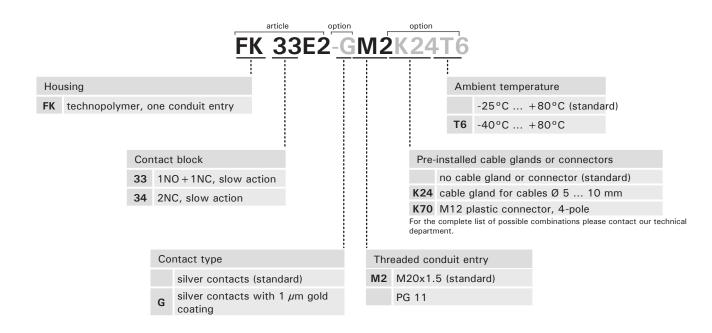
Selection diagram



Code structure

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







- Protection degree IP67 and IP69K
- Technopolymer housing
- Versions with gold-plated silver contacts

Quality marks:



EG610 IMQ approval: UL approval: E131787

CCC approval: 2021000305000101 RU C-IT.YT03.B.00035/19 EAC approval:

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.

In compliance with standards:

IEC 60947-5-1,EN 60947-5-1,EN 60947-1, 50047, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, EN IEC 63000, UL 508, CSA C22.2 No. 14, GB/T14048.5.

Technical data

Ambient temperature:

General data

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

and with double insulation FR series, one conduit entry: M20x1.5 FK series: one threaded conduit entry: M20x1.5

FX series, two knock-out threaded

conduit entries: M20x1.5

Protection degree: IP67 acc. to EN 60529ith cable gland of

equal or higher protection degree IP69K acc. to ISO 2065 ath cable gland

of equal or higher protection degree -25°C ... +80°C (standard) -40°C ... +80°C (T6 option)

40,000,000

Safety parameter Bon: Max. actuation frequency: 3600 operating cycles/hour Mechanical endurance: 20 million operating cycles

Utilization requirements: see page 169

Contact block

Switching force, FR, FX series contacts 3.3 N (NC) / 6 N (NO) 1NO + 1NC:

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 8.5 N

1NO + 2NC: 10.3 N FK series limit of travel force

9.3 N 1NO + 1NC: 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)

min. 1 x 0.5 mm² (1 x AWG 20) Contact blocks 6, 9: 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 Wiring diagrams of the assembled connectors: see page 194

⚠ 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).

Electi	ical data		Utilizatio	n catego	ry	
without	Thermal current (I): Rated insulation voltage (V: Rated impulse withstand voltage (V): Conditional short circuit current: Protection against short circuits: Pollution degree:	10 A 500 Vac 600 Vdc 400 Vac 500 Vdcontact blocks 20, 33, 34) 6 kV / 4 kVcontact blocks 20, 33, 34) 1000 A acc. to EN 60947-5-1 type aM fuse 10 A 500 V 3	Ue (V) le (A)	ing currer 250 6 urrent: D0 24 3	400 4	(50 ÷ 60 Hz) 500 1 250 0.3
with M12 con- nector, 4-pole	Thermal current (II): Rated insulation voltage (IV: Protection against short circuits: Pollution degree:	4 A 250 Vac 300 Vdc type gG fuse 4 A 500 V 3	Ue (V) le (A)	ing currer 24 4 urrent: D0 24 3	120 4	(50 ÷ 60 Hz) 250 4 250 0.3
with M12 con- nector, 8-pole	Thermal current (In): Rated insulation voltage (W): Protection against short circuits: Pollution degree:	2 A 30 Vac 36 Vdc type gG fuse 2 A 500 V 3	Ue (V) le (A)	ing currer 24 2 urrent: D0 24 2		(50 ÷ 60 Hz)

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 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) 500 Vac

400 Vactor contact blocks 20, 33, 34)

Conventional free air thermal current (1: 10 A

Protection against short circuits: type aM fuse 10 A 500 V

Rated impulse withstand voltage (Un): 6 kV

4 kV(for contact blocks 20, 33, 34)

IP67

Protection degree of the housing: ofMV terminals (screw terminals)

Pollution degree:

Utilization category: AC15 Operating voltage (Ue): 400 Vac (50 Hz)

Operating current (le):

Forms of the contact element: Za, Zb, Za+Za, Y+Y, X+X, Y+Y+X, Y+Y+Y, Y+X+ Positive opening of contacts on contact blocks 6, 9, 20, 33, 34

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.

Description



The protected contact block makes it possible to achieve an IP67, IP69K protection degree also in the contact area. This is essentially 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 block ensures an IP67, IP69K protection degree for internal electric contacts.

Extended temperature range

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

dust also inside the cabinet. The 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.

Contact blocks



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.

Protection degrees IP67 and IP69K



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

ing. All switches with actuator that do not have an external rubber hood also have a protection degree of IP69K in accordance with ISO 20653, and can be used on machinery subject to washing with water jets at 100 bar and 80°C.

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 actio	FR 6E2-M2 0 1.5 ⊖3 5 3.1
2NC, slow action →	FR 9E2-M2 0 2.9 [⊙] 4.4.5
1NO + 2NC, slow actio⊕	FR 20E2-M2 0 1.5 ③3 5



Contact block	Article
1NO+1NC, slow actio⊕	FX 6E2-M2 0 1.5 ©3 5 3.1
2NC, slow action €	FX 9E2-M2 0 2.9 [⊙] 4.4 ₅
1NO + 2NC, slow actio⊕	FX 20E2-M2 0 1.5 ③3 5

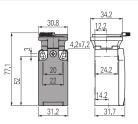


Contact block	Article
1NO+1NC, slow actio	FK 33E2-M2 0 1.5 ⊕3 5 2
2NC, slow action	FK 34E2-M2 0 1.5 ⊕3 5

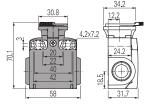
Dimensional drawings

All values in the drawings are in mm

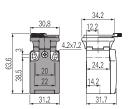
FR series



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).

							No	ote	es								
						l					l						

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

		LZ _	I O O D O C A		
Fixi	ng ring and shaped r	ing		Rea	r connection
1	plastic fixing ring (s	tandard)		AK	A-type USB integrated socket
2	plastic fixing ring an	nd shaped ring		N0.8	Output with PVC cable (length 0.8 m) and A-type USB male connector
3	metal fixing ring an	d shaped ring		N1.8	Output with PVC cable (length 1.8 m) and A-type USB male connector
	E	xternal bezel colour		N3	Output with PVC cable (length 3 m) and A-type USB male connector
	1	black (standard) satin chrome (stan	ndard)	N5	Output with PVC cable (length 5 m) and A-type USB male connector (available only via USB 2.0)
			Froi	nt cor	nnection
			Α	A-ty	pe USB 3.0 integrated socket
			С	A-ty	pe USB 2.0 integrated socket



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

Technical data

Ambient temperature:

General data

Connections: Protection degree: USB 3.0 or USB 2.0 IP67 acc. to EN 60529 (with closed cap)

(with closed cap) -25°C ... +70°C

Tightening torque of the ring: 2 ... 2.5 Nm Utilization requirements: see page 169

In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 602 EN IEC 63000, UL 508, CSA C22.2 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.

Quality marks:

C € : Wus EHI UK

UL approval: E131787

EAC approval: RU C-IT.YT03.B.00035/19

General data

USB 3.0 High Speed



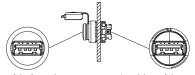
The USB socket for Ø 22 mm buttons uses latest-generation USB 3.0 connectors, in order to offer maximum data transfer speed. Moreover, the socket is also backward compatible with previous USB connectors.

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

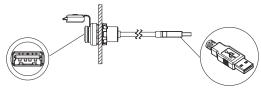
Versions with socket and with cable

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)



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.

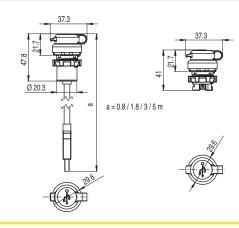
Integrated protection cap

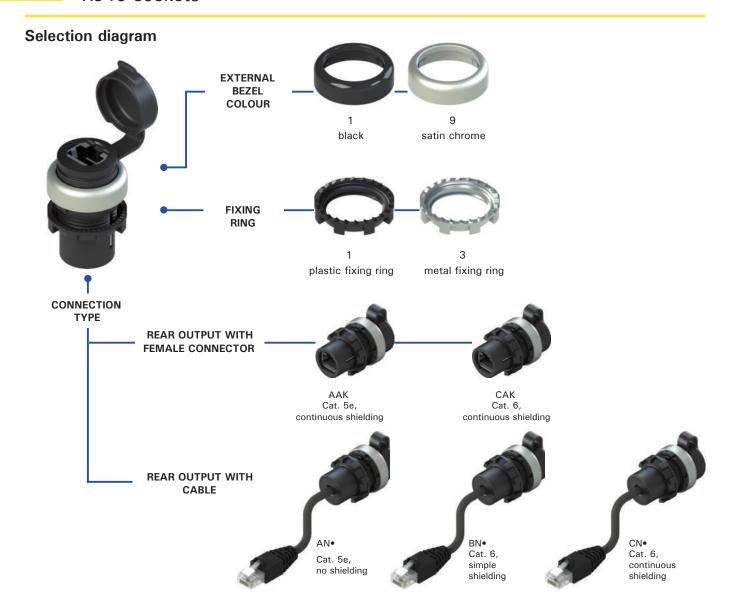
The protection cap integrated in the device ensures maximum resistance, preventing any water or dirt to get inside.

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.

Dimensional drawings

All values in the drawings are in mm





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

E2 1RJ459AAK

			EZ _	<u>I</u> NJ45		
Fixi	ng ring and shape	ed rin	g			
1	plastic fixing ring					
2	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 (sta	ndard)		

i	
Con	nection type
AAK	Rear output with female connector, Cat. 5e, continuous shielding
САК	Rear output with female connector, Cat. 6, continuous shielding
AN1	Rear output with 1 m long PVC cable, Cat. 5e, no shielding
AN1.5	Rear output with 1.5 m long PVC cable, Cat. 5e, no shielding
AN2.5	Rear output with 2.5 m long PVC cable, Cat. 5e, no shielding
BN1	Rear output with 1 m long PVC cable, Cat. 6, simple shielding
BN1.5	Rear output with 1.5 m long PVC cable, Cat. 6, simple shielding
BN2.5	Rear output with 2.5 m long PVC cable, Cat. 6, simple shielding
CN1	Rear output with 1 m long PVC cable, Cat. 6, continuous shielding
CN1.5	Rear output with 1.5 m long PVC cable, Cat. 6, continuous shielding
CN2.5	Rear output with 2.5 m long PVC cable, Cat. 6, continuous shielding $$



- RJ45 connectors available for speeds of up to 10 Gb/s
- Protection degree IP67
- · Version with socket/socket
- Version with socket / cable with male connector
- Available as shielded version

Quality marks:



UL approval: E131787

RU C-IT.YT03.B.00035/19 EAC approval:

Technical data

Protection degree:

General data

Connections:

Data transmission speed:

Up to 1 Gb/s for Cat. 5e Up to 10 Gb/s for Cat. 6

RJ45 connectors

IP67 acc. to EN 60529 (with closed cap)

-25°C ... +70°C Ambient temperature: Tightening torque of the ring: 2 ... 2.5 Nm Utilization requirements: see page 169

In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 602 EN IEC 63000, UL 508, CSA C22.2 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: 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

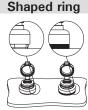


The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.

Protection degree IP67

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

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



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 Dimensional drawings hygiene are required.

Transmission speed (Cat. 6) and shielding

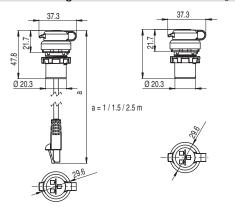
The RJ45 network sockets comply with the latest data transmission standards and are suitable for transmission speeds of up to 10 Gb/s, which is ideal for modern high-tech applications, where machinery must be connected to corporate networks and be able to process large files. The RJ45 sockets are also available with a full shielding option for front and rear connection or with simple shielding on the output cable (the latter only for versions with rear cable connection). Effective internal shielding is useful in the event of any electromagnetic interference, which can disturb or compromise the quality of data transmission.

Integrated protection cap

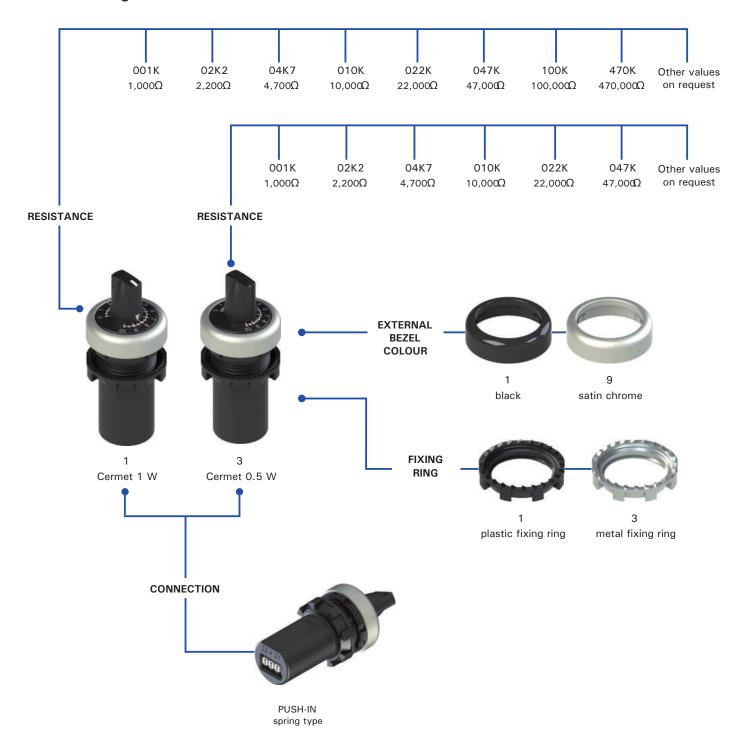
The protection cap integrated in the device ensures maximum resistance, preventing any water or dirt to get inside.

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.

All values in the drawings are in mm



Selection diagram



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

E6 1DM02K2-D111

Fixi	ng 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

	i
Resis	tance
001K	1 kΩ
02K2	2.2 ΙΩ
04K7	4.7 ΙΩ
010K	10 ΙΩ
022K	$22k\Omega$
047K	47 ΚΩ
100K	100 ${ m k}\Omega$ (for 1 W versions only)
470K	$470k\Omega$ (for 1 W versions only)

Other values on request.

External bezel colour

1 black (standard)

9 satin chrome (standard)

Potentiometer type

1 Cermet 1 W

3 Cermet 0.5 W

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



- 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:



RU C-IT.YT03.B.00035/19 EAC approval:

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 -40°C ... +80°C Ambient temperature:

Mechanical endurance:

50,000 operating cycles 1 W version 10,000 operating cycles 0.5 W version

Tightening torque of the fixing ring: 2 ... 2.5 Nm Utilization requirements: see page 169

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. 12(10x3AWM6n24) max 1 x 1.5 mm (1 x AWG 16)

Wire cross-section with pre-insulated wire-enthin. 1 x 0.34 mm (1 x AWG 24)

sleeve:

Pin assignment:

max. 1 x 0.75 mm(1 x AWG 18) PUSH-IN spring type Connection system: Cable stripping length (x):

min. 8 mm, max. 12 mm

Z2 terminal mobile cursor

Application features, 1 W version:

operating Max power nt le max (70 °C)
1 mA 1 W
1 mA 1 W
4 mA 1 W
0 mA 1 W
.7 mA 1W
.6 mA 1 W
3 mA 0.9 W
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 le 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 ΚΩ	46 V	10.8 mA	0.5 W
10 ΙΩ	67 V	7.4 mA	0.5 W
22 kΩ	99 V	5.0 mA	0.5 W
47 ΚΩ	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 C22.2 No. 14.

Compliance with the requirements of:

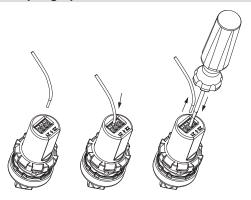
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

General data

Integrated potentiometer



PUSH-IN spring-operated connection



Thanks to its monolithic shape, it has been possible to integrate all the potentiometer is provided with a three-pole terminal board with the mechanical and electrical components needed for its end us PUSH-IN type spring-operated connection. This technology allows a inside the E6 series potentiometer body; it is therefore not necessary very handy quick wiring procedure. The wire is simply inserted into to assemble any other parts, such as knobs or trimmers, all that heise propriate hole, without the need for any auxiliary tooling, throurequired is to insert the circuit wires into the incorporated termigal the use of rigid or flexible wires with crimped wire-end sleeve. Release is obtained by pressing the appropriate wire-releasing button.

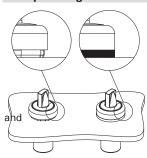
Moreover, the resistive element used is made of a composite ceramic and metal material, produced with the Cermet technology, which ensures remarkable stability and constancy in the set resistance value.

Protection degrees IP67 and IP69K

IP69K IP67 These devices are designed to be used under the toughest environmental conditions, and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where the maximum degree

of protection is required for the housing. 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.

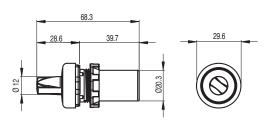
Metal fixing ring



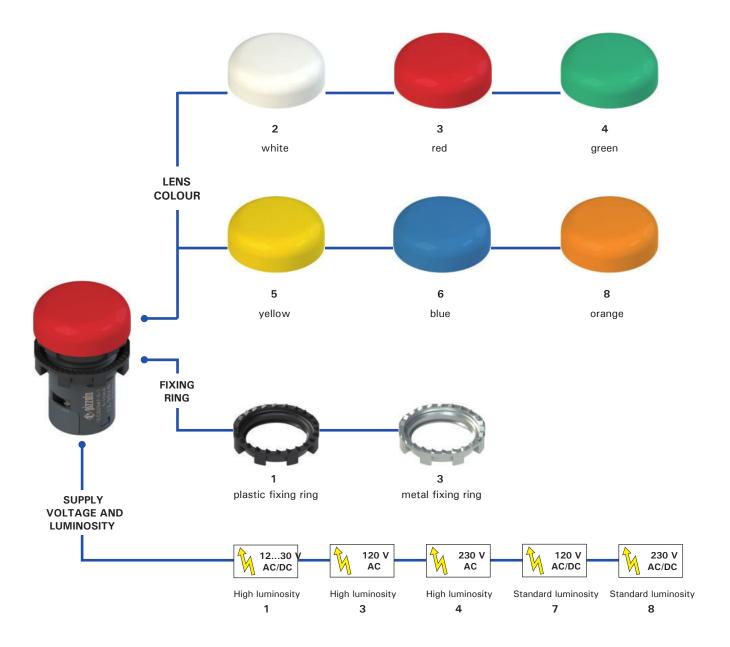
The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches.

Dimensional drawings

All values in the drawings are in mm



Selection diagram



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			
Ì	4	metal fixing ring and shaped ring			

Sup	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				

Engi	Engraving				
0	no engraving (standard)				
IT7	IN SERVIZIO				
L54	4				
Other engravings on request. See page 165.					

•						
Len	Lens colour					
2	white					
3	red					
4	green					
5	yellow					
6	blue					
8	orange					



- 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.YT03.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 hoursat rated voltage and +25 °C ambient temperature)

Tightening torque of the terminal screws: $0.8 \dots 1 \text{ Nm}$ Tightening torque of the fixing ring: $2 \dots 2.5 \text{ Nm}$ Utilization requirements: see page 169

LED unit

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(1 x AWG 22) max. 2 x 1.5 mm(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 C22.2 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

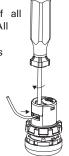
These devices are under the toughest tions, and they pass test acc. to EN 60 fore be used in all

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

the maximum degree of protection is required for the housing. In 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.

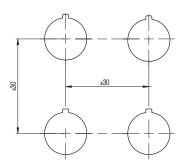
	Operating voltage						
Colour	12 - 30 Vac/dc	120 Vac	230 Vac	120 Vac/dc	230 Vac/dc		
	High luminosity	High luminosity	High luminosity	Standard luminosity	Standard luminosity		
white	E6 1IL1A2110	E6 1IL3A2110	E6 1IL4A2110	E6 1IL7A2110	E6 1IL8A2110		
red	E6 1IL1A3110	E6 1IL3A3110	E6 1IL4A3110	E6 1IL7A3110	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		

Dimensional drawings

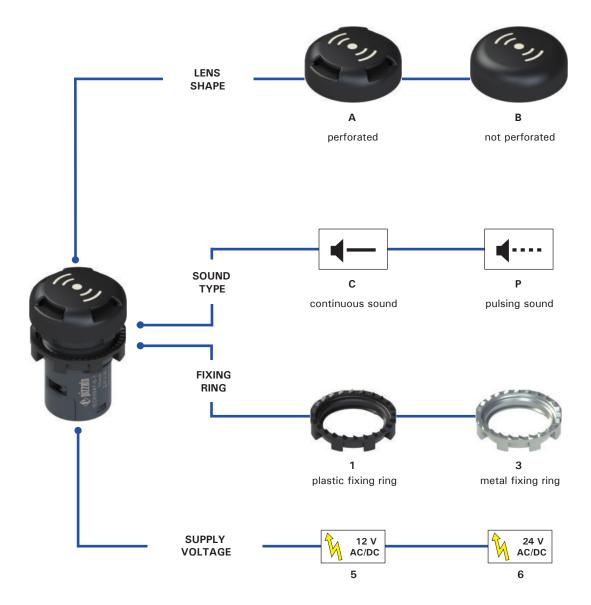
All values in the drawings are in mm

132

Minimum distances for installation



Selection diagram



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

E6 1IS6A1CV1B

Fixi	ng ring and	l shap	ped ring			Sou	nd type
1	plastic fix	ing ri	ng			С	continuous sound
2	2 plastic fixing ring and shaped ring					Р	pulsing sound
3	metal fixing ring						
4 metal fixing ring and shaped ring							
	Supply voltage				Lens	shap	е
	5 12 Vac/dc				Α	perfo	rated
		6	24 Vac/dc		В	not p	erforated



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

Quality marks:

C € :@... [AL 2K

UL approval:

RU C-IT.YT03.B.00035/19 EAC approval:

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 2065@vith 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 169

Electrical data

Operating voltage U: 12 Vac/dc or 24 Vac/dc

Supply voltage tolerance: $\pm 15\%$ of U Operating current: 10 mA

Minimum level of sound intensity:

24 Vac/dc versions: 95 dB at 10cmperforated lens) 80 dB at 10cmperforation-free lens) 12 Vac/dc versions: 90 dB at 10cmperforated lens)

75 dB at 10cmperforation-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 mm (1 x AWG 22) max. 2 x 1.5 m²ft(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 C22.2 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 xlSxBxxxxx "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

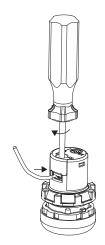
Protection degrees IP67 and IP69K

These devices are designed to be used under environments where the maximum degree install further components.

of protection is required for the housing. 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

Integrated screw connection

The shape of the type E6 sound indicator, though very compact, allows the toughest environmental conditions, and the integration on the device of all components for proper installation they pass the IP67 immersion test acc. to and functioning. All that is required is to wire the device by means of EN 60529. They can therefore be used in alls screw terminals in a quick and intuitive way. There is no need to



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.

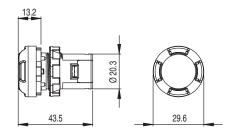
To diversify the type of indication provided, there are two different types of acoustic warning available: continuous sound or pulsing sound.

Selection table

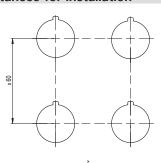
Lens shape	Sound type and supply voltage				
	Continuo	us sound —	Pulsing sound		
	12 Vac/dc	24 Vac/dc	12 Vac/dc	24 Vac/dc	
perforated	E6 1IS5A1CV1B	E6 1IS6A1CV1B	E6 1IS5A1PV1B	E6 1IS6A1PV1B	
not perforated	E6 1IS5B1CV1B	E6 1IS6B1CV1B	E6 1IS5B1PV1B	E6 1IS6B1PV1B	

Dimensional drawings

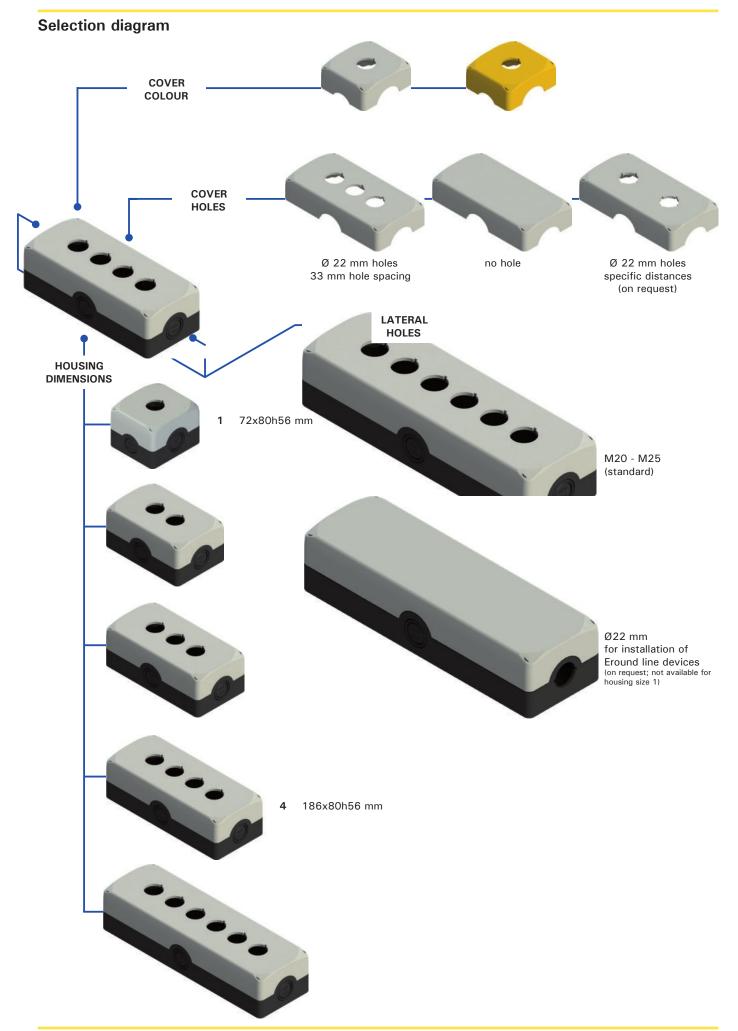
All values in the drawings are in mm



Minimum distances for installation



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



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

Confindard) 000 1

Bod	y material
3	polycarbonate PC (standard)

•						
Cor	Configuration					
000	black base, grey cover					
001	black base, yellow cover					
Other combinations on request.						

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



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

Quality marks:

RU C-IT.YT03.B.00035/19 FAC approval: UL approval: F131787

Technical data

Housing

Self-extinguishing shock-proof polycarbonate with double insulation, UV-resistant and glass fibre reinforced, high shock resistance. Material:

Material of the screws: Stainless steel

Protection degree: IP67 acc. to EN 60529

IP69K acc. to ISO 2065@able 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

4x knock-out side entries: 4x M20 - 1/2 NPT - M25

2x M20 knock-out base entries

Suitable for the installation of Ø 22 mm con-Device installation:

trol and signalling devices

Ø 22 mm hole acc. to EN 60947-5-1

Utilization requirements: see page 169

General data

Ambient temperature: -40°C ... +80°C Tightening torque of the cover screws: 1 ... 1.4 Nm

Housings with 2-3-4-6 holes:

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 C22.2 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

- The Tightening Torque value of cover screws: "Torque 1-1.4 Nm".
- The enclosed control box series ES and EA can be provided empty (without actuators and contact blocks) or equipped with actuators and contact blocks
- Empty version of Enclosed Control Stations ES and EA are already provided of holes for actuators
- Enclosed Control Stations ES and EA cannot be provided of mushroom actuators equipped with red head and yellow background
- Enclosed Control Stations ES and EA provided with yellow cover are not suitable for use with mushroom actuator with red head
- The Enclosed Control Stations ES and EA are suitable for conduit connection only
- For the enclosed control box series ES, the hub is to be connected to the conduit before the hub is connected to the enclosure
- For polymeric Enclosures that are intended for field assembly of the bonding means shall be located where visible during installation, such as inside the cover, and consist of the word "CAUTION" and the following or the equivalent, "Bonding between conduit connections is not auton and must be provided as a part of the installation"; or the word "CAUTION" and the following or equivalent, "Nonmetallic enclosure does not provide grounding between conduit connection. Use grounding bushings and jumper wires".
- The maximum number of contact block for each hole of the Enclosed Control Stations ES and EA is 4
- The illuminated disk VE DL series as polymeric component assembled to Enclosed Control Stations ES and EA covers a hole of 5,5 mm diameter

General data

Protection degrees IP67 and IP69K

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

protection is required for the housing. 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

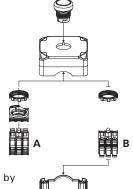
The housings of the EROUND line by Pizzato Elettrica have 4 additional holes on the cover. The holes enable wall fixing from the outside by means of insertion of the screws, without the need to open the cover to

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. Ø 25

Selection table for housings



Cover colour	Article	Ø 22 mm hole
yellow RAL 1003	ES 31001	1
grey RAL 7035	ES 31000	1
grey RAL 7035	ES 31013	0
grey RAL 7035	ES 31014	2
yellow RAL 1003	ES 31015	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 colou	Actuator rcolour and engraving		Contacts pos. 3		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	-	1NO	-	ES AC31015 ES 31000 + E2 1PU2R421GB1 + E2 CF10G2V1	-
grey RAL 7035	red	-	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		Positions	Contacts			Black selector switch with 2 position
	colour	FUSILIONS	pos. 2	pos. 3	pos. 1	black bezel
		\ /				ES AC31019
	grey RAL 7035		-	1NO	-	ES 31002 + E2 1SE12AVA11AB -



Other combinations on request.

grey RAL 7035

Spring-return $\ensuremath{\Omega}$ Key extraction position

1NO







Housing cover colour	_	pos. 2	Contacts pos. 3	pos. 1	Emergency stop button Push-Pull	Emergency stop button rotary release	Emergency stop button, key release
	colour	p03. 2	p03. 0	pos. 1	1 44111	,	,
yellow RAL 1003	red	-	ınc⊖	-	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 →	ınc⊖	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.

To data regarding contact blocks, please see the respective chapters.

Other combinations on request.

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

Complete control device units ES AC31 •••







Housing cover colour	Actuator				Emergency stop button	Emergency stop button	Emergency stop button,
Housing cover colourdesign and colour pos. 2 pos. 3 pos. 1		Push-Pull	rotary release	key release			
yellow RAL 1003	red	-	1NC⊖	-	ES AC31054 ES 31015 + E2 1PEPZ4531 + E2 CF01G2V1	ES AC31238 ES 31015 + E2 1PERZ4531 + E2 CF01G2V1	ES AC31606 ES 31015 + E2 1PEBZ4531 + E2 CF01G2V1
yellow RAL 1003	red	-	1NC SELF-MONITORED	-	ES AC31601 ES 31015 + E2 1PEPZ4531 + E2 CF01S2V1	ES AC31605 ES 31015 + E2 1PERZ4531 + E2 CF01S2V1	ES AC31607 ES 31015 + E2 1PEBZ4531 + E2 CF01S2V1
yellow RAL 1003	red	1NC →	-	1NC →	ES AC31602 ES 31015 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF01G2V1	ES AC31050 ES 31015 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF01G2V1	ES AC31092 ES 31015 + E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF01G2V1
yellow RAL 1003	red	1NC	-	1NO	ES AC31603 ES 31015 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF10G2V1	ES AC31056 ES 31015 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF10G2V1	ES AC31608 ES 31015 + E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF10G2V1
yellow RAL 1003	red	1NC →	1NC→	1NO	ES AC31604 ES 31015 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1	ES AC31332 ES 31015 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1	ES AC31609 ES 31015 + E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1

Complete control device units ES AC31 •• with luminous disc







Housing cover colou	Actuator	Contacts			Emergency stop button Push-Pull
riousning cover colou	colour	pos. 2	pos. 2 pos. 3		Yellow luminous disc, flashing Ø 60 mm, 24 Vac/dc
grey RAL 7035	red	1NO	ınc⊖	CON- NECTION BLOCK	ES AC31430 ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 1BAC11 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1
grey RAL 7035	red	1NO	1NC SELF-MONITORED	CON- NECTION BLOCK	ES AC31431 ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 1BAC11 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1
grey RAL 7035	red	1NO	2NC 🕀	CON- NECTION BLOCK	ES AC31432 ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 1BAC11 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1

Emergency stop button rotary release
Yellow luminous disc, flashing
Ø 60 mm, 24 Vac/dc

ES AC31433 ES AC31433 ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 1BAC11 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1

ES AC31434 ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 1BAC11 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1

ES AC31435 ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 1BAC11 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1

Emergency stop button, key release
Yellow luminous disc, flashing
Ø 60 mm, 24 Vac/dc

ES AC31436 ES AC31436 ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 1BAC11 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1

ES AC31437 ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 1BAC11 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1

ES AC31438 ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 1BAC11 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1

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

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

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



Housing cover colou	Actuator	Contacts			Emergency stop button rotary release
riousing cover colou	design and colour	pos. 2 pos. 3		pos. 1	with plastic M12 connector
yellow RAL 1003	red	-	ıNC↔	-	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 1NCself-Monitored		ES AC31027 1NO+1NC	ES AC31028 1NO+2NC
2 4	2 4	2 4	2 4	2 7 6 5 8

M12 connector, M12 connector, M12 connector, M12 connector, M12 connector, 4-pole 4-pole 4-pole 4-pole 8-pole 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	Spare caps							
	Article	Description						
9	VE TS35RA1	4 spare caps for ES series housing cover. Colour: yellow						
9	VE TS39RA1	4 spare caps for ES series housing cover. Colour: grey						

Accessories

→ More ACCESSORIES on page 161



	ES AC316		
Description	F	eatures	Diagram
Button - 1NO E2 1PU2R221L9	flush, sp	oring-return, white	E\
Contacts 1x E2 CP10G2V1	pos. 2	pos. 3 pos. 1 1NO /	
Button - 1NO E2 1PU2R121L10	flush, sp	oring-return, black	F- \
Contacts 1x E2 CP10G2V1	pos. 2	pos. 3 pos. 1 1NO /	L



ES AC32010						
Description	Features		Diagram			
Button - 1NO E2 1PU2R421L35	flush, spring-retu	rn, green	F \			
Contacts 1x E2 CF10G2V1	pos. 2 pos. 3 / 1NO	pos. 1 /	[]			
Button - 1NC E2 1PU2S321L1	projecting, spring-	return, red	_ _			
Contacts 1x E2 CF01G2V1	pos. 2 pos. 3	pos. 1	E-7			



ES AC33017					
	Description		Features		Diagram
Button - 1NO E2 1PU2R221L9		flush	n, spring-return,	white	E\
Contacts 1x E2 CF10G2V1		pos. 2	pos. 3 1NO	pos. 1 /	
Button - 1NC E2 1PU2S321L1		projecting, spring-return, red			L E 7
Contacts 1x E2 CF01G2V1		pos. 2	pos. 3 1NC⊖	pos. 1 /	L-7
Button - 1NO E2 1PU2R121L10		flush, spring-return, black			E-7
Contacts 1x E2 CF10G2V1		pos. 2 /	pos. 3 1NO	pos. 1 /	E\



	ES AC34035	
Description	Features	Diagram
Button - 1NO E2 1PU2R221L9 Contacts 1x E2 CP10G2V1	flush, spring-return, white pos. 2 pos. 3 pos. 1 / 1NO /	E-\
Button - 1NO E2 1PU2R121L10 Contacts 1x E2 CP01G2V1	flush, spring-return, black pos. 2 pos. 3 pos. 1 / 1NO /	E\
Emergency stop button E2 1PERZ4531 Contacts 1x E2 CP01G2V1+1x E2 CP10G2V1	rotary release, red pos. 2	O.F\-\-\
Luminous disc VE DL1A5L13	Yellow, continuous light 24 Vac/dc	EE

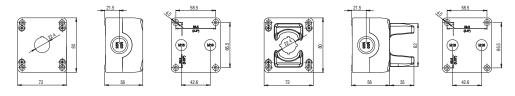


	ES AC36041	
Description	Features	Diagram
Button - 1NO E2 1PU2F4410	mushroom, spring-return, green	
Protection guard 1x VE GP32B1A	cylindrical, black	E
Contacts 1x E2 CP10G2V1	pos. 2 pos. 3 pos. 1 / 1NO /	
Emergency stop button - 1NC E2 1PERZ4531	rotary release, red	45
Contacts 1x E2 CP01G2V1	pos. 2 pos. 3 pos. 1 / 1NC⊖ /	0.F _V -7
Button - 1NO E2 1PU2F4410	mushroom, spring-return, green	
Protection guard 1x VE GP32B1A	cylindrical, black	E\
Contacts 1x E2 CP10G2V1	pos. 2 pos. 3 pos. 1 / 1NO /	

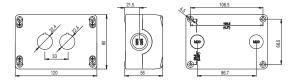
Other combinations on request.

Dimensional drawings

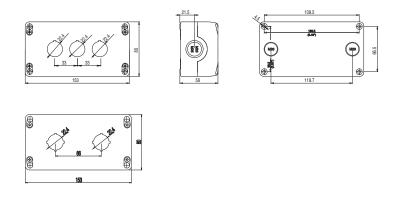
Housings (72 x 80 h 56)



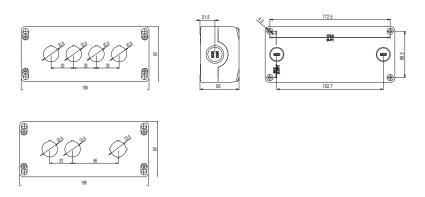
Housings (120 x 80 h 56)



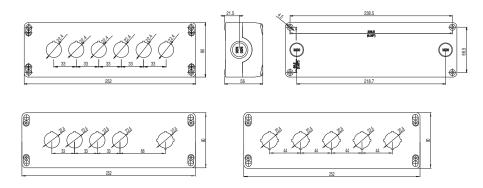
Housings (153 x 80 h 56)



Housings (186 x 80 h 56)



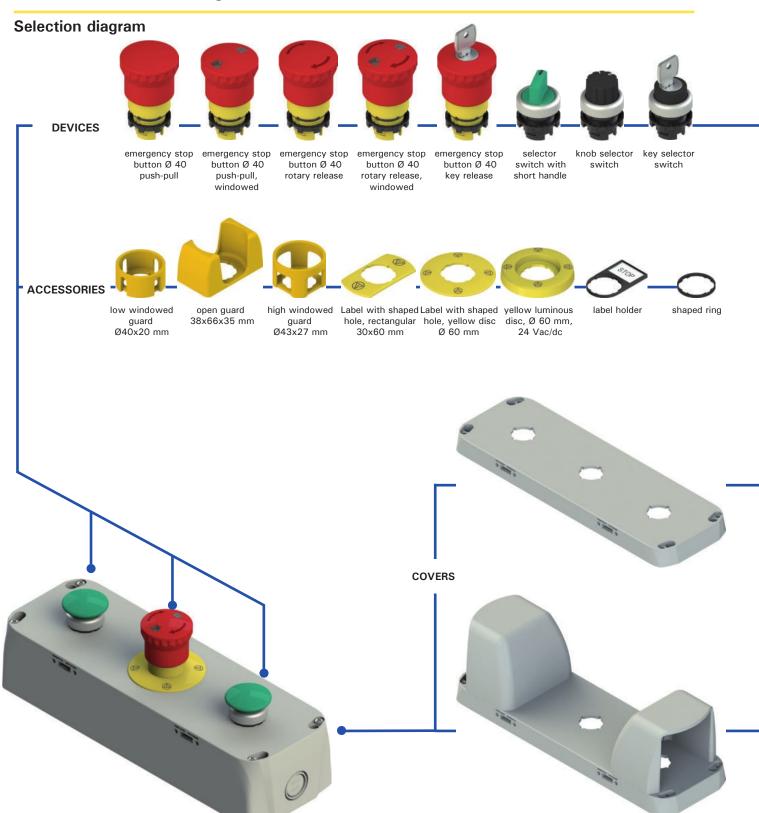
Housings (252 x 80 h 56)



All values in the drawings are in mm

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

							No	ote	es								
											l	l					







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

EA <u>3701</u>0

Body material

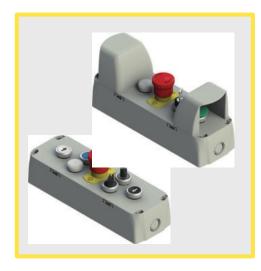
Configuration

3 polycarbonate PC (standard)

010 grey base, grey cover
...

Housing dimensions

7 280x90 mm



- Protection degree IP65
- · Stainless steel captive screws
- 2 x side cable entries + 2 x bottom cable entries

Quality marks:

C € [H[: @ " ĽK

RU C-IT.YT03.B.00035/19 E131787 UL approval:

Technical data

Housing

Self-extinguishing shock-proof polycarbonate with double insulation, UV-resistant and glass Material:

fibre reinforced, high shock resistance.

Material of the screws: Stainless steel

IP65 acc. to EN 60529 with cable gland of equal or Protection degree:

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 con-

trol and signalling devices

Ø 22 mm hole acc. to EN 60947-5-1

Utilization requirements: see page 169

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

Features approved by UL

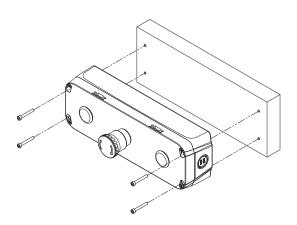
- The Tightening Torque value of cover screws: "Torque 1-1.4 Nm"
- The enclosed control box series ES and EA can be provided empty (without actuators and contact blocks) or equipped with actuators and
- Empty version of Enclosed Control Stations ES and EA are already provided of holes for actuators
- Enclosed Control Stations ES and EA cannot be provided of mushroom actuators equipped with red head and yellow background
- Enclosed Control Stations ES and EA provided with vellow cover are not suitable for use with mushroom actuator with red head
- The Enclosed Control Stations ES and EA are suitable for conduit connection only
- For the enclosed control box series ES, the hub is to be connected to the conduit before the hub is connected to the enclosure
- For polymeric Enclosures that are intended for field assembly of the bonding means shall be located where visible during installation, such as inside the cover, and consist of the word "CAUTION" and the following or the equivalent, "Bonding between conduit connections is not automatic and must be provided as a part of the installation"; or the word "CAUTION" and the following or equivalent, "Nonmetallic enclosure does not provide grounding between conduit connection. Use grounding bushings and jumper wires".
- The maximum number of contact block for each hole of the Enclosed Control Stations ES and EA is 4
- The illuminated disk VE DL series as polymeric component assembled to Enclosed Control Stations ES and EA covers a hole of 5,5 mm diameter

General data

Fixing of EROUND housings

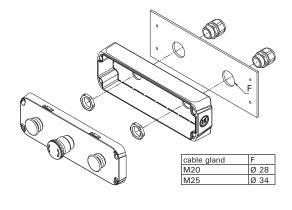
The new housings of the EROUND line by Pizzato Elettrica have 4 additional holes on the cover. The holes enable wall fixing from the outside by means of insertion of the screws, without the need to open the cover to access the holes.

The external fixing of the housing is therefore particularly suited for already wired enclosures.



Wiring through the lower surface

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



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 •••





Description		Features		Diagram
Mushroom button - 1NO E2 1PU2F4490	Sį	oring-return, gre	en	ı
Guard VE GG3AA9A				E
Contacts 1x E2 CP10G2V1	pos. 2	pos. 3 1NO	pos. 1	
Emergency stop button Ø 40 - 1NC E2 1PERZ4531	rotary r	elease, 40 mm red		
Label VE TF32A5113				Φ - √-}†
Contacts 1x E2 CP01G2V1	pos. 2	pos. 3 1NC⊖	pos. 1 /	
Mushroom button - 1NO E2 1PU2F4490	Sį	oring-return, gre	en	ı
Guard VE GG3AA9A				E\
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.

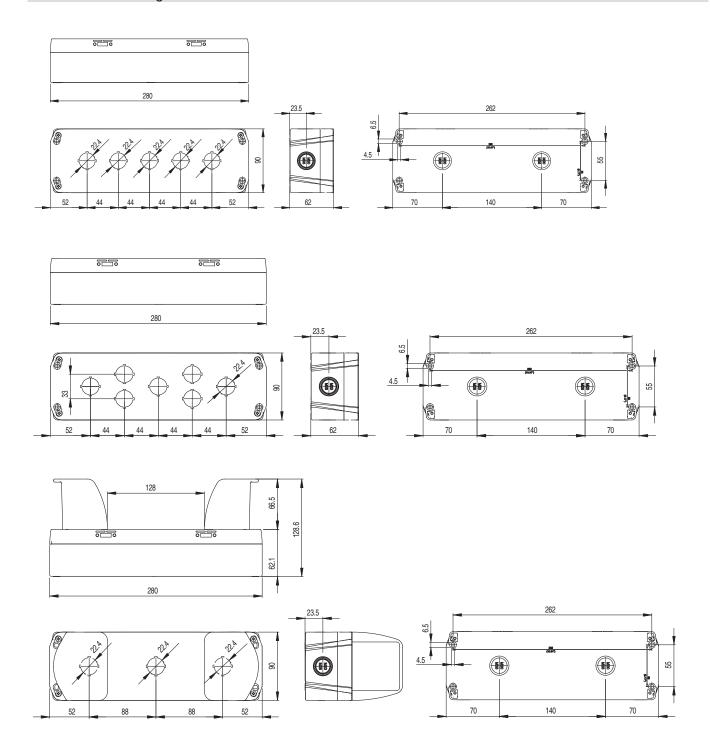




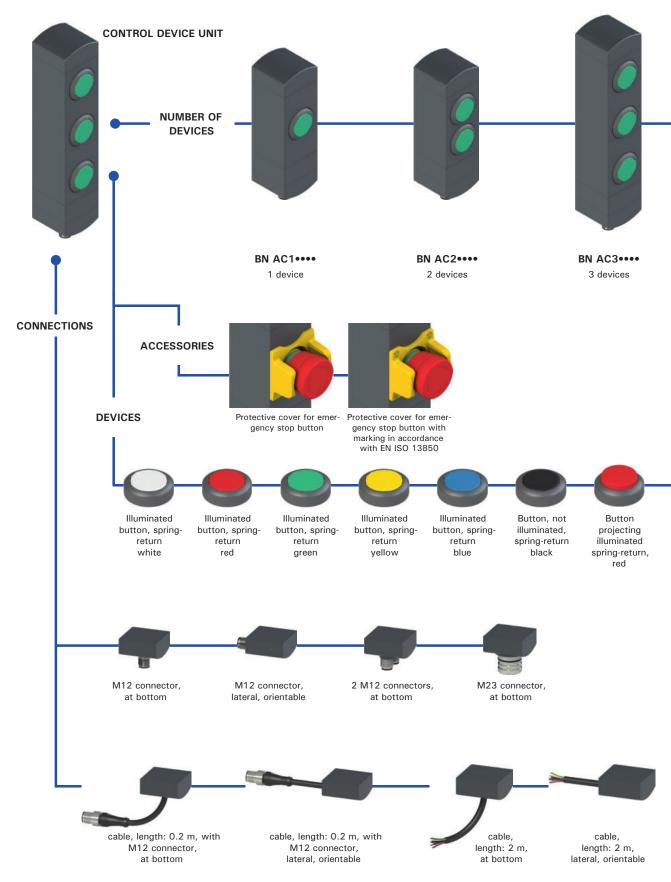
Description		Features		Diagram
Mushroom button - 1NO + 1NC E2 1PU2F4490	sı	pring-return, gre	1.1	
Guard VE GG3AA9A				E\
Contacts E2 CP10G2V1 + E2 CP01G2V1	pos. 2	pos. 3 1NO	pos. 1 1NC ↔	
Emergency stop button Ø 40 - 2NC E2 1PERZ4531	rotary r	elease, 40 mm red	diameter,	1.1
Label VE TF32A5113				Φ <i>Ŧ</i> -√-ϟ ϟ
Contacts 2x E2 CP01G2V1	pos. 2 1NC⊖	pos. 3	pos. 1 1NC⊖	11
Mushroom button - 1NO + 1NC E2 1PU2F4490	s	pring-return, gre	een	1.1
Guard VE GG3AA9A				E\
Contacts E2 CP10G2V1 + E2 CP01G2V1	pos. 2	pos. 3 1NO	pos. 1 1NC ⊖	1 1

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.

Dimensional drawings



Selection diagram

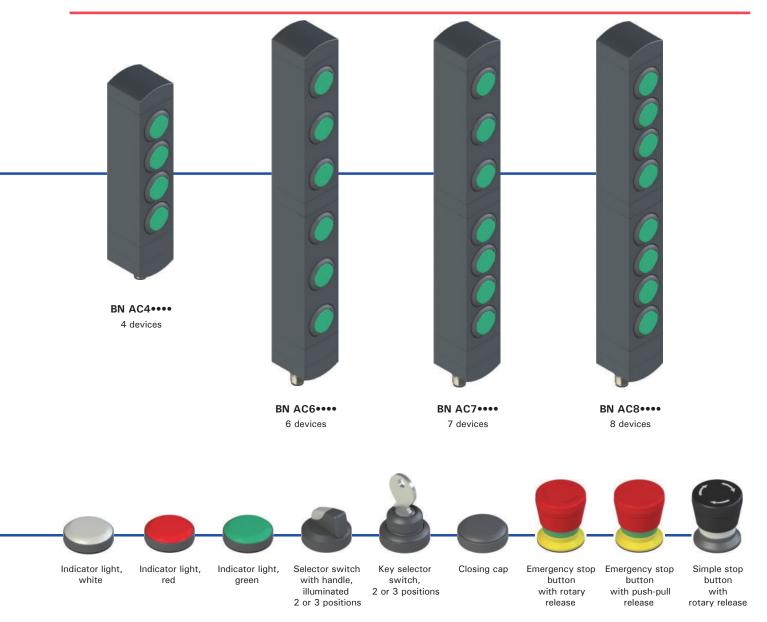




product option

Sold separately as accessory





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

BN AC3ZA01

Nun	nber of devices	Bu	utto	n configuration
1	1 device	AC	01	A01 configuration
2	2 devices	AC	02	A02 configuration
3	3 devices	AC	03	A03 configuration
4	4 devices			other configurations on request
6	6 devices			
7	7 devices			
8	8 devices			



- Modular control device unit for 1 to 8 devices
- Rotatable fixing position
- 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 Model BN with base module dimensions 40 mm by 38.5 mm by

Input Supplied by 24 Vdc, 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)

Model BN with base module dimensions 40 mm by 38.5 mm by 82.1 mm:

Input Supplied by 24 Vdc, Class 2 Source or limited voltage limited energy, 0,048 A max. (Maximum four leds).

Output 24 Vac/dc "Class 2" 0.25 A Pilot Duty (Maximum four Actuators, with maximum eight contacts, NO or NC or both) o 0.18 A Pilot Duty (Maximum four Actuators, with maximum eight 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 mmength 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 50,000 operating cycles Emergency stop button: Selector switch: 300,000 operating cycles 50,000 operating cycles Key selector switch:

30,000 operating cycles including remo-

val of the key

100,000 (emergency stop button) Safety parameter, B:

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 24 Vdc ±10% SELV/PELV Thermal current 1: 1 A Rated insulation voltage U 32 Vac/dc

Rated impulse withstand voltage Un: 1.5 kV Material of the contacts: silver contacts

Contact type: Self-cleaning contacts with double interruption Utilization category of the contact block: DC-13; $V_a = 24 V_a \neq 0.55 A$

LED supply voltage: 24 Vdc ± 15%

Single LED supply current: 12 mA

M12 connector electrical data

32 Vac/dc Max. operating voltage: 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 C22.2 No. 14.

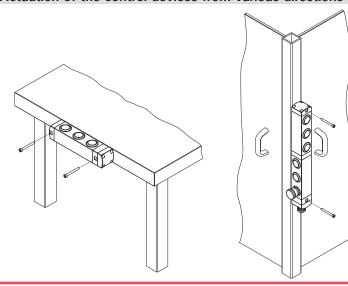
Compliance with the requirements of:

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 1 to 8 devices.

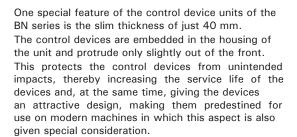
The unique design with individually turnable modules allows the user to select from a number of combinations. He receives a very versatile product that is immediately ready for use.

Compatibility with NS series switches

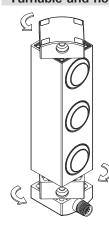


The control device units of the BN series have the same dimensions as the RFID safety switches with lock of the NS series. When mounted directly to the side of the switch, one obtains an integrated safety device whose components are made of the same material and have identical dimensions.

Minimal dimensions



Turnable and non-detachable modules

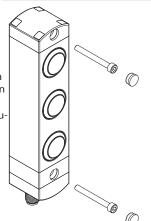


During installation, the fixing modules can be turned on the top and bottom of the device to enable variable orientation of the control devices.

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.

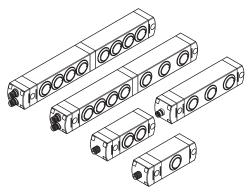
Protection against tampering

40 mm



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 1 to 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.

Laser markable lenses



With all product configurations, a number of devices can be installed that can also be illuminated via LEDs integrated in the device.

The buttons are equipped with lenses that can be marked by laser for a resistant, indelible engraving. This allows you to customize the lenses with a wide range of text and symbols. For a complete

list of available engravings, please refer to the tables on pp. 165-168.

Protection guard for emergency stop button



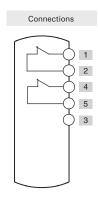
The mushroom-shaped emergency stop button can be combined with a yellow protection guard that serves to protect the device from shocks. The protection guard can also be provided with a laser marking in accordance with EN ISO 13850.

Examples of available configurations

BN AC1ZA12



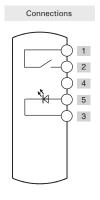
	Description	Colour	Diagram
Device 1	Emergency stop button with rotary release 2NC, with laser-marked protection guard	l red	1 2 4 5
Connector	M12, 5-pole at bottom	1	



BN AC1ZA02



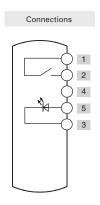
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 2 5 3
Connector	M12, 5-pole, at bottom	/	



BN AC1ZA03



	Description	Colour	Diagram
Device 1	Illuminated selector switch with handle with two positions 1NO	black	1 — 2 5 — 3
Connector	M12, 5-pole, at bottom	/	

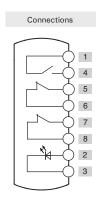




BN AC2ZA26



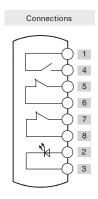
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 — 4 2 — 3
Device 2	Emergency stop button with rotary release 2NC, with protection guard	red	5 6 7 8
Connector	M12, 8-pole, at bottom	/	



BN AC2ZA02



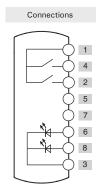
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	blue	1 — 4 2 — 3
Device 2	Emergency stop button with rotary release 2NC	red	5 — 6 7 — 8
Connector	M12, 8-pole, at bottom	1	



BN AC2ZA03



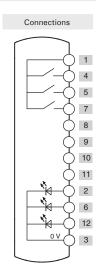
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 — 4 6 — 3
Device 2	Illuminated button, spring-return 1NO	blue	1 — 2 8 — 3
Connector	M12, 8-pole, at bottom	/	



BN AC3ZA01



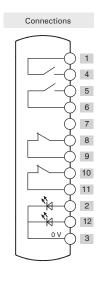
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 — 4 2 — 3
Device 2	Illuminated button, spring-return 1NO	blue	1 — 5 6 — 3
Device 3	Illuminated button, spring-return 1NO	yellow	1 — 7 12 — 3
Connector	M12, 12-pole, at bottom	1	



BN AC3ZB59



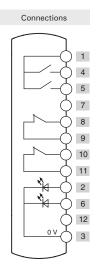
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 — 4 2 — 3
Device 2	Illuminated button, spring-return 1NO	blue	5 — 6 12 — 3
Device 3	Emergency stop button with rotary release 2NC, with laser-marked protection guard		8 — 9 10 — 11
Connector	M12, 12-pole, at bottom	1	



BN AC3ZA03



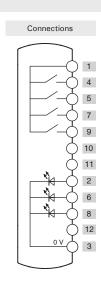
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 — 4 2 — 3
Device 2	Illuminated button, spring-return 1NO	yellow	1 5 6 3
Device 3	Emergency stop button with rotary release 2NC	red	8 9
Connector	M12, 12-pole, at bottom	/	



BN AC4ZA01



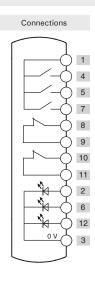
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	green	1 — 4 2 — 3
Device 2	Illuminated button, spring-return 1NO	red	1 5 6 3
Device 3	Illuminated button, spring-return 1NO	white	1 7 8 3
Device 4	Two-position key selector switch 1NO	black	1 9
Connector	M12, 12-pole, at bottom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



BN AC4ZB19



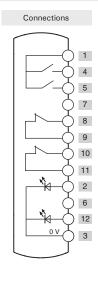
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 — 4 2 — 3
Device 2	Illuminated button, spring-return 1NO	blue	1 5 6 3
Device 3	Illuminated button, spring-return 1NO	yellow	1 7 12 3
Device 4	Emergency stop button with rotary release 2NC, with protection guard	red	8 —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



BN AC4ZA03



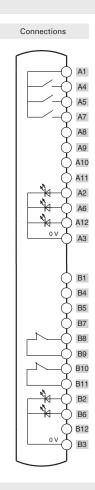
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	1 — 4 2 — 3
Device 2	Spring-return button 1NO	black	1 — 5
Device 3	Indicator light	green	12————————————————————————————————————
Device 4	Emergency stop button with rotary release 2NC	red	8 — 9 10 — 11
Connector	M23, 12-pole,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



BN AC6ZA40



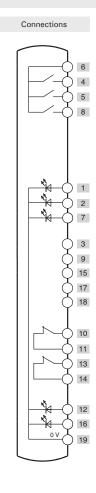
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	A1 — A4 A2 — A3
Device 2	Illuminated button, spring-return 1NO	blue	A1 — A5 A6 — A3
Device 3	Illuminated button, spring-return 1NO	yellow	A1 — A7 A12 — A3
Device 4	Indicator light	green	B2—B3
Device 5	Indicator light	white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



BN AC6ZA02



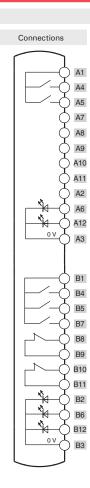
	Description	Colour	Diagram
Device 1	Illuminated button, spring-return 1NO	white	6 — 4 1 — 19
Device 2	Illuminated button, spring-return 1NO	blue	6 5 2 19
Device 3	Illuminated button, spring-return 1NO	yellow	6 — 8 7 — 19
Device 4	Indicator light	green	12————————————————————————————————————
Device 5	Indicator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



BN AC7ZA07



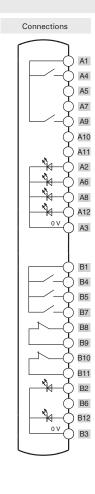
	Description	Colour	Diagram
Device 1	Two-position key selector switch 1NO	black	A1 —— A4
Device 2	Illuminated selector switch with handle with two positions 1NO	black	A1 A5 A3
Device 3	Indicator light	green	A12 A3
Device 4	Illuminated button, spring-return 1NO	white	B1 — B4 B2 B3
Device 5	Illuminated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



BN AC8ZA01



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



BN series control device units

Spare devices available

	Description	Colour	Article	Combinable with contact	Protrusion (x) mm
0	Illuminated button, spring-return	White Red Green Yellow Blue	VN NG-AC27121 VN NG-AC27123 VN NG-AC27124 VN NG-AC27125 VN NG-AC27126	1NO (1NC) (2NO)	3
	Non-illuminated button, spring-return	Black	VN NG-AC27122	1NO (1NC) (2NO) (1NO + 1NC)	3
	Non-laser-markable, illuminated, projecting push buttof ⁽¹⁾	Red	VN NG-AC26018	1NO (1NC) (2NO) (1NO + 1NC)	6,1
	Indicator light	Red Yellow Green Blue White	VN NG-AC26060 VN NG-AC26061 VN NG-AC26062 VN NG-AC26063 VN NG-AC26064		2,7
	Emergency stop button acc. to. EN ISO 13850 Rotary release Push-pull release	Red Red	VN NG-AC26052 VN NG-AC26055		26,4
	EN ISO 13850-compliant emergency pushbutton for 2NC + 1NO pulse contacts (3) Rotary release	● Red	VN NG-AC26056	2NC + 1NO pulse	26,4
9	Illuminated emergency stop button acc. to. EN ISO 13850 Rotary release Push-pull release	Red Red	VN NG-AC26051 VN NG-AC26054	2NC	26,4
	Simple stop button Rotary release Push-pull release	Black Black	VN NG-AC26053 VN NG-AC26057		26,4
	Illuminated selector switch with handle with 2 or 3 positions and transparent lens for LED	BlackBlackBlackBlack	VN NG-AC26033 VN NG-AC26030 VN NG-AC26034 VN NG-AC26031	(1NC) (2NO) (1NO + 1NC)	16,8
	Key selector switch, 2 or 3 positions	BlackBlackBlack	VN NG-AC26043 VN NG-AC26040 VN NG-AC26041	(2NO) (1NO + 1NC)	39 (a) 14 (b)
	Closing cap	Black	VN NG-AC26020) /	2,7
		Black			

To order buttons with marking:
add the marking code indicated in the tables on pp. 165-168 to the article codes.
Example: Black spring-return button with "0" engraving.

VN NG-AC27122→ VN NG-AC27122-L1

⁽¹⁾ The contacts in brackets are on request. Contact our technical department to verify the effective feasibility of the control panel with the chosen combination of control devices.
(2) The projecting buttons are not laser markable.
(3) The pulse NO contact is activated only when the emergency button reaches the bottom of the stroke. The NO contact signal should be detected by analyzing the rising edge.

Technical data of the control devices

General data

IP65 acc. to EN 60529 Protection degree:

Mechanical endurance:

Spring-return button: 1 million operating cycles Emergency stop button: 50,000 operating cycles 300,000 operating cycles Selector switch: Key selector switch:

50,000 operating cycles

of the key

100,000 (emergency stop button) Safety parameter, B:

Actuating force

4 N min 100 N max. Spring-return button: Emergency stop button: 20 N min 100 N max. 0.1 Nm min 1.5 Nm max. Selector switch: Key selector switch: 0.1 Nm min 1.3 Nm max.

Contact blocks of the control devices Material of the contacts:silver contacts

Contact type: Self-cleaning contacts with double inter-

ruption

Electrical data:

Thermal current 1: 1 A 32 Vac/dc Rated insulation voltage U Rated impulse withstand voltage Un: 1.5 kV LED supply voltage: 24 Vdc ± 15% LED supply current: 10 mA per LED

30,000 operating cycles including removal Utilization category of the contact block:

Direct current: DC13

U_e (V) 24 0.55 I (A)

Signalling contact with spring return:

Direct current: DC13

U_a(V) 24 I (mA) 10

In compliance with standards:

IEC 60947-5-1, IEC 60947-5-5, EN ISO 13850

♠ Installation for safety applications:

Always connect the safety circuit to the NC contacts (normally closed

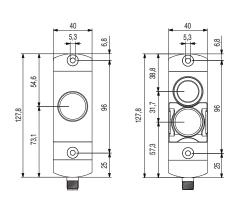
contacts) as stated in standard EN 60947-5-1.

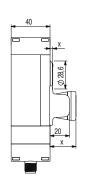
Dimensional drawings

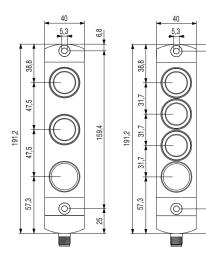
BN AC1 •••• BN AC2 ••••

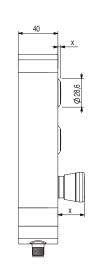
BN AC3••••

BN AC4••••

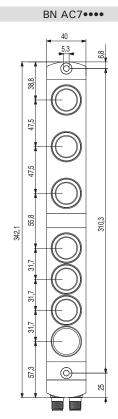


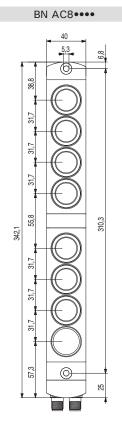


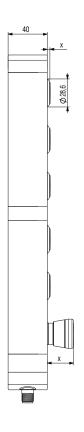




BN AC6 **** 55,8 342,1 57,3







Output type

M12 connector, at bottom

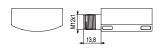
M12 connector,

Two M12 connectors,

M23 connector, at bottom















All values in the drawings are in mm

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



Electrical connections

M12 connector, 5-pole





Two M12 connectors, 12-pole

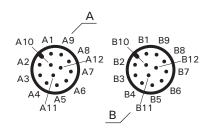
M12 connector, 8-pole

		С	abl	е
Pin No.	Cable colour			Р
1	brown			
2	blue			
3	white			
4	green			
5	pink			
6	yellow			

Pin No.	Cable colour
7	black
8	grey
9	red
10	purple
11	grey-pink
12	red-blue

M12 connector, 12-pole





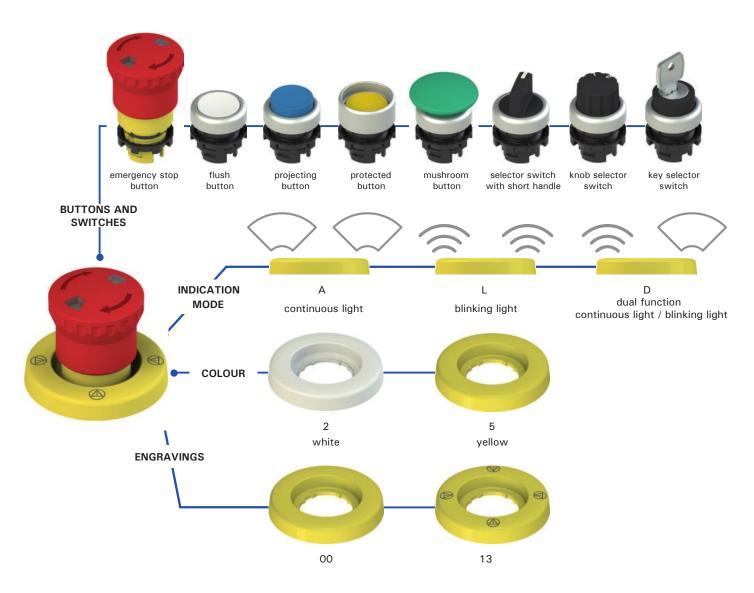
M23 connector, 12-pole

M23 connector, 19-pole



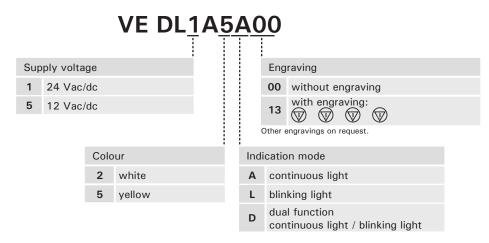


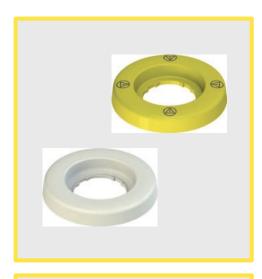
Selection diagram



Code structure

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





Main features

- · High visibility
- Protection degree IP67
- · Compact design
- · Indelible laser engraving
- · Customisable engravings
- · Continuous, blinking or dual function light

Technical data

General data

Protection degree: IP67 acc. to EN 6052@applied with the

supplied adhesive)

Ambient temperature: -25°C ... +70°C 0.25 mm² (AWG 24) Cable cross section:

Cable laying: fixed Cable minimum bending radius: 14 mm Cable insulation: PVC

Operating voltage U: 12 Vac/dc or 24 Vac/dc

Operating voltage tolerance: $\pm\,15\%$ of $\c U$

Operating current at U voltage: 65 mA(12 Vac/dc version) 25 mA(24 Vac/dc version)

Blinking frequency (if present): 1 Hz

Utilization requirements: see page 169

In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 602 EN IEC 63000.

Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU

Quality marks:





RU C-IT.YT03.B.00035/19 EAC approval:

UL approval: E131787

General data

Continuous or blinking light



The luminous disc can be supplied withThanks to internal or blinking light. The blinking light versions stop button can be immediately allow a faster identification on the panel of recognized and located. This

the lit device compared to the continuous light. The internal electronic ensures a safer use in scarcely circuit autonomously alternates the ON and OFF phases without illuminated environments, or 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 protection is required for the housing. surface and the IP67 protection degree.

High visibility

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

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

therefore be used in all environments where the maximum degree of

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.

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.

Features approved by UL

- VE DL5 models: 12 Vac/Vdc Class 2, 65 mA
- VE DL1 models: 24 Vac/Vdc Class 2, 25 mA
- Maximum Ambient Temperature: 40°C
- Environmental rating: "For use on a Flat surface of a Type 1, 4, 4X Enclosure"

The illuminated disk VE DL series as polymeric component assembled to Enclosed Control Stations ES and EA covers a hole of 5,5 mm diameter

The illuminated disk VE DL series yellow version is not suitable for use with mushroom actuator with red head

The illuminated disk VE DL series cannot be marked with words like "emergency", "emergency stop" or similar/equivalent

Selection table

Colour and	Description	Tuno	Operatin	g voltage	
engraving	Description	Туре	12 Vac/dc	24 Vac/dc	
	Yellow luminous disc, Ø 60 mm,	continuous light	VE DL5A5A00	VE DL1A5A00	
	without engraving, acc. to	blinking light	VE DL5A5L00	VE DL1A5L00	
	ISO 13850	dual function	VE DL5A5D00	VE DL1A5D00	
	Yellow luminous disc, Ø 60 mm, with engraving:	continuous light	VE DL5A5A13	VE DL1A5A13	
dia con est		blinking light	VE DL5A5L13	VE DL1A5L13	
	acc. to ISO 13850	dual function	VE DL5A5D13	VE DL1A5D13	
OR WOTO	Yellow luminous disc, Ø 60 mm	continuous light	VE DL5A5A09	VE DL1A5A09	
00/S = 407	with engraving:	blinking light	VE DL5A5L09	VE DL1A5L09	
	STOP STOP STOP STOP	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 DL1A5A00 VE DL1A2A00

Electrical connection of the dual function luminous disc



Cable colour	Description
white (J1)	Blinking light power supply
grey (J2)	Power supply 0 V
yellow (J3)	Continuous light power supply

Application example of the dual function luminous disc

It is possible to obtain a continuous or blinking light device depending on the wiring. For example, this opportunity can be exploited on a series of emergency 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.

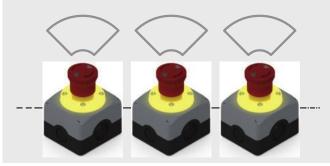




Figure 1 Figure 2

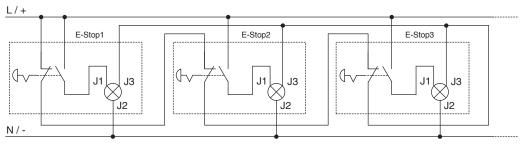
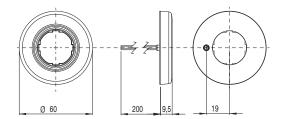
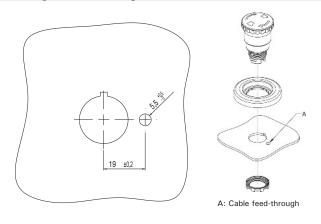


Figure 3

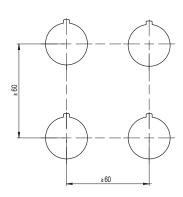
Dimensional drawings



Drilling and mounting



Minimum distances for installation



All values in the drawings are in mm

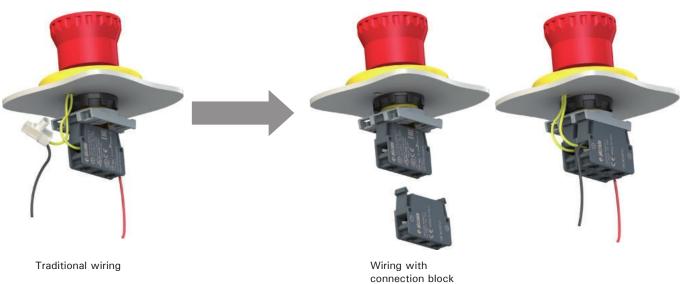
Packs of 10 pcs.

Connection block



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



Accessories

→ More ACCESSORIES on page 161

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 €•• fixing rings

Ø 22 ... Ø 30 mm adapter

Packs of 10 pcs.



Technical data: Body and ring material Protection degree:	technopolymer	Tightening torque: Dowel can be removed with	2 2.5 Nm a simple screwdriver
Article	Description		
VE GF151A	Adapter with ring for panel fix EN 60947-5-1	xing for Ø 22 devices on Ø 30	holes compliant with

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.



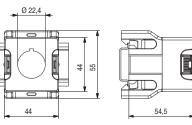
Article	Description
E2 1BAC21	4-slot mounting adapter for E2 CP contact blocks
E2 1BAC22	4-slot mounting adapter, oriented, for E2 CP contact blocks

Combinable only with selectors E2SE•••••••, key selector switches E2SC••••••, 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 E2MA••••• joysticks.

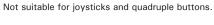
Adapter for DIN rail



Article	Description	Ø 22,4
VE AD3PF9A0	Support with Ø22 hole for fixing on DIN rail of the signalling and control devices the EROUND line	



Packs of 10 pcs.







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



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 165.

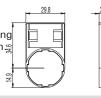
Example: Black label with "STOP" engraving. VE TF12H12→ •VE TF12H12GB0

Label holders



Label holders for single device, adjustable by $90\ensuremath{^\circ}$ in $90\ensuremath{^\circ}$ 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 $\frac{3}{50}$



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 glo aluminium-coloured label with black engraving	ssy 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 165. Example: Label holder provided with label, "STOP" engraving. VE PT32A09A • VE PT32A09AGB0

Labels



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

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



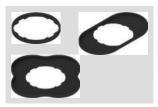
Article	Description
VE TR4A970	Label for VE PT label holders without engraving, for cutter or laser engraving. Packs of 100 pcs .
VE TR4A91•••	Label for VE PT label holders with black indelible laser engraving.

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

For ordering engraved labels:

Replace the dots ••• in the article codes with the engraving code reported on the table at page 165. Example: Label with "STOP" engraving. VE TR4A91 •• VE TR4A96B0

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 IP67 -40°C Protection degree:

+80°C Ambient temperature:

Ideal for dusty food environments or in presence of water and sand.

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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 IP67 and IP69K Protection degree: 2 ... 2.5 Nm Tightening torque:

Article	Description
E2 1TA1A110	Black closing cap for Ø 22 mm holes

Dust protection Packs of 50 pcs.



Article Description

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

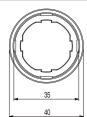
contact blocks.

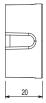


Windowed protection guard



Article	Description
VE GP32A5A	Cylindrical yellow protection guard with 4 windows

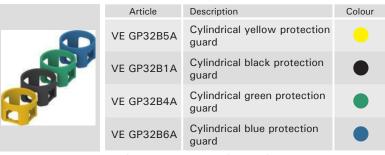


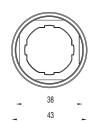


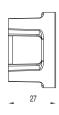
It does not alter the IP protection degree of the associated device.

Not applicable in presence of shaped rings, label holders, adapters from \emptyset 22 to \emptyset 30 mm or protection caps.

Cylindrical protection guard







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

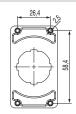
Not applicable on emergency stop buttons of the EPPE ••••• series.

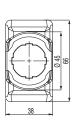
Not applicable in presence of shaped rings, label holders, adapters from \emptyset 22 to \emptyset 30 mm or protection caps.

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.

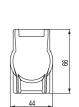
Not applicable in presence of shaped rings, label holders, adapters from \emptyset 22 to \emptyset 30 mm or protection caps.

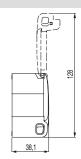
Lockable guard

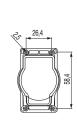


Article	Description
VE GG3EA7A	Lockable guard complete with 4 screws (for panel thicknesses between 1 and 3.5 mm)

Ideal for protecting devices which must not be actuated involuntarily.

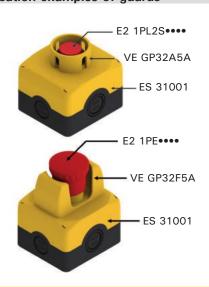






It does not alter the IP protection degree of the associated device. Not applicable with attached label holder.

Application examples of guards

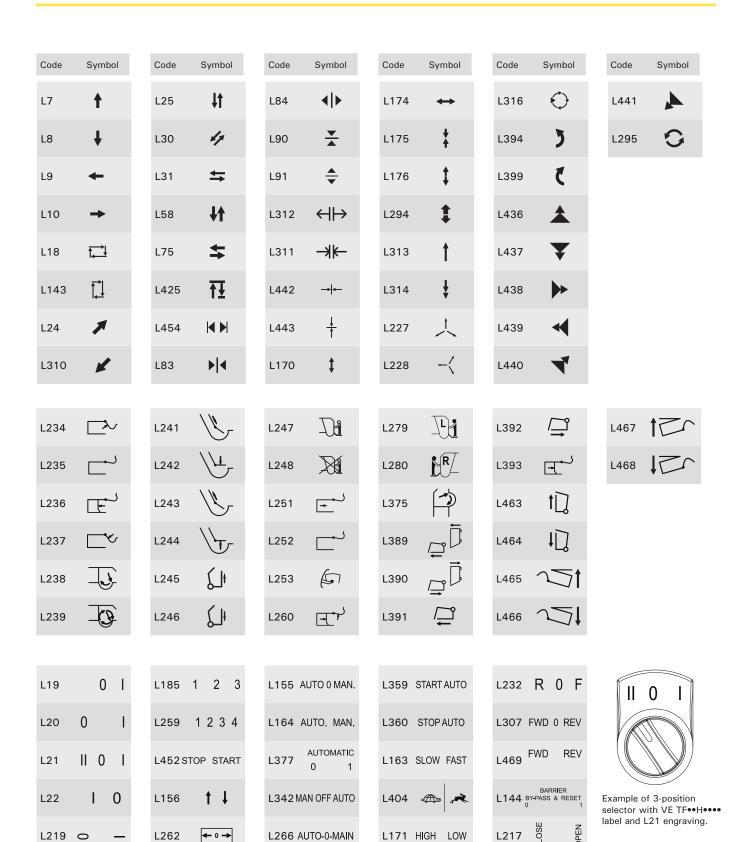






List of available engravings

		ic chighavi	9-									
Code	Symbol	Code	Symbol	Code	Symbol	Cod	de	Symbol	Code	Symbol	Code	Symbol
L1	0	L42	> >	L27	@	L3:	30	I	L187	\Diamond	L386	\rightarrow
L287	\bigcirc	L43	~ ~	L147	35	L4!	55		L230	₩	L395	-> <- -> <- -> <-
L413	மு	L213	Ÿ-	L148	—	L4!	56		L249	A A	L411	
L2	1	L254	溢	L162		L30	69	ţ	L376	Q.	L414	
L3	II	L17	Zml	L172	C	L4:	26	((†))	L102	\ominus	L415	\Leftrightarrow
L4	III	L44		L220	ن	L5:	9	\oplus	L103		L418	0
L35	_	L45	Sul	L277	**	L64	4	\bigoplus	L139		L419	<u> </u>
L36	=	L46	Sun	L226	0	L6:	2	\oplus	L140	\bigcirc	L420	© <u>></u>
L37	=	L60		L142		L6:	3	\oplus	L141		L80	*AAA
L11	+	L191	A	L54	4	L80	3		L157	AIR	L374	•
L12	_	L193		L56	4	L8	3		L381	<-	L476	Ţ
L412	//	L308		L57	4	L89	9		L445	1	L472	<u>Ji</u>
L188	//	L61	9 /	L55	4	L8	7		L278		L473	
L14	\(\rightarrow\)	L153	A	L146	\bigoplus	L70	6	\Leftrightarrow	L323	(C)	L474	ΠĀ
L32	→	L194)L	L293	/ \	L7	7	\bigoplus	L362	<u>_</u>	L475	1.2 3.4
L33	₽	L309	*	L304	1	L78	3		L380	(*)		
L34	\diamondsuit	L408	Ĭ	L305	(I	L19	90		L382			
L240	Å	L145	6	L470	-	L4	16	\bigcirc	L383	D		
L16	, Ō,	L336	T	L317	[]	L4	17		L384	D		
L41	#Q(<	L96	((•))	L319	<u>↓</u>	L18	39	\bigcirc	L385	←		



Other engravings on request

Code	Symbol	Code	Symbol	Code	Symbol	Code	Symbol	Code	Symbol	Code	Symbol
L28	STOP	L67	3	L39	70	L289	BOOST	L208	×	L135	AVANTI - INDIETRO
L50	9OT2	L68	4	L114	RESET	L292	MONO / TRI	L117	POMPA FILTRO 0 - 1	L104	24V 电源指示 24V Power
L48	STOP	L69	5	L306	RESET	L327	ENABLE DISABLE	L118	FILTER PUMP 0 - 1	L105	220V电源指示 220V Power
L49	STOP	L70	6	L130	100%	L222	ACCESS DENIED	L119	RISCALDAMENTO 0 - 1	L106	选择开关 Selector
L113	∾⊢or	L71	7	L315	24V=	L223	ACCESS ALLOWED	L120	HEATING 0 - 1	L107	启动按钮 START
L29	START	L72	8	L82	ERŒUND	L224	ACCESS REQUEST	L121	SCATTO TERMICO	L108	停止按钮 STOP
L53	TAAT2	L73	9	L199	SPEED	L225	ACCESS RESET	L122	CIRCUIT BREAKER	L109	电源指示 Power
L51	START	L74	0	L233	CAUTION	L215	INIT	L123	MAN AUT.	L110	合闸指示 Ready
L52	START	L450	-1	L250	POWER	L216	C/C	L124	START CICLO	L111	故障指示 Stoppage
L218	ω⊢∢α⊢	L451	- 2	L332	ALLOW IN	L370	UNLOCK DOOR	L125	RADDRIZZATORE 0 - 1		
L276	START STOP	L129	3/4	L334	SYSTEM START	L371	REQUEST / RESET ACCESS TO AREA	L126	STOP CICLO		
L410	PAUSE (START)	L15	R	L335	SYSTEM STOP	L205	Y+	L127	BY-PASS EMERGENZE 0 - 1		
L65	1	L40	Я	L333	CYCLE STOP	L206	×	L131	AZIONAMENTO 0 - 1		
L66	2	L38	~	L281	DEFAULT	L207	- Y	L132	TACITAZIONE SIRENA		

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	H8 f ∆us
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

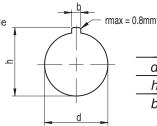
Other engravings on request

EROUND line

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



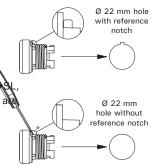
		Ø 30
d		<i>30,5</i> +0,5 -0
h		33,0 +0,5 -0
b	3,2 +0,2 -0	4,8 +0,2 -0

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.

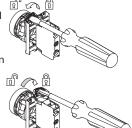
The removal of the reference dowel, is not advisable for the selectors (series E2 •SE, E2 E2 •SC) and emergency stop buttons (series E2 •PE) with rotary release, as these devices subject to rotary-type actuation.



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.

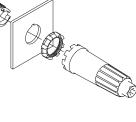


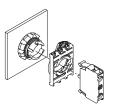
Panel fixing

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.





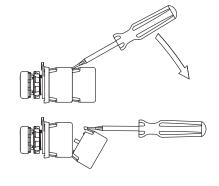
Mounting of contact blocks and LED units

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.

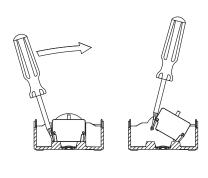
Contact blocks and LED units can be quickly disassembled by using a flat-head screwdriver to leverage on the connection flaps.



Release of the contact block from the base



Release of the contact block from another unit

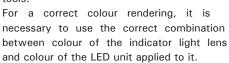


Release of the contact block from the base



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.





Lenses for buttons and illuminated buttons

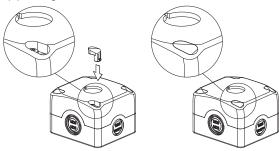
The buttons and the illuminated buttons feature replaceable lenses. To remove the lenses, leverage them with a pointed object near the reference notch on the external diameter of the lens itself.



Screw caps insertion / removal

The cover caps supplied for housings of the EROUND series make it The caps engage to the cover with a simple pressure until the flexible possible to close the screws seats, preventing thus the accumulation flap snaps in. of dirt and tampering.

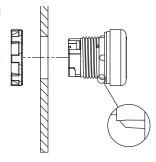
These caps are connected to surfaces of the housing. This creates thus a monolithic block showing no visible screws, making it aesthe- the coupling flap to open it. tically pleasing too.



Seal gasket

Thanks to its design, the seal gasket ensures a pre-fixing on the panel.

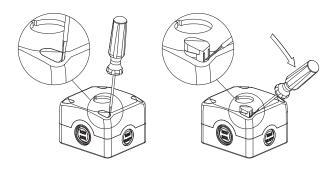
This allows to mount the ring without having to hold the device in position.



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.
- 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 if 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.

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



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 conden-
- 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
- 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.

Limits of use

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

EROUND line Utilization requirements for

Wiring and installation

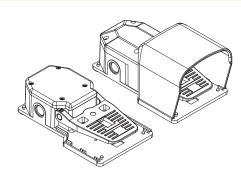
- Installation must be carried out by qualified staff only.
- Observe minimum distances between devices (if provided).
- Observe the tightening torques.
- Keep the electrical load below the value specified by the utilization
- Disconnect the power before to work on the contacts, also during the wiring.
- 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 IFC 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
- 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
- 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
- Refrain from opening, disassembling or attempting to repair the device and replace it immediately if it appears to be damaged.
- 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 stop 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 - Should the installer be unable to fully understand the utilization 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.

◆ pizzato 171 General Catalogue HMI 2023-2024



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 169 to 171 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 170.
- 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).
 - 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.
 - 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).
 - Check that the locking mechanism of the pedal actuator (where present) is functioning correctly.
 - Check that the electrical connecting cable and associated cable gland are in good condition, and firmly attached to the device.
 - 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



M12 male connectors with cable	▶175
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M23 connectors



M8 connectors



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Cable glands and adapters

Tampering protection for M12 connectors





Strain relief cable glands

Thread adapters

Protection caps

Threaded nuts

Chock plugs

► 187

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Tampering protection for M12 connectors ▶189

LED signalling lights

LED signalling lights

Fixing screws and plates



Fixing plates ► 191

Torx safety screws ► 191

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Bits for Torx safety screws ► 191

Junction box for series connections



Junction box for series connection of up to 4 devices

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M12 male connectors with cable



Features:

- Polyurethane connector body
- Class 6 copper conductors acc. to IEC 60228 mobile installation
- Gold-plated contacts
- Anti-vibration 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 (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

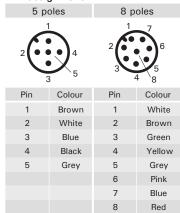
Wire cross-sections: 0.34 mm² (22 AWG) for 4-pole

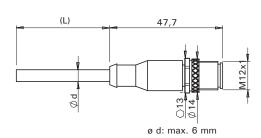
 0.25 mm^2 (23 AWG) for 5/8-pole

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

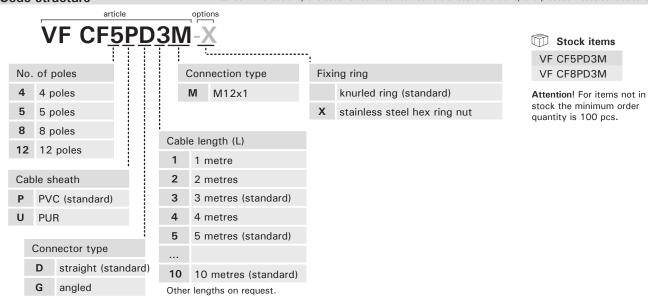
Pin assignment





Code structure

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



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
- Anti-vibration 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

12 poles

-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

8 poles

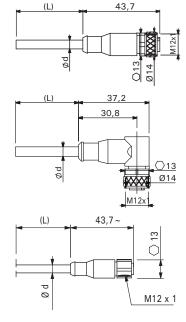
Minimum bending radius: > cable diameter x 15

5 poles

Tightening torque of the ring: 0.6 ... 0.8 Nm

Pin assignment 4 poles

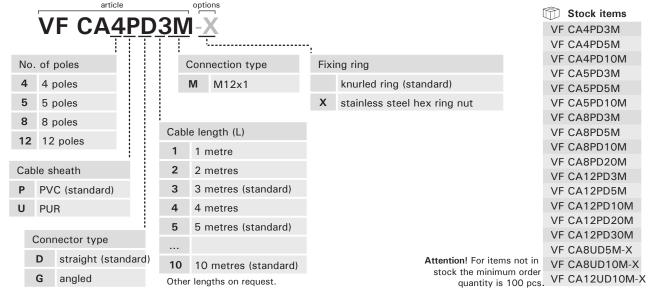
1		1		7	1	9 1 10		
40	2	40	2 5	600	2 3 4 8	12 8 0 7 0 6	2 0 0 0 3 3 5 4	
Pin	Colour	Pin	Colour	Pin	Colour	Pin	Colour	
1	Brown	1	Brown	1	White	1	Brown	
2	White	2	White	2	Brown	2	Blue	
3	Blue	3	Blue	3	Green	3	White	
4	Black	4	Black	4	Yellow	4	Green	
		5	Grey	5	Grey	5	Pink	
				6	Pink	6	Yellow	
				7	Blue	7	Black	
				8	Red	8	Grey	
						9	Red	
						10	Purple	
						11	Grey-Pink	
						12	Red-Blue	



ø d: max. 6 mm

Code structure

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



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

M12 male connectors for panel mounting



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

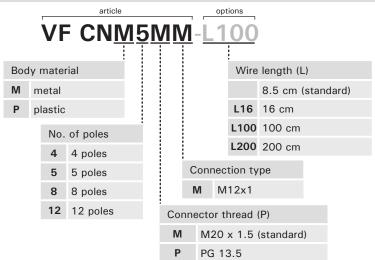
Contact type: gold-plated

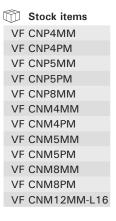
Pin assignment

4 poles		5 poles		8 p	oles	12 poles	
2	1 4	2	4 5	2	7 6 5 8	10 1 2 3 4 / 11	9812
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.





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 m²n(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 6.5 mm multipolar cables	4
VF CBMP5DM04	Field wireable M12 female connector, straight, for Ø 4 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)

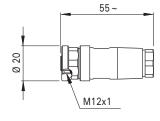
Max. operating current: 4 A (5-pole) 2 A (8-pole)

Protection degree: IP67 acc. to EN 60529 Ambient temperature: -25 °C ... +85 °C

Wire cross-sections: 0.25 mm² (23 AWG) ... 0.5 m²n(20 AWG)

Tightening torque of the ring: 0.6 ... 0.8 Nm





60~

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

pizzato

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, SIL 3 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

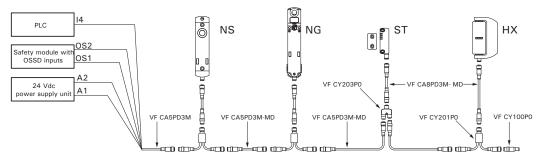
The series may consist both of devices that are identical to one another (homogeneous series) or that belong to different series (mixed series). The following Pizzato Elettrica devices may be connected in series using the Y connectors:

- ST series RFID safety sensors: ST ••31•M•, ST ••71•M•.
- NG •••••--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	14	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 extension cables



Features:

- · Polyurethane connector body
- Class 6 copper conductors acc. to IEC 60228
- Gold-plated contacts
- Anti-vibration 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)

4 A (5-pole), 2 A (8-pole) Max. operating current: Protection degree: IP67 acc. to EN 60529

IP69K acc. to ISO 2653

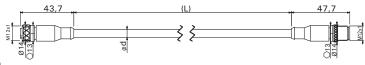
(Protect the cables from direct high-pressure and high-temperature jets)

-25°C ... +80°C for fixed installation Ambient temperature: -15°C ... +80°C for mobile installation

0.5 mm² (20 AWG) (5-pole) Wire cross-sections: 0.25 mm² (23 AWG) (8-pole)

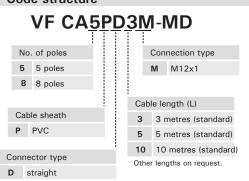
Minimum bending radius: > cable diameter x 15

Tightening torque of the ring: 0.6 ... 0.8 Nm

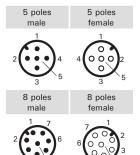


ø d: 6.4 mm for 5-pole 6 mm for 8-pole

Code structure



Pin assignment



Stock items

VF CA5PD3M-MD VF CA5PD5M-MD VF CA5PD10M-MD VF CA8PD3M-MD VF CA8PD5M-MD VF CA8PD10M-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 VF CY201P0 Description

M12 connector, Y-shaped, for series connections with 150 mm cable length

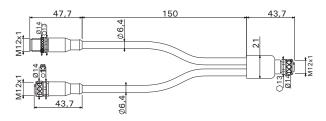


Article

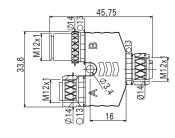
VF CY203P0

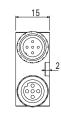
Description M12 connector, Y-shaped, for series connec-

tions without cable









Features:

- Polyurethane connector body
- Gold-plated contacts
- · Anti-vibration 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

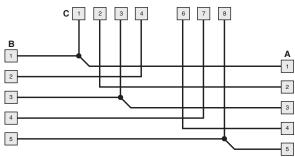
30 Vac / 36 Vdc Max. operating voltage: Max. operating current: 4 A (5-pole) 2 A (8-pole)

IP67 acc. to EN 60529 Protection degree:

-25°C ... +80°C for fixed installation Ambient temperature: -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) (B) (C) M12, 5-pole M12, 5-pole M12, 8-pole female male 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



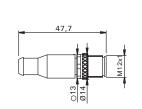
Features:

- · Polyurethane connector body
- Gold-plated contacts
- · Anti-vibration self-locking ring nut

250 Vac / 300 Vdc Max. operating voltage: Max. operating current: 4 A

IP67 acc. to EN 60529 Protection degree:

Tightening torque of the ring: 0.6 ... 0.8 Nm







Pin assignment

4-pole



Article	Description

M12 terminating plugs for series connections, 4-pole

M23 male connectors for panel mounting



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

Ambient temperature: -25 °C ... +80 °C
Tightening torque: 1 ... 1.5 Nm
Wire cross-section: 0.34 mm² (22 AWG)
Contact type: gold-plated







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

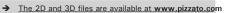
Attention! The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

| No. of poles | 12 | 12 poles | 19 | 19-pole |

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.





M23 female connectors for panel mounting



Features:

- Threaded connection M20
- 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

Protection degree: IP67 acc. to EN 60529

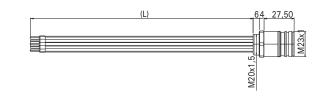
IP69K acc. to ISO 20653

Pin assignment



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

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

VF CPM12MT-L10

M metal

No. of poles

12 12 poles

19 19-pole

Wire length (L)

L10 10 cm

L20 20 cm

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

M23 female connectors with cable



- · Polyurethane connector body
- Class 5 tin-plated copper conductors acc. to IEC 60228 (12-pole)
- Class 5 tin-plated copper conductors acc. to IEC 60228 (19-pole)
- · Gold-plated contacts
- Anti-vibration self-locking ring nut
- Cable with PVC sheath acc. to IEC 60332-1-2 (flame retardant)

Max. operating voltage: 160 Vac (12-pole)

63 Vac (19-pole)

Maximum operating current with 125 A x 0.5 mm2 (20 AWG), the currents are per poles:

conductor

Maximum operating current with 198 A x 0.75 mm² + 4 A x 0.34 mm² (22 AWG), the

poles:

Protection degree:

currents are per conductor IP67 acc. to EN 60529

IP69K acc. to ISO 20653

(Protect the cables from direct high-pressure and high-temperature jets)

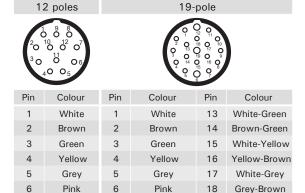
-5°C ... +70°C Ambient temperature: Wire cross-section: 12x0,5 mm² (12-pole)

 $17x0.34 \text{ mm}^2 + 2x0.75 \text{ mm}^2 (19-pole)$

Minimum bending radius: > cable diameter x 15

Tightening torque of the ring: 1 ... 1.5 Nm

Pin assignment



Blue

Red

Black

Purple

Grev-Pink

Red-Blue

19

White-Pink

Code structure

Blue

Red

Black

Purple

Grev-Pink

Red-Blue

7

8

9

10

11

12

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

Ø

VF CA12PD20S

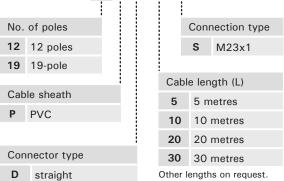
8

9

10

11

12



Stock items VF CA12PD10S VF CA12PD20S VF CA12PD30S VF CA19PD5S VF CA19PD10S VF CA19PD20S VF CA19PD30S

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

80

ø d: 10.5 mm

M23x1

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



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)

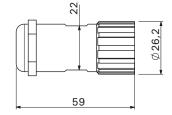
Max. operating current: 8 A

Protection degree: IP67 acc. to EN 60529 IP69K acc. to ISO 20653

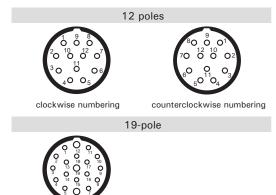
Ambient temperature: -40°C ... +125°C

Tightening torque of the ring: 1 ... 1.5 Nm

Pollution degree:



Pin configuration





VF AC2205 Mounting key

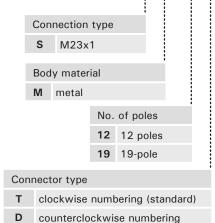
Note: Article required for opening and wiring of connector.

Code structure

clockwise numbering

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

VF CBSM12TC07



Cable diameter

07 Ø 7 ... 12 mm

Pin connection type

C crimp connection (standard) 0.34 ... 1 mm

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

solder connection 0.34 ... 1 mm

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

M23 extension cables with male and female connector



Features:

- Polyurethane connector body
- Class 5 tin-plated copper conductors acc. to IEC 60228
- Gold-plated contacts
- Anti-vibration self-locking ring nut
- Cable with PVC sheath acc. to IEC 60332-1-2 (flame retardant)

Max. operating voltage: 63 Vac

Maximum operating current with 198 A x 0.75 mm² + 4 A x 0.34 mm² (22 AWG), the

poles: currents are per conductor 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-section: $17x0.34 \text{ mm}^2 + 2x0.75 \text{ mm}^2$ Minimum bending radius: > cable diameter x 15

Tightening torque of the ring: 1 ... 1.5 Nm

80 (L) 80 x1 80 M23x1

Pin assignment



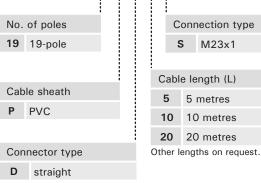
19-pole female



Code structure

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

VF CA19PD5S-SD



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

M8 female connectors with cable



Features:

- Polyurethane connector body
- Class 6 copper conductors acc. to IEC 60228
- Gold-plated contacts
- Anti-vibration 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

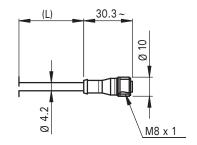
Protection degree: IP67 acc. to EN 60529 IP69K acc. to ISO 20653

(Protect the cables from direct high-pressure and high-temperature jets)

Ambient temperature: $-25\,^{\circ}\text{C}$... $+80\,^{\circ}\text{C}$ for fixed installation $-15\,^{\circ}\text{C}$... $+80\,^{\circ}\text{C}$ for mobile installation

Wire cross-sections: 0.25 mm 2 (23 AWG) Minimum bending radius: > cable diameter x 15

Tightening torque of the ring: 0.3 ... 0.5 Nm



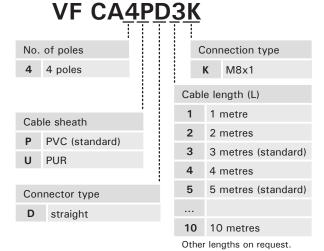
Pin assignment



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.



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

Strain relief cable glands

Packs of 10 pcs.



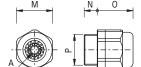
This particular design ensures high resistance to traction of the cable glands. All cable glands are also suitable for a wide range of cable diameters.

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)

3 ... 4 Nm (PG 13.5/M20) 2 ... 2.5 Nm (PG 11/M16)



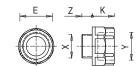
		Article	Description	Α	Ом	N	0	Р
		VF PAM25C7N	M25x1.5 cable gland for one cable Ø 10 17 mm	0	33	10	31	M25x1.5
		VF PAM20C6N	M20x1.5 cable gland for one cable Ø 6 12 mm	0	24	9	24	M20x1.5
		VF PAM20C5N	M20x1.5 cable gland for one cable from Ø 5 10 mm	0	24	9	24	M20x1.5
		VF PAM20C3N	M20x1.5 cable gland for one cable Ø 3 7 mm	0	24	9	24	M20x1.5
	ic ds	VF PAM16C5N	M16x1.5 cable gland for one cable Ø 5 10 mm	0	22	7.5	23	M16x1.5
	Metric threads	VF PAM16C4N	M16x1.5 cable gland for one cable Ø 4 8 mm	0	22	7.5	23	M16x1.5
	≥ ‡	VF PAM16C3N	M16x1.5 cable gland for one cable Ø 3 7 mm	0	22	7.5	23	M16x1.5
		VF PAM20CBN	M20x1.5 multi-hole cable gland for 2 cables Ø 3 5 mm	θ	24	9	23	M20x1.5
		VF PAM20CDN	M20x1.5 multi-hole cable gland for 3 cables Ø 1 4 mm	8	24	9	23	M20x1.5
		VF PAM20CEN	M20x1.5 multi-hole cable gland for 3 cables Ø 3 5 mm	8	24	9	23	M20x1.5
		VF PAM20CFN	M20x1.5 multi-hole cable gland for 4 cables Ø 1 4 mm	8	22	9	23	M20x1.5
		VF PAP13C6N	PG 13.5 cable gland for one cable from Ø 6 12 mm	\circ	24	9	24	PG 13.5
		VF PAP13C5N	PG 13.5 cable gland for one cable from Ø 5 10 mm	0	24	9	24	PG 13.5
	ads	VF PAP13C3N	PG 13.5 cable gland for one cable from Ø 3 7 mm	0	24	9	24	PG 13.5
PG threads	VF PAP11C5N	PG 11 cable gland for one cable from Ø 5 10 mm	0	22	7.5	23	PG 11	
		VF PAP11C4N	PG 11 cable gland for one cable from Ø 4 8 mm	0	22	7.5	23	PG 11
		VF PAP11C3N	PG 11 cable gland for one cable from Ø 3 7 mm	0	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	Υ	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 M20x1.5 to 1/2 NPT	M20x1.5	1/2 NPT	9	14	24

All values in the drawings are in mm



Protection caps Packs of 10 pcs.



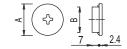
Features:

Body material: technopolymer, self-extinguishing Protection degree:

IP67 acc. to EN 60529 IP69K acc. to ISO 20653



Cross-recessed screw: PH3



Article	Description	Α	В
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	Р
	VF DFPM25	M25x1.5 threaded technopolymer nut	6	32	M25x1.5
Diantia	VF DFPM20	M20x1.5 threaded technopolymer nut	6	27	M20x1.5
Plastic	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



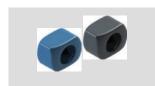


Note: Use a socket wrench for tightening.

Article	Description	Α	В
VF PFM20C8N	Chock plug for one cable Ø 8 12 mm, threaded, M20x1.5	7.5	M20x1.5
VF PFM20C4N	Chock plug for one cable Ø 4 8 mm, threaded, M20x1.5	3.5	M20x1.5

Tampering protection for M12 connectors

Packs of 10 pcs.



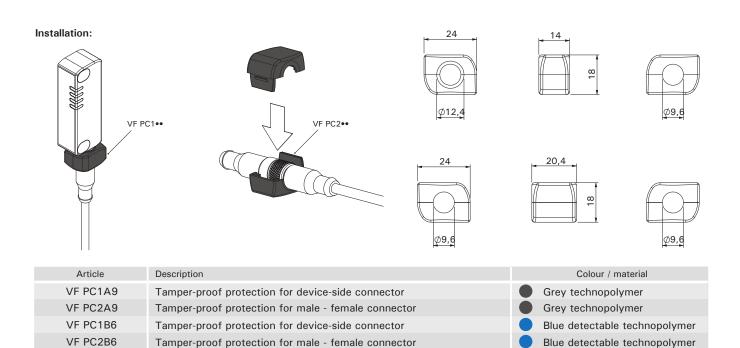
Features:

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.

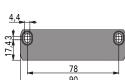
A version made of detectable plastic is available for the food industry, and it can easily be detected during the process using common optical vision technologies, X-rays or metal detectors.



Door holding magnets



Article	Description	18	4.4		
SM H9ZF	Door holding magnet (holding force 40 N)		*		
SM H9ZQ	Door holding magnet (holding force 40 N, opposite polarity to SI H9ZF)	72	17,43	1	
Holding magnets for use on machinery doors. The magnets are sealed inside a plastic cover					



and will not rust even in damp environments.

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, FY, 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:

IP67 acc. to EN 60529 Protection degree: IP69K acc. to ISO 20653

-25°C ... +70°C Ambient temperature: Operating voltage U: 24 Vac/dc (10 mA) 120 Vac (20 mA) 230 Vac (20 mA)

Tolerance on the supply voltages:

±15% of U Operating current: 10 mA Connection system: PUSH-IN spring type

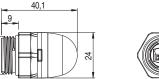
Cross-section of rigid/flexible wires w. min. 1 x 0.34 mm (1 x AWG 24)

wire-end sleeve:

Wire cross-section with pre-insulated

wire-end sleeve:

Tightening torque. 1.2 ... 2 Nm Wire stripping length (x): min.: 8 mm max.: 12 mm





Application examples





max. 1 x 1.5 m²r(1 x AWG 16)

min. 1 x 0.34 mm (1 x AWG 24)

max. 1 x 0.75 mm (1 x AWG 18)

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 24 Vac/dc 120 Vac 230 Vac Type of light source

Standard LED with continuous light

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

PUSH-IN terminal strip Lens colour

2 White 3 Red Green Yellow

Connection type

Stock items

VF SL1A3PA1 VF SL1A5PA1

All values in the drawings are in mm

Fixing plates

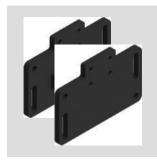


Metal fixing plate, for fixing rope switches on the ceiling.

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



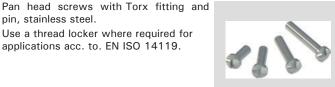
Fixing plate (complete with fastening screws) provided with long slots for adjusting the operating point. Each plate is provided with two pairs of mounting holes, one for standard switches and one for switches with reset device. The actuator thus always has the same actuating point.

OneWay safety screws

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

Torx safety screws

Packs of 10 pcs.



pin, stainless steel. Use a thread locker where required for

Pan head screws with OneWay fitting in stainless steel.

Packs of 10 pcs.

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 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

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

All values in the drawings are in mm



Junction box for series connection of up to 4 devices

2B

зв

4B

5B

6B

7B

8B

9B

10B



4C 5C 6C 7C

Pin assignment

2A

зА

4A

5A

6A

7A

8A

9A

10A

11A

2C 3C

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 stee

Protection degree: IP67 acc. to EN 60529, IP69K acc. to ISO 20653, with cable

gland of equal or higher protection degree 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 mm (1 x AWG 24)

max. 1 x 1.5 m² (1 x AWG 16)

Wire cross-section

Article

OAUX2

OAUX3

OAUX4

4A / 4B

5A / 5B

6A / 6B

7A / 7B

8A / 8B 9A / 9B

10A / 10B

11A / 11B I4

Conduit entries:

with pre-insulated wire-end min. 1 x 0.34 mm (1 x AWG 24) sleeve: max. 1 x 0.75 mm (1 x AWG 18)

Wire stripping length (x): min.: 8 mm

OS1 / IS1 Safety output / safety input

OS2 / IS2 Safety output / safety input

Auxiliary connection

Auxiliary connection

Auxiliary output Oaux1

Auxiliary output Oaux2

Auxiliary output Oaux3

Auxiliary output Oaux4

Solenoid activation input

Description





VF CY302P0			Junction box for	or serie	s connec	tion of	up to 4 devices
Terminal	Connec	ction			Terminal	Connec	ction
box					box		
1A / 1B	A1	Supply	input +24 Vdc		1C	A1	Supply input +24 Vdc
2Δ / 2R	Λ2	Cupply	innut 0 V		20	0.51	Safety output

4C

5C

6C

7C 8C A2

IS1

03

04

OS2

IS2

Supply input 0 V

Signalling output, actuator inserted

Signalling output, actuator inserted

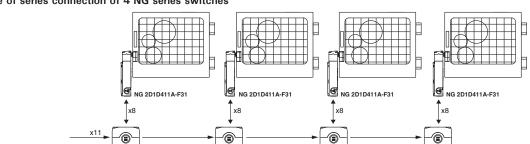
Safety input

and locked

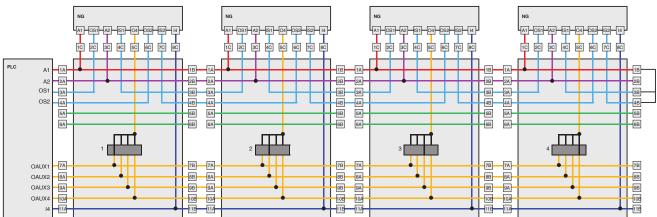
Safety output

Safety input Solenoid activation input

Example of series connection of 4 NG series switches



Wiring diagram



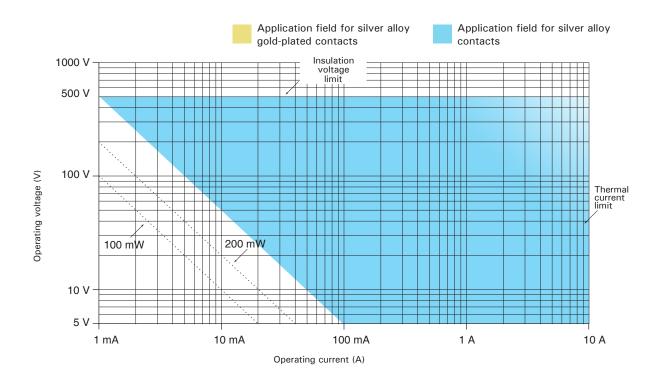
Minimum operating voltages and currents for reliable switching

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 μ W range for dozens of millions of handling operations, without losing signals. However, this does not mean that the same contact will have the same performance when the switch operates in environments with sudden changes of temperature (condensation) or where few switching occur (oxidation).

In order to avoid this kind of problem, gold plated contacts are used for very low loads profiting from the non-oxidability of this material. The gold-plating layer should be thick enough to be mechanically resistant to switching as well as electrically resistant to possible sparks that may vaporize it. For this reason Pizzato Elettrica 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.

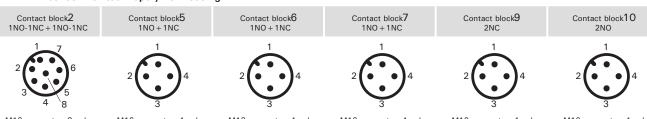


100 mW Recommended limit for general applications with snap action contact blocks with silver alloy contacts.

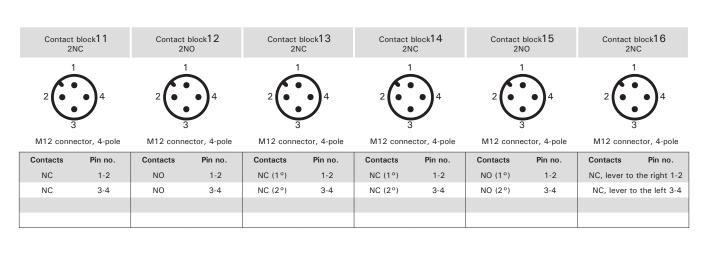
200 mW Recommended limit for general applications with slow action contact blocks with silver alloy contacts.

Wiring diagram for assembled connectors

For FR - FX series with technopolymer housing



WITZ COIIII	sctor, o-pole	WITZ COIIII	sctor, 4-pole	W12 Connector, 4-pole							
Contacts	Pin no.	Contacts	Pin no.	Contacts	Pin no.	Contacts	Pin no.	Contacts	Pin no.	Contacts	Pin no.
NO	3-4	NC	1-2	NC	1-2	NC	1-2	NC	1-2	NO	1-2
NC	5-6	NO	3-4	NO	3-4	NO	3-4	NC	3-4	NO	3-4
NC	7-8										
NO	1-2										



Contact block18	Contact block20	Contact block21	Contact block22	Contact block33	Contact block34
1NO + 1NC	2NC + 1NO	3NC	1NC + 2NO	1NC+1NO	2NC
2 4	2 3 6 6	2 3 4 5 8	2 3 6 5 8	2 4	

M12 conne	ector, 4-pole	M12 conne	ector, 8-pole	M12 conne	ector, 8-pole	M12 conne	ector, 8-pole	M12 conne	ector, 4-pole	M12 conne	ector, 4-pole
Contacts	Pin no.										
NC	1-2	NC	3-4	NC	3-4	NC	3-4	NC	1-2	NC	1-2
NO	3-4	NC	5-6	NC	5-6	NO	5-6	NO	3-4	NC	3-4
		NO	7-8	NC	7-8	NO	7-8				

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

Control switches

Devices or operating mechanisms for controlling the operation equipment, including signalling, interlocking, etc.

Utilization category

Combination of specified requirements related to the conditions Contact elements with independent action (snap action) which the switching device fulfils its purpose.

Sequence of two operations, one for opening and one for closing.

Rated current le

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 le of the equipment without enclosure, in eight-hour duty.

Electrical endurance

Number of on-load operating cycles, under the conditions defined by Foot switch the corresponding product standard, which can be carried out without Control switch whose actuator is actuated by exerting force with a repair or replacement.

Mechanical endurance

contacts), under the conditions defined by the corresponding product of the contact elements. 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 specified test conditions. switch is actuated.

Break-contact elements (normally closed)

Contact element combination including one make-contact element

Electrically separated contact elements

oContact 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 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 on the pedal.

Pre-travel of the actuator

Number of no-load operating cycles (i.e. without current on the main The maximum travel of the actuator which does not cause any travel

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 le, 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

Contact block

Contact element or contact elements combination which can be

Contact element opening a circuit's conducting path when the controcombined with similar units, operated by a common actuating system. switch is actuated.

Change-over contact elements

and one break-contact element.

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 assoto check and certify the compliance of materials and equipment with safety standards (CEI standards in the EAC mark

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.

TÜV SÜD mark



TÜV SÜD is an international authority claiming longstanding 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 ciation in Italy (independent third body) whose task is product, but also its specific operating suitability for use in safety applications according to the IEC 61508 standard.

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.

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/mecha-

nical conformity tests by products and the compliance of the company quality system with required standards. To obtain the mark, the check inspections. Position switches cannot be sold in the Chinese territory without this mark.

UKCA mark

Following the withdrawalof the United Kingdom from the European Union, the UKCA mark (UKCA Conformity Assessment) takes the place of the CE marking for the British market (England, Scotland and Wales).

The UKCA mark indicates that the product satisfies the British Chinese body makes preliminary company visits as well as periodical regulations. As in the European Union, conformity can be achieved through the application of harmonised standards, the so-called "designated standards" The evaluation of the conformity can be performed through self-certificati through a certification process by an "approved body".

At the time of printing this catalogue, the British government spec January 2025 as the date from which the UKCA mark will be mandatory products that are placed on the market in Great Britain.

International and European Standards

EN 50041: Low voltage switchgear and controlgear for industrial use. Control switches. Position switches 42.5x80 mm. Dimensions and feature EN 50047: Low voltage switchgear and controlgear for industrial use. Control switches. Position switches 30x55 mm. Dimensions and feature

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 lice

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 ISO 14118: 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. Secti 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 are 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 electron control systems.

EN 60079-0 (equivalent to IEC 60079-0): Explosive atmospheres - Part 0: Equipment - General requirements.

EN 60079-11 (equivalent to IEC 60079-11): Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i".

EN 60079-15 (equivalent to IEC 60079-15): Explosive atmospheres - Part 15: Equipment protection by type of protection "n".

EN 60079-31 (equivalent to IEC 60079-31): Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t".

EN IEC 63000: Technical documentation for the evaluation of electrical and electronic products in relation to the restriction of hazardous subst 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 C22.2 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

identifies instead the protection degree against liquid penetration.

2014/34/EU ATEX Directive 2011/65/UE RoHS Directive

Regulatory Organisations

CEI Comitato Elettrotecnico Italiano (IT)

NF Normes Françaises (FR)

Canadian Standard Association (CAN)

VDE Verband Deutscher Flek

CSA Canadian Standard Association (CAN)

CENELEC European Committee for Electrotechnical Standardisation UNI

CEN European Committee for Standardisation

LU Underwriter's Laboratories (USA)

IEC International Electrotechnical Commission

UL TÜV

Technischer Überwachungs-Verein (DE)

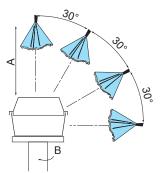
Protection degree of housings for electrical material according to EN 60529

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

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	<u>≥50 m</u> m	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	<u>≥12 m</u> m	Protected against solid objects greater than 12 mm	Against access to hazardous parts with a finger (Ø 12 mm)	2	156	Protected against water drops falling at max. 15° angle
3	<u>i</u> ≥2.5 mm	Protected against solid objects greater than 2.5 mm	Against access to hazardous parts with a tool (Ø 2.5 mm)	3	600 11111111111111111111111111111111111	Protected against rain drops falling at max. 60° angle
4	<u>≥1 m</u> m	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 pressur 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 wat 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 moistur 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.					

General terms and conditions of sale

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

