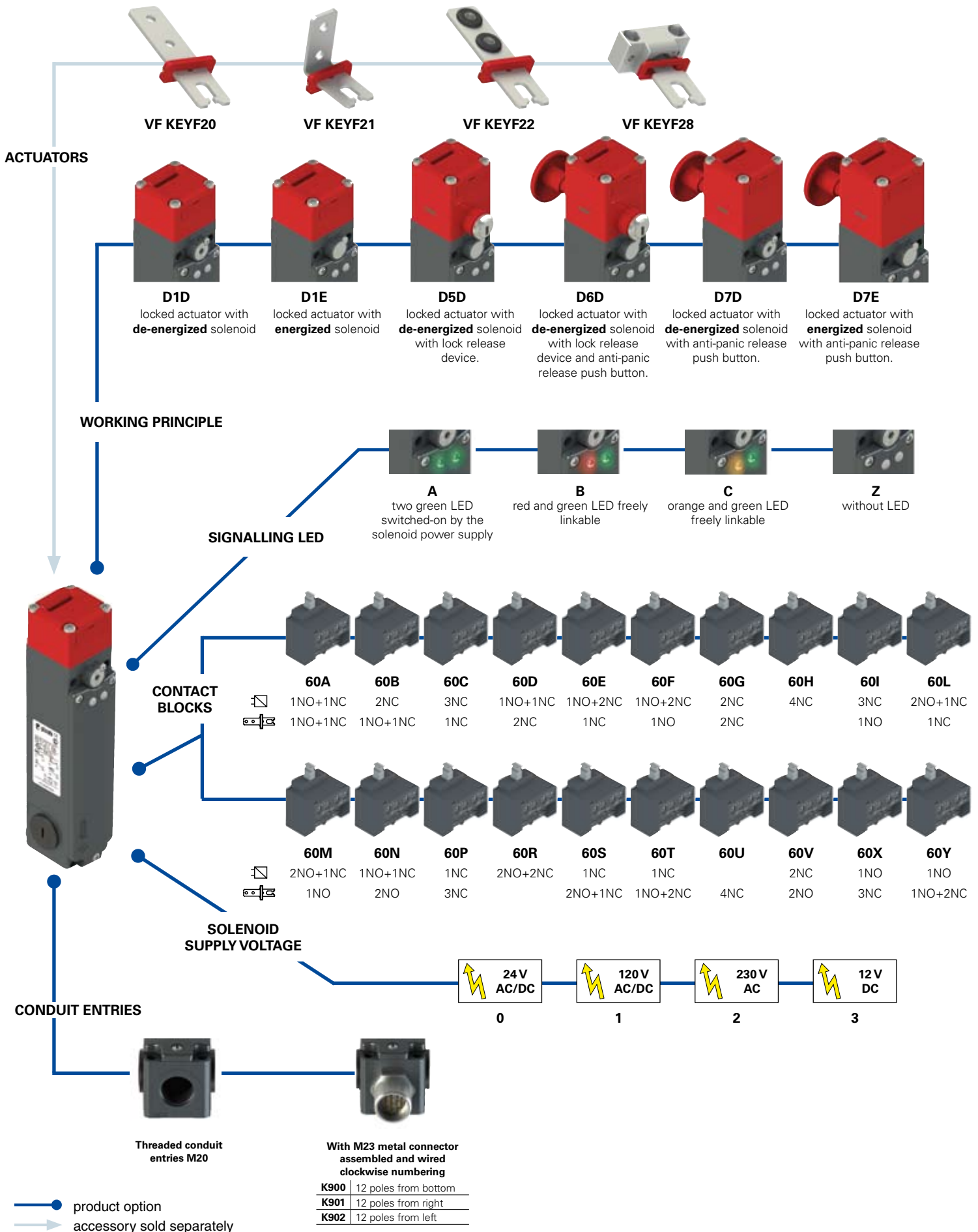


Selection diagram





## 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-LP30F20GK900

## Integrated contact blocks

	Solenoid operated 	Actuator operated 
<b>60A</b>	1NO+1NC	1NO+1NC
<b>60B</b>	2NC	1NO+1NC
<b>60C</b>	3NC	1NC
<b>60D</b>	1NO+1NC	2NC
<b>60E</b>	1NO+2NC	1NC
<b>60F</b>	1NO+2NC	1NO
<b>60G</b>	2NC	2NC
<b>60H</b>	4NC	/
<b>60I</b>	3NC	1NO
<b>60L</b>	2NO+1NC	1NC
<b>60M</b>	2NO+1NC	1NO
<b>60N</b>	1NO+1NC	2NO
<b>60P</b>	1NC	3NC
<b>60R</b>	2NO+2NC	/
<b>60S</b>	1NC	1NC+2NO
<b>60T</b>	1NC	2NC+1NO
<b>60U</b>	/	4NC
<b>60V</b>	2NC	2NO
<b>60X</b>	1NO	3NC
<b>60Y</b>	1NO	1NO+2NC

## Working principle

<b>D1D</b>	locked actuator with de-energized solenoid
<b>D1E</b>	locked actuator with energized solenoid
<b>D5D</b>	locked actuator with de-energized solenoid. With lock release device.
<b>D6D</b>	locked actuator with de-energized solenoid. With lock release device and anti-panic release push button.
<b>D7D</b>	locked actuator with de-energized solenoid. With anti-panic release push button.
<b>D7E</b>	locked actuator with energized solenoid. With anti-panic release push button.

## Solenoid supply voltage

<b>0</b>	24 Vac/dc (-10% ... +10%)
<b>1</b>	120 Vac/dc (-15% ... +10%)
<b>2</b>	230 Vac (-15% ... +10%)
<b>3</b>	12 Vdc (-15% ... +20%)

## Preinstalled connectors

	no connectors (standard)
<b>K900</b>	with M23 metal connector assembled and wired, 12 poles from bottom
<b>K901</b>	with M23 metal connector assembled and wired, 12 poles from right
<b>K902</b>	with M23 metal connector assembled and wired, 12 poles from left

## Contacts type

	silver contacts (standard)
<b>G</b>	silver contacts gold plated 1 µm

## Actuators

	without actuator (standard)
<b>F20</b>	with straight actuator (VF KEYF20)
<b>F21</b>	with right-angled actuator (VF KEYF21)
<b>F22</b>	with actuator with rubber mountings (VF KEYF22)
<b>F28</b>	with universal actuator (VF KEYF28)

## Release button length

	wall thickness length max 15 mm (standard)
<b>LP30</b>	wall thickness length max 30 mm
<b>LP40</b>	wall thickness length max 40 mm
<b>LP60</b>	wall thickness length max 60 mm
<b>LPRG</b>	adjustable for wall thickness length from 60 mm to 500 mm

## Signalling LED

<b>A</b>	two green LED switched-on by the solenoid power supply
<b>B</b>	red and green LED freely linkable
<b>C</b>	orange and green LED freely linkable
<b>Z</b>	without LED



### Main features

- Actuator holding force 2500 N
- 20 contact blocks with 4 contacts
- Metal housing, three conduit entries M20
- Protection degree IP67
- Version with lock release device and emergency release push button
- 4 stainless steel actuators
- Rotating head and devices and not detachable
- Signalling LED
- Working with energized or de-energized solenoid

### Markings and quality marks:



Approval IMQ:	CA02.03848
Approval UL:	E131787
Approval CCC:	2013010305602309
Approval GOST:	POCC IT.AB24.B04512

### Technical data

#### Housing

Metal housing, coated with baked epoxy powder.

Three conduit entries M20

Protection degree:

IP67 according to EN 60529  
with cable gland having equal or higher protection degree  
(electrical contacts)

#### General data

For safety applications up to SIL 3 / PL e

Safety parameters:

see page 7/34

Ambient temperature:

from -25°C to +60°C

Max actuation frequency:

600 operations cycles<sup>1</sup>/hour

Mechanical endurance:

1 million of operations cycles<sup>1</sup>

Max actuating speed:

0,5 m/s

Min. actuating speed:

1 mm/s

Max holding force:

2500 N

Maximum force before the breaking

in accordance with GS-ET-19:

2800 N

Maximum holding force

in accordance with GS-ET-19:

2150 N

Max backlash of the actuator:

4,5 mm

Actuator extraction force:

30 N

Driving torque for installation:

see pages 7/1-7/12

(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard..

#### Cross section of the conductors (flexible copper wire)

Contact blocks:

min. 1 x 0,34 mm<sup>2</sup> (1 x AWG 22)

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

#### In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, IEC 60529, EN 60529, EN 61000-6-2, EN 61000-6-3, NFC 63-140, VDE 0660-200, VDE 0113, BG-GS-ET-15.

#### Approvals:

IEC 60947-5-1, UL 508.

#### In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and Electromagnetic Compatibility 2004/108/EC.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, VDE 0660-206.

#### Solenoid

Solenoid duty cycle:

100% ED

Solenoid protection 12 V:

fuse 1 A type gG

Solenoid protection 24 V:

fuse 0,5 A type gG

Solenoid protection 120 V:

fuse 315 mA, delayed type

Solenoid protection 230 V:

fuse 315 mA, delayed type

Solenoid power:

9 VA

**⚠ If not expressly indicated in this chapter, for the right installation and the correct utilization of all articles see requirements indicated from page 7/1 to page 7/12.**

### Electrical data

### Utilization categories

without connector	Thermal current (I <sub>th</sub> ):	10 A
	Rated insulation voltage (U <sub>i</sub> ):	400Vac 300 Vdc
	Rated impulse withstand voltage (U <sub>imp</sub> ):	6 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

Alternate current: AC15 (50...60 Hz)			
U <sub>e</sub> (V)	120	250	400
I <sub>e</sub> (A)	6	5	3
Direct current: DC13			
U <sub>e</sub> (V)	24	125	250
I <sub>e</sub> (A)	3	0,7	0,4

with 12 poles M23 connector	Thermal current (I <sub>th</sub> ):	8 A
	Rated insulation voltage (U <sub>i</sub> ):	250 Vac 300 Vdc
	Protection against short circuits:	fuse 8 A 500 V type gG
	Pollution degree:	3

Alternate current: AC15 (50...60 Hz)			
U <sub>e</sub> (V)	120	250	
I <sub>e</sub> (A)	6	5	
Direct current: DC13			
U <sub>e</sub> (V)	24	125	250
I <sub>e</sub> (A)	3	0,7	0,4



### Data type approved by IMQ

Rated insulation voltage (Ui): 400 Vac  
Thermal current (Ith): 10  
Rated impulse withstand voltage ( $U_{imp}$ ): 6 kV  
Protection against short circuits: fuse 10 A 500 V type gG  
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: 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 contact block 60A, 60B, 60C, 60D, 60E, 60F, 60G, 60H, 60I, 60L, 60M, 60N, 60P, 60R, 60S, 60T, 60U, 60V, 60X, 60Y

In conformity with standards: EN 60947-1, EN 60947-5-1+ A1:2009, fundamental requirements of the Low Voltage Directive 2006/95/CE.

**Please contact our technical service for the list of approved products.**

### Data type approved by UL

Utilization categories A300 (720 VA, 120-300 Vac)  
Q300 (69 VA, 125-250 Vdc)

Data of the housing type 1, 4X "indoor use only"; 12, 13

In conformity with standard: UL 508

**Please contact our technical service for the list of approved products.**

### Limits of utilization

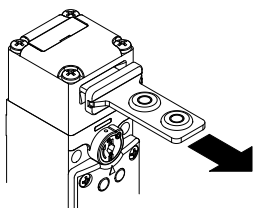
Do not use where dust and dirt may penetrate in any way into the head and deposit there, in particular where metal dust, concrete or chemicals are spread.

Do not use where explosive or inflammable gas is present.

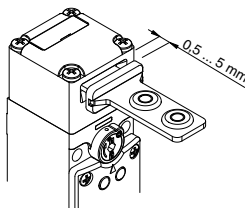
Use Atex products in environments with explosion hazard (see page 2/137).

**Description**

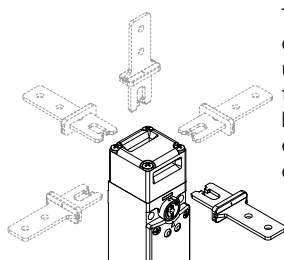
These switches are used on machines where the hazardous conditions remain for a while, even after the machines have been switched off, for example because of mechanical inertia of pulleys, saw disks, parts under pressure or with high temperatures. They can also be used when it is necessary to control machine guards allowing the opening of protections only under specific conditions.

**Actuator holding force**

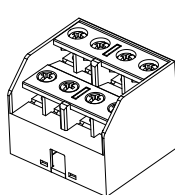
The strong interlocking system guarantees a maximum actuator holding force of 2500 N.

**Actuating regulation zone**

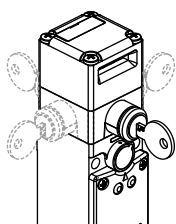
This switch has a wide backlash of the actuator into the head (4,5 mm) to avoid that door gaskets keep in traction the actuator on the solenoid. With closed door, check that the actuator doesn't knock straight against the head of the switch; it must be in the adjustment zone (0,5...5 mm)

**Rotating heads and devices**

The head can be quickly rotated on each of the 4 sides of the switch by unfastening the four fixing screws. Also the lock release device and the release button can be rotated in 90° steps; this enables the switch to assume 32 different configurations.

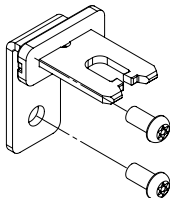
**4 poles contact block**

Innovative 4 poles contact block, available in different contacts configurations to monitor the actuator or the solenoid (patented). The contact block is supplied with no-loosening screws and self-lifting plates

**Release device with rotating lock**

The auxiliary release device with rotating lock is used to allow the maintenance or the entry into the machinery to authorized personnel only. Rotating the key, will make the same action of the solenoid, that is move solenoid contacts and release the actuator. The device can be rotated allowing the installation of the safety switch inside the machinery and

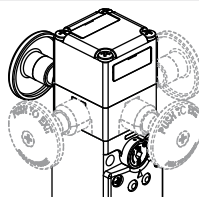
making the release device accessible outside the protection. In this way, the switch is more protected against possible tampering and the external side/surface of the machinery remains pleasant.

**Safety screws for actuators**

These new screws have tamper-resistant Torx buttonheads.

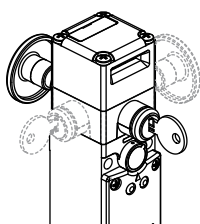
Devices fixed with this kind of screws cannot be removed or tampered by common tools.

See accessories page 6/5.

**Emergency release push button**

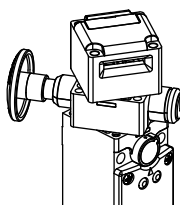
This device is used when the safety switch controls hazardous areas where operators may physically enter with all their body. The release button, oriented towards inside the machinery, allows the exit of the operator accidentally trapped also in case of possible black-out.

Pushing the button, it will be actuated the same function of the auxiliary release device. To reset the switch, restore the button to the initial position. The emergency button can be rotated, available with different lengths and it is fixed to the switch by a screw, so to allow the installation of the switch inside or outside the guards.

**Lock release device and emergency push button**

This device performs the two above mentioned functions at the same time. Also in this case the device can be rotated and the release button can be ordered with different lengths. The activation of the button has the priority on the lock, that is with the closed lock is possible to activate the button and unlock the switch. To reset the switch is

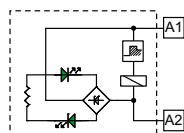
necessary to restore lock and button to their initial position.

**Not detachable head and devices**

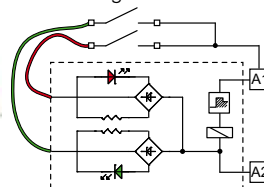
The head and the release devices can be rotated but they are not detachable to each other. In such a way the switch is safer because the installer do not have to worry about the assembly of various components and there is a lower probability of damages (loss of small parts, dirt penetration, etc.)

**Signalling LED type A**

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

**Signalling LED type B**

In the version with signalling LED type B, two LED connection wires are available, one green and one red. Through suitable connections to the contact block, it is possible to control the different states of the switch.



## Description

### Working conditions

The working principle of these safety switches allows three different working states:

**state A:** with the actuator inserted and blocked by the solenoid

**state B:** with the actuator inserted but not blocked

**state C:** with the actuator extracted

All or some of these states may be controlled through the positive opening contacts of the internal contact block. 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:

### Working principle

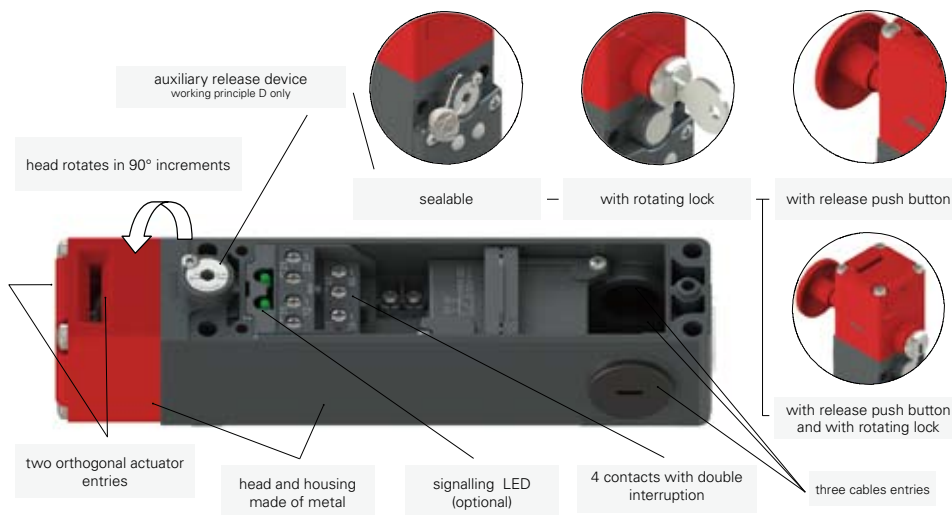
It is also possible to choose between two working principles for the actuator locking:

- **Working principle D:** Actuator blocked with de-energized solenoid. Actuator release is obtained by power supply to the solenoid (see example of working cycle steps).
- **Working principle E:** Actuator blocked with energized solenoid. The unlock of the actuator is obtained by power-off to the solenoid. It is advisable to use this version under special conditions because a blackout will allow the immediate opening of the protection.

### Product versatility

This series of products includes many technical solutions that results in easier installation and working:

- Four different types of stainless steel actuators, suitable to be fixed in several positions and with insertion radius arc equal to or over 80 mm.
- Swinging head, in 90° steps, with two actuator entries for easy installation of the switch. Heads D5, D6 and D7 are provided with release devices that can be rotated independently to the actuator entry side. All parts of heads are rotating but not detachable from the body, in order to avoid any tampering or wrong assembling during the installation.
- To extract the inserted but not blocked actuator, a 30 N force is necessary, that avoids the guard opening because of vibrations or impacts.
- Extremely heavy mechanical system of actuator locking, able to support traction forces up to 2500 N.
- When actuator is locked, it can still move a little (4,5 mm), to avoid that door gaskets keep in traction the actuator on the solenoid.
- Housing with three conduit entries for an easier installation or connection in series.
- Electronic control of the power supply. This technical solution resolves the problems that may derive from not stable power supply (machine distance from main transformers, tension variation between night/day hours), allowing also a low solenoid power consumption and consequently enlarging the working temperatures range of the switch.
- No-loosing screws contact blocks, fingers protection, contacts with double interruption, high contact reliability.
- Version with signalling LED connected to the power supply or freely linked by the installer. LED are externally visible through the housing cover.



### Release device

Versions with D working principle are supplied with a sealable auxiliary release device used by technicians during the installation or to access the machine in case of black-out.

Head D1: • The auxiliary release device is actuated by screwing to the end the safety dowel and rotating the device by 180°.

- The arrow on the switch cover indicates the auxiliary release device state. After the actuator release, put in the start position and reposition the safety dowel.
- To avoid improper use of the auxiliary release device during the usual machine working cycle, it has to be sealed with some drops of paint or by lead sealing.

Head D5: The auxiliary release device is composed of a lock with double key supplied on issue.

Head D7: The auxiliary release device is composed of a mushroom-head push button with no panic functions. This device must be rotated towards the inner and dangerous side of the machine so that an operator entrapped could activate it, release the switch and go out of the area. To restore the switch, reset the push button. This device cannot be used for functions of emergency stop of the machine.

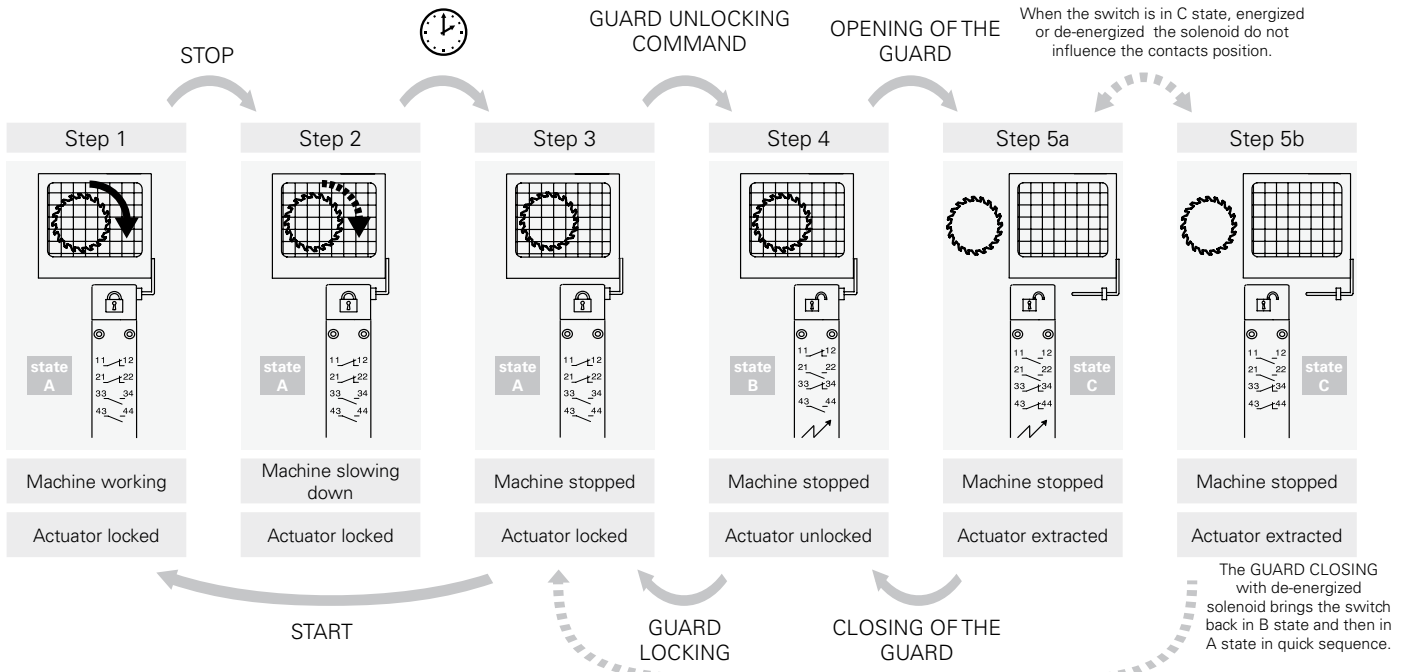
Head D6: This head has contemporaneously functions of heads D5 and D7. The release occurs always, any of two devices is activated (push button or lock).

### Gate monitoring

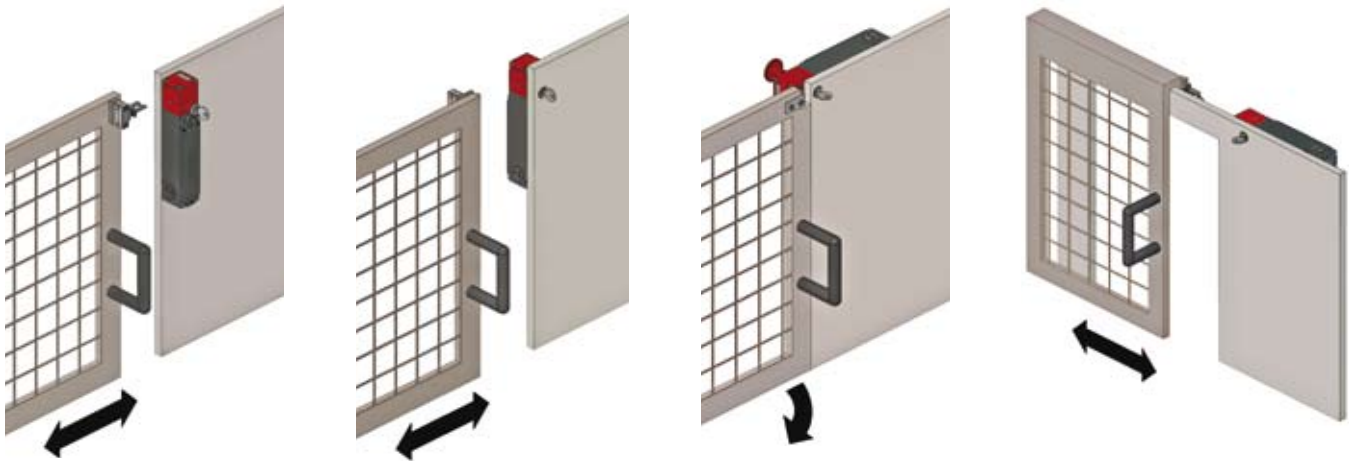
These switches alone cannot protect operators or maintenance men where they may physically enter with all their body in the hazardous area, because an involuntary closing of the protection behind them could allow the restart of the machine. If the authorization to the machine restart is completely granted by these switches, it must be foreseen a system to avoid that risk, as for example the pad lockable device to lock the actuator entry, item VF KB2 at page 4/86 or a safety handle with padlocks as for example VF AP-P11B-200P (page 4/109).



Example of working cycle steps with FG 60AD1D0A-F21 (switch with working principle D)



Application examples on machinery guards





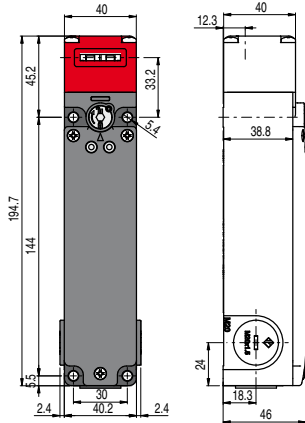


Dimensional drawings

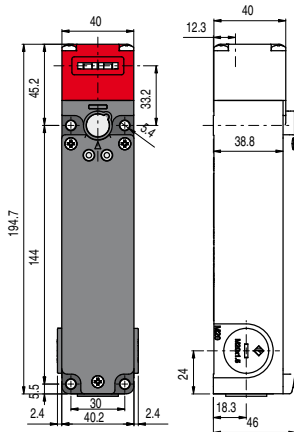
Contacts type:

**L** = slow action

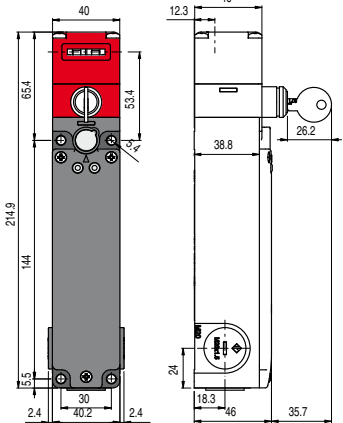
D working principle with sealable auxiliary release device, supplied without actuator



E working principle, supplied without actuator



D working principle with lock release device, supplied without actuator

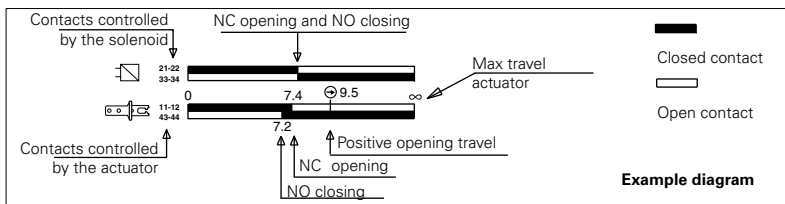


Contact blocks

60A	<b>L</b>	FG 60AD1D0A	⊕	1NO+1NC 1NO+1NC	FG 60AD1E0A	⊕	1NO+1NC 1NO+1NC	FG 60AD5D0A	⊕	1NO+1NC 1NO+1NC
60B	<b>L</b>	FG 60BD1D0A	⊕	2NC 1NO+1NC	FG 60BD1E0A	⊕	2NC 1NO+1NC	FG 60BD5D0A	⊕	2NC 1NO+1NC
60C	<b>L</b>	FG 60CD1D0A	⊕	3NC 1NC	FG 60CD1E0A	⊕	3NC 1NC	FG 60CD5D0A	⊕	3NC 1NC
60D	<b>L</b>	FG 60DD1D0A	⊕	1NO+1NC 2NC	FG 60DD1E0A	⊕	1NO+1NC 2NC	FG 60DD5D0A	⊕	1NO+1NC 2NC
60E	<b>L</b>	FG 60ED1D0A	⊕	1NO+2NC 1NC	FG 60ED1E0A	⊕	1NO+2NC 1NC	FG 60ED5D0A	⊕	1NO+2NC 1NC
60F	<b>L</b>	FG 60FD1D0A	⊕	1NO+2NC 1NO	FG 60FD1E0A	⊕	1NO+2NC 1NO	FG 60FD5D0A	⊕	1NO+2NC 1NO
60G	<b>L</b>	FG 60GD1D0A	⊕	2NC 2NC	FG 60GD1E0A	⊕	2NC 2NC	FG 60GD5D0A	⊕	2NC 2NC
60H	<b>L</b>	FG 60HD1D0A	⊕	4NC /	FG 60HD1E0A	⊕	4NC /	FG 60HD5D0A	⊕	4NC /
60I	<b>L</b>	FG 60ID1D0A	⊕	3NC 1NO	FG 60ID1E0A	⊕	3NC 1NO	FG 60ID5D0A	⊕	3NC 1NO
60L	<b>L</b>	FG 60LD1D0A	⊕	2NO+1NC 1NC	FG 60LD1E0A	⊕	2NO+1NC 1NC	FG 60LD5D0A	⊕	2NO+1NC 1NC
60M	<b>L</b>	FG 60MD1D0A	⊕	2NO+1NC 1NO	FG 60MD1E0A	⊕	2NO+1NC 1NO	FG 60MD5D0A	⊕	2NO+1NC 1NO
60N	<b>L</b>	FG 60ND1D0A	⊕	1NO+1NC 2NO	FG 60ND1E0A	⊕	1NO+1NC 2NO	FG 60ND5D0A	⊕	1NO+1NC 2NO
60P	<b>L</b>	FG 60PD1D0A	⊕	1NC 3NC	FG 60PD1E0A	⊕	1NC 3NC	FG 60PD5D0A	⊕	1NC 3NC
60R	<b>L</b>	FG 60RD1D0A	⊕	2NO+2NC /	FG 60RD1E0A	⊕	2NO+2NC /	FG 60RD5D0A	⊕	2NO+2NC /
60S	<b>L</b>	FG 60SD1D0A	⊕	1NC 2NO+1NC	FG 60SD1E0A	⊕	1NC 2NO+1NC	FG 60SD5D0A	⊕	1NC 2NO+1NC
60T	<b>L</b>	FG 60TD1D0A	⊕	1NC 1NO+2NC	FG 60TD1E0A	⊕	1NC 1NO+2NC	FG 60TD5D0A	⊕	1NC 1NO+2NC
60U	<b>L</b>	FG 60UD1D0A	⊕	4NC	FG 60UD1E0A	⊕	4NC	FG 60UD5D0A	⊕	4NC
60V	<b>L</b>	FG 60VD1D0A	⊕	2NC 2NO	FG 60VD1E0A	⊕	2NC 2NO	FG 60VD5D0A	⊕	2NC 2NO
60X	<b>L</b>	FG 60XD1D0A	⊕	1NO 3NC	FG 60XD1E0A	⊕	1NO 3NC	FG 60XD5D0A	⊕	1NO 3NC
60Y	<b>L</b>	FG 60YD1D0A	⊕	1NO 1NO+2NC	FG 60YD1E0A	⊕	1NO 1NO+2NC	FG 60YD5D0A	⊕	1NO 1NO+2NC
Min. force		30 N (60 N ⊕)			30 N (60 N ⊕)			30 N (60 N ⊕)		
Travel diagrams		page 4/84 - group 1			page 4/84 - group 1			page 4/84 - group 1		

How to read travel diagrams

All measures in the diagrams are in mm

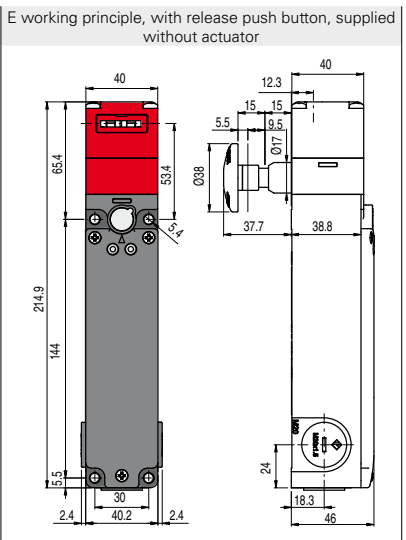
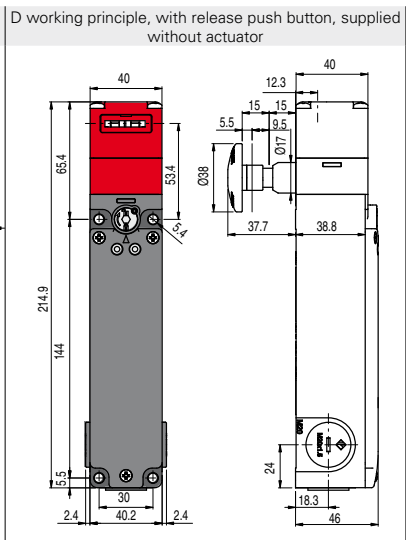
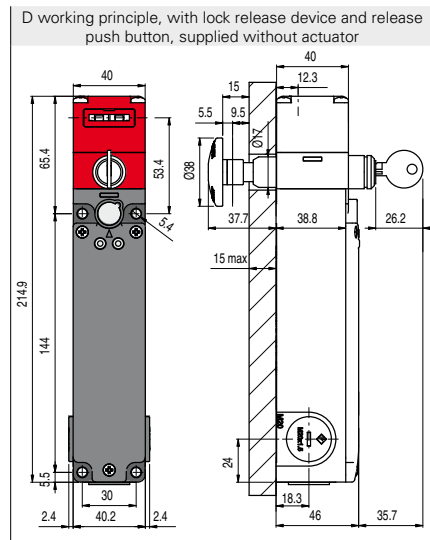


IMPORTANT:

NC contact has to be considered with inserted and locked actuator. In safety applications it is necessary to activate the switch at least up to the positive opening point indicated in the diagrams with the symbol ⊕. Operate the switch at least with the positive opening force, indicated between brackets, below each article, next the value of minimum force.



Contacts type:  
**L** = slow action



Contact blocks													
60A	<b>L</b>	<b>FG 60AD6D0A</b>	➔	1NO+1NC	1NO+1NC	FG 60AD7D0A	➔	1NO+1NC	1NO+1NC	FG 60AD7E0A	➔	1NO+1NC	1NO+1NC
60B	<b>L</b>	FG 60BD6D0A	➔	2NC	1NO+1NC	FG 60BD7D0A	➔	2NC	1NO+1NC	FG 60BD7E0A	➔	2NC	1NO+1NC
60C	<b>L</b>	FG 60CD6D0A	➔	3NC	1NC	FG 60CD7D0A	➔	3NC	1NC	FG 60CD7E0A	➔	3NC	1NC
60D	<b>L</b>	FG 60DD6D0A	➔	1NO+1NC	2NC	FG 60DD7D0A	➔	1NO+1NC	2NC	FG 60DD7E0A	➔	1NO+1NC	2NC
60E	<b>L</b>	FG 60ED6D0A	➔	1NO+2NC	1NC	FG 60ED7D0A	➔	1NO+2NC	1NC	FG 60ED7E0A	➔	1NO+2NC	1NC
60F	<b>L</b>	FG 60FD6D0A	➔	1NO+2NC	1NO	FG 60FD7D0A	➔	1NO+2NC	1NO	FG 60FD7E0A	➔	1NO+2NC	1NO
60G	<b>L</b>	FG 60GD6D0A	➔	2NC	2NC	FG 60GD7D0A	➔	2NC	2NC	FG 60GD7E0A	➔	2NC	2NC
60H	<b>L</b>	FG 60HD6D0A	➔	4NC	/	FG 60HD7D0A	➔	4NC	/	FG 60HD7E0A	➔	4NC	/
60I	<b>L</b>	FG 60ID6D0A	➔	3NC	1NO	FG 60ID7D0A	➔	3NC	1NO	FG 60ID7E0A	➔	3NC	1NO
60L	<b>L</b>	FG 60LD6D0A	➔	2NO+1NC	1NC	FG 60LD7D0A	➔	2NO+1NC	1NC	FG 60LD7E0A	➔	2NO+1NC	1NC
60M	<b>L</b>	FG 60MD6D0A	➔	2NO+1NC	1NO	FG 60MD7D0A	➔	2NO+1NC	1NO	FG 60MD7E0A	➔	2NO+1NC	1NO
60N	<b>L</b>	FG 60ND6D0A	➔	1NO+1NC	2NO	FG 60ND7D0A	➔	1NO+1NC	2NO	FG 60ND7E0A	➔	1NO+1NC	2NO
60P	<b>L</b>	FG 60PD6D0A	➔	1NC	3NC	FG 60PD7D0A	➔	1NC	3NC	FG 60PD7E0A	➔	1NC	3NC
60R	<b>L</b>	FG 60RD6D0A	➔	2NO+2NC	/	FG 60RD7D0A	➔	2NO+2NC	/	FG 60RD7E0A	➔	2NO+2NC	/
60S	<b>L</b>	FG 60SD6D0A	➔	1NC	2NO+1NC	FG 60SD7D0A	➔	1NC	2NO+1NC	FG 60SD7E0A	➔	1NC	2NO+1NC
60T	<b>L</b>	FG 60TD6D0A	➔	1NC	1NO+2NC	FG 60TD7D0A	➔	1NC	1NO+2NC	FG 60TD7E0A	➔	1NC	1NO+2NC
60U	<b>L</b>	FG 60UD6D0A	➔	4NC	4NC	FG 60UD7D0A	➔	4NC	4NC	FG 60UD7E0A	➔	4NC	4NC
60V	<b>L</b>	FG 60VD6D0A	➔	2NC	2NO	FG 60VD7D0A	➔	2NC	2NO	FG 60VD7E0A	➔	2NC	2NO
60X	<b>L</b>	FG 60XD6D0A	➔	1NO	3NC	FG 60XD7D0A	➔	1NO	3NC	FG 60XD7E0A	➔	1NO	3NC
60Y	<b>L</b>	FG 60YD6D0A	➔	1NO	1NO+2NC	FG 60YD7D0A	➔	1NO	1NO+2NC	FG 60YD7E0A	➔	1NO	1NO+2NC
Min. force		30 N (60 N ➔)				30 N (60 N ➔)				30 N (60 N ➔)			
Travel diagrams		page 4/84 - group 1				page 4/84 - group 1				page 4/84 - group 1			

**Travel diagrams table**

Contact blocks	Group 1	Contact blocks	Group 1	Contact blocks	Group 1
60A 2NO+2NC		60G 4NC		60R 2NO+2NC	
60B 1NO+3NC		60H 4NC		60S 2NO+2NC	
60C 4NC		60I 1NO+3NC		60T 1NO+3NC	
60D 1NO+3NC		60L 1NO+3NC		60U 4NC	
60E 1NO+3NC		60M 3NO+1NC		60V 2NO+2NC	
60F 2NO+2NC		60N 3NO+1NC		60X 1NO+3NC	
		60P 4NC		60Y 2NO+2NC	

Items with code on the **green** background are available in stock

**Stainless steel actuators**

**IMPORTANT:** These actuators must be used with FG series only (e.g. FG 60AD1D0A).

Article	Description
VF KEYF20	Straight actuator

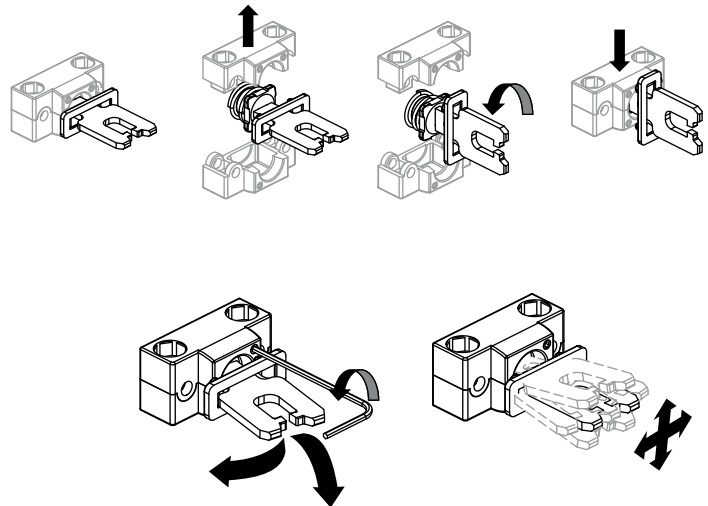
Article	Description
VF KEYF21	Right-angled actuator

Article	Description
VF KEYF22	Actuator with rubber mountings

**Universal actuator VF KEYF28**

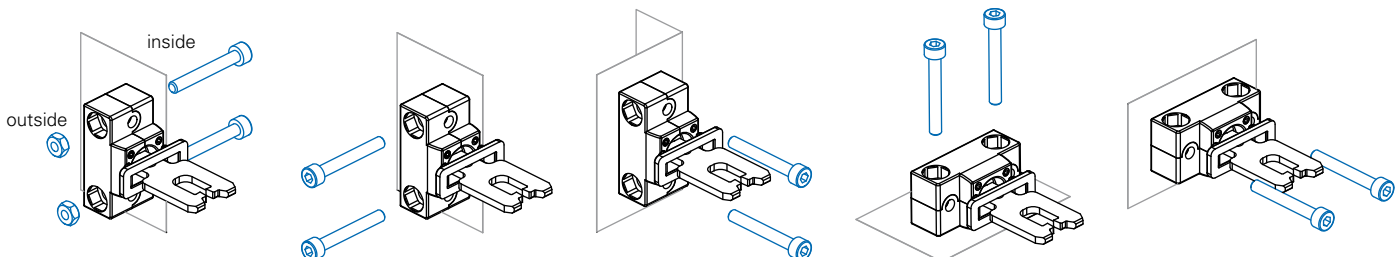
**IMPORTANT:** These actuators must be used with FG series only (e.g. FG 60AD1D0A).

Article	Description
VF KEYF28	Universal actuator



Joined and two directions adjustable actuator for doors with reduced dimensions.  
The actuator has two couples of fixing holes and it is possible to rotate by 90° the actuator-working plan.

for inaccurate doors



Accessories See page 6/1

**Accessories for sealing**

Pliers, steel wire and lead seals used to seal the auxiliary release device.



Article	Description
VF FSPB-200	Set of 200 lead seals
VF FSPB-10	Set of 10 lead seals

Article	Description
VF FSFI-400	400 m steel wire roll
VF FSFI-10	10 m steel wire roll

Article	Description
VF FSPZ	Plier without logo

**Accessories**

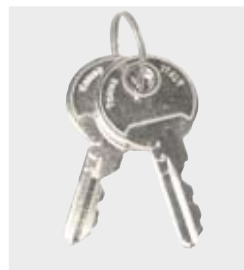
Article	Description
<b>VF KB2</b>	Actuator entry locking device



Padlockable device to lock the actuator entry in order to prevent from the accidental closing of the door behind operators while they are inside the machine. To be used only with FG series. Padlocks diameter holes 9 mm

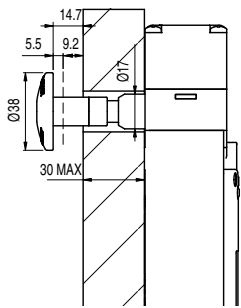


Article	Description
<b>VF KLA371</b>	Set of 2 locking keys

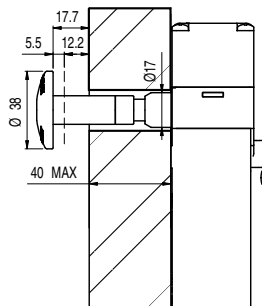


Extra copy of the locking keys to be purchased if further keys are needed (standard supply 2 units). All switches keys have the same code. Other codes on request.

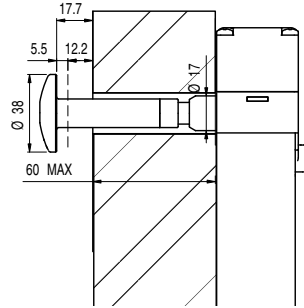
Items with code on the **green** background are available in stock

**Other release button lengths****-LP30**

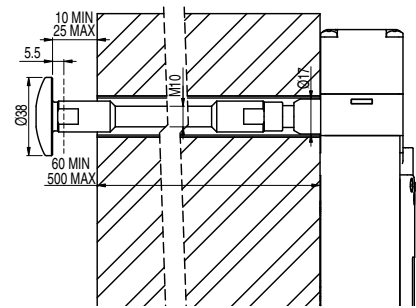
Wall thickness length  
from 15 to 30 mm

**-LP40**

Wall thickness length  
from 30 to 40 mm

**-LP60**

Wall thickness length  
from 40 to 60 mm

**-LPRG**

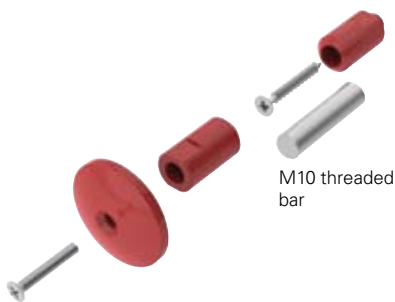
Wall thickness length  
60 ... 500 mm

- Avoid torsion and bending on the release button bar.
- To guarantee the device correct operation, keep a distance of 10 to 25 mm between the wall and the release button.
- Keep clean the release push button slipping area. The guide bushing or tube must be cleaned inside, since dirt or chemical products could compromise the device operation.
- Periodically check for correct device operation.

- Avoid torsion and bending on the release button bar.
- Use a bushing or a tube with  $18 \pm 0,5$  mm diameter as a guide inside the wall.
- The M10 threaded bar has to be inserted into the guide in order to avoid its bending. The M10 threaded bar is not supplied with the device.
- To guarantee the device correct operation, keep a distance of 10 to 25 mm between the wall and the release button.
- Keep clean the release push button slipping area. The guide bushing or tube must be cleaned inside, since dirt or chemical products could compromise the device operation.
- Periodically check for correct device operation.

**Release pushbutton**

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



M10 threaded  
bar

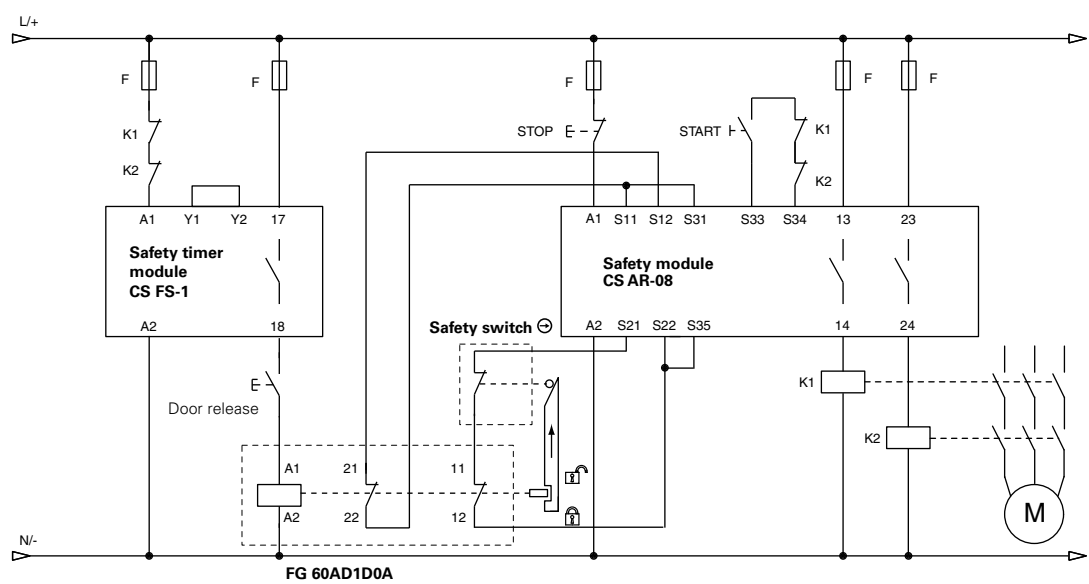
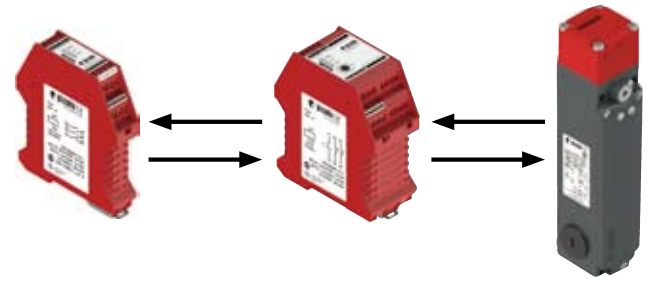
Article	Description
VF FG-LPRG	Metal release pushbutton from 60 to 500 mm, supplied with 2 supports and 2 screws, without M10 threaded bar

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



### Safety modules

Pizzato Elettrica s.r.l. offers its customers a wide range of safety modules made considering the typical problems about the control of the safety switches and their real use conditions. There are available safety modules with instantaneous or delayed contacts suitable for type 0 (immediate stop) or type 1 (monitored stop) emergency circuits. Safety switches with solenoid series FG could be connected to safety modules in order to obtain safety circuits up to PLe in accordance with EN ISO 13849. For any technical information or wiring diagram please contact our technical staff.





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