Switches with **manual reset for speed limiters**

Main features
Safety switches designed specifically for speed limiters requiring high sensitivity, with a low actuating force.
Operation: the switch button is pressed up to the switching point. The button then continues to the limit of travel automatically.

Quality marks:

IMQ approval:	EG610
UL approval:	E131787
CCC approval:	2021000305000101
EAC approval:	RU C-IT.УТ03.B.00035/19

Technical data

Housing

Housing made of glass fibre reinforced technopolymer, self-extinguishing, shock-proof and with double insulation:	⧈
One threaded conduit entry:	M20x1.5 (standard)
Protection degree acc. to EN 60529:	IP67 with cable gland of equal or higher protection degree

General data

Ambient temperature:	-25°C … +80°C (standard) -40°C … +80°C (T6 option)
Max. operating frequency:	3600 operating cycles/hour
Mechanical endurance:	1 million operating cycles (FR 5A3-M2 / FR 11A3-M2) 50,000 operating cycles (FR 17A3-M2 / FR 19A3-M2)
Mounting position:	any
Safety parameter B_{10D} for NC contacts:	2,000,000 (FR 5A3-M2 / FR 11A3-M2) 100.000 (FR 17A3-M2 / FR 19A3-M2)
Mechanical interlock, not coded:	type 1 acc. to EN ISO 14119
Tightening torques for installation:	see page 155
Wire cross-sections and wire stripping lengths:	see page 169

In compliance with standards:
IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, EN IEC 63000, EN 81-20, EN 81-50, UL 508, CSA 22.2 No.14
Approvals:
IEC 60947-5-1, UL 508, CSA 22.2 No.14, GB/T14048.5-2017.

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, Lift Directive 2014/33/EU, RoHS Directive 2011/65/EU.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1.

Installation for safety applications:
Use only switches marked with the ⊖ symbol beside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in **standard EN 81-20 par. 5.11.2.2.1**. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 156. Actuate the switch **at least with the positive opening force**, reported in brackets below each article, next to the actuating force value.

⚠ **If not expressly indicated in this chapter, for correct installation and utilization of all articles see the instructions given on pages 153 to 162.**

Electrical data

Thermal current (I_{th}):	10 A
Rated insulation voltage (U_i):	500 Vac 600 Vdc 400 Vac 500 Vdc (contact block 11)
Rated impulse withstand voltage (U_{imp}):	6 kV
Conditional short circuit current:	1000 A acc. to EN 60947-5-1
Protection against short circuits:	type aM fuse 10 A 500 V
Pollution degree:	3

Utilization category

Alternating current: AC15 (50÷60 Hz)

U_e (V)	250	400	500
I_e (A)	6	4	1

Direct current: DC13

U_e (V)	24	125	250
I_e (A)	3	0.55	0.3

Features approved by IMQ

Rated insulation voltage (U_i):	500 Vac 400 Vac (for contact block 11)
Conventional free air thermal current (I_{th}):	10 A
Protection against short circuits:	type aM fuse 10 A 500 V
Rated impulse withstand voltage (U_{imp}):	6 kV
Protection degree of the housing:	IP67
MV terminals (screw terminals)	
Pollution degree:	3
Utilization category:	AC15
Operating voltage (U_e):	400 Vac (50 Hz)
Operating current (I_e):	3 A

Forms of the contact element: Zb, Y+Y, Y+Y+X
Positive opening of contacts on contact blocks 5, 11, 17, 19
In compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU

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

Features approved by UL

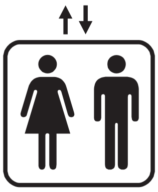
Electrical Ratings:	Q300 pilot duty (69 VA, 125-250 V dc) A600 pilot duty (720 VA, 120-600 V ac)
Environmental Ratings:	Types 1, 4X

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

The hub is to be connected to the conduit before the hub is connected to the enclosure.

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

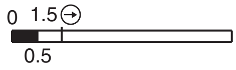
Compliant with EN 81-20 and EN 81-50



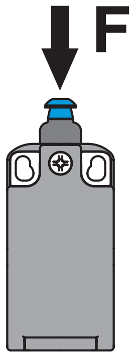
- Safety contacts in compliance with EN 60947-5-1, annex K.
- Protection degree higher than IP4x.
- All switches meet requirements laid down by the new standards for safety contacts.

Contact blocks 17 and 19

Pizzato Elettrica has developed innovative and specific contact blocks, designed with a very short pre-travel distance and low actuating forces; as required by modern speed limiters.



Increased actuating force



On request, contact block 19 can be supplied with increased actuating force of 4 or 6 N; ideal for applications with high levels of vibrations.

Protection degree IP67

IP67

All switches of these series have protection degree IP67.

Code structure

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

article: FR 19A3 – options: E26G – M2 – options: K23P11T6

FR 19A3-E26GM2K23P11T6

Housing	
FR	technopolymer, one conduit entry

Contact block	
5	1NO+1NC, snap action
11	2NC, snap action
17	1NC, snap action
19	2NC, snap action

Actuators	
A3	short plunger

Actuating force	
	standard actuating force
E26	actuating force 4 N (19 N ⊖) (only with contact block 19)
E27	actuating force 6 N (21 N ⊖) (only with contact block 19)

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

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

Pre-installed cable glands	
K23	for cables Ø 6 … 12 mm
K27	for cables Ø 3 … 7 mm

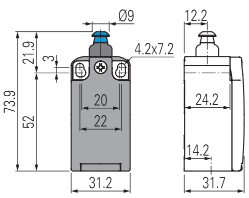
Fixing plates	
	without plate (standard)
P11	with VF SFP1 plate

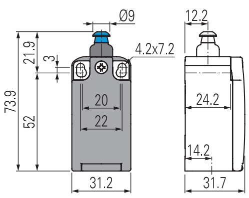
Ambient temperature	
	-25°C … +80°C (standard)
T6	-40°C … +80°C

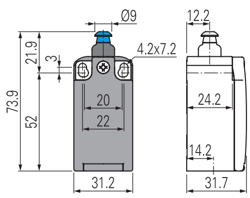
Dimensional drawings

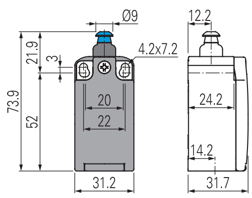
Contact type:

R = snap action









Contact block					
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
Actuating force		3.5 N (25 N ⊖)	3.5 N (25 N ⊖)	1.5 N (25 N ⊖)	2 N (25 N ⊖)
Travel diagrams		0 2 ⊖4 6	0 2 ⊖4 6	0 1.5⊖ 6 0.5	0 1.5⊖ 4.5 0.5

All values in the drawings are in mm

Legend
Closed contact | Open contact | ⊖ Positive opening travel