



### Main data

- Housing made of glass-reinforced polymer, self-extinguishing
- Self-cleaning contacts made of solid silver
- Possibility of application with the cable side close to the wall
- Frontal actuation
- Protection degree from IP00 to IP20
- Transparent cover

### Quality marks:



Approval IMQ-UNI: CA50.00541  
 Approval UL: E131787  
 Approval CCC: 2007010305230013  
 Approval EAC: RU C-IT.A.135.B.00454

### Technical data

#### Description

Safety switches with double interruption and positive opening. Suitable for the control of automatic lift doors.

#### Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin  
 Protection degree: IP00 according to EN 60529 (DS A•5VA)  
 IP20 according to EN 60529 (DS A•1VA)

#### General data

Ambient temperature: -30°C ... +80°C  
 (humidity ≤ 95%, without condensation)  
 Max operating frequency: 3600 operations cycles/hour  
 Mechanical endurance: 10 millions of operations cycles (DS A•1VA)  
 5 millions of operations cycles (DS A•5VA)  
 Mechanical interlock, not coded: type 1 according to EN ISO 14119  
 Safety parameters  $B_{10D}$ : 20,000,000 (DS A•1VA)  
 10,000,000 (DS A•5VA)  
 Max actuating speed: 0.5 m/s  
 Min. actuating speed: 1 mm/s  
 Actuating force: 1.2 ... 2.1 N (DS A•1VA)  
 1.2 ... 1.7 N (DS A•5VA)  
 With reduced actuating force on request: 0.8 ... 1.3 N (DS A•1VA)  
 0.8 ... 1.1 N (DS A•5VA)  
 Driving torque for installation: see page 137  
 Fixing screw: M4 self-tapping screw  
 Available on request versions with longer fixing screw

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

min. 1 x 0.5 mm<sup>2</sup> (1 x AWG 20)  
 max. 1 x 2.5 mm<sup>2</sup> (1 x AWG 14)

#### In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 60529, EN ISO 14119, EN 60529, EN 81-20, EN 81-50, UL 508, CSA 22.2 No.14

#### Approvals:

IEC 60947-5-1, UL 508, CSA 22.2 No.14, GB14048.5-2001.

#### In conformity with requirements requested by:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, Lift Directive 2014/33/EU.

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

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

### Electrical data

Thermal current ( $I_{th}$ ): 4 A  
 Rated insulation voltage ( $U_i$ ): 500 Vac  
 Rated impulse with stand voltage ( $U_{imp}$ ): 6 kV  
 Protection against short circuits: fuse 4 A  
 500 V type gG  
 Pollution degree: 3

According  
 EN 60947-5-1

EN 81-20 par. 5.11.2.2

Utilization categories:

AC15 (50, 60 Hz)

$U_e$  (V) 120 250

$I_e$  (A) 3 3

DC13

$U_e$  (V) 125 250

$I_e$  (A) 0.55 0.27

According

EN 81-50 par. 5.2.2.4

Utilization categories:

AC (50, 60 Hz)

230 Vac

2 A

DC:

200 Vdc

2 A

According

EN 81-50 par.

5.2.2.2.2

Utilization categories:

AC (50, 60 Hz)

230 Vac

2 A

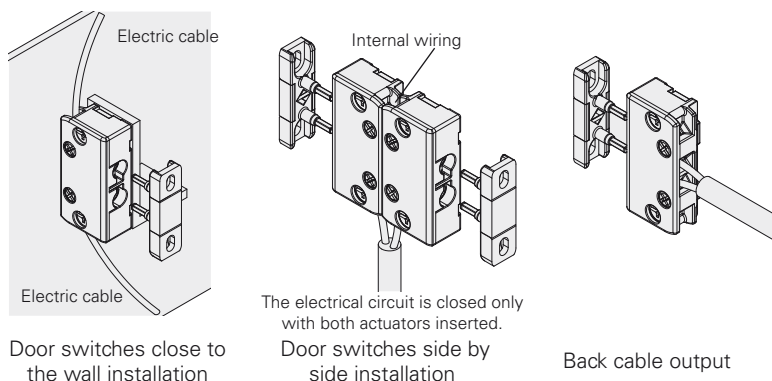
DC:

125 Vdc

0.5 A

### Application examples

These devices have several cable outputs to allow installation also in restricted spaces, for example:



### Data type approved by UL

Utilization categories Q300 (69 VA, 125-250 Vdc), 120-240 Vac, 3 A pilot duty, 5 A thermal current

For all contact blocks use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG.  
 Terminal tightening torque of 7.1 lb in (0.8 Nm).

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

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

**Dimensional drawings**

**10 pcs packs**

	Door switches with internal contacts		Door switches with external contacts	
	Switch without actuator	Switch without actuator	Switch without actuator	Switch without actuator
Slow action contacts	<b>DS AA1VA</b> 1NC	<b>DS AE1VA</b> 1NC	<b>DS AA5VA</b> 1NC	<b>DS AE5VA</b> 1NC
Max actuating travel	8 mm	8 mm	6 mm	6 mm
Travels diagrams				

**Legend**

Closed contact | Opened contact | 40° Positive opening travel

All measures in the drawings are in mm

**Actuators for door switches with internal contacts**

**10 pcs packs**

Article	Description	Article	Description
<b>DS KA1A</b>	Straight actuator	<b>DS KB1A</b>	Right-angled actuator
<b>DS KA2A</b>	Straight actuator	<b>DS KB2A</b>	Right-angled actuator
<b>DS KA3A</b>	Straight actuator	<b>DS KB3A</b>	Right-angled actuator

**Actuator for door switches with external contacts**

**10 pcs packs**

Article	Description
<b>DS KP5A</b>	Plane actuator

**Centering device**

**100 pcs packs**

Article	Description
<b>VD CE1A20</b>	Centering device

The centering device can be used on actuators type DS KA•• and DS KB••. It grants an easy centering of the actuators on DS A•1VA switches during the fitting stage

→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)

Accessories See page 127

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



### Main data

- Housing made of glass-reinforced polymer, self-extinguishing
- Self-cleaning contacts made of solid silver
- Three wiring possibilities
- Protection degree IP20
- Transparent cover

### Quality marks:



Approval IMQ-UNI: CA50.00541  
 Approval UL: E131787  
 Approval CCC: 2007010305230013  
 Approval EAC: RU C-IT.A135.B.00454

### Technical data

#### Description

Safety switches with double interruption and positive opening. Suitable for the control of automatic lift doors.

#### Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin  
 Protection degree: IP20 according to EN 60529

#### General data

Ambient temperature: -30°C ... +80°C  
 (humidity ≤ 95%, without condensation)  
 Max operating frequency: 3600 operations cycles/hour  
 Mechanical endurance: 20 millions of operations cycles  
 Mechanical interlock, not coded: type 1 acc. to EN ISO 14119  
 Safety parameters  $B_{10D}$ : 40,000,000 for NC contacts  
 Max actuating speed: 0.5 m/s  
 Min. actuating speed: 1 mm/s  
 Max actuating force: 1.5 N  
 Driving torque for installation: see page 137

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

min. 1 x 0.5 mm<sup>2</sup> (1 x AWG 20)  
 max. 1 x 2.5 mm<sup>2</sup> (1 x AWG 14)

#### In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 60529, EN ISO 14119, EN 60529, EN 81-20, EN 81-50, UL 508, CSA 22.2 No.14

#### Approvals:

IEC 60947-5-1, UL 508, CSA 22.2 No.14, GB14048.5-2001.

#### In conformity with requirements requested by:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, Lift Directive 2014/33/UE.

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

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

### Electrical data

Thermal current ( $I_{th}$ ): 6 A  
 Rated insulation voltage ( $U_i$ ): 500 Vac  
 Rated impulse with stand voltage ( $U_{imp}$ ): 6 kV  
 Protection against short circuits: fuse 6 A  
 500 V type G G  
 Pollution degree: 3

#### According

EN 60947-5-1  
 EN 81-20 par. 5.11.2.2  
 Utilization categories:  
 AC15 (50, 60 Hz)  
 $U_e$  (V) 120 250  
 $I_e$  (A) 3 3  
 DC13  
 $U_e$  (V) 125 250  
 $I_e$  (A) 0.8 0.45

#### According

EN 81-50  
 par. 5.2.2.2.2  
 AC (50, 60 Hz)  
 230 Vac  
 2 A  
 DC:  
 200 Vdc  
 2 A

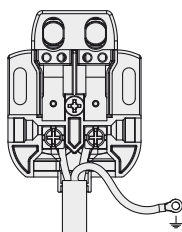
#### According

EN 81-50  
 par. F.1.2.2.1.1  
 AC (50, 60 Hz)  
 230 Vdc  
 2 A  
 DC:  
 125 Vdc  
 1 A

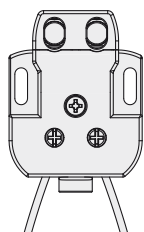
#### According

UL508  
 Ratings:  
 AC (50, 60 Hz)  
 C300  
 DC:  
 Q300

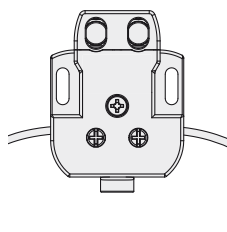
### Three wiring possibilities



Standard wiring



Fast bottom wiring



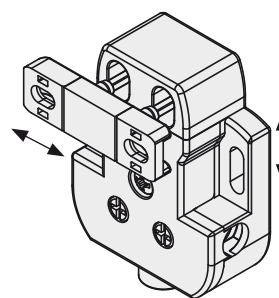
Fast lateral wiring

With a bipolar cable through the central hole on the housing bottom. Furthermore, using a three-pole cable it is possible to use the lateral hole with a wire for earthing other metal parts.

With two monopolar cables through two holes on the housing bottom. During this operation there is no need to open the contact cover.

With two monopolar cables through two holes on the housing sides. During this operation there is no need to open the contact cover.

### Transparent head and slotted holes

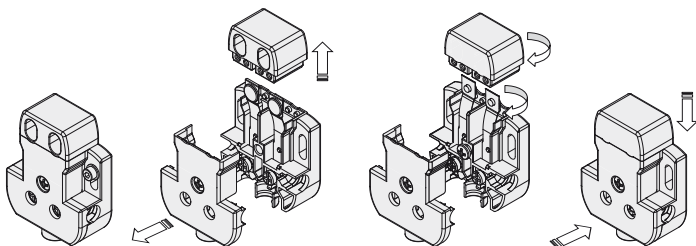


Transparent head on all sides in order to allow adjustment and centering of the actuator with the contacts.

The slotted holes on the actuator and on the contact housing allow to obtain a correct alignment between these two devices.

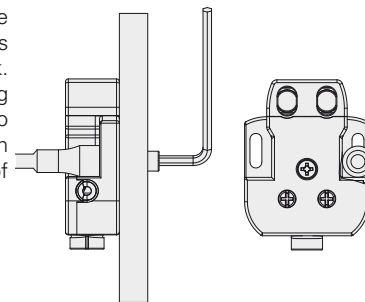
### Rotating heads

By rotating the head and the contact reeds of 180° it is possible to transform a door switch with frontal actuation into a door switch with actuation from back. The whole operation is possible by simply unscrewing three screws.



### Housing back fixing

The particular shape of the housing allows fixing from the back. In fact near the fixing holes it is possible to fit a tubular wrench in order to keep hold of the nut while fixing.



### Dimensional drawings

10 pcs packs

	frontal actuation	back actuation
	Switch without actuator	Switch without actuator
	A= Direction for inserting the actuator	A= Direction for inserting the actuator
Slow action contacts	<b>DS CH1VA0</b> 1NC	<b>DS CN1VA0</b> 1NC
Max actuating travel	6 mm	6 mm
Travels diagrams		

#### Legend

— Closed contact | — Opened contact | ⊕40° Positive opening travel

All measures in the drawings are in mm

### Centering device

100 pcs packs

Article	Description
<b>VD CE1A20</b>	Centering device
	The centering device can be used on actuators type DS KA●● and DS KB●●. It grants an easy centering of the actuators on DS C●1VA switches during the fitting stage

### Actuators

10 pcs packs

Article	Description	Article	Description
<b>DS KA1A</b>	Straight actuator	<b>DS KB1A</b>	Right-angled actuator
<b>DS KA2A</b>	Straight actuator	<b>DS KB2A</b>	Right-angled actuator
<b>DS KA3A</b>	Straight actuator	<b>DS KB3A</b>	Right-angled actuator

→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)

Accessories See page 127

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



#### Main data

- Reduced actuating force
- Protection degree IP67
- Polymer housing, one or two conduit entries
- Possibility of fixing the actuator in 2 perpendicular positions with respect to each other

#### Quality marks:



Approval IMQ:	EG610
Approval IMQ-UNI:	CA50.00662
Approval UL:	E131787
Approval CCC:	2007010305230013
Approval EAC:	RU C-IT.AD35.B.00454

#### Installation for safety applications:

Use only switches marked with the symbol  $\ominus$ . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in the **standard EN 81-20 par. 5.11.2.2.1**. The switch must be actuated with **at least up to the positive opening travel** shown in the travels diagrams. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the actuating force.

**⚠ If not expressly indicated in this chapter, for correct installation and utilization of all articles see the instructions given on pages 131 to 138.**

#### Technical data

##### Description

Safety switches with double interruption and positive opening. Suitable for the control of automatic lift doors.

##### Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation  $\square$

FR series one knock-out threaded conduit entry: M20x1.5 (M16x1.5 on request)

FX series two knock-out threaded conduit entries: M20x1.5 (M16x1.5 on request)

Protection degree: IP67 according to EN 60529 with cable gland having equal or higher protection degree

##### General data

Ambient temperature:	-25°C ... +80°C
Version for operation in ambient temperature from -40°C to +80° C on request	
Max operating frequency:	3600 operations cycles/hour
Mechanical endurance:	10 million operations cycles
Mechanical interlock, not coded:	type 1 acc. to EN ISO 14119
Safety parameters $B_{10D}$ :	20,000,000 for NC contacts
Max actuating speed:	0.5 m/s
Min. actuating speed:	1 mm/s
Assembling position:	any
Driving torque for installation:	see page 133

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

Contact blocks 38, 39:	min. 1 x 0.5 mm <sup>2</sup>	(1 x AWG 20)
	max. 2 x 2.5 mm <sup>2</sup>	(2 x AWG 14)

##### In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, EN 81-20, EN 81-50, UL 508, CSA 22.2 No.14

##### Approvals:

IEC 60947-5-1, UL 508, CSA 22.2 No.14, GB14048.5-2001.

##### In conformity with requirements requested by:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, Lift Directive 2017/33/EU.

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

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

#### Electrical data

Thermal current ( $I_{th}$ ):	10 A
Rated insulation voltage ( $U_i$ ):	500 Vac 600 Vdc
Rated impulse withstand voltage ( $U_{imp}$ ):	6 kV
Conditional shot circuit current:	1000 A according to EN 60947-5-1
Protection against short circuits:	fuse 10 A 500 V type aM
Pollution degree:	3

#### Utilization categories

Alternate current: AC15 (50..60 Hz)			
$U_e$ (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

#### Data type approved by IMQ

Rated insulation voltage ( $U_i$ ): 500 Vac  
 Thermal current ( $I_{th}$ ): 10 A  
 Protection against short circuits: fuse 10 A 500 V type aM  
 Rated impulse withstand voltage ( $U_{imp}$ ): 6 kV  
 Protection degree: IP67  
 MV terminals (screw clamps)  
 Pollution degree 3  
 Utilization category: AC15  
 Operation voltage ( $U_e$ ): 400 Vac (50 Hz)  
 Operation current ( $I_e$ ): 3 A  
 Forms of the contact element: Y, Y+Y  
 Positive opening of contacts on contact block 38, 39  
 In conformity with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

#### Data type approved by UL

Utilization categories Q300 (69 VA, 125-250 Vdc)  
 A600 (720 VA, 120-600 Vac)  
 Data of the housing type 1, 4X "indoor use only"; 12, 13  
 For all contact blocks use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7.1 lb in (0.8 Nm).  
 In conformity with standard: UL 508, CSA 22.2 No.14

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

## Dimensional drawings

All measures in the drawings are in mm

Contacts type:

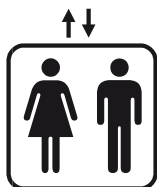
**L** = slow action

Contact blocks	<b>FR 38B1-D30M2</b> $\oplus$ 1NC	<b>FR 39B1-D30M2</b> $\oplus$ 2NC	<b>FX 38B1-D30M2</b> $\oplus$ 1NC	<b>FX 39B1-D30M2</b> $\oplus$ 2NC
Actuating force	3 N (25 N $\oplus$ )	4.2 N (25 N $\oplus$ )	3 N (25 N $\oplus$ )	4.2 N (25 N $\oplus$ )
Travels diagrams				

### Legend

Closed contact | Opened contact |  $\oplus 40^\circ$  Positive opening travel

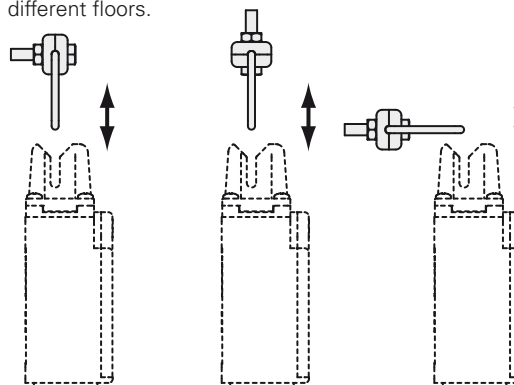
### According to EN 81-20 and EN 81-50



- Safety contacts according to EN 60947-5-1, encl. K.
- Protection degree higher than IP4x.
- Mechanical endurance higher than  $10^6$  cycles.

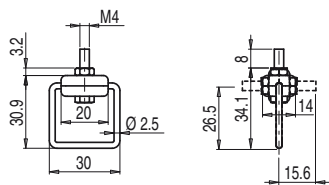
### Adjustable actuator

It is possible to fix the actuator in two positions perpendicular to each other. Furthermore it is possible to operate the switch from different floors.



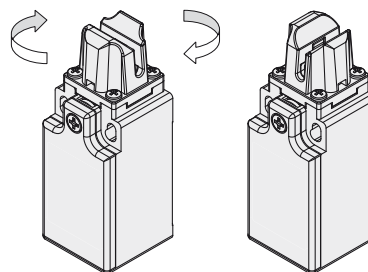
### Separate actuator

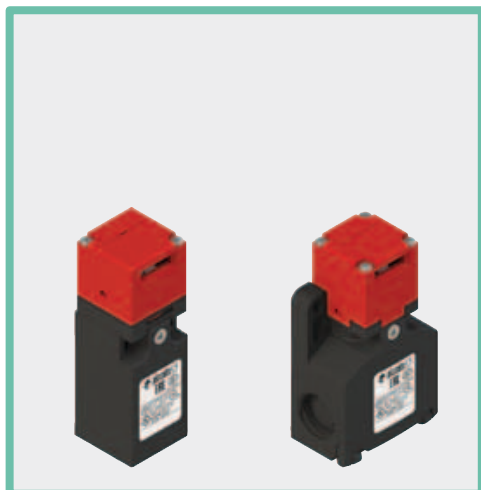
Article	Description
VF KEYD30	Adjustable actuator



### Rotating heads

In all switches, it is possible to rotate the head in  $90^\circ$  steps.





### Main data

- Polymer housing, from one to three conduit entries
- Protection degree IP67
- 6 stainless steel actuators available
- M12 assembled connector versions
- Silver contacts gold plated versions


### Quality marks:



Approval IMQ:	EG610
Approval IMQ-UNI:	CA50.00662
Approval UL:	E131787
Approval CCC:	2007010305230013
Approval EAC:	RU C-IT.AQ35.B.00454

### Technical data

#### Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation: 

FR series one threaded conduit entry:	M20x1.5 (M16x1.5 on request)
FK series one threaded conduit entry:	M16x1.5
FX series two knock out threaded conduit entries:	M20x1.5 (M16x1.5 on request)
FW series three knock out threaded conduit entries:	M20x1.5
Protection degree:	IP67 according to EN 60529 (electrical contacts) with cable gland having equal or higher protection degree

#### General data

Ambient temperature:	-25°C ... +80°C
Version for operation in ambient temperature from -40°C to +80°C on request	
Max operating frequency:	3600 operations cycles/hour
Mechanical endurance:	1 million of operations cycles
Mechanical interlock, coded:	type 2 acc. to EN ISO 14119
Coding level:	Low acc. to EN ISO 14119
Safety parameters B <sub>10D</sub> :	2,000,000 for NC contacts
Max actuating speed:	0.5 m/s
Min. actuating speed:	1 mm/s
Actuator extraction force	10 N
Driving torque for installation:	see page 133

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

Contact blocks 20, 33, 34:	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)
Contact blocks 6:	min.	1 x 0.5 mm <sup>2</sup>	(1 x AWG 20)
	max.	2 x 2.5 mm <sup>2</sup>	(2 x AWG 14)

#### In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50047, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, EN81-20, EN 81-50, UL 508, CSA 22.2 No.14

#### Approvals:

IEC 60947-5-1, UL 508, CSA 22.2 No.14, GB14048.5-2001.

#### In conformity with requirements requested by:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, Lift Directive 2014/33/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 131 to 138.**

### Electrical data

Thermal current (I <sub>th</sub> ):	10 A
Rated insulation voltage (U <sub>i</sub> ):	500 Vac 600 Vdc
	400 Vac 500 Vdc (contacts block 20, 33, 34)
Rated impulse withstand voltage (U <sub>imp</sub> ):	6 kV
	4 kV for contact blocks 20, 33, 34
Conditional short circuit current:	1000 A according to EN 60947-5-1
Protection against short circuits:	fuse 10 A 500 V type aM
Pollution degree:	3

### Utilization categories

Alternate current: AC15 (50...60 Hz)			
U <sub>e</sub> (V)	250	400	500
I <sub>e</sub> (A)	6	4	1
Direct current: DC13			
U <sub>e</sub> (V)	24	125	250
I <sub>e</sub> (A)	6	1.1	0.4

### Data type approved by IMQ

Rated insulation voltage (U <sub>i</sub> ):	500 Vac
	400 Vac contact blocks 20, 33, 34
Thermal current (I <sub>th</sub> ):	10 A
Protection against short circuits:	fuse 10 A 500 V type aM
Rated impulse withstand voltage (U <sub>imp</sub> ):	6 kV
	4 kV Vac contact blocks 20, 33, 34
Protection degree:	IP67
MV terminals (screw clamps)	
Pollution degree	3
Utilization category:	AC15
Operation voltage (U <sub>e</sub> ):	400 Vac (50 Hz)
Operation current (I <sub>e</sub> ):	3 A
Forms of the contact element:	Zb, Y+Y
Positive opening of contacts on contact block	6, 20, 33, 34
In conformity with standards:	EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

### Data type approved by UL

Utilization categories	Q300 (69 VA, 125-250 Vdc)
	A600 (720 VA, 120-600 Vdc)
Data of the housing type	1, 4X "indoor use only", 12, 13
For all contact blocks use	60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7.1 lb in (0.8 Nm).
In conformity with standard:	UL 508, UL 508, CSA 22.2 No.14

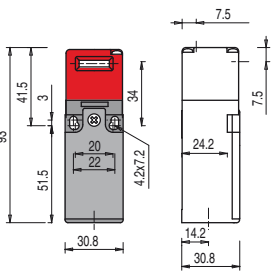
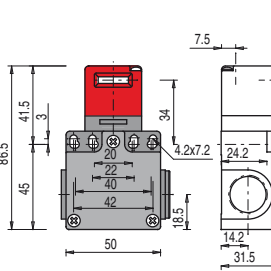
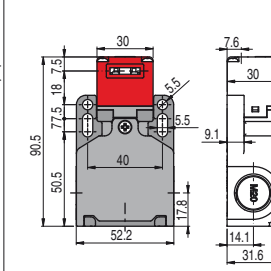
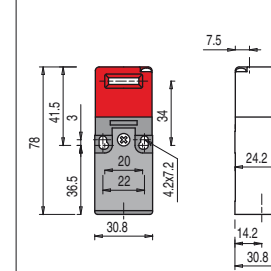











Please contact our technical service for the list of approved products.

**Dimensional drawings**

All measures in the drawings are in mm

Contacts type:  
**L** = slow action

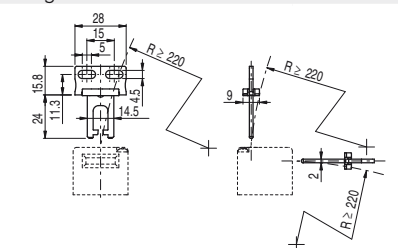
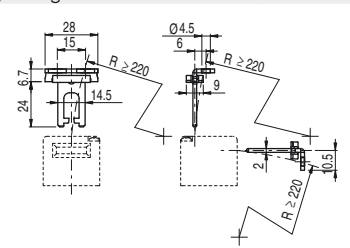
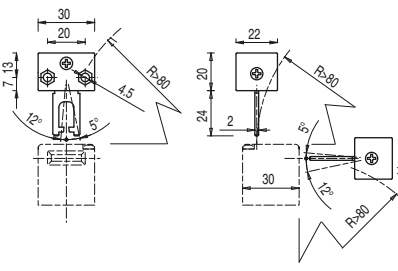
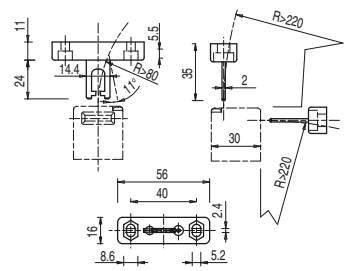
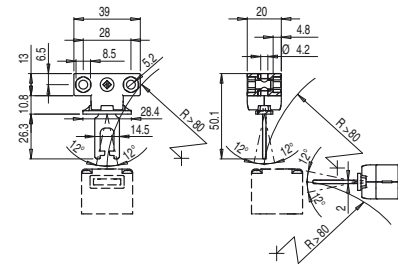
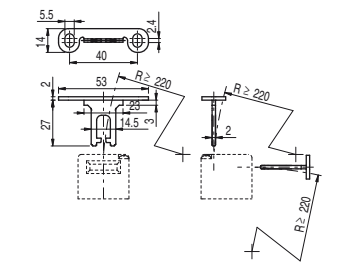
Contact blocks

	polymer housing Switch without actuator	polymer housing Switch without actuator	polymer housing Switch without actuator	polymer housing Switch without actuator
6 <b>L</b>				
20 <b>L</b>	<b>FR 2093-M2</b> 	<b>FX 2093-M2</b> 	<b>FW 2092-M2</b> 	<b>FK 3493-M1</b> 
33 <b>L</b>			<b>FW 3392-M2</b> 	
34 <b>L</b>			<b>FW 3492-M2</b> 	<b>FK 3493-M1</b> 
Actuating force	10 N (18 N  )	10 N (18 N  )	10 N (18 N  )	10 N (18 N  )
Travel diagrams	page 134 - group 1e	page 134 - group 1e	page 134 - group 1e	page 134 - group 1e

**Actuators stainless steel**

10 pcs packs

**IMPORTANT:** These actuators must be used with FR, FX, FK e FW (e.g. FR 693).

Article	Description	Article	Description
<b>VF KEYD</b>	Straight actuator 	<b>VF KEYD1</b>	Right-angled actuator 
<b>VF KEYD3</b>	Jointed actuator adjustable in two directions 	<b>VF KEYD7</b>	Jointed actuator adjustable in one direction 
<b>VF KEYD8</b>	Universal actuator 	<b>VF KEYD10</b>	Shaped actuator 

Actuator adjustable in two directions for doors with reduced dimensions.

Actuator adjustable in one direction for doors with reduced dimensions.

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.

→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)

Accessories See page 127

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