FG series safety switches for door locking

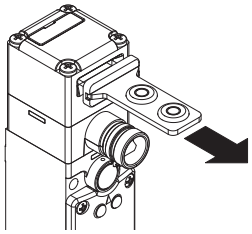
Description



These switches, compliant with EN 81, are used as locking devices for hinged and sliding lift doors.
The door is unlocked by powering the internal solenoid, which then unlocks the actuator inserted in the head, thus allowing the door to be unlocked and opened. Equipped with a locking system with enhanced force, they meet the retention requirements (3000 N) set by the standards EN 81-20 and EN 81-50.
The versions with solenoid actuated NC contacts are considered interlocks with locking in accordance with ISO 14119, and the product's label is marked with the symbol shown.

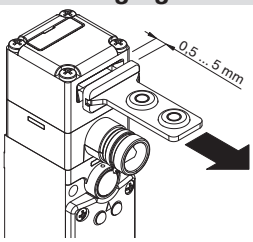


Holding force of the locked actuator



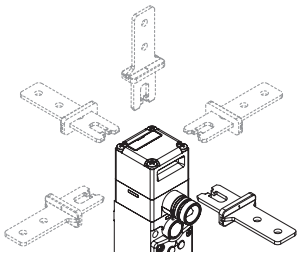
The strong interlocking system guarantees a maximum actuator holding force of 3000 N.

Wide-ranging actuator travel



The actuation head of this switch features a wide range of travel. In this way the guard can oscillate along the direction of insertion (4.5 mm) without causing unwanted machine shutdowns. This wide range of travel is available in all actuators in order to ensure maximum device reliability.

Heads and devices with variable orientation



The system can be variably configured by loosening the 4 screws on the head.
The key release device and the release button can also be rotated and secured independently of one another in steps of 90°. The device can thus assume 32 different configurations.

Contact blocks with 4 contacts



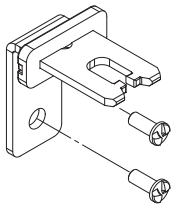
Innovative contact block with 4 contacts, available in various contact configurations for monitoring the actuator or the solenoid (patented). The unit is supplied with captive screws and self-lifting clamping plates. Removable finger protection for eyelet terminal.
High-reliability electrical contacts with 4 contact points and double interruption.

Key release devices with triangular key



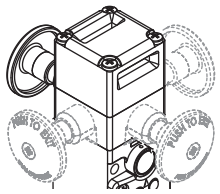
The auxiliary key release option V70 is equipped with a triangular key acc. to DIN 22417. This option can be used with installations in which the auxiliary release is to be actuated with a triangular key, including a spring return of the release to the initial position.
The device can be turned, thereby enabling installation of the safety switch in the machine while the release device remains accessible on the outside of the guard.

Safety screws for actuators



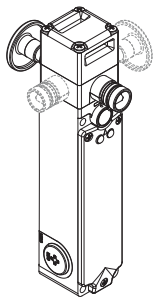
As required by EN ISO 14119, the actuator must be fixed immovably to the guard frame. Pan head safety screws with one-way fitting are available for this purpose. With this screw type, the actuators cannot be removed or tampered by using common tools. See accessories on page 149.

Escape release button



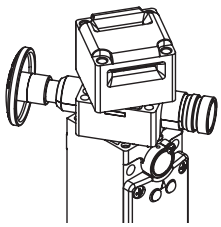
This device is used to safeguard a hazardous area that an operator may enter with his entire body. The release button allows for exit even in the event of possible blackouts. Pushing the button results in the same function as the auxiliary release device. To reset the switch, simply return the button to its initial position. The escape release button can be rotated and is available with different lengths. It is fixed to the switch by means of a screw allowing the installation of the switch both inside and outside the guards.

Key release device and escape release button



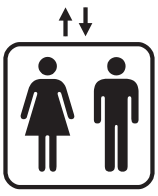
This device performs simultaneously the two functions mentioned above. The lock and button can be rotated in this case as well; the release button can be ordered with various lengths. The release button has priority over the lock, i.e., the emergency escape can be actuated to unlock the switch even if the lock is locked. To reset the switch, the lock and the button must be returned to their initial position.

Non-detachable heads and release devices



The head and the release device can be rotated but cannot be detached from each other. This makes the switch more secure since the problem of incorrect assembly by the installer cannot occur; in addition, the risk of damage is lower (loss of small parts, penetration of dirt, etc.).

Compliant with EN 81-20 and EN 81-50



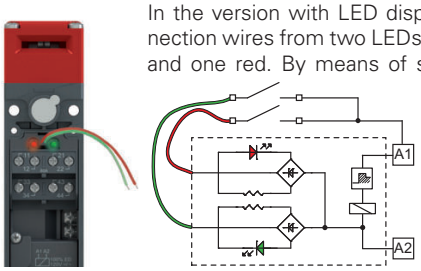
- Safety contacts in compliance with EN 60947-5-1, annex K.
- Protection degree higher than IP4x.
- All switches meet requirements laid down by the new standards for safety contacts.

LED display unit, type A



In the version with LED display unit of type A, two green LEDs are switched-on directly by the power supply of the solenoid. Wiring is not necessary.

LED display unit, types B and C



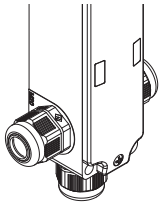
In the version with LED display unit of type B, connection wires from two LEDs are available, one green and one red. By means of suitable connections on the contact block, various operating states of the switch can be displayed externally.

Protection degree IP67

IP67

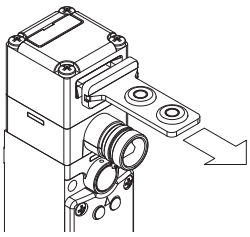
These devices are designed to be used under the toughest environmental conditions, and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where the maximum degree of protection is required for the housing.

Three conduit entries



The switch is provided with three conduit entries in different directions. This allows its application in series connections or in narrow places.

Holding force of the unlocked actuator



The inside of each switch features a device which holds the actuator in its closed position. The device keeps the unlocked guard in its position with a retaining force of approx. 30 N, stopping any vibrations or gusts of wind from opening them.

Laser engraving



All FG series switches are permanently marked with a special laser system. As a result, the marking remains legible even under extreme operating conditions. 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.

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 +60°C.

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

LED signalling lights

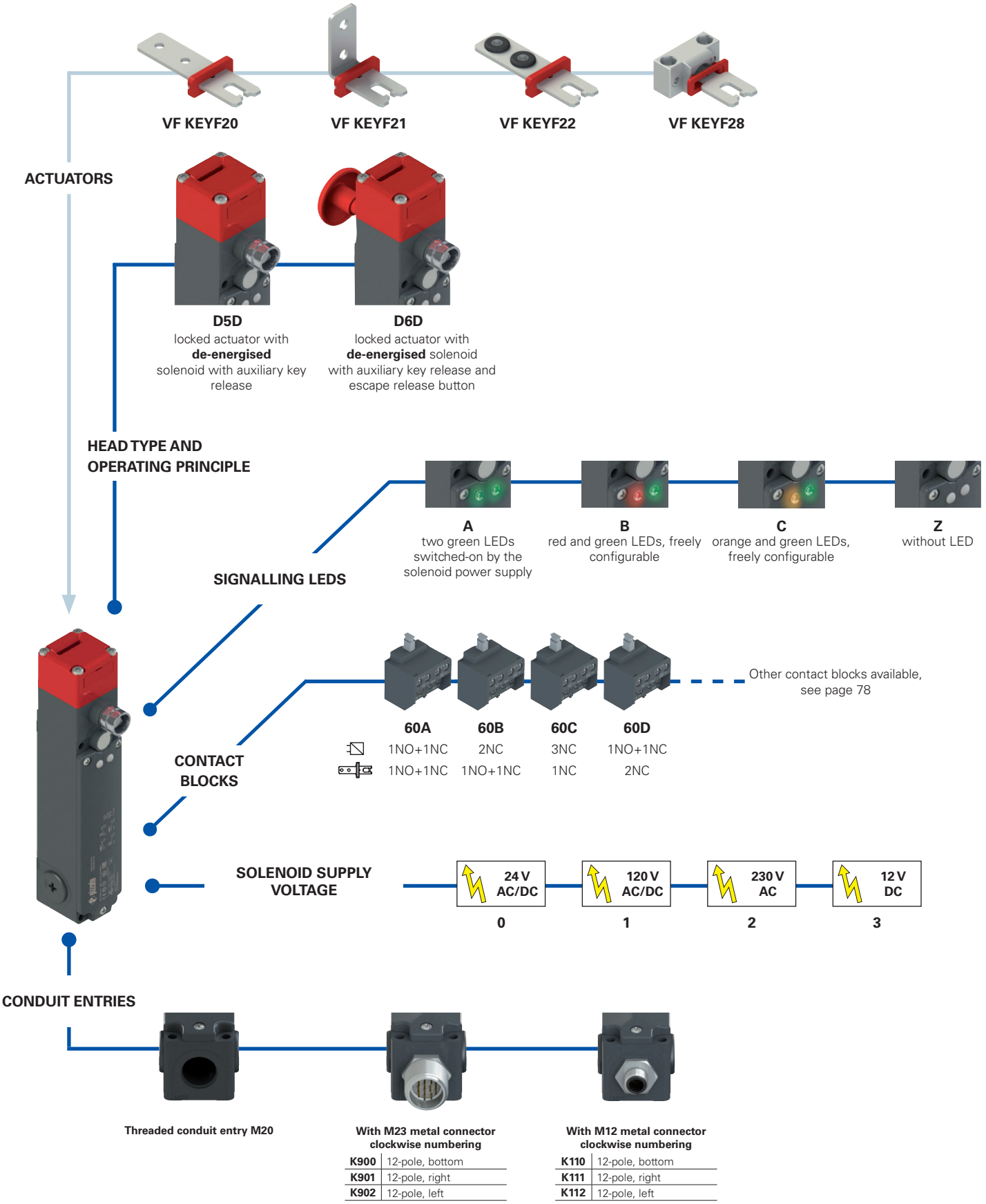


Thanks to the three threaded cable entries, the high luminosity LED signalling lights of the VF SL series can be installed on the switch.

The LED signalling lights can be be easily installed by screwing them on one of the conduit entries not used for electric cables. They can be used for many different purposes: for example, to signal, from a distance, whether the switch has been actuated; whether the door has been closed correctly; or whether the door is locked or unlocked.

For more information see chapter Accessories, page 149.

Selection diagram



product option

Sold separately as accessory

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

FG 60AD1D0A-LP30F20GK900T6V70V90

Contact block

	Contacts activated by the solenoid	Contacts activated by the actuator
60A	1NO+1NC	1NO+1NC
60B	2NC	1NO+1NC
60C	3NC	1NC
60D	1NO+1NC	2NC
60E	1NO+2NC	1NC
60G	2NC	2NC
60L	2NO+1NC	1NC
60P	1NC	3NC
60S	1NC	2NO+1NC
60T	1NC	1NO+2NC
60X	1NO	3NC
60Y	1NO	1NO+2NC
61E	1NO	2NO+1NC
61G	2NO	1NO+1NC
61H	2NO	2NC
61M	3NO	1NC

Operating principle

D5D	locked actuator with de-energised solenoid. With auxiliary key release.
D6D	locked actuator with de-energised solenoid. With auxiliary key release and escape release button.

Solenoid supply voltage

0	24 Vac/dc (-10% … +10%)
1	120 Vac/dc (-15% … +10%)
2	230 Vac (-15% … +10%)
3	12 Vdc (-10% … +10%)

Signalling LEDs

A	two green LEDs switched-on by the solenoid power supply
B	red and green LEDs, freely configurable
C	orange and green LEDs, freely configurable
Z	without LED

Release button length

	for max. 15 mm wall thickness (standard)
LP30	for max. 30 mm wall thickness
LP40	for max. 40 mm wall thickness
LP60	for max. 60 mm wall thickness
LPRG	adjustable, for wall thickness from 60 mm to 500 mm

Actuators

	without actuator (standard)
F20	straight actuator VF KEYF20
F21	angled actuator VF KEYF21
F22	actuator with rubber pads VF KEYF22
F28	universal actuator VF KEYF28

Contact type

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

Pre-installed connectors

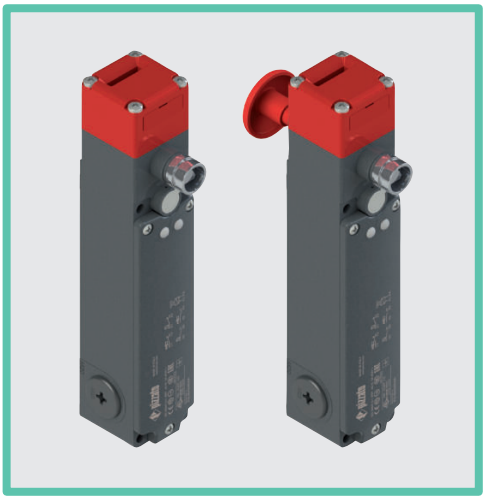
	without connector (standard)
K900	M23 metal connector, 12-pole, bottom
...	…
K110	M12 metal connector, 12-pole, bottom
...	…

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

Ambient temperature

	-25°C … +60°C (standard)
T6	-40°C … +60°C

FG series safety switches for door locking



Main features

- Actuator locking force: 3000 N
- 16 contact blocks with 4 contacts
- Metal housing, three M20 conduit entries
- Protection degree IP67
- Auxiliary key release with triangular lock and spring return
- 4 stainless steel actuators
- Head and release devices, individually turnable and non-detachable
- Signalling LEDs

Quality marks:

IMQ approval (dir. 2014/35/EU):	CA02.03808
IMQ approval (dir. 2014/33/EU):	CA50.00781
UL approval:	E131787
CCC approval:	2021000305000103
EAC approval:	RU C-IT.УТ03.B.00035/19

Technical data

Housing

Metal head and housing, baked powder coating.

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

SIL (SIL CL) up to:	SIL 3 acc. to EN 62061
Performance Level (PL) up to:	PL e acc. to EN ISO 13849-1
Interlock with mechanical lock, coded:	type 2 acc. to EN ISO 14119
Coding level:	low acc. to EN ISO 14119
Safety parameters:	
B_{10D}:	5,000,000 for NC contacts
Mission time:	20 years
Ambient temperature:	-25°C … +60°C (standard) -40°C … +60°C (T6 option)
Max. actuation frequency:	600 operating cycles/hour
Mechanical endurance:	1 million operating cycles
Max. actuation speed:	0.5 m/s
Min. actuation speed:	1 mm/s
Locking closure force:	3000 N
Maximum clearance of locked actuator:	4.5 mm
Released actuator extraction force:	30 N
Tightening torques for installation:	see page 159
Wire cross-sections and wire stripping lengths:	see page 170

Solenoid

Duty cycle:	100% ED (continuous operation)
Solenoid consumption:	9 VA

In compliance with standards:
IEC 60947-5-1, IEC 60947-1, IEC 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, IEC 61000-6-2, IEC 61000-6-3, EN IEC 63000, EN 81-20, EN 81-50, BG-GS-ET-15, BG-GS-ET-19, UL 508, CSA C22.2 No. 14.

Approvals:
EN 60947-5-1, UL 508, CSA C22.2 No. 14, GB/T14048.5

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU, Lift Directive 2014/33/EU, Machinery Directive 2006/42/EC, EMC Directive 2014/30/EU, RoHS Directive 2011/65/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 the instructions given on pages 153 to 162.**

	Electrical data		Utilization category
without connector	Thermal current (I_{th}):	10 A	Alternating current: AC15 (50÷60 Hz)
	Rated insulation voltage (U_i):	400 Vac 300 Vdc	U_e (V) 120 250 400
	Rated impulse withstand voltage (U_{imp}):	6 kV	I_e (A) 6 5 3
	Conditional short circuit current:	1000 A acc. to EN 60947-5-1	Direct current: DC13
	Protection against short circuits:	type gG fuse 10 A 500 V	U_e (V) 24 125 250
	Pollution degree:	3	I_e (A) 3 0.7 0.4
with M23 connector, 12-pole	Thermal current (I_{th}):	8 A	Alternating current: AC15 (50÷60 Hz)
	Rated insulation voltage (U_i):	250 Vac 300 Vdc	U_e (V) 120 250
	Protection against short circuits:	type gG fuse 8 A 500 V	I_e (A) 6 5
	Pollution degree:	3	Direct current: DC13
			U_e (V) 24 125 250
			I_e (A) 3 0.7 0.4
with M12 connector, 12-pole	Thermal current (I_{th}):	1.5 A	Alternating current: AC15 (50÷60 Hz)
	Rated insulation voltage (U_i):	30 Vac 36 Vdc	U_e (V) 24
	Protection against short circuits:	type gG fuse 1.5 A	I_e (A) 1.5
	Pollution degree:	3	Direct current: DC13
			U_e (V) 24
			I_e (A) 1.5

Features approved by IMQ

In compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

Rated insulation voltage (U_i):	400 Vac
Conventional free air thermal current (I_{th}):	10 A
Protection against short circuits:	type gG fuse 10 A 500 V
Rated impulse withstand voltage (U_{imp}):	6 kV
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: X+X+X+X, Y+Y+Y+Y, X+Y+Y+Y, X+X+Y+Y, X+X+X+Y
Positive opening of contacts on all contact blocks: 60A, 60B, 60C, 60D, 60E, 60G, 60L, 60P, 60S, 60T, 60X, 60Y, 61E, 61G, 61H, 61M

In compliance with standards: EN 81-20, EN 81-50, fundamental requirements of the Lift Directive 2014/33/EU.

Protection degree of the housing:	IP67
Resistance to tracking:	TK 175V
MV terminals (screw terminals)	
Operating voltage (U_e):	250 V c.a. / a.c. – 200 V c.c. / d.c.
Operating current (I_e):	2 A c.a. / a.c. – 0,5 A c.c. / d.c.

Forms of the contact element: Y+Y+Y+Y, X+Y+Y+Y, X+X+Y+Y
Positive opening of contacts on all contact blocks: 60A, 60B, 60C, 60D, 60E, 60G, 60L, 60P, 60S, 60T

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

Features approved by UL

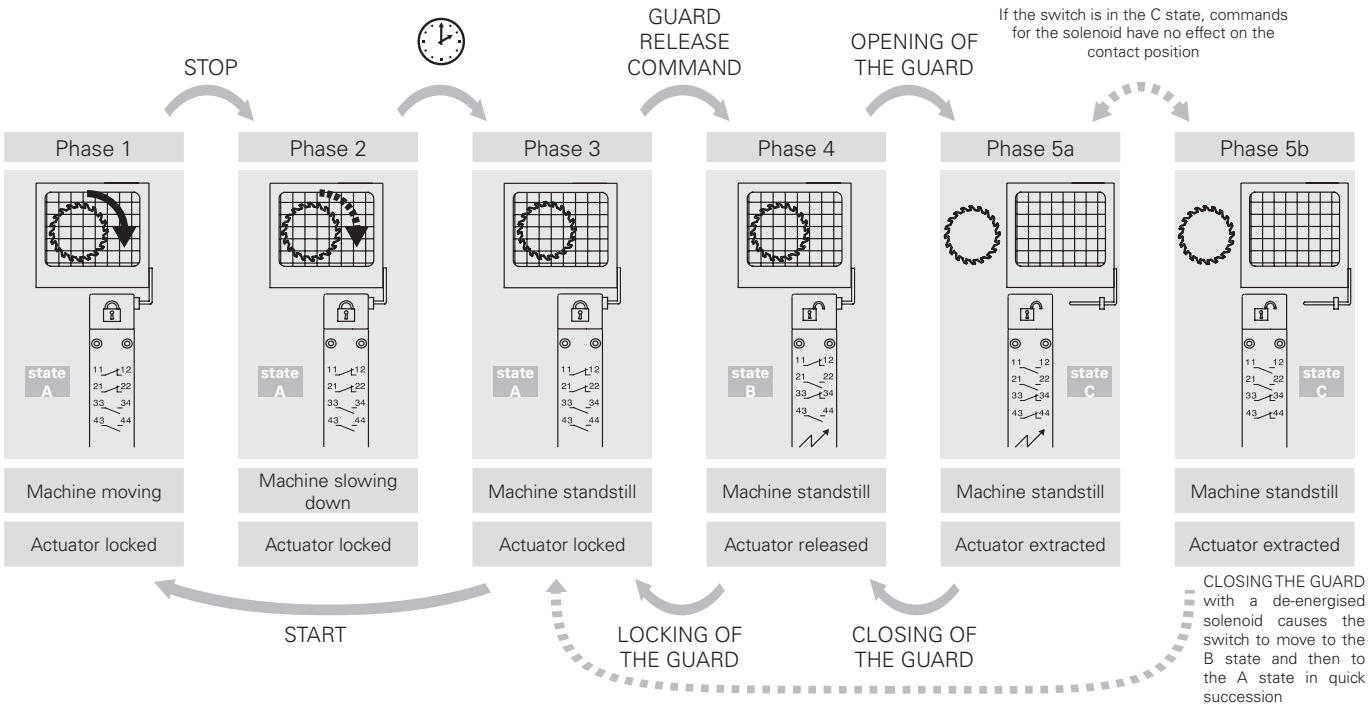
Electrical Ratings:	A300 pilot duty (720 VA, 120-300 Vac) Q300 pilot duty (69 VA, 125-250 Vdc)
Environmental Ratings:	Types 1, 4X, 12, 13

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

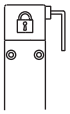
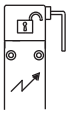
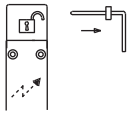
Operating principle

The operating principle of these safety switches allows three different operating states:
state A: with inserted and locked actuator
state B: with inserted but not locked actuator
state C: with extracted actuator
All or some of these states can be monitored by means of electrical NO contacts or NC contacts with positive opening by selecting the appropriate contact blocks. In detail, contact blocks that have electric contacts marked with the symbol of the solenoid ( ) are switched in the transition between the state A and state B, while the electric contacts marked with the symbol of the actuator ( ) are switched between state B and state C.
According to the operating principle, the actuator is locked when the solenoid is de-energised. The actuator is released by energising the solenoid (see example of operating phases).

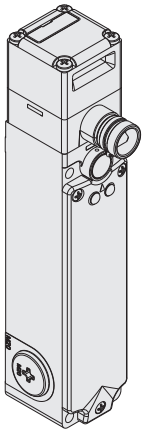
Example of the operating phases



Contact positions related to switch states

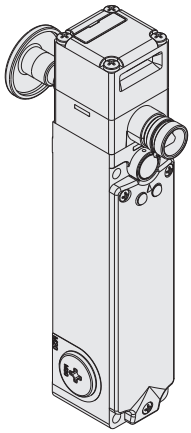
Operating state	Operating principle with locked actuator with de-energised solenoid		
	state A	state B	state C
Actuator	Inserted and locked	Inserted and released	Extracted
Solenoid	De-energised	Energised	-
			
FG 60A••••• 1NO+1NC controlled by the solenoid 1NO+1NC controlled by the actuator	11 12 21 22 33 34 43 44	11 12 21 22 33 34 43 44	11 12 21 22 33 34 43 44
FG 60B••••• 2NC controlled by the solenoid 1NO+1NC controlled by the actuator	11 12 21 22 31 32 43 44	11 12 21 22 31 32 43 44	11 12 21 22 31 32 43 44
FG 60C••••• 3NC controlled by the solenoid 1NC controlled by the actuator	11 12 21 22 31 32 41 42	11 12 21 22 31 32 41 42	11 12 21 22 31 32 41 42
FG 60D••••• 1NO+1NC controlled by the solenoid 2NC controlled by the actuator	13 14 21 22 31 32 41 42	13 14 21 22 31 32 41 42	13 14 21 22 31 32 41 42
FG 60E••••• 1NO+2NC controlled by the solenoid 1NC controlled by the actuator	11 12 21 22 31 32 43 44	11 12 21 22 31 32 43 44	11 12 21 22 31 32 43 44
FG 60G••••• 2NC controlled by the solenoid 2NC controlled by the actuator	11 12 21 22 31 32 41 42	11 12 21 22 31 32 41 42	11 12 21 22 31 32 41 42
FG 60L••••• 2NO+1NC controlled by the solenoid 1NC controlled by the actuator	11 12 21 22 33 34 43 44	11 12 21 22 33 34 43 44	11 12 21 22 33 34 43 44
FG 60P••••• 1NC controlled by the solenoid 3NC controlled by the actuator	11 12 21 22 31 32 41 42	11 12 21 22 31 32 41 42	11 12 21 22 31 32 41 42
FG 60S••••• 1NC controlled by the solenoid 2NO+1NC controlled by the actuator	11 12 21 22 33 34 43 44	11 12 21 22 33 34 43 44	11 12 21 22 33 34 43 44
FG 60T••••• 1NC controlled by the solenoid 1NO+2NC controlled by the actuator	11 12 21 22 31 32 43 44	11 12 21 22 31 32 43 44	11 12 21 22 31 32 43 44
FG 60X••••• 1NO controlled by the solenoid 3NC controlled by the actuator	13 14 21 22 31 32 41 42	13 14 21 22 31 32 41 42	13 14 21 22 31 32 41 42
FG 60Y••••• 1NO controlled by the solenoid 1NO+2NC controlled by the actuator	11 12 21 22 33 34 43 44	11 12 21 22 33 34 43 44	11 12 21 22 33 34 43 44
FG 61E••••• 1NO controlled by the solenoid 2NO+1NC controlled by the actuator	13 14 21 22 33 34 43 44	13 14 21 22 33 34 43 44	13 14 21 22 33 34 43 44
FG 61G••••• 2NO controlled by the solenoid 1NO+1NC controlled by the actuator	13 14 21 22 33 34 43 44	13 14 21 22 33 34 43 44	13 14 21 22 33 34 43 44
FG 61H••••• 2NO controlled by the solenoid 2NC controlled by the actuator	11 12 21 22 33 34 43 44	11 12 21 22 33 34 43 44	11 12 21 22 33 34 43 44
FG 61M••••• 3NO controlled by the solenoid 1NC controlled by the actuator	13 14 21 22 33 34 43 44	13 14 21 22 33 34 43 44	13 14 21 22 33 34 43 44

Contact type
L = slow action



Operating principle		Provided with key release with triangular key, without actuator			
Contact block					
60A	L	FG 60AD5D0A-V70V90	⊞ ⊕	1NO+1NC	1NO+1NC
60B	L	FG 60BD5D0A-V70V90	⊞ ⊕	2NC	1NO+1NC
60C	L	FG 60CD5D0A-V70V90	⊞ ⊕	3NC	1NC
60D	L	FG 60DD5D0A-V70V90	⊞ ⊕	1NO+1NC	2NC
60E	L	FG 60ED5D0A-V70V90	⊞ ⊕	1NO+2NC	1NC
60G	L	FG 60GD5D0A-V70V90	⊞ ⊕	2NC	2NC
60L	L	FG 60LD5D0A-V70V90	⊞ ⊕	2NO+1NC	1NC
60P	L	FG 60PD5D0A-V70V90	⊞ ⊕	1NC	3NC
60S	L	FG 60SD5D0A-V70V90	⊞ ⊕	1NC	2NO+1NC
60T	L	FG 60TD5D0A-V70V90	⊞ ⊕	1NC	1NO+2NC
60X	L	FG 60XD5D0A-V70V90	⊕	1NO	3NC
60Y	L	FG 60YD5D0A-V70V90	⊕	1NO	1NO+2NC
61E	L	FG 61ED5D0A-V70V90	⊕	1NO	2NO+1NC
61G	L	FG 61GD5D0A-V70V90	⊕	2NO	1NO+1NC
61H	L	FG 61HD5D0A-V70V90	⊕	2NO	2NC
61M	L	FG 61MD5D0A-V70V90	⊕	3NO	1NC
Actuating force		30 N (60 N ⊕)			
Travel diagrams		Page 170			

Contact type
L = slow action



Operating principle		Provided with key release with triangular key, escape release button, without actuator			
Contact block					
60A	L	FG 60AD6D0A-V70V90	⊞ ⊕	1NO+1NC	1NO+1NC
60B	L	FG 60BD6D0A-V70V90	⊞ ⊕	2NC	1NO+1NC
60C	L	FG 60CD6D0A-V70V90	⊞ ⊕	3NC	1NC
60D	L	FG 60DD6D0A-V70V90	⊞ ⊕	1NO+1NC	2NC
60E	L	FG 60ED6D0A-V70V90	⊞ ⊕	1NO+2NC	1NC
60G	L	FG 60GD6D0A-V70V90	⊞ ⊕	2NC	2NC
60L	L	FG 60LD6D0A-V70V90	⊞ ⊕	2NO+1NC	1NC
60P	L	FG 60PD6D0A-V70V90	⊞ ⊕	1NC	3NC
60S	L	FG 60SD6D0A-V70V90	⊞ ⊕	1NC	2NO+1NC
60T	L	FG 60TD6D0A-V70V90	⊞ ⊕	1NC	1NO+2NC
60X	L	FG 60XD6D0A-V70V90	⊕	1NO	3NC
60Y	L	FG 60YD6D0A-V70V90	⊕	1NO	1NO+2NC
61E	L	FG 61ED6D0A-V70V90	⊕	1NO	2NO+1NC
61G	L	FG 61GD6D0A-V70V90	⊕	2NO	1NO+1NC
61H	L	FG 61HD6D0A-V70V90	⊕	2NO	2NC
61M	L	FG 61MD6D0A-V70V90	⊕	3NO	1NC
Actuating force		30 N (60 N ⊕)			
Travel diagrams		Page 170			

Legend: ⊕ With positive opening according to EN 60947-5-1, ⊞ interlock with lock monitoring acc. to EN ISO 14119

Contacts activated by the actuator

Contacts activated by the solenoid

Accessories See page 149

➔ The 2D and 3D files are available at **www.pizzato.com**

Stainless steel actuators

IMPORTANT: These actuators can be used only with items of the FG series (e.g. FG 60AD5D0A-F20V70V90).
Low level of coding acc. to EN ISO 14119.



Article	Description
VF KEYF20	Straight actuator



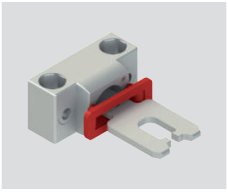
Article	Description
VF KEYF21	Angled actuator



Article	Description
VF KEYF22	Actuator with rubber pads

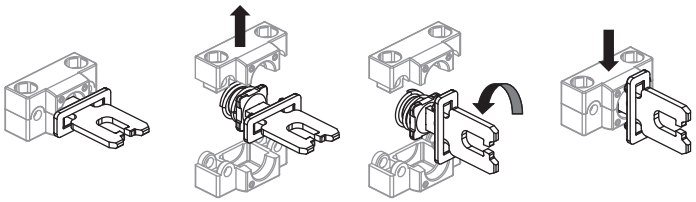
Universal actuator VF KEYF28

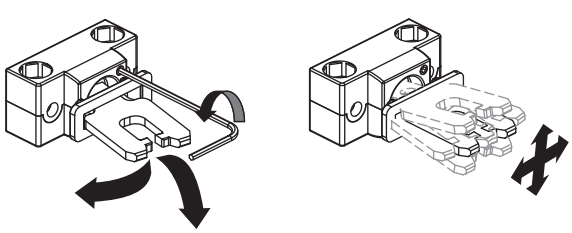
IMPORTANT: These actuators can be used only with items of the FG series (e.g. FG 60AD5D0A-F28V70V90).
Low level of coding acc. to EN ISO 14119.

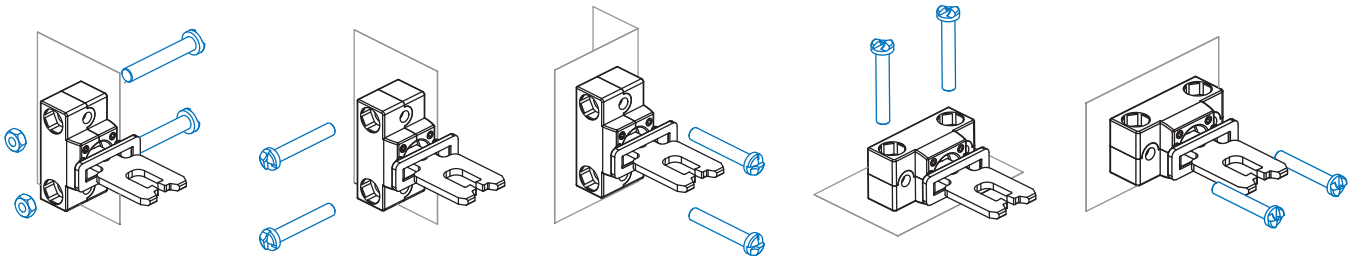


Article	Description
VF KEYF28	Universal actuator

Jointed actuator for guards with poor alignment, adjustable in two dimensions for small doors; can be mounted in various positions. The metal fixing body has two pairs of bore holes; it is provided for rotating the working plane of the actuator by 90°.







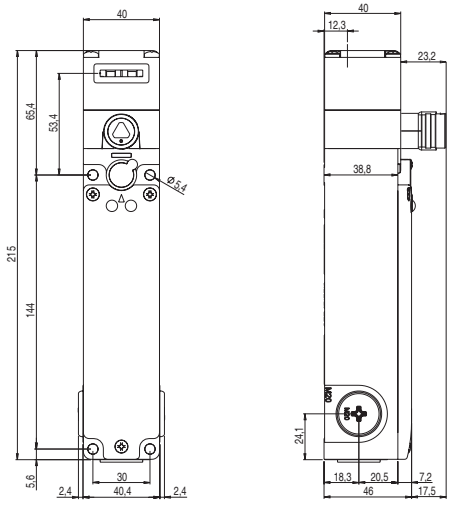
All values in the drawings are in mm

Accessories See page 149

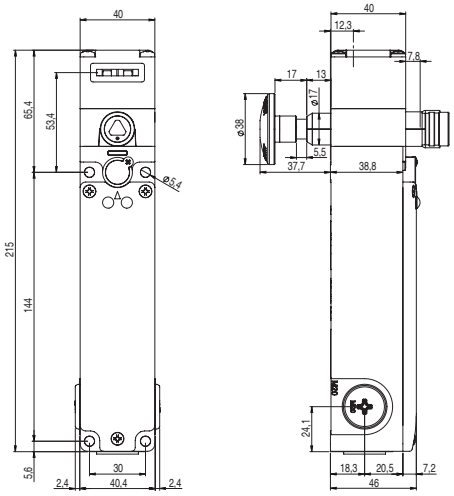
→ The 2D and 3D files are available at **www.pizzato.com**

Dimensional drawings

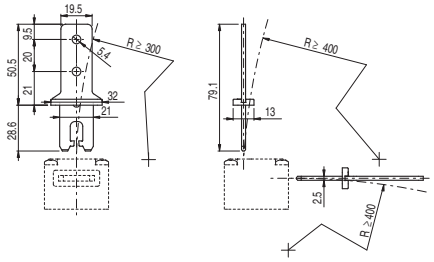
Switch FG 6••D5D••-V70V90
With auxiliary key release
with triangular key



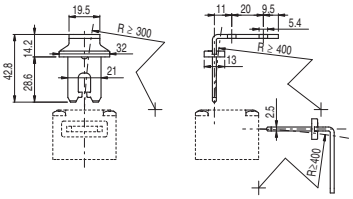
Switch FG 6••D6D••-V70V90
With auxiliary key release with triangular key and escape release button



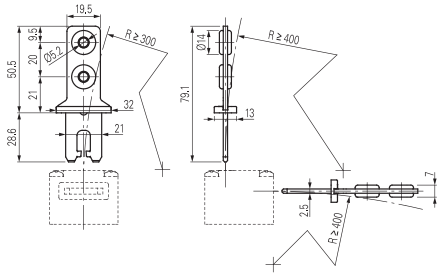
Actuator VF KEYF20



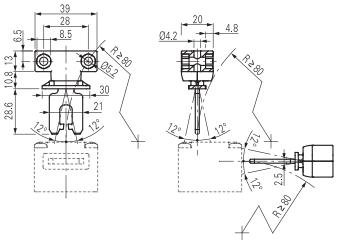
Actuator VF KEYF21



Actuator VF KEYF22



Actuator VF KEYF28



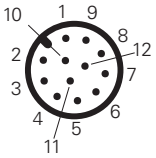
All values in the drawings are in mm

Accessories See page 149

➔ The 2D and 3D files are available at **www.pizzato.com**

Wiring diagram for M12 connectors

M12 connector, 12-pole



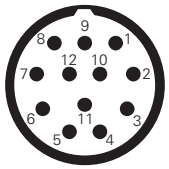
Contact block 60A 2NO+2NC		Contact block 60B 1NO+3NC		Contact block 60C 4NC		Contact block 60D 1NO+3NC		Contact block 60E 1NO+3NC		Contact block 60G 4NC		Contact block 60L 2NO+2NC		Contact block 60P 4NC		Contact block 60S 2NO+2NC		Contact block 60T 1NO+3NC	
Contacts	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**
A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2
NC	3-4	NC	3-4	NC	3-4	NO	3-4	NC	3-4	NC	3-4	NC	3-4	NC	3-4	NC	3-4	NC	3-4
NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6
NO	7-8	NC	7-8	NC	7-8	NC	7-8	NC	7-8	NC	7-8	NO	7-8	NC	7-8	NO	7-8	NC	7-8
NO	9-10	NO	9-10	NC	9-10	NC	9-10	NO	9-10	NC	9-10	NO	9-10	NC	9-10	NO	9-10	NO	9-10

Contact block 60X 1NO+3NC		Contact block 60Y 2NO+2NC		Contact block 61E 3NO+1NC		Contact block 61G 3NO+1NC		Contact block 61H 2NO+2NC		Contact block 61M 3NO+1NC	
Contacts	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**
A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2
NO	3-4	NC	3-4	NO	3-4	NO	3-4	NC	3-4	NO	3-4
NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6
NC	7-8	NO	7-8	NO	7-8	NO	7-8	NO	7-8	NO	7-8
NC	9-10	NO	9-10	NO	9-10	NO	9-10	NO	9-10	NO	9-10

Note: the wires connected to pins 11 and 12 of the M12 connector can be used to activate the LEDs in FG series configurations with freely connectable LEDs.

Wiring diagram for M23 connectors

M23 connector, 12-pole



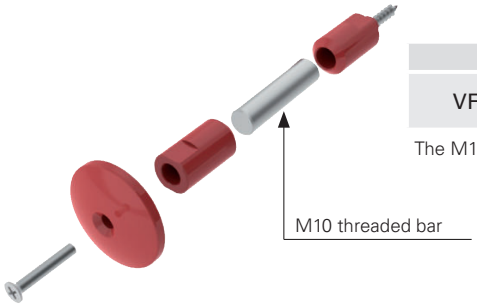
Contact block 60A 2NO+2NC		Contact block 60B 1NO+3NC		Contact block 60C 4NC		Contact block 60D 1NO+3NC		Contact block 60E 1NO+3NC		Contact block 60G 4NC		Contact block 60L 2NO+2NC		Contact block 60P 4NC		Contact block 60S 2NO+2NC		Contact block 60T 1NO+3NC	
Contacts	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**
A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2
NC	3-4	NC	3-4	NC	3-4	NO	3-4	NC	3-4	NC	3-4	NC	3-4	NC	3-4	NC	3-4	NC	3-4
NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6
NO	7-8	NC	7-8	NC	7-8	NC	7-8	NC	7-8	NC	7-8	NO	7-8	NC	7-8	NO	7-8	NC	7-8
NO	9-10	NO	9-10	NC	9-10	NC	9-10	NO	9-10	NC	9-10	NO	9-10	NC	9-10	NO	9-10	NO	9-10
ground	11	ground	11	ground	11	ground	11	ground	11	ground	11	ground	11	ground	11	ground	11	ground	11

Contact block 60X 1NO+3NC		Contact block 60Y 2NO+2NC		Contact block 61E 3NO+1NC		Contact block 61G 3NO+1NC		Contact block 61H 2NO+2NC		Contact block 61M 3NO+1NC	
Contacts	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**	**Contacts**	**Pin no.**
A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2	A1-A2	1-2
NO	3-4	NC	3-4	NO	3-4	NO	3-4	NC	3-4	NO	3-4
NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6	NC	5-6
NC	7-8	NO	7-8	NO	7-8	NO	7-8	NO	7-8	NO	7-8
NC	9-10	NO	9-10	NO	9-10	NO	9-10	NO	9-10	NO	9-10
ground	11	ground	11	ground	11	ground	11	ground	11	ground	11

Release button



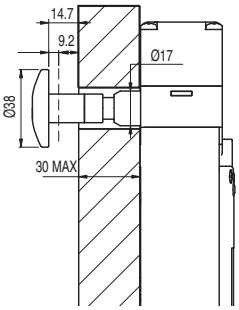
Article	Description
VF FG-LP15	Technopolymer release button for max. 15 mm wall thickness, supplied with screw
VF FG-LP30	Technopolymer release button for max. 30 mm wall thickness, supplied with screw
VF FG-LP40	Technopolymer release button for max. 40 mm wall thickness, supplied with screw
VF FG-LP60	Metal release button for max. 60 mm wall thickness, supplied with screw



Article	Description
VF FG-LPRG	Metal release button for wall thickness from 60 to 500 mm, supplied with 2 supports and 2 screws, without M10 threaded bar

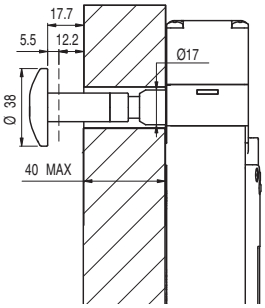
The M10 bar can be supplied in zinc-plated steel with 1 m length. Article: AC 8512.

Other release button lengths



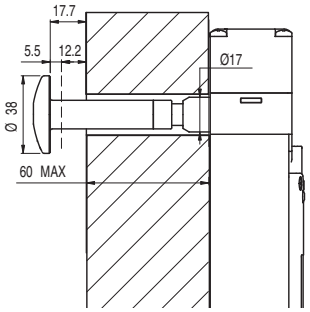
-LP30

For wall thickness
15 … 30 mm



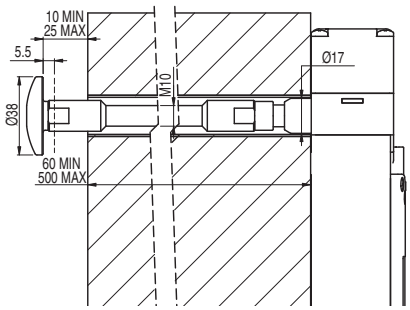
-LP40

For wall thickness
30 … 40 mm



-LP60

For wall thickness
40 … 60 mm



-LPRG

For wall thickness
60 … 500 mm

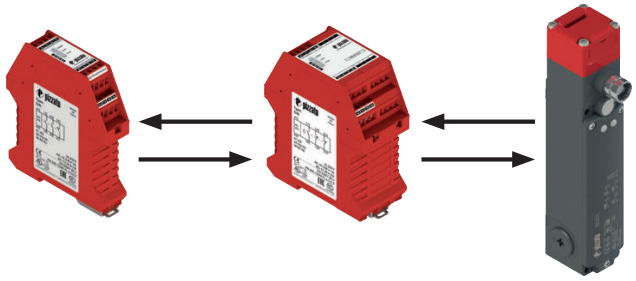
-LP30, -LP40, -LP60:
- Avoid bending and twisting the release button.
- To guarantee correct device operation, keep a distance of 10 … 25 mm between the wall and the release button.
- The actuation path of the release button must always be kept clean. Dirt or chemical products could compromise the device operation.
- Periodically check the device for proper function.

-LPRG:
- Avoid bending and twisting the release button.
- On the inside of the wall, use a bushing or a tube with an inner diameter of 18±0.5 mm as a guide.
- Guide in the M10 threaded rod in such as way so as to prevent bending. The M10 threaded rod is not supplied with the device.
- Use medium-strength thread locker to secure the threaded rod.
- Do not exceed an overall length of 500 mm between the release button and the switch.
- To guarantee correct device operation, keep a distance of 10 … 25 mm between the wall and the release button.
- The actuation path of the release button must always be kept clean. Dirt or chemical products could compromise the device operation.
- Periodically check the device for proper function.

Safety modules

Pizzato Elettrica offers its customers a wide range of safety modules. These were developed taking into consideration typical problems encountered during the monitoring of safety switches under actual operating conditions. Safety modules with instantaneous or delayed contacts for emergency circuits of type 0 (immediate stop) or type 1 (controlled stop).

Safety switches with solenoid of the FG series can be connected to safety modules for the realization of safety circuits up to PL e acc. to EN ISO 13849. For technical information or wiring diagrams, please contact our technical office.



All values in the drawings are in mm

Accessories See page 149

➔ The 2D and 3D files are available at **www.pizzato.com**