



### 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: CA50.00662  
 Approval UL: E131787  
 Approval CCC: 2007010305230013  
 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

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 cycles<sup>1</sup>/hour

Mechanical endurance:

1 million operations cycles<sup>1</sup>  
 (FR 5A3-M2 / FR 11A3-M2)  
 50,000 operations cycles<sup>1</sup>  
 (FR 17A3-M2 / FR 19A3-M2)

Assembling position:

any

Safety parameters:

B<sub>10d</sub> 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 according to EN ISO 14119

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 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, EN 50047, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, EN81-20, EN 81-50, UL 508, CSA 22.2 No.14

#### Approvals:

IEC 60947-5-1, UL 508, CSA 22.2 No.14, GB14048.5-2001.

#### In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2014/30/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 . 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 EN 81-20 par. 5.11.2.2.1**. 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<sub>th</sub>): 10 A  
 Rated insulation voltage (U<sub>i</sub>): 500 Vac 600 Vdc  
 400 Vac 500 Vdc for contacts block 11  
 Rated impulse withstand voltage (U<sub>imp</sub>): 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<sub>e</sub> (V) 250 400 500  
 I<sub>e</sub> (A) 6 4 1  
 Direct current: DC13  
 U<sub>e</sub> (V) 24 125 250  
 I<sub>e</sub> (A) 6 1.1 0.4

### Data type approved by IMQ

Rated insulation voltage (U<sub>i</sub>): 500 Vac  
 400 Vac for contacts block 11  
 Thermal current (I<sub>th</sub>): 10 A  
 Protection against short circuits: fuse 10 A 500 V type aM  
 Rated impulse withstand voltage (U<sub>imp</sub>): 6 kV  
 Protection degree: IP67  
 MV terminals (screw clamps)  
 Pollution degree 3  
 Utilization category: AC15  
 Operation voltage (U<sub>e</sub>): 400 Vac (50 Hz)  
 Operation current (I<sub>e</sub>): 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.

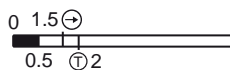
**EN 81-20 standard**



- 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**

<b>Housing</b> FR polymer housing, one conduit entry	<b>Fixing plate</b> without fixing plate (standard) P11 with fixing plate VF SFP1
<b>Contact blocks</b> 5 1NO+1NC, snap action 11 2NC, snap action 17 1NC, snap action 19 2NC, snap action	<b>Threaded conduit entry</b> M2 M20x1.5 (standard) PG 13.5 A PG 11 M1 M16x1.5
<b>Actuators</b> A3 short plunger	<b>Contacts type</b> silver contacts (standard) G silver contacts gold plated 1 μm
<b>Actuation force</b> 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 <b>R</b>	FR 5A3-M2 ⊕ 1NO+1NC			
11 <b>R</b>		FR 11A3-M2 ⊕ 2NC		
17 <b>R</b>			FR 17A3-M2 ⊕ 1NC	
19 <b>R</b>				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	0 2 ⊕4 6	0 2 ⊕4 6	0 1.5 ⊕ 6 0.5 ⊕2	0 1.5 ⊕ 4.5 0.5 ⊕2

**Legend**

**Accessories** See page 119

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