



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

Installation for safety applications:

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

Technical data

Housing

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

One threaded conduit entry:

M20x1.5 (standard)

Protection degree:

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

General data

Ambient temperature:

-25°C ... +80°C

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

Max operating frequency:

3600 operations cycles¹/hour

Mechanical endurance:

1 million operations cycles¹

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

50.000 operations cycles¹

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

Assembling position:

any

Driving torque for installation:

see page 123

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

Cross section of the conductors (flexible copper wire)

Contact blocks 5, 11, 17:

min. 1 x 0.5 mm² (1 x AWG 20)

max. 2 x 2.5 mm² (2 x AWG 14)

In conformity with standards:

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

Approvals:

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

In conformity with requirements requested by:

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

Positive contact opening in conformity with standards:

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

Electrical data

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

Utilization categories

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

Data type approved by IMQ, CCC and EZU

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

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

Data type approved by UL

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

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

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