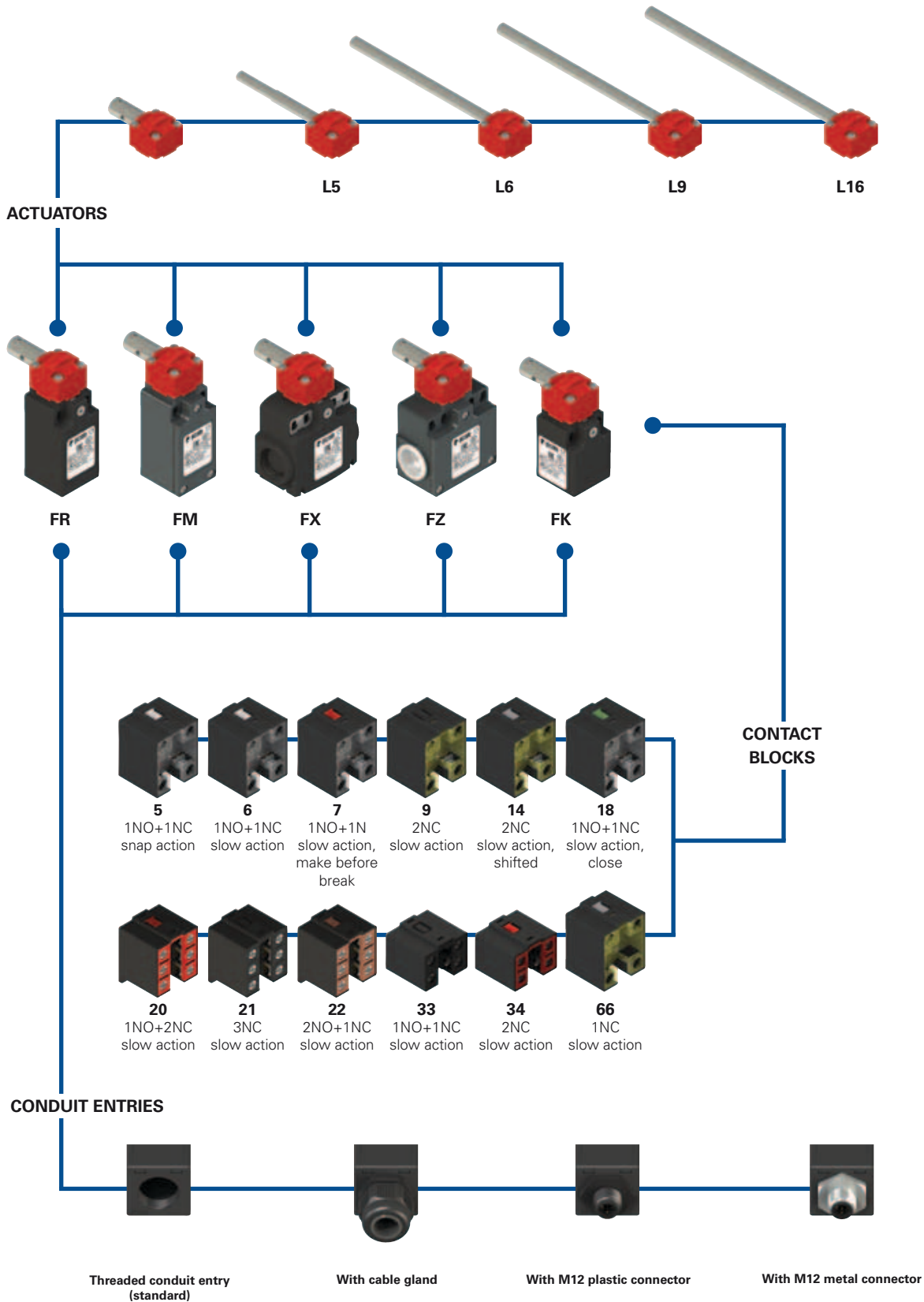


Selection diagram



—●— product option



## 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 1896-XGL16M2K70T6**

Housing	
<b>FR</b>	technopolymer, one conduit entry
<b>FM</b>	metal, one conduit entry
<b>FX</b>	technopolymer, two conduit entries
<b>FZ</b>	metal, two conduit entries

Contact block	
<b>5</b>	1NO+1NC, snap action
<b>6</b>	1NO+1NC, slow action
<b>7</b>	1NO+1NC, slow action, make before break
<b>9</b>	2NC, slow action
<b>14</b>	2NC, slow action, shifted
<b>18</b>	1NO+1NC, slow action, close
<b>20</b>	1NO+2NC, slow action
<b>21</b>	3NC, slow action
<b>22</b>	2NO+1NC, slow action
<b>33</b>	1NO+1NC, slow action
<b>34</b>	2NC, slow action
<b>66</b>	1NC, slow action

External metallic parts	
	zinc-plated steel (standard)
<b>X</b>	stainless steel

Contact type	
	silver contacts (standard)
<b>G</b>	silver contacts with 1 µm gold coating
<b>G1</b>	silver contacts, 2.5 µm gold coating (not for contact blocks 20, 21, 22, 33, 34)

Ambient temperature	
	-25°C ... +80°C (standard)
<b>T6</b>	-40°C ... +80°C

Pre-installed cable glands or connectors	
	no cable gland or connector (standard)
<b>K23</b>	cable gland for cables Ø 6 ... 12 mm
...	.....
<b>K70</b>	M12 plastic connector, 4-pole
...	.....

For the complete list of possible combinations please contact our technical department.

Threaded conduit entry	
<b>M2</b>	M20x1.5 (standard)
<b>M1</b>	M16x1.5 (FR-FX housing only)
	PG 13.5
<b>A</b>	PG 11 (FR-FX housing only)

Actuator design	
	actuator with hole (standard)
<b>L5</b>	Ø8x69 mm, tapered Ø6.9
<b>L6</b>	Ø8x120 mm
<b>L9</b>	Ø8x140 mm
<b>L16</b>	Ø8.7x165 mm, stainless steel

article options options  
**FK 3396-XGL16M1K24T6**

Housing	
<b>FK</b>	technopolymer, one conduit entry

Contact block	
<b>33</b>	1NO+1NC, slow action
<b>34</b>	2NC, slow action

External metallic parts	
	zinc-plated steel (standard)
<b>X</b>	stainless steel

Contact type	
	silver contacts (standard)
<b>G</b>	silver contacts with 1 µm gold coating

Ambient temperature	
	-25°C ... +80°C (standard)
<b>T6</b>	-40°C ... +80°C

Pre-installed cable glands	
	no cable gland (standard)
<b>K24</b>	cable gland for cables Ø 5 ... 10 mm
<b>K28</b>	cable gland for cables Ø 3 ... 7 mm

Threaded conduit entry	
<b>M1</b>	M16x1.5 (standard)
	PG11

Actuator design	
	actuator with hole (standard)
<b>L5</b>	Ø8x69 mm, tapered Ø6.9
<b>L6</b>	Ø8x120 mm
<b>L9</b>	Ø8x140 mm
<b>L16</b>	Ø8.7x165 mm, stainless steel



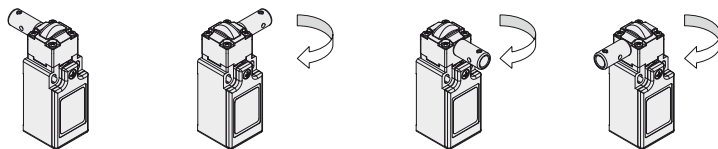


## Description



These safety switches are designed to monitor gates or doors that safeguard dangerous parts of machines without inertia. They are very sensitive, open the contacts after few degrees of rotation and immediately send the stop signal. The head, which can be turned in 90° steps, enables installation in multiple positions. Available with technopolymer or metal housings, with protection degree IP67. The special design allows it to be used even under operating conditions in which dust and dirt could inhibit the operation of normal safety switches with separate actuator.

## Head with variable orientation



For all switches, the head can be adjusted in 90° steps after removing the four fastening screws. This allows you to use the same switch on both right- and left-facing door fronts.

## Protection degree IP67

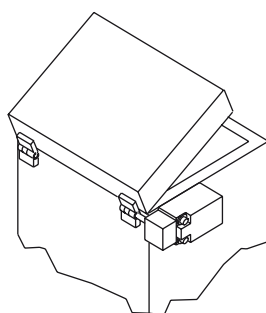
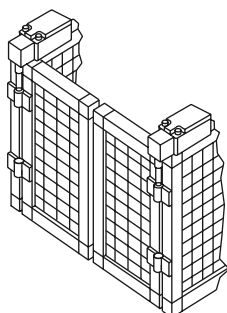
**IP67** These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required.

## Extended temperature range

**-40°C** These devices are also available in a special version suitable for an ambient operating temperature range from -40°C up to +80°C.

They can therefore be used for applications in cold stores, sterilisers and other equipment with low temperature environments. The special materials used to produce these versions retain their characteristics even under these conditions, thereby expanding the installation possibilities.

## Application examples



## Adjustable switching point



When installing the device, the contact switching point can be adjusted over the entire 360° range. By fixing the stud screw, it is possible to check the correct setting of the activation angle and quickly and easily adjust it if necessary. Once adjustment is complete, you can render the device tamper-proof against commonly used tools using the supplied lock pin.

## Features approved by IMQ

Rated insulation voltage (U <sub>i</sub> ):	500 Vac 400 Vac (for contact blocks 20, 21, 22, 33, 34)
Conventional free air thermal current (I <sub>th</sub> ):	10 A
Protection against short circuits:	type aM fuse 10 A 500 V
Rated impulse withstand voltage (U <sub>imp</sub> ):	6 kV
Protection degree of the housing:	4 kV (for contact blocks 20, 21, 22, 33, 34) IP67
MV terminals (screw terminals)	
Pollution degree:	3
Utilization category:	AC15
Operating voltage (U <sub>e</sub> ):	400 Vac (50 Hz)
Operating current (I <sub>e</sub> ):	3 A

Forms of the contact element: Zb, Y+Y, Y+Y+X, Y+Y+Y, Y+X+X  
Positive opening contacts on contact blocks 5, 6, 7, 9, 14, 18, 20, 21, 22, 33, 34, 66.  
In compliance with standards: EN 60947-1, EN 60947-5-1+ A1:2009, 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

Utilization categories	Q300 (69 VA, 125-250 Vdc) A600 (720 VA, 120-600 Vac)
Housing features type 1, 4X "indoor use only"; 12, 13	
For all contact blocks use 60 or 75 °C copper (Cu) conductor, rigid or flexible, wire size 12, 14 AWG. Tightening torque for terminal screws of 7.1 lb in (0.8 Nm).	
In compliance with standard:	UL 508, CSA 22.2 No.14

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

## Dimensional drawings

All values in the drawings are in mm

Contact type:	Technopolymer housing		Technopolymer housing	
<p><b>R</b> = snap action</p> <p><b>L</b> = slow action</p> <p><b>LO</b> = slow action make before break</p> <p><b>LS</b> = slow action shifted</p>				
<p>5 <b>R</b></p> <p>6 <b>L</b></p> <p>7 <b>LO</b></p> <p>9 <b>L</b></p> <p>14 <b>LS</b></p> <p>18 <b>L</b></p> <p>20 <b>L</b></p> <p>21 <b>L</b></p> <p>22 <b>L</b></p> <p>33 <b>L</b></p> <p>34 <b>L</b></p> <p>66 <b>L</b></p>	<p>FR 596-M2</p> <p>FR 696-M2</p> <p>FR 796-M2</p> <p><b>FR 996-M2</b></p> <p>FR 1496-M2</p> <p><b>FR 1896-M2</b></p> <p><b>FR 2096-M2</b></p> <p>FR 2196-M2</p> <p>FR 2296-M2</p> <p>FR 3396-M2</p> <p>FR 3496-M2</p> <p>FR 6696-M2</p>	<p>1NO+1NC</p> <p>1NO+1NC</p> <p>1NO+1NC</p> <p>2NC</p> <p>2NC</p> <p>1NO+1NC</p> <p>1NO+2NC</p> <p>3NC</p> <p>2NO+1NC</p> <p>1NO+1NC</p> <p>2NC</p> <p>1NC</p>	<p>FX 596-M2</p> <p>FX 696-M2</p> <p>FX 796-M2</p> <p>FX 996-M2</p> <p>FX 1496-M2</p> <p>FX 1896-M2</p> <p>FX 2096-M2</p> <p>FX 2196-M2</p> <p>FX 2296-M2</p> <p>FX 3396-M2</p> <p>FX 3496-M2</p> <p>FX 6696-M2</p> <p>FK 3396-M1</p> <p>FK 3496-M1</p>	<p>1NO+1NC</p> <p>1NO+1NC</p> <p>1NO+1NC</p> <p>2NC</p> <p>2NC</p> <p>1NO+1NC</p> <p>1NO+2NC</p> <p>3NC</p> <p>2NO+1NC</p> <p>1NO+1NC</p> <p>2NC</p> <p>1NC</p> <p>1NO+1NC</p> <p>2NC</p>
Actuating force	0.15 Nm (0.4 Nm $\rightarrow$ )		0.15 Nm (0.4 Nm $\rightarrow$ )	0.15 Nm (0.4 Nm $\rightarrow$ )
Travel diagrams	page 318 - group 9		page 318 - group 9	page 318 - group 9

Contact type:	Metal housing		Metal housing	
<p><b>R</b> = snap action</p> <p><b>L</b> = slow action</p> <p><b>LO</b> = slow action make before break</p> <p><b>LS</b> = slow action shifted</p>				
<p>5 <b>R</b></p> <p>6 <b>L</b></p> <p>7 <b>LO</b></p> <p>9 <b>L</b></p> <p>14 <b>LS</b></p> <p>18 <b>L</b></p> <p>20 <b>L</b></p> <p>21 <b>L</b></p> <p>22 <b>L</b></p> <p>33 <b>L</b></p> <p>34 <b>L</b></p> <p>66 <b>L</b></p>	<p>FM 596-M2</p> <p>FM 696-M2</p> <p>FM 796-M2</p> <p>FM 996-M2</p> <p>FM 1496-M2</p> <p>FM 1896-M2</p> <p>FM 2096-M2</p> <p>FM 2196-M2</p> <p>FM 2296-M2</p> <p>FM 3396-M2</p> <p>FM 3496-M2</p> <p>FM 6696-M2</p>	<p>1NO+1NC</p> <p>1NO+1NC</p> <p>1NO+1NC</p> <p>2NC</p> <p>2NC</p> <p>1NO+1NC</p> <p>1NO+2NC</p> <p>3NC</p> <p>2NO+1NC</p> <p>1NO+1NC</p> <p>2NC</p> <p>1NC</p>	<p>FZ 596-M2</p> <p>FZ 696-M2</p> <p>FZ 796-M2</p> <p>FZ 996-M2</p> <p>FZ 1496-M2</p> <p>FZ 1896-M2</p> <p>FZ 2096-M2</p> <p>FZ 2196-M2</p> <p>FZ 2296-M2</p> <p>FZ 3396-M2</p> <p>FZ 3496-M2</p> <p>FZ 6696-M2</p>	<p>1NO+1NC</p> <p>1NO+1NC</p> <p>1NO+1NC</p> <p>2NC</p> <p>2NC</p> <p>1NO+1NC</p> <p>1NO+2NC</p> <p>3NC</p> <p>2NO+1NC</p> <p>1NO+1NC</p> <p>2NC</p> <p>1NC</p>
Actuating force	0.15 Nm (0.4 Nm $\rightarrow$ )		0.15 Nm (0.4 Nm $\rightarrow$ )	0.15 Nm (0.4 Nm $\rightarrow$ )
Travel diagrams	page 318 - group 9		page 318 - group 9	page 318 - group 9

Items with code on green background are stock items

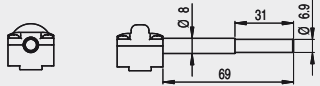
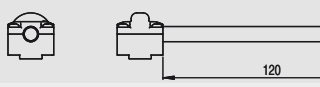
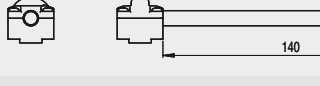
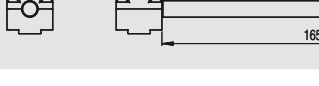
Accessories See page 299

$\rightarrow$  The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

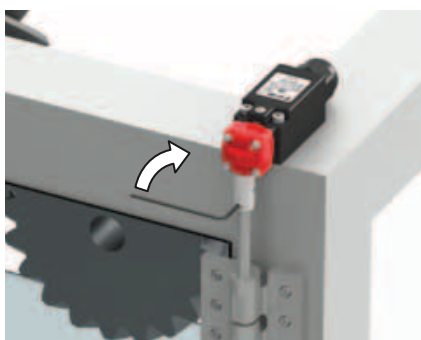


## Dimensional drawings for actuators

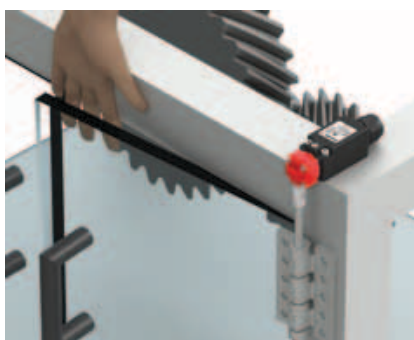
All values in the drawings are in mm

Option	Drawing
L5	
L6	
L9	
L19	

## Adjustment of the switching point



Temporary locking of the actuator (stud screw provided).



Verify the switching point according to EN ISO 13857 and recalibrate if necessary.



Pin the switch (pin is provided).

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