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

Description

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

Protection degree IP65

IP65

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

Conduit entry with cable clamp

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

Sturdy cap

800 N

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

Side openings

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

Stainless steel external metallic parts

AISI 304

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

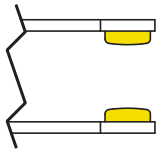
Contact block

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

Non-slip rubber feet

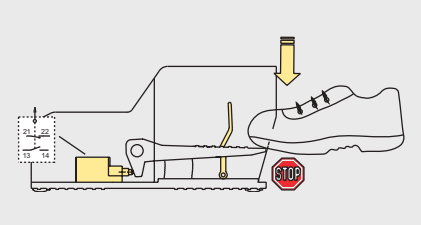
All foot switches are provided with four dedicated non-slip feet. Being hollow in the middle, these feet guarantee smaller contact surface and greater friction coefficient. This way the actuation of the foot switch is simple and practical, preventing its sliding away on very smooth and polished floors.

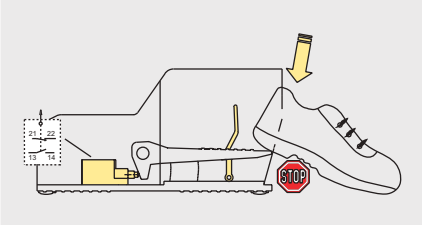
Gold-plated contacts



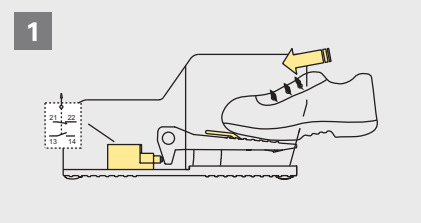
The contact blocks of these devices can be supplied gold-plated upon request. Ideal for applications with low voltages or currents; it ensures increased contact reliability. Available in two thicknesses (1 or 2.5 microns), it adapts perfectly to the various fields of application, ensuring a long endurance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

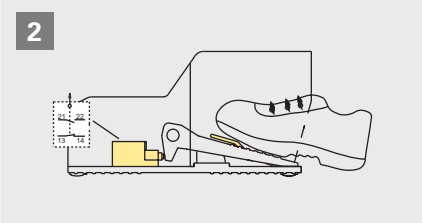
Safety lever





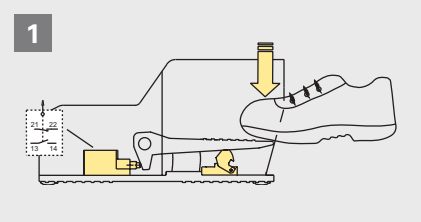
The safety lever prevents the lowering of the pedal actuator in case the foot is not fully inserted into the pedal. This prevents the accidental activation of the pedal.



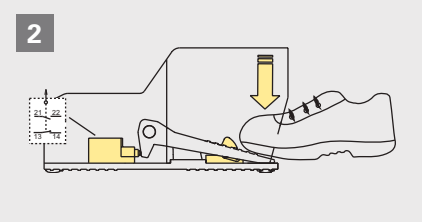


Only if the foot is completely inserted it is possible to lower the safety lever and push down the pedal actuator.

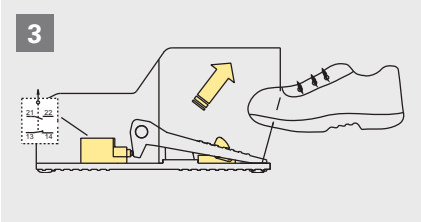
Lock of the pedal actuator



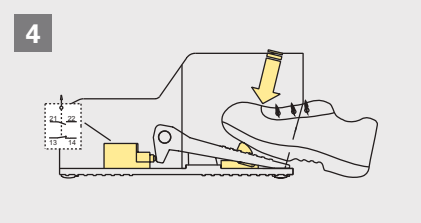
Insertion of the foot into the pedal



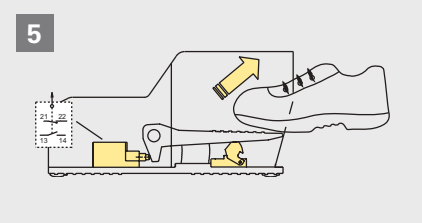
Pushing down the pedal actuator, the contacts switch and the locking device locks the actuator



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

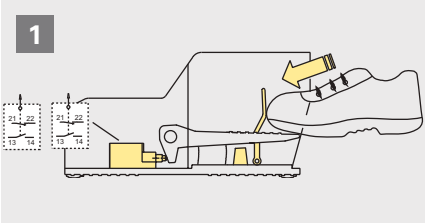


To unlock the pedal actuator push on the locking device.

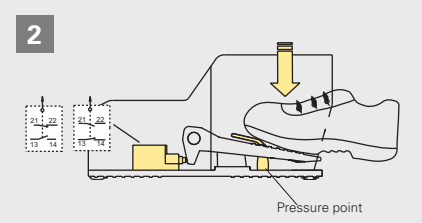


Removing the foot from the foot switch, the pedal actuator and the contacts return to their initial positions.

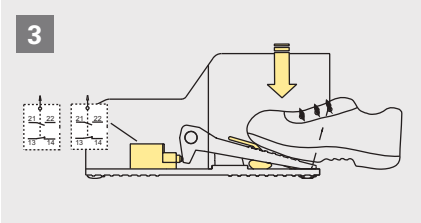
2-stage actuating force



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

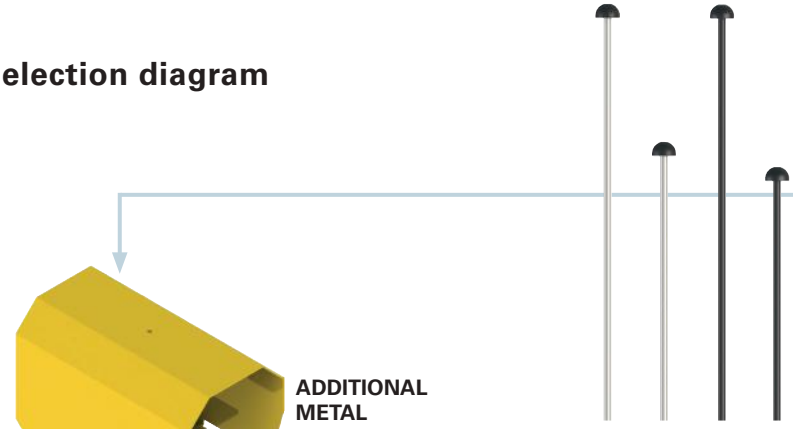


With a light pressure (~19 N) on the pedal actuator, one of the two contact blocks switches while the second keeps its state. The pedal actuator stops at pressure point.



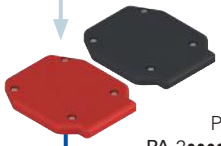
By pushing down with higher force (~180 N) on the pedal actuator, the second contact block switches as well. In this position, both contact blocks are switched.

Selection diagram



CARRYING RODS
See page 24

ADDITIONAL METAL PROTECTION



OPEN PROTECTIONS

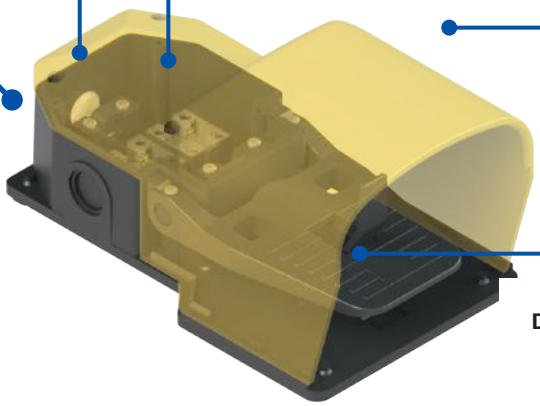
PA 5••••
PA 2••••

CONTACT BLOCK COMBINATIONS

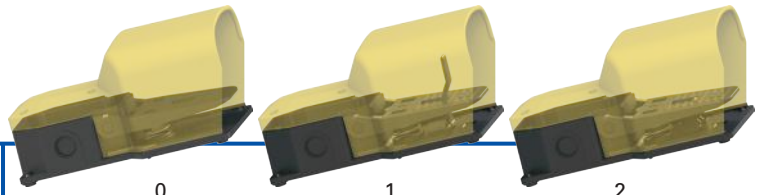
01
1NO+1NC
snap action

02
2NO+2NC
snap action

CLOSED PROTECTIONS



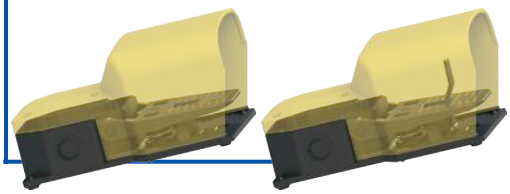
PEDAL DEVICES



0
no device

1
with safety lever

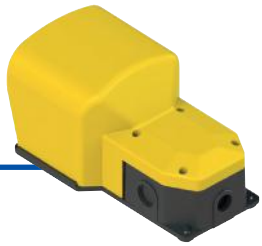
2
lock of the pedal actuator



3
two-stage

4
two-stage
with safety lever

CONDUIT ENTRY



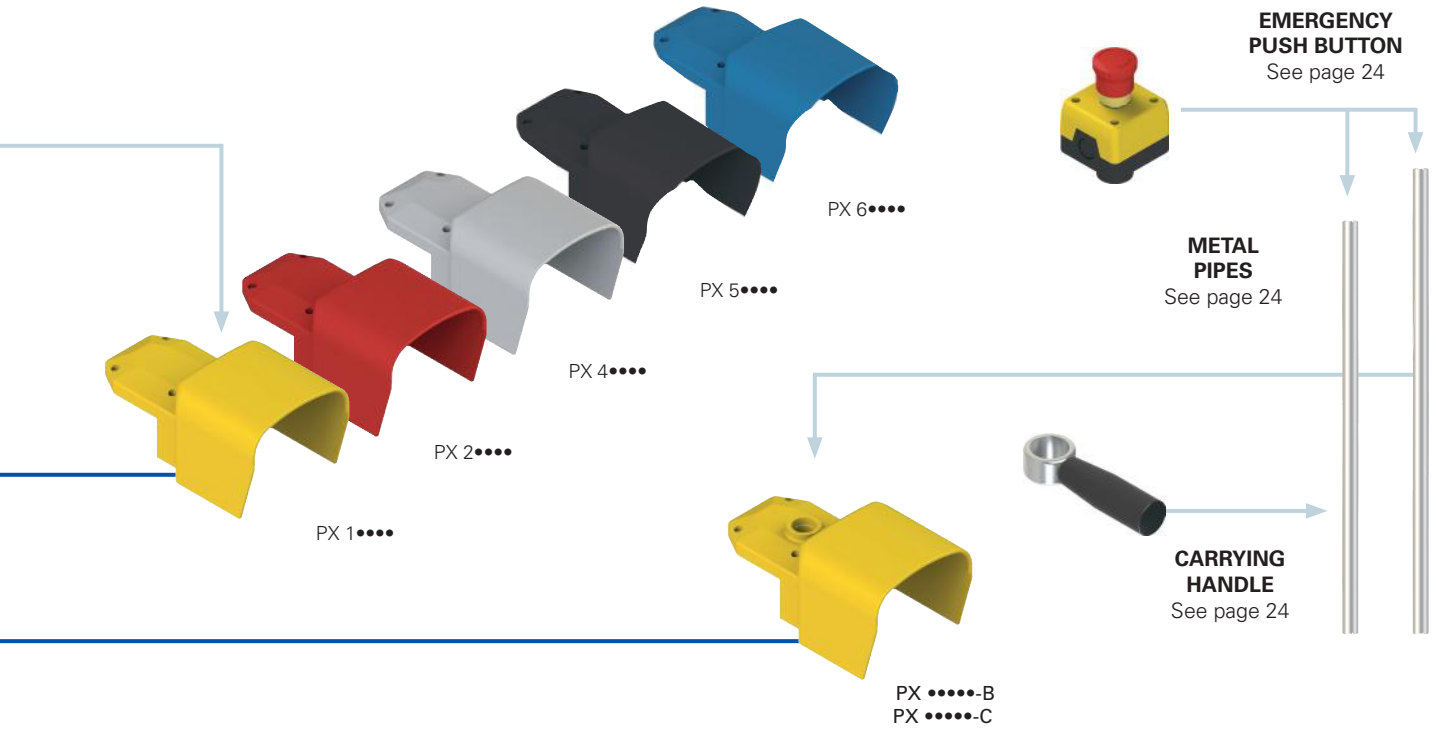
Threaded conduit entry

M2	M20x1.5 (standard)
	PG 13.5

STABILIZING PLATE

Product options

Sold separately as accessory



Code structure

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

article | options

PX 10110-AGM2

Foot switches	
PX	closed version
PA	open version

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

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

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

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

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

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

Protection degree	
0	IP53
1	IP65

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

Main features

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

Utilization categories

Alternating current: AC15 (50÷60 Hz)

Ue (V)	250	400	500
Ie (A)	6	4	1

Direct current: DC13

Ue (V)	24	125	250
Ie (A)	3	0.55	0.3

Quality marks:
complete foot switch

EAC approval: RU C-IT.АД35.В.00454

Internal contact block

UL approval: E131787
CCC approval: 2013010305600704
EAC approval: RU C-IT.АД35.В.00454

Technical data

Housing

Housing with double insulation:	⧈
Base:	glass fibre reinforced technopolymer, self-extinguishing and shock-proof
Cap:	technopolymer, self-extinguishing and shock-proof
External metallic parts:	stainless steel
Cap screw tightening torque:	0.8 … 1.2 Nm
Actuating force:	16 N
One threaded conduit entry:	M20x1.5 (standard)
Cable clamp screw tightening torque:	0.8 … 1 Nm
Protection degree:	IP53 (P• ••••0-M2) or IP65 (P• ••••1-M2) acc. to EN 60529 with cable gland of equal or higher protection degree
Utilization requirements:	see page 152

General data

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

Electrical data

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

Cable cross section (flexible copper strands)

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

In compliance with standards:
IEC 60947-5-1, EN 60947-5-1, IEC 60947-1, EN 60947-1, EN 60529, EN 50581..

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU,
EMC Directive 2014/30/EU,
RoHS Directive 2011/65/EU.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1.

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

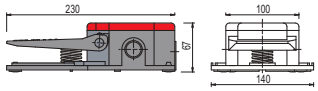
Dimensional drawings

All values in the drawings are in mm

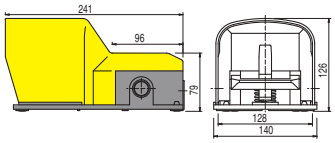
Contact type:

R = snap action
L = slow action
LO = slow action make before break
RS = snap action shifted

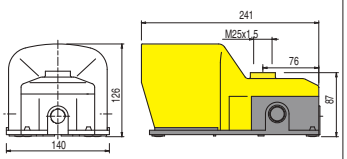
open version



closed version



closed version with M25 hole for VF KIT31



Contact block combinations	Contact type	Article	Contacts	Article	Contacts	Article	Contacts	Travel diagram
01	R	PA 20100-M2	1NO+1NC	PX 10110-M2	1NO+1NC	PX 10110-BM2	1NO+1NC	
02	R	PA 20200-M2	1NO+1NC 1NO+1NC	PX 10210-M2	1NO+1NC 1NO+1NC	PX 10210-BM2	1NO+1NC 1NO+1NC	
03	L	PA 20300-M2	1NO+1NC	PX 10310-M2	1NO+1NC	PX 10310-BM2	1NO+1NC	
04	L	PA 20400-M2	1NO+1NC 1NO+1NC	PX 10410-M2	1NO+1NC 1NO+1NC	PX 10410-BM2	1NO+1NC 1NO+1NC	
05	L	PA 20500-M2	2NO 2NO	PX 10510-M2	2x 2NO	PX 10510-BM2	2NO 2NO	
06	L	PA 20600-M2	2NC 2NC	PX 10610-M2	2x 2NC	PX 10610-BM2	2NC 2NC	
07	L	PA 20700-M2	2NC	PX 10710-M2	2NC	PX 10710-BM2	2NC	
08	L	PA 20800-M2	2NO	PX 10810-M2	2NO	PX 10810-BM2	2NO	
09	LO	PA 20900-M2	1NO+1NC	PX 10910-M2	1NO+1NC	PX 10910-BM2	1NO+1NC	
14	R	PA 21400-M2	2NO	PX 11410-M2	2NO	PX 11410-BM2	2NO	
15	R	PA 21500-M2	2NC	PX 11510-M2	2NC	PX 11510-BM2	2NC	
20	RS	PA 22030-M2	1NO+1NC 1NO+1NC	PX 12040-M2	1NO+1NC 1NO+1NC	PX 12040-BM2	1NO+1NC 1NO+1NC	
24	RS	PA 22430-M2	1NO+1NC 2NC	PX 12440-M2	1NO+1NC 2NC	PX 12440-BM2	1NO+1NC 2NC	

For contact block data see page 27

Key to travel diagrams

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

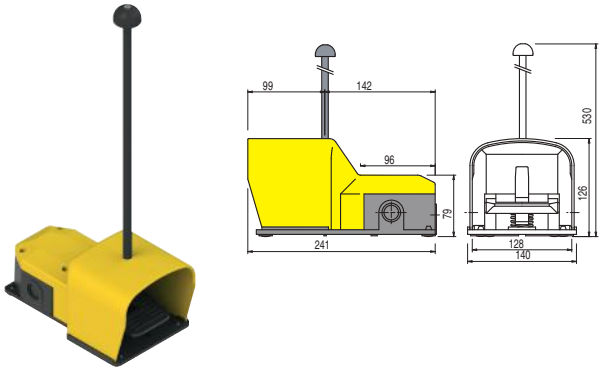
Accessories See page 143

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

Combination examples

All values in the drawings are in mm

Foot switch, closed version, provided with a 400 mm techno-polymer carrying rod

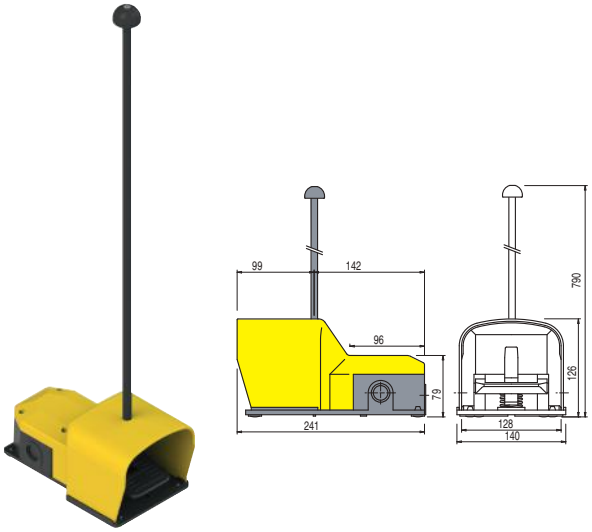


Ordering example:

			
PX 10110-M2	VF KIT21		

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

Foot switch, closed version, provided with a 660 mm techno-polymer carrying rod

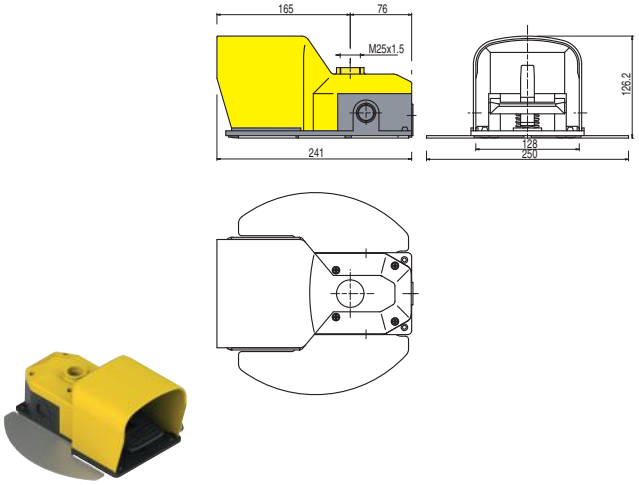


Ordering example:

			
PX 10110-M2	VF KIT22		

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

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

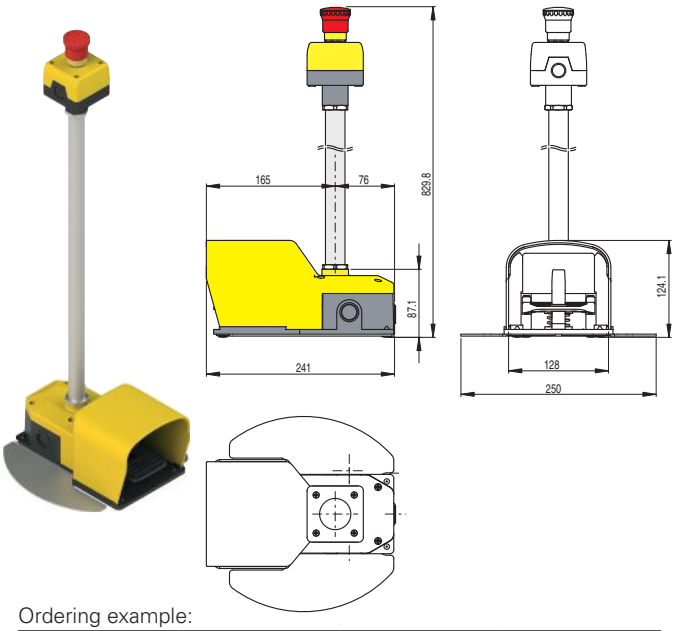


Ordering example:

			
PX 10110-BM2	VF KIT60		

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

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

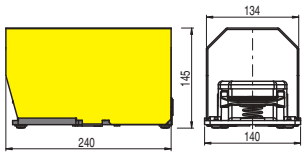


Ordering example:

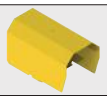
			
PX 10110-BM2	VF KIT60	VF KIT31	VF KIT32

Combination examples

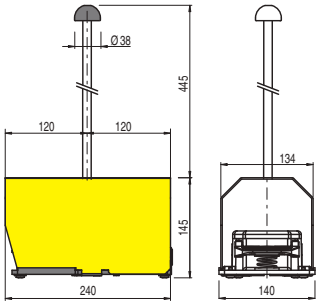
Foot switch, open version, provided with an additional metal protection. Ideal for heavy duty applications with safety shoes.



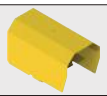
Ordering example:

			
PA 20100-M2	VF KIT71		

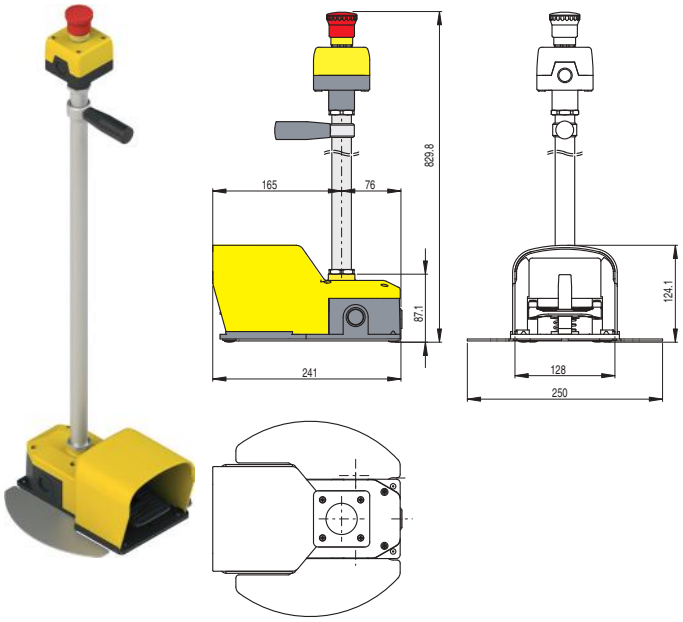
Foot switch, open version, provided with metal protection and a 400 mm metal carrying rod. In heavy-duty work environments, protection hood with increased dimensions for safety shoes.



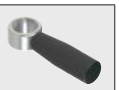
Ordering example:

			
PA 20100-M2	VF KIT71	VF KIT25	

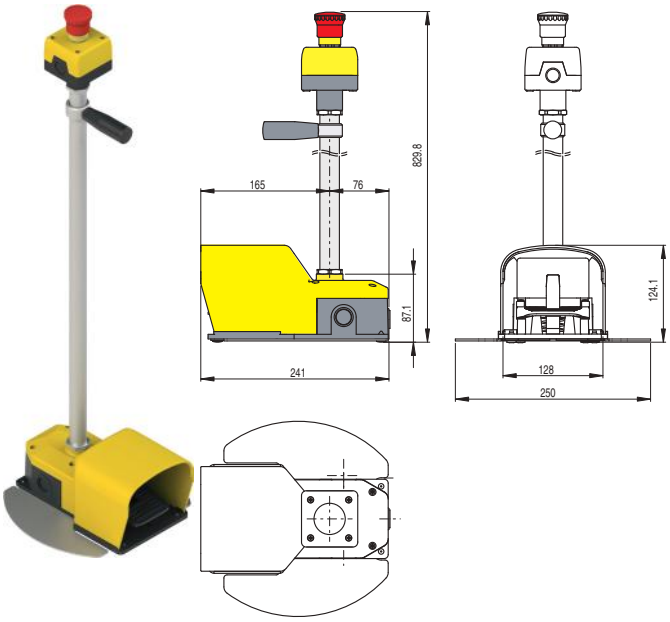
Foot switch, closed version, provided with metal pipe, stabilizing plate, carrying handle and emergency button 1 NC



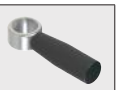
Ordering example:

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

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



Ordering example:

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