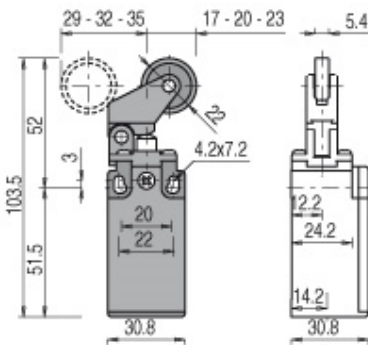


Article: **FR 207**  
 Description: Position switch with adjustable one-way roller

 Sheet: 15367-0-en-2.1.0  
 Date: 2018/01/11  
 Page: 1/3

**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.

**Positive switch opening:**

Device without positive opening. If installed individually, not suitable for safety applications.

**Travel diagram:**


- Closed contact
- Opened contact
- ⊕ Positive opening travel (IEC 60947-5-1)
- ⊖ Opening travel 2x2m (EN 81)
- R Reset device travel
- ▶ Pushing the switch
- ◀ Releasing the switch
- ⊙ Tripping mechanical point

**Cross section of the conductors (flexible copper wire):**

 min. 1 x 0,5 mm<sup>2</sup> (1 x AWG 20)  
 max. 2 x 1,5 mm<sup>2</sup> (2 x AWG 16)

**Device screw tightening torques:**

 Cover screws: 0,7 ... 0,9 Nm  
 Head screws: 0,5 ... 0,7 Nm  
 Lever screws: 0,7 ... 0,9 Nm  
 Contact blocks screws: 0,6 ... 0,8 Nm  
 Plugs: 1,2 ... 1,6 Nm (M20/PG13,5)  
 1 ... 1,4 Nm (M16/PG11)

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

 Low Voltage Directive 2014/35/EU Min.: 4 N  
 Electromagnetic Compatibility Directive Positive opening: 25 N  
 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 (I<sub>th</sub>): 10 A  
 Rated insulation voltage (U<sub>i</sub>): 400 Vac 500 Vdc  
 Rated impulse withstand voltage (U<sub>imp</sub>): 4 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	
I <sub>e</sub> (A)	6	4	
Direct current: DC13			
U <sub>e</sub> (V)	24	125	250
I <sub>e</sub> (A)	6	1,1	0,4

Article: **FR 207**  
Description: Position switch with adjustable one-way roller

Sheet: 15367-0-en-2.1.0  
Date: 2018/01/11  
Page: 2/3

### Data type approved by IMQ.

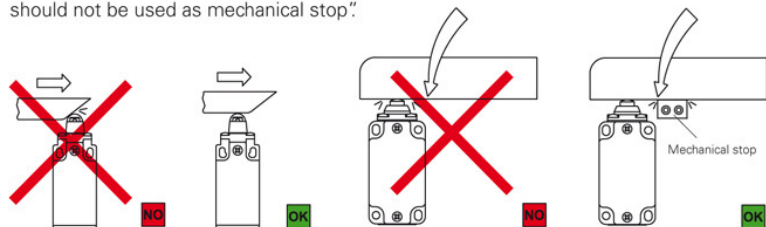
Rated insulation voltage (Ui): 500 Vac  
400 Vac (for contact blocks 2, 11, 12, 20, 21, 22, 33, 34)  
Thermal current (Ith): 10 A  
Protection against short circuits: fuse 10 A 500 V type aM  
Rated impulse withstand voltage (Uimp): 6 kV  
4 kV (for contact blocks 20, 21, 22, 33, 34)  
Protection degree: 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 size No. 14 AWG. Terminal tightening torque 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".



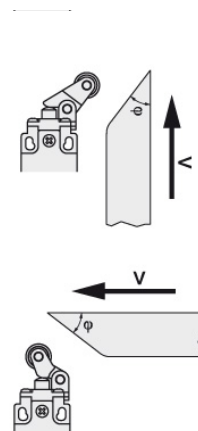
The actuator must not exceed the max. travel as indicated in the

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

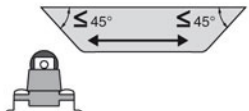
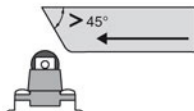
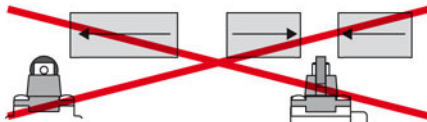
### Actuation speed

$\varphi$	Vmax (m/s)	Vmin (mm/s) L	Vmin (mm/s) R
15°	1	5	0,05
30°	0,5	2,5	0,025
45°	0,3	1,5	0,015

Contacts type:  
R = snap action  
L = slow action



### Actuation modality

Recommended application	Application to avoid	Forbidden application
	<p>Possible application but with mechanical stress for the switch higher than expected, mechanical endurance is not guaranteed</p> 	



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Article: **FR 207**  
Description: Position switch with adjustable one-way roller

Sheet: 15367-0-en-2.1.0  
Date: 2018/01/11  
Page: 3/3

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