



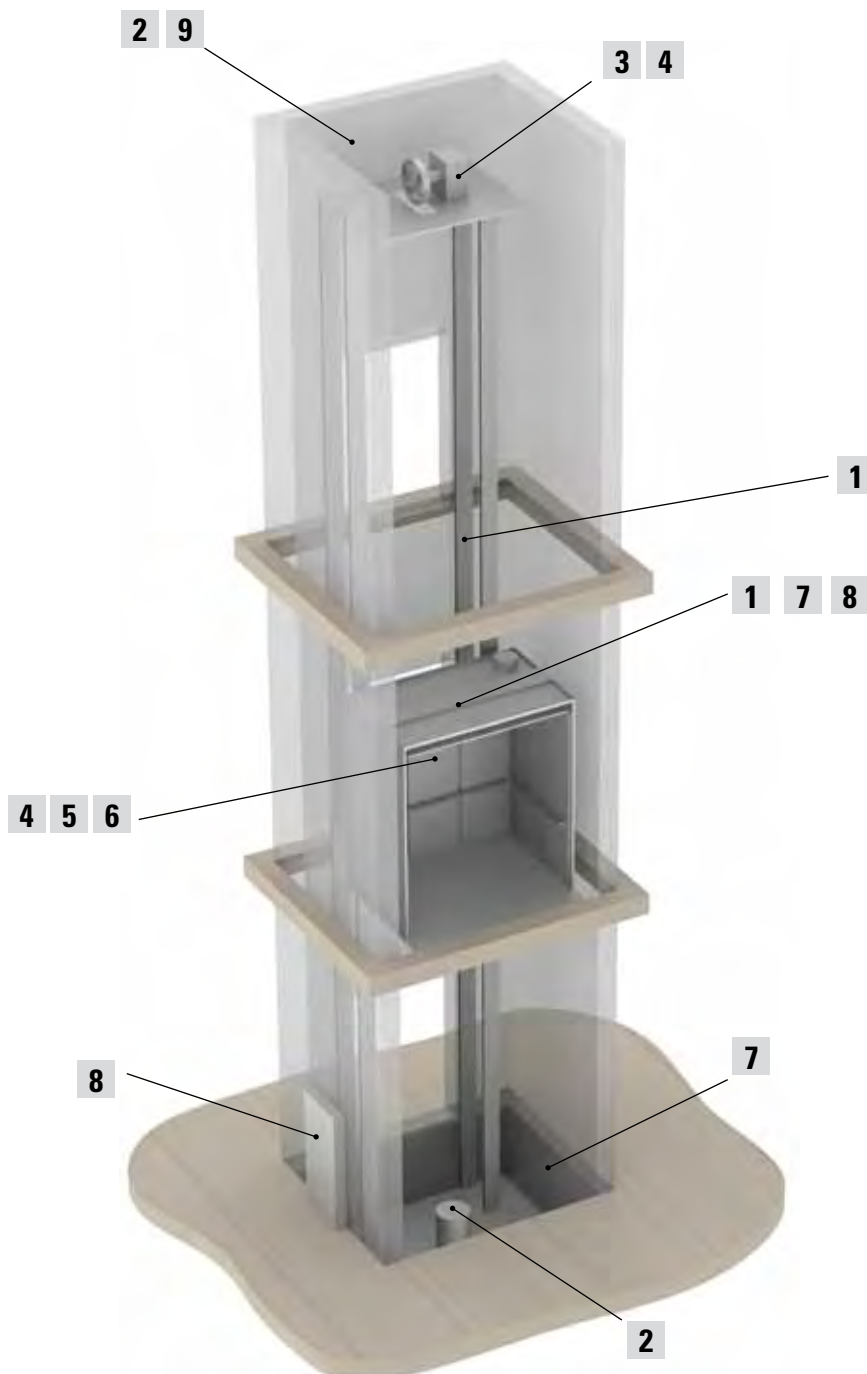
Presentation



Pizzato Elettrica position switches are used since many years in lift sector, due to their reliability and quality/price ratio. Some of the items presented here have been selected by the most important multinationals lift companies as first choice products and therefore used worldwide. The range of traditional position switches which could be used in the lift sector is very wide and therefore on next pages there are indicated only some Pizzato Elettrica products, selected from the ones which are usually used in this sector. The company in any case is able to offer other types of switches or special versions to satisfy customer requirements.

Pizzato Elettrica has also developed some products specifically for the lift sector, like switches for over-speed devices or automatic floor levelling operation devices.

All the products shown in this catalogue are produced completely by the company Pizzato Elettrica with the passion for the quality which distinguish the company.



1A Position switches



page 17

1B Position switches



page 25

2 Switches with manual reset



page 33

3 Switches for over-speed devices with manual reset



page 41

4 Switches with electrical reset



page 43

5 Door switches



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page 53



page 55



page 57

6 Operator switches



page 59



7A EL AC Lift control stations



page 67

7B EL AN Lift control stations



page 83

8 Automatic floor levelling op. devices



page 107



9 Signalling switches



page 115



180 PASSIONATE PROFESSIONALS

It is people, with their professionalism and dedication that make a great company. This profound conviction has always guided Pizzato Elettrica in their choice of employees and collaborators. 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 60% since the year 2000 and has achieved a considerable increase in business in all the countries where Pizzato Elettrica is present.

The various strategic sectors of the business are headed by professionals with significant experience and expertise. Many of



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

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





100% MADE IN ITALY

An entrepreneurial company such as Pizzato Elettrica, which has grown day after day thanks to the “culture of doing” of a family that benefited from approaching its work with tenacity, intelligence and far-sightedness, has its foundations in a system of solid and deeply-shared values. The pillars that form the basis of the company’s work have remained constant and constitute Pizzato Elettrica’s fundamental guiding principles.

- **TERRITORIAL ROOTS.** Pizzato Elettrica is a successful example of the ripe entrepreneurship that characterises the North-East of Italy and Veneto in particular, an area that is tellingly referred to as “Italy’s locomotive”. The territory is highly productive in every sector, from agriculture to high technology, and makes a fundamental contribution to the generation of Italian wealth; where 100 is the average per capita value added produced at the national level, the figure here has consistently been between 110 and 135. The productivity rate is among the highest in Europe and originates from a tradition of diffuse and markedly export-oriented entrepreneurship.

- **ORIENTATION TO EXCELLENCE.** Innovation and development: this company philosophy is at the heart of the operations and product quality assessments that Pizzato Elettrica performs in a 360 degree manner, and is also manifest in the heightened propensity for research and innovation that characterises its design work. Every product development in Pizzato Elettrica is born with the aim of bringing a secure, reliable and innovative choice to the market: those using Pizzato Elettrica products do so in the certainty that they are of certified quality as fruits of a process that is scrupulously controlled at every stage.

- **ATTENTION TO THE CLIENT.** In order to be successful, a product must respond to the specific needs of those who will use it: quality alone is not enough. Market developments must be carefully monitored so that one can understand, in advance, which new applications will prove truly useful. This is why Pizzato Elettrica has always cultivated close synergies with the companies that choose it as a supplier, using this continuous dialogue to identify the potential developments of its product range so as to render it highly flexible, complete and able to offer optimal solutions to diverse needs.





1984: AN ENTREPRENEURIAL STORY BEGINS

16 November 1984. This is the date that marks the beginning of a long entrepreneurial story: the story of a family that was able to build a company and allow it to grow consistently, one step at a time, to reach important results, guided by a profound work ethic and a marked spirit of initiative.

- 80s. The company was initially called Pizzato, owned by the Pizzato B. & C. general partnership with headquarters in Marostica. It was immediately able to assert itself on the market thanks to the quality of its products. In the short space of 4 years, the firm had already developed to the point of making a fundamental upgrade: on 18 April 1988, it became Ltd. company and was re-named Pizzato Elettrica, a brand shortly destined to become renowned and appreciated nationwide. During the same year, its first company-owned plant, geared towards mechanical processing, was built. By the end of the decade, thanks to the development of quality products and the experience built on the Italian market, Pizzato Elettrica turned to the international market: in 1989, the commercialisation of products was extended to the USA.

- 90s. The range of products continued to be upgraded and specialised with the introduction of new machinery and the growing input of technology. In 1994, Pizzato Elettrica introduced its first line of prewired switches with immediate success. 1996 and 1997 were important years in the development of safety devices, a sector that became strategic when new European directives on working environments were introduced. Pizzato Elettrica immediately became an Italian leader in this regard, thanks to its evolved safety switches and switches with solenoid. Meanwhile (1995), its second plant, geared towards the moulding of plastic materials, was also born. The brand was now ready to approach the new frontiers of the international market: South Africa in 1995 and Australia in 1997.

As a confirmation of its innovative spirit, Pizzato Elettrica was among the first companies to believe in the strong potential of the Web, presenting itself online with a well-constructed and multi-functional site as early as 1996. This exciting, constant growth culminated in 1998 with the construction of the third plant, dedicated to the assembly department.

- 00s. The new millennium heralded the search for quality certifications: the ISO 9002 was achieved in April 2000, followed by the ISO 9001 achieved in November 2002. In the meanwhile, technological evolution continued: in 2000, the design studio began using CAD 3D systems. This allowed new avant garde product models to be developed, such as safety modules (2002) and switches conforming to the European ATEX directives (2005), laid out for equipment operating in potentially explosive environments.

In 2006, the HP switch, the result of an innovative engineering design project combining safety and style in a single product, was introduced to the market. The Palladio line was selected by the judging panel of the "Innovation&Design Award 2007" as one of the industrial products most distinguished by its unique design and technological innovativeness.

In 2007, the company extended its range of products for machine safety, introducing two new series of magnetic safety sensors, suitable for the monitoring of protections and repairs.

The initial months of 2009 have witnessed the introduction of the new prewired modular switches NA-NB-NF series.

In 2010 Pizzato Elettrica introduced the new EROUND line control and signalling devices, therefore remarkably widening its offer within the man-machine interface sector.

In 2012, the company integrates its offering in the machine safety field, thanks to the ST series sensors with RFID technology and to the programmable safety modules of the GEMNIS CS MP series.

In 2013 were introduced the new safety switches in stainless steel HX series.

More recently were presented new RFID safety switches with lock NG series. Furthermore the programmable multifunction safety modules from the Gemnis series have been updated to version 11, with the introduction of new functions and better performance in terms of hardware and software. At the same time software Gemnis Studio was also updated, a graphic development environment for the creation, simulation and debug of programs suitable to be entered in the modules belonging to the Gemnis line.



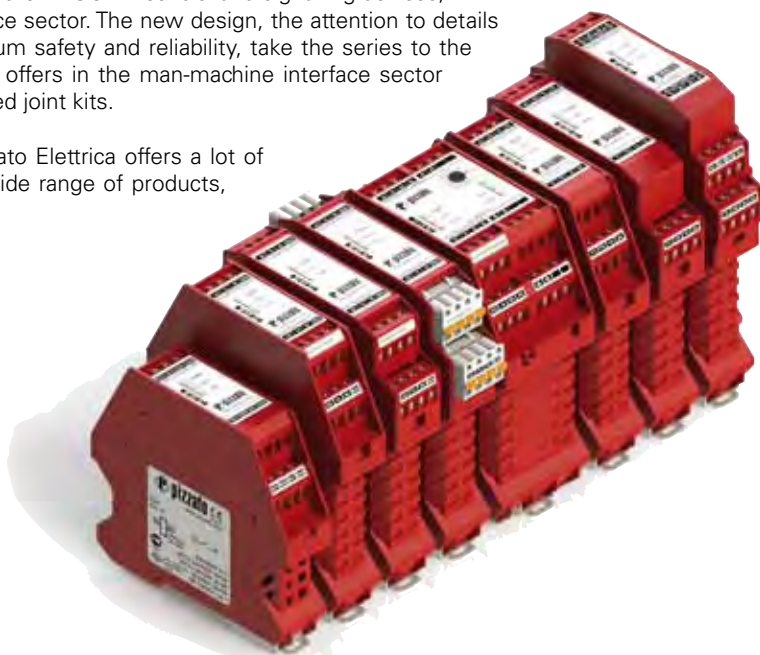
59,000,000 PARTS SOLD WORLDWIDE

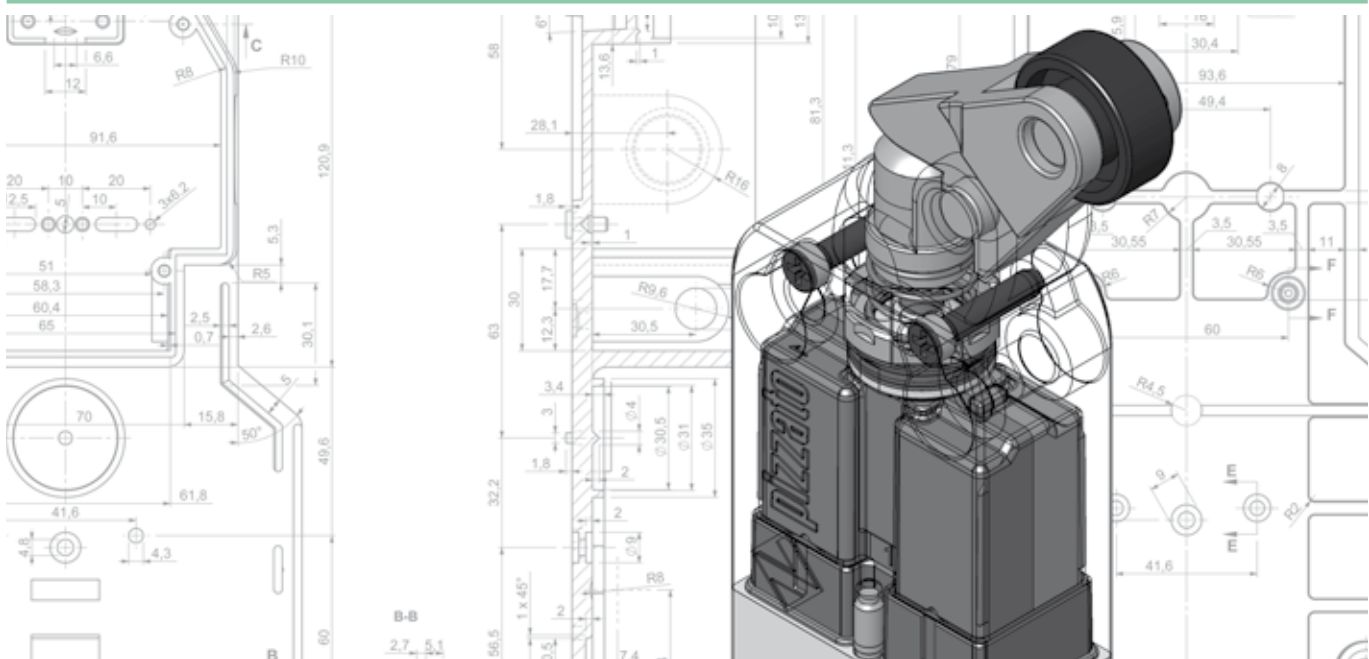
Pizzato Elettrica's product catalogue contains around 7,000 items, with over 1,000 special codes developed for devices personalised according to clients' specific needs.

Pizzato Elettrica devices can be grouped, according to typology, into 3 main macro-categories:

- **POSITION SWITCHES.** They are installed daily on any type of industrial machinery with applications in the wood, metal, plastic, elevator, automotive, naval etc. sectors. In order to be used in a such wide variety of sectors and countries, Pizzato Elettrica position switches are made to be assembled in a lot of configurations thanks to the various body shapes, dozens of contact blocks, hundreds of actuators and materials, forces, assembling versions. The product range that Pizzato Elettrica can offer in the field of position switches is one of the widest in the world. Moreover, the use of high quality materials, high reliability technologies as twin bridge contact blocks and the protection degree IP67, make this range of position switches one of the most technologically evolved. Furthermore since 2005 Pizzato Elettrica has also started to produce versions of its switches with specific features for some sectors as follows: switches with ATEX homologations and switches for high temperature.
- **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, so becoming one of the main European manufacturers of safety devices. The wide range of specific products for machine safety completely designed and assembled in our company premises in Marostica (VI), has been widened by the introduction of coded magnetic sensors, switches with solenoid provided with anti-panic release device, hinged safety switches and new safety handles. New products have recently been introduced, including ST series safety sensors with RFID technology, HX series hinge-shaped safety switches in stainless steel, NG Series RFID safety switches with block and P-KUBE 2 safety handles.
- **MAN-MACHINE INTERFACE.** Thanks to the introduction of the EROUND control and signalling devices, Pizzato Elettrica widens its offer in the man-machine interface sector. The new design, the attention to details and the elegance of the product combined with its maximum safety and reliability, take the series to the forefront of the market. The wide range that our Company offers in the man-machine interface sector includes single and modular footswitches with many patented joint kits.

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





140 NEW PROJECTS COMPLETED

There's a key word in the development of latest-generation devices: Mechatronics. This new science has grown in recent years, reaching some of the most important research centres, both national and international, right here in Veneto. It is based on the fusion of the principles of Mechanics with those of Electronics in the design of instruments that guarantee great precision, high performance, versatility and constant improvement.

This is why, in recent years, all new models have indeed been created following careful Mechatronics studies, undertaken directly by the highly specialised technicians and engineers that form part of the R&D department.

The evolution of Pizzato Elettrica's product lines thus proceeds on a double platform: on one side, there are the internally-researched innovative materials and technologies; on the other, the particular needs that emerge from continuous dialogue with big competitors and, above all, clients.

Indeed, requests for specific personalisations of a product are quite common: Pizzato Elettrica's duty is to respond to these needs as best it can, guaranteeing maximum flexibility and openness with regards to 'custom made' projects too.





10 MILLION CERTIFIED PRODUCT CODES

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

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

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



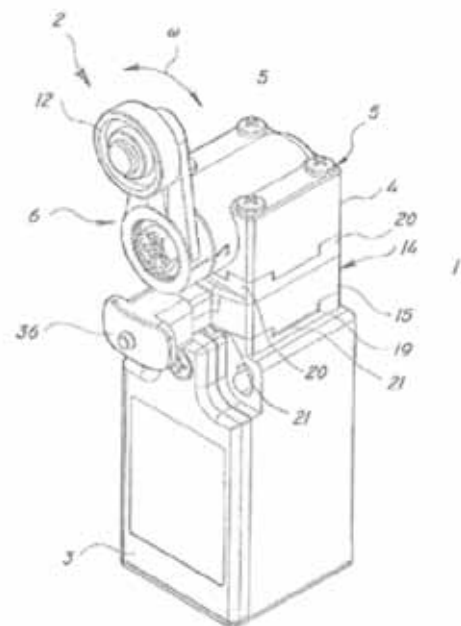
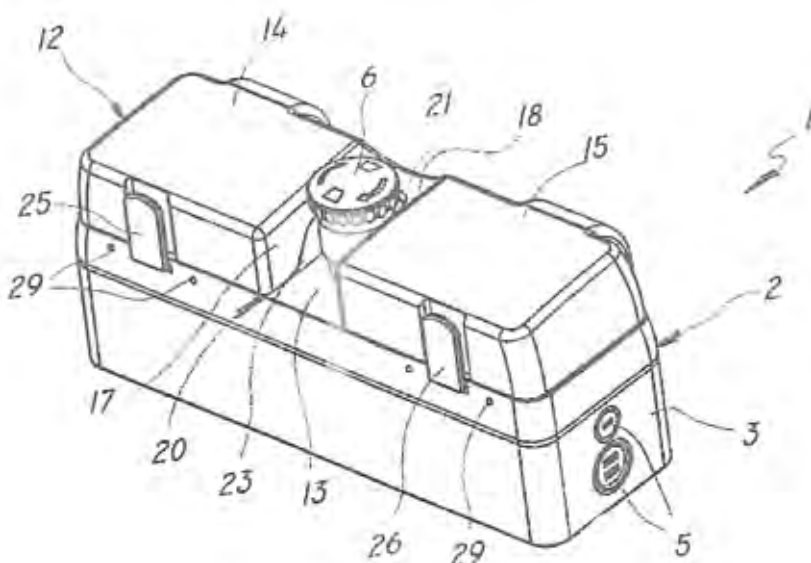


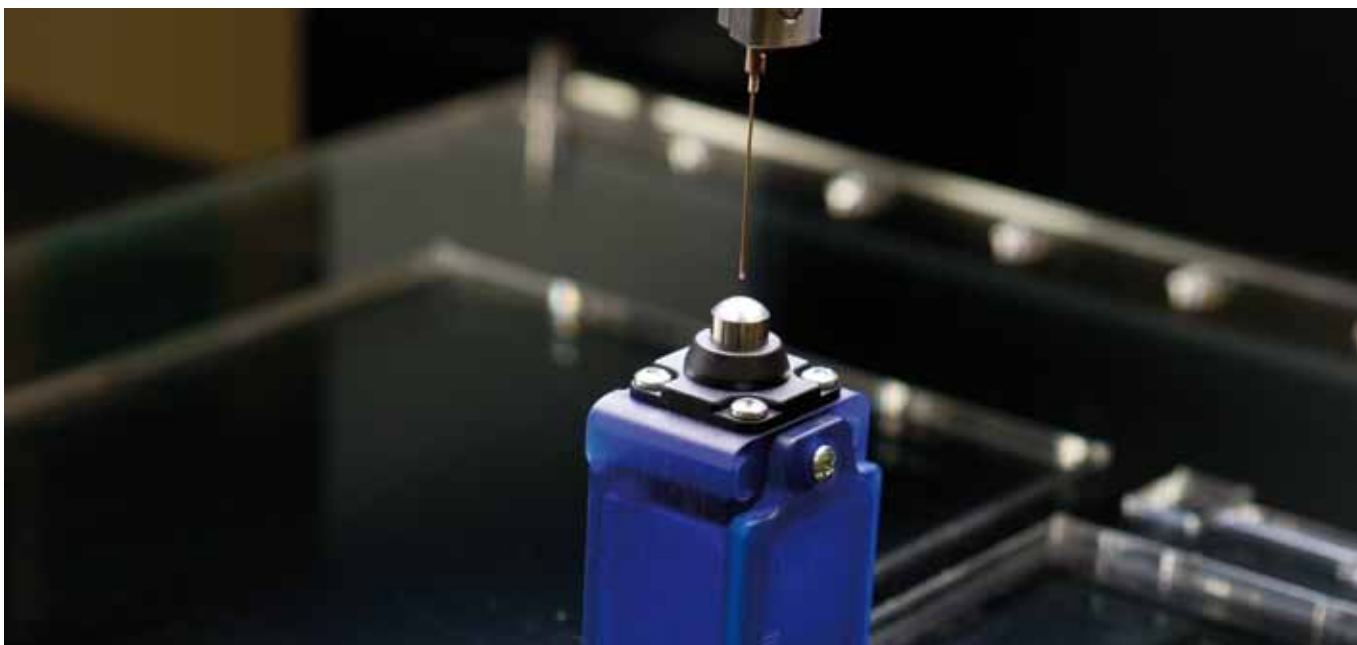
140 REGISTERED PATENTS

The fact that Pizzato Elettrica has, over 30 years, been able to take on a leadership role at the European level is also a result of continuous research and innovation, which its labs and internal design studios undertake on a daily basis.

This is a strategic sector that is exploited to the maximum thanks to a constant process of innovation: indeed, this undoubtedly represents the most important value added. This is why, on average, Pizzato Elettrica develops 3 innovative projects to be covered by international patents each year: a route that the company has been following since its birth, immediately understanding the importance of registering and protecting ideas in order to approach the market with the added strength of being truly 'different' from its competitors.

The company's ideas are what have distinguished it and allowed it to come to occupy a highly important market position, through the tens of patents that have been developed and registered. An ever evolving know-how that is renewed daily, as demonstrated, for example, by the more recent innovations introduced in the safety device sector. This field is due to change significantly in the coming years through profound technological developments: a path that Pizzato Elettrica once again intends to take before time, outlining new principles destined to respond to the international market trends of the future.





20,800 HOURS DEDICATED TO RESEARCH PER YEAR

Behind every new product lies a careful research and design process that aims to find technologically advanced solutions that can improve the device.

This evolution would not have been possible if Pizzato Elettrica hadn't acquired increasingly well-adapted instruments over time, thus keeping pace with the latest technological frontiers. In this sense, the number of computers used daily within the company is particularly significant: an average of almost one computer per employee (workers included!) represents an exhaustive index of a highly computerised company.

The design effort utilises the most evolved 3D CAD software; the efficiency of the Electrical and Mechanical labs, which operate in strict synergy, allows for immediate assessments to be undertaken for the development and perfection of every functional aspect of the prototypes.

The switches undergo the most thorough of checks, which evaluate their efficiency in extreme conditions too: this ensures that Pizzato Elettrica's clients will have access to a genuinely safe, reliable product.

Measurements are taken using over 200 precision tools, which allow for every single component and every characteristic of the finished products to be evaluated: from measures of humidity and temperature to weight and force, to electrical levels, flammability, mechanical duration, magnetic characteristics, microscopic surveys, the level of IP protection and EMC electromagnetic compatibility.





1,000 TECHNICAL SUPPORT ANSWERS PER MONTH

Pizzato Elettrica sees itself as a company that is as attentive to customers needs as it is to the development of its products.

This is why significant resources have always been dedicated to the development of the technical assistance service, giving the company the role of a highly qualified technological partner that is able to fully support technicians and designers.

Pizzato Elettrica offices can be contacted by telephone from Monday to Friday and offer both information and advice relating to the choice of products, the technical characteristics and the correct installation, ensuring to the customers a direct technical assistance service.

WWW.PIZZATO.COM

Pizzato Elettrica was one of the first Italian firms of its sector to believe in Internet, developing a web site since 1996.

Pizzato Elettrica website, renewed in its graphics and contents and now available in four languages (Italian, English, French and German), is full of data, technical information and news on products and services supplied by our company.

- General Catalog in PDF format
- Certificates, brochures and leaflets of new products
- Research engine code
- List of new products
- Form to require technical and commercial information
- Article cross reference
- Frequently asked questions (FAQ)
- Company profile
- List of trade fairs
- Download 2D CAD drawings in DXF format
- Download 3D CAD drawings in STEP format
- Download Pizzato Elettrica libraries for the SISTEMA software
- Video section with installation examples
- Section dedicated to Machine Safety, explanations of standards and prescriptions for product operation.
- Quick News section, with all the latest news on products and services by Pizzato Elettrica
- Newsletter



MORE THAN 40 MEETINGS ORGANISED EACH YEAR

MEETINGS

Pizzato Elettrica, in addition to offering a qualified technical assistance, sees itself as dynamic company attentive to customers needs organising several meetings and training courses, with a particular focus on machinery safety standards.

EXHIBITIONS

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

MULTILINGUAL DOCUMENTATION

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

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





66,000 PACKAGES SHIPPED PER YEAR

In order to be able to bring its products to distributors and clients operating all over the world, Pizzato Elettrica's guiding principles are speed and efficiency.

These objectives informed the company's creation of a computerised merchandise transfer system, which is managed automatically by an appositely developed company software that is geared towards specific operational needs.

Over 66,000 parcels are sorted by the logistic center each year: a significant volume of merchandise reflecting the needs of an evermore rapid and competitive market.

All shipments and transfers are traced via a barcode system that can immediately identify the contents of any parcel. A pre-arranged system that is easily modulated: this flexibility has also proved key in providing a quick response to particularly urgent shipment requests.

One of the strong points of the company's relations with the commercial network is the provision of guaranteed direct assistance in 6 languages: Italian, English, French, German, Spanish and Chinese. A service that confirms the quality and attention paid by Pizzato Elettrica to its clients worldwide.






TECHNICAL AND COMMERCIAL SERVICE



TECHNICAL OFFICE

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

Office hours: from Monday to Friday
08.00-12.00 / 14.00-18.00 CET
Phone: +39.0424.470.930
Fax: +39.0424.470.955
E-mail: tech@pizzato.com

Spoken languages:  | 



SALES OFFICES

Among the strengths in the company relationship with the commercial network, the direct assistance guaranteed in 6 languages: Italian, English, French, German, Spanish and Chinese. A service that confirms Pizzato Elettrica quality and attention to customers needs from around the world.

Office hours: from Monday to Friday
08.00-12.00 / 14.00-18.00 CET
Phone: +39.0424.470.930
Fax: +39.0424.470.955
E-mail: info@pizzato.com

Spoken languages:  |  |  |  |  | 



Safety modules CS AR-91 and CS AR-93

- Safety modules for lift automatic floor levelling operation according to EN 81
- Choice between automatic start, manual start or monitored start
- Output contacts: 3 NO safety contacts and 1 NC auxiliary contact (CS AR 91)
2 NO safety contacts (CS AR 93)
- Supply voltage 24 Vac/dc
- Brief power failure insensitiveness

► 107



Single self-monitored contact blocks E2 C series

- Ideal for emergency pushbuttons. With the opening of the electrical circuit, it automatically detects the detachment of the contact block from its fixing adapter or the fixing adapter from the actuating device
- Gold plated contacts version
- Positive opening NC contacts according to IEC 60947-5-1
- Terminals IP20 according to IEC 60529

► 100



Introduction to new standards EN 81-20 and EN 81-50

- Pizzato Elettrica products dedicated to the lift sector are updated in accordance with standards EN 81-20 and EN 81-50
- LASER markings according to EN 81-20: LASER markings for control stations EL AC and EL AN series are now enriched with symbols according to new standard EN 81-20; control stations can also be customized with indications, symbols and customer logos
- All switches are in compliance with the requirements set by the new standards on safety contacts.

► 67



Quadruple pushbuttons E2 PQ series

- Protection degree IP67
- Version with projecting pushbuttons
- Possibility of customization with symbols
- High mechanical endurance

► 102



Door switches with positive opening DS A series

- Version with reduced actuation force
- Seven different actuators available
- Self-tapping screw

► 51



Illuminated devices

Illuminated disc VE DL series

- High visibility
- Protection degree IP67
- Compact design
- Indelible laser marking
- Customizing possibility

► 101



Monolithic illuminated indicator

- Fully integrated indicator light in monolithic body
- Protection degree IP67
- 3 power supply: 12 ... 30 Vac/dc, 120 Vac, 230 Vac
- Optional customization with symbols

► 103



Accessories

USB socket

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

RJ45 socket

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

DIN rail adapter VE AD series:

- Adapter with Ø22 hole for front fixing on DIN rail of control and signalling devices EROUND series
- Patented fastening system which allows a fast removal of the upper part of the adapter, so as to facilitate the installation and replacement of devices
- Panel and base fixing contact blocks for fast wiring
- Sturdy structure made of shockproof technopolymer

► 103

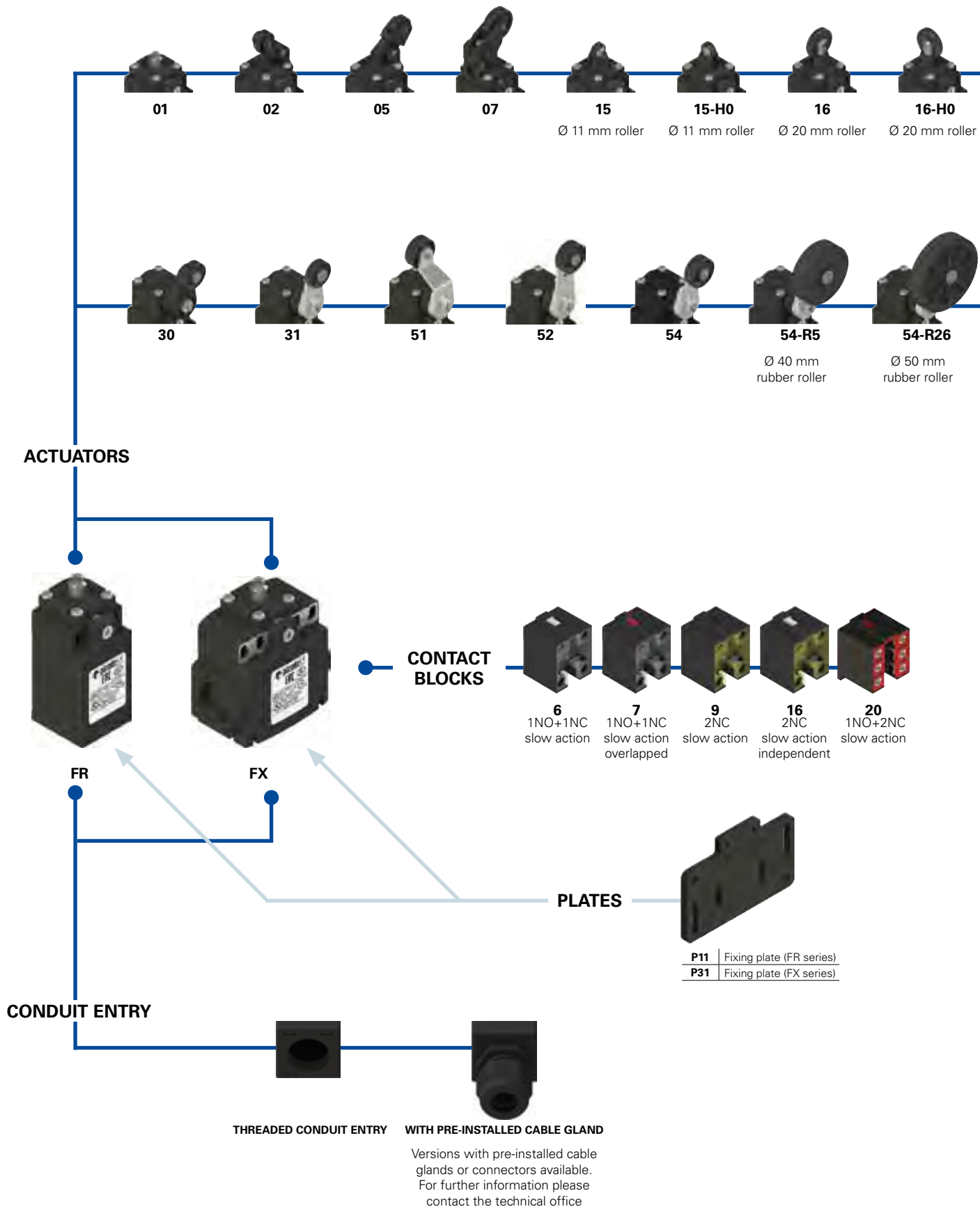


Cam switches EH series

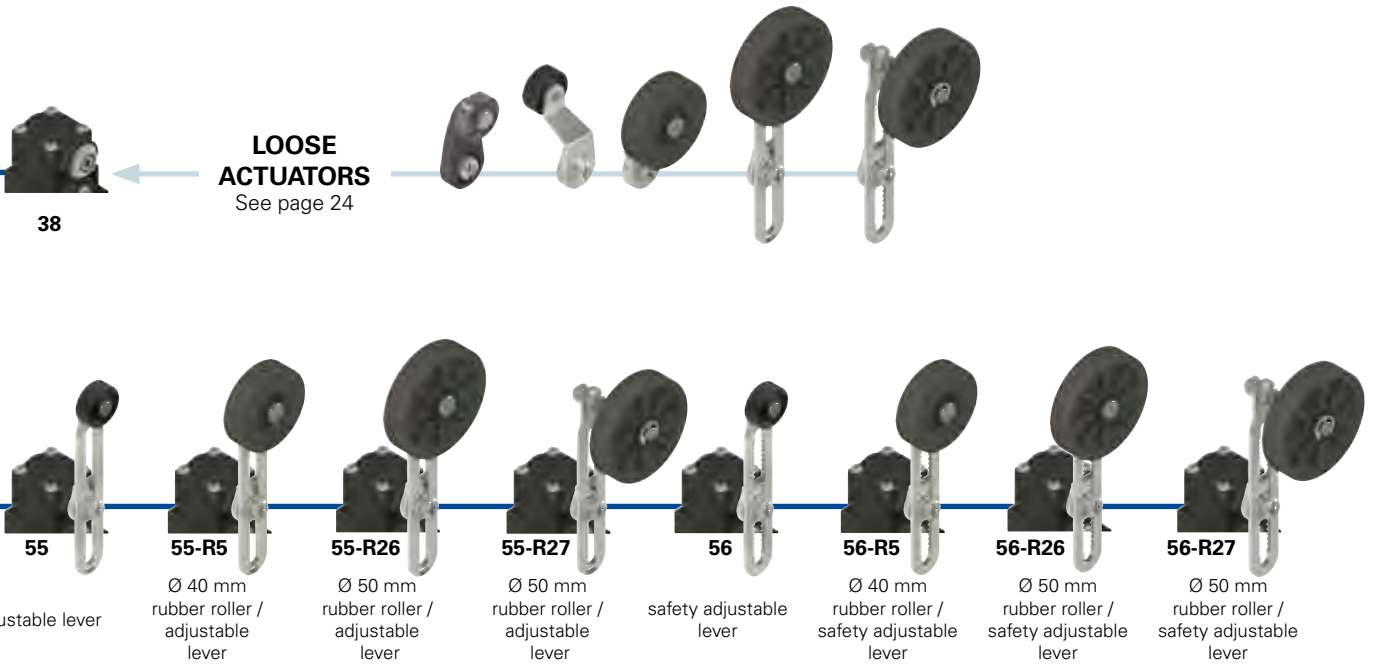
- Rotary cam switches for application on specific configurations of the enclosure covers EL AC and EL AN series
- Versions with two and three stay-put positions
- Protection degree IP65
- Wide ergonomic actuation knob with protection guard
- Thermal current 16A
- Versions up to 8 contacts
- Possibility to configure the contact diagrams according to customer requirements

► 101

Selection diagram



—● product option
—▶ accessory sold separately



Code structure

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

article option options
FR 655-GM2P11R26

Housing	
FR	polymer housing, one conduit entry
FX	polymer housing, two conduit entries

Contact blocks	
6	1NO+1NC, slow action
7	1NO+1NC, slow action overlapped
9	2NC, slow action
16	2NC, slow action independent
20	1NO+2NC, slow action

Actuators	
01	short plunger
02	roller lever
05	offset roller lever
...

Contacts type	
	silver contacts (standard)
G	silver contacts gold plated 1 µm

Rollers	
	standard roller
R5	with Ø 40 mm rubber roller
R26	with Ø 50 mm rubber roller
R27	with Ø 50 mm overhanging rubber roller

Fixing plate	
	without fixing plate (standard)
P11	supplied with fixing plate VF SFP1
P31	supplied with fixing plate VF SFP3

Threaded conduit entry	
M2	M20x1.5 (standard) PG 13.5
A	PG 11
M1	M16x1.5



Main data

- Polymer housing, with one or two conduit entries
- Protection degree IP67
- External stainless steel parts versions
- M12 assembled connector versions
- Silver contacts gold plated versions

Markings and quality marks:



Approval IMQ:	EG610
Approval IMQ-UNI:	in progress
Approval UL:	E131787
Approval CCC:	2007010305230013
Approval ECU:	101015
Approval EAC:	RU C-IT DM94.B.01024

Technical data

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation \square

FR series one threaded conduit entry:	M20x1.5 (standard)
FX series two threaded conduit entries:	M20x1.5 (standard)
Protection degree:	IP67 according to EN 60529 with cable gland having equal or higher protection degree

General data

Ambient temperature:	-25°C ... +80°C
Version for operation in ambient temperature from -40°C to +80°C on request	
Max operating frequency:	3600 operations cycles ¹ /hour
Mechanical endurance:	20 million operations cycles ¹
Assembling position:	any
Driving torque for installation:	see page 123
<small>(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.</small>	

Cross section of the conductors (flexible copper wire)

Contact blocks 20:	min.	1 x 0.34 mm ²	(1 x AWG 22)
	max.	2 x 1.5 mm ²	(2 x AWG 16)
Contact blocks 6, 7, 9, 16:	min.	1 x 0.5 mm ²	(1 x AWG 20)
	max.	2 x 2.5 mm ²	(2 x AWG 14)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, EN 60529, EN 60529, EN 81-20, EN 81-50, NFC 63-140, VDE 0660-200, VDE 0113.

Approvals:

IEC 60947-5-1, UL 508, GB14048.5-2001

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, VDE 0660-206.

Installation for safety applications:

Use only switches marked with the symbol \ominus . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in the **standard ISO 14119, par. 5.4**. The switch must be actuated with **at least up to the positive opening travel** shown in the travels diagrams on page 123. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the min. force.

Electrical data

Thermal current (I _{th}):	10 A
Rated insulation voltage (U _i):	500 Vac 600 Vdc
	400 Vac 500 Vdc for contacts block 20
Rated impulse withstand voltage (U _{imp}):	6 kV
	4 kV for contact blocks 20
Conditional short circuit current:	1000 A according to EN 60947-5-1
Protection against short circuits:	fuse 10 A 500 V type aM
Pollution degree:	3

Utilization categories

Alternate current: AC15 (50...60 Hz)			
U _e (V)	250	400	500
I _e (A)	6	4	1
Direct current: DC13			
U _e (V)	24	125	250
I _e (A)	6	1.1	0.4

Data type approved by IMQ, CCC and EZU

Rated insulation voltage (U _i):	500 Vac
	400 Vac for contacts block 20
Thermal current (I _{th}):	10 A
Protection against short circuits:	fuse 10 A 500 V type aM
Rated impulse withstand voltage (U _{imp}):	6 kV
	4 kV for contacts block 20
Protection degree:	IP67
MV terminals (screw clamps)	
Pollution degree	3
Utilization category:	AC15
Operation voltage (U _e):	400 Vac (50 Hz)
Operation current (I _e):	3 A
Forms of the contact element:	Zb, Y+Y, Y+Y+X
Positive opening of contacts on contact block	6, 7, 9, 16, 20

In conformity with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2006/95/CE.

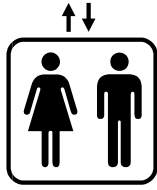
Please contact our technical service for the list of type approved products.

Data type approved by UL

Utilization categories	Q300 (69 VA, 125-250 Vdc)
	A600 (720 VA, 120-600 Vac)
Data of the housing type	1, 4X "indoor use only"; 12, 13
For all contact blocks use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7.1 lb in (0.8 Nm).	
In conformity with standard:	UL 508

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

EN 81-20 standard



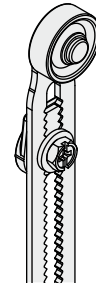
- Safety contacts according to EN 60947-5-1, encl. K.
- Protection degree higher than IP4x.
- Mechanical endurance higher than 10⁶ cycles.

Protection degree IP 67

IP67

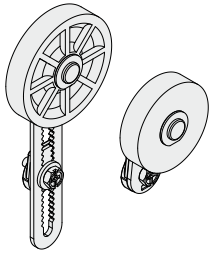
These series switches are all IP 67 rated.

Safety lever LE56



The adjustable lever code 56 (and variants) is supplied with an indentation which blocks the lever slipping in case of fixing screw release.

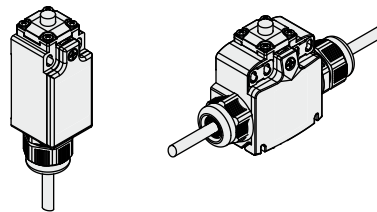
Rubber rollers



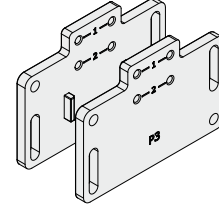
Different actuators with rubber rollers are available. The client can choose the most suitable product depending on lift speed in order to reduce the noise inside the cabin.

Conduit entries

Switches with conduit entries in several directions are available, for applications also in restricted spaces.



Adaptive plates

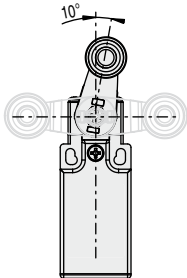


Adaptive plates provided with long slots for the adjustment of the actuating point, developed for compatibility with old products.

Every plate has a double couple of switch fixing holes, one for standard switches and the other one for switches with reset device. In this way the actuator will always have the same actuating point.

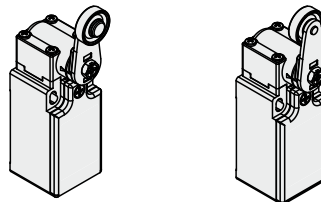
Adjustable levers

In switches with revolving lever it is possible to adjust the lever with 10° steps for the whole 360° range. The positive movement transmission is always guaranteed thanks to the particular geometrical coupling between the lever and the revolving shaft as prescribed for safety applications by the German standard BG-GS-ET-15.



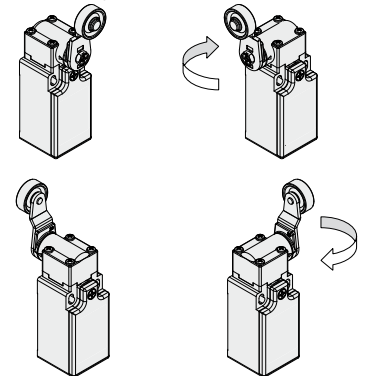
Overturning levers

It's possible to fasten the lever on switches on straight or reverse side, maintaining the positive coupling. In this way it is possible to obtain two different work plans of the lever.



Rotating heads

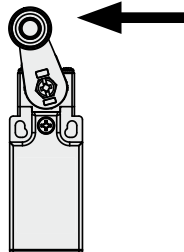
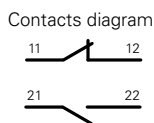
In all switches, it is possible to rotate the head in 90° steps.



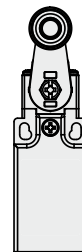
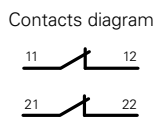
Working operation of contact block 16 with independent contacts

The contact block 16 has two NC contacts, both with positive opening activated independently according to the lever turning direction.

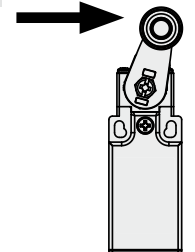
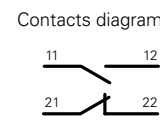
Lever turned to left



Lever not turned



Lever turned to right






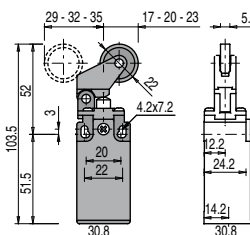
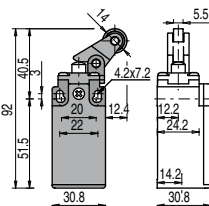
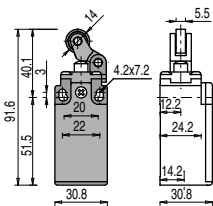
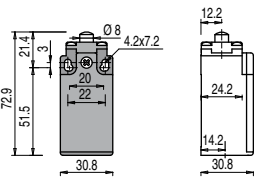
Extended temperature range

-40°C


























This range of switches is also available in a special version with an ambient operating temperature range of -40°C to +80°C. This is particularly useful for applications in cold stores, sterilisers and other low temperature environments. The materials used in the production of these switches maintain the standard operating parameters even over this temperature range, further increasing application possibilities.

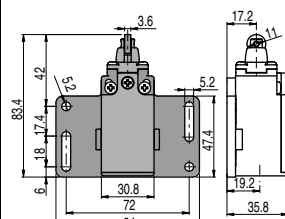
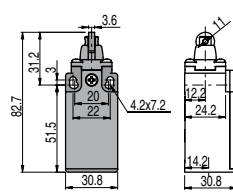
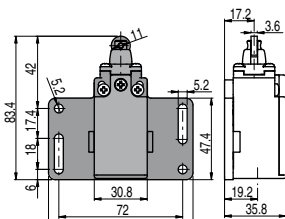
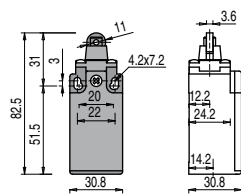
Contacts type:

-  = slow action
-  = slow action overlapped
-  = slow action independent




























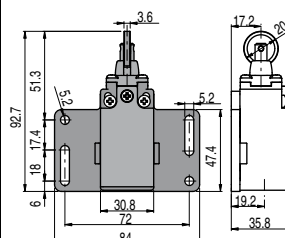
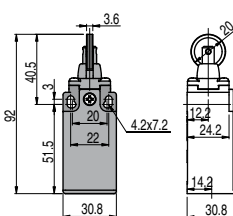
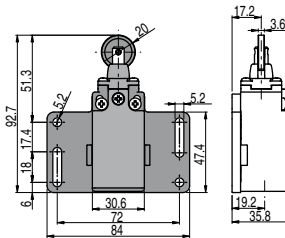
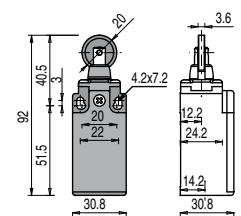
Contact blocks

6		FR 601-M2  1NO+1NC	FR 602-M2  1NO+1NC	FR 605-M2  1NO+1NC	FR 607-M2  1NO+1NC
7		FR 701-M2  1NO+1NC	FR 702-M2  1NO+1NC	FR 705-M2  1NO+1NC	FR 707-M2  1NO+1NC
9		FR 901-M2  2NC	FR 902-M2  2NC	FR 905-M2  2NC	FR 907-M2  2NC
16					
20		FR 2001-M2  1NO+2NC	FR 2002-M2  1NO+2NC	FR 2005-M2  1NO+2NC	FR 2007-M2  1NO+2NC
Max speed		page 123 - type 4	page 123 - type 3	page 123 - type 3	page 123 - type 3
Min. force		8 N (25 N )	6 N (25 N )	6 N (25 N )	4 N (25 N )
Travel diagrams		page 124 - group 1a	page 124 - group 2a	page 124 - group 2a	page 124 - group 3a




























Contact blocks

6		FR 615-M2  1NO+1NC	FR 615-M2P11  1NO+1NC	FR 615-H0M2  1NO+1NC	FR 615-H0M2P11  1NO+1NC
7		FR 715-M2  1NO+1NC	FR 715-M2P11  1NO+1NC	FR 715-H0M2  1NO+1NC	FR 715-H0M2P11  1NO+1NC
9		FR 915-M2  2NC	FR 915-M2P11  2NC	FR 915-H0M2  2NC	FR 915-H0M2P11  2NC
16					
20		FR 2015-M2  1NO+2NC	FR 2015-M2P11  1NO+2NC	FR 2015-H0M2  1NO+2NC	FR 2015-H0M2P11  1NO+2NC
Max speed		page 123 - type 2	page 123 - type 2	page 123 - type 2	page 123 - type 2
Min. force		8 N (25 N )	8 N (25 N )	8 N (25 N )	8 N (25 N )
Travel diagrams		page 124 - group 1a	page 124 - group 1a	page 124 - group 1a	page 124 - group 1a



Contact blocks

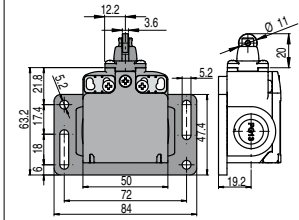
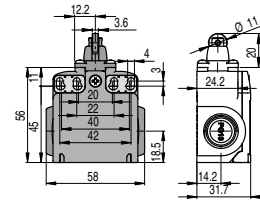
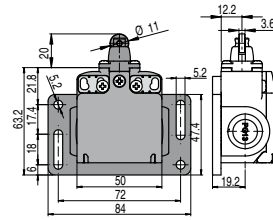
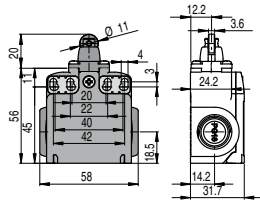
6		FR 616-M2  1NO+1NC	FR 616-M2P11  1NO+1NC	FR 616-H0M2  1NO+1NC	FR 616-H0M2P11  1NO+1NC
7		FR 716-M2  1NO+1NC	FR 716-M2P11  1NO+1NC	FR 716-H0M2  1NO+1NC	FR 716-H0M2P11  1NO+1NC
9		FR 916-M2  2NC	FR 916-M2P11  2NC	FR 916-H0M2  2NC	FR 916-H0M2P11  2NC
16					
20		FR 2016-M2  1NO+2NC	FR 2016-M2P11  1NO+2NC	FR 2016-H0M2  1NO+2NC	FR 2016-H0M2P11  1NO+2NC
Max speed		page 123 - type 2	page 123 - type 2	page 123 - type 2	page 123 - type 2
Min. force		8 N (25 N )	8 N (25 N )	8 N (25 N )	8 N (25 N )
Travel diagrams		page 124 - group 1a	page 124 - group 1a	page 124 - group 1a	page 124 - group 1a

Accessories See page 119

All measures in the drawings are in mm

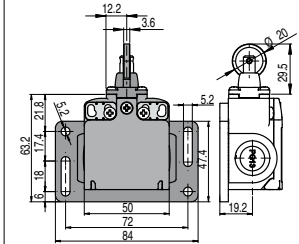
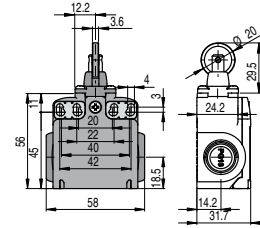
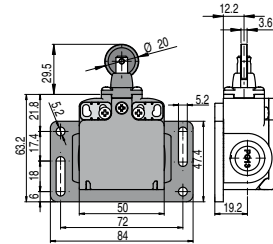
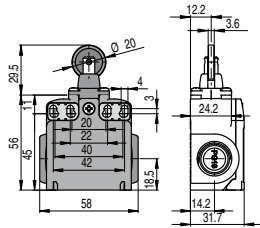
Contacts type:

- L** = slow action
- LO** = slow action overlapped
- LI** = slow action independent



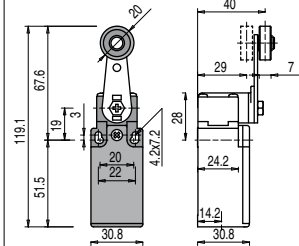
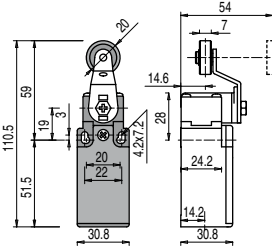
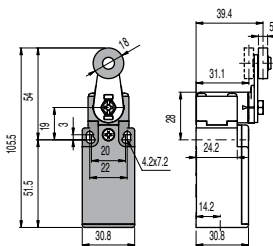
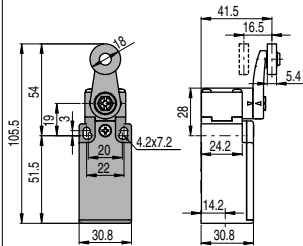
Contact blocks

6	L	FX 615-M2 (↻) 1NO+1NC	FX 615-M2P31 (↻) 1NO+1NC	FX 615-H0M2 (↻) 1NO+1NC	FX 615-H0M2P31 (↻) 1NO+1NC
7	LO	FX 715-M2 (↻) 1NO+1NC	FX 715-M2P31 (↻) 1NO+1NC	FX 715-H0M2 (↻) 1NO+1NC	FX 715-H0M2P31 (↻) 1NO+1NC
9	L	FX 915-M2 (↻) 2NC	FX 915-M2P31 (↻) 2NC	FX 915-H0M2 (↻) 2NC	FX 915-H0M2P31 (↻) 2NC
16	LI				
20	L	FX 2015-M2 (↻) 1NO+2NC	FX 2015-M2P31 (↻) 1NO+2NC	FX 2015-H0M2 (↻) 1NO+2NC	FX 2015-H0M2P31 (↻) 1NO+2NC
Max speed		page 123 - type 2	page 123 - type 2	page 123 - type 2	page 123 - type 2
Min. force		8 N (25 N (↻))	8 N (25 N (↻))	8 N (25 N (↻))	8 N (25 N (↻))
Travel diagrams		page 124 - group 1a	page 124 - group 1a	page 124 - group 1a	page 124 - group 1a



Contact blocks

6	L	FX 616-M2 (↻) 1NO+1NC	FX 616-M2P31 (↻) 1NO+1NC	FX 616-H0M2 (↻) 1NO+1NC	FX 616-H0M2P31 (↻) 1NO+1NC
7	LO	FX 716-M2 (↻) 1NO+1NC	FX 716-M2P31 (↻) 1NO+1NC	FX 716-H0M2 (↻) 1NO+1NC	FX 716-H0M2P31 (↻) 1NO+1NC
9	L	FX 916-M2 (↻) 2NC	FX 916-M2P31 (↻) 2NC	FX 916-H0M2 (↻) 2NC	FX 916-H0M2P31 (↻) 2NC
16	LI				
20	L	FX 2016-M2 (↻) 1NO+2NC	FX 2016-M2P31 (↻) 1NO+2NC	FX 2016-H0M2 (↻) 1NO+2NC	FX 2016-H0M2P31 (↻) 1NO+2NC
Max speed		page 123 - type 2	page 123 - type 2	page 123 - type 2	page 123 - type 2
Min. force		8 N (25 N (↻))	8 N (25 N (↻))	8 N (25 N (↻))	8 N (25 N (↻))
Travel diagrams		page 124 - group 1a	page 124 - group 1a	page 124 - group 1a	page 124 - group 1a



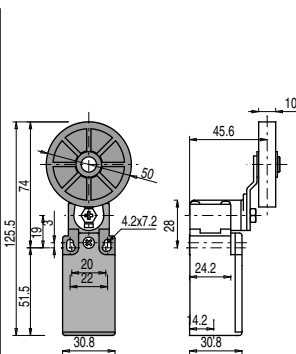
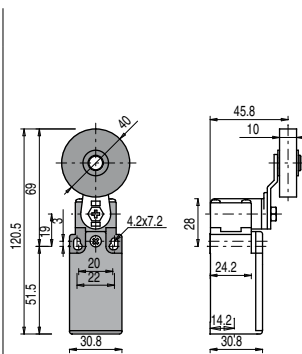
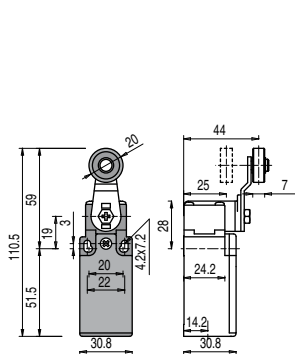
Contact blocks

6	L	FR 630-M2 (↻) 1NO+1NC	FR 631-M2 (↻) 1NO+1NC	FR 651-M2 (↻) 1NO+1NC	FR 652-M2 (↻) 1NO+1NC
7	LO	FR 730-M2 (↻) 1NO+1NC	FR 731-M2 (↻) 1NO+1NC	FR 751-M2 (↻) 1NO+1NC	FR 752-M2 (↻) 1NO+1NC
9	L	FR 930-M2 (↻) 2NC	FR 931-M2 (↻) 2NC	FR 951-M2 (↻) 2NC	FR 952-M2 (↻) 2NC
16	LI	FR 1630-M2 (↻) 2NC	FR 1631-M2 (↻) 2NC	FR 1651-M2 (↻) 2NC	FR 1652-M2 (↻) 2NC
20	L	FR 2030-M2 (↻) 1NO+2NC	FR 2031-M2 (↻) 1NO+2NC	FR 2051-M2 (↻) 1NO+2NC	FR 2052-M2 (↻) 1NO+2NC
Max speed		page 123 - type 1	page 123 - type 1	page 123 - type 1	page 123 - type 1
Min. force		0.06 Nm (0.25 Nm (↻))	0.06 Nm (0.25 Nm (↻))	0.06 Nm (0.25 Nm (↻))	0.06 Nm (0.25 Nm (↻))
Travel diagrams		page 124 - group 4a	page 124 - group 4a	page 124 - group 4a	page 124 - group 4a

Items with code on the green background are available in stock

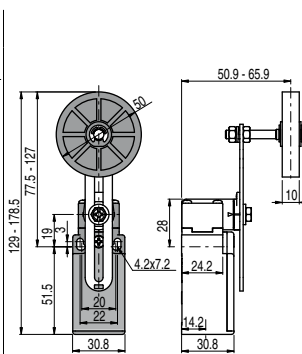
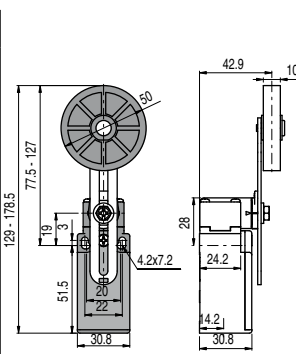
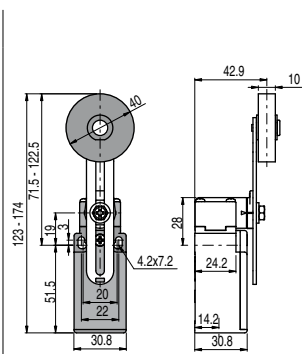
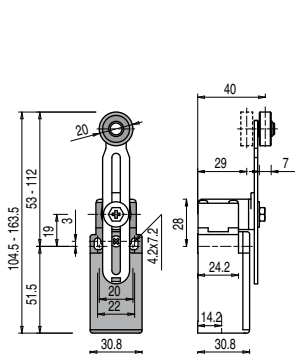
Contacts type:

- L** = slow action
- LO** = slow action overlapped
- LI** = slow action independent



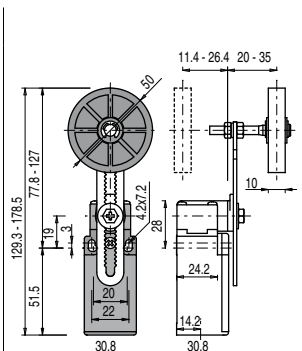
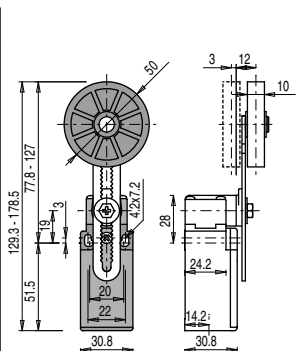
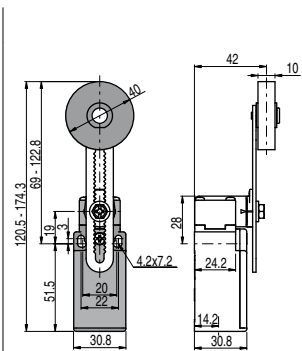
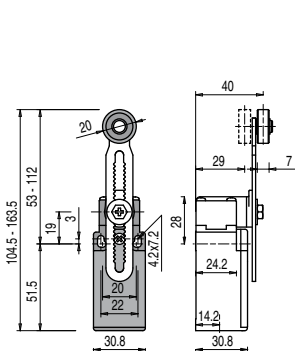
Contact blocks

6	L	FR 654-M2	⊕ 1NO+1NC	FR 654-M2R5	⊕ 1NO+1NC	FR 654-M2R26	⊕ 1NO+1NC
7	LO	FR 754-M2	⊕ 1NO+1NC	FR 754-M2R5	⊕ 1NO+1NC	FR 754-M2R26	⊕ 1NO+1NC
9	L	FR 954-M2	⊕ 2NC	FR 954-M2R5	⊕ 2NC	FR 954-M2R26	⊕ 2NC
16	LI	FR 1654-M2	⊕ 2NC	FR 1654-M2R5	⊕ 2NC	FR 1654-M2R26	⊕ 2NC
20	L	FR 2054-M2	⊕ 1NO+2NC	FR 2054-M2R5	⊕ 1NO+2NC	FR 2054-M2R26	⊕ 1NO+2NC
Max speed		page 123 - type 1		page 123 - type 1		page 123 - type 1	
Min. force		0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)	
Travel diagrams		page 124 - group 4a		page 124 - group 4a		page 124 - group 4a	



Contact blocks

6	L	FR 655-M2	⊕ (*) 1NO+1NC	FR 655-M2R5	⊕ (*) 1NO+1NC	FR 655-M2R26	⊕ (*) 1NO+1NC	FR 655-M2R27	⊕ (*) 1NO+1NC
7	LO	FR 755-M2	⊕ (*) 1NO+1NC	FR 755-M2R5	⊕ (*) 1NO+1NC	FR 755-M2R26	⊕ (*) 1NO+1NC	FR 755-M2R27	⊕ (*) 1NO+1NC
9	L	FR 955-M2	⊕ (*) 2NC	FR 955-M2R5	⊕ (*) 2NC	FR 955-M2R26	⊕ (*) 2NC	FR 955-M2R27	⊕ (*) 2NC
16	LI	FR 1655-M2	⊕ (*) 2NC	FR 1655-M2R5	⊕ (*) 2NC	FR 1655-M2R26	⊕ (*) 2NC	FR 1655-M2R27	⊕ (*) 2NC
20	L	FR 2055-M2	⊕ (*) 1NO+2NC	FR 2055-M2R5	⊕ (*) 1NO+2NC	FR 2055-M2R26	⊕ (*) 1NO+2NC	FR 2055-M2R27	⊕ (*) 1NO+2NC
Max speed		page 123 - type 1		page 123 - type 1		page 123 - type 1		page 123 - type 1	
Min. force		0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)	
Travel diagrams		page 124 - group 4a		page 124 - group 4a		page 124 - group 4a		page 124 - group 4a	



Contact blocks

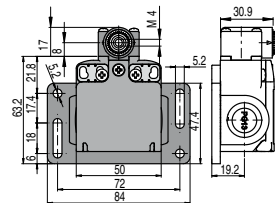
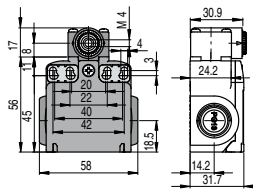
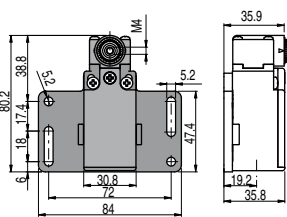
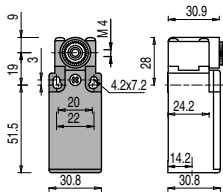
6	L	FR 656-M2	⊕ 1NO+1NC	FR 656-M2R5	⊕ 1NO+1NC	FR 656-M2R26	⊕ 1NO+1NC	FR 656-M2R27	⊕ 1NO+1NC
7	LO	FR 756-M2	⊕ 1NO+1NC	FR 756-M2R5	⊕ 1NO+1NC	FR 756-M2R26	⊕ 1NO+1NC	FR 756-M2R27	⊕ 1NO+1NC
9	L	FR 956-M2	⊕ 2NC	FR 956-M2R5	⊕ 2NC	FR 956-M2R26	⊕ 2NC	FR 956-M2R27	⊕ 2NC
16	LI	FR 1656-M2	⊕ 2NC	FR 1656-M2R5	⊕ 2NC	FR 1656-M2R26	⊕ 2NC	FR 1656-M2R27	⊕ 2NC
20	L	FR 2056-M2	⊕ 1NO+2NC	FR 2056-M2R5	⊕ 1NO+2NC	FR 2056-M2R26	⊕ 1NO+2NC	FR 2056-M2R27	⊕ 1NO+2NC
Max speed		page 123 - type 1		page 123 - type 1		page 123 - type 1		page 123 - type 1	
Min. force		0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)	
Travel diagrams		page 124 - group 4a		page 124 - group 4a		page 124 - group 4a		page 124 - group 4a	

Accessories See page 119

(*) Positive opening only with lever adjusted on the max.

Contacts type:

- L** = slow action
- LO** = slow action overlapped
- LI** = slow action independent



Contact blocks

6	L	FR 638-M2	➔	1NO+1NC	FR 638-M2P11	➔	1NO+1NC	FX 638-M2	➔	1NO+1NC	FX 638-M2P31	➔	1NO+1NC
7	LO	FR 738-M2	➔	1NO+1NC	FR 738-M2P11	➔	1NO+1NC	FX 738-M2	➔	1NO+1NC	FX 738-M2P31	➔	1NO+1NC
9	L	FR 938-M2	➔	2NC	FR 938-M2P11	➔	2NC	FX 938-M2	➔	2NC	FX 938-M2P31	➔	2NC
16	LI	FR 1638-M2	➔	2NC	FR 1638-M2P11	➔	2NC	FX 1638-M2	➔	2NC	FX 1638-M2P31	➔	2NC
20	L	FR 2038-M2	➔	1NO+2NC	FR 2038-M2P11	➔	1NO+2NC	FX 2038-M2	➔	1NO+2NC	FX 2038-M2P31	➔	1NO+2NC
Max speed		page 123 - type 1			page 123 - type 1			page 123 - type 1			page 123 - type 1		
Min. force		0.06 Nm (0.25 Nm ➔)			0.06 Nm (0.25 Nm ➔)			0.06 Nm (0.25 Nm ➔)			0.06 Nm (0.25 Nm ➔)		
Travel diagrams		page 124 - group 4a			page 124 - group 4a			page 124 - group 4a			page 124 - group 4a		

IMPORTANT

For safety applications: join only switches and actuators marked with symbol ➔.

Special loose actuators

IMPORTANT: These loose actuators can be used with items of series FR, FX only.

Ø 40 mm rubber rollers

VF LE31-R5 ➔ (4)	VF LE51-R5 ➔ (4)	VF LE52-R5 ➔	VF LE54-R5 ➔ (4)	VF LE55-R5 ➔ (1)	VF LE56-R5 ➔

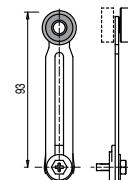
Ø 50 mm rubber rollers

VF LE51-R26 ➔ (4)	VF LE52-R26 ➔ (4)	VF LE54-R26 ➔ (4)	VF LE55-R26 ➔ (1)	VF LE56-R26 ➔

Ø 50 mm overhanging rubber rollers

VF LE55-R27 ➔ (1)	VF LE56-R27 ➔

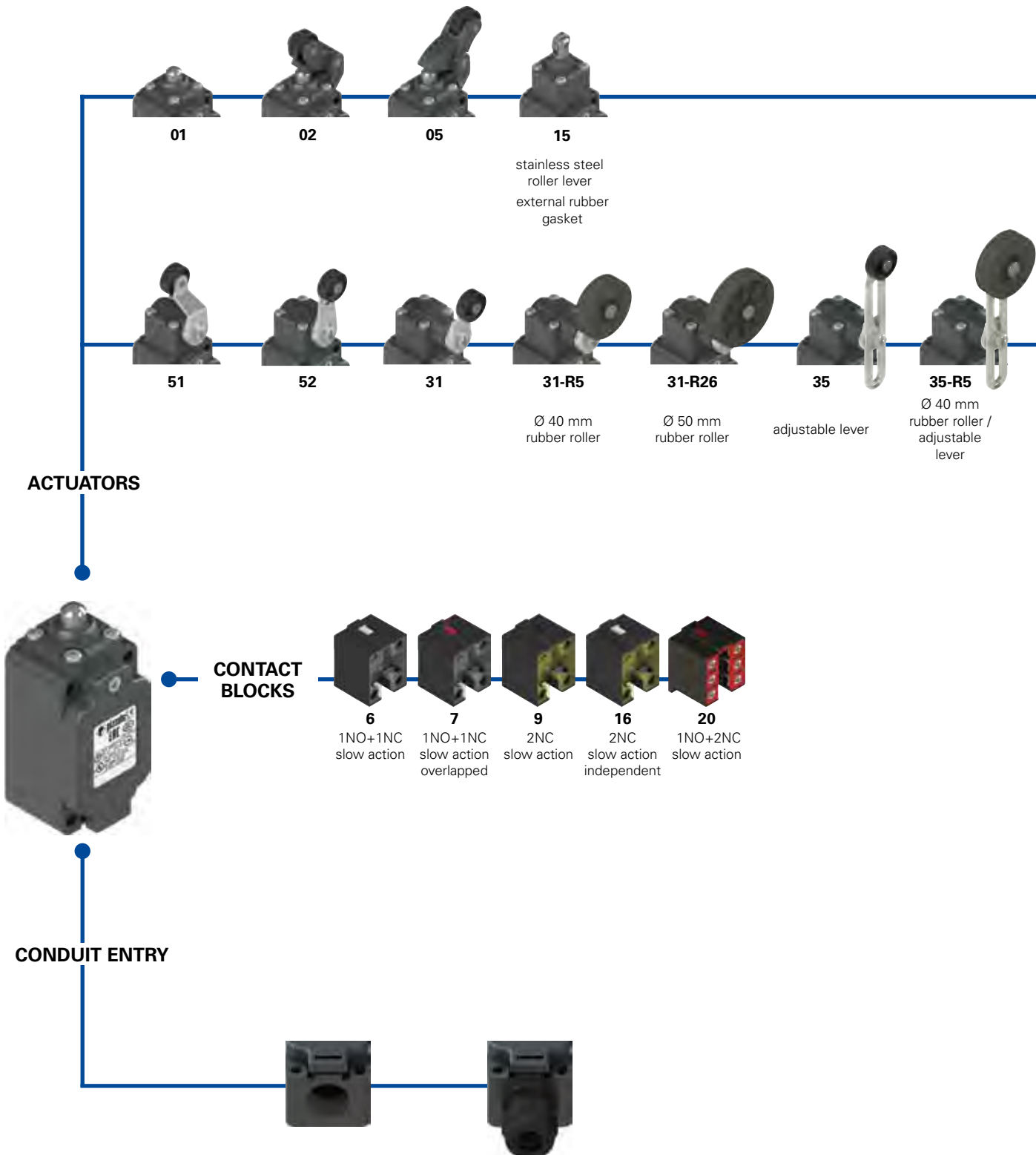
- Only orders for multiple quantities of the packs are accepted.
- (1) Actuator VF LE55 suits to safety applications only if adjusted to its max length, as you can see in figure beside. If you need an adjustable lever for safety applications, use the adjustable safety lever VF LE56.
- (4) The actuator cannot be oriented to inside direction because it will mechanically interfere with the switch head.



Items with code on the green background are available in stock

➔ 2D and 3D files available on www.pizzato.com

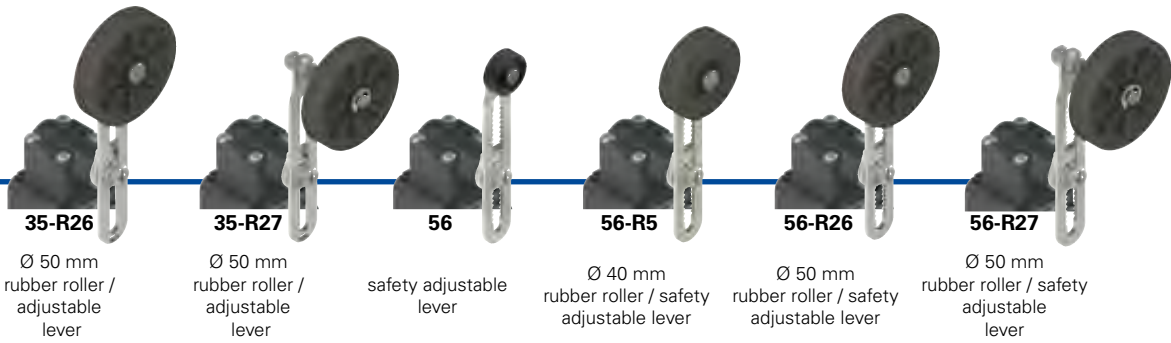
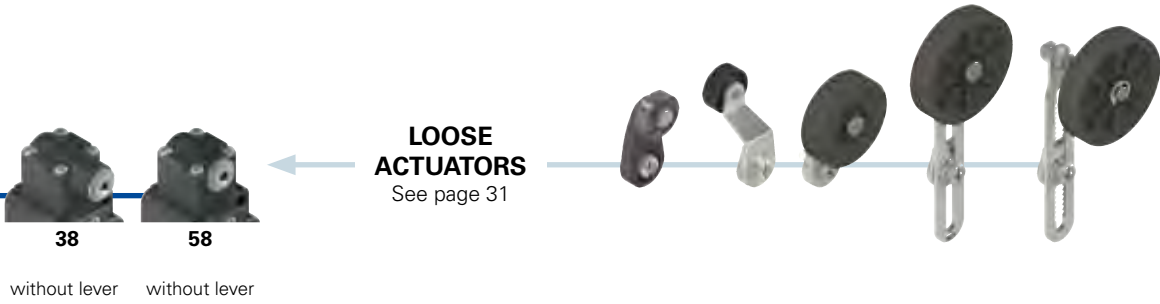
Selection diagram



THREADED CONDUIT ENTRY WITH PRE-INSTALLED CABLE GLAND

Versions with pre-installed cable glands or connectors available. For further information please contact the sales dept.

● product option
 → accessory sold separately



Code structure

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

article option options
FP 635-GM2R26

Housing	
FP	polymer housing, one conduit entry

Contact blocks	
6	1NO+1NC, slow action
7	1NO+1NC, slow action overlapped
9	2NC, slow action
16	2NC, slow action independent
20	1NO+2NC, slow action

Actuators	
01	short plunger
02	roller lever
05	offset roller lever
...

Rollers	
	standard roller
R5	with Ø 40 mm rubber roller
R26	with Ø 50 mm rubber roller
R27	with Ø 50 mm overhanging rubber roller

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

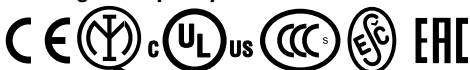
Contacts type	
	silver contacts (standard)
G	silver contacts gold plated 1 µm



Main data

- Polymer housing, one conduit entry
- Protection degree IP67
- External stainless steel parts versions
- M12 assembled connector versions
- Silver contacts gold plated versions

Markings and quality marks:



Approval IMQ:	EG606
Approval IMQ-UNI:	in progress
Approval UL:	E131787
Approval CCC:	2007010305230014
Approval ECU:	1010151
Approval EAC:	RU C-IT DM94.B.01024

Technical data

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation

One threaded conduit entry:	M20x1.5 (standard)
Protection degree:	IP67 according to EN 60529 with cable gland having equal or higher protection degree

General data

Ambient temperature:	-25°C ... +80°C
Version for operation in ambient temperature from -R270°C to +80° C on request	
Max operating frequency:	3600 operations cycles/hour
Mechanical endurance:	20 million operations cycles ¹
Assembling position:	any
Driving torque for installation:	see page 125
(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.	

Cross section of the conductors (flexible copper wire)

Contact blocks 20:	min.	1 x 0.34 mm ²	(1 x AWG 22)
	max.	2 x 1.5 mm ²	(2 x AWG 16)
Contact blocks 6, 7, 9, 16:	min.	1 x 0.5 mm ²	(1 x AWG 20)
	max.	2 x 2.5 mm ²	(2 x AWG 14)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50041, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, EN 60529, EN 60529, EN 81-20, EN 81-50, NFC 63-140, VDE 0660-200, VDE 0113.

Approvals:

IEC 60947-5-1, UL 508, GB14048.5-2001

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, VDE 0660-206.

Installation for safety applications:

Use only switches marked with the symbol . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in the **standard ISO 14119, par. 5.4**. The switch must be actuated with **at least up to the positive opening travel** shown in the travels diagrams on page 125. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the min. force.

Electrical data

Thermal current (I _{th}):	10 A
Rated insulation voltage (U _i):	500 Vac 600 Vdc 400 Vac 500 Vdc for contacts block 20
Rated impulse withstand voltage (U _{imp}):	6 kV 4 kV for contact blocks 20
Conditional short circuit current:	1000 A according to EN 60947-5-1
Protection against short circuits:	fuse 10 A 500 V type aM
Pollution degree:	3

Utilization categories

Alternate current: AC15 (50...60 Hz)			
U _e (V)	250	400	500
I _e (A)	6	4	1
Direct current: DC13			
U _e (V)	24	125	250
I _e (A)	6	1.1	0.4

Data type approved by IMQ, CCC and EZU

Rated insulation voltage (U _i):	500 Vac 400 Vac for contacts block 20
Thermal current (I _{th}):	10 A
Protection against short circuits:	fuse 10 A 500 V type aM
Rated impulse withstand voltage (U _{imp}):	6 kV 4 kV for contacts block 20
Protection degree:	IP67
MV terminals (screw clamps)	
Pollution degree	3
Utilization category:	AC15
Operation voltage (U _e):	400 Vac (50 Hz)
Operation current (I _e):	3 A
Forms of the contact element:	Zb, Y+Y, Y+Y+X
Positive opening of contacts on contact block	6, 7, 9, 16, 20

In conformity with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2006/95/CE.

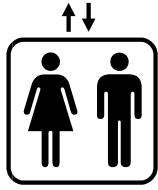
Please contact our technical service for the list of type approved products.

Data type approved by UL

Utilization categories	Q300 (69 VA, 125-250 Vdc) A600 (720 VA, 120-600 Vac)
Data of the housing type 1, 4X "indoor use only";	12, 13
For all contact blocks use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7.1 lb in (0.8 Nm).	
In conformity with standard:	UL 508

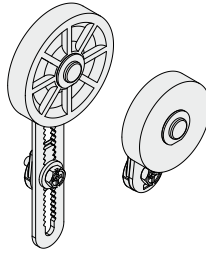
Please contact our technical service for the list of approved products.

EN 81-20 standard



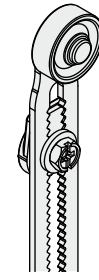
- Safety contacts according to EN 60947-5-1, encl. K.
- Protection degree higher than IP4x.
- Mechanical endurance higher than 10⁶ cycles.

Rubber rollers



Different actuators with rubber rollers are available. The client can choose the most suitable product depending on lift speed in order to reduce the noise inside the cabin.

Safety lever L56



The adjustable lever code 56 (and variants) is supplied with an indentation which blocks the lever slipping in case of fixing screw release.

Protection degree IP 67

IP67

These series switches are all IP 67 rated.

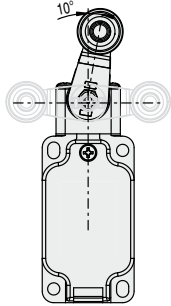
Extended temperature range

-40°C

This range of switches is also available in a special version with an ambient operating temperature range of -40°C to +80°C. This is particularly useful for applications in cold stores, sterilisers and other low temperature environments.

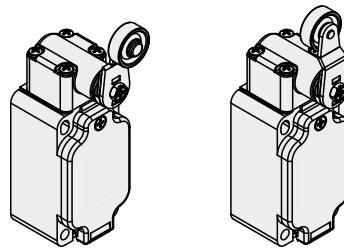
Adjustable levers

In switches with revolving lever it is possible to adjust the lever with 10° steps for the whole 360° range. The positive movement transmission is always guaranteed thanks to the particular geometrical coupling between the lever and the revolving shaft as prescribed for safety applications by the German standard BG-GS-ET-15.



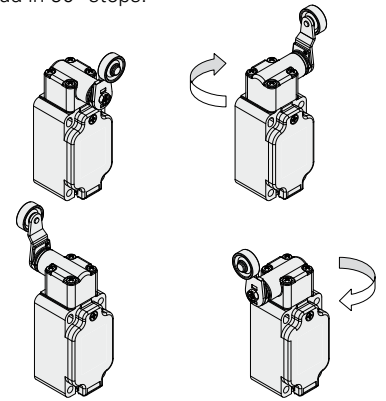
Overturning levers

It's possible to fasten the lever on switches on straight or reverse side, maintaining the positive coupling. In this way it is possible to obtain two different work plans of the lever.



Rotating heads

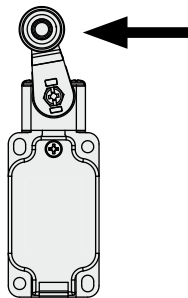
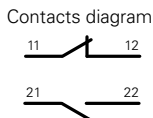
In all switches, it is possible to rotate the head in 90° steps.



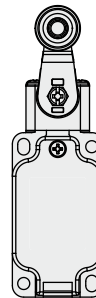
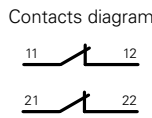
Working operation of contact block 16 with independent contacts

The contact block 16 has two NC contacts, both with positive opening activated independently according to the lever turning direction.

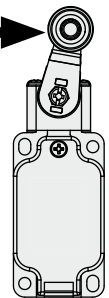
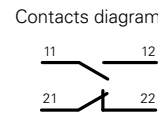
Lever turned to left



Lever not turned

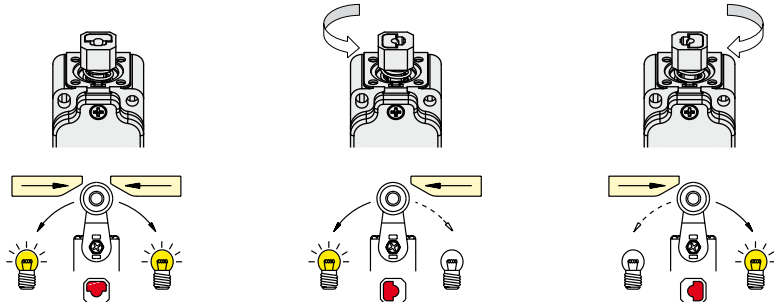
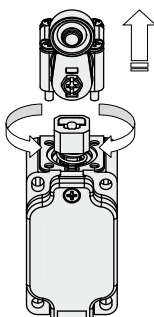


Lever turned to right






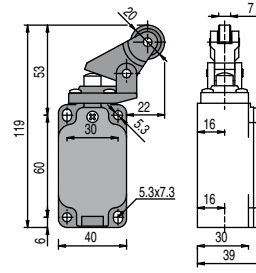
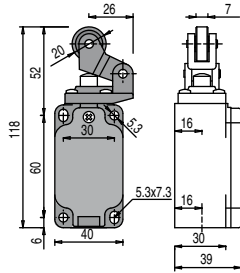
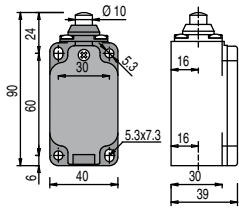
Unidirectional heads

In the switches with revolving lever, it is possible to select the directional operation by removing the four screws of the head and revolving the internal piston (contact block 16 excluded).

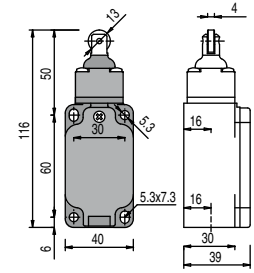


Contacts type:


























-  = slow action
-  = slow action overlapped
-  = slow action independent

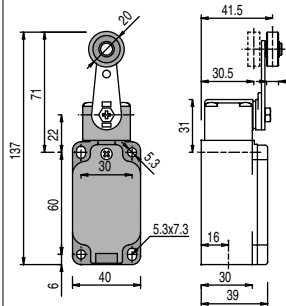
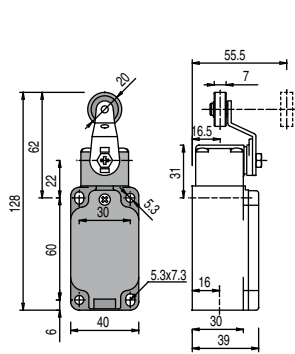


With external rubber gasket


















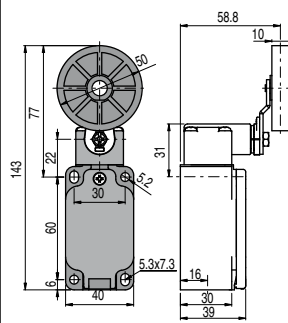
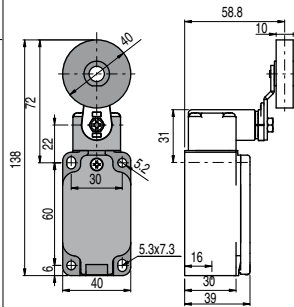
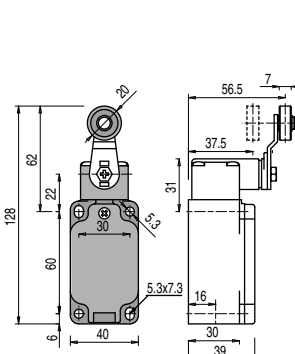
Contact blocks

6		FP 601-M2  1NO+1NC	FP 602-M2  1NO+1NC	FP 605-M2  1NO+1NC	FP 615-M2  1NO+1NC
7		FP 701-M2  1NO+1NC	FP 702-M2  1NO+1NC	FP 705-M2  1NO+1NC	FP 715-M2  1NO+1NC
9		FP 901-M2  2NC	FP 902-M2  2NC	FP 905-M2  2NC	FP 915-M2  2NC
16					
20		FP 2001-M2  1NO+2NC	FP 2002-M2  1NO+2NC	FP 2005-M2  1NO+2NC	FP 2015-M2  1NO+2NC
Max speed		page 125 - type 4	page 125 - type 3	page 125 - type 3	page 125 - type 2
Min. force		8 N (25 N )	6 N (25 N )	6 N (25 N )	11 N (25 N )
Travel diagrams		page 126 - group 1b	page 126 - group 2b	page 126 - group 2b	page 126 - group 1b


























Contact blocks

6		FP 651-M2  1NO+1NC	FP 652-M2  1NO+1NC		
7		FP 751-M2  1NO+1NC	FP 752-M2  1NO+1NC		
9		FP 951-M2  2NC	FP 952-M2  2NC		
16					
20		FP 2051-M2  1NO+2NC	FP 2052-M2  1NO+2NC		
Max speed		page 125 - type 1	page 125 - type 1		
Min. force		0.06 Nm (0.25 Nm )	0.06 Nm (0.25 Nm )		
Travel diagrams		page 126 - group 3b	page 126 - group 3b		



Contact blocks

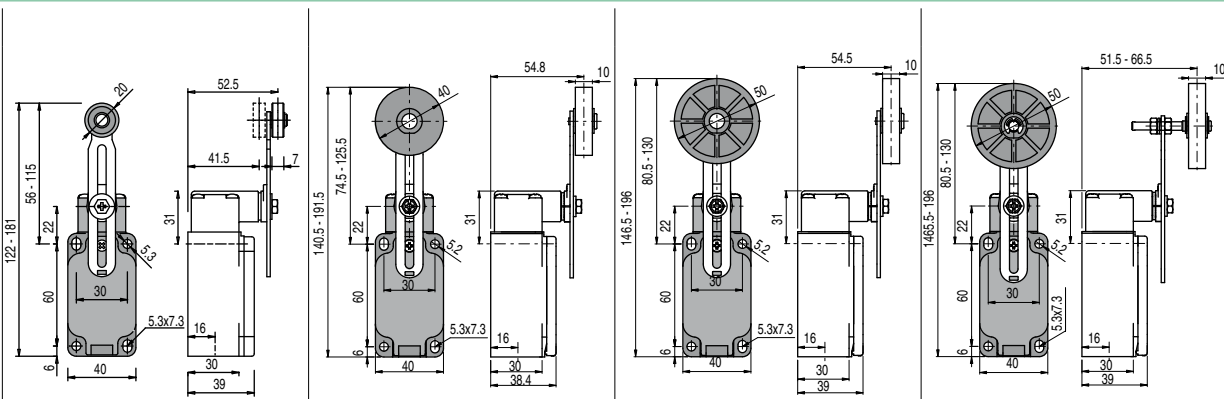
6		FP 631-M2  1NO+1NC	FP 631-M2R5  1NO+1NC	FP 631-M2R26  1NO+1NC	
7		FP 731-M2  1NO+1NC	FP 731-M2R5  1NO+1NC	FP 731-M2R26  1NO+1NC	
9		FP 931-M2  2NC	FP 931-M2R5  2NC	FP 931-M2R26  2NC	
16		FP 1631-M2  2NC	FP 1631-M2R5  2NC	FP 1631-M2R26  2NC	
20		FP 2031-M2  1NO+2NC	FP 2031-M2R5  1NO+2NC	FP 2031-M2R26  1NO+2NC	
Max speed		page 125 - type 1	page 125 - type 1	page 125 - type 1	
Min. force		0.1 Nm (0.25 Nm )	0.1 Nm (0.25 Nm )	0.1 Nm (0.25 Nm )	
Travel diagrams		page 126 - group 3b	page 126 - group 3b	page 126 - group 3b	

Accessories See page 119

All measures in the drawings are in mm

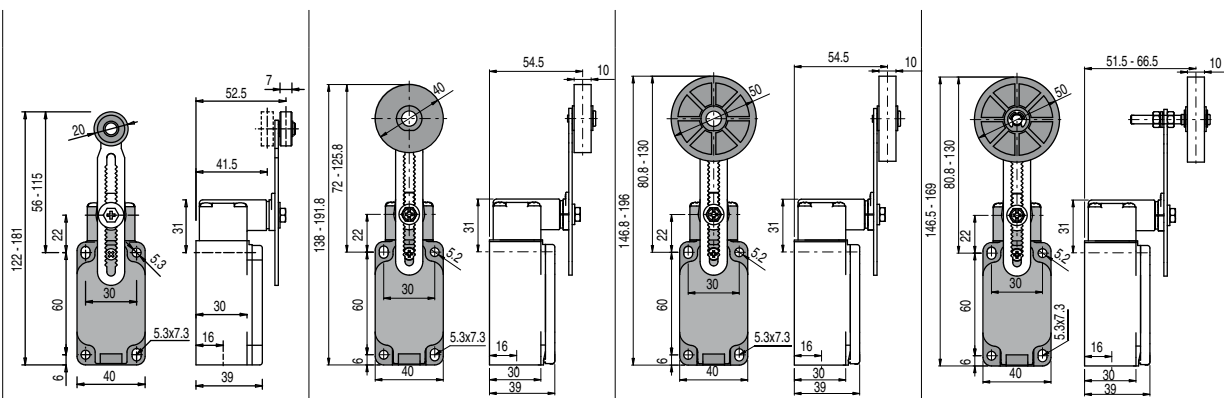
Contacts type:

- L** = slow action
- LO** = slow action overlapped
- LI** = slow action independent



Contact blocks

6	L	FP 635-M2	➔ ⁽¹⁾ 1NO+1NC	FP 635-M2R5	➔ ⁽¹⁾ 1NO+1NC	FP 635-M2R26	➔ ⁽¹⁾ 1NO+1NC	FP 635-M2R27	➔ ⁽¹⁾ 1NO+1NC
7	LO	FP 735-M2	➔ ⁽¹⁾ 1NO+1NC	FP 735-M2R5	➔ ⁽¹⁾ 1NO+1NC	FP 735-M2R26	➔ ⁽¹⁾ 1NO+1NC	FP 735-M2R27	➔ ⁽¹⁾ 1NO+1NC
9	L	FP 935-M2	➔ ⁽¹⁾ 2NC	FP 935-M2R5	➔ ⁽¹⁾ 2NC	FP 935-M2R26	➔ ⁽¹⁾ 2NC	FP 935-M2R27	➔ ⁽¹⁾ 2NC
16	LI	FP 1635-M2	➔ ⁽¹⁾ 2NC	FP 1635-M2R5	➔ ⁽¹⁾ 2NC	FP 1635-M2R26	➔ ⁽¹⁾ 2NC	FP 1635-M2R27	➔ ⁽¹⁾ 2NC
20	L	FP 2035-M2	➔ ⁽¹⁾ 1NO+2NC	FP 2035-M2R5	➔ ⁽¹⁾ 1NO+2NC	FP 2035-M2R26	➔ ⁽¹⁾ 1NO+2NC	FP 2035-M2R27	➔ ⁽¹⁾ 1NO+2NC
Max speed		page 125 - type 1		page 125 - type 1		page 125 - type 1		page 125 - type 1	
Min. force		0.1 Nm (0.25 Nm ➔)		0.1 Nm (0.25 Nm ➔)		0.1 Nm (0.25 Nm ➔)		0.1 Nm (0.25 Nm ➔)	
Travel diagrams		page 126 - group 3b		page 126 - group 3b		page 126 - group 3b		page 126 - group 3b	



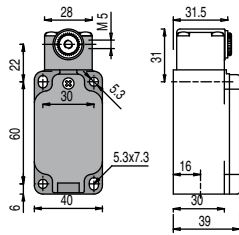
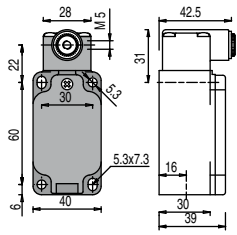
Contact blocks

6	L	FP 656-M2	➔ 1NO+1NC	FP 656-M2R5	➔ 1NO+1NC	FP 656-M2R26	➔ 1NO+1NC	FP 656-M2R27	➔ 1NO+1NC
7	LO	FP 756-M2	➔ 1NO+1NC	FP 756-M2R5	➔ 1NO+1NC	FP 756-M2R26	➔ 1NO+1NC	FP 756-M2R27	➔ 1NO+1NC
9	L	FP 956-M2	➔ 2NC	FP 956-M2R5	➔ 2NC	FP 956-M2R26	➔ 2NC	FP 956-M2R27	➔ 2NC
16	LI	FP 1656-M2	➔ 2NC	FP 1656-M2R5	➔ 2NC	FP 1656-M2R26	➔ 2NC	FP 1656-M2R27	➔ 2NC
20	L	FP 2056-M2	➔ 1NO+2NC	FP 2056-M2R5	➔ 1NO+2NC	FP 2056-M2R26	➔ 1NO+2NC	FP 2056-M2R27	➔ 1NO+2NC
Max speed		page 125 - type 1		page 125 - type 1		page 125 - type 1		page 125 - type 1	
Min. force		0.1 Nm (0.25 Nm ➔)		0.1 Nm (0.25 Nm ➔)		0.1 Nm (0.25 Nm ➔)		0.1 Nm (0.25 Nm ➔)	
Travel diagrams		page 126 - group 3b		page 126 - group 3b		page 126 - group 3b		page 126 - group 3b	

⁽¹⁾ Positive opening only with lever adjusted on the max.
LIFT General Catalog

Contacts type:

- L** = slow action
- LO** = slow action overlapped
- LI** = slow action independent



IMPORTANT

For safety applications: join only switches and actuators marked with symbol ⊕.

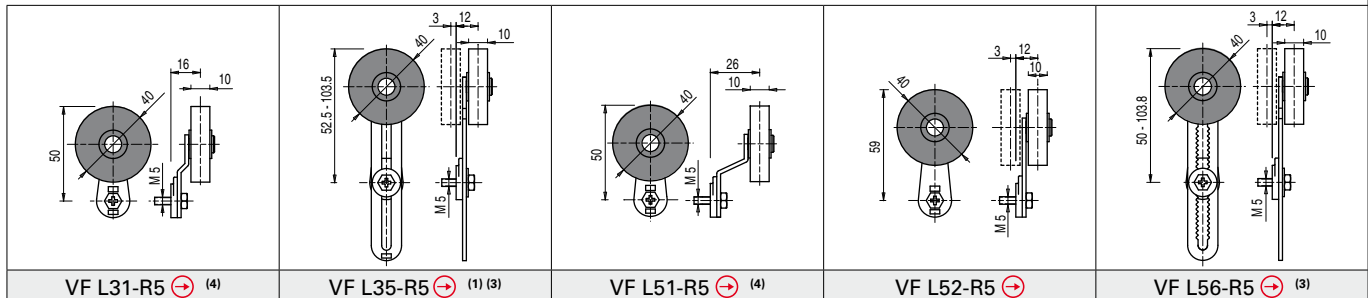
Contact blocks

6	L	FP 638-M2 ⊕	1NO+1NC	FP 658-M2 ⊖	1NO+1NC
7	LO	FP 738-M2 ⊕	1NO+1NC	FP 758-M2 ⊕	1NO+1NC
9	L	FP 938-M2 ⊕	2NC	FP 958-M2 ⊖	2NC
16	LI	FP 1638-M2 ⊕	2NC		
20	L	FP 2038-M2 ⊕	1NO+2NC	FP 2058-M2 ⊖	1NO+2NC
Max speed		page 125 - type 1		page 125 - type 1	
Min. force		0.1 Nm (0.25 Nm ⊖)		0.06 Nm (0.25 Nm ⊖)	
Travel diagrams		page 126 - group 3b		page 126 - group 3b	

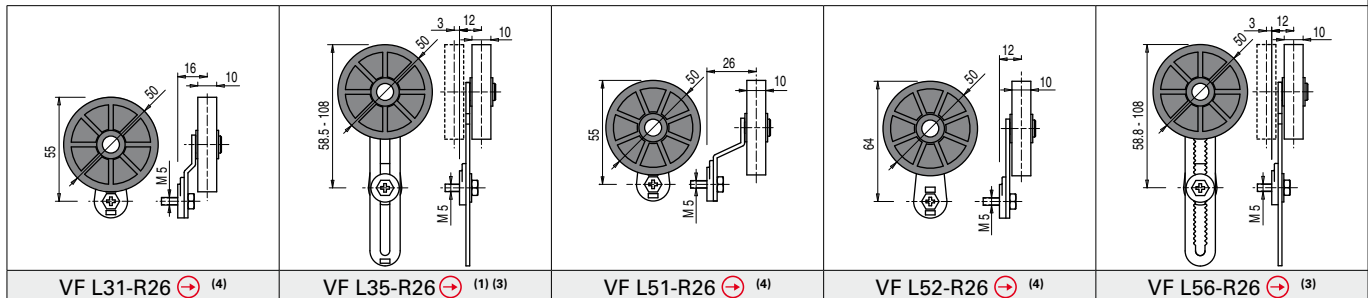
Special loose actuators

IMPORTANT: These loose actuators can be used with items of series FD, FP, FL, FC only.

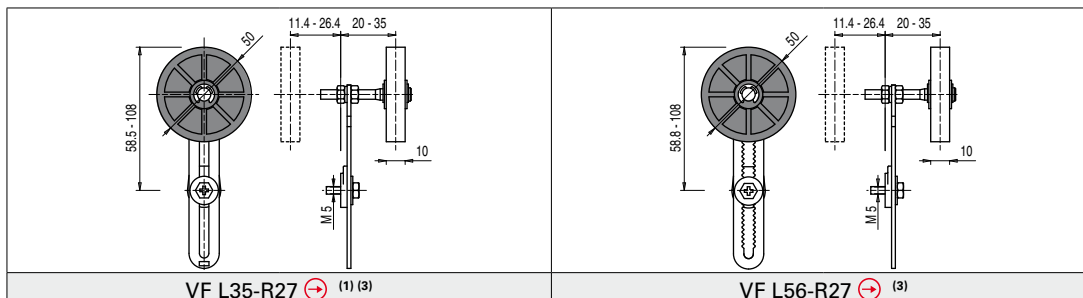
Ø 40 mm rubber rollers



Ø 50 mm rubber rollers



Ø 50 mm overhanging rubber rollers

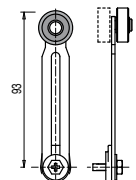


- Only orders for multiple quantities of the packs are accepted.

- (1) Actuator VF L35 suits to safety applications only if adjusted to its max length, as you can see in figure beside. If you need an adjustable lever for safety applications, use the adjustable safety lever VF L56.

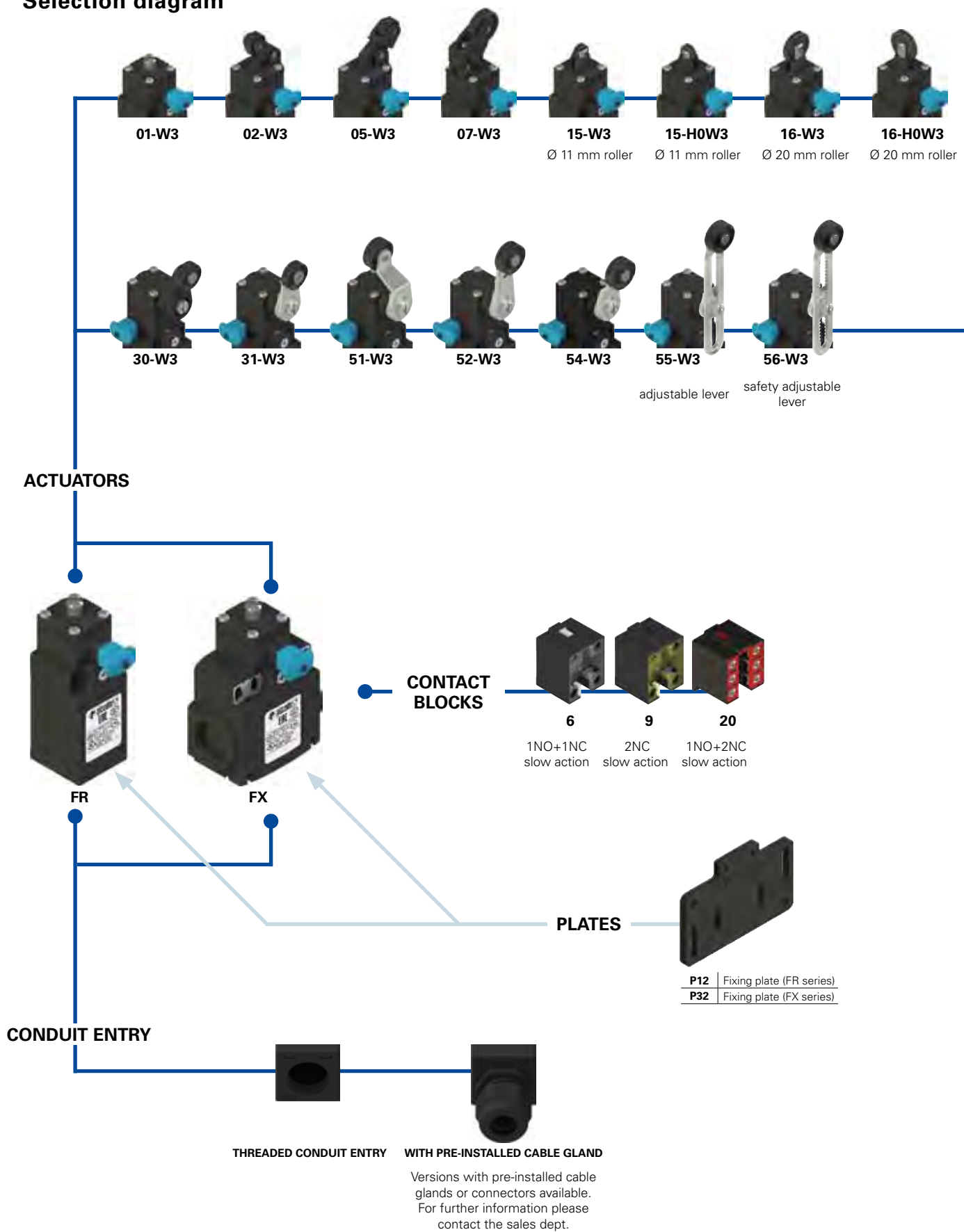
- (3) If it is installed with switch FP •58 (e.g. FP 558, FP 658..), the actuator can mechanically interfere with the housing of the switch. The interference could happen or not according to the actuator and the head fixing position.

- (4) The actuator cannot be oriented to inside direction because it will mechanically interfere with the switch head.



Accessories See page 119

Selection diagram





38-W3

without lever

LOOSE ACTUATORS

See page 40



Code structure

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

article option options

FR 655-W3GM2P12R26

Housing

FR	polymer housing, one conduit entry
FX	polymer housing, two conduit entries

Contact blocks

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

Actuators

01	short plunger
02	roller lever
05	offset roller lever
...

Reset hooking

W3	simultaneous reset (standard)
W4	simultaneous reset with increased force

Rollers

	standard roller
R5	with Ø 40 mm rubber roller
R26	with Ø 50 mm rubber roller
R27	with Ø 50 mm overhanging rubber roller

Fixing plate

	without fixing plate (standard)
P12	supplied with fixing plate VF SFP1
P32	supplied with fixing plate VF SFP3

Threaded conduit entry

M2	M20x1.5 (standard)
	PG 13.5
A	PG 11
M1	M16x1.5

Contacts type

	silver contacts (standard)
G	silver contacts gold plated 1 µm



Main data

- Polymer housing, with one or two conduit entries
- Protection degree IP67
- External stainless steel parts versions
- M12 assembled connector versions
- Silver contacts gold plated versions

Markings and quality marks:



Approval IMQ:	EG610
Approval IMQ-UNI:	in progress
Approval UL:	E131787
Approval CCC:	2007010305230013
Approval EZU:	1010151
Approval EAC:	RU C-IT ДМ94.В.01024

Technical data

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation

FR series one threaded conduit entry:	M20x1.5 (standard)
FX series two threaded conduit entries:	M20x1.5 (standard)
Protection degree:	IP67 according to EN 60529 with cable gland having equal or higher protection degree

General data

Ambient temperature:	-25°C ... +80°C
Version for operation in ambient temperature from -R270°C to +80° C on request	
Max operating frequency:	3600 operations cycles/hour
Mechanical endurance:	1 million operations cycles ¹
Assembling position:	any
Driving torque for installation:	see page 123
(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.	

Cross section of the conductors (flexible copper wire)

Contact blocks 20:	min.	1 x 0.34 mm ²	(1 x AWG 22)
	max.	2 x 1.5 mm ²	(2 x AWG 16)
Contact blocks 6, 9:	min.	1 x 0.5 mm ²	(1 x AWG 20)
	max.	2 x 2.5 mm ²	(2 x AWG 14)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, EN 60529, EN 60529, EN 81-20, EN 81-50, NFC 63-140, VDE 0660-200, VDE 0113.

Approvals:

IEC 60947-5-1, UL 508, GB14048.5-2001

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, VDE 0660-206.

Installation for safety applications:

Use only switches marked with the symbol . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-R262) as stated in the **standard ISO 14119, par. 5.4**. The switch must be actuated with **at least up to the positive opening travel** shown in the travels diagrams on page 123. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the min. force.

Electrical data

Thermal current (I _{th}):	10 A
Rated insulation voltage (U _i):	500 Vac 600 Vdc
	400 Vac 500 Vdc for contacts block 20
Rated impulse withstand voltage (U _{imp}):	6 kV
	4 kV for contact blocks 20
Conditional short circuit current:	1000 A according to EN 60947-5-1
Protection against short circuits:	fuse 10 A 500 V type aM
Pollution degree:	3

Utilization categories

Alternate current: AC15 (50...60 Hz)			
U _e (V)	250	400	500
I _e (A)	6	4	1
Direct current: DC13			
U _e (V)	24	125	250
I _e (A)	6	1.1	0.4

Data type approved by IMQ, CCC and EZU

Rated insulation voltage (U _i):	500 Vac
	400 Vac for contacts block 20
Thermal current (I _{th}):	10 A
Protection against short circuits:	fuse 10 A 500 V type aM
Rated impulse withstand voltage (U _{imp}):	6 kV
	4 kV for contacts block 20
Protection degree:	IP67
MV terminals (screw clamps)	
Pollution degree	3
Utilization category:	AC15
Operation voltage (U _e):	400 Vac (50 Hz)
Operation current (I _e):	3 A
Forms of the contact element:	Zb, Y+Y, Y+Y+X
Positive opening of contacts on contact block	6, 9, 20

In conformity with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2006/95/CE.

Please contact our technical service for the list of type approved products.

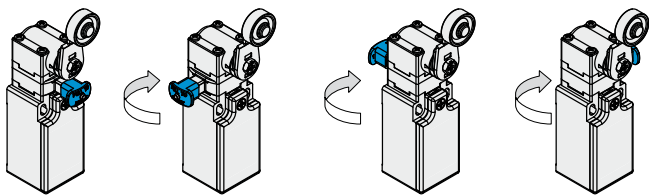
Data type approved by UL

Utilization categories	Q300 (69 VA, 125-250 Vdc)
	A600 (720 VA, 120-600 Vac)
Data of the housing type	1, 4X "indoor use only"; 12, 13
For all contact blocks use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7.1 lb in (0.8 Nm).	
In conformity with standard:	UL 508

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

Rotating reset device

The device can be rotated independently from the above actuator, making the product highly flexible in the positioning. The reset is obtained by pulling back the blue button, as prescribed by standards, to avoid that unwanted objects could reset it accidentally.

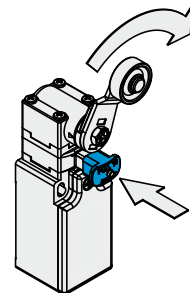


W3 simultaneous reset device

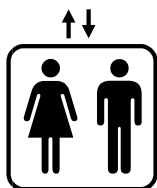
Pizzato Elettrica has developed and patented an innovative reset device.

By activating the switch this device forces the simultaneous electrical contacts tripping and the reset system hooking.

Therefore contact blocks with snap action are no more necessary and will not occur anymore problems caused by small differences between reset button hooking and contacts opening.



EN 81-20 standard



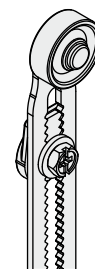
- Safety contacts according to EN 60947-5-1, encl. K.
- Protection degree higher than IP4x.
- Mechanical endurance higher than 10⁶ cycles.

Protection degree IP67

IP67

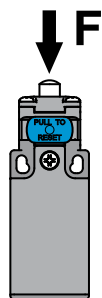
These series switches are all IP 67 rated.

Safety lever LE56



The adjustable lever code 56 (and variants) is supplied with an indentation which blocks the lever slipping in case of fixing screw release.

Increased actuating force

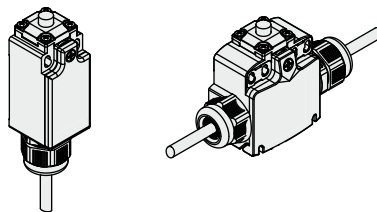


The switch can be supplied with an increased actuating force (option W4); ideal for applications with vibrations.

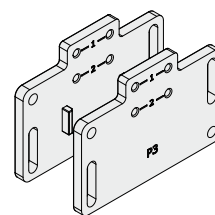
Actuator	Force
01, 14, 15, 16	7 N
02, 05	6 N
07	3.5 N
30 ... 56	0.08 Nm

Conduit entries

Switches with conduit entries in several directions are available, for applications also in restricted spaces.



Adaptive plates

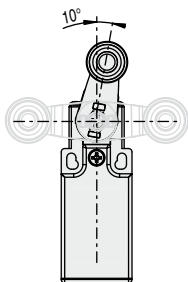


Adaptive plates provided with long slots for the adjustment of the actuating point, developed for compatibility with old products.

Every plate has a double couple of switch fixing holes, one for standard switches and the other one for switches with reset device. In this way the actuator will always have the same actuating point.

Adjustable levers

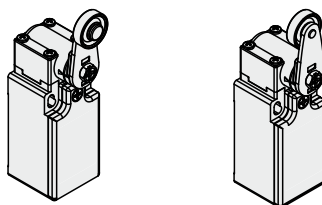
In switches with revolving lever it is possible to adjust the lever with 10° steps for the whole 360° range. The positive movement transmission is always guaranteed thanks to the particular geometrical coupling between the lever and the revolving shaft as prescribed for safety applications by the German standard BG-GS-ET-15.



Overturning levers

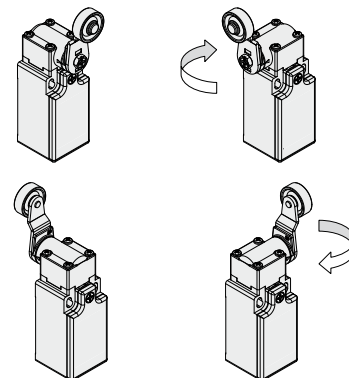
It's possible to fasten the lever on switches on straight or reverse side, maintaining the positive coupling.

In this way it is possible to obtain two different work plans of the lever.



Rotating heads

In all switches, it is possible to rotate the head in 90° steps.



Extended temperature range

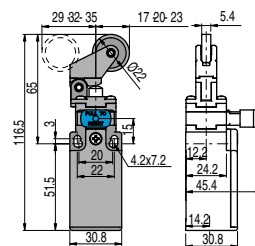
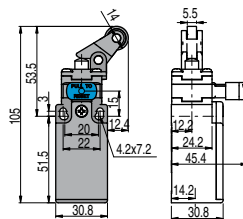
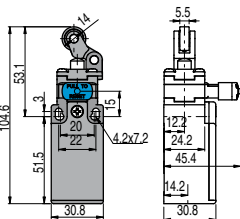
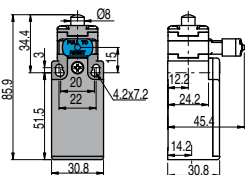
-40°C

This range of switches is also available in a special version with an ambient operating temperature range of -40°C to +80°C. This is particularly useful for applications in cold stores, sterilisers and other low temperature environments. The materials used in the production of these switches maintain the standard operating parameters even over this temperature range, further increasing application possibilities.

Switches with manual reset

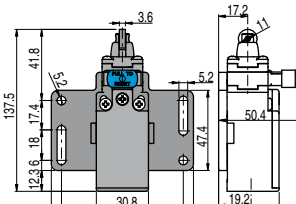
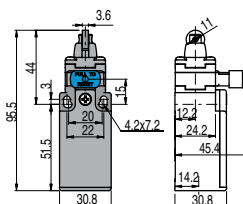
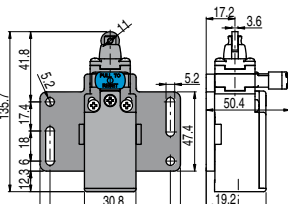
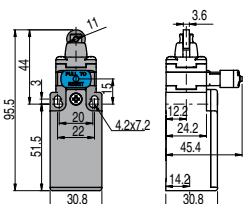
Contacts type:

L = slow action



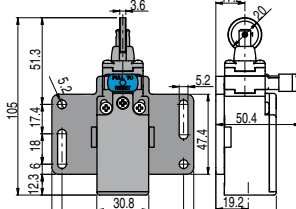
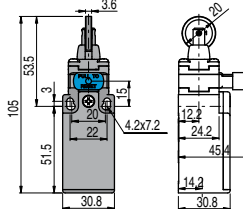
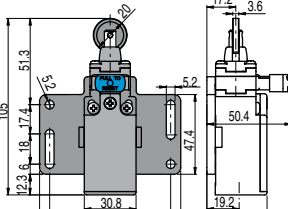
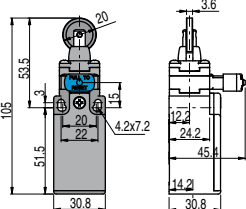
Contact blocks

6	L	FR 601-W3M2	➔ 1NO+1NC	FR 602-W3M2	➔ 1NO+1NC	FR 605-W3M2	➔ 1NO+1NC	FR 607-W3M2	➔ 1NO+1NC
9	L	FR 901-W3M2	➔ 2NC	FR 902-W3M2	➔ 2NC	FR 905-W3M2	➔ 2NC	FR 907-W3M2	➔ 2NC
20	L	FR 2001-W3M2	➔ 1NO+2NC	FR 2002-W3M2	➔ 1NO+2NC	FR 2005-W3M2	➔ 1NO+2NC	FR 2007-W3M2	➔ 1NO+2NC
Max speed		page 123 - type 4		page 123 - type 3		page 123 - type 3		page 123 - type 3	
Min. force		4.5 N (25 N ➔)		4 N (25 N ➔)		4 N (25 N ➔)		2.5 N (25 N ➔)	
Travel diagrams		page 124 - group 1c		page 124 - group 2c		page 124 - group 2c		page 124 - group 3c	



Contact blocks

6	L	FR 615-W3M2	➔ 1NO+1NC	FR 615-W3M2P12	➔ 1NO+1NC	FR 615-W3H0M2	➔ 1NO+1NC	FR 615-W3H0M2P12	➔ 1NO+1NC
9	L	FR 915-W3M2	➔ 2NC	FR 915-W3M2P12	➔ 2NC	FR 915-W3H0M2	➔ 2NC	FR 915-W3H0M2P12	➔ 2NC
20	L	FR 2015-W3M2	➔ 1NO+2NC	FR 2015-W3M2P12	➔ 1NO+2NC	FR 2015-W3H0M2	➔ 1NO+2NC	FR 2015-W3H0M2P12	➔ 1NO+2NC
Max speed		page 123 - type 2		page 123 - type 2		page 123 - type 2		page 123 - type 2	
Min. force		4.5 N (25 N ➔)		4.5 N (25 N ➔)		4.5 N (25 N ➔)		4.5 N (25 N ➔)	
Travel diagrams		page 124 - group 1c		page 124 - group 1c		page 124 - group 1c		page 124 - group 1c	



Contact blocks

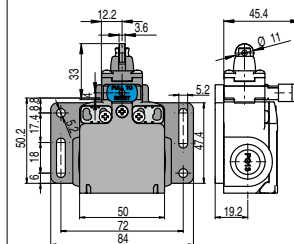
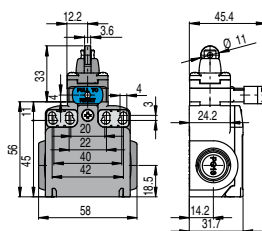
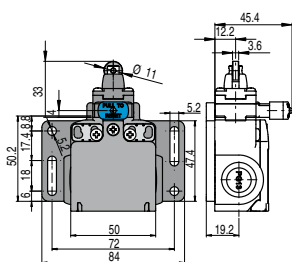
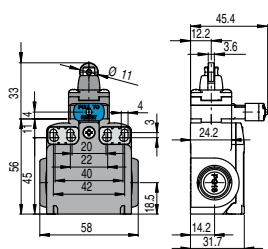
6	L	FR 616-W3M2	➔ 1NO+1NC	FR 616-W3M2P12	➔ 1NO+1NC	FR 616-W3H0M2	➔ 1NO+1NC	FR 616-W3H0M2P12	➔ 1NO+1NC
9	L	FR 916-W3M2	➔ 2NC	FR 916-W3M2P12	➔ 2NC	FR 916-W3H0M2	➔ 2NC	FR 916-W3H0M2P12	➔ 2NC
20	L	FR 2016-W3M2	➔ 1NO+2NC	FR 2016-W3M2P12	➔ 1NO+2NC	FR 2016-W3H0M2	➔ 1NO+2NC	FR 2016-W3H0M2P12	➔ 1NO+2NC
Max speed		page 123 - type 2		page 123 - type 2		page 123 - type 2		page 123 - type 2	
Min. force		4.5 N (25 N ➔)		4.5 N (25 N ➔)		4.5 N (25 N ➔)		4.5 N (25 N ➔)	
Travel diagrams		page 124 - group 1c		page 124 - group 1c		page 124 - group 1c		page 124 - group 1c	

Accessories See page 119

All measures in the drawings are in mm

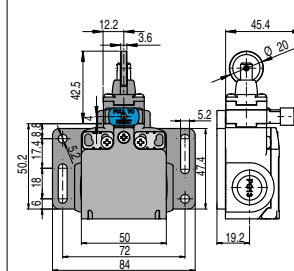
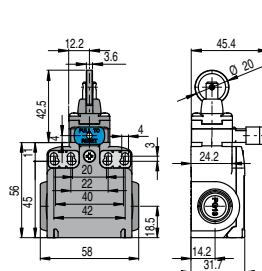
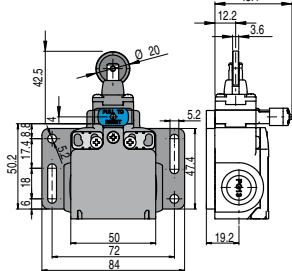
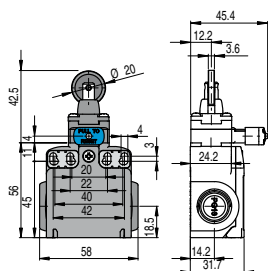
Contacts type:

L = slow action



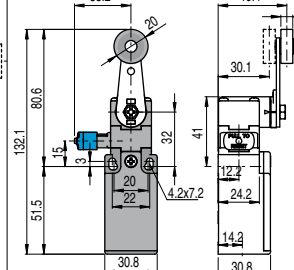
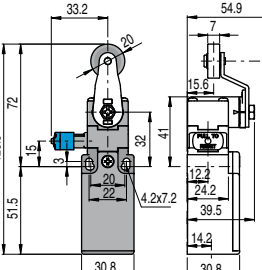
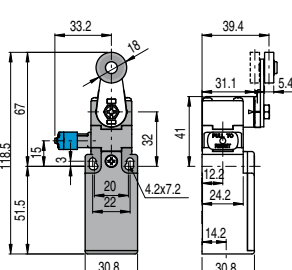
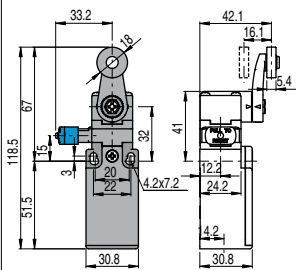
Contact blocks

6	L	FX 615-W3M2 \rightarrow 1NO+1NC	FX 615-W3M2P32 \rightarrow 1NO+1NC	FX 615-W3H0M2 \rightarrow 1NO+1NC	FX 615-W3H0M2P32 \rightarrow 1NO+1NC
9	L	FX 915-W3M2 \rightarrow 2NC	FX 915-W3M2P32 \rightarrow 2NC	FX 915-W3H0M2 \rightarrow 2NC	FX 915-W3H0M2P32 \rightarrow 2NC
20	L	FX 2015-W3M2 \rightarrow 1NO+2NC	FX 2015-W3M2P32 \rightarrow 1NO+2NC	FX 2015-W3H0M2 \rightarrow 1NO+2NC	FX 2015-W3H0M2P32 \rightarrow 1NO+2NC
Max speed		page 123 - type 2	page 123 - type 2	page 123 - type 2	page 123 - type 2
Min. force		4.5 N (25 N \rightarrow)	4.5 N (25 N \rightarrow)	4.5 N (25 N \rightarrow)	4.5 N (25 N \rightarrow)
Travel diagrams		page 124 - group 1c	page 124 - group 1c	page 124 - group 1c	page 124 - group 1c



Contact blocks

6	L	FX 616-W3M2 \rightarrow 1NO+1NC	FX 616-W3M2P32 \rightarrow 1NO+1NC	FX 616-W3H0M2 \rightarrow 1NO+1NC	FX 616-W3H0M2P32 \rightarrow 1NO+1NC
9	L	FX 916-W3M2 \rightarrow 2NC	FX 916-W3M2P32 \rightarrow 2NC	FX 916-W3H0M2 \rightarrow 2NC	FX 916-W3H0M2P32 \rightarrow 2NC
20	L	FX 2016-W3M2 \rightarrow 1NO+2NC	FX 2016-W3M2P32 \rightarrow 1NO+2NC	FX 2016-W3H0M2 \rightarrow 1NO+2NC	FX 2016-W3H0M2P32 \rightarrow 1NO+2NC
Max speed		page 123 - type 2	page 123 - type 2	page 123 - type 2	page 123 - type 2
Min. force		4.5 N (25 N \rightarrow)	4.5 N (25 N \rightarrow)	4.5 N (25 N \rightarrow)	4.5 N (25 N \rightarrow)
Travel diagrams		page 124 - group 1c	page 124 - group 1c	page 124 - group 1c	page 124 - group 1c

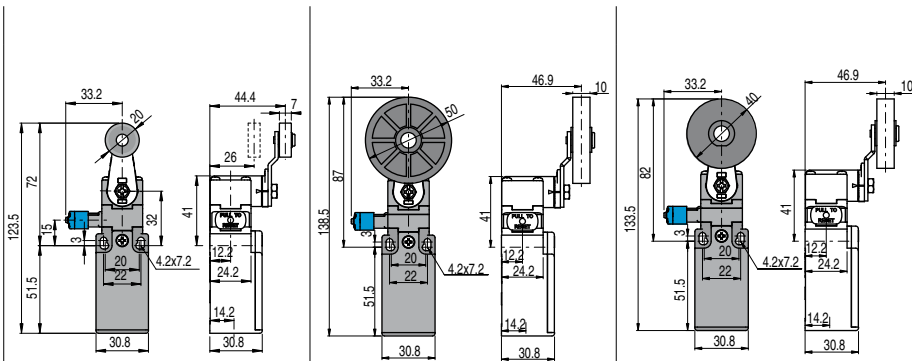


Contact blocks

6	L	FR 630-W3M2 \rightarrow 1NO+1NC	FR 631-W3M2 \rightarrow 1NO+1NC	FR 651-W3M2 \rightarrow 1NO+1NC	FR 652-W3M2 \rightarrow 1NO+1NC
9	L	FR 930-W3M2 \rightarrow 2NC	FR 931-W3M2 \rightarrow 2NC	FR 951-W3M2 \rightarrow 2NC	FR 952-W3M2 \rightarrow 2NC
20	L	FR 2030-W3M2 \rightarrow 1NO+2NC	FR 2031-W3M2 \rightarrow 1NO+2NC	FR 2051-W3M2 \rightarrow 1NO+2NC	FR 2052-W3M2 \rightarrow 1NO+2NC
Max speed		page 123 - type 1	page 123 - type 1	page 123 - type 1	page 123 - type 1
Min. force		0.07 Nm (0.25 Nm \rightarrow)	0.07 Nm (0.25 Nm \rightarrow)	0.07 Nm (0.25 Nm \rightarrow)	0.07 Nm (0.25 Nm \rightarrow)
Travel diagrams		page 124 - group 4c	page 124 - group 4c	page 124 - group 4c	page 124 - group 4c

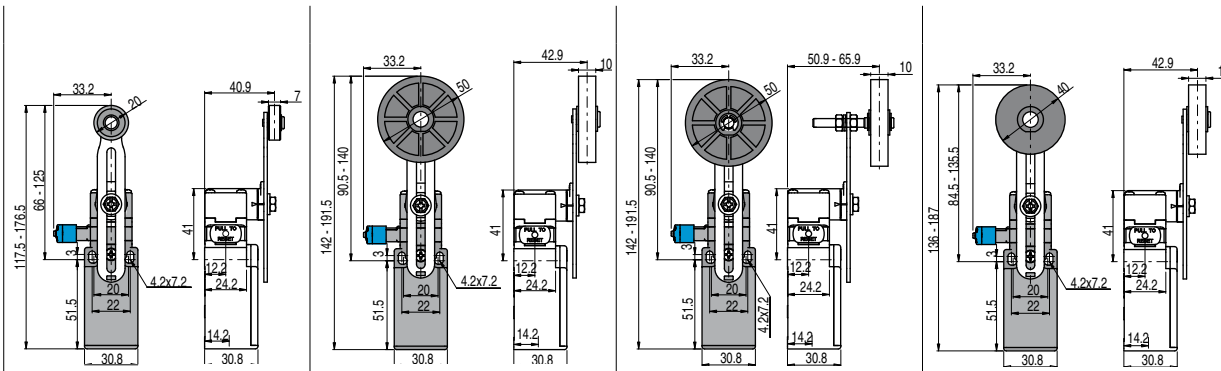
Contacts type:

L = slow action



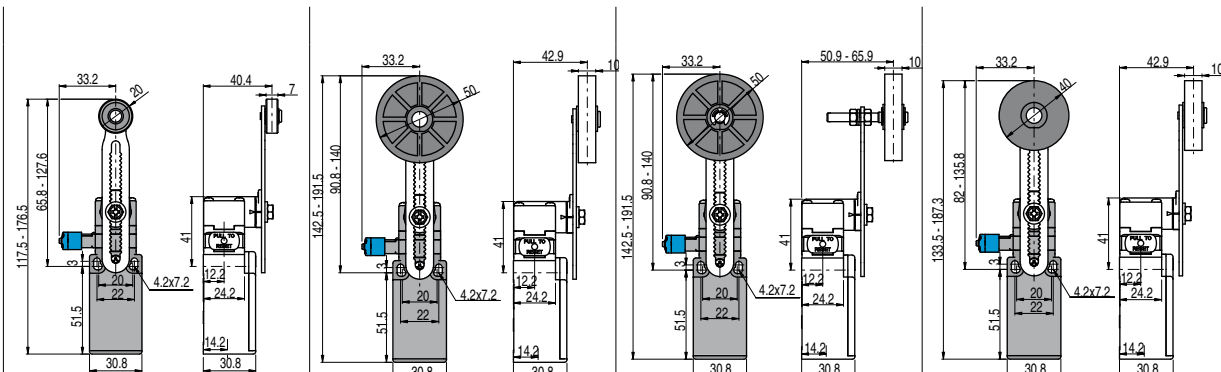
Contact blocks

6	L	FR 654-W3M2	➔ 1NO+1NC	FR 654-W3M2R26	➔ 1NO+1NC	FR 654-W3M2R5	➔ 1NO+1NC
9	L	FR 954-W3M2	➔ 2NC	FR 954-W3M2R26	➔ 2NC	FR 954-W3M2R5	➔ 2NC
20	L	FR 2054-W3M2	➔ 1NO+2NC	FR 2054-W3M2R26	➔ 1NO+2NC	FR 2054-W3M2R5	➔ 1NO+2NC
Max speed		page 123 - type 1		page 123 - type 1		page 123 - type 1	
Min. force		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)	
Travel diagrams		page 124 - group 4c		page 124 - group 4c		page 124 - group 4c	



Contact blocks

6	L	FR 655-W3M2	➔ ⁽¹⁾ 1NO+1NC	FR 655-W3M2R26	➔ ⁽¹⁾ 1NO+1NC	FR 655-W3M2R27	➔ ⁽¹⁾ 1NO+1NC	FR 655-W3M2R5	➔ ⁽¹⁾ 1NO+1NC
9	L	FR 955-W3M2	➔ ⁽¹⁾ 2NC	FR 955-W3M2R26	➔ ⁽¹⁾ 2NC	FR 955-W3M2R27	➔ ⁽¹⁾ 2NC	FR 955-W3M2R5	➔ ⁽¹⁾ 2NC
20	L	FR 2055-W3M2	➔ ⁽¹⁾ 1NO+1NC	FR 2055-W3M2R26	➔ ⁽¹⁾ 1NO+2NC	FR 2055-W3M2R27	➔ ⁽¹⁾ 1NO+2NC	FR 2055-W3M2R5	➔ ⁽¹⁾ 1NO+2NC
Max speed		page 123 - type 1		page 123 - type 1		page 123 - type 1		page 123 - type 1	
Min. force		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)	
Travel diagrams		page 124 - group 4c		page 124 - group 4c		page 124 - group 4c		page 124 - group 4c	



Contact blocks

6	L	FR 656-W3M2	➔ 1NO+1NC	FR 656-W3M2R26	➔ 1NO+1NC	FR 656-W3M2R27	➔ 1NO+1NC	FR 656-W3M2R5	➔ 1NO+1NC
9	L	FR 956-W3M2	➔ 2NC	FR 956-W3M2R26	➔ 2NC	FR 956-W3M2R27	➔ 2NC	FR 956-W3M2R5	➔ 2NC
20	L	FR 2056-W3M2	➔ 1NO+2NC	FR 2056-W3M2R26	➔ 1NO+2NC	FR 2056-W3M2R27	➔ 1NO+2NC	FR 2056-W3M2R5	➔ 1NO+2NC
Max speed		page 123 - type 1		page 123 - type 1		page 123 - type 1		page 123 - type 1	
Min. force		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)	
Travel diagrams		page 124 - group 4c		page 124 - group 4c		page 124 - group 4c		page 124 - group 4c	

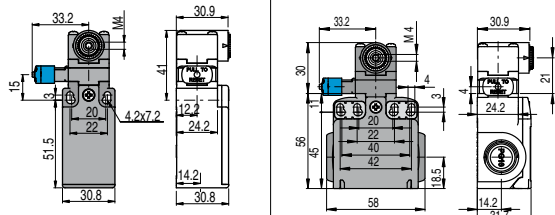
Accessories See page 119

⁽¹⁾ Positive opening only with lever adjusted on the max.

Position switches (reset hooking) with revolving lever without actuator

Contacts type:

L = slow action



IMPORTANT

For safety applications: join only switches and actuators marked with symbol ⊕.

Contact blocks

6	L	FR 638-W3M2 ⊕	1NO+1NC	FX 638-W3M2 ⊕	1NO+1NC
9	L	FR 938-W3M2 ⊕	2NC	FX 938-W3M2 ⊕	2NC
20	L	FR 2038-W3M2 ⊕	1NO+2NC	FX 2038-W3M2 ⊕	1NO+2NC
Max speed	page 123 - type 1		page 123 - type 1		
Min. force	0.07 Nm (0.25 Nm ⊕)		0.07 Nm (0.25 Nm ⊕)		
Travel diagrams	page 124 - group 4c		page 124 - group 4c		

Special loose actuators

IMPORTANT: These loose actuators can be used with items of series FR, FX only.

∅ 40 mm rubber rollers

VF LE31-R5 ⊕ (4)	VF LE51-R5 ⊕ (4)	VF LE52-R5 ⊕	VF LE54-R5 ⊕ (4)	VF LE55-R5 ⊕ (1)	VF LE56-R5 ⊕

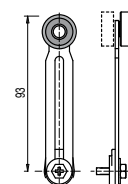
∅ 50 mm rubber rollers

VF LE51-R26 ⊕ (4)	VF LE52-R26 ⊕ (4)	VF LE54-R26 ⊕ (4)	VF LE55-R26 ⊕ (1)	VF LE56-R26 ⊕

∅ 50 mm overhanging rubber rollers

VF LE55-R27 ⊕ (1)	VF LE56-R27 ⊕

- Only orders for multiple quantities of the packs are accepted.
- (1) Actuator VF LE55 suits to safety applications only if adjusted to its max length, as you can see in figure beside. If you need an adjustable lever for safety applications, use the adjustable safety lever VF LE56.
- (4) The actuator cannot be oriented to inside direction because it will mechanically interfere with the switch head.





Main features

Safety switch designed for over-speed governors where a high sensibility and a low actuating force are required.

Operation: the actuator of the switch has to be pressed up to the tripping point. Then the actuator snaps to the end of the travel, up to end of travel.

Markings and quality marks:



Approval IMQ:	EG610
Approval IMQ-UNI:	in progress
Approval UL:	E131787
Approval CCC:	2007010305230013
Approval EZU:	101015
Approval EAC:	RU C-IT DM94.B.01024

Technical data

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation

One threaded conduit entry:

M20x1.5 (standard)

Protection degree:

IP67 according to EN 60529 with cable gland having equal or higher protection degree

General data

Ambient temperature:

-25°C ... +80°C

Version for operation in ambient temperature from -40°C to +80°C on request

Max operating frequency:

3600 operations cycles¹/hour

Mechanical endurance:

1 million operations cycles¹

(FR 5A3-M2 / FR 11A3-M2)

50.000 operations cycles¹

(FR 17A3-M2 / FR 19A3-M2)

Assembling position:

any

Driving torque for installation:

see page 123

(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Cross section of the conductors (flexible copper wire)

Contact blocks 5, 11, 17:

min. 1 x 0.5 mm² (1 x AWG 20)

max. 2 x 2.5 mm² (2 x AWG 14)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, EN 60529, EN 60529, EN 81-20, EN 81-50, NFC 63-140, VDE 0660-200, VDE 0113.

Approvals:

IEC 60947-5-1, UL 508, GB14048.5-2001

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, VDE 0660-206.

Installation for safety applications:

Use only switches marked with the symbol . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in the **standard ISO 14119, par. 5.4**. The switch must be actuated with **at least up to the positive opening travel** shown in the travels diagrams on page 42. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the min. force.

Electrical data

Thermal current (I _{th}):	10 A
Rated insulation voltage (U _i):	500 Vac 600 Vdc
	400 Vac 500 Vdc for contacts block 11
Rated impulse withstand voltage (U _{imp}):	6 kV
Conditional short circuit current:	1000 A according to EN 60947-5-1
Protection against short circuits:	fuse 10 A 500 V type aM
Pollution degree:	3

Utilization categories

Alternate current: AC15 (50...60 Hz)			
U _e (V)	250	400	500
I _e (A)	6	4	1
Direct current: DC13			
U _e (V)	24	125	250
I _e (A)	6	1.1	0.4

Data type approved by IMQ, CCC and EZU

Rated insulation voltage (U _i):	500 Vac
	400 Vac for contacts block 11
Thermal current (I _{th}):	10 A
Protection against short circuits:	fuse 10 A 500 V type aM
Rated impulse withstand voltage (U _{imp}):	6 kV
Protection degree:	IP67
MV terminals (screw clamps)	
Pollution degree	3
Utilization category:	AC15
Operation voltage (U _e):	400 Vac (50 Hz)
Operation current (I _e):	3 A
Forms of the contact element:	Zb, Y+Y, Y+Y+X
Positive opening of contacts on contact block	5, 11, 17, 19

In conformity with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2006/95/CE.

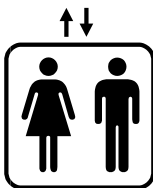
Data type approved by UL

Utilization categories	Q300 (69 VA, 125-250 Vdc)
	A600 (720 VA, 120-600 Vac)
Data of the housing type	1, 4X "indoor use only", 12, 13
For all contact blocks use	60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7.1 lb in (0.8 Nm).
In conformity with standard:	UL 508

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

Please contact our technical service for the list of type approved products.

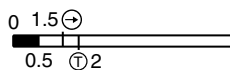
EN 81-20 standard



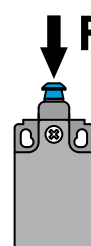
- Safety contacts according to EN 60947-5-1, encl. K.
- Protection degree higher than IP4x.
- All switches are in compliance with the requirements set by the new standards on safety contacts.

Contact blocks 17 and 19

Pizzato Elettrica has developed innovative contact blocks, designed to offer a very short pre-travel and low actuating forces, as requested in modern over-speed devices.



Increased actuating force



The contact block 19 can be supplied on request with an increased actuating force 4 or 6 N, suitable for applications with strong vibrations.

Protection degree IP 67

IP67

These series switches are all IP 67 rated.

Code structure

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

article options options
FR 19A3-E26GM2P11

Housing FR polymer housing, one conduit entry	Fixing plate without fixing plate (standard) P11 with fixing plate VF SFP1
Contact blocks 5 1NO+1NC, snap action 11 2NC, snap action 17 1NC, snap action 19 2NC, snap action	Threaded conduit entry M2 M20x1.5 (standard) PG 13.5 A PG 11 M1 M16x1.5
Actuators A3 short plunger	Contacts type silver contacts (standard) G silver contacts gold plated 1 μm
Actuation force standard actuation force E26 actuation force 4 N (19 N ⊕) (contact block 19 only) E27 actuation force 6 N (21 N ⊕) (contact block 19 only)	

Dimensional drawings

Contacts type:

R = snap action

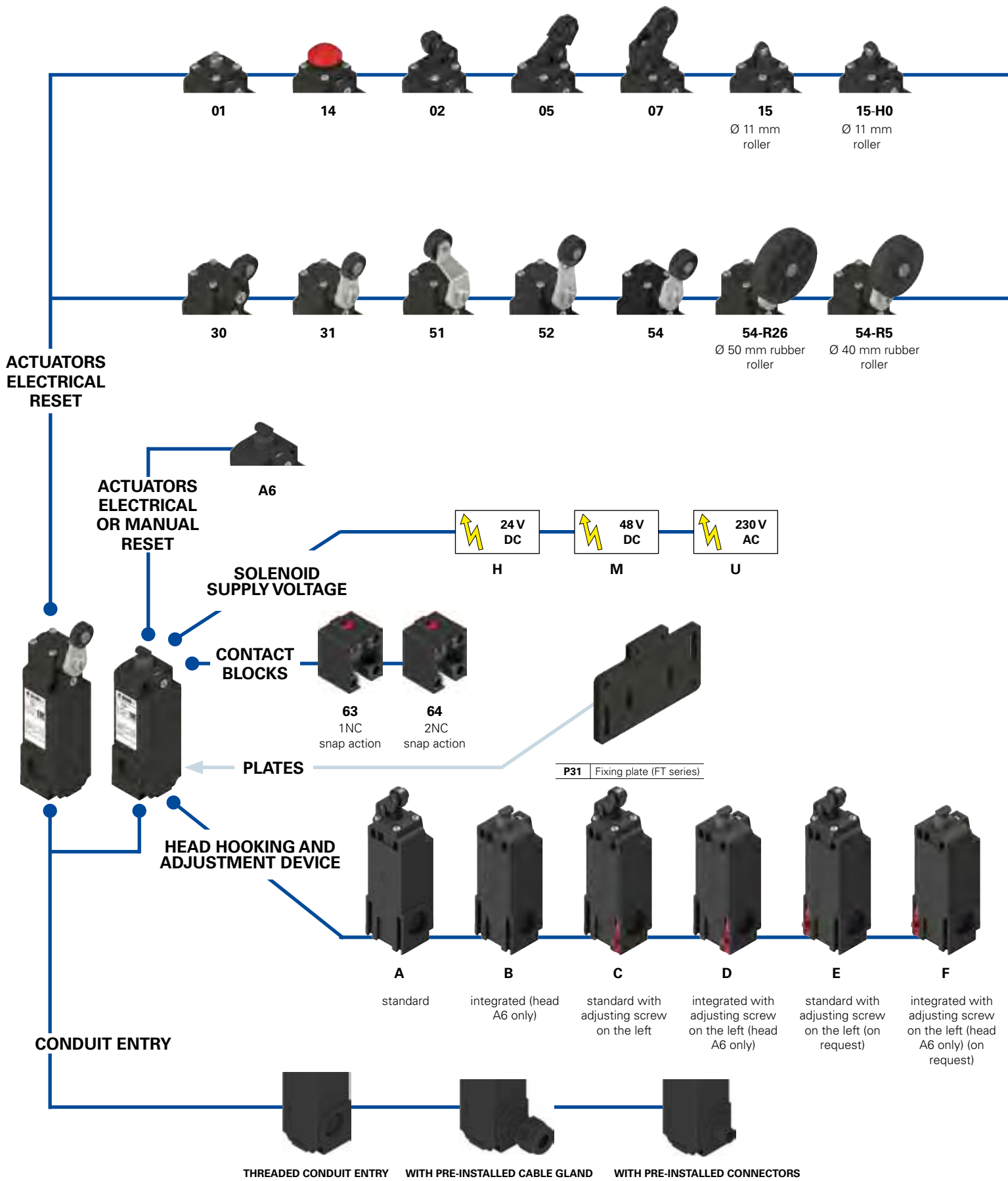
Contact blocks	FR 5A3-M2	FR 11A3-M2	FR 17A3-M2	FR 19A3-M2
5 R	FR 5A3-M2 ⊕ 1NO+1NC			
11 R		FR 11A3-M2 ⊕ 2NC		
17 R			FR 17A3-M2 ⊕ 1NC	
19 R				FR 19A3-M2 ⊕ 2NC
Max speed	0.5 m/s	0.5 m/s	0.5 m/s	0.5 m/s
Min. force	3.5 N (25 N ⊕)	3.5 N (25 N ⊕)	1.5 N (25 N ⊕)	2 N (25 N ⊕)
Travels diagrams				

Legend

Accessories See page 119

■ Closed contact | □ Opened contact | ⊕40° Positive opening travel | ⊕ 2x2 mm contact opening travel according to EN81

Selection diagram



Versions with pre-installed cable glands or connectors available.
For further information please contact the sales dept.

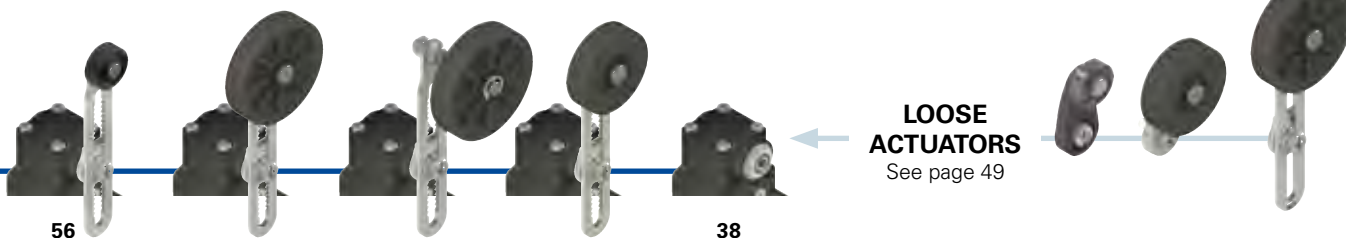


16
Ø 20 mm
roller

16-H0
Ø 20 mm
roller

12

13



56

56-R26

safety adjustable
lever with Ø 50
mm rubber roller

56-R27

safety adjustable
lever with Ø 50
mm overhanging
rubber roller

56-R5

safety adjustable
lever with Ø 40
mm rubber roller

38

**LOOSE
ACTUATORS**
See page 49

Code structure

article options
FT 2A6454AH-E27GP31R26

Housing

FT polymer housing, three conduit entries

Head hooking and adjustment device

A	standard
B	integrated (actuator A6 only)
C	standard with adjusting screw on the left
D	integrated with adjusting screw on the left (actuator A6 only)
E	standard with adjusting screw on the left (on request)
F	integrated with adjusting screw on the left (actuator A6 only) (on request)

Contact blocks

63	1NC, snap action
64	2NC, snap action

Actuators

A6	plunger with manual reset
01	short plunger
02	roller lever
05	offset roller lever
...

Rollers

	standard roller
R5	with Ø 40 mm rubber roller
R26	with Ø 50 mm rubber roller
R27	with Ø 50 mm overhanging rubber roller

Fixing plate

	without fixing plate (standard)
P31	supplied with fixing plate VF SFP3

Contacts type

	silver contacts (standard)
G	silver contacts gold plated 1 µm

Actuation force

E27	Standard actuating force
E26	Reduced actuating force
E28	Reduced actuating force (with K solenoid voltage only)

Solenoid supply voltage

H	24 Vdc 4.2 A (100 W)
M	48 Vdc 2.1 A (100 W)
U	230 Vac 0.5 A (115 W)
K	48 Vdc 0.75 A (36 W)
J	24 Vdc 1.5 A (36 W)



Main data

- Different actuating force versions
- Versions with adjusting screw
- Polymer housing, with one or two conduit entries
- Protection degree IP67

Technical data

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation \square

Three threaded conduit entries: M20 x1.5 (standard)
 Protection degree: IP67 according to EN 60529 with cable gland having equal or higher protection degree

General data

Ambient temperature: -25°C ... +50°C
 Version for operation in ambient temperature from -40°C to +50°C on request
 Mechanical endurance: 50,000 operations cycles
 Assembling position: any
 Driving torque for installation: see page 123
 (1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Cross section of the conductors (flexible copper wire)

Contact blocks 63, 64: min. 1 x 0.34 mm² (1 x AWG 22)
 max. 2 x 1.5 mm² (2 x AWG 16)

Solenoid

Rated operational voltage (U_e) and current (I_e): 24 Vdc ±10%; 4.2 A (100 W)
 24 Vdc ±10%; 1.5 A (36 W)
 48 Vdc ±10%; 2.1 A (100 W)
 48 Vdc ±10%; 0.75 A (36 W)
 230 Vac ±10%; 0.5 A (115 W)

Solenoid duty cycle: 3% ED

Solenoid protection 24 Vdc (4.2 A): fuse 5 A type F
 Solenoid protection 24 Vdc (1.5 A): fuse 2 A type F
 Solenoid protection 48 Vdc (2.1 A): fuse 2.5 A type F
 Solenoid protection 48 Vdc (0.75 A): fuse 1 A type F
 Solenoid protection 230 Vac (0.5 A): fuse 0.8 A, type F
 Power supply time: min. 0.2 s, max 0.5 s
 Time without power supply: min. 30 s
 Max operating frequency: 118 operations cycles/hour

In conformity with standards:

EN 60947-5-1, IEC 60947-5-1, EN 81-20, EN 81-50

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, VDE 0660-206.

Markings and quality marks:



Approval EAC: RU C-IT ДМ94.В.01024

Installation for safety applications:

Use only switches marked with the symbol \ominus . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in the **standard ISO 14119, par. 5.4**. The switch must be actuated with **at least up to the positive opening travel** shown in the travels diagrams on page 123. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the min. force.

Electrical data

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

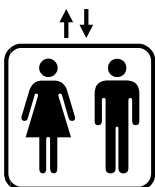
Utilization categories

Alternate current: AC15 (50...60 Hz)
 U_e (V) 250 400 500
 I_e (A) 6 4 1
 Direct current: DC13
 U_e (V) 24 125 250
 I_e (A) 6 1.1 0.4

Introduction

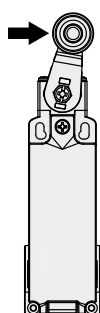
When the FT series safety switches with reset are operated they remain switched and they reset electrically through the integrated solenoid. Thanks to this feature it's possible to remote reset the switch without being physically near it. They are available with different actuators and are adapt to many applications, particularly to the lift, the over-speed governor and generally to the safety field. Some items can also be supplied with the manual reset.

EN 81-20 standard



- Safety contacts according to EN 60947-5-1, encl. K.
- Protection degree higher than IP4x.
- All switches are in compliance with the requirements set by the new standards on safety contacts.

Reduced actuating force -E26



On request FT series switches can be supplied with a reduced actuating force.

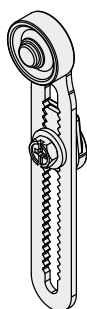
Actuator	Force
A6,	3.4 N (25 N ⊖)
01, 12, 13, 14, 15, 16	4.4 N (25 N ⊖)
02, 05	3.6 N (25 N ⊖)
07	2.1 N (25 N ⊖)
30, 31, 38, 51, 52, 54, 56	0.07 Nm (0.25 Nm ⊖)

Protection degree IP 67

IP67

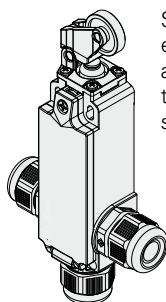
These series switches are all IP 67 rated.

Safety lever LE56



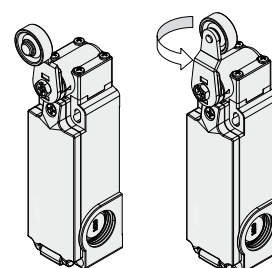
The adjustable lever code 56 (and variants) is supplied with an indentation which blocks the lever slipping in case of fixing screw release.

Conduit entries



Switches with conduit entries in several directions are available, for applications also in restricted spaces.

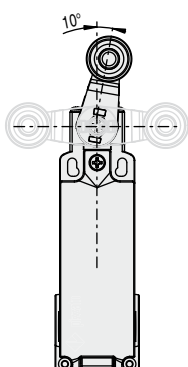
Overturning levers



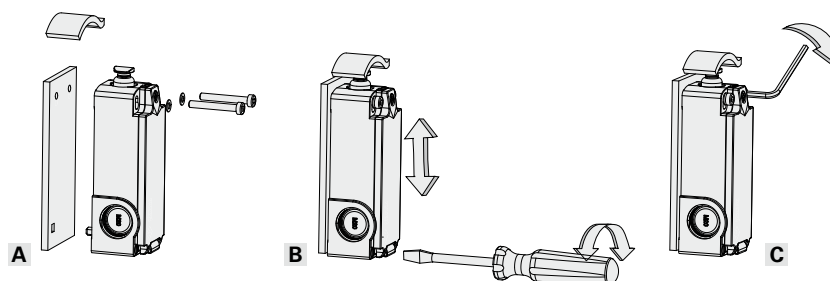
It's possible to fasten the lever on straight or reverse side, maintaining the positive coupling. In this way it is possible to obtain two different work plans of the lever.

Adjustable levers

In switches with revolving lever it is possible to adjust the lever with 10° steps for the whole 360° range. The positive movement transmission is always guaranteed thanks to the particular geometrical coupling between the lever and the revolving shaft as prescribed for safety applications by the German standard BG-GS-ET-15.



Adjustment system version (C, D, E, F housing)



Pizzato Elettrica introduces a new integrated adjustment system designed purposely for applications on over-speed devices.

The system allows a fine and sensitive adjustment of the switch position along its vertical axis.

Characteristics:

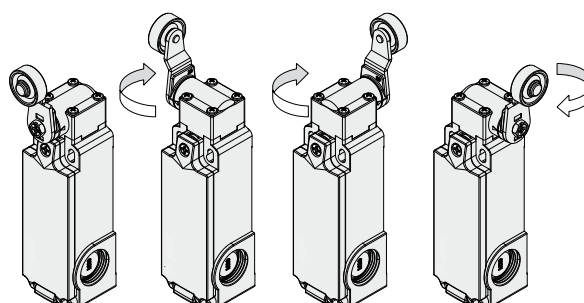
- Easy installation and adjustment
- Accurate vertical adjustment
- Wide adjustment travel (up to 4 mm)
- Unlosable components

Operation:

- Make a hole in the fixing plate to insert the adjusting pin on the back of the switch. Apply the switch to the over-speed device without blocking the two fixing screws.
- Adjust the switch position by the screw on the front.
- Finally lock the switch body to the over-speed device.

Rotating heads

In all switches, it is possible to rotate the head in 90° steps.

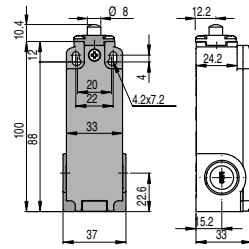
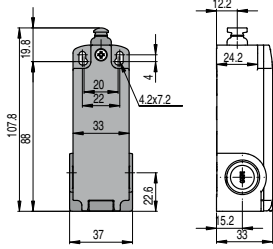


Switches with electrical reset FT series

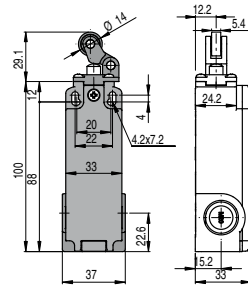
Contacts type:

R = snap action

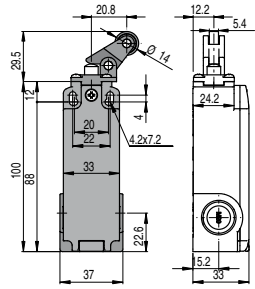
With external rubber gasket



With stainless steel roller on request

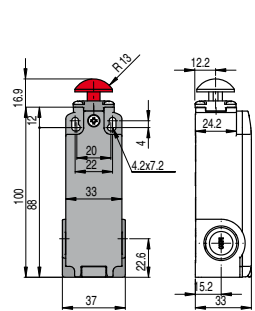
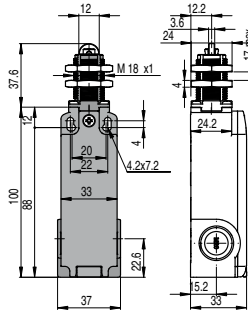
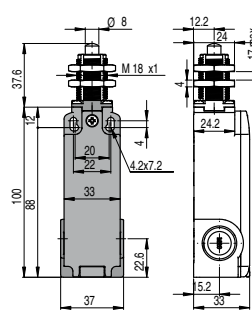
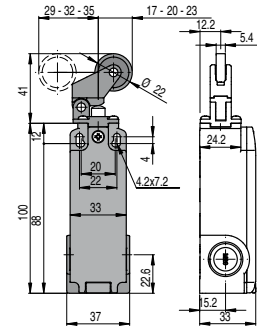


With stainless steel roller on request



Contact blocks

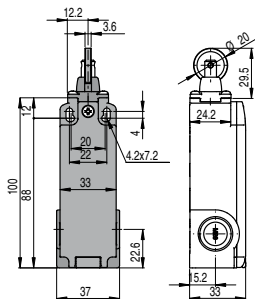
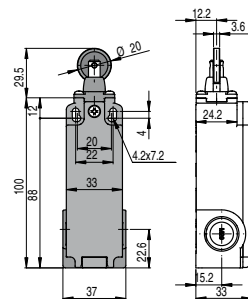
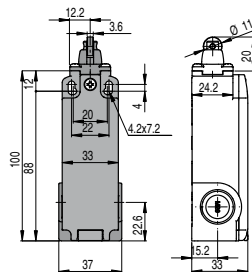
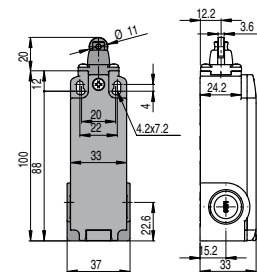
63	R	FT 2B63A6AH-E27	⊕ 1NC	FT 2A6301AH-E27	⊕ 1NC	FT 2A6302AH-E27	⊕ 1NC	FT 2A6305AH-E27	⊕ 1NC
64	R	FT 2B64A6AH-E27	⊕ 2NC	FT 2A6401AH-E27	⊕ 2NC	FT 2A6402AH-E27	⊕ 2NC	FT 2A6405AH-E27	⊕ 2NC
Max speed	page 123 - type 4			page 123 - type 4		page 123 - type 3		page 123 - type 3	
Min. force	5 N (25 N ⊕)			6 N (25 N ⊕)		5 N (25 N ⊕)		5 N (25 N ⊕)	
Travel diagrams	page 124 - group 1d			page 124 - group 2d		page 124 - group 3d		page 124 - group 3d	



Contact blocks

63	R	FT 2A6307AH-E27	⊕ 1NC	FT 2A6312AH-E27	⊕ 1NC	FT 2A6313AH-E27	⊕ 1NC	FT 2A6314AH-E27	⊕ 1NC
64	R	FT 2A6407AH-E27	⊕ 2NC	FT 2A6412AH-E27	⊕ 2NC	FT 2A6413AH-E27	⊕ 2NC	FT 2A6414AH-E27	⊕ 2NC
Max speed	page 123 - type 2			page 123 - type 4		page 123 - type 2		page 123 - type 2	
Min. force	3 N (25 N ⊕)			6 N (25 N ⊕)		6 N (25 N ⊕)		6 N (25 N ⊕)	
Travel diagrams	page 124 - group 4d			page 124 - group 2d		page 124 - group 2d		page 124 - group 2d	

On request Ø 12 mm stainless steel roller



Contact blocks

63	R	FT 2A6315AH-E27	⊕ 1NC	FT 2A6315AH-E27H0	⊕ 1NC	FT 2A6316AH-E27	⊕ 1NC	FT 2A6316AH-E27H0	⊕ 1NC
64	R	FT 2A6415AH-E27	⊕ 2NC	FT 2A6415AH-E27H0	⊕ 2NC	FT 2A6416AH-E27	⊕ 2NC	FT 2A6416AH-E27H0	⊕ 2NC
Max speed	page 123 - type 2			page 123 - type 2		page 123 - type 2		page 123 - type 2	
Min. force	6 N (25 N ⊕)			6 N (25 N ⊕)		6 N (25 N ⊕)		6 N (25 N ⊕)	
Travel diagrams	page 124 - group 2d			page 124 - group 2d		page 124 - group 2d		page 124 - group 2d	

Accessories See page 119

All measures in the drawings are in mm

Contacts type:
R = snap action

	With Ø 20 mm stainless steel roller on request	Other rollers available. See page 42	Other rollers available. See page 42	Other rollers available. See page 42
Contacts type:				
Contact blocks				
63 R	FT 2A6330AH-E27 → 1NC	FT 2A6331AH-E27 → 1NC	FT 2A6351AH-E27 → 1NC	FT 2A6352AH-E27 → 1NC
64 R	FT 2A6430AH-E27 → 2NC	FT 2A6431AH-E27 → 2NC	FT 2A6451AH-E27 → 2NC	FT 2A6452AH-E27 → 2NC
Max speed	page 123 - type 1	page 123 - type 1	page 123 - type 1	page 123 - type 1
Min. force	0.08 Nm (0.25 Nm →)	0.08 Nm (0.25 Nm →)	0.08 Nm (0.25 Nm →)	0.08 Nm (0.25 Nm →)
Travel diagrams	page 124 - group 5d	page 124 - group 5d	page 124 - group 5d	page 124 - group 5d

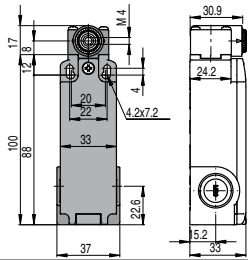
Contacts type:				
Contact blocks				
63 R	FT 2A6354AH-E27 → 1NC	FT 2A6354AH-E27R26 → 1NC	FT 2A6354AH-E27R5 → 1NC	
64 R	FT 2A6454AH-E27 → 2NC	FT 2A6454AH-E27R26 → 2NC	FT 2A6454AH-E27R5 → 2NC	
Max speed	page 123 - type 1	page 123 - type 1	page 123 - type 1	
Min. force	0.08 Nm (0.25 Nm →)	0.08 Nm (0.25 Nm →)	0.08 Nm (0.25 Nm →)	
Travel diagrams	page 124 - group 5d	page 124 - group 5d	page 124 - group 5d	

Contacts type:				
Contact blocks				
63 R	FT 2A6356AH-E27 → 1NC	FT 2A6356AH-E27R26 → 1NC	FT 2A6356AH-E27R27 → 1NC	FT 2A6356AH-E27R5 → 1NC
64 R	FT 2A6456AH-E27 → 2NC	FT 2A6456AH-E27R26 → 2NC	FT 2A6456AH-E27R27 → 2NC	FT 2A6456AH-E27R5 → 2NC
Max speed	page 123 - type 1	page 123 - type 1	page 123 - type 1	page 123 - type 1
Min. force	0.08 Nm (0.25 Nm →)	0.08 Nm (0.25 Nm →)	0.08 Nm (0.25 Nm →)	0.08 Nm (0.25 Nm →)
Travel diagrams	page 124 - group 5d	page 124 - group 5d	page 124 - group 5d	page 124 - group 5d

Position switches with revolving lever without actuator

Contacts type:

[R] = snap action

**IMPORTANT**

For safety applications: join only switches and actuators marked with symbol ⊕.

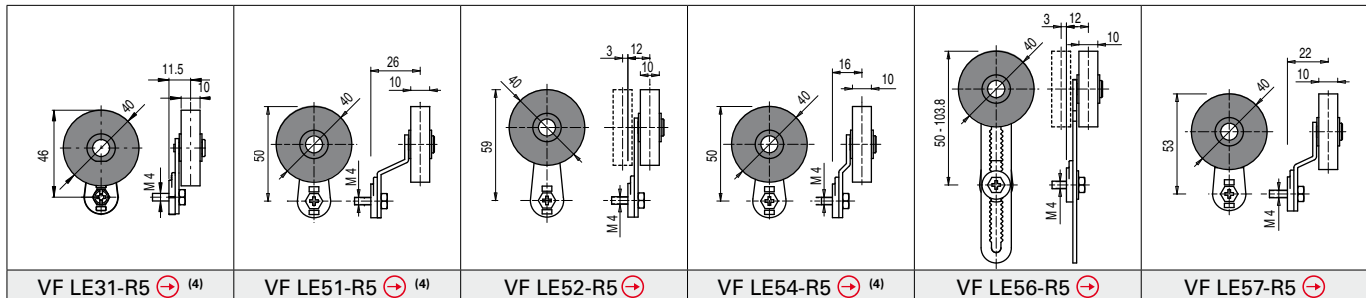
Contact blocks

63	[R]	FT 2A6338AH-E27	⊕ 1NC
64	[R]	FT 2A6438AH-E27	⊕ 2NC
Max speed	page 123 - type 2		
Min. force	0.08 Nm (0.25 Nm ⊕)		
Travel diagrams	page 124 - group 5d		

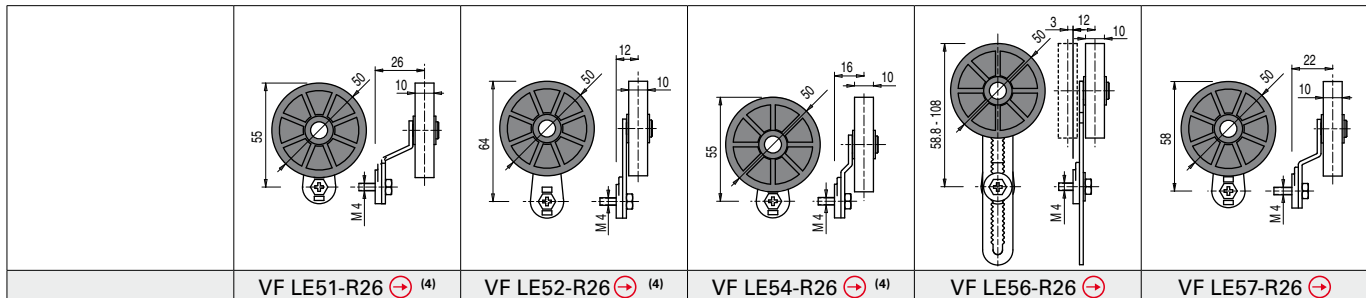
Special loose actuators

IMPORTANT: These loose actuators can be used with items of series FR, FX and FT only.

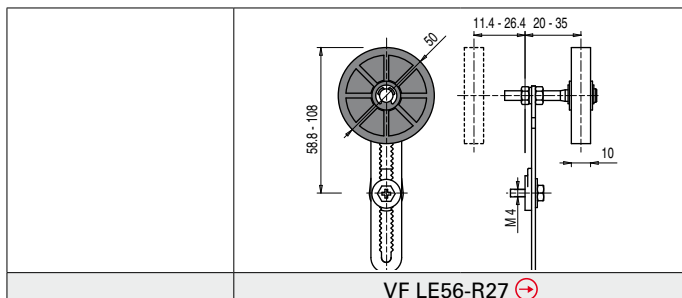
Ø 40 mm rubber rollers



Ø 50 mm rubber rollers



Ø 50 mm overhanging rubber rollers



- Only orders for multiple quantities of the packs are accepted.

- (4) The actuator cannot be oriented to inside direction because it will mechanically interfere with the switch head.



Main data

- Housing made of glass-reinforced polymer, self-extinguishing
- Self-cleaning contacts made of solid silver
- Possibility of application with the cable side close to the wall
- Frontal actuation
- Protection degree from IP00 to IP20
- Transparent cover

Markings and quality marks:



Approval IMQ-UNI: CA50.00541
 EN 81-1:2005
 EN 81-2:2005
 230 Vac - 2 A

Approval UL: E131787

Approval EAC: RU C-IT ДМ94.В.01024

Technical data

Description

Safety switches with double interruption and positive opening. Suitable for the control of automatic lift doors.

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin
 Protection degree: IP00 according to EN 60529 (DS A•5VA)
 IP20 according to EN 60529 (DS A•1VA)

General data

Ambient temperature: -30°C ... +80°C
 (humidity ≤ 95%, without condensation)
 Max operating frequency: 3600 operations cycles¹/hour
 Mechanical endurance: 10 millions of operations cycles¹ (DS A•1VA)
 5 millions of operations cycles¹ (DS A•5VA)
 Max actuating speed: 0.5 m/s
 Min. actuating speed: 1 mm/s
 Actuating force: 1.2 ... 2.1 N (DS A•1VA)
 1.2 ... 1.7 N (DS A•5VA)
 With reduced actuating force on request: 0.8 ... 1.3 N (DS A•1VA)
 0.8 ... 1.1 N (DS A•5VA)
 Driving torque for installation: see page 126
 Fixing screw: M4 self-tapping screw
 Available on request versions with longer fixing screw

(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Cross section of the conductors (flexible copper wire)

min. 1 x 0.5 mm² (1 x AWG 20)
 max. 1 x 2.5 mm² (1 x AWG 14)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 60529, EN 60529, EN 81-20, EN 81-50

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, VDE 0660-206.

Electrical data

Thermal current (I_{th}): 4 A
 Rated insulation voltage (U_i): 500 Vac
 Rated impulse with stand voltage (U_{imp}): 6 kV
 Protection against short circuits: fuse 4 A
 500 V type gG
 Pollution degree: 3

According
 EN 60947-5-1

EN 81 par. 14.1.2.2

Utilization categories:

AC15 (50, 60 Hz)

U_e (V) 120 250

I_e (A) 3 3

DC13

U_e (V) 125 250

I_e (A) 0.55 0.27

According
 EN 81 par. F.1.2.4

AC (50, 60 Hz)

230 Vac

2 A

DC:

200 Vdc

2 A

According
 EN 81 par. F.1.2.2.1.1

AC (50, 60 Hz)

230 Vac

2 A

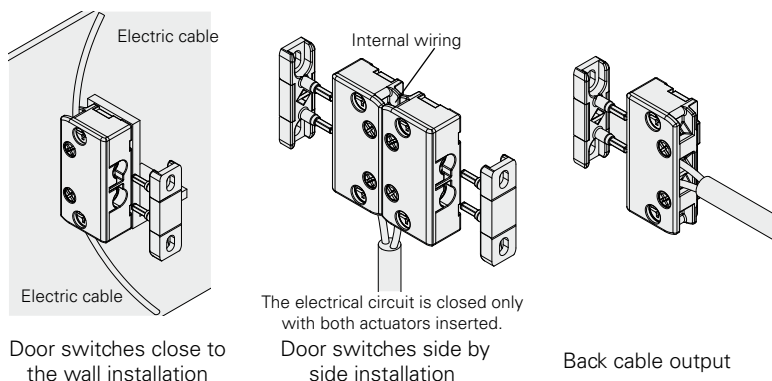
DC:

125 Vdc

0.5 A

Application examples DS A series

These devices have several cable outputs to allow installation also in restricted spaces, for example:



Data type approved by UL

Utilization categories Q300 (69VA, 125-250Vdc), 120-240Vac,
 3 A pilot duty, 5 A thermal current

For all contact blocks use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG.
 Terminal tightening torque of 7.1 lb in (0.8 Nm).

In conformity with standard: UL 508

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

Dimensional drawings

10 pcs packs

	Door switches with internal contacts		Door switches with external contacts	
	Switch without actuator	Switch without actuator	Switch without actuator	Switch without actuator
Slow action contacts	DS AA1VA 1NC	DS AE1VA 1NC	DS AA5VA 1NC	DS AE5VA 1NC
Max actuating travel	8 mm	8 mm	6 mm	6 mm
Travels diagrams				

Legend

Closed contact | Opened contact | 40° Positive opening travel | 2x2 mm contact opening travel according to EN81

Actuators for door switches with internal contacts

10 pcs packs

Article	Description
DS KA1A	Straight actuator

Article	Description
DS KB1A	Right-angled actuator

Article	Description
DS KA2A	Straight actuator

Article	Description
DS KB2A	Right-angled actuator

Article	Description
DS KA3A	Straight actuator

Article	Description
DS KB3A	Right-angled actuator

Actuator for door switches with external contacts

10 pcs packs

Article	Description
DS KP5A	Plane actuator

Centering device

100 pcs packs

Article	Description
VD CE1A20	Centering device

The centering device can be used on actuators type DS KA●● and DS KB●●. It grants an easy centering of the actuators on DS A●1VA switches during the fitting stage

Items with code on the **green** background are available in stock

→ 2D and 3D files available on www.pizzato.com



Main data

- Housing made of glass-reinforced polymer, self-extinguishing
- Self-cleaning contacts made of solid silver
- Three wiring possibilities
- Protection degree IP20
- Transparent cover

Markings and quality marks:



Approval IMQ-UNI: CA50.00541
 EN 81-1:2005
 EN 81-2:2005
 230 Vac - 2 A

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

Technical data

Description

Safety switches with double interruption and positive opening. Suitable for the control of automatic lift doors.

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin
 Protection degree: IP20 according to EN 60529

General data

Ambient temperature: -30°C ... +80°C
 (humidity ≤ 95%, without condensation)
 Max operating frequency: 3600 operations cycles¹/hour
 Mechanical endurance: 20 millions of operations cycles¹
 Max actuating speed: 0.5 m/s
 Min. actuating speed: 1 mm/s
 Max actuating force: 1.5 N
 Driving torque for installation: see page 126

(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Cross section of the conductors (flexible copper wire)

min. 1 x 0.5 mm² (1 x AWG 20)
 max. 1 x 2.5 mm² (1 x AWG 14)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 60529, EN 60529, EN 81-20, EN 81-50

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, VDE 0660-206.

Electrical data

Thermal current (I_{th}): 6 A
 Rated insulation voltage (U_i): 500 Vac
 Rated impulse with stand voltage (U_{imp}): 6 kV
 Protection against short circuits: fuse 6 A
 500 V type gG
 Pollution degree: 3

According

EN 60947-5-1
 EN 81 par. 14.1.2.2
 Utilization categories:
 AC15 (50, 60 Hz)
 U_e (V) 120 250
 I_e (A) 3 3
 DC13
 U_e (V) 125 250
 I_e (A) 0.8 0.45

According

EN 81
 par. F.1.2.4
 AC (50, 60 Hz)
 230 Vac
 2 A
 DC:
 200 Vdc
 2 A

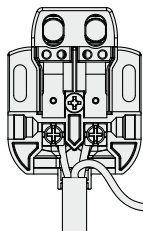
According

EN 81
 par. F.1.2.2.1.1
 AC (50, 60 Hz)
 230 Vdc
 2 A
 DC:
 125 Vdc
 1 A

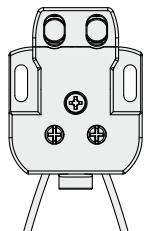
According

UL508
 Ratings:
 AC (50, 60 Hz)
 C300
 DC:
 Q300

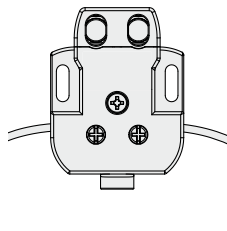
Three wiring possibilities



Standard wiring



Fast bottom wiring



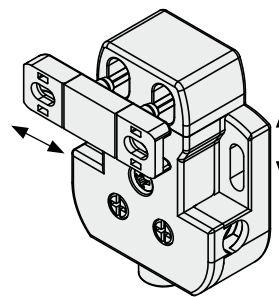
Fast lateral wiring

With a bipolar cable through the central hole on the housing bottom. Furthermore, using a three-pole cable it is possible to use the lateral hole with a wire for earthing other metal parts.

With two monopolar cables through two holes on the housing bottom. During this operation there is no need to open the contact cover.

With two monopolar cables through two holes on the housing sides. During this operation there is no need to open the contact cover.

Transparent head and slotted holes



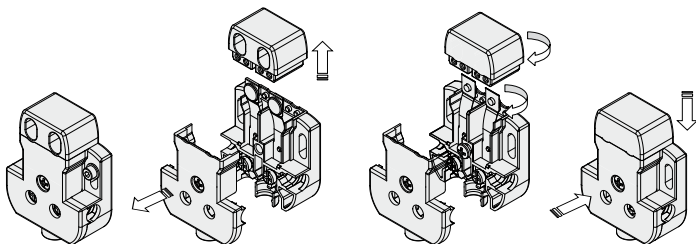
Transparent head on all sides in order to allow adjustment and centering of the actuator with the contacts.

The slotted holes on the actuator and on the contact housing allow to obtain a correct alignment between these two devices.

Items with code on the **green** background are available in stock

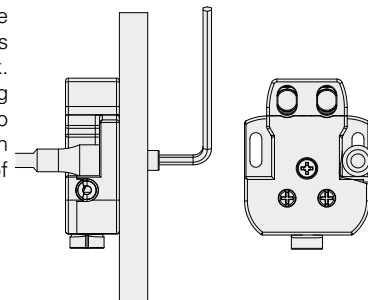
Rotating heads

By rotating the head and the contact reeds of 180° it is possible to transform a door switch with frontal actuation into a door switch with actuation from back. The whole operation is possible by simply unscrewing three screws.



Housing back fixing

The particular shape of the housing allows fixing from the back. In fact near the fixing holes it is possible to fit a tubular wrench in order to keep hold of the nut while fixing.



Dimensional drawings

10 pcs packs

	frontal actuation	back actuation
	Switch without actuator	Switch without actuator
Slow action contacts	DS CH1VA0 \odot 1NC	DS CN1VA0 \odot 1NC
Max actuating travel	6 mm	6 mm
Travels diagrams		


Legend

■ Closed contact | □ Opened contact | \odot 40° Positive opening travel | \odot 2x2 mm contact opening travel according to EN81

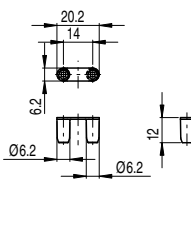
Centering device

100 pcs packs

Article	Description
VD CE1A20	Centering device



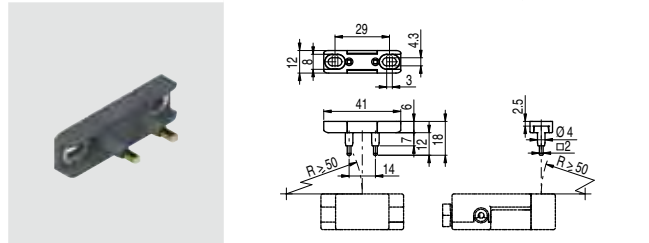
The centering device can be used on actuators type DS KA●● and DS KB●●. It grants an easy centering of the actuators on DS C•1VA switches during the fitting stage



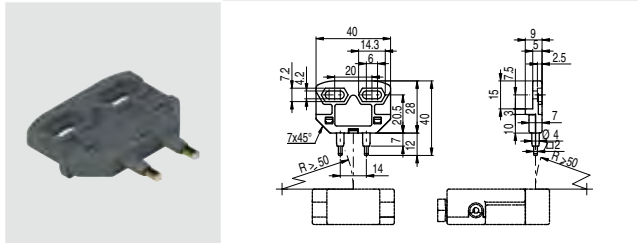
Actuators

10 pcs packs

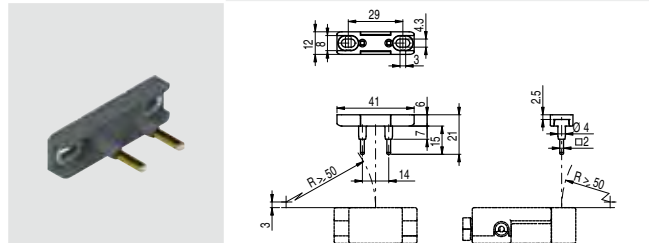
Article	Description
DS KA1A	Straight actuator



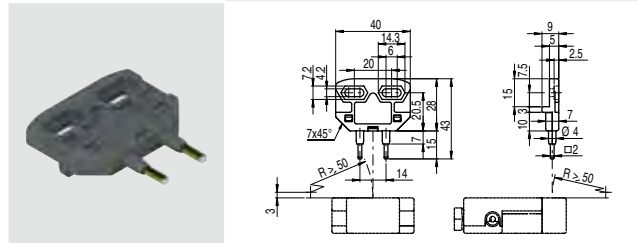
Article	Description
DS KB1A	Right-angled actuator



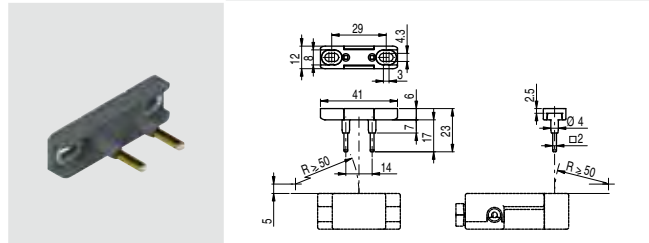
Article	Description
DS KA2A	Straight actuator



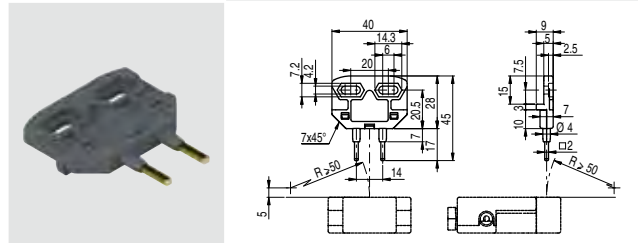
Article	Description
DS KB2A	Right-angled actuator



Article	Description
DS KA3A	Straight actuator



Article	Description
DS KB3A	Right-angled actuator



→ 2D and 3D files available on www.pizzato.com



Main data

- Reduced actuating force
- Protection degree IP67
- Polymer housing, one or two conduit entries
- Possibility of fixing the actuator in 2 perpendicular positions with respect to each other

Markings and quality marks:



Approval IMQ: EG610
 Approval IMQ-UNI: in progress
 Approval UL: E131787
 Approval EAC: RU C-IT DM94.B.01024

Technical data

Description

Safety switches with double interruption and positive opening. Suitable for the control of automatic lift doors.

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation

FR series one conduit entry: M20x1.5 (M16x1.5 on request)
 FX series two knock out conduit entries: M20x1.5 (M16x1.5 on request)
 Protection degree: IP67 according to EN 60529 with cable gland having equal or higher protection degree

General data

Ambient temperature: -25°C ... +80°C
 Version for operation in ambient temperature from -40°C to +80°C on request
 Max operating frequency: 3600 operations cycles¹/hour
 Mechanical endurance: 10 million operations cycles¹
 Max actuating speed: 0.5 m/s
 Min. actuating speed: 1 mm/s
 Assembling position: any
 Driving torque for installation: see page 123
 (1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Cross section of the conductors (flexible copper wire)

Contact blocks 38, 39:
 min. 1 x 0.5 mm² (1 x AWG 20)
 max. 2 x 2.5 mm² (2 x AWG 14)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, EN 60529, EN 60529, EN 81-20, EN 81-50, NFC 63-140, VDE 0660-200, VDE 0113.

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, VDE 0660-206.

Installation for safety applications:

Use only switches marked with the symbol . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in the **standard ISO 14119, par. 5.4**. The switch must be actuated with **at least up to the positive opening travel** shown in the travels diagrams. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the min. force.

Electrical data

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

Utilization categories

Alternate current: AC15 (50...60 Hz)
 U_e (V) 250 400 500
 I_e (A) 6 4 1
 Direct current: DC13
 U_e (V) 24 125 250
 I_e (A) 6 1.1 0.4

Data type approved by IMQ

Rated insulation voltage (U_i): 500 Vac
 Thermal current (I_{th}): 10 A
 Protection against short circuits: fuse 10 A 500 V type aM
 Rated impulse withstand voltage (U_{imp}): 6 kV
 Protection degree: IP67
 MV terminals (screw clamps)
 Pollution degree 3
 Utilization category: AC15
 Operation voltage (U_e): 400 Vac (50 Hz)
 Operation current (I_e): 3 A
 Forms of the contact element: Y, Y+Y
 Positive opening of contacts on contact block 38, 39

In conformity with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2006/95/CE.

Data type approved by UL

Utilization categories Q300 (69 VA, 125-250 Vdc)
 A600 (720 VA, 120-600 Vac)
 Data of the housing type 1, 4X "indoor use only"; 12, 13
 For all contact blocks use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7.1 lb in (0.8 Nm).
 In conformity with standard: UL 508

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

Please contact our technical service for the list of type approved products.

Dimensional drawings

Contacts type:

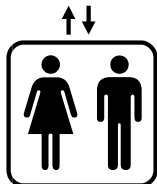
L = slow action

Contact blocks	FR 38B1-D30M2 \ominus 1NC	FR 39B1-D30M2 \ominus 2NC	FX 38B1-D30M2 \ominus 1NC	FX 39B1-D30M2 \ominus 2NC
Min. force	3 N (25 N \ominus)	4.2 N (25 N \ominus)	3 N (25 N \ominus)	4.2 N (25 N \ominus)
Travels diagrams				

Legend

Closed contact | Opened contact | \ominus 40° Positive opening travel | \oplus 2x2 mm contact opening travel according to EN81

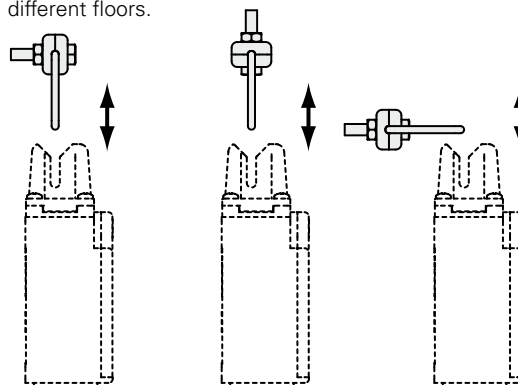
EN 81-20 standard



- Safety contacts according to EN 60947-5-1, encl. K.
- Protection degree higher than IP4x.
- Mechanical endurance higher than 10⁶ cycles.

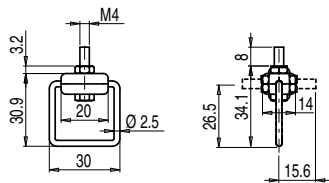
Adjustable actuator

It is possible to fix the actuator in two positions perpendicular to each other. Furthermore it is possible to operate the switch from different floors.



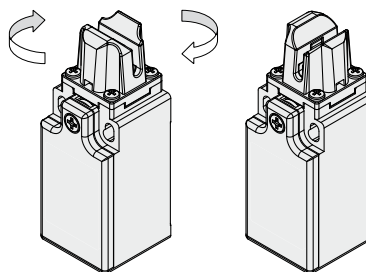
Separate actuator

Article	Description
VF KEYD30	Adjustable actuator



Rotating heads

In all switches, it is possible to rotate the head in 90° steps.





Main data

- Polymer housing, from one to three conduit entries
- Protection degree IP67
- 6 stainless steel actuators available
- M12 assembled connector versions
- Silver contacts gold plated versions

Markings and quality marks:



Approval IMQ:	EG610
Approval IMQ-UNI:	in progress
Approval UL:	E131787
Approval CCC:	2007010305230013
Approval EZU:	101015
Approval EAC:	RU C-IT DM94.B.01024

Technical data

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation □

FR series one conduit entry:	M20x1.5 (M16x1.5 on request)
FK series one conduit entry:	M16x1.5
FX series two knock out conduit entries:	M20x1.5 (M16x1.5 on request)
FW series three knock out conduit entries:	M20x1.5
Protection degree:	IP67 according to EN 60529 (electrical contacts) with cable gland having equal or higher protection degree

General data

Ambient temperature:	-25°C ... +80°C
Version for operation in ambient temperature from -40°C to +80° C on request	
Max operating frequency:	3600 operations cycles ¹ /hour
Mechanical endurance:	1 million of operations cycles ¹
Max actuating speed:	0.5 m/s
Min. actuating speed:	1 mm/s
Actuator extraction force:	10 N
Driving torque for installation:	see page 123
(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.	

Cross section of the conductors (flexible copper wire)

Contact blocks 20, 33, 34:	min.	1 x 0.34 mm ²	(1 x AWG 22)
	max.	2 x 1.5 mm ²	(2 x AWG 16)
Contact blocks 6:	min.	1 x 0.5 mm ²	(1 x AWG 20)
	max.	2 x 2.5 mm ²	(2 x AWG 14)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, EN 60529, EN 60529, EN 81-20, EN 81-50, NFC 63-140, VDE 0660-200, VDE 0113, BG-GS-ET-15.

Approvals:

IEC 60947-5-1, UL 508, GB14048.5-2001

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, VDE 0660-206.

Electrical data

Thermal current (I _{th}):	10 A
Rated insulation voltage (U _i):	500 Vac 600 Vdc
	400 Vac 500 Vdc for contacts block 20, 33, 34
Rated impulse withstand voltage (U _{imp}):	6 kV
	4 kV for contact blocks 20, 33, 34
Conditional short circuit current:	1000 A according to EN 60947-5-1
Protection against short circuits:	fuse 10 A 500 V type aM
Pollution degree:	3

Utilization categories

Alternate current: AC15 (50...60 Hz)			
U _e (V)	250	400	500
I _e (A)	6	4	1
Direct current: DC13			
U _e (V)	24	125	250
I _e (A)	6	1.1	0.4

Data type approved by IMQ, CCC and EZU

Rated insulation voltage (U _i):	500 Vac
	400 Vac for contact blocks 20, 33, 34
Thermal current (I _{th}):	10 A
Protection against short circuits:	fuse 10 A 500 V type aM
Rated impulse withstand voltage (U _{imp}):	6 kV
	4 kV Vac for contact blocks 20, 33, 34
Protection degree:	IP67
MV terminals (screw clamps)	
Pollution degree	3
Utilization category:	AC15
Operation voltage (U _e):	400 Vac (50 Hz)
Operation current (I _e):	3 A
Forms of the contact element:	Zb, Y+Y
Positive opening of contacts on contact block	6, 20, 33, 34

In conformity with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2006/95/CE.

Please contact our technical service for the list of type approved products.

Data type approved by UL

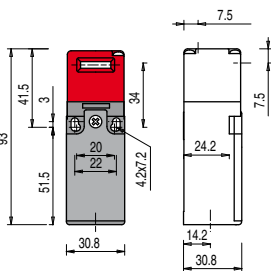
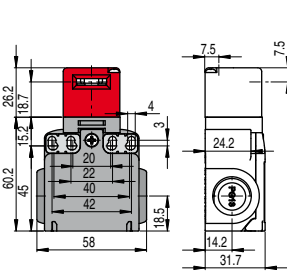
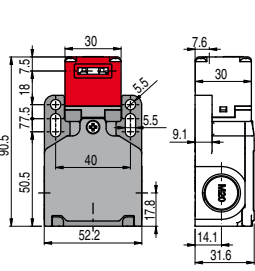
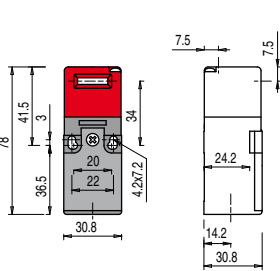










Utilization categories	Q300 (69 VA, 125-250 Vdc)
	A600 (720 VA, 120-600 Vac)
Data of the housing type	1, 4X "indoor use only"; 12, 13
For all contact blocks use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7.1 lb in (0.8 Nm).	
In conformity with standard:	UL 508

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

Dimensional drawings

Contacts type:
L = slow action

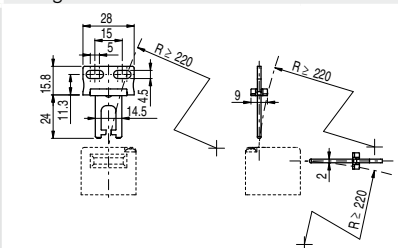
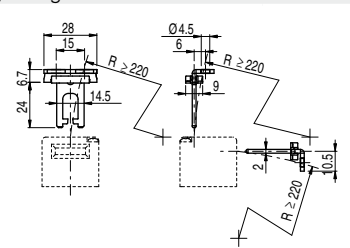
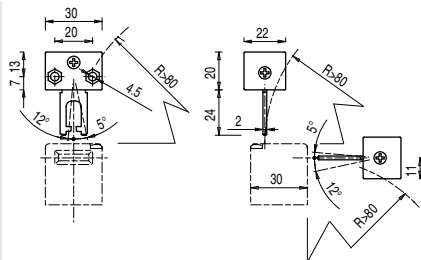
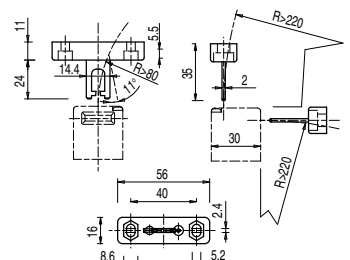
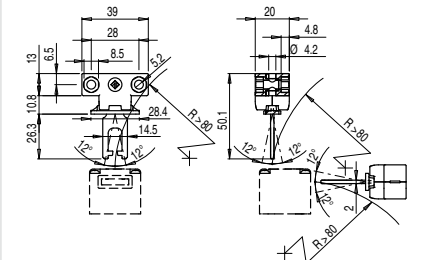
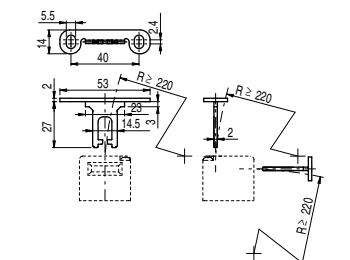
Contact blocks

	polymer housing Switch without actuator	polymer housing Switch without actuator	polymer housing Switch without actuator	polymer housing Switch without actuator
6 L				
20 L	FR 2093-M2 	FX 2093-M2 		
33 L			FW 3392-M2 	FK 3393-M1 
34 L			FW 3492-M2 	FK 3493-M1 
Min. force	10 N (18 N )	10 N (18 N )	10 N (18 N )	10 N (18 N )
Travel diagrams	page 114 - group 1e	page 114 - group 1e	page 114 - group 1e	page 114 - group 1e

Actuators stainless steel

10 pcs packs

IMPORTANT: These actuators must be used with FR, FX, FK e FW (e.g. FR 693).

Article	Description	Article	Description
VF KEYD	Straight actuator 	VF KEYD1	Right-angled actuator 
VF KEYD3	Jointed actuator adjustable in two directions 	VF KEYD7	Jointed actuator adjustable in one direction 
<p>Actuator adjustable in two directions for doors with reduced dimensions.</p>		<p>Actuator adjustable in one direction for doors with reduced dimensions.</p>	
VF KEYD8	Universal actuator 	VF KEYD10	Shaped actuator 
<p>Joined and two directions adjustable actuator for doors with reduced dimensions. The actuator has two couples of fixing holes and it is possible to rotate by 90° the actuator-working plan.</p>			

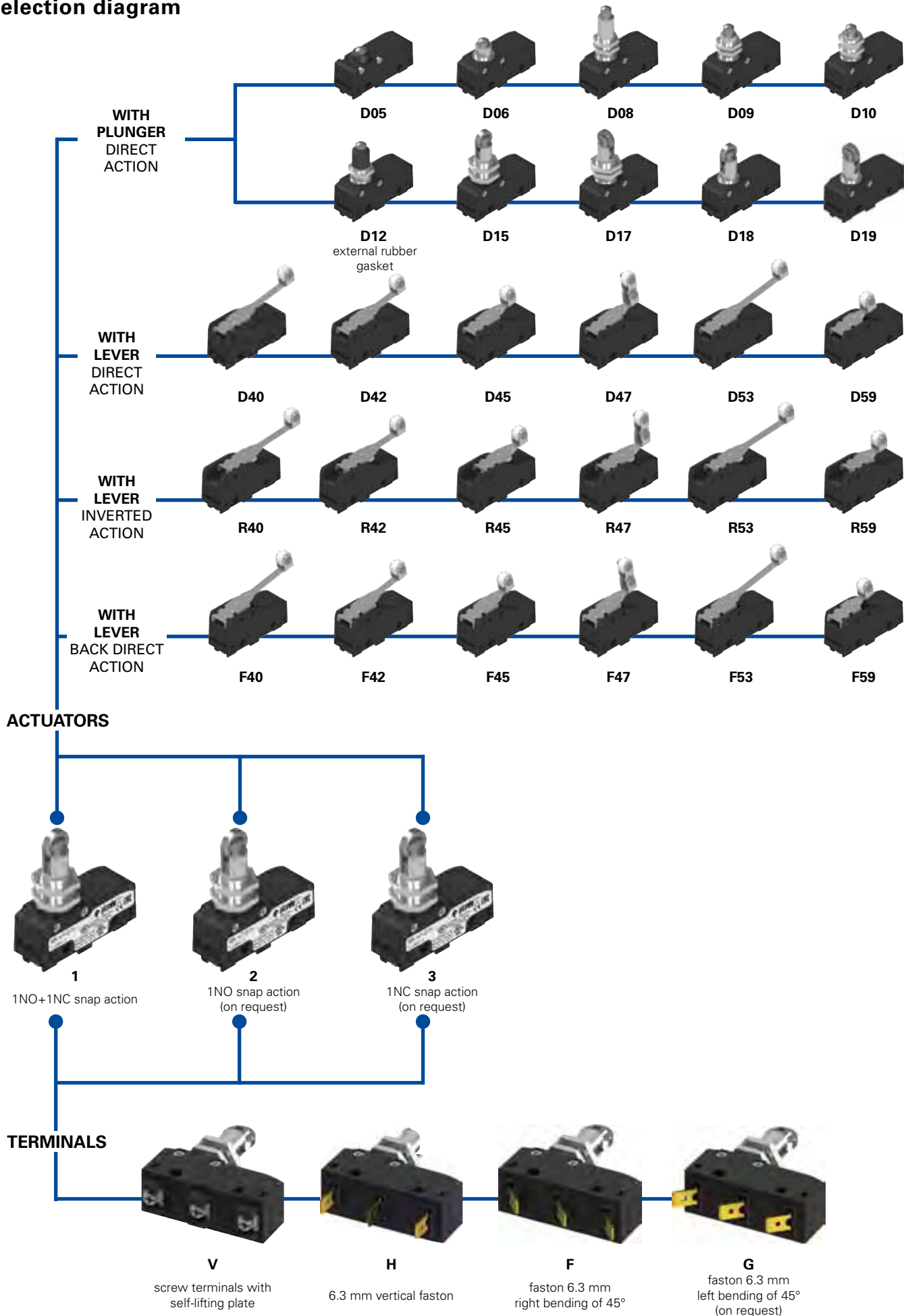
Accessories See page 119

Items with code on the **green** background are available in stock

→ 2D and 3D files available on www.pizzato.com

All measures in the drawings are in mm

Selection diagram



Code structure

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

article
options
MK V12D40-GR16T6

Terminals type		Ambient temperature	
V	screw terminals with self-lifting late		-25°C ... +85°C (standard)
H	vertical faston terminals	T6	-40°C ... +85°C
F	with faston, right bending of 45°	Suffix	
G	with faston, left bending of 45° (on request)		no suffix (standard)
Contact block		R16	∅ 9.5x4 mm metal roller (for actuator 40, 42 .45 47, 53, 59)
1	1NO+1NC, snap action	R10	∅ 9.8x8.4 mm polymer roller (for actuator 40, 42 .45, 53)
2	1NO, snap action (on request)	Contacts type	
3	1NC, snap action (on request)		silver contacts (standard)
Max protection degree		G	silver contacts gold plated 1 µm
1	IP40 (with protection)	Actuator	
2	IP65 (with protection)	01	with pin
Actuation type		02	with pin
D	direct action	03	with small push button
R	inverted action
F	back direct action		

**Main data**

- Polymer housing
- Protection degree IP20, IP40 or IP65
- 4 terminal types available
- Versions with positive opening ⊕
- Silver contacts gold plated versions
- Terminal covers with wire trap cable gland

Markings and quality marks:

Approval IMQ: in progress
 Approval UL: E131787
 Approval CCC: 2013010305604291
 Approval EAC: RU C-IT ДМ94.В.01024

Technical data**Housing**

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin.

Protection degree according to EN 60529: IP00 (without protection)
 IP20 (with protection VF C01 - VF C03)
 IP40 (with protection VF MKC•1• - VF C02)
 IP65 (with protection VF MKC•22 - VF MKC•23)

General data

Ambient temperature: -25°C ... +85°C
 Max operating frequency: 3600 operations cycles¹/hour
 Mechanical endurance: 10 million operations cycles¹
 Driving torque for installation: see page 126

(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Cross section of the conductors (flexible copper wire)

MK series:	min.	1 x 0.34 mm ²	(1 x AWG 22)
	max.	2 x 1.5 mm ²	(2 x AWG 16)

In conformity with standards:

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

Approvals:

UL 508

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, VDE 0660-206.

Installation for safety applications:

Use only switches marked with the symbol ⊕. The safety circuit must always be connected with the **NC contacts** (normally closed contacts) as stated in the **standard ISO 14119, par. 5.4**. The switch must be actuated with **at least up to the positive opening travel (FAP)** near the code article. The switch must be actuated **at least with the positive opening force (CAP)**, near the code article.

Electrical data

Thermal current (I _{th}):	16 A
Rated insulation voltage (U _i):	250 Vac 300 Vdc
Rated impulse withstand voltage (U _{imp}):	4 kV
Conditional short circuit current:	1000 A according to EN 60947-5-1
Protection against short circuits:	fuse 16 A 250 V type gG
Pollution degree:	3
Dielectric strength	2000 Vac/min.

Utilization categories

Alternate current: AC15 (50 ... 60 Hz)			
U _e (V)	250	120	
I _e (A)	4	6	
Direct current: DC13			
U _e (V)	24	125	250
I _e (A)	5	0.5	0.3

Data type approved by UL

Utilization categories	Q300 (69 VA, 125-250 Vdc)
	A300 (720 VA, 120-300 Vac)

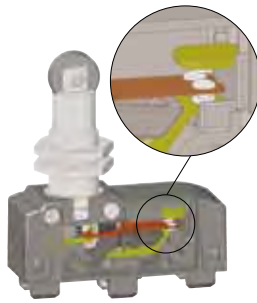
In conformity with standard: UL 508

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

Contact block reliability

The electrical contact on new microswitch has been realized with higher reliability technology, thanks to the double and redundant shape

For high quantity it's possible to supply the microswitch only with the contact NO or NC, in order to minimize purchase costs.

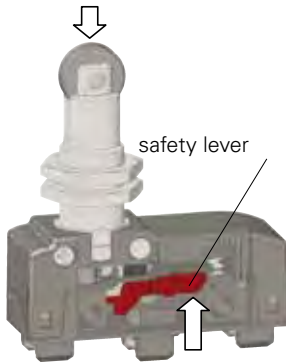


Protection degree IP65

IP65

The housing of the new microswitch provides the possibility to seat gaskets in order to seal the device against fine dusts or liquids up to IP65 degree. To obtain the protection degree match the appropriate version of the microswitch IP65 with the IP65 terminal cover.

Microswitches for safety applications



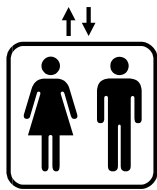
All microswitches that have the symbol beside the code are with positive opening, therefore suitable for safety applications. These microswitches are provided with a rigid connection between push button and NC contacts, which are opened by force through a strong/sturdy internal safety lever. The positive opening has been realised in conformity with the standard IEC 60947-5-1, enclosure K, therefore these microswitches are suitable for the installation for people's protection.

Clamping screw plates for different diameter cables (MK V)



These clamping screw plates have a particular "roofing tile" structure and are connected loosely to the clamping screw. In this way, during the wires fixing, the clamping screw plate is able to suit to cables of different diameter (see picture) and tends to tighten the wires toward the screw instead of permitting them to escape towards the outside.

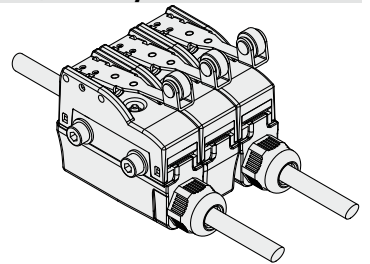
EN 81-20 standard



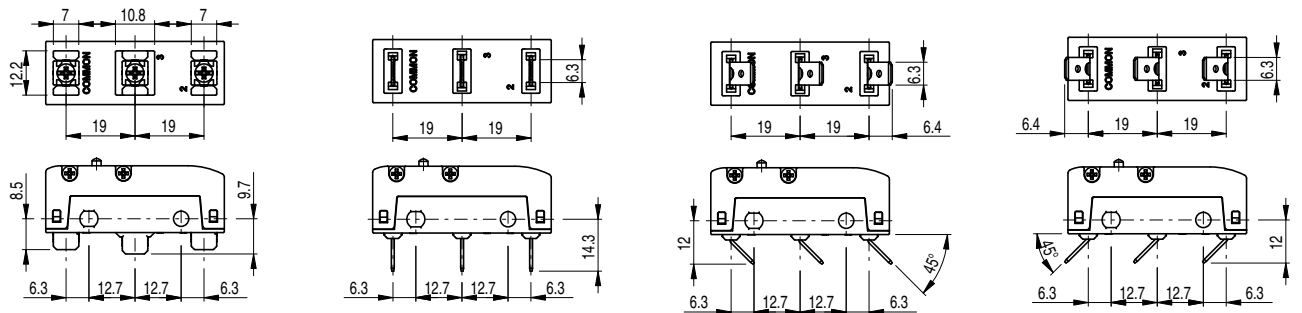
- Safety contacts according to EN 60947-5-1, encl. K.
- Protection degree higher than IP4x.
- Mechanical endurance higher than 10⁶ cycles.

Terminal covers with wire trap cable gland, side by side installable

New terminal covers supplied with wire trap cable gland are provided for the protection degree up to IP65. These terminal covers are snap-in assembled and they have small dimensions in the microswitch profile, it's possible to install them also on microswitches fixed side by side.



Terminals outline dimension



Screw terminals **V** with plate

Vertical faston **H** terminals

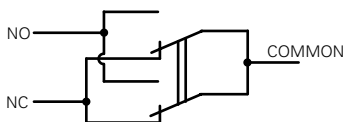
faston terminals **F**, right bending

faston terminals **G**, left bending (on request)

Note: H vertical faston terminals can be bent according to one's installation requirements.

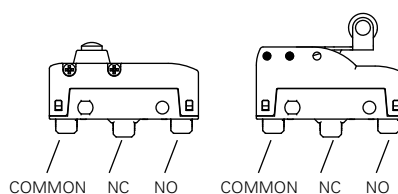
We recommend to bend the faston with an angle not higher than 45° and to carry out this operation no more than 5 times.

Wire diagram

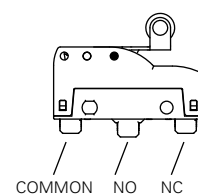


Contacts with single interruption and double contacts

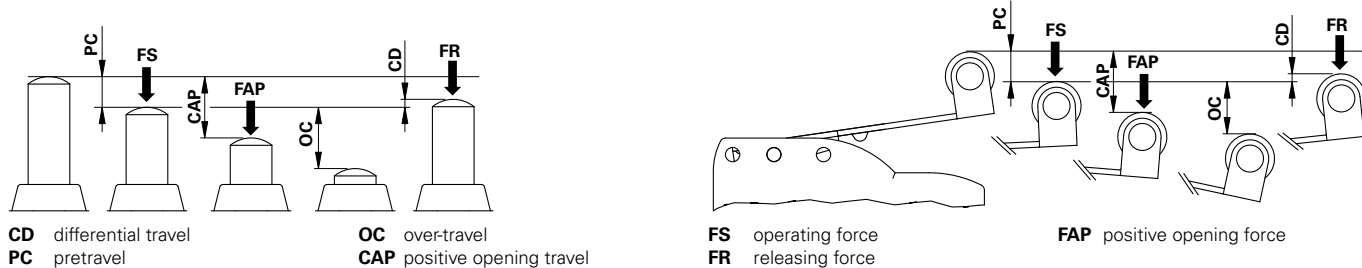
With direct and back direct action (F, D)



With inverted action (R)



Legend



Microswitches with direct action (All measures in the drawings are in mm)

10 pcs packs

<p>MK V11D05 (1NO+1NC) PC 0.5 mm FS 4 N OC 2 mm FR 3 N CD 0.05 mm FAP 20 N CAP 2.2 mm</p> <p>Max and min. speed page 126 - type 1</p>	<p>MK V11D06 (1NO+1NC) PC 0.5 mm FS 4 N OC 3 mm FR 3 N CD 0.05 mm FAP 20 N CAP 2.2 mm</p> <p>Max and min. speed page 126 - type 1</p>

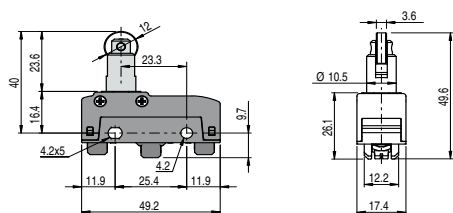
<p>MK V11D08 (1NO+1NC) PC 0.5 mm FS 4 N OC 5.5 mm FR 3 N CD 0.05 mm FAP 20 N CAP 2.2 mm</p> <p>Max and min. speed page 126 - type 1</p>	<p>MK V11D09 (1NO+1NC) PC 0.5 mm FS 4 N OC 5.5 mm FR 3 N CD 0.05 mm FAP 20 N CAP 2.2 mm</p> <p>Max and min. speed page 126 - type 1</p>

<p>MK V11D10 (1NO+1NC) PC 0.5 mm FS 4 N OC 5.5 mm FR 3 N CD 0.05 mm FAP 20 N CAP 2.2 mm</p> <p>Max and min. speed page 126 - type 1</p>	<p>MK V11D12 (1NO+1NC) PC 0.5 mm FS 4.5 N OC 5.5 mm FR 3 N CD 0.05 mm FAP 20 N CAP 2.2 mm</p> <p>Max and min. speed page 126 - type 1</p>

Fixed only by threaded head

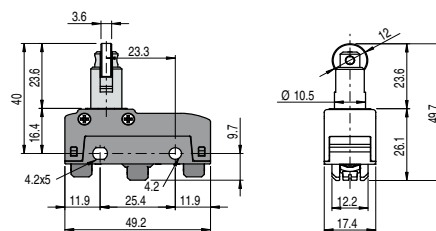
<p>MK V11D15 (1NO+1NC) PC 0.5 mm FS 4 N OC 5.5 mm FR 3 N CD 0.05 mm FAP 20 N CAP 2.2 mm</p> <p>Max and min. speed page 126 - type 2</p>	<p>MK V11D17 (1NO+1NC) PC 0.5 mm FS 4 N OC 5.5 mm FR 3 N CD 0.05 mm FAP 20 N CAP 2.2 mm</p> <p>Max and min. speed page 126 - type 2</p>

Items with code on the green background are available in stock



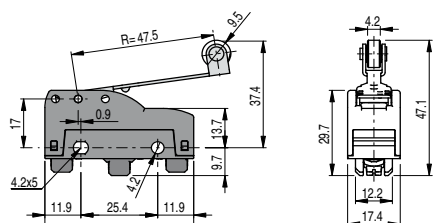
MK V11D18 \odot 1NO+1NC	PC	0.5 mm	FS	4 N
	OC	5.5 mm	FR	3 N
	CD	0.05 mm	FAP	20 N
	CAP	2.2 mm		

Max and min. speed page 126 - type 2



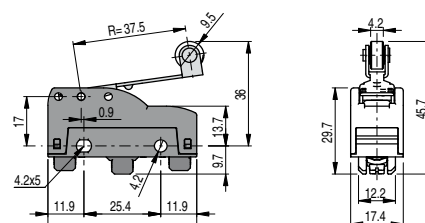
MK V11D19 \odot 1NO+1NC	PC	0.5 mm	FS	4 N
	OC	5.5 mm	FR	3 N
	CD	0.05 mm	FAP	20 N
	CAP	2.2 mm		

Max and min. speed page 126 - type 2



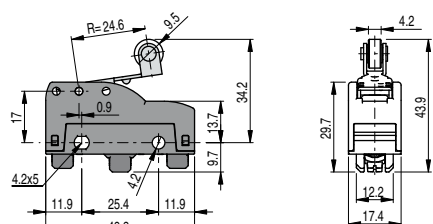
MK V11D40 1NO+1NC	PC	6.7 mm	FS	0.86 N
	OC	7.8 mm	FR	0.66 N
	CD	0.8 mm		

Max and min. speed page 126 - type 6



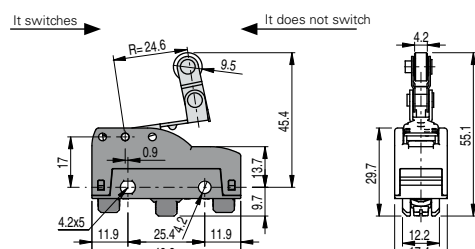
MK V11D42 1NO+1NC	PC	5.3 mm	FS	1.09 N
	OC	5.7 mm	FR	0.84 N
	CD	0.6 mm		

Max and min. speed page 126 - type 6



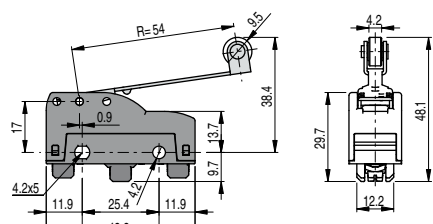
MK V11D45 1NO+1NC	PC	3.5 mm	FS	1.66 N
	OC	4.5 mm	FR	1.28 N
	CD	0.4 mm		

Max and min. speed page 126 - type 6



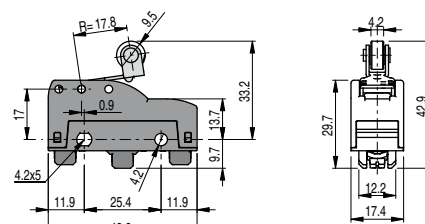
MK V11D47 1NO+1NC	PC	3.5 mm	FS	1.66 N
	OC	4 mm	FR	1.28 N
	CD	0.4 mm		

Max and min. speed page 126 - type 6



MK V11D53 1NO+1NC	PC	7.7 mm	FS	0.76 N
	OC	8.9 mm	FR	0.58 N
	CD	0.9 mm		

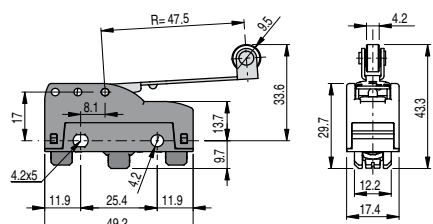
Max and min. speed page 126 - type 6



MK V11D59 1NO+1NC	PC	2.5 mm	FS	2.3 N
	OC	4.5 mm	FR	1.77 N
	CD	0.2 mm		

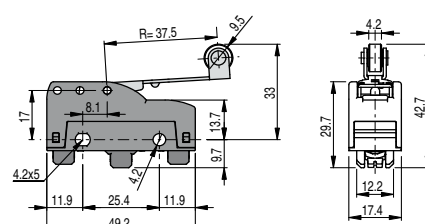
Max and min. speed page 126 - type 6

Microswitches with inverted action (All measures in the drawings are in mm)



MK V11R40 1NO+1NC	PC	3.4 mm	FS	0.8 N
	OC	10.3 mm	FR	0.5 N
	CD	0.7 mm		

Max and min. speed page 126 - type 7



MK V11R42 1NO+1NC	PC	2.7 mm	FS	1.2 N
	OC	7.9 mm	FR	1.7 N
	CD	0.5 mm		

Max and min. speed page 126 - type 7

MK V11R45	1NO+1NC	PC 1.5 mm OC 5.5 mm CD 0.3 mm	FS 1.7 N FR 1 N
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Max and min. speed page 126 - type 7

MK V11R47	1NO+1NC	PC 1.7 mm OC 5.3 mm CD 0.3 mm	FS 1.7 N FR 1 N
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Max and min. speed page 126 - type 7

MK V11R53	1NO+1NC	PC 4.3 mm OC 11.6 mm CD 0.8 mm	FS 0.8 N FR 0.4 N
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Max and min. speed page 126 - type 7

MK V11R59	1NO+1NC	PC 1.5 mm OC 3.9 mm CD 0.3 mm	FS 2.4 N FR 1.3 N
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Max and min. speed page 126 - type 7

Microswitches with back direct action (All measures in the drawings are in mm)

10 pcs packs

MK V11F40	1NO+1NC	PC 2.4 mm OC 10.4 mm CD 0.25 mm	FS 0.85 N FR 0.65 N
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Max and min. speed page 126 - type 8

MK V11F42	1NO+1NC	PC 1.6 mm OC 8.4 mm CD 0.2 mm CAP 9 mm	FS 1 N FR 0.7 N FAP 4.9 N
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Max and min. speed page 126 - type 8

MK V11F45	1NO+1NC	PC 1.1 mm OC 6.6 mm CD 0.1 mm CAP 6.3 mm	FS 1.3 N FR 0.9 N FAP 6.9 N
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Max and min. speed page 126 - type 8

MK V11F47	1NO+1NC	PC 1.1 mm OC 5.6 mm CD 0.1 mm CAP 6.3 mm	FS 1.3 N FR 0.9 N FAP 6.9 N
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Max and min. speed page 126 - type 8

MK V11F53	1NO+1NC	PC 2.5 mm OC 11.5 mm CD 0.3 mm	FS 0.7 N FR 0.6 N
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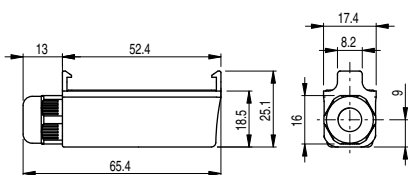
Max and min. speed page 126 - type 8

MK V11F59	1NO+1NC	PC 0.8 mm OC 5.2 mm CD 0.08 mm CAP 4.9 mm	FS 1.7 N FR 1.3 N FAP 8.9 N
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Max and min. speed page 126 - type 8

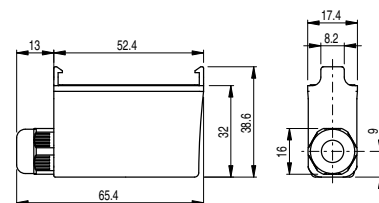
Protections (terminals covers)

10 pcs packs



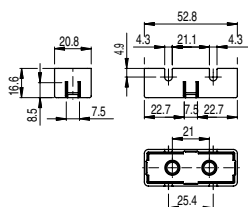
Protection terminal cover for screw terminals snap-in assembled and with wire trap cable gland. It allows the installation of more switches side by side.

Article	Description	Protection degree
VF MKCV11	Protection terminal cover without gasket for multipolar cables from Ø 5 to Ø 7.5 mm	IP40
VF MKCV12	Protection terminal cover without gasket for multipolar cables from Ø 4 to Ø 7.5 mm	IP40
VF MKCV13	Protection terminal cover without gasket for multipolar cables from Ø 2 to Ø 5 mm	IP40
VF MKCV22	Protection terminal cover with gasket for multipolar cables from Ø 4 to Ø 7.5 mm	IP65
VF MKCV23	Protection terminal cover with gasket for multipolar cables from Ø 2 to Ø 5 mm	IP65

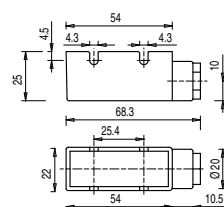


Protection terminal cover for vertical faston terminals snap-in assembled and with wire trap cable gland. It allows the installation of more switches side by side.

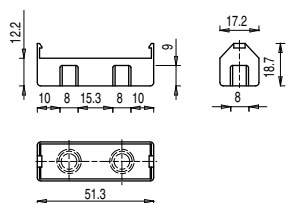
Article	Description	Protection degree
VF MKCH11	Protection terminal cover without gasket for multipolar cables from Ø 5 to Ø 7.5 mm	IP40
VF MKCH12	Protection terminal cover without gasket for multipolar cables from Ø 4 to Ø 7.5 mm	IP40
VF MKCH13	Protection terminal cover without gasket for multipolar cables from Ø 2 to Ø 5 mm	IP40
VF MKCH22	Protection terminal cover with gasket for multipolar cables from Ø 4 to Ø 7.5 mm	IP65
VF MKCH23	Protection terminal cover with gasket for multipolar cables from Ø 2 to Ø 5 mm	IP65



Article	Description	Protection degree
VF C01	Protection terminal cover for screw terminals	IP20



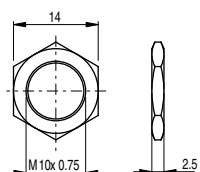
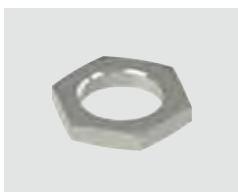
Article	Description	Protection degree
VF C02	Protection terminal cover for screw terminals with cable gland PG9 for multipolar cables from Ø 5 to Ø 7 mm	IP40



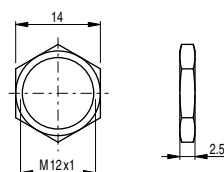
Article	Description	Protection degree
VF C03	Protection terminal cover for screw terminals snap-in assembled. It allows the installation of more switches side by side	IP20

Accessories

10 pcs packs

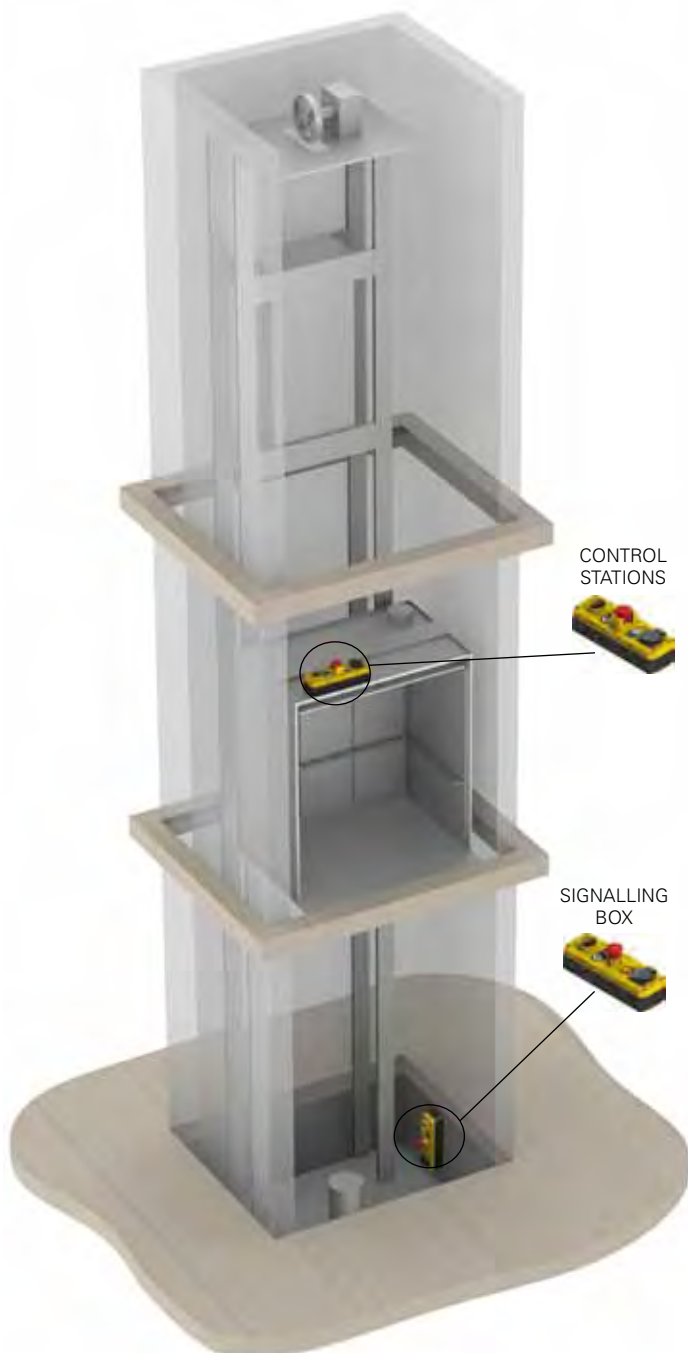


Article	Description
AC83	Hexagonal threaded nut M10 x 0.75 for microswitches



Article	Description
AC72	Hexagonal threaded nut M12 x 1 for microswitches

Items with code on the **green** background are available in stock



Sturdiness

The devices are guaranteed protection against knocks and treading both by the side-hinged cover (in the relevant versions) and the choice of recessed pushbuttons, thus not protruding from the control station surface. Moreover, the use of sturdy guards for particularly bulky auxiliary control devices, such as the emergency pushbutton or the selector, makes the product suitable for especially heavy-duty installation areas.



Introduction

Backed by the experience and knowledge acquired in over 25 years of activity in the automation world, Pizzato Elettrica confirms its capacity of proposing, even in new sectors, innovative solutions which succeed in combining an extremely practical and flexible operation with an accurately detailed linear design. The new EL AC series lift control stations by Pizzato Elettrica incorporate these latest features, and they use articles from the EROUND line as control and signalling devices. The EL AC series lift control stations have been designed to pilot the movement of lifts during control and maintenance operations.

Innovation

The EL AC series control stations by Pizzato Elettrica can be fitted with a new-concept flip-open protection cover, which allows the actuating



devices to be safeguarded from knocks or dirt (often found in lift installation areas), while leaving the mushroom emergency button always accessible, even with the protection in the closed position (filed patent). The cover is

hinged on the right or the left side, and is provided with a snap system which prevents it from being closed unintentionally due to vibration. Similarly, a closing system with a snap catch prevents it from being opened accidentally.

Modularity



The control stations have been designed with the precise objective to make them as user-friendly as possible for maintenance operators, as well as to provide the widest and most versatile choice in the combination of applicable devices.

These diverse options are made possible thanks to the innovative construction of the enclosures cover (filed patent) which allows free arrangement of the perforated holes and shapes for housing various devices; such insert elements make up the whole cover, just one solid piece produced by means of a single moulding process.

Cam switch and selector:



In control station EL AC series can be installed rotary cam switches EH series as an alternative to the E2 series switches.

The cam switch is matched with a wide ergonomic actuation knob, available in versions with two and three stay-put positions; it can also be configured with contact diagrams according to customer requirements up to a maximum number of 8 contacts.

The covers dedicated to house the cam switches provide a suitable slot with protection guard.

Equipped with gasket below the knob provides an IP65 protection degree.

Tread-safe

The dual function of the side-hinged cover is to protect the devices from dust and dirt and to safeguard them against knocks and stresses (up to 100 kg max.). Its particular outline allows the emergency button to be freely activated, at the same time granting protection even in the case where an incautious maintenance operator should inadvertently tread on the control station. The devices fitted to the station will not be affected thanks to the design of the protection cover, which allows the pressure exerted to be discharged onto the sturdy control station structure.



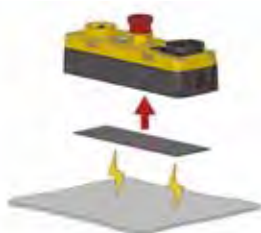
Design

The outline of the lower lift control station perfectly matches that of the protection cover, thus forming a single body distinguished by the absence of protruding elements.

This allows the station to be used in the increasingly frequent cases where a satisfactory aesthetic result is desired, especially in structures using large glazed surfaces which leave the lift cabin in full view. In order to further integrate them in the machinery to which they are fitted, the EL AC series lift control stations are also available in an all-black version, as well as the standard black-yellow version.



Magnetic bases

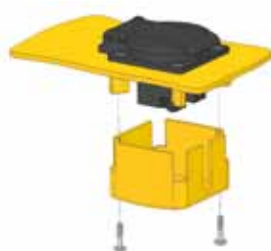


All control stations EL AC series can be supplied with a magnetic base applied to the bottom of the box; in this way it will be possible to anchor the control stations to metal walls and surfaces in a removable manner without needing to drill. Adhesive magnetic bases can be applied at a later time.

Electrical socket

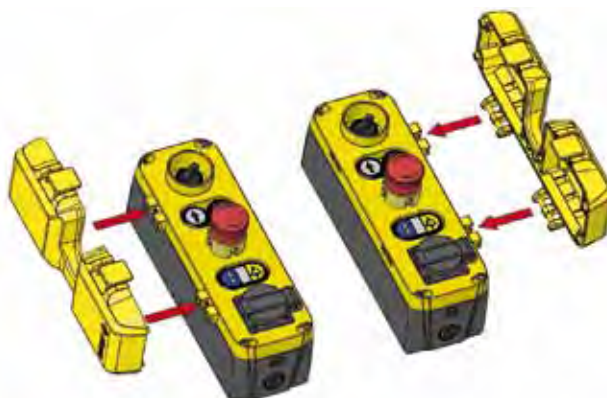
The inside of the electrical socket is protected against the risk of accidental contact by means of a removable cover.

Available in different types, it can be perfectly adapted to the standards in force in the country where the lift is installed.



Possibility of separate purchasing of the protection cover

For the control stations featuring a centrally positioned emergency push button without protruding guards, it is possible to add a side-hinged protection cover at a later stage, as this can be purchased as an accessory, separate from the control station.



Two heights

The EL AC series control stations by Pizzato Elettrica are available both with high base (2 levels of contacts) and with low base (1 level of contacts) thus considerably increasing the number of possible applications of the products.



2 levels of contacts

1 level of contacts

LASER marking



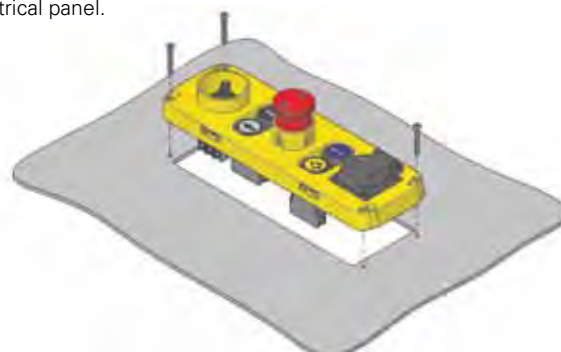
Pizzato Elettrica has introduced a new LASER marking system for control stations EL AC series.

Thanks to this system, which excludes the use of pad printing or labels, product marking is indelible and durable.

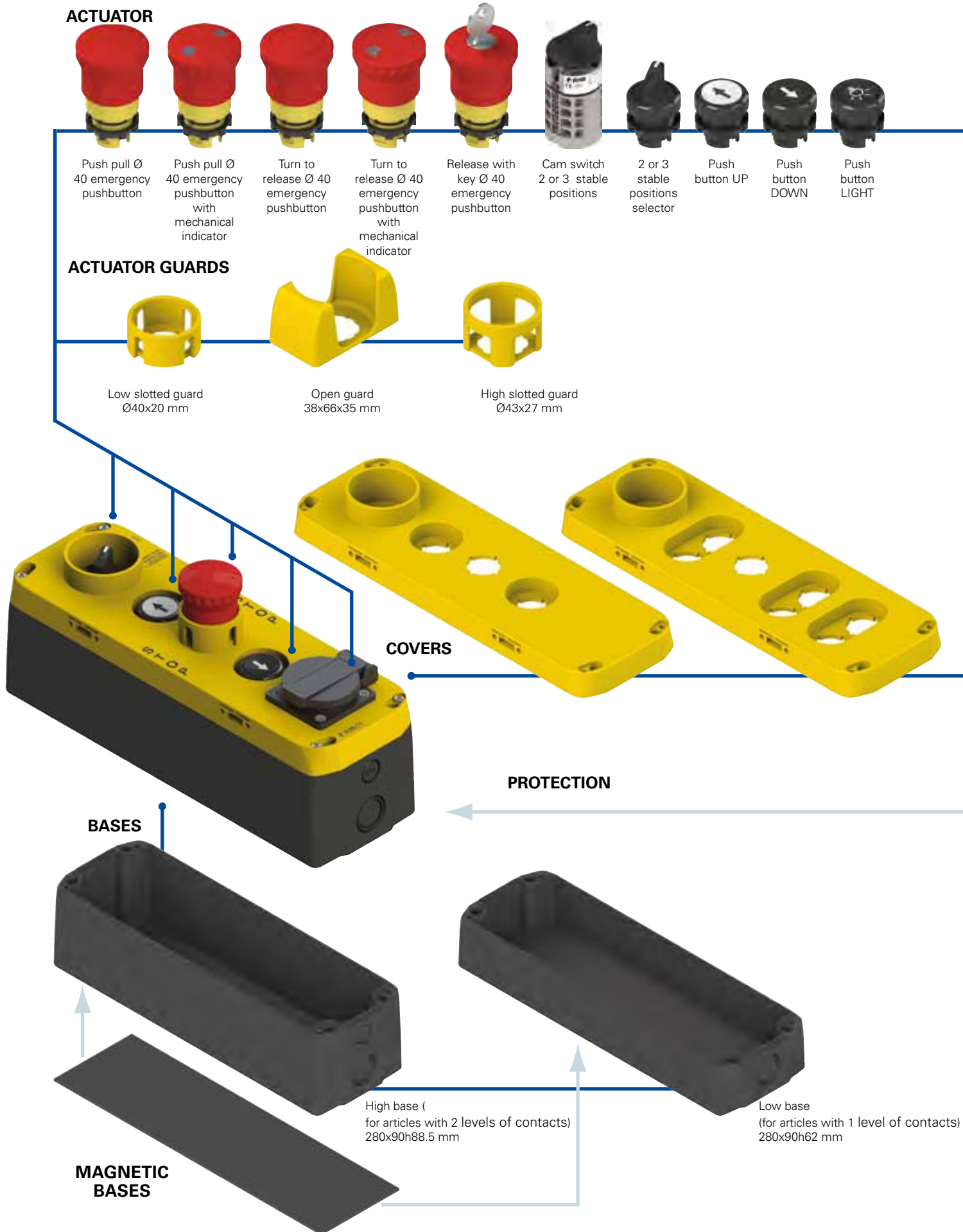
LASER markings for control stations EL AC series are now enriched with pictograms and symbols according to new standard 81-20; control stations can also be customized with indications, symbols and customer logos.

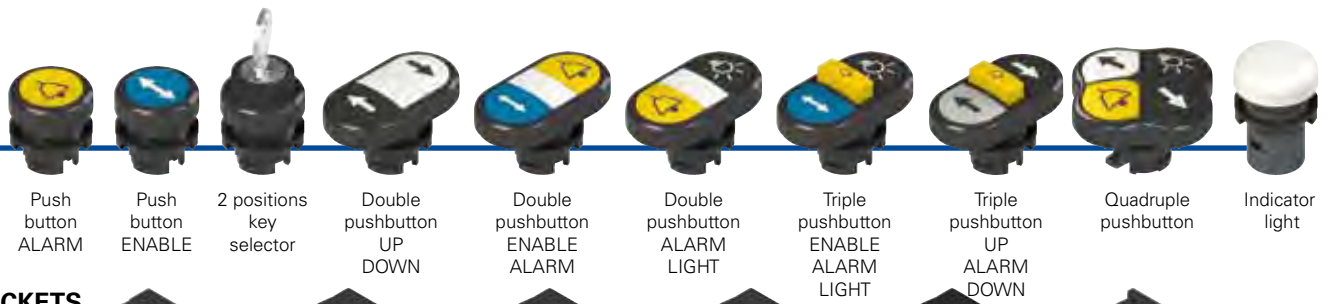
Cover without base

The EL AC series control stations are also available with a cover not provided with base. This version has been especially designed to allow direct fixing of the control station on a wall or onto the electrical panel.



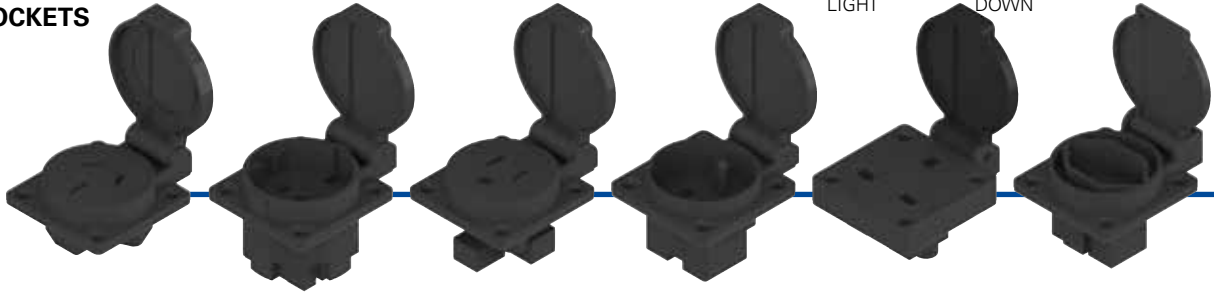
Selection diagram



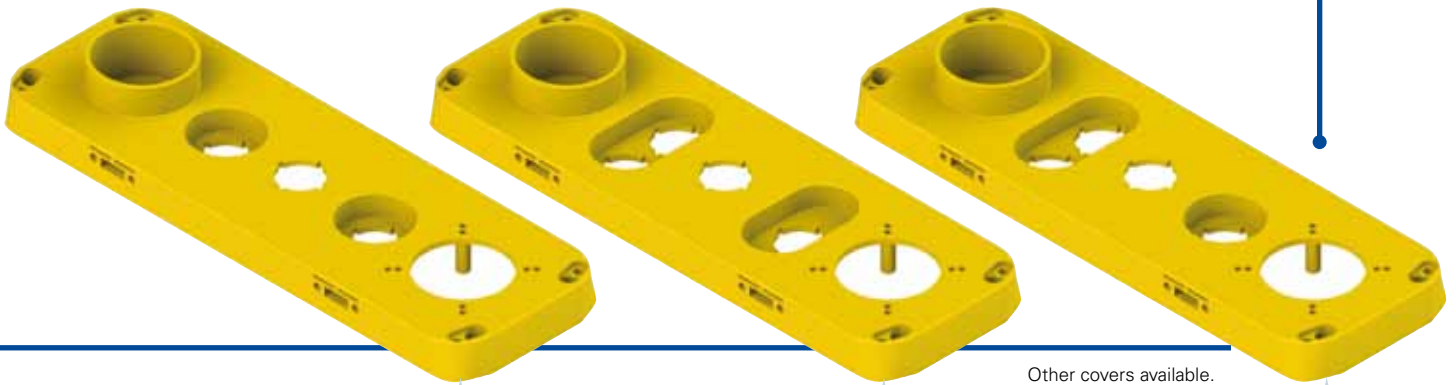


Push button ALARM Push button ENABLE 2 positions key selector Double pushbutton UP DOWN Double pushbutton ENABLE ALARM Double pushbutton ALARM LIGHT Triple pushbutton ENABLE ALARM LIGHT Triple pushbutton UP ALARM DOWN Quadruple pushbutton Indicator light

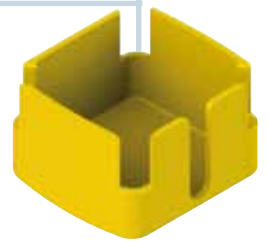
SOCKETS



China/Australia Europe schuko USA France England Swiss



Other covers available. See page 81.



Socket protection

● product option
 → accessory sold separately

Code structure

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

EL AC27010

Box shape	
7	base 280 x 90 mm

Configuration progressive number	
010	configuration 010
011	configuration 011
012	configuration 012
...



Main data

- Different configurations available
- With error-proof protection
- Protection degree IP54 or IP65
- Internal and external fixing
- Built-in devices or protected by guards
- Customized sockets

Markings and quality marks (enclosures):



Markings and quality marks (contact blocks):



Approval IMQ: CA02.04805
 Approval UL: E131787
 Approval CCC: 2013010305631156
 Approval EAC: RU C-IT ДМ94.В.01024

Technical data

Housing

Made of shock-proof, self-extinguishing polymer with double insulation , UV resistant.
 High base:

2 lateral knock out conduit entries M20 – M25 - PG 13.5 - 1/2 NPT
 2 lateral knock out conduit entries M16 - PG 11
 6 bottom knock out conduit entries M20 - PG 13.5 - 1/2 NPT

Low base:

2 lateral knock out conduit entries M20 – M25 - PG 13.5 - 1/2 NPT
 2 bottom knock out conduit entries M20 – M25 - PG 13.5 - 1/2 NPT

Base colour: Black RAL 9005

Cover colour: Yellow RAL 1023 (standard)
 Black RAL 9005 (on request)
 Yellow RAL 1023 (standard)
 Black RAL 9005 (on request)

Protection colour:

Screws materials: Galvanized steel, stainless steel on request

Protection degree: IP54 according to EN 60529
 IP65 (on request on some articles) according to EN 60529
 with cable gland having equal or higher protection degree

General data


Ambient temperature: -25°C ... +80°C

Cover screws driving torque: 1 ... 1.4 Nm

In conformity with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 N°14, EN 81-20, EN 81-50

Installation for safety applications:

Use only switches marked with the symbol . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 1-2) as stated in the standard ISO 14119, par. 5.4.

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, VDE 0660-206.

Electrical data

Thermal current (I_{th}): 10 A
 Rated insulation voltage (U_i): 600 Vac/dc
 Protection against short circuits: fuse 10 A 500 V type gG/gL
 Rated impulse U_{imp}: 6 kV
 Pollution degree: 3

Utilization categories

Alternate current: AC15 (50-60 Hz)

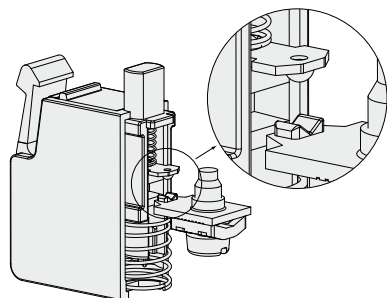
U _e (V)	24	48	120	250	400
I _e (A)	6	6	6	6	3

 Direct current: DC13

U _e (V)	24	125	250
I _e (A)	2.5	0.6	0.3

High reliability self-cleaning contacts

"V shape" self-cleaning contacts with quadruple contact points. This shape, thanks to its quadruple support, allows to reduce the probability of contact wrong switching. Furthermore it highly improves the contacts reliability in case of dust (registered patent).



Positive opening

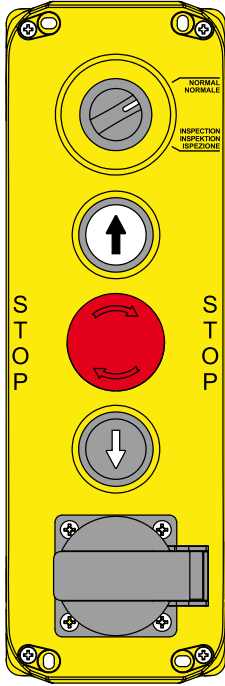
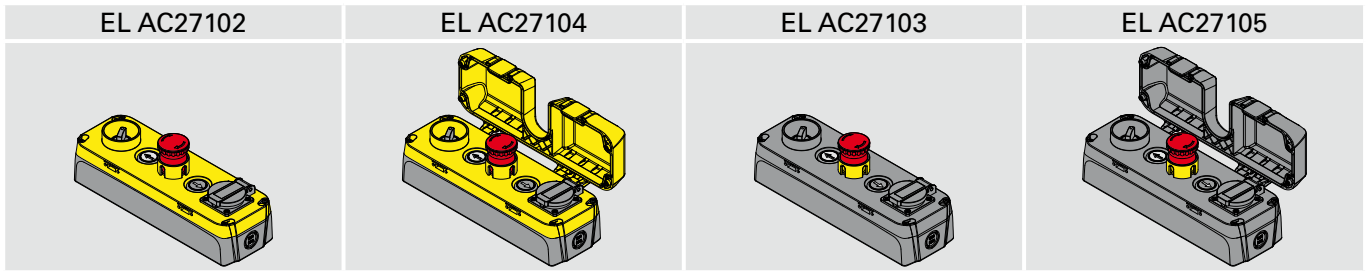
NC contact blocks are suitable for safety application, with positive opening contacts according to IEC 60947-5-1.

Data type approved by UL

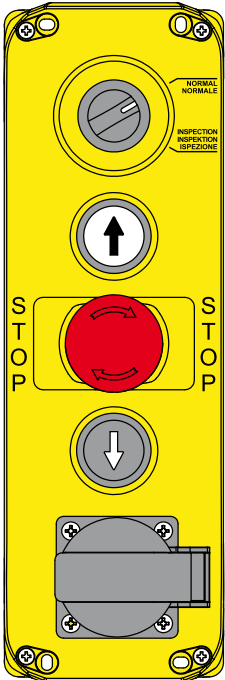
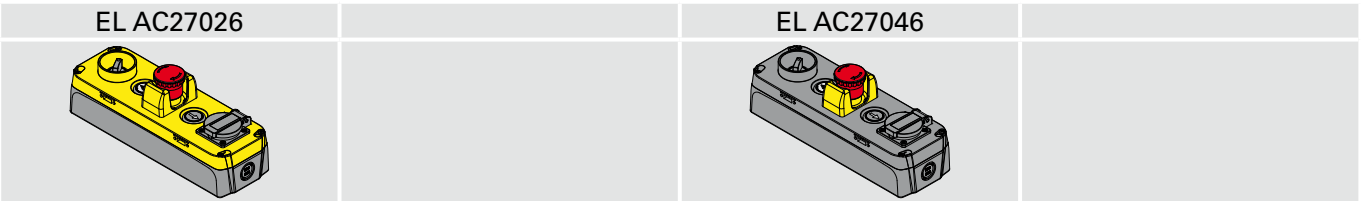
Utilization category: A600 pilot duty (720 VA, 120-600 Vac)
 Q300 pilot duty (69 VA, 125-250 Vdc)

Note:

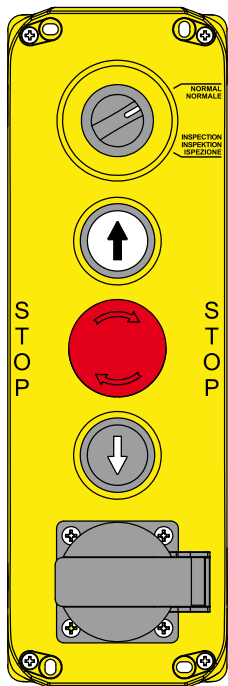
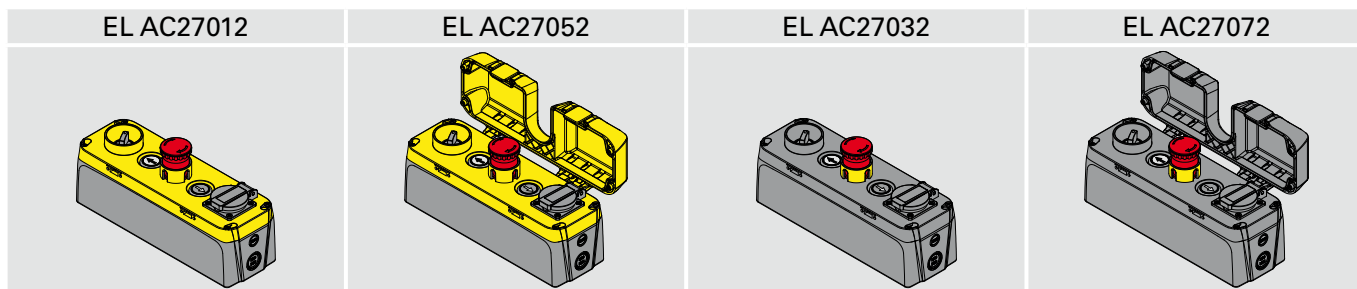
- Use copper wire (Cu) 60 or 75 °C rigid or flexible with cross section 12-20 AWG.
- Terminals tightening torque 7.1 Lb In (0.8 Nm).



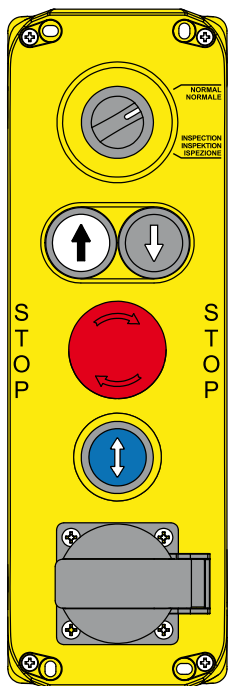
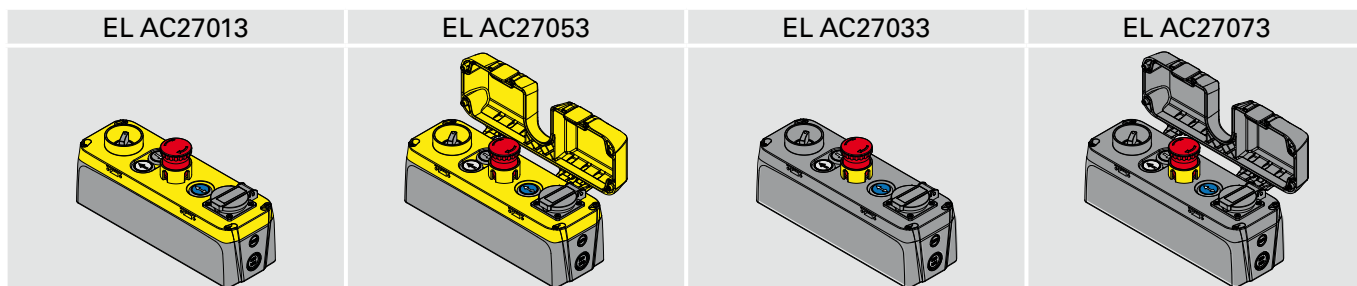
Description	Features	Wiring layout
Short handle selector - 2NO+2NC E2 1SE12AVQ11AB	recessed, 2 stay-put positions, black colour	NORMAL
Contacts 2x E2 CP10G2V1 + 2x E2 CP01G2V1	pos 2 pos 4 pos 3 pos 1 1NC ⊖ 1NC ⊖ 1NO 1NO	INSPECTION
Pushbutton UP - 2NO E2 1PU2R221L9	recessed, flush, spring-return, white colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531	turn to release, 40 mm diameter, red colour	
Slotted guard VE GP22A5A	40 mm diameter, yellow colour	
Contacts 1x E2 CP01G2V1	pos 2 pos 3 pos 1 / 1NC ⊖ /	
Pushbutton DOWN - 2NO E2 1PU2R121L10	recessed, flush, spring-return, black colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Europe socket VE PE1E1AA1	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour	
Internal protection VE GG2BA5A	internal, yellow colour	



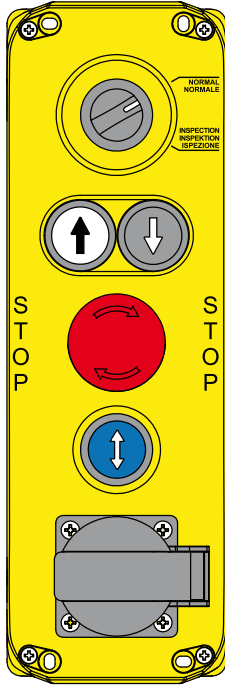
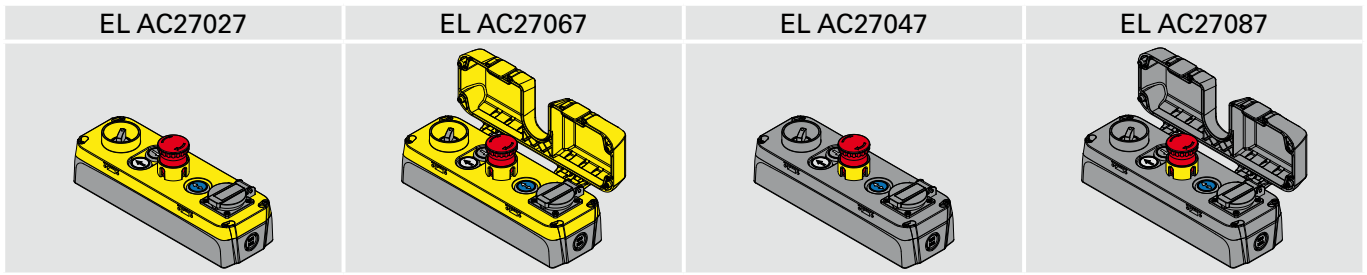
Description	Features	Wiring layout
Short handle selector - 2NO+2NC E2 1SE12AVQ11AB	recessed, 2 stay-put positions black colour	NORMAL
Contacts 2x E2 CP10G2V1 + 2x E2 CP01G2V1	pos 3 pos 2 pos 4 pos 1 1NC ⊖ 1NC ⊖ 1NO 1NO	INSPECTION
Pushbutton UP - 2NO E2 1PU2R221L9	recessed, flush, spring-return, white colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531	turn to release, 40 mm diameter, red colour	
Open guard VE GP22F5A	open rectangular, yellow colour	
Contacts 1x E2 CP01G2V1	pos 2 pos 3 pos 1 / 1NC ⊖ /	
Pushbutton DOWN - 2NO E2 1PU2R121L10	recessed, flush, spring-return, black colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Europe socket VE PE1E1AA1	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour	
Internal protection VE GG2BA5A	internal, yellow colour	



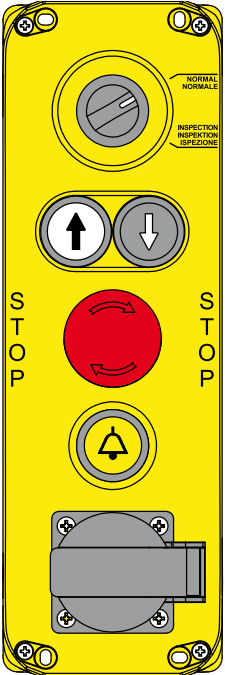
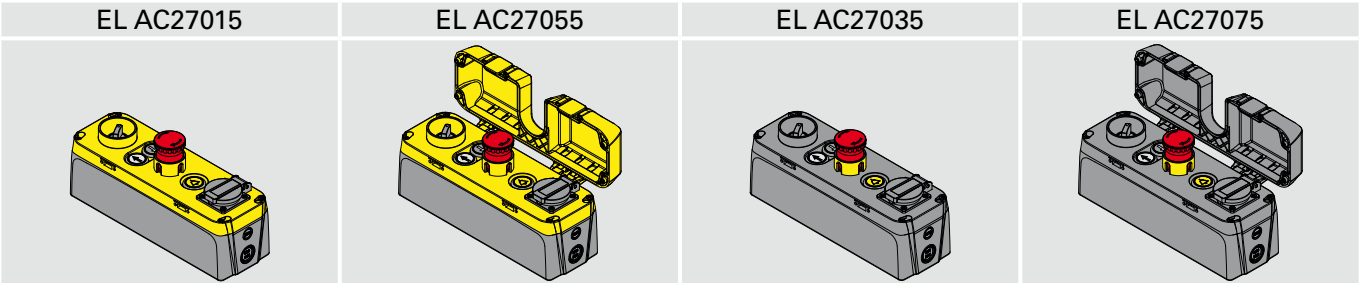
Description	Features	Wiring layout
Short handle selector - 3NO+3NC E2 1SE12AVA11AB Contacts 3x E2 CP10G2V1+ 3x E2 CP01G2V1	recessed, 2 stay-put positions, black colour pos 2 pos 3 pos 1 1NO 1NO 1NO pos 5 pos 6 pos 4 1NC ⊖ 1NC ⊖ 1NC ⊕	NORMAL INSPECTION
Pushbutton UP - 2NO E2 1PU2R221L9 Contacts 2x E2 CP10G2V1	recessed, flush, spring-return, white colour pos 2 pos 3 pos 1 1NO / 1NO	
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531 Slotted guard VE GP22A5A Contacts 1x E2 CP01G2V1	turn to release, 40 mm diameter, red colour 40 mm diameter, yellow colour pos 2 pos 3 pos 1 / 1NC ⊖ /	
Pushbutton DOWN - 2NO E2 1PU2R121L10 Contacts 2x E2 CP10G2V1	recessed, flush, spring-return, black colour pos 2 pos 3 pos 1 1NO / 1NO	
Europe socket VE PE1E1AA1 Internal protection VE GG2BA5A	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour internal, yellow colour	



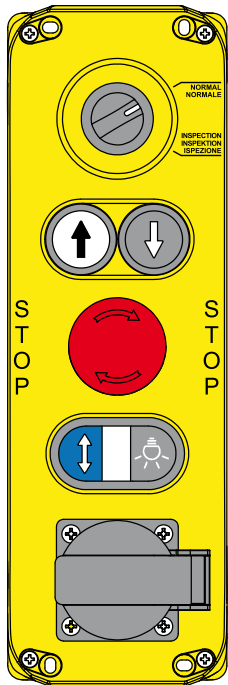
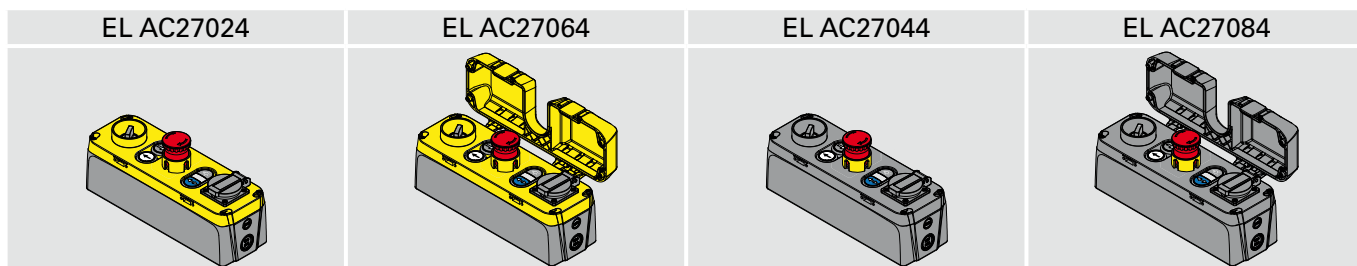
Description	Features	Wiring layout
Short handle selector - 3NO+3NC E2 1SE12AVA11AB Contacts 3x E2 CP10G2V1+ 3x E2 CP01G2V1	recessed, 2 stay-put positions, black colour pos 2 pos 3 pos 1 1NO 1NO 1NO pos 5 pos 6 pos 4 1NC ⊖ 1NC ⊖ 1NC ⊕	NORMAL INSPECTION
Pushbutton UP - 2NO E2 1PU2R221L7 Contacts 2x E2 CP10G2V1	recessed, flush, spring-return, white colour pos 2 pos 3 pos 1 1NO / 1NO	
Pushbutton DOWN - 2NO E2 1PU2R121L8 Contacts 2x E2 CP10G2V1	recessed, flush, spring-return, black colour pos 2 pos 3 pos 1 1NO / 1NO	
Emergency pushbutton Ø 40 - 2NC E2 1PERZ4531 Slotted guard VE GP22A5A Contacts 2x E2 CP01G2V1	turn to release, 40 mm diameter, red colour 40 mm diameter, yellow colour pos 2 pos 3 pos 1 1NC ⊖ / 1NC ⊕	
Pushbutton ENABLE - 2NO E2 1PU2R621L174 Contacts 2x E2 CP10G2V1	recessed, flush, spring-return, blue colour pos 2 pos 3 pos 1 1NO / 1NO	
Europe socket VE PE1E1AA1 Internal protection VE GG2BA5A	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour internal, yellow colour	



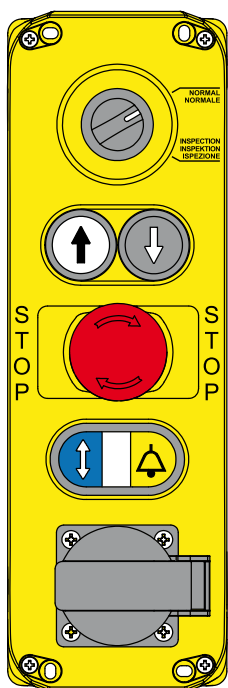
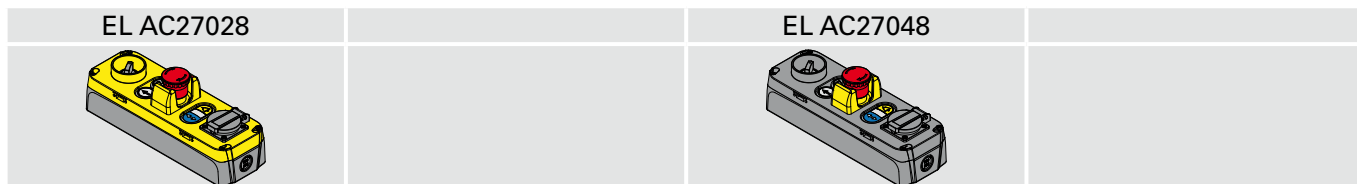
Description	Features	Wiring layout
Short handle selector - 2NO+2NC E2 1SE12AVQ11AB	recessed, 2 stay-put positions, black colour	NORMAL
Contacts 2x E2 CP10G2V1 + 2x E2 CP01G2V1	pos 2 pos 4 pos 3 pos 1 1NC ⊖ 1NC ⊖ 1NO 1NO	INSPEZIONE
Pushbutton UP - 2NO+2NC E2 1PU2R221L7	recessed, flush, spring-return, white colour	
Contacts E2 CP11G2V1 + E2 CP10G2V1 + E2 CP01G2V1	pos 2 pos 3 pos 1 1NO+1NC 1NO 1NC ⊖	
Pushbutton DOWN - 2NO+2NC E2 1PU2R121L8	recessed, flush, spring-return, black colour	
Contacts E2 CP01G2V1 + E2 CP10G2V1 + E2 CP11G2V1	pos 2 pos 3 pos 1 1NC ⊖ 1NO 1NO+1NC	
Emergency pushbutton Ø 40 - 2NC E2 1PERZ4531	turn to release, 40 mm diameter, red colour	
Slotted guard VE GP22A5A	40 mm diameter, yellow colour	
Contacts 2x E2 CP01G2V1	pos 2 pos 3 pos 1 1NC ⊖ / 1NC ⊖	
Pushbutton ENABLE - 2NO E2 1PU2R621L174	recessed, flush, spring-return, blue colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Europe socket VE PE1E1AA1	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour	
Internal protection VE GG2BA5A	internal, yellow colour	



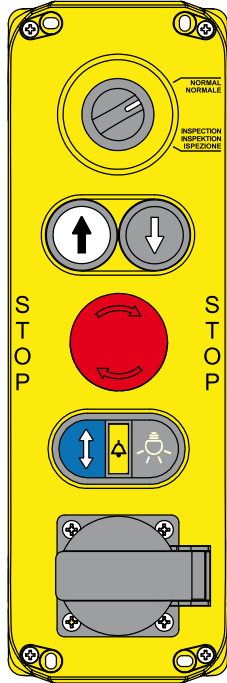
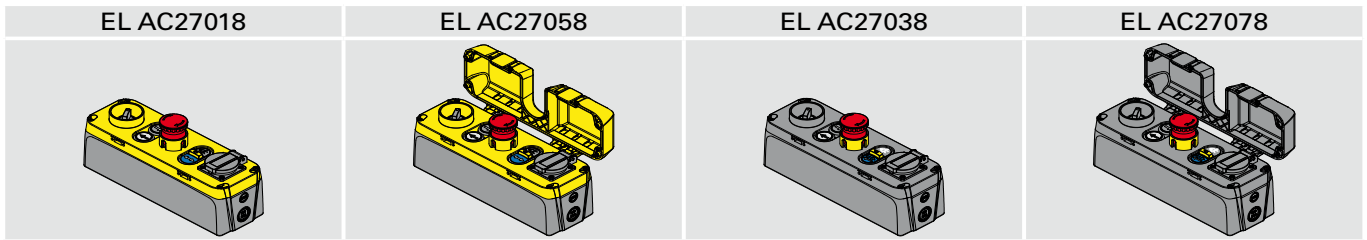
Description	Features	Wiring layout
Short handle selector - 3NO+3NC E2 1SE12AVA11AB	recessed, 2 stay-put positions, black colour	NORMAL
Contacts 3x E2 CP10G2V1 + 3x E2 CP01G2V1	pos 2 pos 3 pos 1 1NO 1NO 1NO pos 5 pos 6 pos 4 1NC ⊖ 1NC ⊖ 1NC ⊖	INSPEZIONE
Pushbutton UP - 2NO E2 1PU2R221L7	recessed, flush, spring-return, white colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Pushbutton DOWN - 2NO E2 1PU2R121L8	recessed, flush, spring-return, black colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Emergency pushbutton Ø 40 - 2NC E2 1PERZ4531	turn to release, 40 mm diameter, red colour	
Slotted guard VE GP22A5A	40 mm diameter, yellow colour	
Contacts 2x E2 CP01G2V1	pos 2 pos 3 pos 1 1NC ⊖ / 1NC ⊖	
Pushbutton ALARM - 1NO+1NC E2 1PU2R521L32	recessed, flush, spring-return, yellow colour	
Contacts 1x E2 CP10G2V1 + 1x E2 CP01G2V1	pos 2 pos 3 pos 1 1NO / 1NC ⊖	
Europe socket VE PE1E1AA1	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour	
Internal protection VE GG2BA5A	internal, yellow colour	



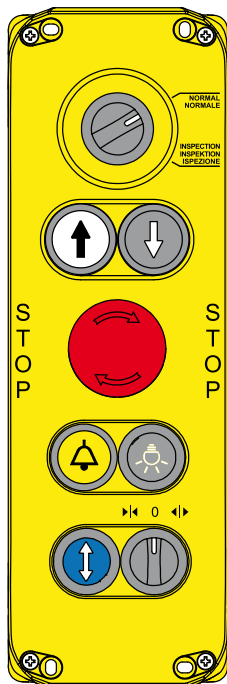
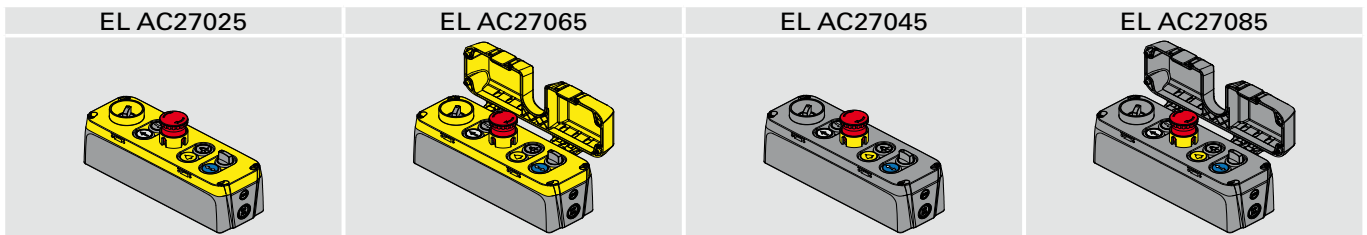
Description	Features	Wiring layout
Short handle selector - 3NO+3NC E2 1SE12AVA11AB Contacts 3x E2 CP10G2V1+ 3x E2 CP01G2V1	recessed, 2 stay-put positions, black colour pos 2 pos 3 pos 1 1NO 1NO 1NO pos 5 pos 6 pos 4 1NC ⊖ 1NC ⊖ 1NC ⊖	NORMAL INSPECTION
Pushbutton UP - 2NO+1NC E2 1PU2R221L7 Contacts 2x E2 CP10G2V1+ 1x E2 CP01G2V1	recessed, flush, spring-return, white colour pos 2 pos 3 pos 1 1NO 1NC ⊖ 1NO	
Pushbutton DOWN - 2NO+1NC E2 1PU2R121L8 Contacts 2x E2 CP10G2V1+ 1x E2 CP01G2V1	recessed, flush, spring-return, black colour pos 2 pos 3 pos 1 1NO 1NC ⊖ 1NO	
Emergency pushbutton Ø 40 - 2NC E2 1PERZ4531 Slotted guard VE GP22A5A Contacts 2x E2 CP01G2V1	turn to release, 40 mm diameter, red colour 40 mm diameter, yellow colour pos 2 pos 3 pos 1 1NC ⊖ / 1NC ⊖	
Double pushbutton: ENABLE - 2NO LIGHT - 1NO E2 1PDRL1AADC Contacts 3x E2 CP10G2V1	recessed, flush, spring-return blue pushbutton ENABLE white indicator light black pushbutton LIGHT pos 2 pos 3 pos 1 1NO / 1NO pos 5 pos 6 pos 4 1NO / 1NO	
Europe socket VE PE1E1AA1 Internal protection VE GG2BA5A	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour internal, yellow colour	



Description	Features	Wiring layout
Short handle selector - 2NO+2NC E2 1SE12AVQ11AB Contacts 2x E2 CP10G2V1+ 2x E2 CP01G2V1	recessed, 2 stay-put positions, black colour pos 3 pos 2 pos 4 pos 1 1NC ⊖ 1NC ⊖ 1NO 1NO	NORMAL INSPECTION
Pushbutton UP - 2NO+1NC E2 1PU2R221L7 Contacts 2x E2 CP10G2V1+ 1x E2 CP01G2V1	recessed, flush, spring-return, white colour pos 2 pos 3 pos 1 1NO 1NC ⊖ 1NO	
Pushbutton DOWN - 2NO+1NC E2 1PU2R121L8 Contacts 2x E2 CP10G2V1+ 1x E2 CP01G2V1	recessed, flush, spring-return, black colour pos 2 pos 3 pos 1 1NO 1NC ⊖ 1NO	
Emergency pushbutton Ø 40 - 2NC E2 1PERZ4531 Open guard VE GP22F5A Contacts 2x E2 CP01G2V1	turn to release, 40 mm diameter, red colour open rectangular, yellow colour pos 2 pos 3 pos 1 1NC ⊖ / 1NC ⊖	
Double pushbutton: ENABLE - 1NO ALARM - 1NO E2 1PDRL1AADJ Contacts 2x E2 CP10G2V1	recessed, flush, spring-return blue pushbutton ENABLE white indicator light yellow pushbutton ALARM pos 2 pos 3 pos 1 1NO / 1NO	
Europe socket VE PE1E1AA1 Internal protection VE GG2BA5A	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour internal, yellow colour	

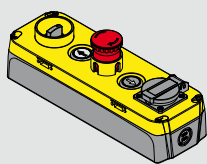


Description	Features	Wiring layout
Short handle selector - 3NO+3NC E2 1SE12AVA11AB Contacts 3x E2 CP10G2V1 + 3x E2 CP01G2V1	recessed, 2 stay-put positions, black colour pos 2 1NO pos 5 1NC ⊖ pos 3 1NO pos 6 1NC ⊖ pos 1 1NO pos 4 1NC ⊖	NORMAL INSPECTION
Pushbutton UP - 2NO+1NC E2 1PU2R221L7 Contacts 2x E2 CP10G2V1 + 1x E2 CP01G2V1	recessed, flush, spring-return, white colour pos 2 1NO pos 3 1NC ⊖ pos 1 1NO	
Pushbutton DOWN - 2NO+1NC E2 1PU2R121L8 Contacts 2x E2 CP10G2V1 + 1x E2 CP01G2V1	recessed, flush, spring-return, black colour pos 2 1NO pos 3 1NC ⊖ pos 1 1NO	
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531 Slotted guard VE GP22A5A Contacts 1x E2 CP01G2V1	turn to release, 40 mm diameter, red colour 40 mm diameter, yellow colour pos 2 / pos 3 1NC ⊖ pos 1 /	
Triple pushbutton: ENABLE - 1NO ALARM - 1NO LIGHT - 1NO E2 1PTRS1AAAdk Contacts 3x E2 CP10G2V1	recessed, flush, spring-return blue pushbutton ENABLE yellow pushbutton ALARM black pushbutton LIGHT pos 2 1NO pos 3 1NO pos 1 1NO	
Europe socket VE PE1E1AA1 Internal protection VE GG2BA5A	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour internal, yellow colour	

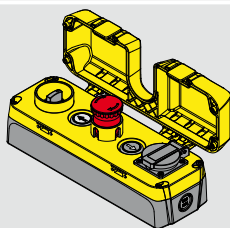


Description	Features	Wiring layout
Short handle selector - 3NO+3NC E2 1SE12AVA11AB Contacts 3x E2 CP10G2V1 + 3x E2 CP01G2V1	recessed, 2 stay-put positions, black colour pos 2 1NO pos 5 1NC ⊖ pos 3 1NO pos 6 1NC ⊖ pos 1 1NO pos 4 1NC ⊖	NORMAL INSPECTION
Pushbutton UP - 2NO E2 1PU2R221L7 Contacts 2x E2 CP10G2V1	recessed, flush, spring-return, white colour pos 2 1NO pos 3 / pos 1 1NO	
Pushbutton DOWN - 2NO E2 1PU2R121L8 Contacts 2x E2 CP10G2V1	recessed, flush, spring-return, black colour pos 2 1NO pos 3 / pos 1 1NO	
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531 Slotted guard VE GP22A5A Contacts 1x E2 CP01G2V1	turn to release, 40 mm diameter, red colour 40 mm diameter, yellow colour pos 2 / pos 3 1NC ⊖ pos 1 /	
Pushbutton ALLARM - 1NO E2 1PU2R521L32 Contacts 2x E2 CP10G2V1	recessed, flush, spring-return, yellow colour pos 2 / pos 3 1NO pos 1 /	
Pushbutton LIGHT - 1NO E2 1PU2R121L16 Contact 1x E2 CP10G2V1	recessed, flush, spring-return, black colour pos 2 / pos 3 1NO pos 1 /	
Pushbutton ENABLE - 2NO E2 1PU2R621L170 Contacts 2x E2 CP10G2V1	recessed, flush, spring-return, blue colour pos 2 1NO pos 3 / pos 1 1NO	
Short handle selector DOOR - 2NO E2 1SE13ACA11AB Contacts 2x E2 CP10G2V1	recessed, spring-return-stay-put-spring-return, black colour pos 2 1NO pos 3 / pos 1 1NO	

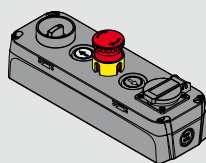
EL AC27029



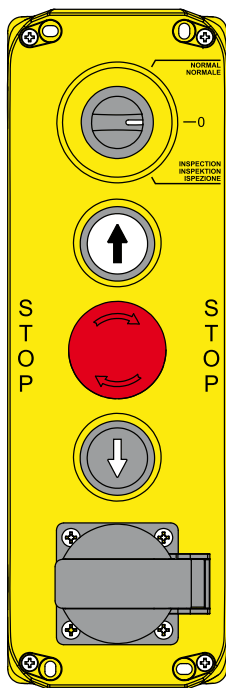
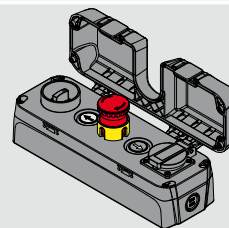
EL AC27069



EL AC27049

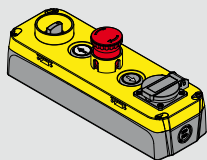


EL AC27089

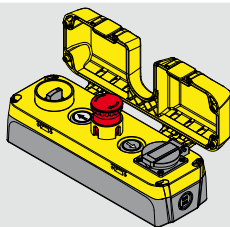


Description	Features	Wiring layout
Short handle selector - 4NO E2 1SE13ACR11AB	recessed, a 3 stay-put positions, black colour	NORMAL
Contacts 4x E2 CP10G2V1	pos 3 pos 2 pos 4 pos 1 1NO 1NO 1NO 1NO	0
		INSPECTION
Pushbutton UP - 2NO E2 1PU2R221L9	recessed, flush, spring-return, white colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531	turn to release, 40 mm diameter, red colour	
Slotted guard VE GP22A5A	40 mm diameter, yellow colour	
Contacts 1x E2 CP01G2V1	pos 2 pos 3 pos 1 / 1NC ⊖ /	
Pushbutton DOWN - 2NO E2 1PU2R121L10	recessed, flush, spring-return, black colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Europe socket VE PE1E1AA1	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour	
Internal protection VE GG2BA5A	internal, yellow colour	

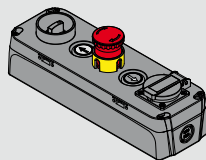
EL AC27090



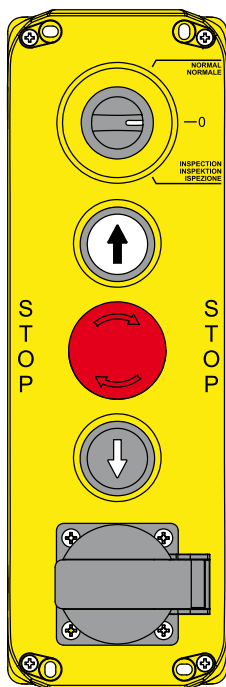
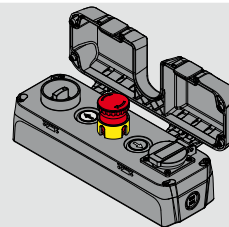
EL AC27092



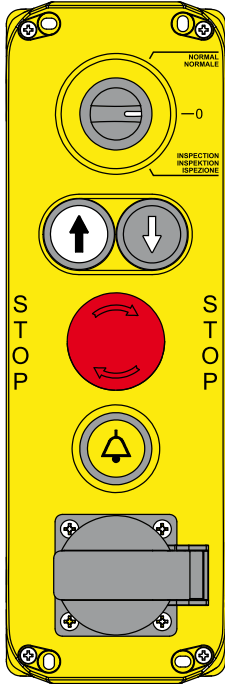
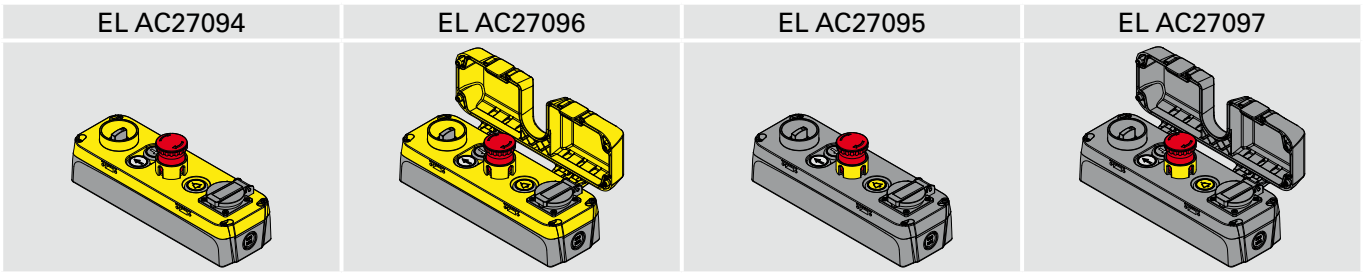
EL AC27091



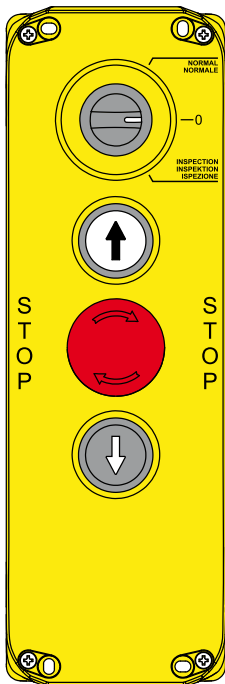
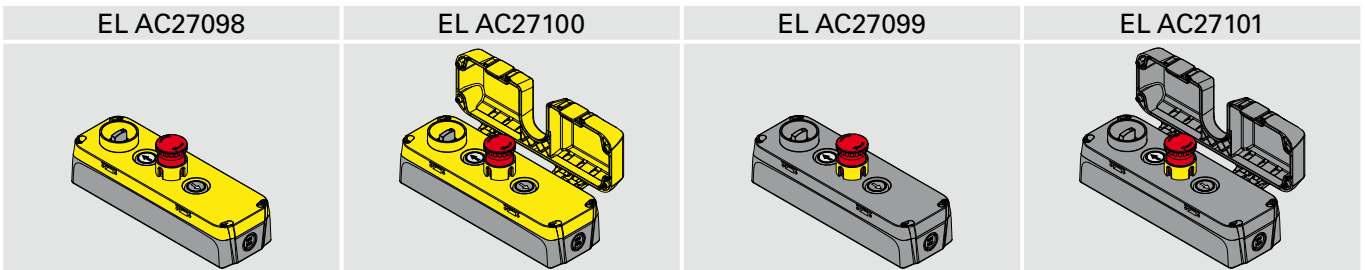
EL AC27093



Description	Features	Wiring layout
Short handle selector - 4NO E2 1SE13ACR11AB	recessed, a 3 stay-put positions, black colour	NORMAL
Contacts 4x E2 CP10G2V1	pos 3 pos 2 pos 4 pos 1 1NO 1NO 1NO 1NO	0
		INSPECTION
Pushbutton UP - 2NO+2NC E2 1PU4R221L9	recessed, flush, spring-return, white colour	
Contacts 2x E2 CP10G2V1+ 2x E2 CP01G2V1	pos 3 pos 2 pos 4 pos 1 1NC ⊖ 1NC ⊖ 1NO 1NO	
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531	turn to release, 40 mm diameter, red colour	
Slotted guard VE GP22A5A	40 mm diameter, yellow colour	
Contacts 1x E2 CP01G2V1	pos 2 pos 3 pos 1 / 1NC ⊖ /	
Pushbutton DOWN - 2NO+2NC E2 1PU4R121L10	recessed, flush, spring-return, black colour	
Contacts 2x E2 CP10G2V1+ 2x E2 CP01G2V1	pos 3 pos 2 pos 4 pos 1 1NC ⊖ 1NC ⊖ 1NO 1NO	
Europe socket VE PE1E1AA1	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour	
Internal protection VE GG2BA5A	internal, yellow colour	

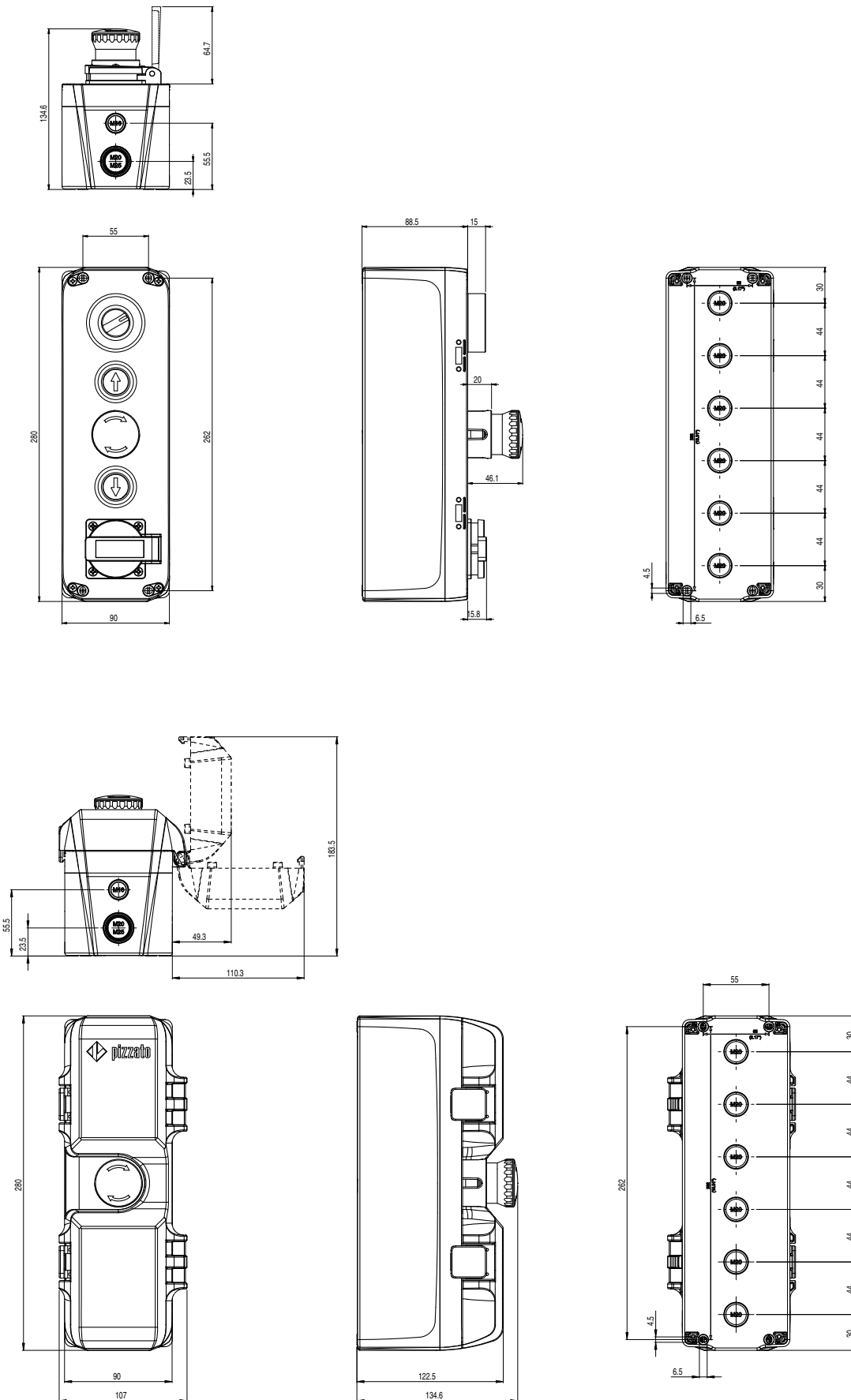


Description	Features	Wiring layout
Short handle selector - 4NO E2 1SE13ACR11AB	recessed, 3 stay-put positions, black colour	NORMAL
Contacts 4x E2 CP10G2V1	pos 3 pos 2 pos 4 pos 1 1NO 1NO 1NO 1NO	0
		INSPECTION
Pushbutton UP - 2NO E2 1PU2R221L7	recessed, flush, spring-return, white colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Pushbutton DOWN - 2NO E2 1PU2R121L8	recessed, flush, spring-return, black colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Emergency pushbutton Ø 40 - 2NC E2 1PERZ4531	turn to release, 40 mm diameter, red colour	
Slotted guard VE GP22A5A	40 mm diameter, yellow colour	
Contacts 2x E2 CP01G2V1	pos 2 pos 3 pos 1 1NC ⊖ / 1NC ⊖	
Pushbutton ALARM - 1NO+1NC E2 1PU2R521L32	recessed, flush, spring-return, yellow colour	
Contacts 1x E2 CP10G2V1 + 1x E2 CP01G2V1	pos 2 pos 3 pos 1 1NO / 1NC ⊖	
Europe socket VE PE1E1AA1	Schuko DIN 49440, 16 A 250 Vac, IP54, black colour	
Internal protection VE GG2BA5A	internal, yellow colour	

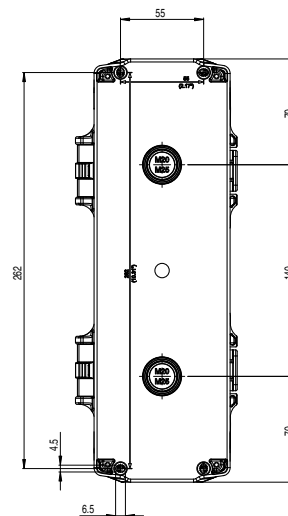
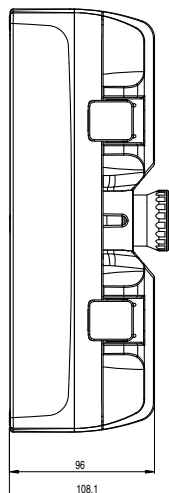
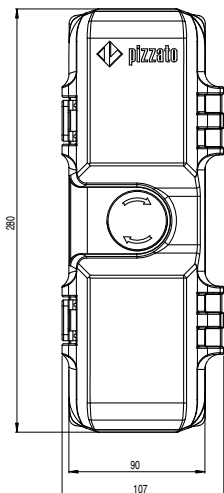
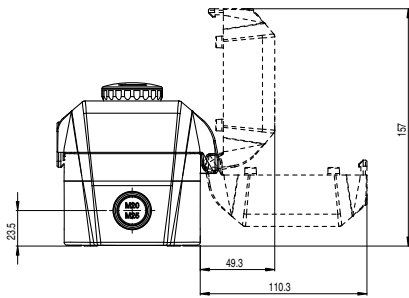
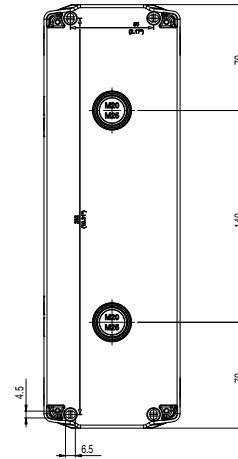
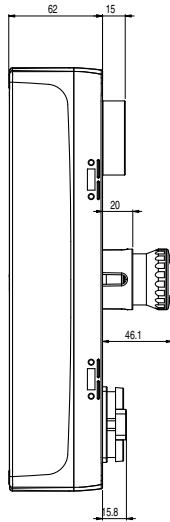
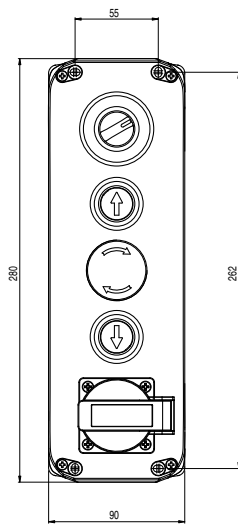
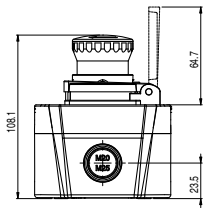


Description	Features	Wiring layout
Short handle selector- 4NO E2 1SE13ACR11AB	recessed, a 3 stay-put positions, black colour	NORMAL
Contacts 4x E2 CP10G2V1	pos 3 pos 2 pos 4 pos 1 1NO 1NO 1NO 1NO	0
		INSPECTION
Pushbutton UP - 2NO E2 1PU2R221L9	recessed, flush, spring-return, white colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531	turn to release, 40 mm diameter, red colour	
Slotted guard VE GP22A5A	40 mm diameter, yellow colour	
Contacts 1x E2 CP01G2V1	pos 2 pos 3 pos 1 / 1NC ⊖ /	
Pushbutton DOWN - 2NO E2 1PU2R121L10	recessed, flush, spring-return, black colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	










Lift control stations with high base EL AC27••• series dimensions






Lift control stations with low base EL AC27••• series dimensions



Selection table of covers EL AC series (versions for selector)

					
Internal code	25001	25068	25074	25075	25076
					
Internal code	25081	25103	25125	25129	

Selection table of covers EL AC series (versions for cam switch)

			
Internal code	25130	25131	25132

Lift control stations EL AN 21••• series dimensions

					
Internal code	25060	25101	25118	25119	25120



Introduction

Backed by the experience and knowledge acquired in over 25 years of activity in the automation world, Pizzato Elettrica confirms its capacity of proposing, even in new sectors, innovative solutions which succeed in combining an extremely practical and flexible operation with an accurately detailed linear design. The new EL AN series lift control stations by Pizzato Elettrica incorporate these latest features, and they use articles from the EROUND line as control and signalling devices. The EL AN series lift control stations have been designed to pilot the movement of lifts during control and maintenance operations.

Modularity

The control stations have been designed with the precise objective to make them as user-friendly as possible for maintenance operators, as well as to provide the widest and most versatile choice in the combination of applicable devices.

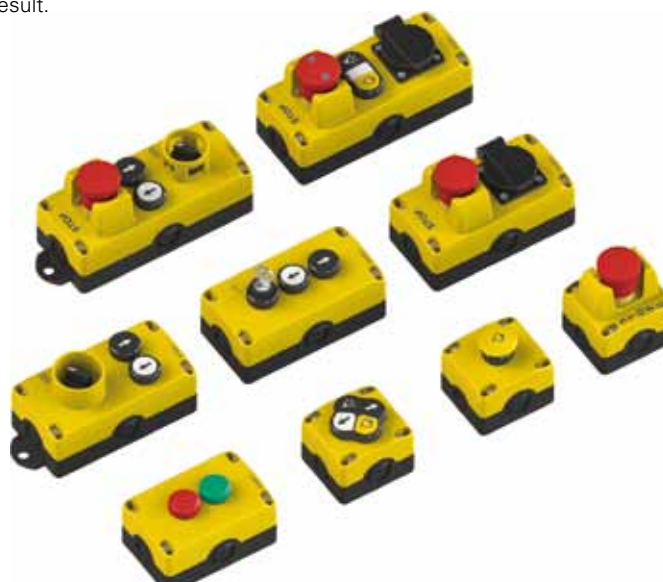
These diverse options are made possible thanks to the innovative construction of the enclosure cover (registered patent) which allows free arrangement of the perforated holes and shapes for housing various devices; such insert elements make up the whole cover, just one solid piece produced by means of a single moulding process.



Wide range

The range of EL AN series control stations includes 4 dimensions and several configurations.

The outlines and details of the new EL AN series control stations have been accurately designed, which contributes to an attractive aesthetic result.



Cam switch and selector:



In control station EL AN series can be installed rotary cam switches EH series as an alternative to the E2 series switches.

The cam switch is matched with a wide ergonomic actuation knob, available in versions with two and three stay-put positions; it can also be configured with contact diagrams according to customer requirements up to a maximum number of 8 contacts.

The covers dedicated to house the cam switches provide a suitable slot with protection guard.

Equipped with gasket below the knob provides an IP65 protection degree.

Tread-safe

EL AN series control stations can bear any impact and stress thanks to their specific design and resistant materials, fitted for heavy-duty application.



Electrical socket

The inside of the electrical socket is protected against the risk of accidental contact by means of a special removable cover.

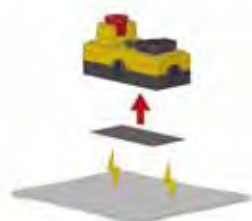
A separator (applicable in different positions) is available, to be used to separate those parts of the control stations having different voltage.

The electrical socket is always fitted to the top of the control station and not to the side, so as to make its use more convenient and its position more readily identifiable.

Available in different types, it perfectly adapts to the standards in force in the country where the lift is installed.



Magnetic bases



All control stations EL AN series can be supplied with a magnetic base applied to the bottom of the box; in this way it will be possible to anchor the control stations to metal walls and surfaces in a removable manner without needing to drill. Adhesive magnetic bases can be applied at a later time.

Sturdiness

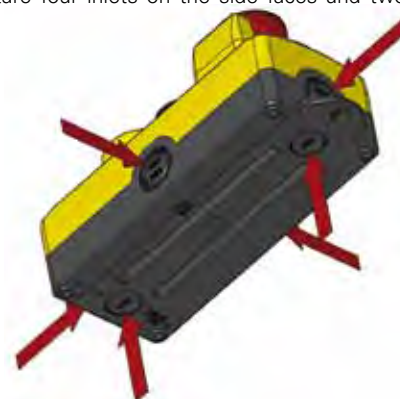
The devices are guaranteed protection against knocks and treading both by the use of sturdy guards for particularly bulky auxiliary control devices, such as the emergency pushbutton or the selector, makes the product suitable for especially heavy-duty installation areas.



Cable entries

The control station EL AN base features numerous possible knockout entries for the passage of cables, in order to ensure easy wiring.

The control stations feature four inlets on the side faces and two inlets on the lower face.



LASER marking



Pizzato Elettrica has introduced a new LASER marking system for control stations EL AC series.

Thanks to this system, which excludes the use of pad printing or labels, product marking is indelible and durable.

LASER markings for control stations EL AC series are now enriched with pictograms and symbols according to new standard 81-20; control stations can also be customized with indications, symbols and customer logos.

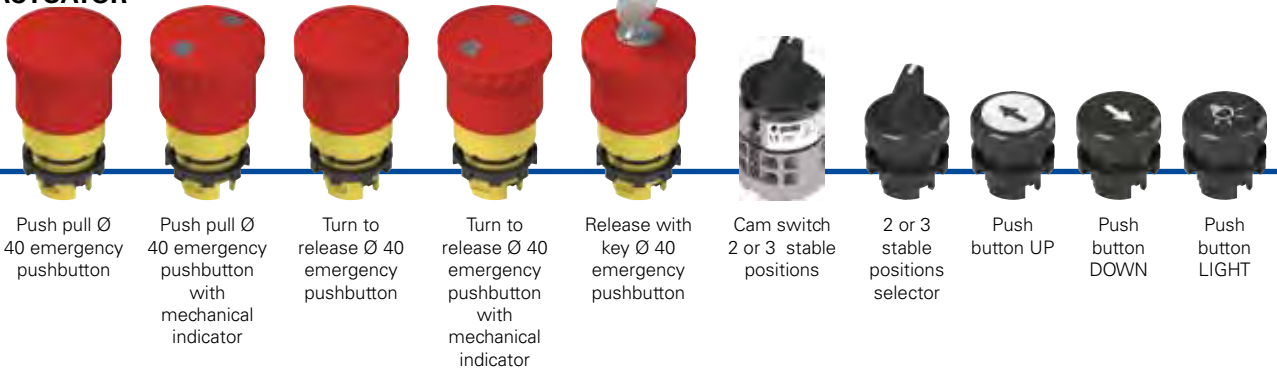
Electrical panel hanging hook



On request, the EL AN series control stations can be equipped with a special hook to hang the control stations directly on a wall or onto the electrical panel.

Selection diagram

ACTUATOR



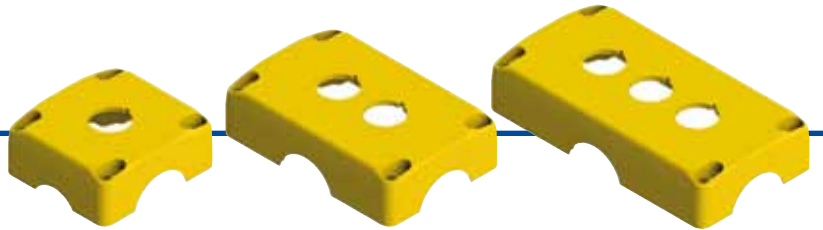
Push pull Ø 40 emergency pushbutton Push pull Ø 40 emergency pushbutton with mechanical indicator Turn to release Ø 40 emergency pushbutton Turn to release Ø 40 emergency pushbutton with mechanical indicator Release with key Ø 40 emergency pushbutton Cam switch 2 or 3 stable positions 2 or 3 stable positions selector Push button UP Push button DOWN Push button LIGHT

ACTUATOR GUARDS



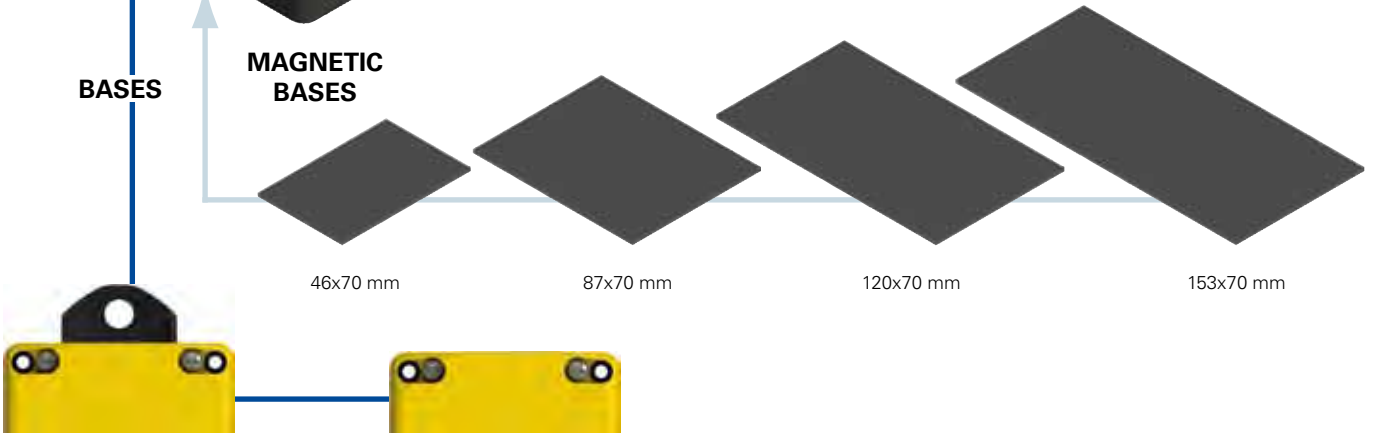
Low slotted guard Ø40x20 mm Open guard 38x66x35 mm High slotted guard Ø43x27 mm

COVER



BASES

MAGNETIC BASES



46x70 mm

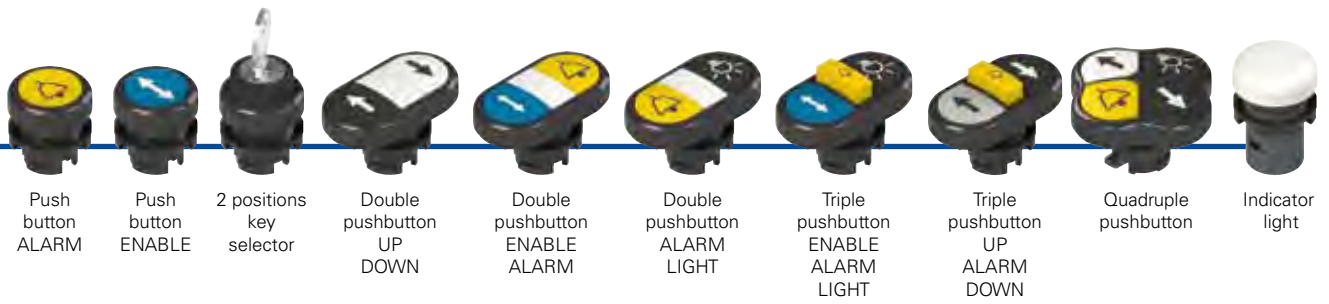
87x70 mm

120x70 mm

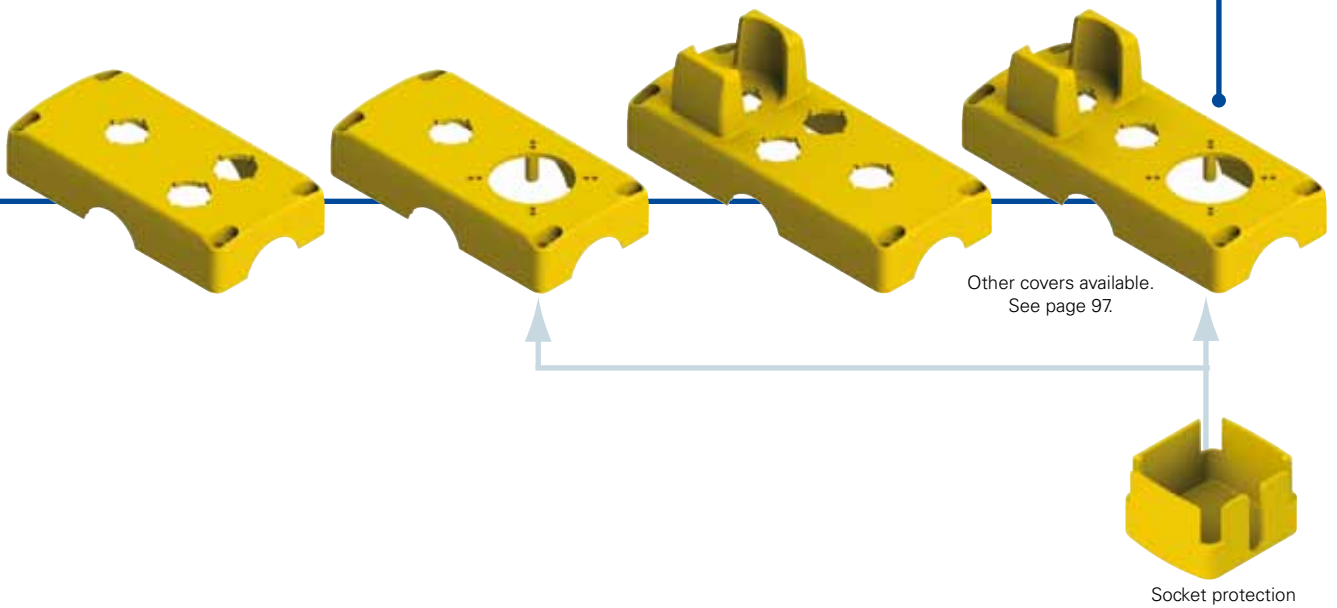
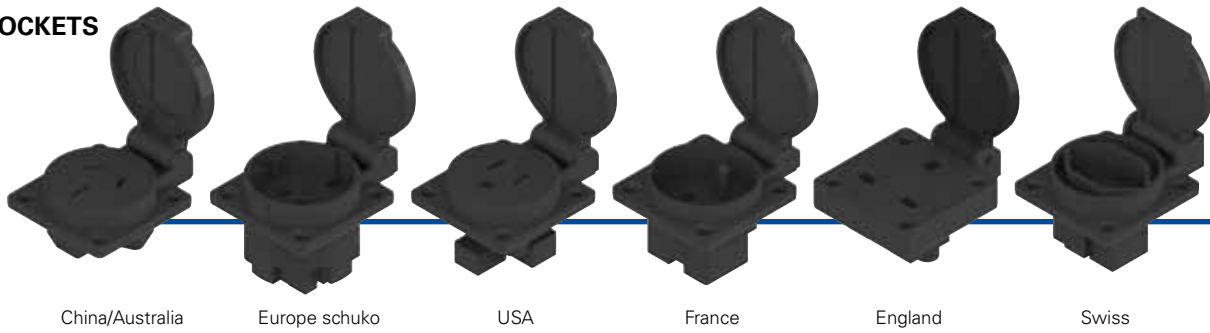
153x70 mm

Base with hook

Base without hook



SOCKETS



product option
 accessory sold separately

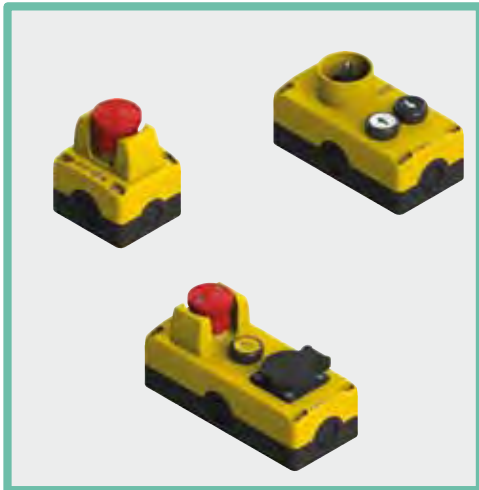
Code structure

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

EL AN23000

Box shape	
1	72x80h56 mm
2	120x80h56 mm
3	153x80h56 mm
4	186x80h56 mm

Configuration progressive number	
000	configuration 000
001	configuration 001
....



Main data

- Different configurations available
- Protection degree IP54 or IP65 or IP67
- Actuator guards
- Internal and external fixing
- Customized sockets
- Retained screws

Markings and quality marks (enclosures):




Markings and quality marks (contact blocks):



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

Technical data

Housing

Made of shock-proof, self-extinguishing polymer with double insulation , UV resistant.
 1 element box:
 2 lateral knock out conduit entries M20 - M25 - PG 13.5 - 1/2 NPT
 2 lateral knock out conduit entries M20 - PG 13.5 - 1/2 NPT
 2 bottom knock out conduit entries M16 - PG 11
 2 or more elements boxes:
 4 lateral knock out conduit entries M20 - M25 - PG 13.5 - 1/2 NPT
 2 bottom knock out conduit entries M20 - PG 13.5 - 1/2 NPT
 Base colour: Black RAL 9005
 Cover colour: Yellow RAL 1023
 Screws materials: Galvanized steel, stainless steel on request
 Protection degree: IP54 according to IEC 60529
 IP65 (on request on some articles) according to IEC 60529
 IP67 (on request on some articles) according to IEC 60529
 with cable gland having equal or higher protection degree


General data

Ambient temperature: -25°C ... +80°C
 Cover screws driving torque: 1 ... 1.4 Nm

In conformity with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 N°14, EN 81-20, EN 81-50

Installation for safety applications:

Use only switches marked with the symbol . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 1-2) as stated in the standard ISO 14119, par. 5.4.

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, VDE 0660-206.

Electrical data

Thermal current (Ith): 10 A
 Rated insulation voltage (Ui): 600 Vac/dc
 Protection against short circuits: fuse 10 A 500 V type gG/gL
 Rated impulse Uimp: 6 kV
 Pollution degree: 3

Utilization categories

Alternate current: AC15 (50-60 Hz)

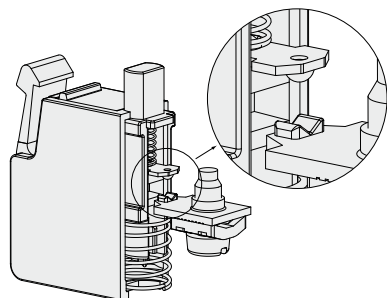
Ue (V)	24	48	120	250	400
Ie (A)	6	6	6	6	3

 Direct current: DC13

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

High reliability self-cleaning contacts

"V shape" self-cleaning contacts with quadruple contact points. This shape, thanks to its quadruple support, allows to reduce the probability of contact wrong switching. Furthermore it highly improves the contacts reliability in case of dust (registered patent).



Positive opening

NC contact blocks are suitable for safety application, with positive opening contacts according to IEC 60947-5-1.

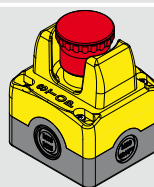
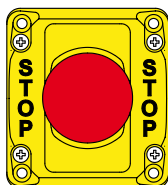
Data type approved by UL

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

Note:

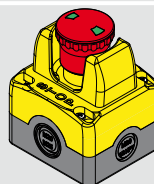
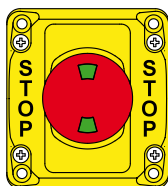
- Use copper wire (Cu) 60 or 75 °C rigid or flexible with cross section 12-20 AWG.
- Terminals tightening torque 7.1 Lb In (0.8 Nm).

EL AN21256



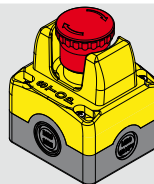
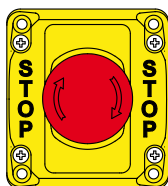
Description	Features	Wiring layout
Emergency pushbutton Ø 40 - 1NC E2 1PEPZ4531 Open guard VE GP22F5A Contacts 1x E2 CP01G2V1	push-pull, 40 mm diameter, red colour open rectangular, yellow colour	
	pos 2 / pos 3 1NC ⊖ pos 1 /	

EL AN21223



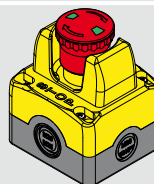
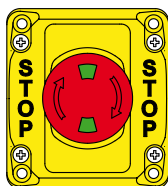
Description	Features	Wiring layout
Emergency pushbutton Ø 40 - 1NC E2 1PEPF4531 Open guard VE GP22F5A Contacts 1x E2 CP01G2V1	push-pull, with mechanical indicator, 40 mm diameter, red colour open rectangular, yellow colour	
	pos 2 / pos 3 1NC ⊖ pos 1 /	

EL AN21224



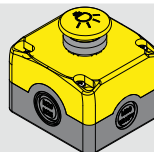
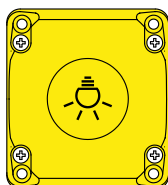
Description	Features	Wiring layout
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531 Open guard VE GP22F5A Contacts 1x E2 CP01G2V1	turn to release, 40 mm diameter, red colour open rectangular, yellow colour	
	pos 2 / pos 3 1NC ⊖ pos 1 /	

EL AN21257

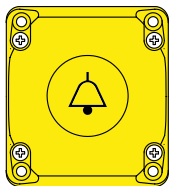


Description	Features	Wiring layout
Emergency pushbutton Ø 40 - 1NC E2 1PERF4531 Open guard VE GP22F5A Contacts 1x E2 CP01G2V1	turn to release, with mechanical indicator, 40 mm diameter, red colour open rectangular, yellow colour	
	pos 2 / pos 3 1NC ⊖ pos 1 /	

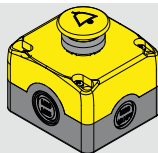
EL AN21220



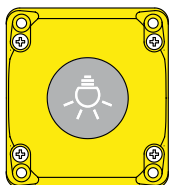
Description	Features	Wiring layout
Illuminated mushroom pushbutton Ø36 LIGHT - 1NO E2 1PL2F541L16 LED holders E2 LP1A2V1 Contacts 1x E2 CP10G2V1	36 mm diameter, spring-return, yellow colour White LED, 12 ... 30 Vac/dc	
	pos 2 / pos 3 LED pos 1 1NO	



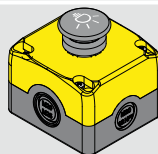
EL AN21221



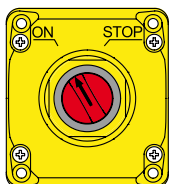
Description	Features	Wiring layout					
Mushroom pushbutton Ø 36 ALARM - 1NO E2 1PU2F541L14	36 mm diameter, spring-return, yellow colour						
Contacts 1x E2 CP10G2V1	<table border="1"> <tr> <td>pos 2</td> <td>pos 3</td> <td>pos 1</td> </tr> <tr> <td>/</td> <td>1NO</td> <td>/</td> </tr> </table>		pos 2	pos 3	pos 1	/	1NO
pos 2	pos 3	pos 1					
/	1NO	/					



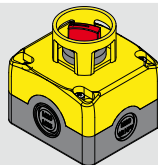
EL AN21222



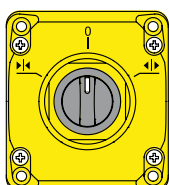
Description	Features	Wiring layout					
Mushroom pushbutton Ø 36 LIGHT - 1NO E2 1PU2F141L16	36 mm diameter, spring-return, black colour						
Contacts 1x E2 CP10G2V1	<table border="1"> <tr> <td>pos 2</td> <td>pos 3</td> <td>pos 1</td> </tr> <tr> <td>/</td> <td>1NO</td> <td>/</td> </tr> </table>		pos 2	pos 3	pos 1	/	1NO
pos 2	pos 3	pos 1					
/	1NO	/					



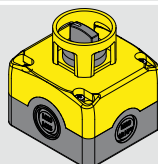
EL AN21258



Description	Features	Wiring layout					
Short handle selector - 1NC E2 1SE12AVA31AF	2 stay-put positions, red colour	<table border="1"> <tr> <td>ON</td> <td></td> </tr> <tr> <td>STOP</td> <td></td> </tr> </table>	ON		STOP		
ON							
STOP							
Ø 43 guard VE GP22B5A Contacts 1x E2 CP01G2V1	43 mm diameter, yellow colour <table border="1"> <tr> <td>pos 2</td> <td>pos 3</td> <td>pos 1</td> </tr> <tr> <td>/</td> <td>1NC ⊕</td> <td>/</td> </tr> </table>	pos 2	pos 3	pos 1	/	1NC ⊕	/
pos 2	pos 3	pos 1					
/	1NC ⊕	/					



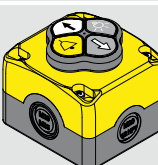
EL AN21255



Description	Features	Wiring layout						
Short handle selector - 2NO E2 1SE13GCE11AB	3 positions spring return - stay put - spring return, black colour	<table border="1"> <tr> <td>◀▶</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>▶◀</td> <td></td> </tr> </table>	◀▶		0		▶◀	
◀▶								
0								
▶◀								
Ø 43 guard VE GP22B5A Contacts 2x E2 CP10G2V1	43 mm diameter, yellow colour <table border="1"> <tr> <td>pos 2</td> <td>pos 3</td> <td>pos 1</td> </tr> <tr> <td>1NO</td> <td>/</td> <td>1NO</td> </tr> </table>	pos 2	pos 3	pos 1	1NO	/	1NO	
pos 2	pos 3	pos 1						
1NO	/	1NO						

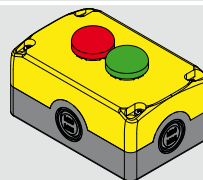
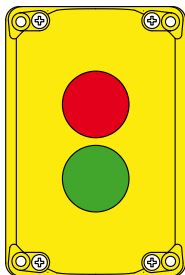


EL AN21298



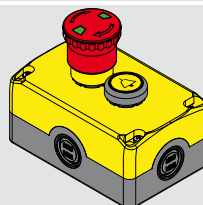
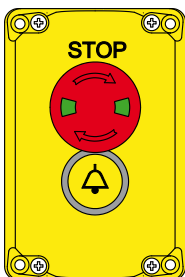
Description	Features	Wiring layout												
Quadruple pushbuttons - 4NO E2 1PQFA1QAAQ	<table border="1"> <tr> <td>flush, spring-return white colour</td> <td>flush, spring-return black colour</td> <td>flush, spring-return black colour</td> <td>flush, spring-return yellow colour</td> </tr> <tr> <td>pos 2</td> <td>pos 3</td> <td>pos 4</td> <td>pos 1</td> </tr> <tr> <td>1NO</td> <td>1NO</td> <td>1NO</td> <td>1NO</td> </tr> </table>	flush, spring-return white colour	flush, spring-return black colour	flush, spring-return black colour	flush, spring-return yellow colour	pos 2	pos 3	pos 4	pos 1	1NO	1NO	1NO	1NO	
flush, spring-return white colour	flush, spring-return black colour	flush, spring-return black colour	flush, spring-return yellow colour											
pos 2	pos 3	pos 4	pos 1											
1NO	1NO	1NO	1NO											
Contacts 4x E2 CP10G2V1														

EL AN22012



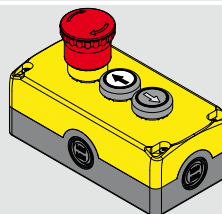
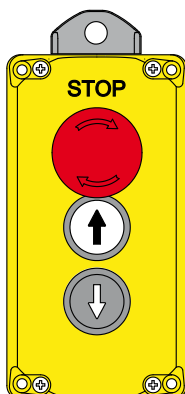
Description	Features	Wiring layout
Monolithic indicator light Ø 30 E6 1IL1A3110	30 mm diameter, red colour red, 12 ... 30 Vac/dc	
Monolithic indicator light Ø 30 E6 1IL1A4110	30 mm diameter, green colour green, 12 ... 30 Vac/dc	

EL AN22027

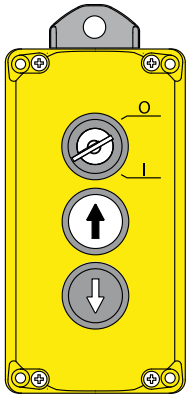


Description	Features	Wiring layout
Emergency pushbutton Ø 40 - 1NC E2 1PERF4531 Contacts 1x E2 CP01G2V1	turn to release, with mechanical indicator, 40 mm diameter, red colour pos 2 / pos 3 / 1NC ⊖ pos 1 /	
Pushbutton ALARM - 1NO E2 1PU2R521L32 Contacts 1x E2 CP10G2V1	flush, spring-return, black colour pos 2 / pos 3 / 1NO pos 1 /	

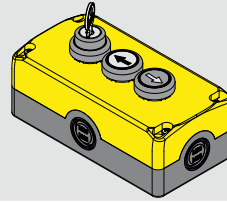
EL AN23017



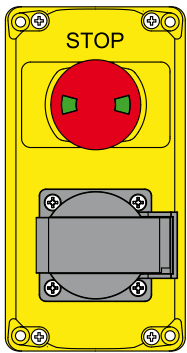
Description	Features	Wiring layout
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531 Contacts 1x E2 CP01G2V1	turn to release, 40 mm diameter, red colour pos 2 / pos 3 / 1NC ⊖ pos 1 /	
Pushbutton UP - 1NO E2 1PU2R221L9 Contacts 1x E2 CP10G2V1	flush, spring-return, white colour pos 2 / pos 3 / 1NO pos 1 /	
Pushbutton DOWN - 1NO E2 1PU2R121L10 Contacts 1x E2 CP10G2V1	flush, spring-return, black colour pos 2 / pos 3 / 1NO pos 1 /	



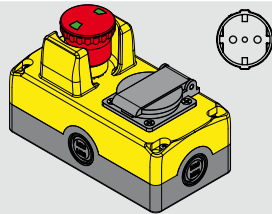
EL AN23019



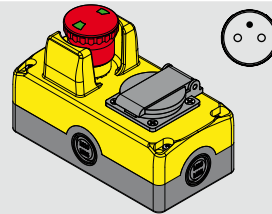
Description	Features			Wiring layout
Key selector - 1NO E2 1SC2AVA11AA	2 stay-put positions, "0" key withdrawal position, black colour			0
Contacts 1x E2 CP10G2V1	pos 2 /	pos 3 1NO	pos 1 /	
Pushbutton UP - 1NO E2 1PU2R221L9	flush, spring-return, white colour			
Contacts 1x E2 CP10G2V1	pos 2 /	pos 3 1NO	pos 1 /	
Pushbutton DOWN - 1NO E2 1PU2R121L10	flush, spring-return, black colour			
Contacts 1x E2 CP10G2V1	pos 2 /	pos 3 1NO	pos 1 /	



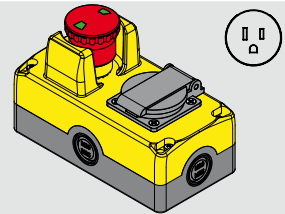
EL AN23020



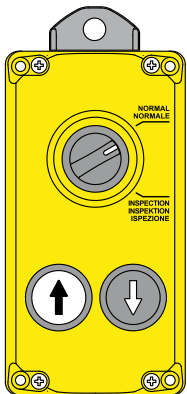
EL AN23024



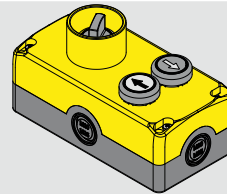
EL AN23027



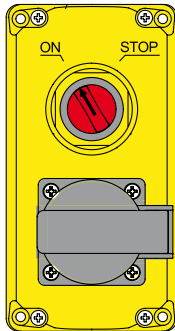
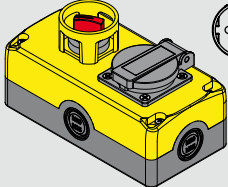
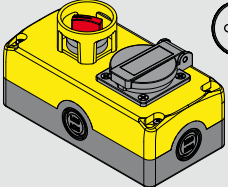
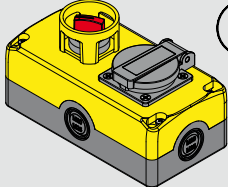





Description	Features			Wiring layout
Emergency pushbutton Ø 40 - 1NC E2 1PEPF4531	push-pull, with mechanical indicator, 40 mm diameter, red colour			
Open guard VE GP22F5A	open rectangular, yellow colour			
Contacts 1x E2 CP01G2V1	pos 2 /	pos 3 1NC ⊕	pos 1 /	Schuko 16 A 250 Vac France 16 A 250 Vac USA 15 A 125 Vac
Socket	Features see on page 95			
Internal protection VE GG2BA5A	internal, yellow colour			

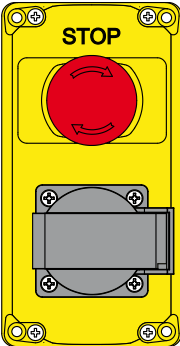
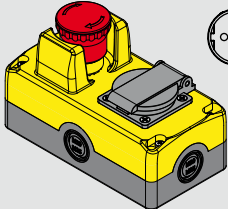
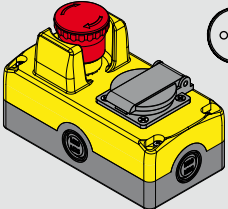
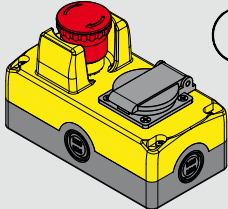






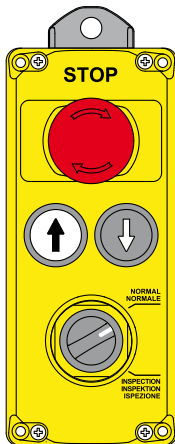
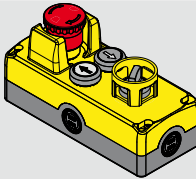





EL AN23052

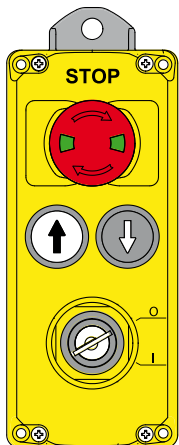


Description	Features				Wiring layout
Short handle selector - 2NC+2NO E2 1SE12AVA11AB	2 stay-put positions, black colour				NORMAL
Contacts 2x E2 CP01G2V1+2x E2 CP10G2V1	pos 3 1NC ⊕	pos 2 1NC ⊖	pos 4 1NO	pos 1 1NO	INSPECTION
Pushbutton UP - 1NO E2 1PU2R221L7	flush, spring-return, white colour				
Contacts 1x E2 CP10G2V1	pos 2 /	pos 3 1NO	pos 1 /		
Pushbutton DOWN - 1NO E2 1PU2R121L8	flush, spring-return, black colour				
Contacts 1x E2 CP10G2V1	pos 2 /	pos 3 1NO	pos 1 /		

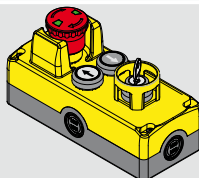
	EL AN23022	EL AN23025	EL AN23028			
						
				Description Short handle selector - 1NC E2 1SE12AVA31AF Ø 43 guard VE GP22B5A Contacts 1x E2 CP01G2V1	Features 2 stay-put positions, red colour 43 mm diameter, yellow colour pos 2 / pos 3 1NC ⊖ pos 1 /	Wiring layout ON  STOP 
				Socket Internal protection VE GG2BA5A	Features see on page 95 internal, yellow colour	 Schuko 16 A 250 Vac  France 16 A 250 Vac  USA 15 A 125 Vac

	EL AN23023	EL AN23026	EL AN23029			
						
				Description Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531 Open guard VE GP22F5A Contacts 1x E2 CP01G2V1	Features turn to release, 40 mm diameter, red colour open rectangular, yellow colour pos 2 / pos 3 1NC ⊖ pos 1 /	Wiring layout 
				Socket Internal protection VE GG2BA5A	Features see on page 95 internal, yellow colour	 Schuko 16 A 250 Vac  France 16 A 250 Vac  USA 15 A 125 Vac

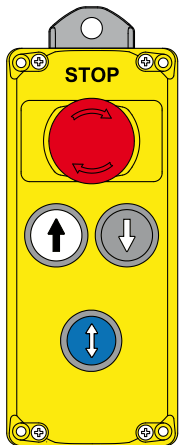
	EL AN24111			
				
		Description Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531 Contacts 1x E2 CP01G2V1	Features turn to release, 40 mm diameter, red colour pos 2 / pos 3 1NC ⊖ pos 1 /	Wiring layout 
		Description Pushbutton UP - 2NO E2 1PU2R221L7 Contacts 2x E2 CP10G2V1	Features flush, spring-return, white colour pos 2 1NO pos 3 / pos 1 1NO	
		Description Pushbutton DOWN - 2NO E2 1PU2R121L8 Contacts 2x E2 CP10G2V1	Features flush, spring-return, black colour pos 2 1NO pos 3 / pos 1 1NO	
		Description Short handle selector - 2NC+2NO E2 1SE12AVA11AB Ø 43 guard VE GP22B5A Contacts 2x E2 CP01G2V1+2x E2 CP10G2V1	Features 2 stay-put positions, black colour 43 mm diameter, yellow colour pos 2 1NC ⊖ pos 4 1NO pos 3 1NO pos 1 1NC ⊖	Wiring layout NORMAL  INSPECTION 



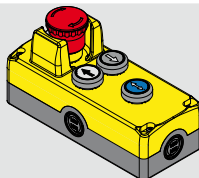
EL AN24023



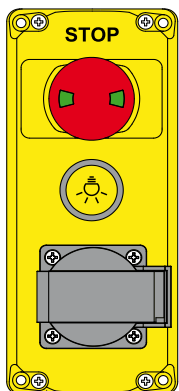
Description	Features	Wiring layout
Emergency pushbutton Ø 40 - 1NC E2 1PERF4531	turn to release, with mechanical indicator, 40 mm diameter, red colour	
Contacts 1x E2 CP01G2V1	pos 2 pos 3 pos 1 / 1NC ⊖ /	
Pushbutton UP - 2NO E2 1PU2R221L7	flush, spring-return, white colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Pushbutton DOWN - 2NO E2 1PU2R121L8	flush, spring-return, black colour	
Contacts 2x E2 CP10G2V1	pos 2 pos 3 pos 1 1NO / 1NO	
Key selector - 1NO E2 1SC2AVA11AA	2 stay-put positions, "0" key withdrawal position, black colour	
Ø 43 guard VE GP22B5A	43 mm diameter, yellow colour	
Contacts 1x E2 CP10G2V1	pos 2 pos 3 pos 1 / 1NO /	



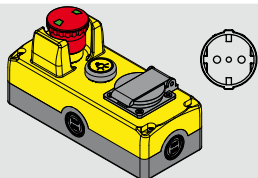
EL AN24024



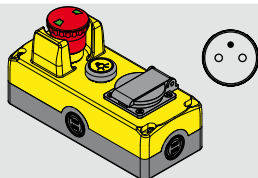
Description	Features	Wiring layout
Emergency pushbutton Ø 40 - 1NC E2 1PERZ4531	turn to release, 40 mm diameter, red colour	
Contacts 1x E2 CP01G2V1	pos 2 pos 3 pos 1 / 1NC ⊖ /	
Pushbutton UP - 1NO E2 1PU2R221L7	flush, spring-return, white colour	
Contacts 1x E2 CP10G2V1	pos 2 pos 3 pos 1 / 1NO /	
Pushbutton DOWN - 1NO E2 1PU2R121L8	flush, spring-return, black colour	
Contacts 1x E2 CP10G2V1	pos 2 pos 3 pos 1 / 1NO /	
Pushbutton ENABLE - 1NO E2 1PU2R621L74	flush, spring-return, blue colour	
Contacts 1x E2 CP10G2V1	pos 2 pos 3 pos 1 / 1NO /	



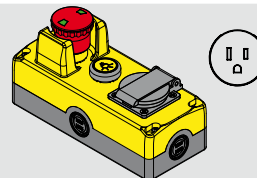
EL AN24025



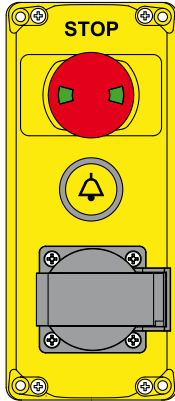
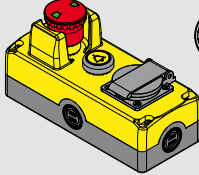

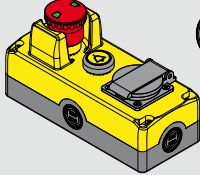

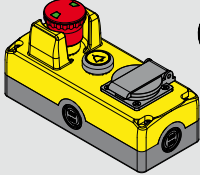






EL AN24029

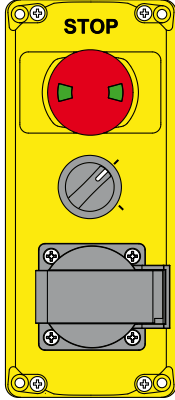
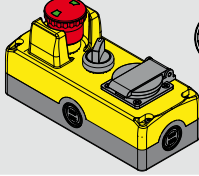

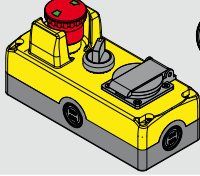

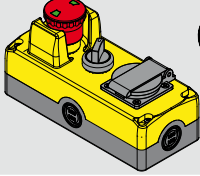








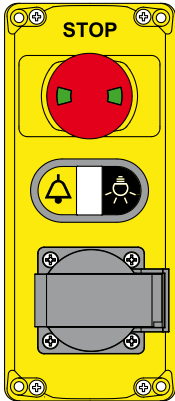
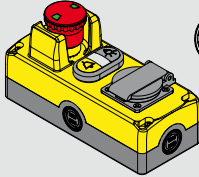

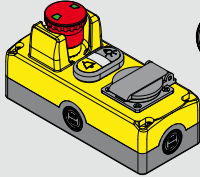

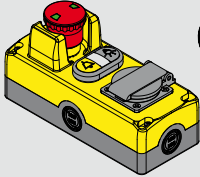






EL AN24033



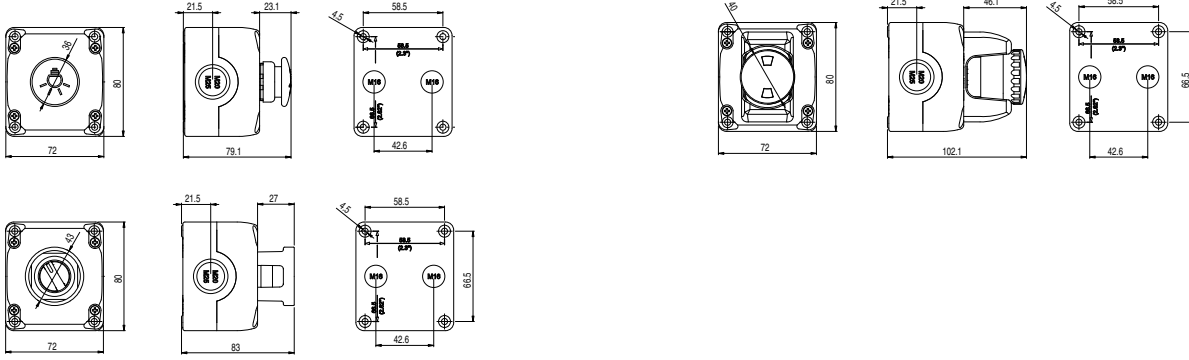
Description	Features	Wiring layout
Emergency pushbutton Ø 40 - 1NC E2 1PEPF4531	push-pull, with mechanical indicator, 40 mm diameter, red colour	
Contacts 1x E2 CP01G2V1	pos 2 pos 3 pos 1 / 1NC ⊖ /	
Illuminated pushbutton LIGHT - 1NO E2 1PL2R521L41	flush, spring-return, yellow colour	
LED holders E2 LP1A2V1	white LED, 12 ... 30 Vac/dc	
Contacts 1x E2 CP10G2V1	pos 2 pos 3 pos 1 / LED 1NO	Schuko 16 A 250 Vac France 16 A 250 Vac USA 15 A 125 Vac
Socket	Features see on page 95	
Internal protection VE GG2BA5A	internal, yellow colour	

	EL AN24026	EL AN24030	EL AN24034
	 	 	 
	Description Emergency pushbutton Ø 40 - 1NC E2 1PEPF4531 Contacts 1x E2 CP01G2V1	Features push-pull, with mechanical indicator, 40 mm diameter, red colour pos 2 / pos 3 1NC ⊖ pos 1 /	Wiring layout 
	Pushbutton ALARM - 1NO E2 1PU2R521L32 Contacts 1x E2 CP10G2V1	Features flush, spring-return, yellow colour pos 2 / pos 3 1NO pos 1 /	
	Socket Internal protection VE GG2BA5A/	Features see on page 95 internal, yellow colour	 Schuko 16 A 250 Vac  France 16 A 250 Vac  USA 15 A 125 Vac

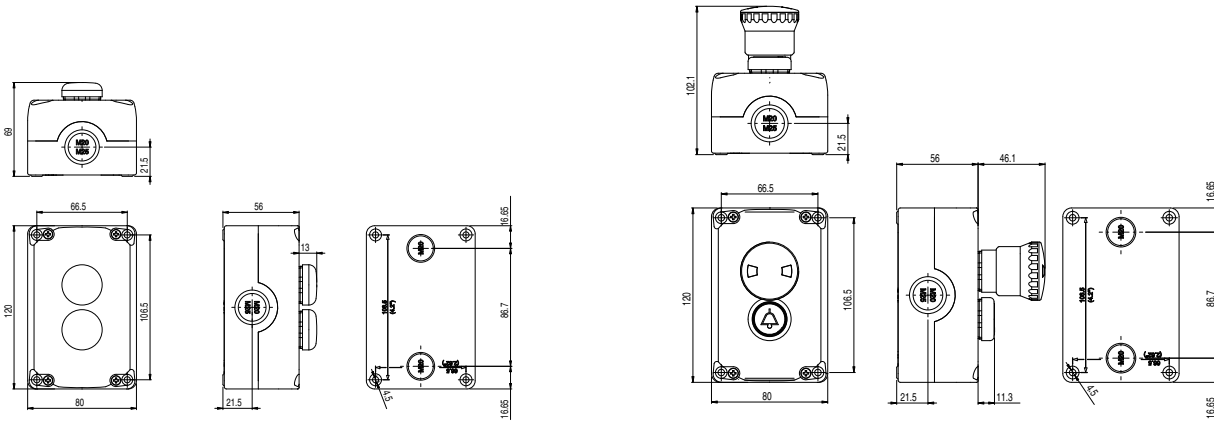
	EL AN24027	EL AN24031	EL AN24035
	 	 	 
	Description Emergency pushbutton Ø 40 - 1NC E2 1PEPF4531 Contacts 1x E2 CP01G2V1	Features push-pull, with mechanical indicator, 40 mm diameter, red colour pos 2 / pos 3 1NC ⊖ pos 1 /	Wiring layout 
	Short handle selector - 1NO+1NC E2 1SE12AVA11AB Contacts 1x E2 CP10G2V1+1x E2 CP01G2V1	Features 2 stay-put positions, black colour pos 2 1NO pos 3 / pos 1 1NC ⊖	
	Socket Internal protection VE GG2BA5A	Features see on page 95 internal, yellow colour	 Schuko 16 A 250 Vac  France 16 A 250 Vac  USA 15 A 125 Vac

	EL AN24028	EL AN24032	EL AN24036
	 	 	 
	Description Emergency pushbutton Ø 40 - 1NC E2 1PEPF4531 Contacts 1x E2 CP01G2V1	Features push-pull, with mechanical indicator, 40 mm diameter, red colour pos 2 / pos 3 1NC ⊖ pos 1 /	Wiring layout 
	Double pushbutton: ALARM - 1NO LIGHT - 1NO E2 1PDRL1AABR Contacts 2x E2 CP10G2V1	Features flush, spring-return yellow pushbutton ALARM white indicator light pos 2 1NO black pushbutton LIGHT pos 3 1NO	
	Socket Internal protection VE GG2BA5A	Features see on page 95 internal, yellow colour	 Schuko 16 A 250 Vac  France 16 A 250 Vac  USA 15 A 125 Vac

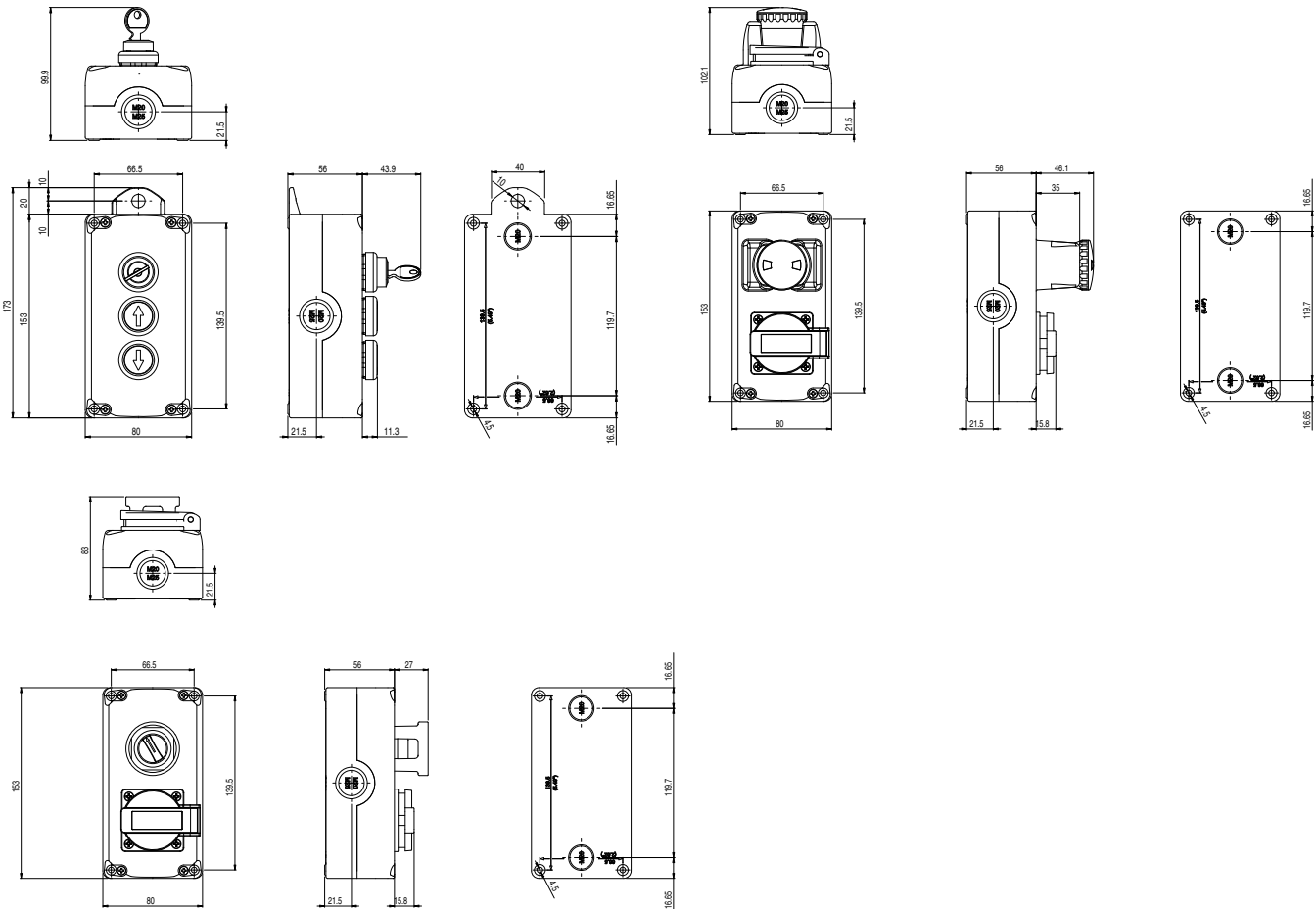
Lift control stations EL AN 21••• series dimensions



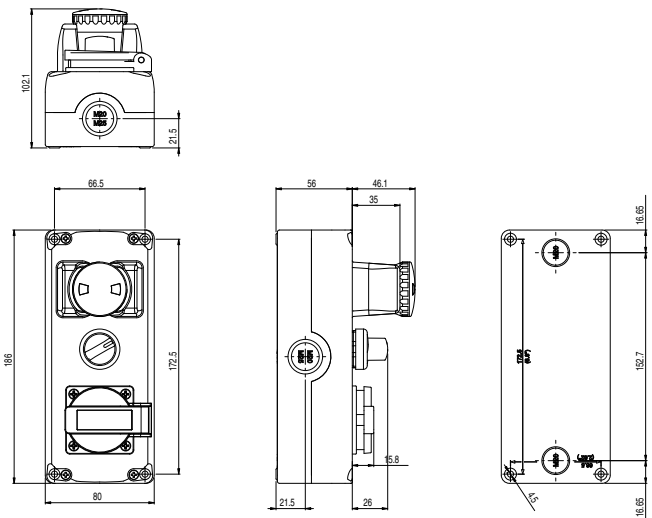
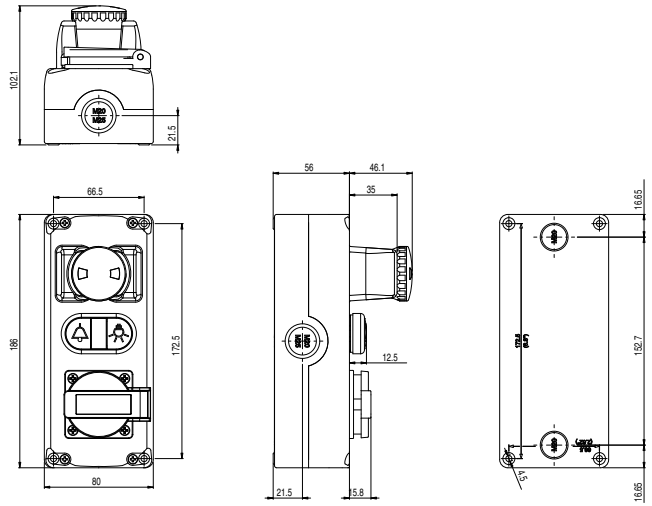
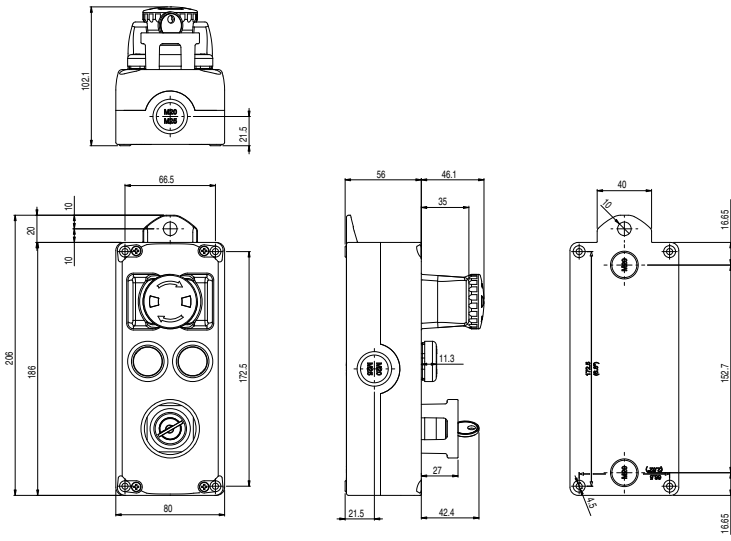
Lift control stations EL AN 22••• series dimensions




Lift control stations EL AN 23••• series dimensions





Lift control stations EL AN 24... dimensions



Lift control stations EL AN 21••• series dimensions

				
Internal code	24151			

Lift control stations EL AN 22••• series dimensions

				
Internal code	24201	24210		

Lift control stations EL AN 23••• series dimensions

				
Internal code	24251	24260	24262	24263

Lift control stations EL AN 24••• dimensions

					
Internal code	24301	24310	24313	24315	24316

Slotted protection guard



Article	Description
VE GP22A5A	Cylindrical yellow protection guard with 4 slots Ø 40x20 mm

It does not alter the device IP protection degree.

Cylindrical protection guard



Article	Description
VE GP22B5A	Cylindrical yellow Ø43x27 mm protection guard

Not suitable for emergency pushbuttons E2 1PE••••• series
It does not alter the device IP protection degree.

Open protection guard



Article	Description
VE GP22F5A	Rectangular open yellow 66x38 h35 mm protection guard

Blanking plug

10 pcs packs



Technical data:
Body and nut material: polymer
Protection degree: IP67 and IP69K
Driving torque: from 2 to 2.5 Nm
Installation prescriptions: page 3/98

Article	Description
E2 1TA1A110	Black blanking plug for Ø 22 mm holes

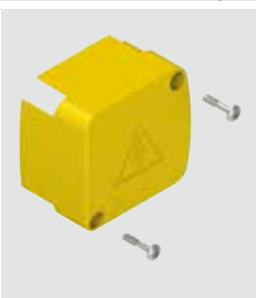
Sockets with protection IP54



Sockets complete with 4 fixing screws

Article	Shape	Description
VE PE1E1AA1		Europe Schuko + Italy IEC 60884-1 with children protection 16 A 250 Vac
VE PE1E1BA1		USA UL498/NEMA5-15 CSA22.2 nr.42 15 A 125 Vac
VE PE1E1CA1		France CEE 7/V IEC 60884-1 NFC 61314 with children protection 16 A 250 Vac
VE PE1E1DA1		England BS1363 with children protection 13 A 250 Vac
VE PE1E1EA1		Swiss IEC 60884-1 SEV 1011 10 A 250 Vac
VE PE1E1FA1		Australia / China AS/NZS 3112 15A 250 Vac

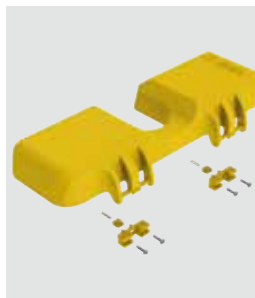
Internal socket protection



Article	Description
VE GG2BA5A	Yellow socket protection

Protection complete with 2 screws for fixing under the socket.

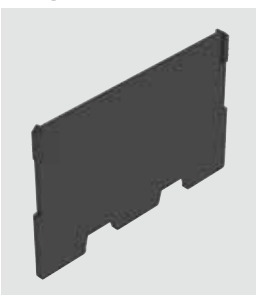
Cover protection



Article	Description
VE GG2CA5A	Yellow cover protection
VE GG2CB5A	Yellow cover protection (IP65)
VE GG2CA1A	Black cover protection (on request)

Hinges and fixing screws kit, only for control stations EL AC•••••.

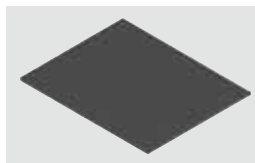
Separator



Article	Description
VE GG2DA1	Separator

Separator applicable in different positions, to be used to separate those parts of the control stations having different voltage. Only for control stations EL AN•••••.

Magnetic bases



Adhesive magnetic bases in plastoferrite to be applied on the bottom of the control stations EL AC••••• and EL AN••••• allowing to anchor them to metal surfaces.

Article	Description
VE BM2B46X70	46x70 mm for EL AN boxes
VE BM2B87X70	87x70 mm for EL AN boxes
VE BM2B120X70	120x70 mm for EL AN boxes
VE BM2B153X70	153x70 mm for EL AN boxes
VE BM2B240X70	240x70 mm for EL AC boxes

Contact blocks



Article	Contacts
E2 CP01G2V1	Slow action 1NC ⊕
E2 CP10G2V1	Slow action 1NO
E2 CP01K2V1	Lagging slow action 1NC ⊕
E2 CP10L2V1	Leading slow action 1NO

General data

Protection degree:	IP20 according to IEC 60529
Ambient temperature:	-40°C ... +80°C
Mechanical endurance:	20 million operations cycles
Max operating frequency:	3600 operations cycles/hour
Contacts material:	silver contacts
Contacts form:	"V shape" self-cleaning contacts with quadruple contact points
Screw terminal driving torque:	0.6 ... 0.8 Nm

Contact blocks

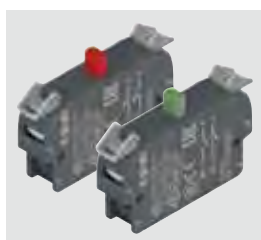


Article	Contacts
E2 CP01S2V1	slow self-monitored action 1NC ⊕

General data

Protection degree:	IP20 according to IEC 60529
Ambient temperature:	-40°C ... +80°C
Mechanical endurance:	20 million operations cycles
Max operating frequency:	3600 operations cycles/hour
Contacts material:	silver contacts
Contacts form:	"V shape" self-cleaning contacts with quadruple contact points
Screw terminal driving torque:	0.6 ... 0.8 Nm

Contact blocks



Article	Contacts
E2 CP11G2V1	Slow action 1NO+1NC ⊕
E2 CP20G2V1	Slow action 2NO
E2 CP02G2V1	Slow action 2NC ⊕

General data

Protection degree:	IP20 according to IEC 60529
Ambient temperature:	-40°C ... +80°C
Mechanical endurance:	20 million operations cycles
Max operating frequency:	3600 operations cycles/hour
Contacts material:	silver contacts
Contacts form:	"V shape" self-cleaning contacts with quadruple contact points
Screw terminal driving torque:	0.6 ... 0.8 Nm

LED holders



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

General data

Protection degree:	IP20 according to IEC 60529
Ambient temperature:	-25°C ... +70°C
Endurance:	100.000 hours (at rated voltage and ambient temperature +25 °C)
Operation voltage:	12 ... 30 Vac/dc; 5 ... 15 mA
	102 ... 138 Vac; 10 ... 12 mA
	195 ... 264 Vac; 9 ... 10 mA
Screw terminal driving torque:	0.6 ... 0.8 Nm

Fixing ring

20 pcs packs



Article	Description
VE GF121A	Polymer fixing ring



Article	Description
VE GF720A	Metal fixing ring

Fixing tool



Article	Description
VE CH121A1	Polymer fixing tool for VE GF •••• fixing rings

Fixing adapter

10 pcs packs



Article	Description
E2 1BAC11	Fixing adapter with 3 positions for E2 CP contact block and E2 LP LED holder



Article	Description
E2 1BAC21	Fixing adapter with 4 positions for E2 CP contact block
Can be exclusively combined with selectors E2 1SE••••••••, key selectors E2 1SC••••••••, pushbuttons E2 1PU••••••••, double pushbuttons E2 1PD••••••••, emergency pushbuttons E2 1PE••••••••, configured in the appropriate versions for adapters with 4 positions.	

Items with code on the **green** background are available in stock

Emergency pushbuttons



Body colour and marking	Actuator colour and marking	Push-pull	Turn to release	Push-pull with mechanical indicator	Turn to release with mechanical indicator	Release with key Key number PY333
Yellow	red	E2 1PEPZ4531	E2 1PERZ4531	E2 1PEPF4531	E2 1PERF4531	E2 1PEBZ4531
Yellow with 4 green indicating lines	red	E2 1PEPZ4731	E2 1PERZ4731	E2 1PEPF4731	E2 1PERF4731	E2 1PEBZ4731

Selectors



Actuator colour and marking	Position	2 positions		Actuator colour and marking	Position	3 positions	
		Black ring				Black ring	
black	V	E2 1SE12AVA11AB		black	↓	E2 1SE13ACE11AB	

Key selectors



Actuator colour and marking	Position	2 positions	
		Black ring	
black	V	E2 1SC2AVA11AA	

Legend

- Stay-put
- Spring-return
- Key withdrawal position

Illuminated disc

colour and marking	Article	Description
	VE DL1A5A00	Yellow illuminated disc, Ø 60 mm, 24 Vac/dc, no marking
	VE DL1A5A09	Yellow illuminated disc, Ø 60 mm, 24 Vac/dc, with marking: STOP STOP STOP STOP
	VE DL1A5A13	Yellow illuminated disc, Ø 60 mm, 24 Vac/dc, with marking:

Blinking illuminated disc

colour and marking	Article	Description
	VE DL1A5L00	Yellow illuminated disc, blinking (0.5s on 0.5s off), Ø 60 mm, 24 Vac/dc, no marking
	VE DL1A5L09	Yellow illuminated disc, blinking (0.5s on 0.5s off), Ø 60 mm, 24 Vac/dc, with marking: STOP STOP STOP STOP
	VE DL1A5L13	Yellow illuminated disc, blinking (0.5s on 0.5s off), Ø 60 mm, 24 Vac/dc, with marking:

Cam switches



Contacts								Position	Article
1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16		
NC	NO	NC	NO	-	-	-	-		EH B2A22A-P01
NO	NO	NC	NC	NC	NC	-	-		EH B2A24A-P01
NC	NO	NC	NO	NC	NO				EH B2A33A-P01
NO	NC	NO	NC	NO	NC	NC	NC		EH B2A35A-P01
NC	NO	NC	NO	NC	NO	NC	NO		EH B2A44A-P01
NC	NO	NC	NO	NC	NO	NC	NO		EH B3A44A-P01

Supplied with fixing screw and knob.
Please note: only compatible with dedicated box covers.
For further information please contact the sales dept.

General data

Protection degree according to IEC 60529: IP65 only if installed on appropriate cover
IP20 on the terminals

Ambient temperature: -25°C +55°C

Mechanical endurance: 1.5 million operation cycles at 120 operation cycles/hour

Contacts material: silver contacts

Screw terminal driving torque: 0.6 ... 0.8 Nm

Thermal current (I_{th}): 16 A

Rated insulation voltage (U_i): 660 Vac

Rated impulse withstand voltage (U_{imp}): 4 kV

Rated operation current I _e : alternate current						
Vac	AC-21A AC-22A (A)		AC23A (A-kW)		AC-3 (A-kW)	
	1PH	3PH	1PH	3PH	1PH	3PH
110	/	/	14 - 1.5	/	12 - 1.1	/
230	/	/	14 - 3.1	13 - 4.2	12 - 2.5	10 - 3.1
400	16	/	/	13 - 7.5	/	10 - 5.1

Double pushbuttons



Actuator colour and marking		Flush upper pushbutton Projecting central pushbutton Flush lower pushbutton	
		Function	Black ring
	"→" black pushbutton	DOWN	E2 1PDRL1AABS
	white indicator light		
	"←" white pushbutton	UP	
	"↑" white pushbutton	UP	E2 1PDRL1AABN
	white indicator light		
	"↓" black pushbutton	DOWN	
	yellow pushbutton	ALARM	E2 1PDRL1AADJ
	white indicator light		
	blue pushbutton	ENABLE	
	black pushbutton	LIGHT	E2 1PDRL1AABR
	white indicator light		
	yellow pushbutton	ALARM	
	black pushbutton	LIGHT	E2 1PDRL1AADL
	white indicator light		
	blue pushbutton	ENABLE	

Triple pushbuttons



Actuator colour and marking		Flush upper pushbutton Projecting central pushbutton Flush lower pushbutton	
		Function	Black ring
	black pushbutton	LIGHT	E2 1PTRS1AADK
	yellow pushbutton	ALARM	
	blue pushbutton	ENABLE	
	"→" black pushbutton	DOWN	E2 1PTRS1AABK
	yellow pushbutton	ALARM	
	"←" white pushbutton	UP	

Flush and mushroom pushbutton



Actuator colour and marking	Function	Flush Pushbuttons	Flush Ø 36 mm mushroom pushbuttons
		Black ring	Black ring
 white	UP	E2 1PU2R221L7	/
 black	DOWN	E2 1PU2R121L8	/
 black	LIGHT	E2 1PU2R121L16	E2 1PU2F141L16
 yellow	LIGHT	/	E2 1PL2F541L16
 yellow	ALARM	E2 1PU2R521L14	E2 1PU2F541L14
 blue	ENABLE	E2 1PU2R621L170	

Quadruple pushbuttons



Actuator colour and marking (starting from the top and clockwise)		flush upper pushbutton flush right pushbutton flush lower pushbutton flush left pushbutton	
		Function	black ring
	"↑" white pushbutton	UP	E2 1PQFA1QAAQ
	light icon black pushbutton	LIGHT	
	"↓" black pushbutton	DOWN	
	yellow pushbutton	ALARM	E2 1PQFA1QAAS
	"↑" white pushbutton	UP	
	light icon black pushbutton	LIGHT	
	"↓" black pushbutton	DOWN	E2 1PQFA1QAAR
	blue pushbutton	ENABLE	
	"↑" white pushbutton	UP	
	yellow pushbutton	ALARM	E2 1PQFA1QAAR
	"↓" black pushbutton	DOWN	
	blue pushbutton	ENABLE	

Items with code on the **green** background are available in stock

Monolithic illuminated indicator**10 pcs packs**

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

DIN rail adapter**10 pcs packs**

Article	Description
VE AD3PF9A0	Adapter with Ø22 hole for front fixing on DIN rail of control and signalling devices EROUND series.

Not suitable for cam switches and quadruple pushbuttons

**USB socket**

Back connection	Front connection USB 2.0 Type A integrated female socket black ring	
USB Type A integrated female socket	E2 1USB1CAK	/
outlet with cable in PVC (1.8 m long) and USB Type A male socket	/	E2 1USB1CN1.8
outlet with cable in PVC (3 m long) and USB Type A male connector	/	E2 1USB1CN3
outlet with cable in PVC (5 m long) and USB Type A male connector	/	E2 1USB1CN5

RJ45 socket

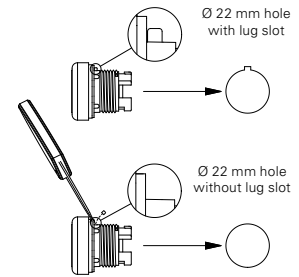
Back connection	Front connection RJ45 integrated female socket black ring	
RJ45 integrated female socket	E2 1RJ451AAK	/
Output with cable in PVC (1 m long) and RJ45 male connector	/	E2 1RJ451AN1
Output with cable in PVC (2.5 m long) and RJ45 male connector	/	E2 1RJ451AN2.5

Alignment lug

The alignment lug in the external diameter of the EROUND series devices allows to obtain an exact alignment of the device while installing it on the panel avoiding any rotation.

If the application hole does not have the lug slot, it is sufficient to remove the lug by levering it with a screwdriver and paying attention not to damage the gasket.

It is not advisable to remove the alignment lug for turn to release selector (E2 1SE, E2 1SL, E21SC series) and emergency pushbuttons (E2 1PE series) since these are devices with rotating actuation.

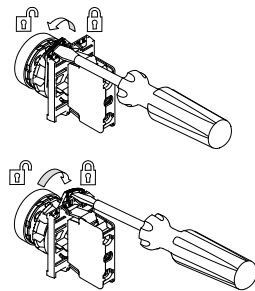


Device connection to the fixing adapter

After having fixed the control device to the panel through its proper ring, connect it to the fixing adapter by turning the locking lever.

The lever has two indications: open position (open padlock) and locked position (close padlock).

The locking lever rotation is easier if using a slotted screwdriver.

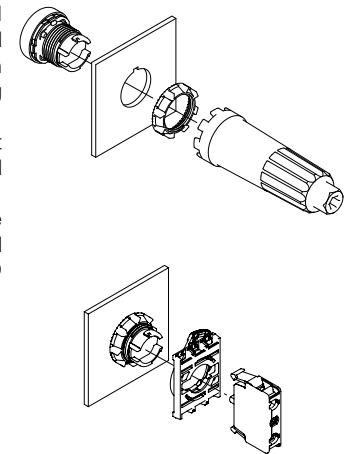


Panel fixing

The signalling and control devices have to be fixed behind the panel through a ring which has to be screwed with the fixing tool provided as accessory.

The driving torque for a correct fixing has to be between 2 and 2,5 Nm.

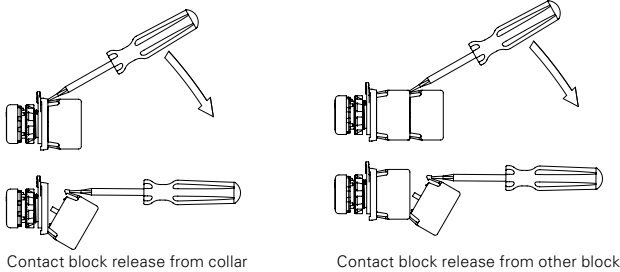
After fixing the ring it is possible to apply the fixing adapter and the panel contact block or LED holder.



Contact and LED holders hooking

Each contact and LED holders have two snap tabs which assure a stable fixing to the adapter, for panel mount versions, or to the enclosure for base fixing versions. Panel contact blocks can be hooked between them, up to a maximum of three, provided that the limits for every actuator are respected as written in the relative chapters.

Contact and LED holders are quickly removed by levering with a slotted screwdriver on the snap tabs.



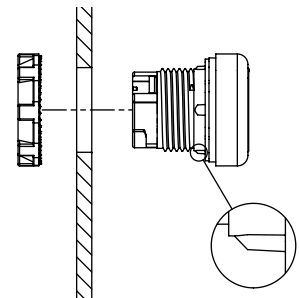
Contact block release from collar

Contact block release from other block

Gasket

Thanks to its configuration, the gasket assures a prefixing on the panel.

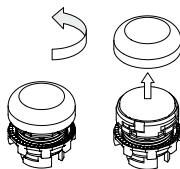
This way the ring nut can be applied with no need of keeping in position the device.



Lenses for indicator lights E2

The E2 indicator lights are provided with lenses of different colours which are interchangeable. The lenses can be fixed and removed by simply turning them clockwise and anticlockwise without needing any tool.

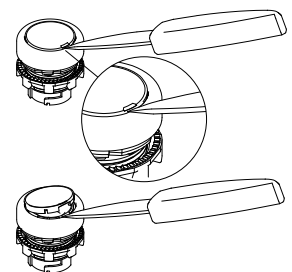
For a good chromatic output, it is necessary a correct combination of lens and LED holder colours.



Lenses for illuminated pushbuttons

Pushbuttons and illuminated pushbuttons can have interchangeable lenses too.

Their lens can be removed by putting a pointed tool under the notch on the lens external diameter and levering it.



General prescription

The product is designed to be installed into electrical board or enclosures destined to contain electric circuits. All EROUND series components and electrical devices destined to be installed inside boards or enclosures, (e.g. E2 CP, E2 CF, E2 LP, E2 LF), do not have adequate protection against: water, dust in high quantity, condensate, humidity, steam, corrosive agents, explosive and inflammable gas or other polluting agents. The boards and enclosures protection degree have to guarantee the necessary protection for the EROUND series electrical components installed inside, as according to the application.

Impacts and vibrations

- Avoid collisions with devices. Excessive impacts and vibrations could not guarantee the correct working of the device.

Devices utilization

- All devices of the EROUND series are projected for manual operation.
- Do not apply excessive force to the device once it has reached the end of its actuating travel.
- Do not pass the actuating maximum travel.
- Do not disassemble or try to repair the device, in case of defect or fault replace the whole device.
- In case the device is deformed or damaged replace it completely. There is no guarantee of working for a deformed or damage device.
- Always attached the following instructions for use in the manual of the machine were the switch is installed.
- The preservation of the following instructions for use has to allow their consultation for the whole utilization period of the device.

Wiring and installation

- The installation has to be made by qualified personnel.
- Comply with minimum distances between devices.
- Comply with the driving torque.
- Keep the electrical load beneath the value indicated on the utilization category.
- Turn off the power before access to the contacts, also during the wiring.
- Do not paint or varnish the devices.
- It is possible to install the product only on surfaces with thickness between 1 and 6mm.
- The protection degree and its correct working are guaranteed only installing the product on flat and smooth surfaces with holes diameter 22 mm according to IEC 60947-5-1.
- After and during the wiring do not pull the electrical cables connected to the contact block. If an elevate traction force is applied to the cables the contact blocks could be separated from the actuator.
- During hooking and release operation of the contact block and the fixing adapter or the enclosure base do not deform or stress the fixing tabs. Tabs deformation could cause the separations between the contact block and the fixing adapter.
- After the installation and before machine working, verify:
 - the correct device working;
 - the correct and complete locking of the E2 1BAC•1 fixing adapter to the device;
 - the correct hooking of the contact block.
- Periodically verify the devices correct working.

Do not use in the following environments:

- Environment where dust and dirt can cover the device and by sedimenting stop its correct working.
- Environment where sudden changes of temperature cause condensation.
- Environment where ice formation on the device is possible.
- Environment where the application causes knocks or vibrations which can damage the device.
- Environment with explosive and inflammable gas presence.

Utilization limits

- Use the devices following the instructions, complying with their working 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 satisfied by the different devices only if singularly taken and not in combination among them. For further information contact our Technical department.
- The utilization implies compliance and acknowledgement of the following standards: IEC 60204-1, IEC 60947-5-1, ISO 12100-1, ISO12100-2.
- Contact our Technical dept. for information and assistance (phone +39.0424.470.930 / fax +39.0424.470.955/ e-mail tech@pizzato.com) in the following cases:
 - Cases not mentioned on the following instructions;
 - 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 device working.

Additional prescription for safety application

Provided that all previous requirements for the devices installed for safety application are fulfilled, further additional prescriptions have to be observed:

- The utilization in any case implies compliance and acknowledgement of the following standards: IEC 60204-1, IEC 60947-5-1, EN 60954-1, EN 13849, EN ISO 13850, ISO 12100-1, ISO12100-2
- In the emergency mushroom the safety circuit has to be connected to NC 1-2 contacts when the device is not actuated. Auxiliary NO 3-4 contacts have to be used only in the signalling circuit.
- Always connect in series the protection fuse (or equivalent device) to 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 doesn't have to be less than one a year.
- After the installation and before machine working, verify:
 - the correct device working;
 - the correct and complete locking of the E2 1BAC•1 fixing adapter to the device;
 - the correct hooking of the contact block.
- Do not leave the key inserted in the emergency mushroom with key-release. A sudden actuation of the emergency mushroom with the key inserted could hurt the operator.



Safety modules for the lift automatic floor levelling operation according to EN 81

Main functions

- For safety applications up to SIL 3 / PL e
- Choice between automatic start, manual start or monitored start
- Connection of the input channels to opposite potentials
- Small 22.5 mm housing
- Output contacts:
2 safety NO contacts, 1 auxiliary NO opto-isolated
- Supply voltages: 24 Vac/dc
- Brief power failure insensitiveness

Utilization categories

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

U_e (V) 230

I_e (A) 3

Direct current: DC13

U_e (V) 24

I_e (A) 4

Markings, quality marks and certificates:



Approval IMQ:

Certificate Of Compliance IMQ n. 340 (Norms: EN

81-1:1998 + A3:2009, EN 81-2:1998 + A3:2009)

IMQ-type Examination Certificate n.236

(Machinery Directive)

Approval UL: E131787

Approval EAC: RU C-IT ДМ94.В.01024

Complying with the requirements requested by:

Low Voltage Directive 2006/95/EC,

Machinery Directive 2006/42/EC,

EMC Directive 2004/108/EC

Technical data

Housing

Made of polyamide PA 6.6 self-extinguishing, class V0 (UL94)

Protection degree:

IP40 (housing), IP20 (terminals)

Dimensions:

see page 108

General data

SIL level (SIL CL):

up to SIL 3 according to EN IEC 62061

Performance Level (PL):

up to PL e according to EN ISO 13849-1

Safety category:

up to category 4 according to EN ISO 13849-1

MTTFd:

227 years

DC:

High

PFHd:

1.18×10^{-10}

Ambient temperature:

-25°C...+55°C

Mechanical endurance:

>10 millions of operations

Electrical endurance:

>100.000 operations

Pollution degree:

outside 3, inside 2

Rated impulse with stand voltage (U_{imp}):

4 kV

Rated insulation voltage (U_i):

250 V

Over-voltage category:

II

Weight:

0.2 kg

Power supply

Rated operating voltage (U_n):

24 Vac/dc; ±15%; 50...60 Hz

Max residual ripple in DC:

10%

Rated power consumption AC:

< 5 VA

Rated power consumption DC:

< 2.5W

Control circuit

Protection against short circuits:

resistance PTC, I_h=0.5 A

Operating time of PTC:

intervention > 100 ms, reset > 3 s

Max input resistance:

≤ 50 Ω

Current for each input:

< 40 mA

Min. period of start impulse t_{MIN}:

> 50 ms

Operating time t_A:

< 120 ms

Releasing time t_{R1}:

< 15 ms

Releasing time in absence of power supply t_R:

< 65 ms

Simultaneity time t_C:

infinite

Operating time on energisation

< 300 ms

Auxiliary signalling circuit

Auxiliary Output (Y43-Y44):

1NO opto-isolated

Rated operational voltage (U_e):

24 Vdc

Rated operational current (I_e):

25 mA

Rated impulse withstand voltage (U_{imp}):

4 kV

Reaction time t_{R2}:

< 1 ms

In conformity with standards:

EN 60204-1, EN 999, EN 1037, EN ISO 12100-1, EN ISO 12100-2, EN 81-1, EN 81-2, EN ISO 13850, EN 60529, EN 61000-6-2, EN 61000-6-3, EN 62326-1, EN 60664-1, EN 60947-1, EN ISO 13849-1, EN ISO 13849-2, EN 62061, UL 508, CSA C22.2 n° 14-95

Output circuit

Output contacts:

2 safety NO contacts,

Contacts type:

forced guided contacts

Contacts material:

silver alloy, gold plated

Max switching voltage:

230/240 Vac; 300 Vdc

Max switching current per contact:

6 A

Conventional free air thermal current I_{th}:

6 A

Max currents sum ΣI_{th}^2 :

36 A²

Min. current:

10 mA

Contacts resistance:

≤ 100 mΩ

Contact protection fuse:

4 A, F type

Code structure

CS AR-91V024

Kind of connection	
V	screw terminals
M	connector with screw terminals
X	connector with spring terminals

Supply voltage	
024	24 Vac/dc

Data type approved by UL

Rated operating voltage (U _n):	24 Vac/dc; 50...60 Hz
Rated power consumption AC:	< 5 VA
Rated power consumption DC:	< 2.5 W
Max switching voltage:	230 Vac
Max switching current per contact:	6 A
Utilization category	C300

Notes:

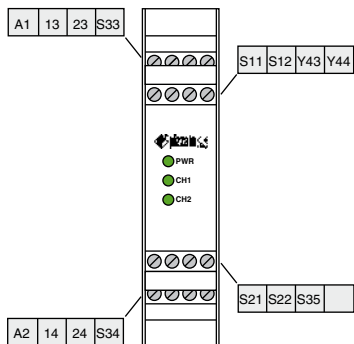
- Use 60° or 75 °C copper (Cu) conductor and wire size No. 30-12 AWG.

- Terminal tightening torque of 5-7 Lb-In.

- Only for 24 Vac/dc version, supply from remote class 2 source or limited voltage and limited energy.

Safety module CS AR-91

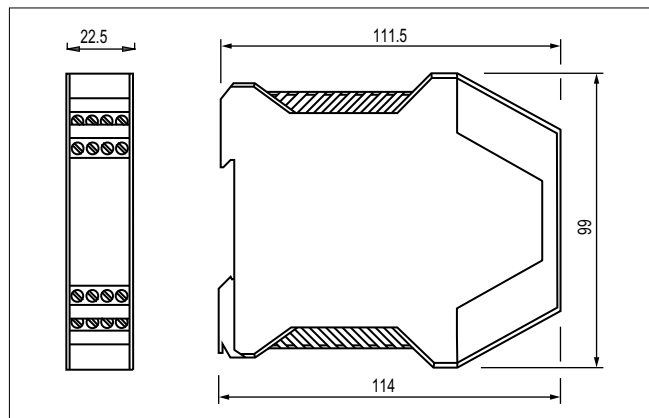
Terminals layout



Brief power failure and supply voltage variation

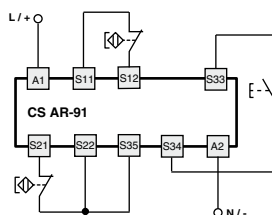
The CS AR-91 safety module has a voltage drop sensor inside which provides the protection and safety of the safety relays internal state in case of brief power failure, in order to avoid unwanted switching state as to the inputs state. Once the input voltage is reset the equipment always restarts correctly and coherently with the inputs state. When a brief power failure occurs the safety module keeps its standard performance. If the power failure lasts longer the safety outputs open and they will reset with the automatic start after the voltage is back while in case of manual or monitored start the system must be reset by the operator.

Dimensions



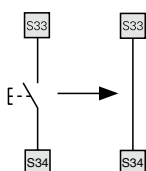
Inputs configuration

Emergency stop
Input configuration with magnetic sensors
2 channels



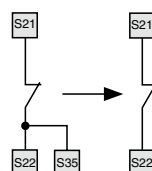
Automatic start

As regards the indicated diagrams, in order to activate the module with the automatic start, you have to bypass the start button between S33 and S34 terminals.



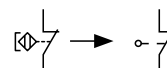
Monitored start

As regards the indicated diagrams, in order to activate the module with the monitored start, you have to remove the connection between S22 and S35 terminals.

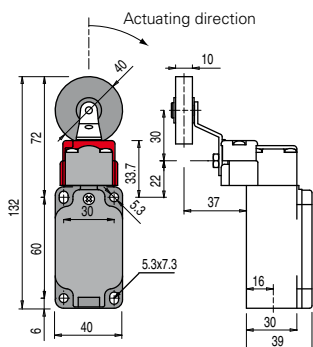


Electromechanical switches

The safety module can control both magnetic sensors and electromechanical switches, replacing the sensors contacts with switches contacts.



Safety position switches FP 945-S6



Article	Description
FP 945-S6	Safety switch with rotating lever and rubber roller for unidirectional actuating towards right. Actuated by a suitable cam, it can be used for automatic floor levelling operations. For further information please contact the technical office. Technical data on page 25.
Contacts	
⊕ 2NO	





Safety modules for the lift automatic floor levelling operation according to EN 81

Main functions

- For safety applications up to SIL 3 / PL e
- Choice between automatic start, manual start or monitored start
- Connection of the input channels to opposite potentials
- Small 22.5 mm housing
- Output contacts: 3 NO safety contacts. 1 NC auxiliary contact.
- Supply voltages: 24 Vac/dc
- Brief power failure insensitiveness

Utilization categories

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

Ue (V) 230

Ie (A) 3

Direct current: DC13

Ue (V) 24

Ie (A) 4

Markings, quality marks and certificates:



Approval IMQ:

Certificate Of Compliance IMQ n. 340 (Norms: EN 81-1:1998 + A3:2009, EN 81-2:1998 + A3:2009)

IMQ-type Examination Certificate n.236

(Machinery Directive)

Approval UL: E131787

Approval EAC: RU C-IT ДМ94.В.01024

Complying with the requirements requested by:

Low Voltage Directive 2006/95/EC,

Machinery Directive 2006/42/EC,

EMC Directive 2004/108/EC

Technical data

Housing

Made of polyamide PA 6.6 self-extinguishing, class V0 (UL94)

Protection degree:

IP40 (housing), IP20 (terminals)

Dimensions:

see page 110

General data

SIL level (SIL CL):

up to SIL 3 according to EN IEC 62061

Performance Level (PL):

up to PL e according to EN ISO 13849-1

Safety category:

up to category 4 according to EN ISO 13849-1

MTTFd:

227 years

DC:

High

PFHd:

1.34×10^{-10}

Ambient temperature:

-25°C...+55°C

Mechanical endurance:

>10 millions of operations

Electrical endurance:

>100.000 operations

Pollution degree:

outside 3, inside 2

Rated impulse with stand voltage (Uimp):

4 kV

Rated insulation voltage (Ui):

250 V

Over-voltage category:

II

Weight:

0.2 kg

Power supply

Rated operating voltage (Un):

24 Vac/dc; $\pm 15\%$; 50...60 Hz

Max residual ripple in DC:

10%

Rated power consumption AC:

< 5 VA

Rated power consumption DC:

< 2.5 W

Control circuit

Protection against short circuits:

resistance PTC, I_h=0.5 A

Operating time of PTC:

intervention > 100 ms, reset > 3 s

Max input resistance:

$\leq 50 \Omega$

Current for each input:

< 35 mA

Min. period of start impulse t_{MIN}:

> 50 ms

Operating time t_A:

<130 ms

Releasing time t_{R1}:

< 20 ms

Releasing time in absence of power supply t_R:

< 60 ms

Simultaneity time t_C:

infinite

Operating time on energisation

< 300 ms

In conformity with standards:

EN 60204-1, EN 999, EN 1037, EN ISO 12100-1, EN ISO 12100-2, EN 81-1, EN 81-2, EN ISO 13850, EN 60529, EN 61000-6-2, EN 61000-6-3, EN 62326-1, EN 60664-1, EN 60947-1, EN ISO 13849-1, EN ISO 13849-2, EN 62061, UL 508, CSA C22.2 n° 14-95

Output circuit

Output contacts:

3 NO safety contacts

1 NC auxiliary contact.

Contacts type:

forced guided contacts

Contacts material:

silver alloy, gold plated

Max switching voltage:

230/240 Vac; 300 Vdc

Max switching current per contact:

6 A

Conventional free air thermal current I_{th}:

6 A

Max currents sum Σ I_{th}²:

36 A²

Min. current:

10 mA

Contacts resistance:

$\leq 100 \text{ m}\Omega$

Contact protection fuse:

4 A, F type

Code structure

CS AR-93V024

Kind of connection	
V	screw terminals
M	connector with screw terminals
X	connector with spring terminals

Supply voltage	
024	24 Vac/dc

Data type approved by UL

Rated operating voltage (Un):	24 Vac/dc; 50...60 Hz
Rated power consumption AC:	< 5 VA
Rated power consumption DC:	< 2 W
Max switching voltage:	230 Vac
Max switching current per contact:	6 A
Utilization category	C300

Notes:

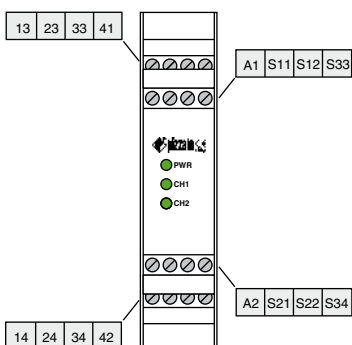
- Use 60° or 75 °C copper (Cu) conductor and wire size No. 30-12 AWG.

- Terminal tightening torque of 5-7 Lb-In.

- Only for 24 Vac/dc version, supply from remote class 2 source or limited voltage and limited energy.

Safety module CS AR-93

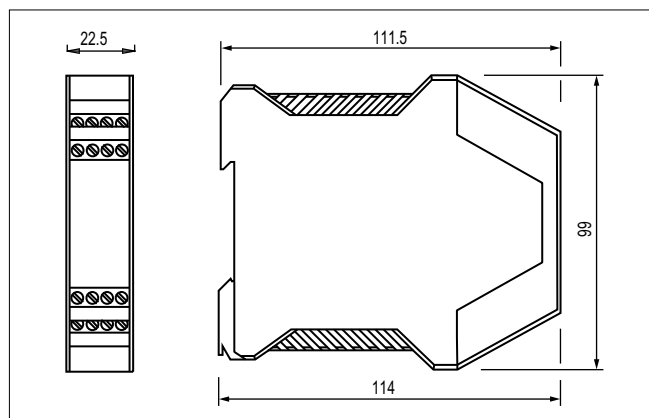
Terminals layout



Brief power failure and supply voltage variation

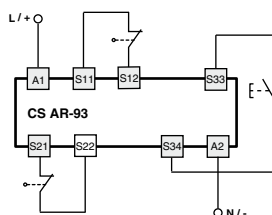
The CS AR-93 safety module has a voltage drop sensor inside which provides the protection and safety of the safety relays internal state in case of brief power failure, in order to avoid unwanted switching state as to the inputs state. Once the input voltage is reset the equipment always restarts correctly and coherently with the inputs state. When a brief power failure occurs the safety module keeps its standard performance. If the power failure lasts longer the safety outputs open and they will reset with the automatic start after the voltage is back while in case of manual or monitored start the system must be reset by the operator.

Dimensions



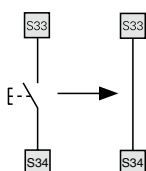
Inputs configuration

Emergency stop
Input configuration with magnetic sensors
2 channels



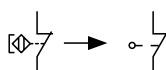
Automatic start

As regards the indicated diagrams, in order to activate the module with the automatic start, you have to bypass the start button between S33 and S34 terminals.

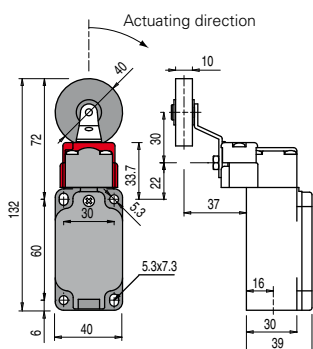


Electromechanical switches

The safety module can control both magnetic sensors and electromechanical switches, replacing the sensors contacts with switches contacts.



Safety position switches FP 945-S6



Article	Description
FP 945-S6	Safety switch with rotating lever and rubber roller for unidirectional actuating towards right. Actuated by a suitable cam, it can be used for automatic floor levelling operations. For further information please contact the technical office. Technical data on page 25.
Contacts	
⊕ 2NO	





Safety modules for the lift automatic floor levelling operation according to EN 81

Main functions

- For safety applications up to SIL 3 / PL e
- Choice between automatic start, manual start or monitored start
- Connection of the input channels to opposite potentials
- Small 22.5 mm housing
- Output contacts:
2 safety NO contacts
- Supply voltages: 24 Vac/dc, 12 Vdc
- Brief power failure insensitiveness

Utilization categories

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

Ue (V) 230

Ie (A) 3

Direct current: DC13

Ue (V) 24

Ie (A) 4

Markings, quality marks and certificates:



Approval IMQ:

Certificate Of Compliance IMQ n. 340 (Norms: EN

81-1:1998 + A3:2009, EN 81-2:1998 + A3:2009)

IMQ-type Examination Certificate n.236

(Machinery Directive)

Approval UL: E131787

Approval EAC: RU C-IT ДМ94.В.01024

Complying with the requirements requested by:

Low Voltage Directive 2006/95/EC,

Machinery Directive 2006/42/EC,

EMC Directive 2004/108/EC

Technical data

Housing

Made of polyamide PA 6.6 self-extinguishing, class V0 (UL94)

Protection degree:

IP40 (housing), IP20 (terminals)

Dimensions:

see page 112

General data

SIL level (SIL CL):

up to SIL 3 according to EN IEC 62061

Performance Level (PL):

up to PL e according to EN ISO 13849-1

Safety category:

up to category 4 according to EN ISO 13849-1

MTTFd:

213 years (24 Vac/dc)

227 years (12 Vdc)

DC:

High

PFHd:

5.62×10^{-9} (24 Vac/dc)

1.13×10^{-10} (12 Vdc)

Ambient temperature:

-25°C...+55°C

Mechanical endurance:

>10 millions of operations

Electrical endurance:

>100.000 operations

Pollution degree:

outside 3, inside 2

Rated impulse with stand voltage (Uimp):

4 kV

Rated insulation voltage (Ui):

250 V

Over-voltage category:

II

Weight:

0.2 kg

Power supply

Rated operating voltage (Un):

24 Vac/dc; $\pm 15\%$; 50...60 Hz

12 Vdc; -10% ... +15%

Max residual ripple in DC:

10%

Rated power consumption AC:

< 5 VA

Rated power consumption DC:

< 2 W

Control circuit

Protection against short circuits:

resistance PTC, I_h=0.5 A

Operating time of PTC:

intervention > 100 ms, reset > 3 s

Max input resistance:

$\leq 25 \Omega$ (24 Vac/dc), $\leq 15 \Omega$ (12 Vdc)

Current for each input:

< 35 mA (24 Vac/dc), 65 mA (12 Vdc)

Min. period of start impulse t_{MIN} :

> 300 ms

Operating time t_A :

< 60 ms

Releasing time t_{R1} :

< 20 ms

Releasing time in absence of power supply t_{R2} :

< 120 ms (24 Vac/dc), 70 ms (12 Vdc)

Simultaneity time t_C :

infinite

Operating time on energisation

< 200 ms (24 Vac/dc), 400 ms (12 Vdc)

In conformity with standards:

EN 60204-1, EN 999, EN 1037, EN ISO 12100-1, EN ISO 12100-2, EN 81-1, EN 81-2, EN ISO 13850, EN 60529, EN 61000-6-2, EN 61000-6-3, EN 62326-1, EN 60664-1, EN 60947-1, EN ISO 13849-1, EN ISO 13849-2, EN 62061, UL 508, CSA C22.2 n° 14-95

Output circuit

Output contacts:

2 safety NO contacts,

Contacts type:

forced guided contacts

Contacts material:

silver alloy, gold plated

Max switching voltage:

230/240 Vac; 300 Vdc

Max switching current per contact:

6 A

Conventional free air thermal current I_{th}:

6 A

Max currents sum ΣI_{th}^2 :

36 A²

Min. current:

10 mA

Contacts resistance:

$\leq 100 \text{ m}\Omega$

Contact protection fuse:

4 A, F type

Code structure

CS AR-94V024

Kind of connection	
V	screw terminals
M	connector with screw terminals
X	connector with spring terminals

Supply voltage	
024	24 Vac/dc
U12	12 Vdc

Data type approved by UL

Rated operating voltage (Un):	24 Vac/dc; 50...60 Hz
Rated power consumption AC:	< 5 VA
Rated power consumption DC:	< 2 W
Max switching voltage:	230 Vac
Max switching current per contact:	6 A
Utilization category	C300

Notes:

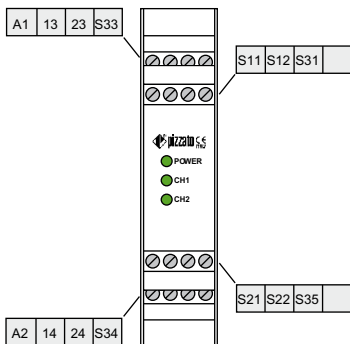
- Use 60° or 75 °C copper (Cu) conductor and wire size No. 30-12 AWG.

- Terminal tightening torque of 5-7 Lb-In.

- Only for 24 Vac/dc version, supply from remote class 2 source or limited voltage and limited energy.

Safety module CS AR-94

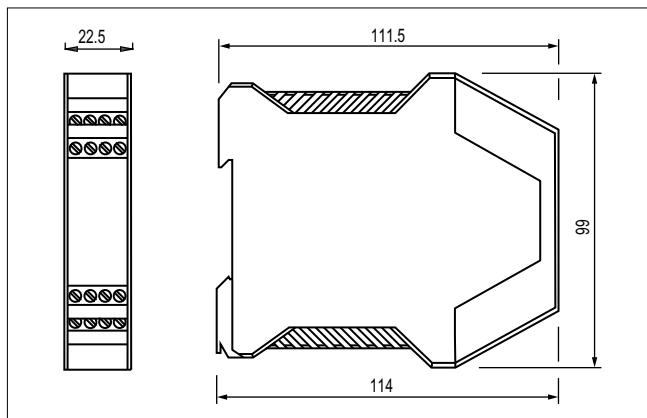
Terminals layout



Brief power failure and supply voltage variation

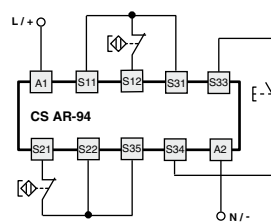
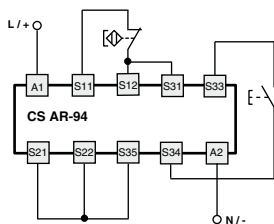
The CS AR-94 safety module has a voltage drop sensor inside which provides the protection and safety of the safety relays internal state in case of brief power failure, in order to avoid unwanted switching state as to the inputs state. Once the input voltage is reset the equipment always restarts correctly and coherently with the inputs state. When a brief power failure occurs the safety module keeps its standard performance. If the power failure lasts longer the safety outputs open and they will reset with the automatic start after the voltage is back while in case of manual or monitored start the system must be reset by the operator.

Dimensions



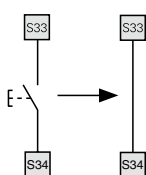
Inputs configuration

Emergency stop	
Input configuration with magnetic sensors	
1 channel	2 channels



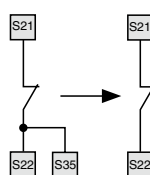
Automatic start

As regards the indicated diagrams, in order to activate the module with the automatic start, you have to bypass the start button between S33 and S34 terminals.



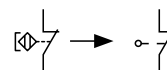
Monitored start

As regards the indicated diagrams, in order to activate the module with the monitored start, you have to remove the connection between S22 and S35 terminals.

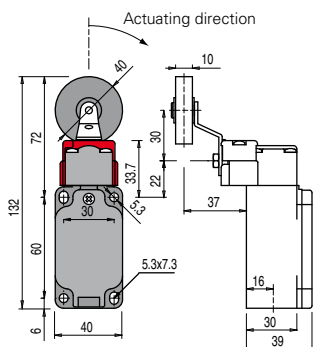


Electromechanical switches

The safety module can control both magnetic sensors and electromechanical switches, replacing the sensors contacts with switches contacts.

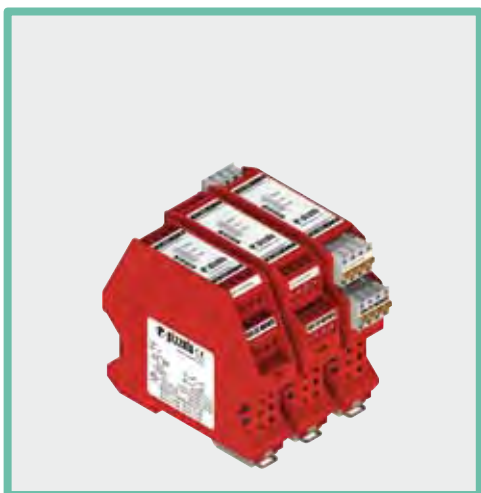


Safety position switches FP 945-S6



Article	Description
FP 945-S6	Safety switch with rotating lever and rubber roller for unidirectional actuating towards right. Actuated by a suitable cam, it can be used for automatic floor levelling operations.
Contacts	For further information please contact the technical office.
⊕ 2NO	Technical data on page 25.





Safety modules for the lift automatic floor levelling operation according to EN 81

Main functions

- For safety applications up to SIL 3 / PL e
- Choice between automatic start, manual start or monitored start
- Connection of the input channels to opposite potentials
- Small 22.5 x 88.5h mm housing
- Output contacts:
2 safety NO contacts
- Supply voltages: 24 Vac/dc
- Brief power failure insensitiveness

Utilization categories

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

Ue (V) 230

Ie (A) 3

Direct current: DC13

Ue (V) 24

Ie (A) 4

Markings, quality marks and certificates:



Approval IMQ:

Certificate Of Compliance IMQ n. 340 (Norms: EN 81-1:1998 + A3:2009, EN 81-2:1998 + A3:2009)

IMQ-type Examination Certificate n.236

(Machinery Directive)

Approval UL: E131787

Approval EAC: RU C-IT ДМ94.В.01024

Complying with the requirements requested by:

Low Voltage Directive 2006/95/EC,

Machinery Directive 2006/42/EC,

EMC Directive 2004/108/EC

Technical data

Housing

Made of polyamide PA 6.6 self-extinguishing, class V0 (UL94)

Protection degree:

IP40 (housing), IP20 (terminals)

Dimensions:

see page 114

General data

SIL level (SIL CL):

up to SIL 3 according to EN IEC 62061

Performance Level (PL):

up to PL e according to EN ISO 13849-1

Safety category:

up to category 4 according to EN ISO 13849-1

MTTFd:

213 years

DC:

High

PFFhd:

$5,42 \times 10^{-9}$

Ambient temperature:

-25°C...+55°C

Mechanical endurance:

>10 millions of operations

Electrical endurance:

>100.000 operations

Pollution degree:

outside 3, inside 2

Rated impulse with stand voltage (Uimp):

4 kV

Rated insulation voltage (Ui):

250 V

Over-voltage category:

II

Weight:

0.2 kg

Power supply

Rated operating voltage (Un):

24 Vac/dc; $\pm 15\%$; 50...60 Hz

Max residual ripple in DC:

10%

Rated power consumption AC:

< 5 VA

Rated power consumption DC:

< 2 W

Control circuit

Protection against short circuits:

resistance PTC, I_h=0.5 A

Operating time of PTC:

intervention > 100 ms, reset > 3 s

Max input resistance:

$\leq 25 \Omega$

Current for each input:

< 35 mA

Min. period of start impulse t_{MIN} :

> 300 ms

Operating time t_A :

< 60 ms

Releasing time t_{R1} :

< 20 ms

Releasing time in absence of power supply t_R :

< 100 ms

Simultaneity time t_C :

infinite

Operating time on energisation

< 200 ms

In conformity with standards:

EN 60204-1, EN 999, EN 1037, EN ISO 12100-1, EN ISO 12100-2, EN 81-1, EN 81-2, EN ISO 13850, EN 60529, EN 61000-6-2, EN 61000-6-3, EN 62326-1, EN 60664-1, EN 60947-1, EN ISO 13849-1, EN ISO 13849-2, EN 62061, UL 508, CSA C22.2 n° 14-95

Output circuit

Output contacts:

2 safety NO contacts,

Contacts type:

forced guided contacts

Contacts material:

silver alloy, gold plated

Max switching voltage:

230/240 Vac; 300 Vdc

Max switching current per contact:

6 A

Conventional free air thermal current I_{th}:

6 A

Max currents sum ΣI_{th}^2 :

36 A²

Min. current:

10 mA

Contacts resistance:

$\leq 100 \text{ m}\Omega$

Contact protection fuse:

4 A, F type

Code structure

CS AR-95V024

Kind of connection	
V	screw terminals
M	connector with screw terminals
X	connector with spring terminals

Supply voltage	
024	24 Vac/dc

Data type approved by UL

Rated operating voltage (Un):	24 Vac/dc; 50...60 Hz
Rated power consumption AC:	< 5 VA
Rated power consumption DC:	< 2 W
Max switching voltage:	230 Vac
Max switching current per contact:	6 A
Utilization category	C300

Notes:

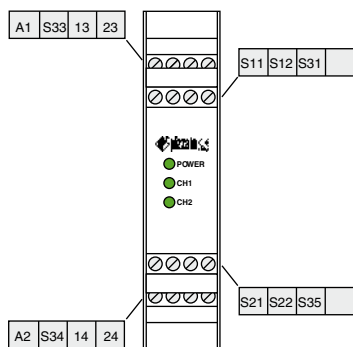
- Use 60° or 75 °C copper (Cu) conductor and wire size No. 30-12 AWG.

- Terminal tightening torque of 5-7 Lb-In.

- Only for 24 Vac/dc version, supply from remote class 2 source or limited voltage and limited energy.

Safety module CS AR-95

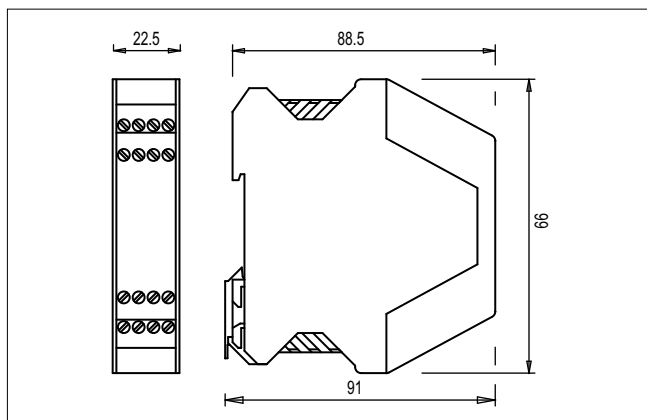
Terminals layout



Brief power failure and supply voltage variation

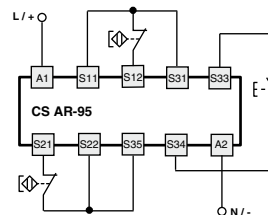
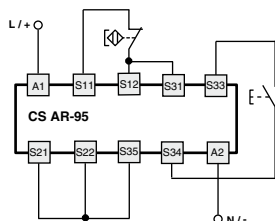
The CS AR-95 safety module has a voltage drop sensor inside which provides the protection and safety of the safety relays internal state in case of brief power failure, in order to avoid unwanted switching state as to the inputs state. Once the input voltage is reset the equipment always restarts correctly and coherently with the inputs state. When a brief power failure occurs the safety module keeps its standard performance. If the power failure lasts longer the safety outputs open and they will reset with the automatic start after the voltage is back while in case of manual or monitored start the system must be reset by the operator.

Dimensions



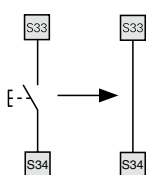
Inputs configuration

Emergency stop	
Input configuration with magnetic sensors	
1 channel	2 channels



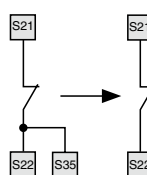
Automatic start

As regards the indicated diagrams, in order to activate the module with the automatic start, you have to bypass the start button between S33 and S34 terminals.



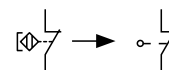
Monitored start

As regards the indicated diagrams, in order to activate the module with the monitored start, you have to remove the connection between S22 and S35 terminals.

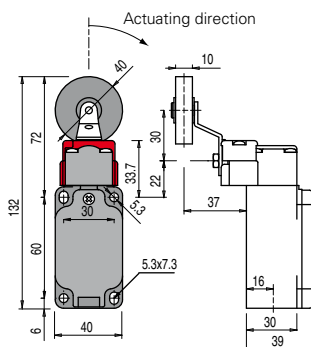


Electromechanical switches

The safety module can control both magnetic sensors and electromechanical switches, replacing the sensors contacts with switches contacts.



Safety position switches FP 945-S6



Article	Description
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Contacts	For further information please contact the technical office.
⊕ 2NO	Technical data on page 25.





Main data

- Polymer housing, with one or two conduit entries
- Protection degree IP67
- M12 assembled connector versions
- In conformity with EN 81

Markings and quality marks:



Approval IMQ: EG610
 Approval IMQ-UNI: in progress
 Approval UL: E131787
 Approval EAC: RU C-IT DM94.B.01024

Technical data

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation

FR series one threaded conduit entry M20x1.5 (standard)

FX series two threaded conduit entries M20x1.5 (standard)

Protection degree: IP67 according to EN 60529 with cable gland having equal or higher protection degree

General data

Ambient temperature: from -25°C to +80°C

Version for operation in ambient temperature from -40°C to +80°C on request

Max operating frequency: 3600 operations cycles/hour

Mechanical endurance: 1 million operations cycles

Assembling position: any

Driving torque for installation: see page 123

(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Cross section of the conductors (flexible copper wire)

Contact blocks 5:	min. 1 x 0.5 mm ²	(1 x AWG 20)
	max. 2 x 2.5 mm ²	(2 x AWG 14)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN 1088, EN 81-20, EN 81-50, EN ISO 12100-1, EN ISO 12100-2, IEC 529, EN 60529, NFC 63-140, VDE 0660-200, VDE 0113.

Approvals:

UL 508

Electrical endurance

Type of load:	20 single tube neon lamp
	36 W / 230 V (connected in parallel)
Frequency:	10 s ON / 10 s OFF
Max number of cycles:	100.000

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Electrical data

Thermal current (I _{th}):	10 A
Rated insulation voltage (U _i):	500 Vac 600 Vdc
	400 Vac 500 Vdc for contacts block 11, 12
Rated impulse withstand voltage (U _{imp}):	6 kV
Conditional short circuit current:	1000 A according to EN 60947-5-1
Protection against short circuits:	fuse 10 A 500 V type aM
Pollution degree:	3

Utilization categories

Alternate current: AC15 (50...60 Hz)			
U _e (V)	250	400	500
I _e (A)	6	4	1
Direct current: DC13			
U _e (V)	24	125	250
I _e (A)	6	1.1	0.4

Data type approved by IMQ, CCC and EZU

Rated insulation voltage (U_i): 500 Vac
 400 Vac for contacts block 11, 12

Thermal current (I_{th}): 10 A

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

Rated impulse withstand voltage (U_{imp}): 6 kV

Protection degree: IP67

MV terminals (screw clamps)

Pollution degree 3

Utilization category: AC15

Operation voltage (U_e): 400 Vac (50 Hz)

Operation current (I_e): 3 A

Forms of the contact element: Zb, Y+Y, X+X

In conformity with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2006/95/CE.

Data type approved by UL

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

Data of the housing type 1, 4X "indoor use only"; 12, 13

For all contact blocks use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7.1 lb in (0.8 Nm).

In conformity with standard: UL 508

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

Please contact our technical service for the list of type approved products.

Introduction

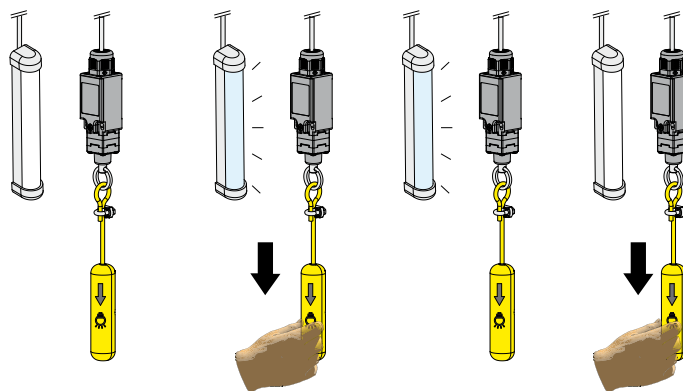
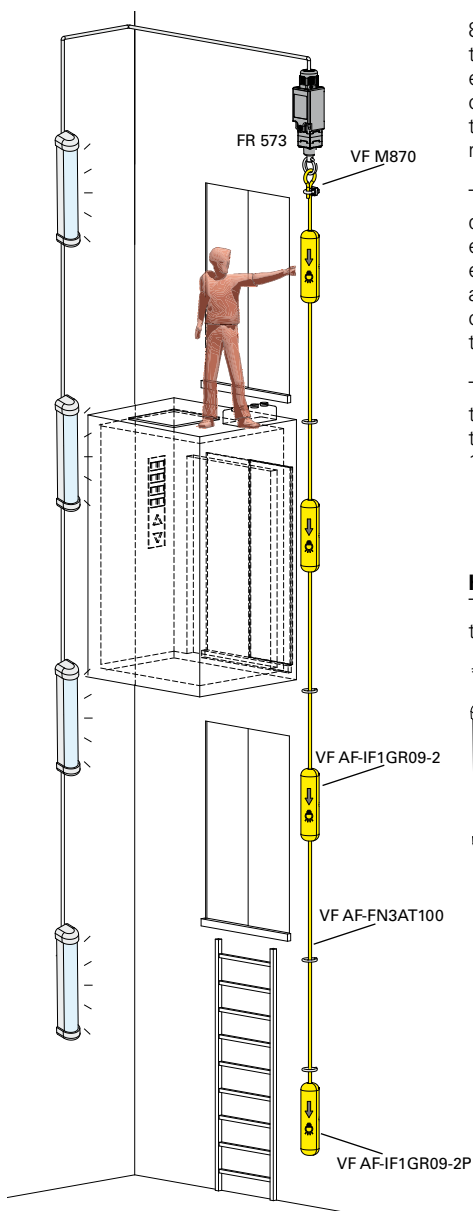
The FR 573 switch has been specifically studied to control the lift shaft lights. The norm EN 81 paragraphs 6.4.9, 13.6.3.2, 6.3.7 state the necessity to have a light switching point next to the working area access and in the machines room. To comply with this prescription usually at every floor there are installed lightning points which control a step relay with its considerable costs due to the number of the control points and their wiring. The switch FR 573 itself allows to control the shaft lights through its own wiring, without any need of different lightning points, relays or wiring.

The switch is fixed to the superior part of the lift shaft and it's connected to a rope which goes down in the shaft next to the cabin. The rope has to be guided through rings in order to avoid the excessive oscillation caused by the cabin windage. At regular intervals along the rope, usually at every floor, an indicator is fixed to make the rope and its function clearly visible. The last indicator at the end of the rope has a weight inside to keep the rope tight. This way the operator on the cabin roof or in any position along the shaft has the possibility to operate the switch by pulling the practical indicator or the rope itself.

The switch FR 573 has a stable position function, which means that the first operation closes the contacts; the following one opens them and so on. This way the switch can totally substitute also the step relay. The switch has been tested with twenty 36 W neon lamps exceeding 100.000 operations.

How it functions:

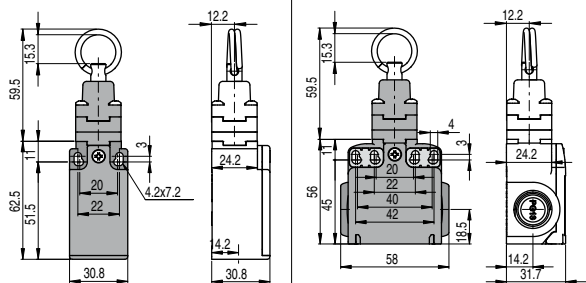
To switch the shaft light on it is sufficient to pull the rope; to switch it off just repeat the operation.



Dimensional drawings

Contacts type:




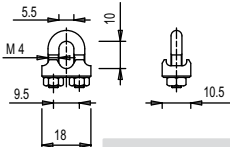
R = snap action



Contact blocks

5	R	FR 573-M2	1NO+1NC	FX 573-M2	1NO+1NC
11	R	FR 1173-M2	2NC	FX 1173-M2	2NC
12	R	FR 1273-M2	2NO	FX 1273-M2	2NO
Max speed		0.5 m/s		0.5 m/s	
Min. force		initial 20 N - final 40 N		initial 20 N - final 40 N	

Accessories

Article	Description
VF AF-IF1GR09-2P	End clamp for rope fixing
VF AF-IF1GR09-2	Intermediate rope function indicators
	Rope function indicators.
Article	Description
VF AF-FN3AT100	100 m rope
	Yellow/transparent rope roll, Ø 3 mm, with a brass-plated steel core and a transparent PVC coating.
Article	Description
VF M870	Rope extremity clamp
	

Accessories See page 119



Main data

- Polymer housing, with one or two conduit entries
- Protection degree IP67
- M12 assembled connector versions
- Silver contacts gold plated versions

Markings and quality marks:



Approval IMQ: EG610
 Approval IMQ-UNI: in progress
 Approval UL: E131787
 Approval CCC: 2007010305230013
 Approval ECU: 1010151
 Approval EAC: RU C-IT ДМ94.В.01024

Technical data

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation

FR series one threaded conduit entry: M20x1.5 (standard)
 FX series two threaded conduit entries: M20x1.5 (standard)
 Protection degree: IP67 according to EN 60529 with cable gland having equal or higher protection degree

General data

Ambient temperature: from -25°C to +80°C
 Version for operation in ambient temperature from -40°C to +80°C on request
 Max operating frequency: 3600 operations cycles¹/hour
 Mechanical endurance: 20 million operations cycles¹
 Assembling position: any
 Driving torque for installation: see page 123
 (1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Cross section of the conductors (flexible copper wire)

Contact blocks 5, 9:
 min. 1 x 0.5 mm² (1 x AWG 20)
 max. 2 x 2.5 mm² (2 x AWG 14)

In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN 1088, EN 81-20, EN 81-50, EN ISO 12100-1, EN ISO 12100-2, EN 60529, EN 60529, NFC 63-140, VDE 0660-200, VDE 0113.

Approvals:

IEC 60947-5-1, UL 508, GB14048.5-2001

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

Electrical data

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

Utilization categories

Alternate current: AC15 (50...60 Hz)
 U_e (V) 250 400 500
 I_e (A) 6 4 1
 Direct current: DC13
 U_e (V) 24 125 250
 I_e (A) 6 1.1 0.4

Data type approved by IMQ, CCC and ECU

Rated insulation voltage (U_i): 500 Vac
 Thermal current (I_{th}): 10 A
 Protection against short circuits: fuse 10 A 500 V type aM
 Rated impulse withstand voltage (U_{imp}): 6 kV
 Protection degree: IP67
 MV terminals (screw clamps)
 Pollution degree 3
 Utilization category: AC15
 Operation voltage (U_e): 400 Vac (50 Hz)
 Operation current (I_e): 3 A
 Forms of the contact element: Zb, Y+Y

In conformity with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2006/95/CE.

Data type approved by UL

Utilization categories Q300 (69 VA, 125-250 Vdc)
 A600 (720 VA, 120-600 Vac)
 Data of the housing type 1, 4X "indoor use only"; 12, 13
 For all contact blocks use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7.1 lb in (0.8 Nm).
 In conformity with standard: UL 508

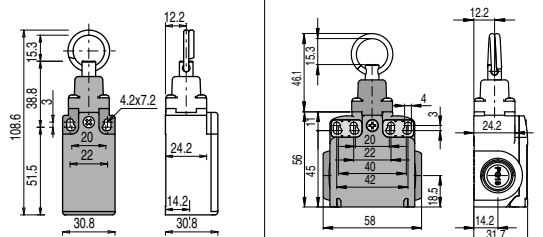
Please contact our technical service for the list of approved products.

Please contact our technical service for the list of type approved products.

Dimensional drawings

Contacts type:


R = snap action
L = slow action





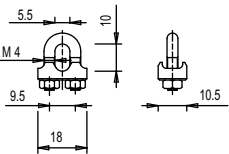
Contact blocks

5	R	FR 576-M2 1NO+1NC	FX 576-M2 1NO+1NC
9	L	FR 976-M2 2NO	FX 976-M2 2NO
Max speed		0.5 m/s	0.5 m/s
Min. force		initial 20 N - final 40 N	initial 20 N - final 40 N

Accessories

Article	Description
VF AF-IF1GR09-2P	End clamp for rope fixing
VF AF-IF1GR09-2	Intermediate rope function indicators
	Rope function indicators.

Article	Description
VF AF-FN3AT100	100 m rope
	Yellow/transparent rope roll, Ø 3 mm, with a brass-plated steel core and a transparent PVC coating.

Article	Description
VF M870	Rope extremity clamp
	

Accessories See page 119

All measures in the drawings are in mm
LIFT General Catalog

Wiretrap cable glands

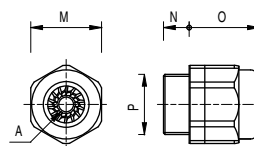
10 pcs packs



The design of this cable gland improves the retention forces of the wires. Each type of cable gland accepts a wider range of cable diameters. Only fit for circular cables.

Technical data:

Body and nut material: halogen free polymer
 Protection degree: IP67
 Driving torque: from 3 ... 4 Nm (PG 13.5/M20)
 from 2 ... 2.5 Nm (PG 11/M16)



	Article	Description	A	⊘M	N	O	P
Metric threading	VF PAM25C7N	Cable glands M25x1.5 for 1 Ø 10 to Ø 17 mm cable	⊘	30	10	28	M25x1.5
	VF PAM20C6N	Cable glands M20x1.5 for 1 Ø 6 to Ø 12 mm cable	⊘	24	9	24	M20x1.5
	VF PAM20C5N	Cable glands M20x1.5 for 1 Ø 5 to Ø 10 mm cable	⊘	24	9	24	M20x1.5
	VF PAM20C3N	Cable glands M20x1.5 for 1 Ø 3 to Ø 7 mm cable	⊘	24	9	24	M20x1.5
	VF PAM16C5N	Cable glands M16x1.5 for 1 Ø 5 to Ø 10 mm cable	⊘	22	7.5	23	M16x1.5
	VF PAM16C4N	Cable glands M16x1.5 for 1 Ø 4 to Ø 8 mm cable	⊘	22	7.5	23	M16x1.5
	VF PAM16C3N	Cable glands M16x1.5 for 1 Ø 3 to Ø 7 mm cable	⊘	22	7.5	23	M16x1.5
	VF PAM20CBN	Multi-hole cable gland M20x1.5 for 2 cables, Ø 3 to Ø 5 mm	⊘	24	9	23	M20x1.5
	VF PAM20CDN	Multi-hole cable gland M20x1.5 for 3 cables, Ø 1 to Ø 4 mm	⊘	24	9	23	M20x1.5
	VF PAM20CEN	Multi-hole cable gland M20x1.5 for 3 cables, Ø 3 to Ø 5 mm	⊘	24	9	23	M20x1.5
	VF PAM20CFN	Multi-hole cable gland M20x1.5 for 4 cables, Ø 1 to Ø 4 mm	⊘	24	9	23	M20x1.5
	PG threading	VF PAP13C6N	Cable glands PG 13.5 for 1 Ø 6 to Ø 12 mm cable	⊘	24	9	24
VF PAP13C5N		Cable glands PG 13.5 for 1 Ø 5 to Ø 10 mm cable	⊘	24	9	24	PG 13.5
VF PAP13C3N		Cable glands PG 13.5 for 1 Ø 3 to Ø 7 mm cable	⊘	24	9	24	PG 13.5
VF PAP11C5N		Cable glands PG 11 for 1 Ø 5 to Ø 10 mm cable	⊘	22	7.5	23	PG 11
VF PAP11C4N		Cable glands PG 11 for 1 Ø 4 to Ø 8 mm cable	⊘	22	7.5	23	PG 11
VF PAP11C3N		Cable glands PG 11 for 1 Ø 3 to Ø 7 mm cable	⊘	22	7.5	23	PG 11

Thread adapters

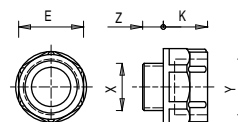
100 pcs packs



With these adapters it is possible to offer to the customers the same product with different threaded cable entries, while only having to stock a single product and many kinds of adapters.

Technical data:

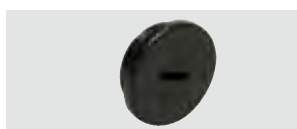
Body material: glass-reinforced polymer resin
 Driving torque: from 3 ... 4 Nm



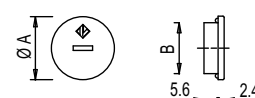
Article	Description	X	Y	Z	K	⊘E
VF ADPG13-PG11	Adapter from PG 13.5 to PG 11	PG 13.5	PG 11	9	12	22
VF ADPG13-M20	Adapter from PG 13.5 to M20x1.5	PG 13.5	M20x1.5	9	14	24
VF ADPG13-1/2NPT	Adapter from PG 13.5 to 1/2 NPT	PG 13.5	1/2 NPT	9	14	24
VF ADPG11-1/2NPT	Adapter from PG 11 to 1/2 NPT	PG 11	1/2 NPT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

Protection plugs

100 pcs packs

**Technical data:**

Body material: halogen free polymer
 Protection degree: IP67
 Driving torque: from 1.2 ... 1.6 Nm (PG13.5 / M20)
 from 1 ... 1.4 Nm (PG11 / M16)



Article	Description	A	B
VF PTM20	Protection plug M20x1.5	25	M20x1.5
VF PTM16	Protection plug M16x1.5	23	M16x1.5
VF PTG13.5	Protection plug PG13.5	25	PG 13.5
VF PTG11	Protection plug PG11	23	PG 11

Items with code on the green background are available in stock

All measures in the drawings are in mm

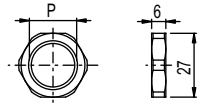
Plastic threaded nuts

100 pcs packs



Technical data:

Body material: glass-reinforced polymer resin
Driving torque: from 1.2 ... 2 Nm



Article	Description	S	CH	P
VF DFPM25	Plastic threaded nut M25x1.5	6	32	M25x1.5
VF DFPM20	Plastic threaded nut M20x1.5	6	27	M20x1.5
VF DFPM16	Plastic threaded nut M16x1.5	5	22	M16x1.5
VF DFPP13	Plastic threaded nut PG13.5	6	27	PG 13.5

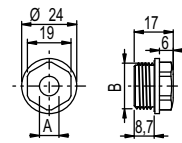
Chock plugs

100 pcs packs



Technical data:

Body material: halogen free polymer
Protection degree: IP54
Driving torque: from 0.8 ... 1 Nm



Note: use a socket wrench for tightening.

Article	Description	A	B
VF PFM20C8N	Chock plug for cable from Ø 8 to Ø 12 mm, threaded M20	7.5	M20x1.5
VF PFM20C4N	Chock plug for cable from Ø 4 to Ø 8 mm, threaded M20	3.5	M20x1.5

Metal fixing plates



Metal fixing plate, designed to fix rope switches on ceiling. The plate is provided with many fixing holes suitable for all switches series. It is supplied without screws.

Article	Description
VF SFP2	Fixing plates for ceiling installations

Plastic fixing plates



Fixing plate (complete with fastening screws) provided with long slots for the adjustment of the actuating point.

Every plate has a double couple of fixing holes, one for standard switches and the other one for switches with reset device. In this way the actuator will always have the same actuating point.

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

Items with code on the **green** background are available in stock

Light indicators

5 pcs packs

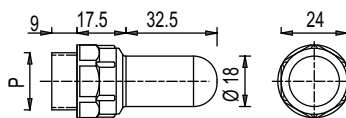


These light indicators are used for visualizing a change of the state of an electric contact inside the switch. They can be installed only on series FL, FX, FZ, FW, FG or FS by screwing them on one of the conduit entries not used for electric cables, and they can have many different functions: for example, combined with a rope switch (e.g. FL 1878) they can indicate (also in the distance) if the switch has been actuated. Otherwise, combined with safety switches with separate actuator (e.g. FL 693), they can indicate if the protection is closed correctly or not.

Combined with a safety switch with solenoid (FS or FG series), they can indicate if the protection is locked or unlocked. Combined with any switch of FL, FX, or FZ series they can be used to calibrate the actuator. The light indicators are decomposable in two parts for bulb replacement without removing the lamp holder from the switch, and their inner part can rotate in such a way that it can be wired and screwed on the switch without any risk of kinking the wires.

Technical data:

Max operating voltage U_i :	250 Vac/dc
Rated impulse withstand voltage (U_{imp}):	4 kV
Max lamp power:	3 W
Protection degree:	IP67
Lamp coupling:	BA9
Cable cross section:	min. 0.5 mm ² max 1.5 mm ²
Ambient temperature:	from -25°C to +40°C
Driving torque:	from 3 ... 4 Nm

**How to order****VF ILI024GP**

Kind of lamp		Threaded coupling (P)	
I	incandescence	P	PG 13.5
X	without lamp	M	M20 x 1.5
Supply voltage		Lamp cover colour	
024	24 Vac/dc ±10%	G	Yellow
110	110 Vac/dc ±10%	R	Red
220	220 Vac/dc ±10%	V	Green
000	without lamp	W	White

Items available in stock

VF ILI024GP
VF ILI024RP
VF ILI024VP
VF ILX000GP
VF ILX000RP
VF ILX000VP

Items with code on the **green** background are available in stock

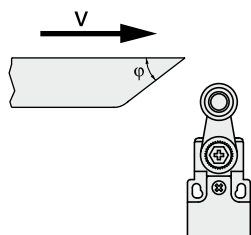
All measures in the drawings are in mm

Switches for normal duty FR-FX-FK-FT series

Maximum and minimum actuation speed

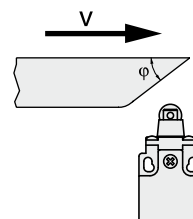
Lever with roller - Type 1

φ	Vmax (m/s)	Vmin (mm/s) L	Vmin (mm/s) R
15°	2.5	9	0.07
30°	1.5	8	
45°	1	7	
60°	0.75	7	



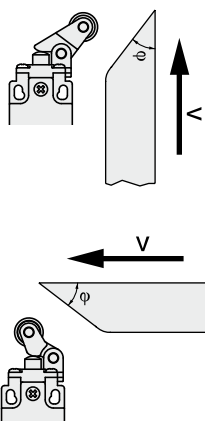
Plunger with roller - Type 2

φ	Vmax (m/s)	Vmin (mm/s) L	Vmin (mm/s) R
15°	1	4	0.04
30°	0.5	2	0.02
45°	0.3	1	0.01



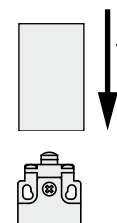
Lever with roller - Type 3

φ	Vmax (m/s)	Vmin (mm/s) L	Vmin (mm/s) R
15°	1	5	0.05
30°	0.5	2.5	0.025
45°	0.3	1.5	0.015



Plunger - Type 4

Vmax (m/s)	Vmin (mm/s) L	Vmin (mm/s) R
0.5	1	0.01

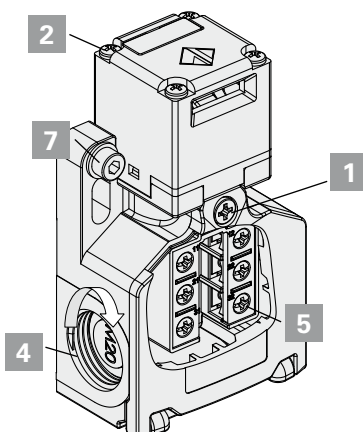
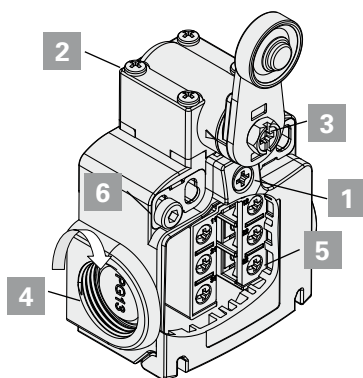


Contacts type:

- R** = snap action
- L** = slow action

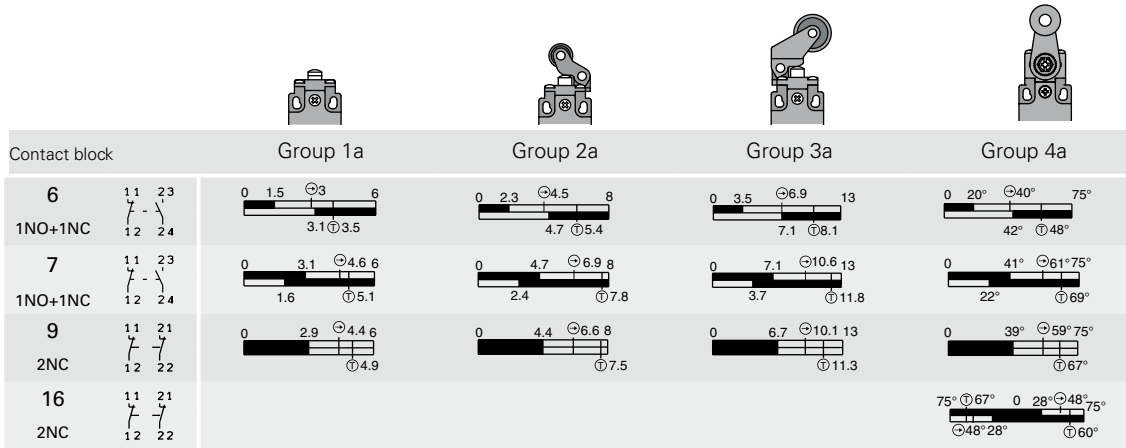
Driving torques

- Cover screws **1** **0.7 ... 0.9 Nm**
- Head screws **2** **0.5 ... 0.7 Nm**
- Lever screws **3** **0.7 ... 0.9 Nm**
- Protection plugs **4** (conduit entry M20/PG13.5) **1.2 ... 1.6 Nm**
- (conduit entry M16/PG11) **1 ... 1.4 Nm**
- Contact blocks screws **5** **0.6 ... 0.8 Nm**
- M4 screws or the housing fastening with washer (FR-FX-FK series) **6** **2... 3 Nm**
- M5 screws or the housing fastening with washer (FW series) **7** **2... 3 Nm**

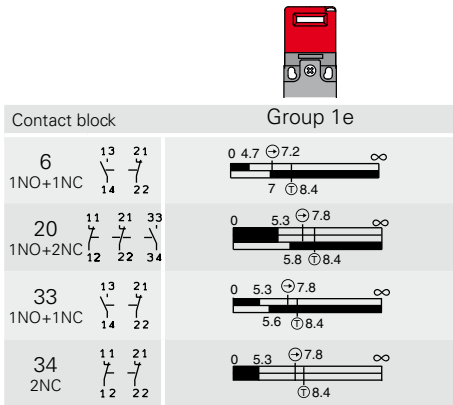


Switches for normal duty FR-FX series

Travel diagrams FR-FX series



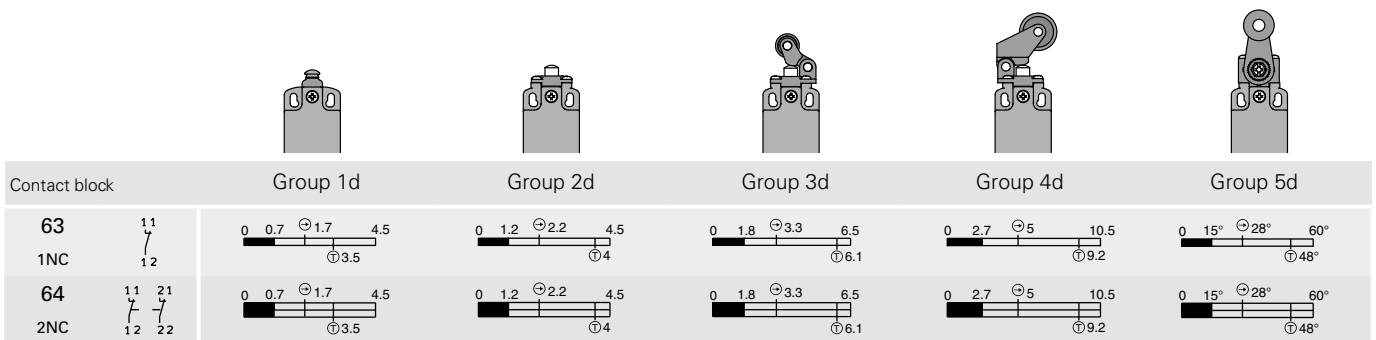
Travel diagrams FR-FX-FK-FW series



Legend

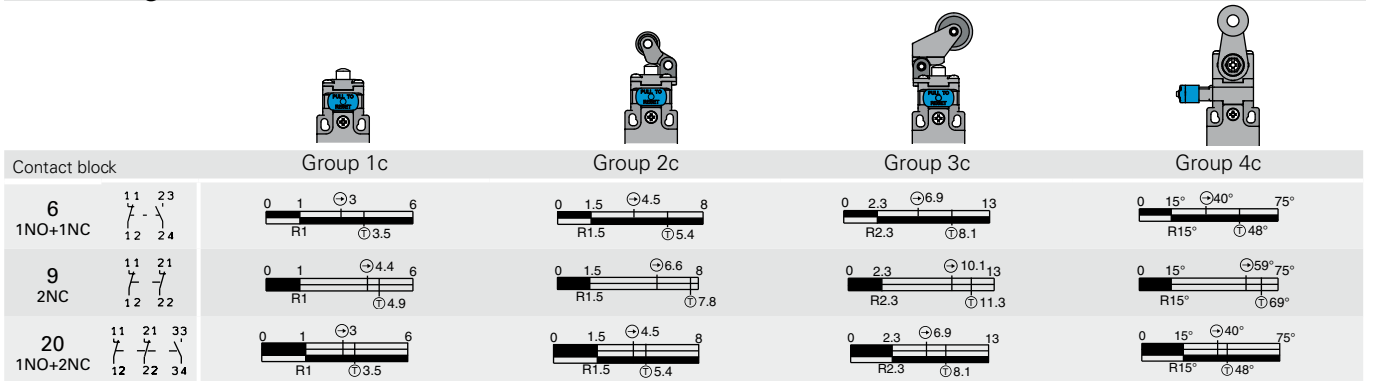
- Closed contact
- Opened contact
- $\ominus 40^\circ$ Positive opening travel
- \oplus 2x2 mm contact opening travel according to EN81

Travel diagrams FT series



Switches for normal application with reset, FR - FX series

Travel diagrams

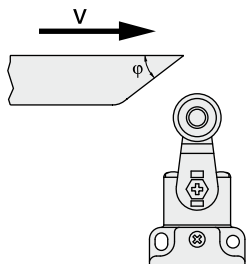


Switches for heavy duty FP series

Maximum and minimum actuation speed

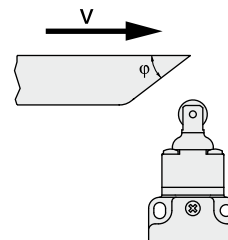
Lever with roller - Type 1

φ	Vmax (m/s)	Vmin (mm/s) L	Vmin (mm/s) R
15°	2.5	9	
30°	1.5	8	0.07
45°	1	7	
60°	0.75	7	



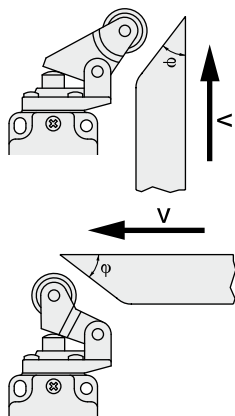
Plunger with roller - Type 2

φ	Vmax (m/s)	Vmin (mm/s) L	Vmin (mm/s) R
15°	1	4	0.04
30°	0.5	2	0.02
45°	0.3	1	0.01



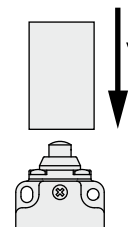
Lever with roller - Type 3

φ	Vmax (m/s)	Vmin (mm/s) L	Vmin (mm/s) R
15°	1	5	0.05
30°	0.5	2.5	0.025
45°	0.3	1.5	0.015



Plunger - Type 4

Vmax (m/s)	Vmin (mm/s) L	Vmin (mm/s) R
0.5	1	0.01

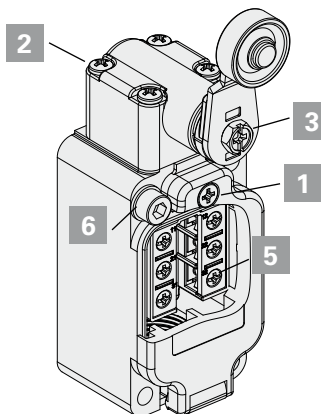


Contacts type:

- R** = snap action
- L** = slow action

Driving torques

- Cover screws **1** **0.8 ... 1.2 Nm**
- Head screws **2** **0.8 ... 1.2 Nm**
- Lever screws **3** **0.8 ... 1.2 Nm**
- Protection plugs **4** (conduit entry M20/PG13.5) **1.2 ... 1.6 Nm**
(conduit entry M16/PG11) **1 ... 1.4 Nm**
- Contact blocks screws **5** **0.6 ... 0.8 Nm**
- M5 screws or the housing fastening with washer (FP-FS series) **6** **2... 3 Nm**



Switches for heavy duty FP series

Diagrams table

Contact block		Group 1b	Group 2b	Group 3b	
6					
1NO+1NC					
7					
1NO+1NC					
9					
2NC					
16					
2NC					

Legend

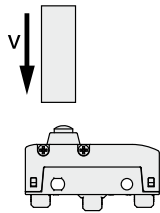
- Closed contact
- Opened contact
- $\ominus 40^\circ$ Positive opening travel
- \oplus 2x2 mm contact opening travel according to EN81

Microswitches MK series

Max and min. actuating speed

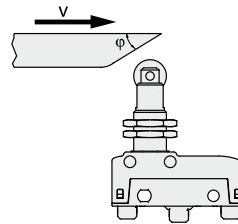
Plunger - Type 1

Vmax (m/s)	Vmin (mm/s)
0.5	0.05



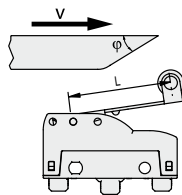
Roller plunger - Type 2

φ	Vmax (m/s)	Vmin (mm/s)
15°	0.6	0.2
30°	0.3	0.1
45°	0.1	0.05



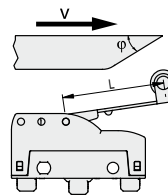
Roller lever with direct action (D) - Type 6

φ	Vmax (m/s)	Vmin (mm/s)
15°	0.1 x L	0.0664 x L
30°	0.05 x L	0.0332 x L
45°	0.03 x L	0.0166 x L



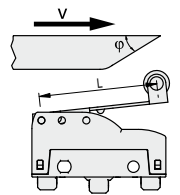
Roller lever with inverted action (R) - Type 7

φ	Vmax (m/s)	Vmin (mm/s)
15°	0.048 x L	0.0332 x L
30°	0.024 x L	0.0166 x L
45°	0.015 x L	0.0083 x L

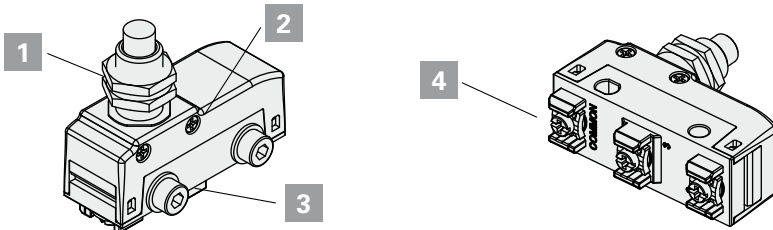


Roller lever with back direct action (F) - Type 8

φ	Vmax (m/s)	Vmin (mm/s)
15°	0.032 x L	0.0188 x L
30°	0.016 x L	0.0094 x L
45°	0.01 x L	0.0047 x L



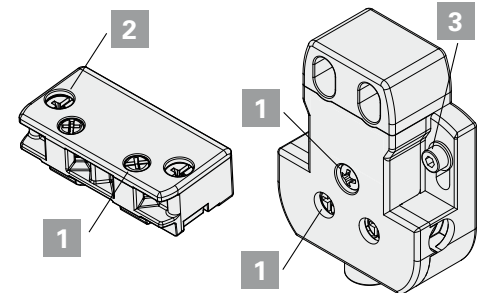
Driving torques



Tighten the nut **1** with a driving torque **2 ... 3 Nm**.
 Tighten the screws **2** with a driving torque **0.4 ... 0.5 Nm**.
 Tighten the nut **3** M4 with a driving torque **0.8 ... 1.2 Nm**, interposing a washer.
 Attention: a driving torque higher than 1.2 Nm can cause the breaking of the microswitch.

Tighten the screws **4** with a driving torque **0.6 ... 0.8 Nm**.

Driving torques DS series



Tighten the screws **1** with a driving torque **0.8 ... 1.2 Nm**.
 Tighten the fixing screws **2** with a driving torque **2 ... 3 Nm**.
 Tighten the fixing screws **3** with a driving torque **1 ... 2 Nm**, interposing a washer.

Article	Page	Article	Page	Article	Page	Article	Page	Article	Page
AC 72	59	E6 11L7A4110	99	EL AN24028	85	FR 5A3-M2	41	FR 615-H0M2	17
AC 83	59	E6 11L7A5110	99	EL AN24032	85	FR 1173-M2	115	FR 615-H0M2P11	17
CS AR-91	107	E6 11L7A6110	99	EL AN24036	85	FR 1273-M2	115	FR 615-M2P11	17
CS AR-93	107	E6 11L7A8110	99	FK 3393-M1	57	FR 11A3-M2	41	FR 615-W3M2	33
CS AR-94	107	E6 11L8A2110	99	FK 3493-M1	57	FR 17A3-M2	41	FR 615-W3H0M2	33
CS AR-95	107	E6 11L8A3110	99	FP 1631-M2	25	FR 19A3-M2	41	FR 615-W3H0M2P12	33
DS AA1VA	51	E6 11L8A4110	99	FP 1631-M2R26	25	FR 1630-M2	17	FR 615-W3M2P12	33
DS AA5VA	51	E6 11L8A5110	99	FP 1631-M2R5	25	FR 1631-M2	17	FR 616-M2	17
DS AE1VA	51	E6 11L8A6110	99	FP 1635-M2	25	FR 1638-M2	17	FR 616-H0M2	17
DS AE5VA	51	E6 11L8A8110	99	FP 1635-M2R26	25	FR 1638-M2P11	17	FR 616-H0M2P11	17
DS CH1VA0	53	EL AC27102	69	FP 1635-M2R27	25	FR 1651-M2	17	FR 616-M2P11	17
DS CN1VA0	53	EL AC27104	69	FP 1635-M2R5	25	FR 1652-M2	17	FR 616-W3M2	33
DS KA1A	51	EL AC27103	69	FP 1638-M2	25	FR 1654-M2	17	FR 616-W3H0M2	33
DS KA2A	51	EL AC27105	69	FP 1656-M2	25	FR 1654-M2R26	17	FR 616-W3H0M2P12	33
DS KA3A	51	EL AC27026	69	FP 1656-M2R26	25	FR 1654-M2R5	17	FR 616-W3M2P12	33
DS KB1A	51	EL AC27046	69	FP 1656-M2R27	25	FR 1655-M2	17	FR 630-M2	17
DS KB2A	51	EL AC27012	69	FP 1656-M2R5	25	FR 1655-M2R26	17	FR 630-W3M2	33
DS KB3A	51	EL AC27052	69	FP 2001-M2	25	FR 1655-M2R27	17	FR 631-M2	17
DS KP5A	51	EL AC27032	69	FP 2002-M2	25	FR 1655-M2R5	17	FR 631-W3M2	33
E2 1BAC11	99	EL AC27072	69	FP 2005-M2	25	FR 1656-M2	17	FR 638-M2	17
E2 1BAC21	99	EL AC27013	69	FP 2015-M2	25	FR 1656-M2R26	17	FR 638-M2P11	17
E2 1ITA1A110	99	EL AC27053	69	FP 2051-M2	25	FR 1656-M2R27	17	FR 638-W3M2	33
E2 1PDR1AABN	99	EL AC27033	69	FP 2052-M2	25	FR 1656-M2R5	17	FR 651-M2	17
E2 1PDR1AABR	99	EL AC27073	69	FP 2031-M2	25	FR 2001-M2	17	FR 651-W3M2	33
E2 1PDR1AABS	99	EL AC27027	69	FP 2031-M2R5	25	FR 2002-M2	17	FR 652-M2	17
E2 1PDR1AADJ	99	EL AC27067	69	FP 2001-M2R26	25	FR 2005-M2	17	FR 652-W3M2	33
E2 1PDR1AADL	99	EL AC27047	69	FP 2035-M2	25	FR 2007-M2	17	FR 654-M2	17
E2 1PDR1AABK	99	EL AC27087	69	FP 2035-M2R5	25	FR 2015-H0M2	17	FR 654-M2R26	17
E2 1PTRS1AADK	99	EL AC27015	69	FP 2035-M2R26	25	FR 2015-H0M2P11	17	FR 654-W3M2R26	33
E2 1PEB24531	99	EL AC27055	69	FP 2035-M2R27	25	FR 2015-M2	17	FR 654-M2R5	17
E2 1PEB24731	99	EL AC27035	69	FP 2056-M2	25	FR 2015-M2P11	17	FR 654-W3M2R5	33
E2 1PEPF4531	99	EL AC27075	69	FP 2056-M2R5	25	FR 2016-H0M2	17	FR 654-W3M2	33
E2 1PEPF4731	99	EL AC27024	69	FP 2056-M2R26	25	FR 2016-H0M2P11	17	FR 655-M2	17
E2 1PEPZ4531	99	EL AC27064	69	FP 2056-M2R24	25	FR 2016-M2	17	FR 655-M2R26	17
E2 1PEPZ4731	99	EL AC27044	69	FP 2038-M2	25	FR 2016-M2P11	17	FR 655-W3M2R26	33
E2 1PERF4531	99	EL AC27084	69	FP 2058-M2	25	FR 2030-M2	17	FR 655-M2R27	17
E2 1PERF4731	99	EL AC27028	69	FP 601-M2	25	FR 2031-M2	17	FR 655-W3M2R27	33
E2 1PERZ4531	99	EL AC27048	69	FP 602-M2	25	FR 2038-M2	17	FR 655-M2R5	17
E2 1PERZ4731	99	EL AC27018	69	FP 605-M2	25	FR 2038-M2P11	17	FR 655-W3M2R5	33
E2 1PQFA1QAAQ	99	EL AC27058	69	FP 615-M2	25	FR 2051-M2	17	FR 655-W3M2	33
E2 1PQFA1QAAR	99	EL AC27038	69	FP 631-M2	25	FR 2052-M2	17	FR 656-M2	17
E2 1PQFA1QAAS	99	EL AC27078	69	FP 631-M2R26	25	FR 2054-M2	17	FR 656-M2R26	17
E2 1PU2F141L16	99	EL AC27025	69	FP 631-M2R5	25	FR 2054-M2R26	17	FR 656-W3M2R26	33
E2 1PU2F541L14	99	EL AC27065	69	FP 635-M2	25	FR 2054-M2R5	17	FR 656-M2R27	17
E2 1PU2F541L16	99	EL AC27045	69	FP 635-M2R26	25	FR 2055-M2	17	FR 656-W3M2R27	33
E2 1PU2R221L7	99	EL AC27085	69	FP 635-M2R27	25	FR 2055-M2R26	17	FR 656-M2R5	17
E2 1PU2R121L8	99	EL AC27029	69	FP 635-M2R5	25	FR 2055-M2R27	17	FR 656-W3M2R5	33
E2 1PU2R121L16	99	EL AC27069	69	FP 638-M2	25	FR 2055-M2R5	17	FR 656-W3M2	33
E2 1PU2R521L14	99	EL AC27049	69	FP 651-M2	25	FR 2056-M2	17	FR 693-M2	57
E2 1PU2R621L170	99	EL AC27089	69	FP 652-M2	25	FR 2056-M2R26	17	FR 701-M2	17
E2 1RJ451AAK	99	EL AC27099	69	FP 656-M2	25	FR 2056-M2R27	17	FR 702-M2	17
E2 1RJ451AN1	99	EL AC27092	69	FP 656-M2R26	25	FR 2056-M2R5	17	FR 705-M2	17
E2 1RJ451AN2.5	99	EL AC27091	69	FP 656-M2R27	25	FR 2093-M2	57	FR 707-M2	17
E2 1SE12AVA11AA	99	EL AC27093	69	FP 656-M2R5	25	FR 2001-W3M2	33	FR 715-M2	17
E2 1SE12AVA11AB	99	EL AC27094	69	FP 658-M2	25	FR 2002-W3M2	33	FR 715-H0M2	17
E2 1SE13ACE11AB	99	EL AC27096	69	FP 681-M2	25	FR 2005-W3M2	33	FR 715-H0M2P11	17
E2 1USB1CAK	99	EL AC27095	69	FP 682-M2	25	FR 2007-W3M2	33	FR 715-M2P11	17
E2 1USB1CN1.8	99	EL AC27097	69	FP 685-M2	25	FR 2015-W3M2	33	FR 716-M2	17
E2 1USB1CN3	99	EL AC27098	69	FP 701-M2	25	FR 2015-W3H0M2	33	FR 716-H0M2	17
E2 1USB1CN5	99	EL AC27100	69	FP 702-M2	25	FR 2015-W3H0M2P12	33	FR 716-H0M2P11	17
E2 CP01G2V1	99	EL AC27099	69	FP 705-M2	25	FR 2015-W3M2P12	33	FR 716-M2P11	17
E2 CP01S2V1	99	EL AC270101	69	FP 715-M2	25	FR 2016-W3M2	33	FR 730-M2	17
E2 CP01K2V1	99	EL AN21256	85	FP 731-M2	25	FR 2016-W3H0M2	33	FR 731-M2	17
E2 CP02G2V1	99	EL AN21223	85	FP 731-M2R26	25	FR 2016-W3H0M2P12	33	FR 738-M2	17
E2 CP10G2V1	99	EL AN21224	85	FP 731-M2R5	25	FR 2016-W3M2P12	33	FR 738-M2P11	17
E2 CP11G2V1	99	EL AN21257	85	FP 735-M2	25	FR 2030-W3M2	33	FR 751-M2	17
E2 CP20G2V1	99	EL AN21220	85	FP 735-M2R26	25	FR 2031-W3M2	33	FR 752-M2	17
E2 CP10L2V1	99	EL AN21221	85	FP 735-M2R27	25	FR 2038-W3M2	33	FR 754-M2	17
EH B2A22A-P01	99	EL AN21222	85	FP 735-M2R5	25	FR 2051-W3M2	33	FR 754-M2R26	17
EH B2A24A-P01	99	EL AN21258	85	FP 738-M2	25	FR 2052-W3M2	33	FR 754-M2R5	17
EH B2A33A-P01	99	EL AN21255	85	FP 751-M2	25	FR 2054-W3M2R26	33	FR 755-M2	17
EH B2A35A-P01	99	EL AN21298	85	FP 752-M2	25	FR 2054-M2R5	17	FR 755-M2R26	17
EH B2A44A-P01	99	EL AN22012	85	FP 756-M2	25	FR 2054-W3M2R5	33	FR 755-M2R27	17
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Orders: Purchasing orders must be booked with us in writing (fax, e-mail). We reserve the right to not accept e-mail orders in case of missing characteristics necessary to correctly identify the sender or to not process them when we recognise virus presence or uncertain origin annexed.

Minimum order amount: Unless specifically agreed, for abroad countries the minimum amount of the order is 200 Euro. Orders under 200 Euro will have an extra surcharge for processing cost plus bank fees (30 Euro).

Prices: List prices does not includes VAT, custom taxes or other similar charges. Unless specifically agreed, prices are not binding and may change without prior notice.

Purchasing Quantity: Some articles are sold in package. Total quantity order of these items must be multiple of the package content.

Orders cancellation/changes: Orders variation could be accepted depending on status of manufacturing process. Changes or cancellation of special articles orders will not be accepted.

Supply: The supply will include only what mentioned in the sales confirmation. We reserve the right to stop supply in case of changes in the customer's financial standing.

Delivery date: Delivery is specified on the order confirmation, which shows the expected week of shipment from Pizzato Elettrica, not the date of arrival at the customer's premises. This date is an approximate value and can not be used as a reason of the order non-fulfilment.

Packing: Packaging is free. Over six boxes pallets could be necessary for the transport.

Shipment: Good's transport is at customer's risk, even when delivery term is agreed at customer's site. It is a customer obligation to check the number of boxes delivered by the forwarder, to verify packaging damages and to control the weight declared in documents before accept the goods. Any discrepancy or mistakes should be reported by writing within 8 days from the good's receipt. If case of Ex works deliveries it is responsibility of customer to verify that forwarder is authorized to the goods carriage in compliance with Italian law.

Warranty: The warranty has a validity of 12 months starting from the delivery date of the material. 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 over the technological limits described in the general catalog, or items that have not received the right maintenance. Pizzato Elettrica engages itself to repair, 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 responsible only for the product's value and refund request are not accepted for machine down-time, repair or expenses for damages direct or indirect as consequence of products performance. It is a manufacturer's responsibility to evaluate the importance of chosen products and any malfunction consequences and adopt necessary technical measures to minimize consequences on machines and people safety (redundancy systems, self-controlled systems, etc). Warranty is subjected to the due payments respect.

Products: Products are subjected to technical improvements in any moment without prior notice.

Payment terms: Payments should be settled within the terms agreed in the sales confirmation. The type of payment is always at buyer's risk, regardless of the means chosen. In case of delayed payment, Pizzato Elettrica reserves the right to stop the delivery of current orders and charge the interest at updated value. Technical or commercial claims does not give the right to stop due payments.

Returns: Any return should be previously authorised in writing. Pizzato Elettrica reserves the right of not accept the goods and send it back with freight collect, through the same way of forwarding. Returns have to be sent back within 3 months from the authorization date and no later. After this period, returns will not be accepted.

Ownership: The delivered products remain property of Pizzato Elettrica until full settlement of the invoices.

Proper Law: For any dispute it will be competent the Italian Law and Bassano del Grappa Court, Vicenza - Italy.

Any information or application example, included the connection diagrams, described in this document are to be intended as purely descriptive. The choice and application of the products in conformity with the Standards, in order to avoid damages to persons or goods, is under the responsibility of the user.

The drawings and data contained in this catalog are not binding, and we reserve the right to improve the quality of our products to modify them at any time without prior notification.

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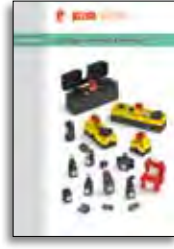
General Catalog



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