

2015-2016

# **General Catalogue HMI**



# 1 Company Profile



▶3

# **1** New products 2015-2016

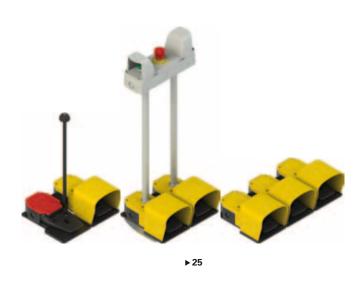


▶15

# 2 Single foot switches PX and PA series



3 Modular foot switches PC series



4 Single buttons PU-PL series



▶35

5 Double and triple buttons PD-PT series



▶ 43

6 Quadruple buttons PQ series



▶49

7 Emergency buttons PE series



▶ 53

8 SE-SL-SC series selectors



9 Indicator lights IL series



▶ 71

# 10 Single contact blocks CP-CF series



12 LED units LP-LF series



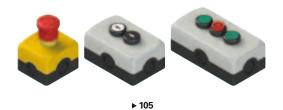
13 Protected contact blocks FR, FK, FX series



15 Monolithic indicator lights E6 IL series



17 ES series enclosures



19 Illuminated discs



**21** Accessories



11 Double contact blocks CP-CF series



14 USB and RJ45 sockets



▶97

16 Potentiometers E6 DM series



18 EA series enclosures



20 Accessories and utilization requirements EROUND line



22 Appendix

١		
	Contact blocks	▶131
	Connectors	▶132
	Technical concepts	▶133
	Alphanumeric Table of Contents	▶137
	General Sales Terms	▶139

2



# 200 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 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.



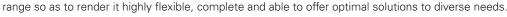
# 100% MADE IN ITALY

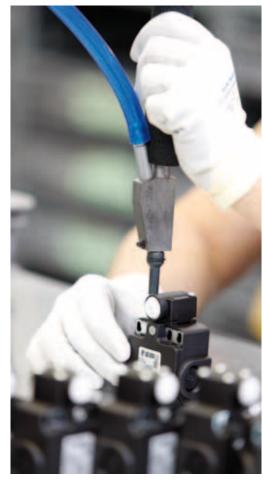
An entrepreneurial company such as Pizzato Elettrica, which has grown day after day thanks to the "culture of doing" of a family that benefited from approaching its work with tenacity, intelligence and far-sightedness,

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







# 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 four 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 year 1988, 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 3D CAD 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.

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 2011, the first pre-programmed safety modules of the GEMNIS CS MF series are introduced.

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, the range of hinge safety switches was expanded with the AISI 316L stainless steel HX switches.

2014 saw the launch on the market of the RFID safety switches with NG series block and of the safety handle of the P-KUBE 2 line for NG series switches.

Thanks to the robust interlocking system, the NG series switches ensure a maximum locking force of the Fzh actuator that is equivalent to 7500 N.

The new safety handle P-KUBE 2, which is installed in combination with the RFID safety switch with NG series block, provides an integrated locking system of the protections with related access control to dangerous areas.



# 59,000,000 PARTS SOLD WORLDWIDE

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

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

• POSITION SWITCHES. They are installed on a daily basis on any type of industrial machinery, for applications in the wood, metal, plastic, elevators, automotive, naval sectors, etc. In order to be used in a such wide variety of sectors and countries, Pizzato Elettrica position switches are made to be assembled in a lot of configurations thanks to the various body shapes, dozens of contact blocks, hundreds of actuators and materials, forces, assembling versions.

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. Recent products include the RFID safety sensors of the ST series, the stainless steel hinge safety switches of the HX series, the RFID switches with block of the NG

series, and the safety handle of the P-KUBE 2 line.

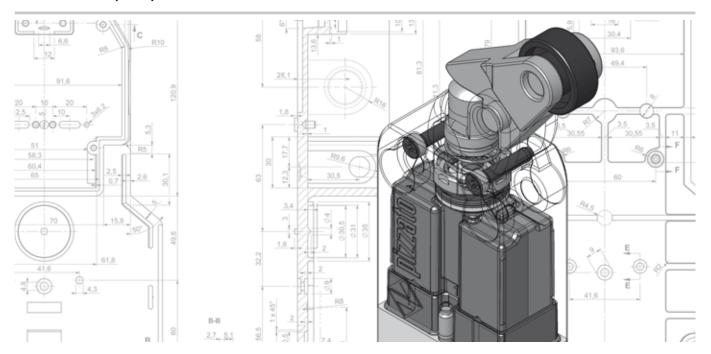
• MAN-MACHINE INTERFACE. Thanks to the recent introduction of the EROUND control and signalling devices, Pizzato Elettrica considerably widens its offer in the man-machine interface sector.

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 manmachine interface sector includes single and modular foot switches 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.

# Company Profile



# 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, TÜV SÜD, EAC. These bodies lay out high technical and qualitative standards for the company to achieve and maintain, verified yearly with seven different inspections: these are performed, without prior notice, by qualified inspectors, who extract samples of products and materials destined for sale from plants, or from the market directly, to subject them to apposite tests.

- CE MARK. All Pizzato Elettrica products bear the CE 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.



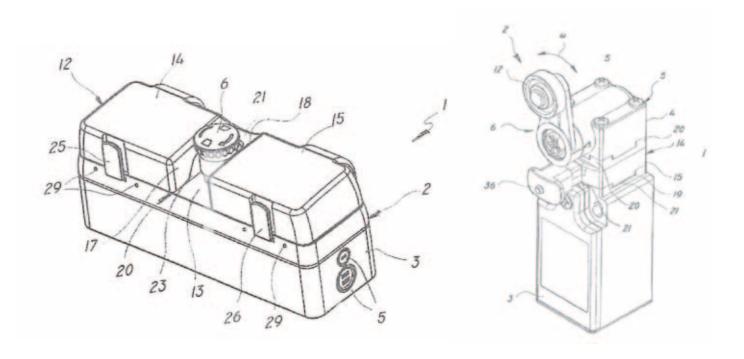


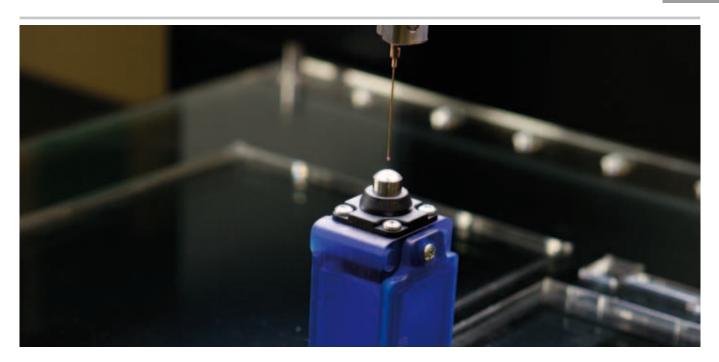
# **140 REGISTERED PATENTS**

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 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.

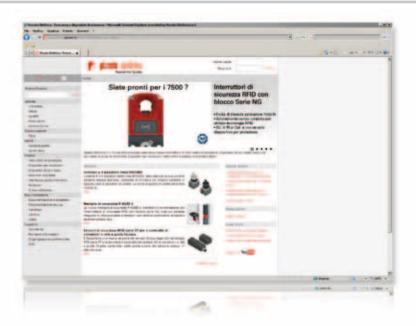
This evolution would not have been possible if Pizzato Elettrica hadn't acquired increasingly well-adapted instruments over time, thus keeping pace with the latest technological frontiers. In this sense, the number of computers used daily within the company is particularly significant: an average of 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 is now available in four languages (Italian, English, French, and German) and it includes plenty of technical data, technical information and news about products and services provided by the company.

- General Catalogue
- Certificates, brochures and leaflets of new products
- Search engine for codes
- 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**

#### **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.

#### **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.

#### **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.





# 77,000 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 77,000 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.

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





# **TECHNICAL AND COMMERCIAL SERVICE**



#### **TECHNICAL OFFICES**

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 +39.0424.470.955 fax: tech@pizzato.com e-mail:

Spoken languages:







## SALES OFFICES

Among the strengths in the company relationship with the commercial network, the direct assistance guaranteed in six 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 +39.0424.470.955 fax: e-mail: info@pizzato.com



# Monolithic indicator lights

# Line EROUND

- Indicator light totally integrated in the monolithic body
- Protection degrees IP67 and IP69K
- More economical than the modular model
- Three different supply voltages
- Optional customisation with symbols and indelible markings

**101** 



# Quadruple buttons

# Line EROUND

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

▶ 49



# Selector switches with 4 positions Line EROUND

- Protection degrees IP67 and IP69K
- Standard and illuminated version
- Three different shapes available
- More than 1,000,000 operations guaranteed

▶ 67



# Potentiometer Line EROUND

- Increased protection degree: IP67 and IP69K
- New resistance values available
- Indelible laser marking

▶ 103





# **Illuminated discs Line** EROUND

- Two signalling modes: continuous and blinking light
- Protection degree IP67
- High visibility thanks to internal high luminosity LEDs
- Optional customisation with symbols and indelible markings

▶ 119



# Blinking LED units Line EROUND

- Integrated blinking feature
- Five colours available
- Wide supply voltage range 12 ... 30 Vac/dc
- High luminosity LED

▶ 85



# **LED** units with solder connection **Line** EROUND

- Solder pin for direct connection to PCB
- Five colours available
- Three supply voltages 12 ... 30Vac/dc, 120 Vac, 230 Vac
- High luminosity LED

▶ 85



# Accessories Line EROUND

- DIN rail adapter: with Ø 22 mm hole for fixing control and signalling devices
- Silicone hood for single projecting button
- Connection block with panel and base mounting
- Shaped ring for quadruple button

▶ 121

# Single foot switches PX and PA series

#### Description



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

## **Protection degree IP65**

Designed for use in even the more severe conditions, these devices have passed the test for IP65 according to IEC 60529 and they are suitable for use where a high protection degree for the enclosure is requested. Available also with IP53 for applications requiring high price/quality

## Conduit entry with cable clamp



Inside the housing there is a cable clamp in axis with the conduit entry which keep the electric cable in position; thus avoiding that repeated tractions and movements impact the electrical connections of the contact blocks. Reversible, it can tighten both, large and small cables.

## Sturdy cap

800 N



Foots witches of the PX series have a shaped reinforced cap that can bear static loads up to 800 N without breaking. Available further solutions for heavy duty environments: the shock-proof protection made of glass-reinforced polymer and the metal protection (only for PA series) with oversize dimensions for safety shoes.

#### Side openings



All PX and PA series foot switches of have two knock out openings on their sides. Thanks to a dedicated joining KIT a single foot switch can be attached to another Pizzato model thus creating only one sturdy double foot switch. The joining KITs are provided with special gaskets which maintain the device protection degree unaltered, and with a special conduit that allows to pass the wires from one foot switch to the next.

#### Stainless steel external metallic parts

ASS 304 On request the foot switch can be provided with external metal parts in stainless steel. In this version, all

screws, springs and sliding pivots made of galvanized steel are replaced by the more resistant stainless steel. Ideal for applications used in presence of corrosive elements as in the food and pharmaceutical sectors.

#### **Contact blocks**



Up to two contact blocks with two contacts each can be fitted in one foot switch. The range of models available is very wide with slow or snap action and different operation travel. All contact blocks are designed with highly reliable double bridge electric contacts; NC contacts have positive opening in accordance with IEC 60947-5-1, they are therefore suitable for safety applications.

## Non-skid rubber feet



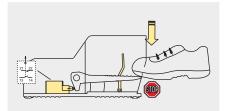
All foot switch are provided with four special non-skid feet which, being hollow in the middle, guarantee smaller contact surface and greater friction. This way the actuation of the foot switch is simple and practical, preventing its sliding away on very smooth and polished floors.

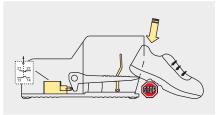
## **Gold-plated contacts**



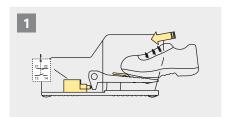
The contact blocks of these devices can be supplied gold-plated upon request. It is ideal for all applications with low voltages or currents and it ensures greater contact reliability. The high-thickness coating > 1 micron ensures the mechanical endurance of the coating over time.

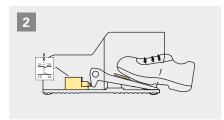
## Safety lever





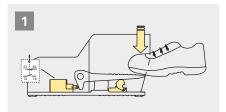
The safety lever prevents the lowering of the pedal actuator in case the foot is not fully inserted into the pedal. This prevents the accidental activation of the pedal.



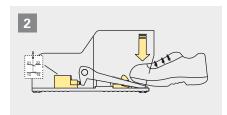


The foot must be completely inserted in order to lower the safety lever and push down the pedal actuator.

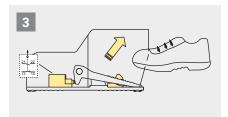
# Lock of the pedal actuator



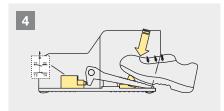
Insertion of the foot in the pedal



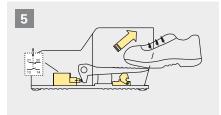
Pushing down the pedal actuator, the contact switches and the device locks the actuator



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

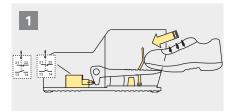


To unlock the pedal actuator, push the locking device



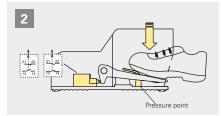
Upon drawing the foot from the foot switch, the pedal actuator and the contacts return to their initial positions

### 2-stage actuating force

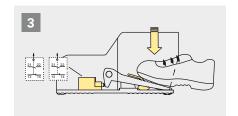


PX foot switches with two overlapped snap action contact blocks

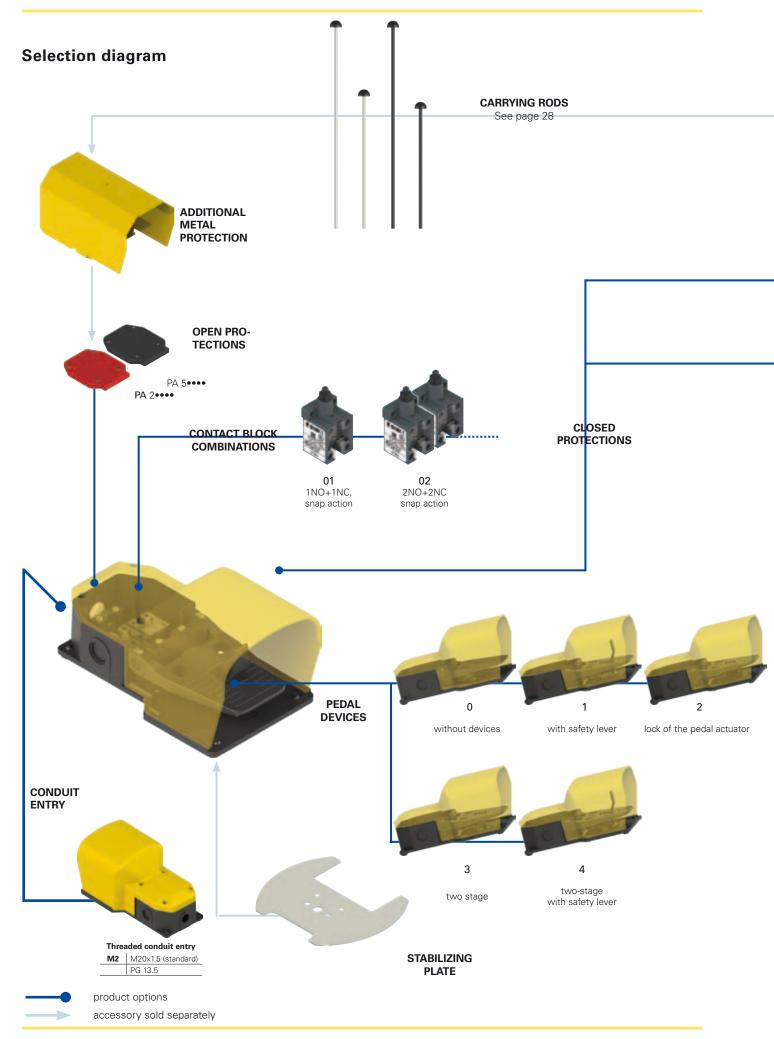
(2x 1NO+1NC), two steps actuation force and safety lever.

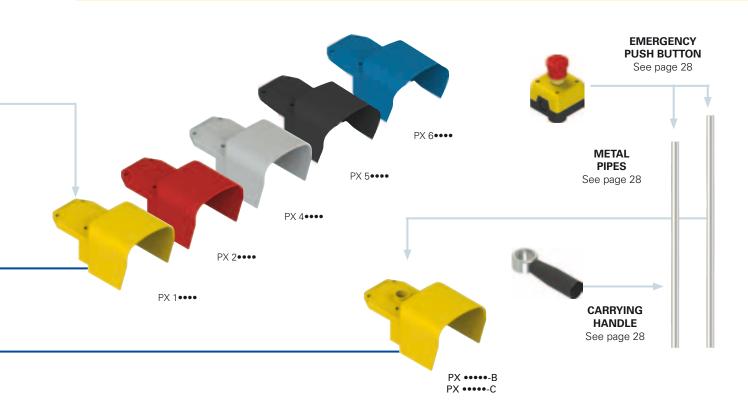


With a light pressure (~19 N) on the pedal actuator, the first contact block switches while the second keeps its state. The pedal actuator stops at pressure point.



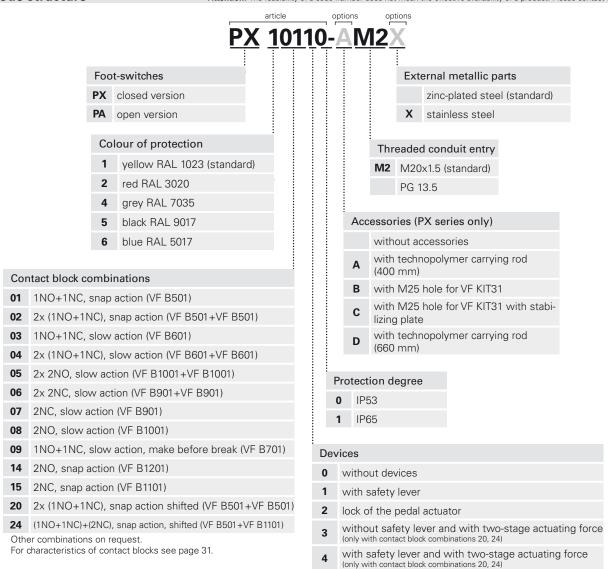
Pushing down with higher force (~180 N) on the pedal actuator, the second contact block switches as well. In this position both contact blocks have been switched.





#### Code structure

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



# Single foot switches PX and PA series



#### Main features

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

#### **Utilization categories**

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

#### Markings and quality marks: complete foot switch

EAC approval: RU C-IT ДМ94.B.01024

#### internal contact block

**←** c(UL)<sub>US</sub> (((())

UL approval:

CCC approval: 2013010305600704 EAC approval: RU C-IT ДМ94.B.01024

#### **Technical data**

#### Housing

Housing with double insulation:

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

Tightening torque, cover screws: 0.8 ... 1.2 Nm Actuating force: 16 N

One threaded conduit entry: M20x1.5 (standard) Tightening torque, cable clamp screws: 0.8 ... 1 Nm

Protection degree: IP53 (P• ••••0-M2) or IP65 (P• ••••1-M2) acc. to EN 60529 with cable gland having equal or higher protection degree

#### General data

-25°C ... +80°C Ambient temperature:

Safety parameters:

B<sub>10d</sub>: 20,000,000 for NC contacts Max. operation frequency: 3600 operating cycles<sup>1</sup>/hour Mechanical endurance: 10 million operating cycles<sup>1</sup> (1) One operation cycle means two movements, one to close ar EN 60947-5-1. nd one to open contacts, as defined in

#### Electrical data

Thermal current (Ith): 10 A

Rated insulation voltage (Ui): 500 Vac 600 Vdc

Rated impulse with stand voltage  $U_{imp}$ : 6 kV

Conditional short circuit current: 1000 A acc. to EN 60947-5-1 Protection against short circuits: type aM fuse 10 A 500 V

Pollution degree:

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

Contact block combinations (all): 1 x 0.5 mm<sup>2</sup> (1 x AWG 20) min. max. 2 x 2.5 mm<sup>2</sup> (2 x AWG 14)

Terminal screw tightening torque: 0.6 ... 0.8 Nm

#### In conformity with standards:

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

#### In conformity with the requirements of:

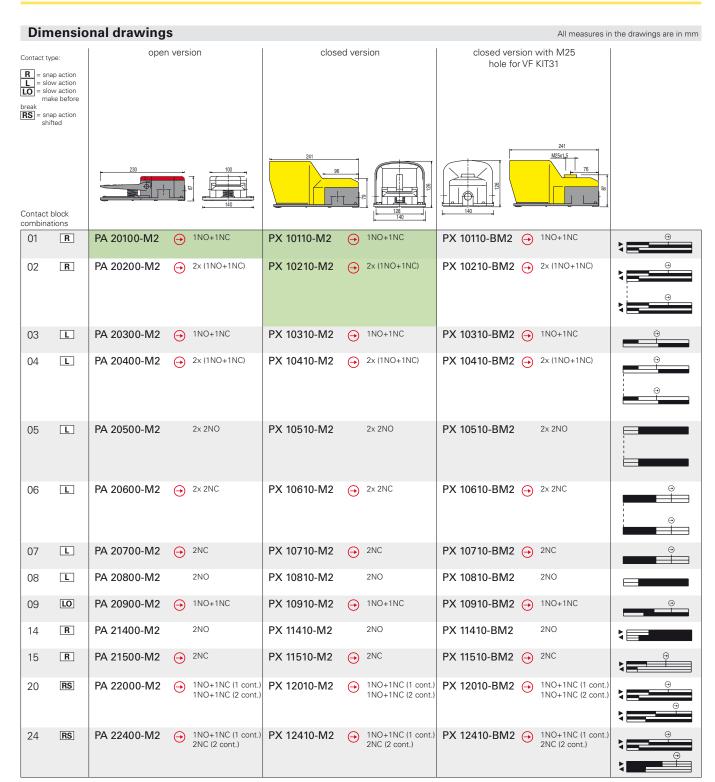
Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

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

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

## Installation for safety applications:

Use only switches marked with the symbol 🕀 aside the product code. Always connect the safety circuit to the NC contacts (normally closed contacts: 11-12, 21-22 or 31-32) as stated in **standard EN 60947-5-1, encl. K, par. 2**.



Contact block data on page 31.

#### Legend

Closed contact

Open contact

Positive opening travel

Pushing the switch / Releasing the switch



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

Accessories See page 127

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

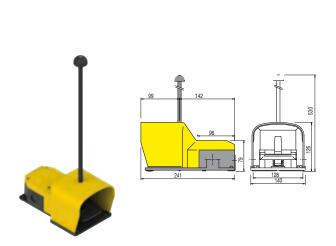
# Single foot switches PX and PA series

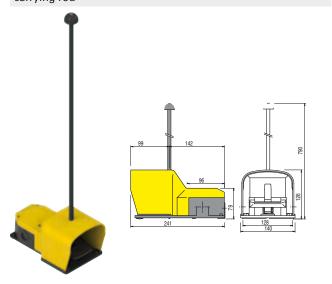
# **Combination examples**

All measures in the drawings are in mm

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

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





How to order:

	/	
PX 10110-M2	VF KIT21	

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

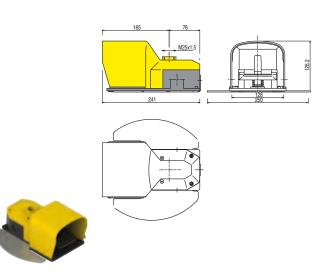
How to order:

<b>*</b>	/	
PX 10110-M2	VF KIT22	

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

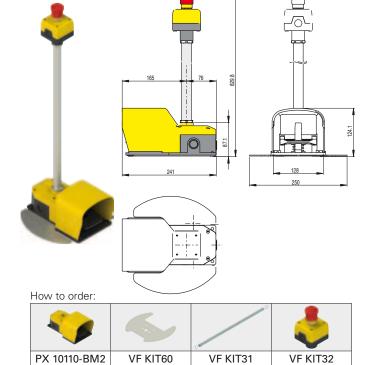
Foot switch closed version with M25x1.5 hole and stabilizing plate

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







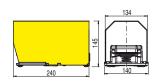


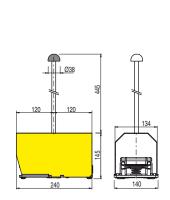
## **Combination examples**

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

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







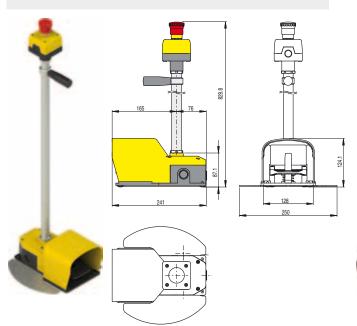
How to order:

-		
PA 20100-M2	VF KIT71	

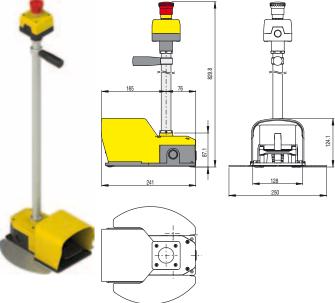
How to order:

-	<b>~</b>		
PA 20100-M2	VF KIT71	VF KIT25	

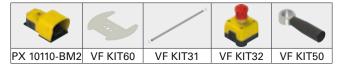
Foot switch, closed version with metal pipe, stabilizing plate, carrying handle and emergency button 1  $\ensuremath{\text{NC}}$ 



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



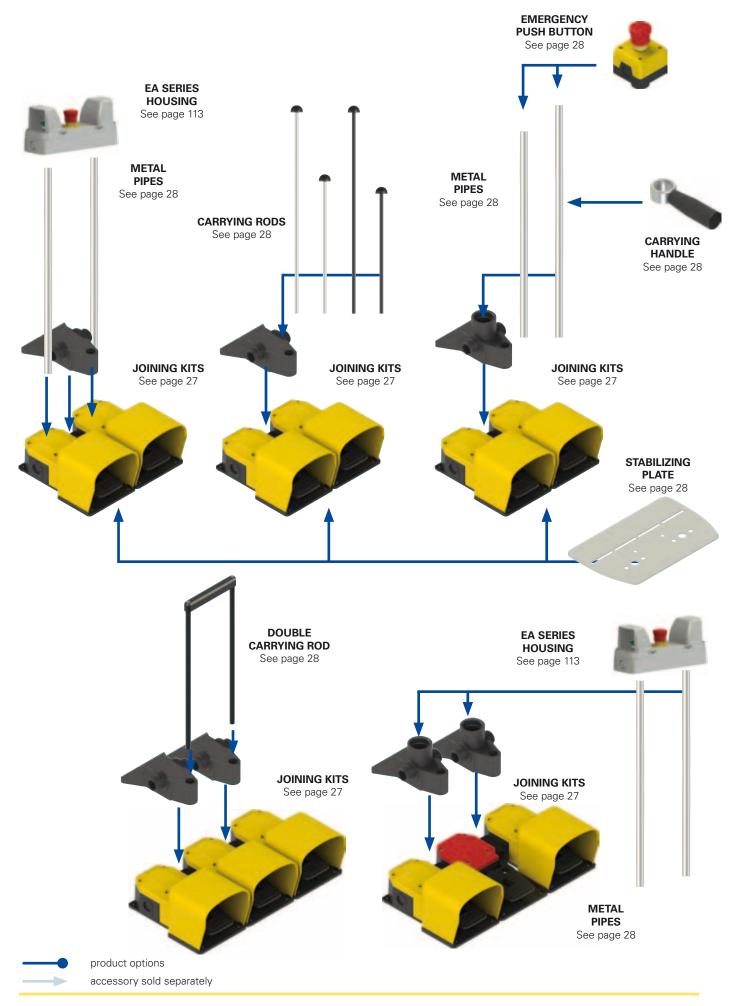
How to order:



How to order:

now to order.	to order.			
***	4			
PX 12040-BM2	VF KIT60	VF KIT31	VF KIT32	VF KIT50

# Selection diagram



# Already existing combinations of double foot switches

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

Code	Left foot switch	Joining device	Right foot switch	Additional kits
PC 2-101	PX 10110-M2	VF KIT20	PX 10110-M2	VF KIT21
PC 2-102	PX 10111-M2	VF KIT20	PX 10111-M2	
PC 2-103	PX 20110-M2	VF KIT20	PX 10210-M2	VF KIT21
PC 2-104	PX 20110-M2	VF KIT20	PX 10110-M2	VF KIT21
PC 2-105	PX 10110-M2	VF KIT20	PX 20110-M2	VF KIT21
PC 2-106	PX 10120-M2	VF KIT20	PX 10110-M2	VF KIT21
PC 2-107	PX 10310-M2	VF KIT20	PX 10310-M2	VF KIT21
PC 2-108	PX 10410-M2	VF KIT20	PX 10410-M2	VF KIT21
PC 2-109	PX 10210-M2	VF KIT20	PX 10210-M2	VF KIT21
PC 2-110	PX 10210 M2	VF KIT20	PX 10301-M2	VI KIIZI
PC 2-111	PX 10100-M2	VF KIT20	PX 10100-M2	
PC 2-112	PX 10100-W2	VF KIT20	PX 10100-W2	VF KIT21
PC 2-112	PX 10111-W2	VF KIT20	PX 10111-W2	VF KIT21
PC 2-113	PX 10120-W2	VF KIT20	PX 10120-W2	VF KIT21
PC 2-114 PC 2-115	PX 10411-M2	VF KIT20	PX 10411-W2	VI KIIZI
PC 2-115	PX 10211-M2	VF KIT20	PX 10201-W2	VF KIT21
PC 2-116 PC 2-117		VF KIT20	PX 10211-W2	VF KIT21
PC 2-117 PC 2-118	PX 10100-M2	VF KIT20	1 1	VF KIT21
	PA 20100-M2		PX 10110-M2	
PC 2-119	PA 20101-M2	VF KIT20	PX 10111-M2	VF KIT21
PC 2-120	PA 20300-M2	VF KIT20	PX 10310-M2	VF KIT21
PC 2-121	PA 20120-M2	VF KIT20	PX 10110-M2	VF KIT21
PC 2-122	PA 20121-M2	VF KIT20	PX 10111-M2	VF KIT21
PC 2-123	PA 20200-M2	VF KIT20	PX 10810-M2	VF KIT21
PC 2-124	PA 20100-M2	VF KIT20	PX 10210-M2	VF KIT21
PC 2-125	PA 20100-M2	VF KIT20	PX 10100-M2	VF KIT21
PC 2-126	PA 20100-M2	VF KIT20	PA 20100-M2	VF KIT21
PC 2-127	PA 20400-M2	VF KIT20	PA 20400-M2	VF KIT21
PC 2-128	PX 10110-M2	VF KIT30	PX 10110-M2	
PC 2-129	PA 20100-M2	VF KIT30	PX 10110-M2	
PC 2-130	PX 10111-M2	VF KIT30	PX 10111-M2	
PC 2-131	PX 10110-BM2	VF KIT20	PX 10110-BM2	
PC 2-132	PX 10111-M2	VF KIT30	PX 10111-M2	VF KIT29+ VF KIT32+VF KIT50
PC 2-133	PX 20210-M2	VF KIT20	PX 20210-M2	
PC 2-134	PX 20410-M2	VF KIT20	PX 20410-M2	
PC 2-35	PX 20211-M2	VF KIT20	PX 20211-M2	
PC 2-137	PX 10421-M2	VF KIT20	PX 10401-M2	
PC 2-138	PX 10210-M2	VF KIT20	PX 20210-M2	VF KIT21
PC 2-139	PX 40220-M2	VF KIT20	PX 40200-M2	
PC 2-40	PA 20100-M2	VF KIT20	PX 10110-M2	VF KIT22
PC 2-141	PX 10110-M2	VF KIT20	PA 20100-M2	
PC 2-142	PX 10111-M2	VF KIT30	PX 10111-M2	VF KIT31+ VF KIT32
PC 2-143	PX 10100-M2	VF KIT30	PX 10210-M2	VF KIT31+ VF KIT33
PC 2-144	PX 10810-M2	VF KIT30	PX 10110-M2	VF KIT31+ VF KIT32
PC 2-145	PX 40100-M2	VF KIT30	PX 40100-M2	VF KIT31+ VF KIT33
PC 2-146	PA 20100-M2	VF KIT30	PX 10110-M2	VF KIT31+ VF KIT36
PC 2-147	PX 10110-M2	VF KIT30	PX 12040-M2	VF KIT31+ VF KIT34
PC 2-148	PX 10110-M2	VF KIT20	PX 10110-M2	VF KIT21 + VF KIT61
PC 2-149	PX 10111-M2	VF KIT30	PX 10111-M2	VF KIT29+ VF KIT32+VF KIT50+ VF KIT61
PC 2-150	PX 40310-M2	VF KIT30	PA 20300-M2	VF KIT29+ VF KIT32

# Already existing combinations of triple foot switches

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

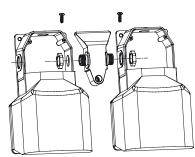
#### Note:

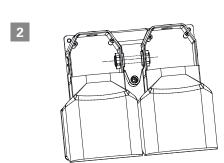
VF KIT21, 22, 26, 29, 31, 32, 33, 34, 35, 40, 50 kits are not supplied assembled because, in order to be wired, kits should be in any case disassembled.

#### How to combine the modular foot switches

All single foot switches (see page 17) have side knock out openings to enable the insertion of the threaded end of the joining elements. The locking of the threaded nuts of the joining elements forms a sealed cable conduit for the electrical cables from a foot switch to the other. In addition to this, with the supplied screws, the joining elements allow the definitive mechanical locking and the stabilization of two or more foot switches as a single object.











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







## Joining elements for modular foot switches

Article	Description
Artiolo	Description
VF KIT20	Joining element



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

Protection degree IP65.

Article	Description
VF KIT30	Joining element



Joining kit for technopolymer pedals with threaded hole M25x1.5 for VF KIT31-VF KIT29 with nuts, seals and self-tapping screws for the fixing of two single pedals. Protection degree IP65.

## Auxiliary elements for modular foot switches

Article	Description
VF KIT21	Kit carrying rod, L=400 mm
VF KIT22	Kit carrying rod, L=660 mm



Kit plastic carrying rod (can be connected to VF KIT20) with selftapping screw for rod fixing.

Article	Description
VF KIT40	Kit double carrying rod, L=400 mm
VF KIT41	Kit double carrying rod, L=660 mm



Kit double carrying rod with handle and self-tapping screws for fixing, to combine with two VF KIT20.

Article	Description	
VF KIT18	Metal nut	



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

10 pcs. packs.

Article	Description	
VF KIT50	Carrying handle	



Kit carrying handle for metal tube Ø 25 mm (VF KIT31-VF KIT29).

Article	Description	
VF KIT61	Metal stabilizing plate	



Metal stabilizing plate for double pedals.

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





Kit metal carrying rod (can be connected to VF KIT20) with selftapping screw for rod fixing.

Article	Description
VF KIT31	Kit Ø 25 mm metal tube, L=660 mm
VF KIT29	Kit Ø 25 mm metal tube, L=740 mm



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

Article	Description
VF KIT32	Kit emergency button, 1NC
VF KIT33	Kit emergency button, 1NC+1NO
VF KIT34	Kit emergency button, 2NC
VF KIT35	Kit box for buttons Ø 22 mm



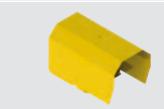
Kit emergency button, rotary release, compliant with EN 60947-5-1 and EN ISO 13850, to combine with VF KIT31-VF KIT29. Protection degree IP65.

Article	Description
VF KIT60	Piastra stabilizzatrice metallica



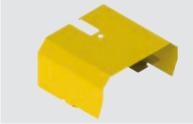
Metal stabilizing plate for single pedal.

Article	Description
VF KIT71 Single yellow metal protection	



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

Article	Description	
VF KIT81	Double yellow metal protection	



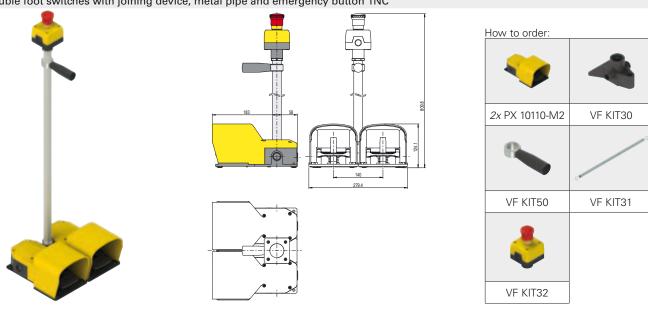
Additional metal protections for modular foot switches PC series. For heavy-duty work environments, increased dimensions for safety shoes. Not applicable with VF KIT61.

Items with code on green background are stock items

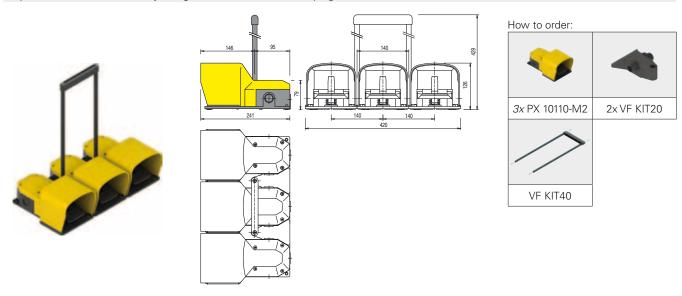
# **Combination examples**

All measures in the drawings are in mm

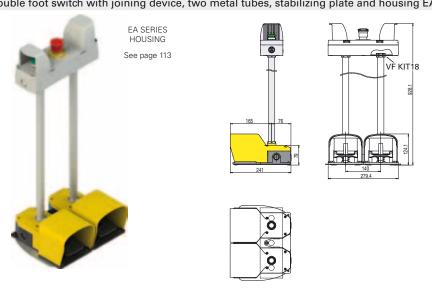
Double foot switches with joining device, metal pipe and emergency button 1NC



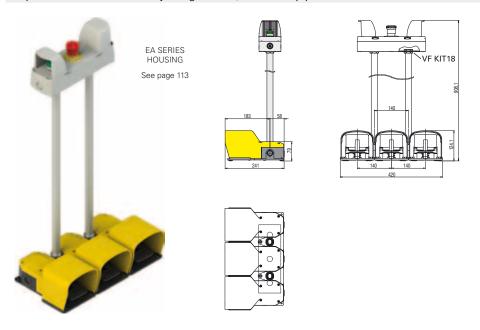
Triple foot switches with two joining devices and double carrying rod



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

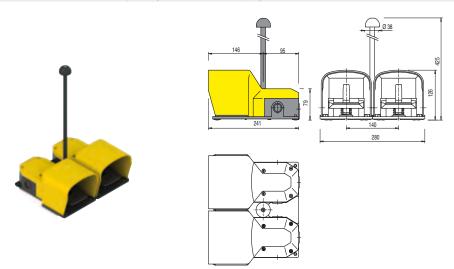


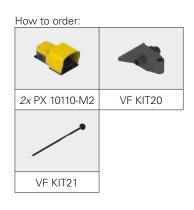
## Triple foot switches with two joining devices, two metal pipes and EA series box





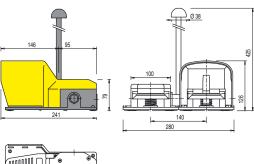
# Double foot switches with joining device and carrying rod

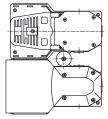




# Double foot switches (with and without pedal actuator protection) with joining device and carrying rod







How to order:			
***	-		
PX 10110-M2	PA 20100-M2		
4			
VF KIT20	VF KIT21		

# Position switches for indoor use



#### Main features

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

#### Markings and quality marks:



2013010305600704 CCC approval: EAC approval: RU C-IT ДМ94.В.01024

#### **Technical data**

#### Housing

Housing made of glass fiber reinforced technopolymer, self-extinguishing and shockproof

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

#### General data

Ambient temperature: -40°C ... +80°C

Safety parameters:

B<sub>10d</sub>: 40,000,000 for NC contacts Max. actuation frequency: 3600 operating cycles<sup>1</sup>/hour Mechanical endurance: 20 million operating cycles<sup>1</sup>

Max. actuation speed: 0.5 m/s

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

0.6 ... 0.8 Nm Tightening torques screws contact blocks: (1) One operation cycle means two movements, one to close and one to open contacts, as defined in EN 60947-5-1

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

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

#### In conformity with standards:

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

#### Approvals:

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

#### In conformity with the requirements of:

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.

#### Installation for safety applications:

Use only switches marked with the symbol  $\odot$  aside the product code. Always connect the safety circuit to the NC contacts (normally closed contacts: 11-12, 21-22 or 31-32) as stated in standard EN 60947-5-1, encl. K, par. 2. Actuate the switch at least up to the positive opening travel shown in the travel diagrams. Operate the switch at least with the positive opening force, indicated between brackets below each article, aside the minimum force value.

Electrical data		Utilization category			
Thermal current (Ith): Rated insulation voltage (Ui): Rated impulse withstand voltage (U <sub>imp</sub> ): Conditional short circuit current: Protection against short circuits: Pollution degree:	10 A 500 Vac 600 Vdc 6 kV 1000 A according to EN 60947-5-1 type aM fuse 10 A 500 V 3	Ue (V) le (A)	ng curren 250 6 Irrent: DC 24 6	400 4	60÷60 Hz) 500 1 250 0.4

#### Characteristics approved by UL

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

Characteristics of the housing: open type

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

In conformity with standard: UL 508, CSA 22.2 N.14

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

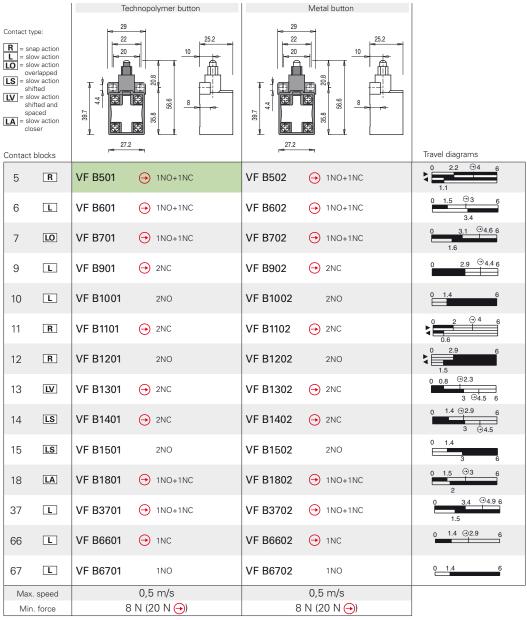
#### **Description**



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

### **Dimensional drawings**

All measures in the drawings are in mm



#### Legend

Closed contact | ☐ Open contact | → Positive opening travel according to IEC 60947-5-1 | ▶ Pushing the switch / ◀ Releasing the switch

#### **Code structure**

