

FR 231

Position switch with roller lever

Article:

Description:

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Positive switch opening:

safety applications.

(flexible copper wire): min. 1 x 0,5 mm2 (1 x AWG 20) max. 2 x 1,5 mm2 (2 x AWG 16)

Device without positive opening. If

installed individually, not suitable for

Cross section of the conductors

**Device screw tightening torques:** 

Contact blocks screws: 0,6 ... 0,8 Nm

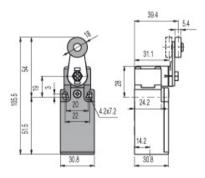
1 ... 1,4 Nm (M16/PG11)

Plugs: 1,2 ... 1,6 Nm (M20/PG13,5)

Cover screws: 0,7 ... 0,9 Nm

Head screws: 0,5 ... 0,7 Nm

Lever screws: 0,7 ... 0,9 Nm



#### Housing:

Polymer housing, one threaded PG 13,5 conduit entry (FR series)

#### General data:

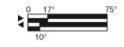
Ambient temperature: from -25°C to +80°C Max actuation frequency: 3600 operations cycles/hour Mechanical endurance: 20 million operations cycles

### Contact block characteristics:

2x(1NO-1NC) fast action (B2)

Double breaking.

### Travel diagram:



- Closed contact
- Opened contact
- → Positive opening travel (IEC 60947-5-1)
- Opening travel 2x2m (EN 81)
- Reset device travel R
- Pushing the switch 4
- Releasing the switch
- (S) Tripping mechanical point

#### In conformity with requirements requested by: Activating forces:

Low Voltage Directive 2014/35/EU Min.: 0.06 Nm Electromagnetic Compatibility Directive Positive opening: 0,25 Nm 2014/30/EU

#### 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, UL 508, CSA 22.2 No. 14. **Approvals:** 

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

Markings and quality marks:



## Electrical data:

Thermal current (Ith): 10 A Rated insulation voltage (Ui): 400 Vac 500 Vdc Rated impulse withstand voltage (Uimp): 4 kV Conditional shot 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 (5060 Hz)					
Ue (V)	250	400			
Ie (A)	6	4			
Direct current: DC13					
Ue (V)	24	125	250		
Ie (A)	6	1,1	0,4		

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Description: Position switch with roller lever

## Data type approved by IMQ.

Rated insulation voltage (Ui): 500 Vac 400 Vac (for contact blocks 2, 11, 12, 20, 21, 22, 33, 34) Thermal current (Ith): 10 A Protection against short circuits: fuse 10 A 500 V type aM Rated impulse withstand voltage (Uimp): 6 kV 4 kV (for contact blocks 20, 21, 22, 33, 34) Protection degree: IP67 MV terminals (screw clamps) Pollution degree 3 Utilization category: AC15 Operation voltage (Ue): 400 Vac (50 Hz) Operation current (Ie): 3 A Forms of the contact element: Za, Zb, Za+Za, Y+Y, X+X, Y+Y+X, Y+Y+Y, Y+X+X Positive opening of contacts on contact block 5, 6, 7, 9, 11, 13, 14, 16, 18, 20, 21, 22, 33,

34 In conformity with standards: EN 60947-1, EN 60947-5-1+ A1:2009, 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 except 2 and 3 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). For contact blocks 2 and 3 use 60 or 75 °C copper (Cu) conductor and wire

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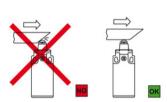
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size No. 14 AWG. Terminal tightening torgue of 12 lb in (1.4 Nm). In conformity with standard: UL 508

### **Mechanical stop**

In accordance with the EN ISO 14119 standard, paragraph 5.2, "the position sensors should not be used as mechanical stop".



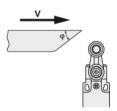
The actuator must not exceed the max. travel as indicated in the



The guard should not make a mechanical stop on the switch head.

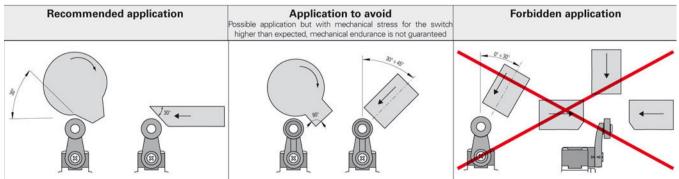
#### Actuation speed

φ	Vmax (m/s)	Vmin (mm/s)	Vmin (mm/s R	
15°	2,5	9		
30°	1,5	8	0,07	
45°	1	7		
60°	0,75	7		



Contacts type: R = snap action L = slow action

# Actuation modality



00 Mechanical stor

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This device does not feature positive opening and therefore cannot be used individually for safety functions.

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