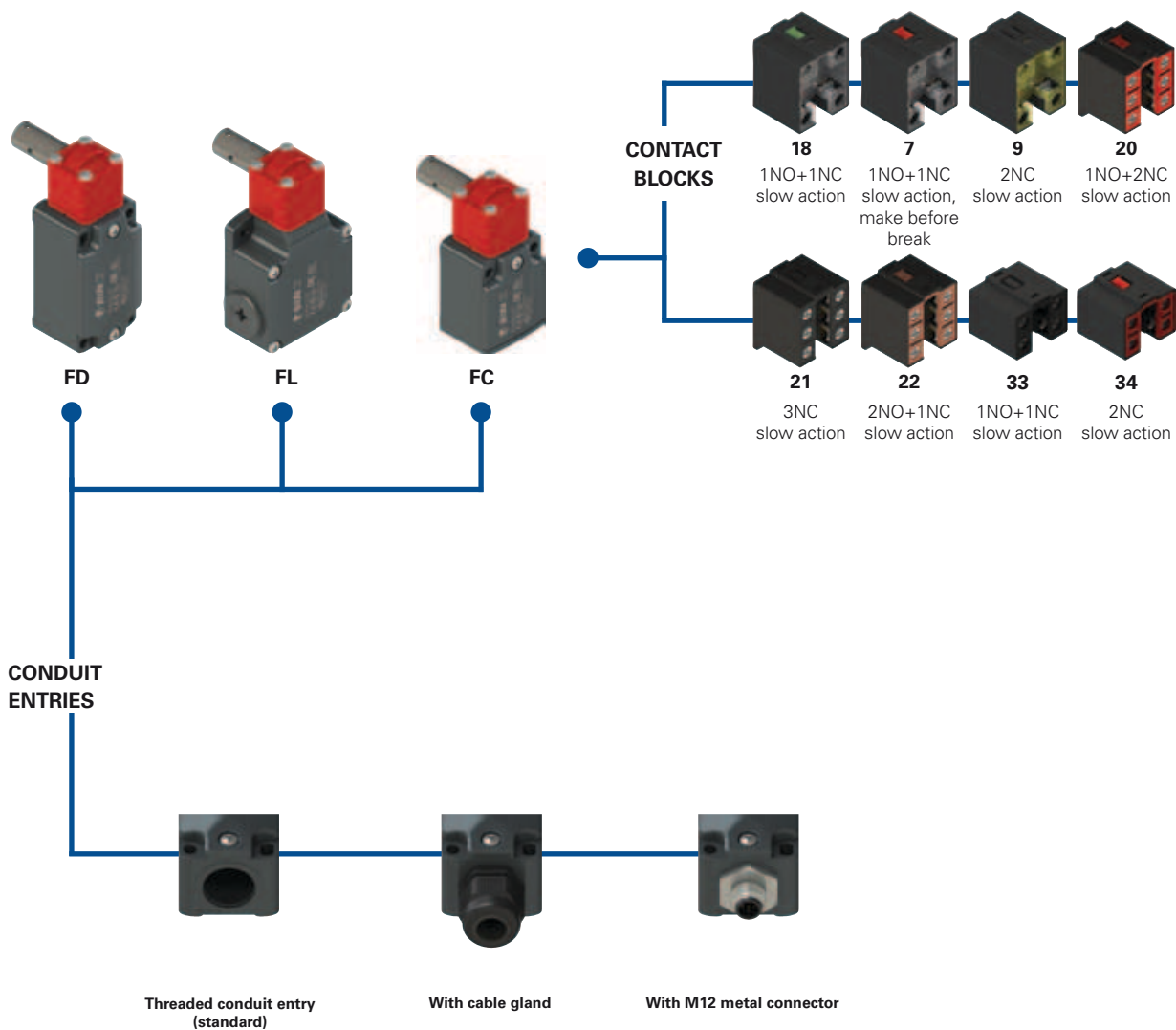


Selection diagram



—●— 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
FD 1895-GM2K50T6

Housing	
FD	metal, one conduit entry
FL	metal, three conduit entries

Ambient temperature	
	-25°C ... +80°C (standard)
T6	-40°C ... +80°C

Contact block	
18	1NO+1NC, slow action
7	1NO+1NC, slow action, make before break
9	2NC, slow action
20	1NO+2NC, slow action
21	3NC, slow action
22	2NO+1NC, slow action
33	1NO+1NC, slow action
34	2NC, slow action

Pre-installed cable glands or connectors	
	no cable gland or connector (standard)
K23	cable gland for cables Ø 6 ... 12 mm
...
K50	M12 metal connector, 5-pole
...

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

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

Threaded conduit entry	
M2	M20x1.5 (standard)
	PG 13.5

article options options
FC 3395-GM2K50T6

Housing	
FC	metal, one conduit entry

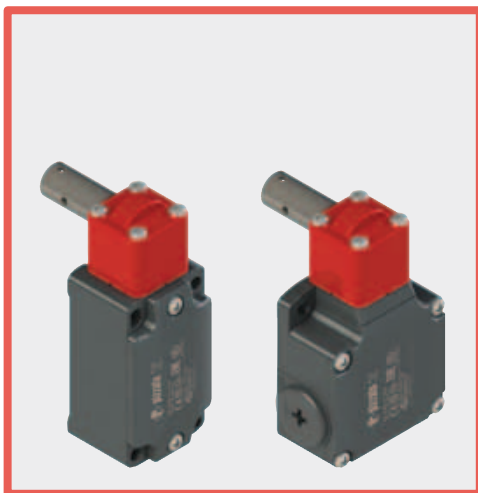
Ambient temperature	
	-25°C ... +80°C (standard)
T6	-40°C ... +80°C

Contact block	
33	1NO+1NC, slow action
34	2NC, slow action

Pre-installed cable glands or connectors	
	no cable gland (standard)
K23	cable gland for cables Ø 6 ... 12 mm
K50	M12 metal connector, 5-pole

Contact type	
	silver contacts (standard)
G	silver contacts with 1 µm gold coating

Threaded conduit entry	
M2	M20x1.5 (standard)
	PG 11



Main features

- Metal housing, from one to three conduit entries
- Protection degree IP67
- 8 contact blocks available
- Stainless steel actuator
- Versions with M12 connector
- Versions with gold-plated silver contacts

Quality marks:



IMQ approval:	EG605
UL approval:	E131787
CCC approval:	2007010305230000
EAC approval:	RU C-IT.AQ35.B.00454

Technical data

Housing

FD, FL and FC series: metal housing, baked powder coating.	
Stainless steel actuator:	
FD, FC series: one threaded conduit entry:	M20x1.5 (standard)
FL series: three threaded conduit entries:	M20x1.5 (standard)
Protection degree:	IP67 acc. to EN 60529 with cable gland of equal or higher protection degree

General data

For safety applications up to:	SIL 3 acc. to EN 62061 PL e acc. to EN ISO 13849-1 type 1 acc. to EN ISO 14119
Mechanical interlock, not coded:	
Safety parameters:	
B_{10D} :	5,000,00 for NC contacts
Service life:	20 years
Ambient temperature:	-25°C ... +80°C
Max. actuation frequency:	3600 operating cycles/hour
Mechanical endurance:	1 million operating cycles
Max. actuation speed:	180°/s
Min. actuation speed:	2°/s
Tightening torques for installation:	see page 313-324

Cable cross section (flexible copper strands)

Contact blocks 20, 21, 22, 33, 34:	min. 1 x 0.34 mm ² (1 x AWG 22) max. 2 x 1.5 mm ² (2 x AWG 16)
Contact blocks 7, 9, 18:	min. 1 x 0.5 mm ² (1 x AWG 20) max. 2 x 2.5 mm ² (2 x AWG 14)

In compliance with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, 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.

Compliance with the requirements of:

Machinery Directive 2006/42/EC and EMC Directive 2014/30/EU.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

⚠ If not expressly indicated in this chapter, for correct installation and utilization of all articles see chapter utilization requirements from page 313 to page 324.

	Electrical data	Utilization category
without connector	Thermal current (I_{th}):	10 A
	Rated insulation voltage (U_i):	500 Vac 600 Vdc 400 Vac 500 Vdc (contact blocks 20, 21, 22, 33, 34)
	Rated impulse withstand voltage (U_{imp}):	6 kV 4 kV (contact blocks 20, 21, 22, 33, 34)
	Conditional short circuit current: Protection against short circuits: Pollution degree:	1000 A acc. to EN 60947-5-1 type aM fuse 10 A 500 V 3
with M12 connector, 4 or 5-pole	Thermal current (I_{th}):	4 A
	Rated insulation voltage (U_i):	250 Vac 300 Vdc
	Protection against short circuits: Pollution degree:	type gG fuse 4 A 500 V 3
	Utilization category	Alternating 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
with M12 connector 8-pole	Thermal current (I_{th}):	2 A
	Rated insulation voltage (U_i):	30 Vac 36 Vdc
	Protection against short circuits: Pollution degree:	type gG fuse 2 A 500 V 3
	Utilization category	Alternating current: AC15 (50±60 Hz) U_e (V) 24 I_e (A) 2 Direct current: DC13 U_e (V) 24 I_e (A) 2



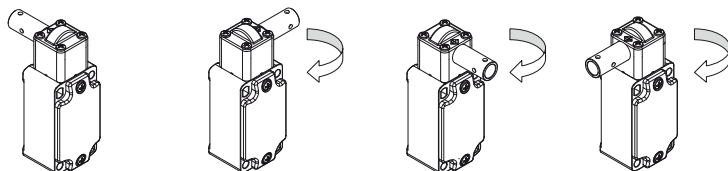
Description



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.

The metal housing and the stainless steel actuator enable use 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

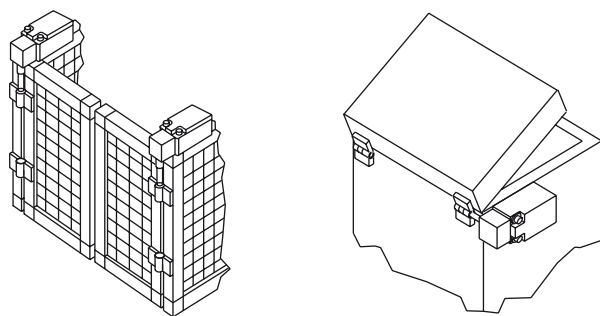
IP67 These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required.

Laser engraving



All devices are marked using a dedicated indelible laser system. These engravings are therefore suitable for extreme environments too. Thanks to this system that does not use labels, the loss of plate data is prevented and a greater resistance of the marking is achieved over time.

Application examples



Features approved by IMQ

Rated insulation voltage (U _i):	500 Vac 400 Vac (for contact blocks 20, 21, 22, 33, 34)
Conventional free air thermal current (I _{th}):	10 A
Protection against short circuits:	type aM fuse 10 A 500 V
Rated impulse withstand voltage (U _{imp}):	6 kV 4 kV (for contact blocks 20, 21, 22, 33, 34)
Protection degree of the housing:	IP67
MV terminals (screw terminals)	
Pollution degree:	3
Utilization category:	AC15
Operating voltage (U _e):	400 Vac (50 Hz)
Operating current (I _e):	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 7, 9, 18, 20, 21, 22, 33, 34

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.

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.

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 UL

Utilization categories	Q300 (69 VA, 125-250 Vdc) A600 (720 VA, 120-600 Vac)
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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).

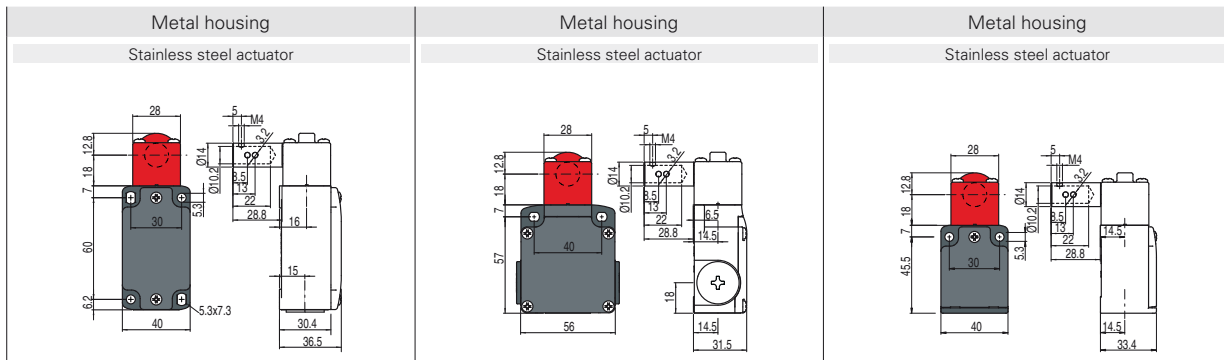
In compliance with standard: UL 508, CSA 22.2 No.14

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

Dimensional drawings

All values in the drawings are in mm

Contact type:
L = slow action
LO = slow action make before break

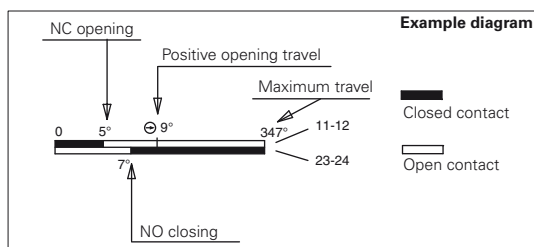


Contact block

	Metal housing Stainless steel actuator	Metal housing Stainless steel actuator	Metal housing Stainless steel actuator
18 L	FD 1895-M2 \ominus 1NO+1NC 	FL 1895-M2 \ominus 1NO+1NC 	
7 LO	FD 795-M2 \ominus 1NO+1NC 	FL 795-M2 \ominus 1NO+1NC 	
9 L	FD 995-M2 \ominus 2NC 	FL 995-M2 \ominus 2NC 	
20 L	FD 2095-M2 \ominus 1NO+2NC 	FL 2095-M2 \ominus 1NO+2NC 	
21 L	FD 2195-M2 \ominus 3NC 	FL 2195-M2 \ominus 3NC 	
22 L	FD 2295-M2 \ominus 2NO+1NC 	FL 2295-M2 \ominus 2NO+1NC 	
33 L	FD 3395-M2 \ominus 1NO+1NC 	FL 3395-M2 \ominus 1NO+1NC 	FC 3395-M2 \ominus 1NO+1NC
34 L	FD 3495-M2 \ominus 2NC 	FL 3495-M2 \ominus 2NC 	FC 3495-M2 \ominus 2NC
Actuating force	0.15 Nm (0.4 Nm \ominus)	0.15 Nm (0.4 Nm \ominus)	0.15 Nm (0.4 Nm \ominus)

How to read travel diagrams

All values in the diagrams are in degrees

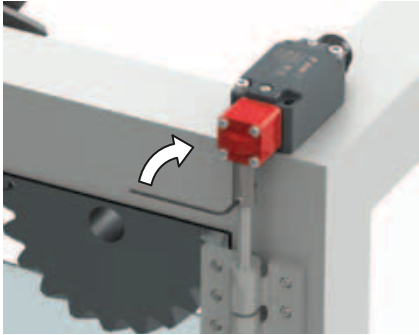


IMPORTANT:

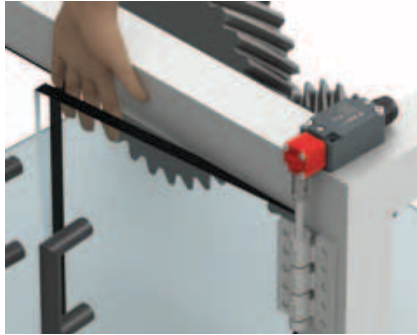
In **safety applications**, actuate the switch **at least up to the positive opening travel** shown in the travel diagrams with symbol \ominus . Actuate the switch **at least with the positive opening force**, reported in brackets below each article, next to the actuating force value.



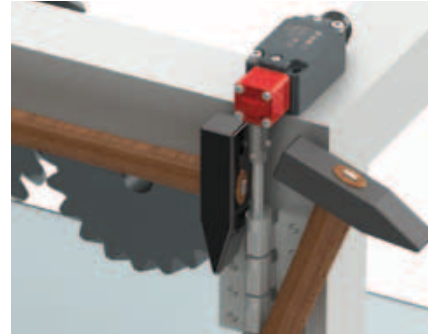
Adjustment of the switching point



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).