

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

Markings and quality marks:



Approval IMQ-UNI: CA50.00541
EN 81-1:2005
EN 81-2:2005
230 Vac - 2 A

Approval UL: E131787
Approval CCC: 2007010305230013
Approval EAC: RU C-IT ДМ94.В.01024

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 ¹ /hour
Mechanical endurance:	10 millions of operations cycles ¹ (DS A•1VA) 5 millions of operations cycles ¹ (DS A•5VA)
Mechanical interlock, coded (DS A•1VA):	type 2 acc. to EN ISO 14119
Coding level (DS A•1VA):	Low acc. to EN ISO 14119
Mechanical interlock, not coded (DS A•5VA):	type 1 according to EN ISO 14119
Safety parameters:	
B _{10d} for NC contacts:	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 126
Fixing screw:	M4 self-tapping screw Available on request versions with longer fixing screw

(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)

min.	1 x 0.5 mm ²	(1 x AWG 20)
max.	1 x 2.5 mm ²	(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 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2014/30/EC.

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

According
EN 81 par. 14.1.2.2

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 par. F.1.2.4

AC (50, 60 Hz)

230 Vac

2 A

DC:

200 Vdc

2 A

According
EN 81 par. F.1.2.2.1.1

AC (50, 60 Hz)

230 Vac

2 A

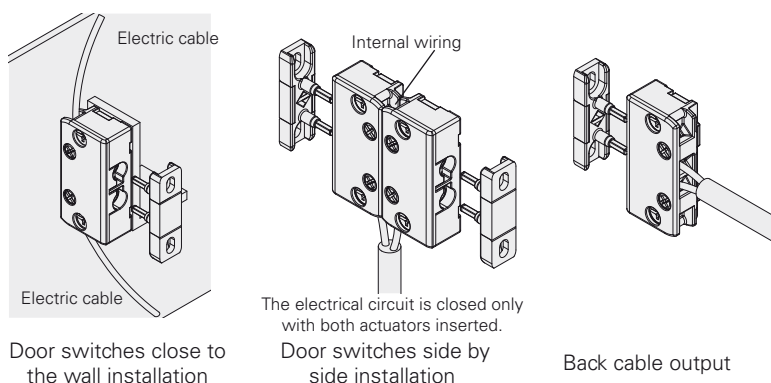
DC:

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 (69VA, 125-250Vdc), 120-240Vac,
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

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	DS AA1VA 1NC	DS AE1VA 1NC	DS AA5VA 1NC	DS AE5VA 1NC
Max actuating travel	8 mm	8 mm	6 mm	6 mm
Travels diagrams				

Legend

■ Closed contact | □ Opened contact | ⊕40° Positive opening travel | ⊕ 2x2 mm contact opening travel according to EN81

Actuators for door switches with internal contacts

10 pcs packs

Article	Description	Article	Description
DS KA1A	Straight actuator	DS KB1A	Right-angled actuator
DS KA2A	Straight actuator	DS KB2A	Right-angled actuator
DS KA3A	Straight actuator	DS KB3A	Right-angled actuator

Actuator for door switches with external contacts

10 pcs packs

Article	Description
DS KP5A	Plane actuator

Centering device

100 pcs packs

Article	Description
VD CE1A20	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

Accessories See page 119

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

Markings and quality marks:



Approval IMQ-UNI: CA50.00541
 EN 81-1:2005
 EN 81-2:2005
 230 Vac - 2 A

Approval UL: E131787

Approval CCC: 2007010305230013

Approval EAC: RU C-IT ДМ94.В.01024

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 cycles¹/hour
 Mechanical endurance: 20 millions of operations cycles¹
 Mechanical interlock, coded: type 2 acc. to EN ISO 14119
 Coding level: Low acc. to EN ISO 14119

Safety parameters:

B_{10d} for NC contacts: 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 126

(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)

min. 1 x 0.5 mm² (1 x AWG 20)
 max. 1 x 2.5 mm² (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 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2014/30/EC.

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 G9
 Pollution degree: 3

According

EN 60947-5-1

EN 81 par. 14.1.2.2

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

par. F.1.2.4

AC (50, 60 Hz)

230 Vac

2 A

DC:

200 Vdc

2 A

According

EN 81

par. F.1.2.2.1.1

AC (50, 60 Hz)

230 Vdc

2 A

DC:

125 Vdc

1 A

According

UL508

Ratings:

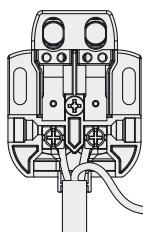
AC (50, 60 Hz)

C300

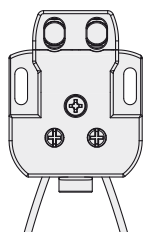
DC:

Q300

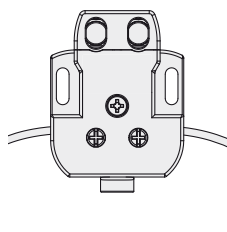
Three wiring possibilities



Standard wiring



Fast bottom wiring



Fast lateral wiring

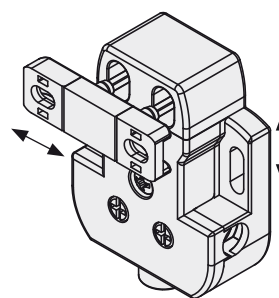
With a bipolar cable through the central hole on the housing bottom.

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

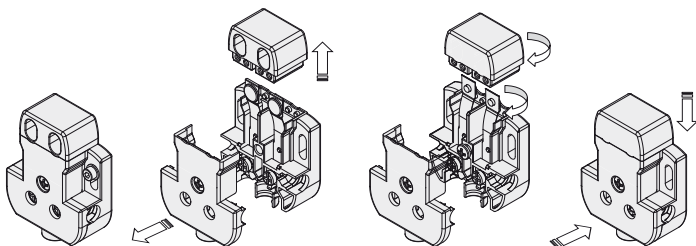


Transparent head on all sides in order to allow adjustment and centering of the actuator with the contacts.

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

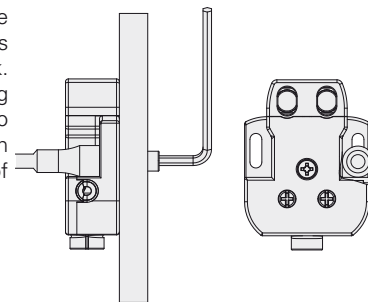
Rotating heads

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
Slow action contacts	DS CH1VA0 1NC	DS CN1VA0 1NC
Max actuating travel	6 mm	6 mm
Travels diagrams		

Legend

Closed contact | Opened contact | 40° Positive opening travel | 2x2 mm contact opening travel according to EN81

Centering device

100 pcs packs

Article	Description
VD CE1A20	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
DS KA1A	Straight actuator

Article	Description
DS KB1A	Right-angled actuator

Article	Description
DS KA2A	Straight actuator

Article	Description
DS KB2A	Right-angled actuator

Article	Description
DS KA3A	Straight actuator

Article	Description
DS KB3A	Right-angled actuator

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

Accessories See page 119

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

Markings and quality marks:



Approval IMQ: EG610
 Approval IMQ-UNI: CA50.00662
 Approval UL: E131787
 Approval CCC: 2007010305230013
 Approval EAC: RU C-IT ДМ94.В.01024

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

FR series one conduit entry: M20x1.5 (M16x1.5 on request)
 FX series two knock out 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 cycles¹/hour
 Mechanical endurance: 10 million operations cycles¹
 Mechanical interlock, coded: type 2 acc. to EN ISO 14119
 Coding level: Low acc. to EN ISO 14119
 Safety parameters:
 B_{10d} for NC contacts: 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 123
 (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 38, 39: min. 1 x 0.5 mm² (1 x AWG 20)
 max. 2 x 2.5 mm² (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 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2014/30/EC.

Positive contact opening in conformity with standards:

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

Installation for safety applications:

Use only switches marked with the symbol . 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 min. force.

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 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_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 2006/95/CE.

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

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

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

Dimensional drawings

Contacts type:

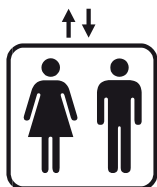
L = slow action

Contact blocks	FR 38B1-D30M2 \ominus 1NC	FR 39B1-D30M2 \ominus 2NC	FX 38B1-D30M2 \ominus 1NC	FX 39B1-D30M2 \ominus 2NC
Min. force	3 N (25 N \ominus)	4.2 N (25 N \ominus)	3 N (25 N \ominus)	4.2 N (25 N \ominus)
Travels diagrams				

Legend

■ Closed contact | □ Opened contact | \ominus 40° Positive opening travel | \oplus 2x2 mm contact opening travel according to EN81

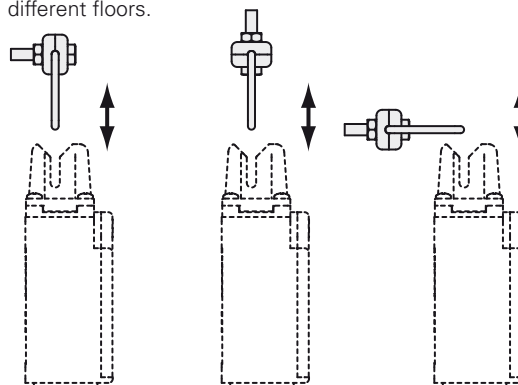
EN 81-20 standard



- Safety contacts according to EN 60947-5-1, encl. K.
- Protection degree higher than IP4x.
- Mechanical endurance higher than 10⁶ cycles.

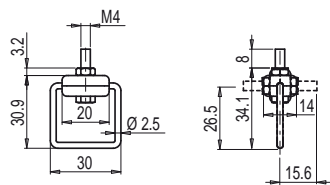
Adjustable actuator

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.



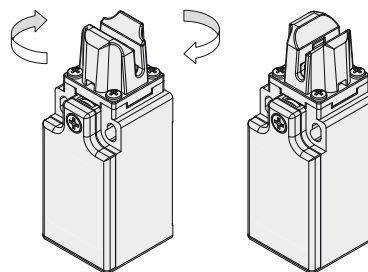
Separate actuator

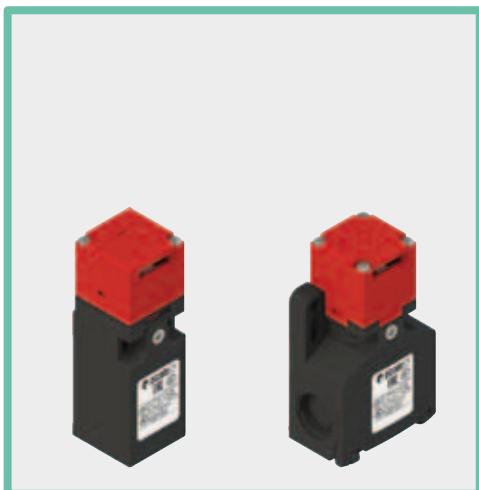
Article	Description
VF KEYD30	Adjustable actuator



Rotating heads

In all switches, it is possible to rotate the head in 90° 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

Markings and quality marks:



Approval IMQ: EG610
 Approval IMQ-UNI: CA50.00662
 Approval UL: E131787
 Approval CCC: 2007010305230013
 Approval EAC: RU C-IT DM94.B.01024

Technical data

Housing

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

FR series one conduit entry: M20x1.5 (M16x1.5 on request)
 FK series one conduit entry: M16x1.5
 FX series two knock out conduit entries: M20x1.5 (M16x1.5 on request)
 FW series three knock out 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 cycles¹/hour
 Mechanical endurance: 1 million of operations cycles¹
 Mechanical interlock, coded: type 2 acc. to EN ISO 14119
 Coding level: Low acc. to EN ISO 14119
 Safety parameters:
 B_{10d}: 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 123
 (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 20, 33, 34: min. 1 x 0.34 mm² (1 x AWG 22)
 max. 2 x 1.5 mm² (2 x AWG 16)
 Contact blocks 6: min. 1 x 0.5 mm² (1 x AWG 20)
 max. 2 x 2.5 mm² (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 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2014/30/EC.

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
 400 Vac 500 Vdc for contacts block 20, 33, 34
 Rated impulse withstand voltage (U_{imp}): 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_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
 400 Vac for contact blocks 20, 33, 34
 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
 4 kV Vac for contact blocks 20, 33, 34
 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: 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 2006/95/CE.

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

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

Dimensional drawings

Contacts type:
L = slow action

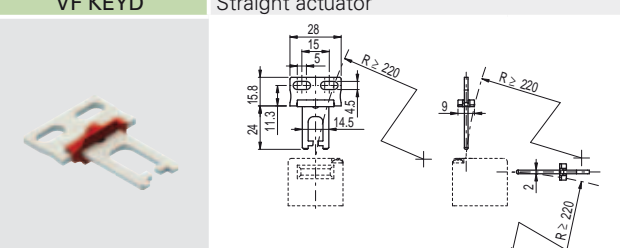
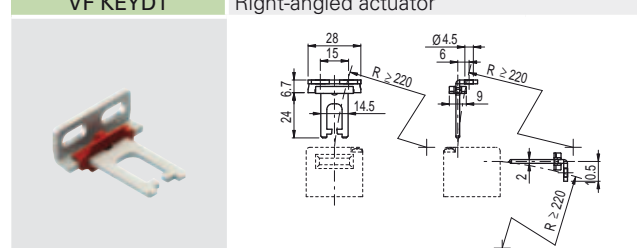
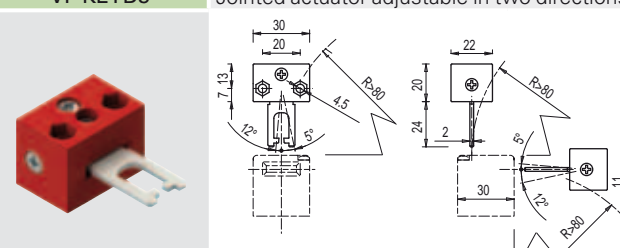
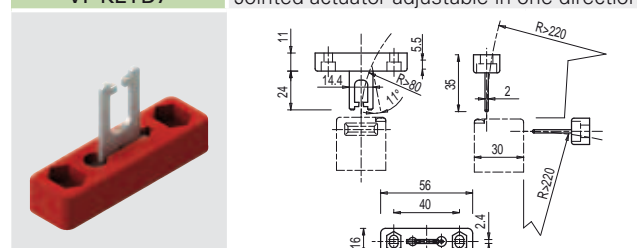
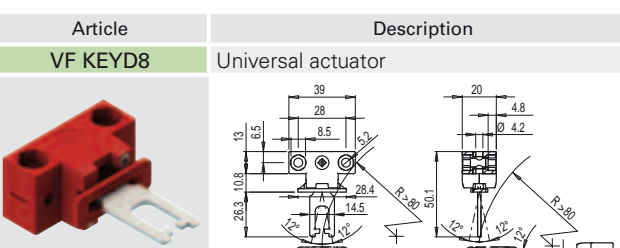
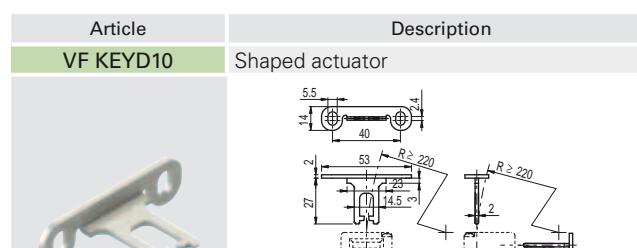
Contact blocks

	polymer housing Switch without actuator	polymer housing Switch without actuator	polymer housing Switch without actuator	polymer housing Switch without actuator
6 L	FR 693-M2 1NO+1NC	FX 693-M2 1NO+1NC		
20 L	FR 2093-M2 1NO+2NC	FX 2093-M2 1NO+2NC		
33 L			FW 3392-M2 1NO+1NC	FK 3393-M1 1NO+1NC
34 L			FW 3492-M2 2NC	FK 3493-M1 2NC
Min. force	10 N (18 N)	10 N (18 N)	10 N (18 N)	10 N (18 N)
Travel diagrams	page 114 - group 1e	page 114 - group 1e	page 114 - group 1e	page 114 - 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
VF KEYD	Straight actuator 	VF KEYD1	Right-angled actuator 
VF KEYD3	Jointed actuator adjustable in two directions 	VF KEYD7	Jointed actuator adjustable in one direction 
VF KEYD8	Universal actuator 	VF KEYD10	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

Accessories See page 119

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