

**Description**

Pizzato Elettrica offers a wide range of products suitable for places where chemical and corrosive agents are used and for aseptic places where particular attention must be paid to cleanliness and hygiene.

The technopolymer housings and external metal parts in stainless steel allow these devices to be used for a variety of applications, ranging from the food and pharmaceutical sectors to the chemical and marine sectors.

**Main features:**

- Technopolymer housings
- External metallic parts exclusively in stainless steel
- Protection degree IP67 (FR, FX, FK, FW, FP series switches)
- Protection degree IP67 and IP69K (SR, ST, HX series sensors)

**Resistance against corrosion**

Substance	Stainless steel	Technopolymer
Acetylene	■	■
Vinegar	■	■
Acetone	■	■
Acetic acid	■	□
Boric acid	■	■
Citric acid	■	■
Hydrochloric acid 100%	□	□
Chromic acid 5%	■	□
Hydrofluoric acid 100%	■	□
Formic acid	■	□
Phosphoric acid (<40%)	□	■
Lactic acid	■	■
Nitric acid (concentrated)	■	□
Oleic acid	■	■
Sulphuric acid (<10%)	■	□
Sulphuric acid (10-75%)	□	□
Sulphuric acid (75-100%)	□	□
Stearic acid	■	■
Tartaric acid	□	■
White water	■	■
Sea water	□	■
Distilled water	■	■
White spirit	■	■
Ethyl alcohol	■	■
Methyl alcohol	■	■
Liquid ammonia	■	■
Ammonium acetate	■	■
Ammonium carbonate	■	■
Ammonium sulfate	■	■
Leaded petrol	■	■
Unleaded petrol	■	■
Benzol	■	□
Beer	■	■
Butane	■	■
Butanol	■	■
Quicklime	■	■
Calcium chloride	■	■
Calcium hydroxide	■	■
Chloroform	■	■
Aluminium chloride	■	■
Ferrous chloride	□	□
Chrome plating	□	□
Diesel	■	■
Ether	■	■
Formaldehyde 100%	■	□
Furfural	■	■
Gelatine	■	■
Glycerine	■	■
Glucose	■	■
Shellac (orange)	■	■
Hydrogen (gas)	■	■
Iodine	□	■
Milk	■	■
Magnesium chloride	□	■
Magnesium hydroxide	■	■
Magnesium sulphate (Epsom salt)	■	■
Mayonnaise	■	■

Substance	Stainless steel	Technopolymer
Whisky malt	■	■
Molasses	■	■
Nickel chloride	□	□
Aluminium nitrate	■	■
Combustible oils	■	■
Tanning oil	■	-
Linseed oil	■	■
Hydraulic oil (synthetic)	■	■
Mineral Oil	■	■
Motor Oil	■	■
Transformer oil	■	■
Paraffin	■	■
Potassium chloride	■	■
Potassium hydroxide (caustic potash)	■	□
Potassium sulphate	■	■
Propane (liquid)	■	■
Copper sulphate >5%	■	□
Liquid soaps	■	■
Chocolate syrup	■	■
Milk whey	■	-
Sodium bicarbonate	■	■
Sodium bisulphate	□	■
Sodium carbonate	■	■
Sodium chloride	■	■
Sodium hydroxide (80%)	■	□
Sodium hypochlorite (100%)	□	□
Sodium nitrate	■	■
Sodium sulphate	■	■
Sodium sulphide	□	■
Aluminium sulphate	■	■
Ferrous sulphate	■	■
Calcium hydroxide	□	■
Potassium hydroxide	■	■
Sodium hydroxide	-	■
Tanning solutions	■	■
Photographic solutions	-	■
Fruit juice	■	■
Vegetable juice	■	■
Toluene	■	□
Transparent (paint)	■	-
Trichloroethylene	■	■
Whisky and wine	■	■
Zinc plate	□	□
Zinc chloride	■	■
Zinc sulphate	-	■
Sulphur chloride	■	■
Sugar (liquid)	■	■
Sugar beet	■	■

**Resistance against corrosion**

- No corrosion
- Possible corrosion
- Corrosion
- Data not available



Contact type:

- R** = snap action
- L** = slow action

Contact block				
5 <b>R</b>	FR 501-XM2 → 1NO+1NC	FR 502-XM2 → 1NO+1NC	FR 505-XM2 → 1NO+1NC	FR 507-XM2 → 1NO+1NC
6 <b>L</b>	FR 601-XM2 → 1NO+1NC	FR 602-XM2 → 1NO+1NC	FR 605-XM2 → 1NO+1NC	FR 607-XM2 → 1NO+1NC
9 <b>L</b>	FR 901-XM2 → 2NC	FR 902-XM2 → 2NC	FR 905-XM2 → 2NC	FR 907-XM2 → 2NC
20 <b>L</b>	FR 2001-XM2 → 1NO+2NC	FR 2002-XM2 → 1NO+2NC	FR 2005-XM2 → 1NO+2NC	FR 2007-XM2 → 1NO+2NC
2 <b>R</b>	FR 201-XM2 2x(1NO-1NC)	FR 202-XM2 2x(1NO-1NC)	FR 205-XM2 2x(1NO-1NC)	FR 207-XM2 2x(1NO-1NC)
Max. speed	page 215 - type 4	page 215 - type 3	page 215 - type 3	page 215 - type 3
Actuating force	8 N (25 N →)	6 N (25 N →)	6 N (25 N →)	4 N (25 N →)
Travel diagrams	page 216 - group 1	page 216 - group 2	page 216 - group 2	page 216 - group 3

Contact block		With external rubber gasket	With external rubber gasket	
5 <b>R</b>	FR 515-XM2 → 1NO+1NC	FR 5A1-XM2 → 1NO+1NC	FR 520-XM2 1NO+1NC	FR 530-XM2V38 → 1NO+1NC
6 <b>L</b>	FR 615-XM2 → 1NO+1NC	FR 6A1-XM2 → 1NO+1NC		FR 630-XM2V38 → 1NO+1NC
9 <b>L</b>	FR 915-XM2 → 2NC	FR 9A1-XM2 → 2NC		FR 930-XM2V38 → 2NC
20 <b>L</b>	FR 2015-XM2 → 1NO+2NC	FR 20A1-XM2 → 1NO+2NC	FR 2020-XM2 1NO+2NC	FR 2030-XM2V38 → 1NO+2NC
2 <b>R</b>	FR 215-XM2 2x(1NO-1NC)		FR 220-XM2 2x(1NO-1NC)	FR 230-XM2V38 2x(1NO-1NC)
Max. speed	page 215 - type 2	page 215 - type 4	1 m/s	page 215 - type 1
Actuating force	8 N (25 N →)	6 N (25 N →)	0.07 Nm	0.06 Nm (0.25 Nm →)
Travel diagrams	page 216 - group 1	page 216 - group 1	page 216 - group 4	page 216 - group 5

Contact block				
5 <b>R</b>	FR 531-XM2V38 → 1NO+1NC	FR 551-XM2V38 → 1NO+1NC	FR 554-XM2V38 → 1NO+1NC	FR 556-XM2V38 → 1NO+1NC
6 <b>L</b>	FR 631-XM2V38 → 1NO+1NC	FR 651-XM2V38 → 1NO+1NC	FR 654-XM2V38 → 1NO+1NC	FR 656-XM2V38 → 1NO+1NC
9 <b>L</b>	FR 931-XM2V38 → 2NC	FR 951-XM2V38 → 2NC	FR 954-XM2V38 → 2NC	FR 956-XM2V38 → 2NC
20 <b>L</b>	FR 2031-XM2V38 → 1NO+2NC	FR 2051-XM2V38 → 1NO+2NC	FR 2054-XM2V38 → 1NO+2NC	FR 2056-XM2V38 → 1NO+2NC
2 <b>R</b>	FR 231-XM2V38 2x(1NO-1NC)	FR 251-XM2V38 2x(1NO-1NC)	FR 254-XM2V38 2x(1NO-1NC)	FR 256-XM2V38 2x(1NO-1NC)
Max. speed	page 215 - type 1	page 215 - type 1	page 215 - type 1	page 215 - type 1
Actuating force	0.06 Nm (0.25 Nm →)	0.06 Nm (0.25 Nm →)	0.06 Nm (0.25 Nm →)	0.06 Nm (0.25 Nm →)
Travel diagrams	page 216 - group 5	page 216 - group 5	page 216 - group 5	page 216 - group 5

All values in the drawings are in mm

Accessories See page 197

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

Contact type:

**R** = snap action  
**L** = slow action

Contact block				
5	<b>R</b> FX 501-XM2 → 1NO+1NC	FX 502-XM2 → 1NO+1NC	FX 505-XM2 → 1NO+1NC	FX 507-XM2 → 1NO+1NC
6	<b>L</b> FX 601-XM2 → 1NO+1NC	FX 602-XM2 → 1NO+1NC	FX 605-XM2 → 1NO+1NC	FX 607-XM2 → 1NO+1NC
9	<b>L</b> FX 901-XM2 → 2NC	FX 902-XM2 → 2NC	FX 905-XM2 → 2NC	FX 907-XM2 → 2NC
20	<b>L</b> FX 2001-XM2 → 1NO+2NC	FX 2002-XM2 → 1NO+2NC	FX 2005-XM2 → 1NO+2NC	FX 2007-XM2 → 1NO+2NC
2	<b>R</b> FX 201-XM2 2x(1NO-1NC)	FX 202-XM2 2x(1NO-1NC)	FX 205-XM2 2x(1NO-1NC)	FX 207-XM2 2x(1NO-1NC)
Max. speed	page 215 - type 4	page 215 - type 3	page 215 - type 3	page 215 - type 3
Actuating force	8 N (25 N →)	6 N (25 N →)	6 N (25 N →)	4 N (25 N →)
Travel diagrams	page 216 - group 1	page 216 - group 2	page 216 - group 2	page 216 - group 3

Contact block				
5	<b>R</b> FX 515-XM2 → 1NO+1NC	FX 520-XM2 1NO+1NC	FX 525-XM2 1NO+1NC	FX 530-XM2V38 → 1NO+1NC
6	<b>L</b> FX 615-XM2 → 1NO+1NC			FX 630-XM2V38 → 1NO+1NC
9	<b>L</b> FX 915-XM2 → 2NC			FX 930-XM2V38 → 2NC
20	<b>L</b> FX 2015-XM2 → 1NO+2NC	FX 2020-XM2 1NO+2NC	FX 2025-XM2 1NO+2NC	FX 2030-XM2V38 → 1NO+2NC
2	<b>R</b> FX 215-XM2 2x(1NO-1NC)	FX 220-XM2 2x(1NO-1NC)	FX 225-XM2 2x(1NO-1NC)	FX 230-XM2V38 2x(1NO-1NC)
Max. speed	page 215 - type 2	1 m/s	1 m/s	page 215 - type 1
Actuating force	8 N (25 N →)	0.07 Nm	0.12 Nm	0.06 Nm (0.25 Nm →)
Travel diagrams	page 216 - group 1	page 216 - group 4	page 216 - group 4	page 216 - group 5

Contact block				
5	<b>R</b> FX 531-XM2V38 → 1NO+1NC	FX 551-XM2V38 → 1NO+1NC	FX 554-XM2V38 → 1NO+1NC	FX 556-XM2V38 → 1NO+1NC
6	<b>L</b> FX 631-XM2V38 → 1NO+1NC	FX 651-XM2V38 → 1NO+1NC	FX 654-XM2V38 → 1NO+1NC	FX 656-XM2V38 → 1NO+1NC
9	<b>L</b> FX 931-XM2V38 → 2NC	FX 951-XM2V38 → 2NC	FX 954-XM2V38 → 2NC	FX 956-XM2V38 → 2NC
20	<b>L</b> FX 2031-XM2V38 → 1NO+2NC	FX 2051-XM2V38 → 1NO+2NC	FX 2054-XM2V38 → 1NO+2NC	FX 2056-XM2V38 → 1NO+2NC
2	<b>R</b> FX 231-XM2V38 2x(1NO-1NC)	FX 251-XM2V38 2x(1NO-1NC)	FX 254-XM2V38 2x(1NO-1NC)	FX 256-XM2V38 2x(1NO-1NC)
Max. speed	page 215 - type 1	page 215 - type 1	page 215 - type 1	page 215 - type 1
Actuating force	0.06 Nm (0.25 Nm →)	0.06 Nm (0.25 Nm →)	0.06 Nm (0.25 Nm →)	0.06 Nm (0.25 Nm →)
Travel diagrams	page 216 - group 5	page 216 - group 5	page 216 - group 5	page 216 - group 5

All values in the drawings are in mm

Accessories See page 197

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

Contact type:									
<b>R</b> = snap action <b>L</b> = slow action									
Contact block									
3	<b>R</b>	FK 301-XM1	1NO+1NC	FK 302-XM1	1NO+1NC	FK 305-XM1	1NO+1NC	FK 307-XM1	1NO+1NC
33	<b>L</b>	FK 3301-XM1	1NO+1NC	FK 3302-XM1	1NO+1NC	FK 3305-XM1	1NO+1NC	FK 3307-XM1	1NO+1NC
34	<b>L</b>	FK 3401-XM1	2NC	FK 3402-XM1	2NC	FK 3405-XM1	2NC	FK 3407-XM1	2NC
Max. speed		page 215 - type 4		page 215 - type 3		page 215 - type 3		page 215 - type 3	
Actuating force		8 N (25 N $\ominus$ )		6 N (25 N $\ominus$ )		6 N (25 N $\ominus$ )		4 N (25 N $\ominus$ )	
Travel diagrams		page 216 - group 1		page 216 - group 2		page 216 - group 2		page 216 - group 3	

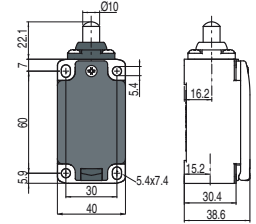
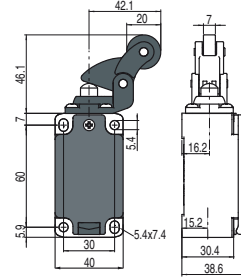
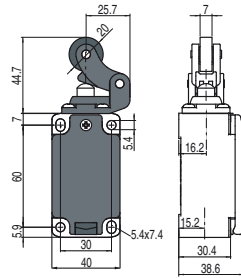
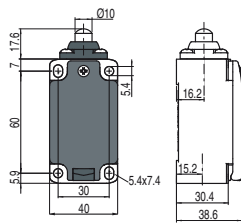
Contact block				With external rubber gasket 		With external rubber gasket 			
3	<b>R</b>	FK 315-XM1	1NO+1NC	FK 320-XM1	1NO-1NC	FK 325-XM1	1NO-1NC	FK 330-XM1V38	1NO+1NC
33	<b>L</b>	FK 3315-XM1	1NO+1NC	FK 3320-XM1	1NO+1NC	FK 3325-XM1	1NO+1NC	FK 3330-XM1V38	1NO+1NC
34	<b>L</b>	FK 3415-XM1	2NC	FK 3420-XM1	2NC	FK 3425-XM1	2NC	FK 3430-XM1V38	2NC
Max. speed		page 215 - type 2		1 m/s		1 m/s		page 215 - type 1	
Actuating force		8 N (25 N $\ominus$ )		0.05 Nm		0.1 Nm		0.06 Nm (0.25 Nm $\ominus$ )	
Travel diagrams		page 216 - group 1		page 216 - group 4		page 216 - group 4		page 216 - group 5	

Contact block									
3	<b>R</b>	FK 331-XM1V38	1NO+1NC	FK 351-XM1V38	1NO+1NC	FK 354-XM1V38	1NO+1NC	FK 356-XM1V38	1NO+1NC
33	<b>L</b>	FK 3331-XM1V38	1NO+1NC	FK 3351-XM1V38	1NO+1NC	FK 3354-XM1V38	1NO+1NC	FK 3356-XM1V38	1NO+1NC
34	<b>L</b>	FK 3431-XM1V38	2NC	FK 3451-XM1V38	2NC	FK 3454-XM1V38	2NC	FK 3456-XM1V38	2NC
Max. speed		page 215 - type 1		page 215 - type 1		page 215 - type 1		page 215 - type 1	
Actuating force		0.06 Nm (0.25 Nm $\ominus$ )		0.06 Nm (0.25 Nm $\ominus$ )		0.06 Nm (0.25 Nm $\ominus$ )		0.06 Nm (0.25 Nm $\ominus$ )	
Travel diagrams		page 216 - group 5		page 216 - group 5		page 216 - group 5		page 216 - group 5	

All values in the drawings are in mm

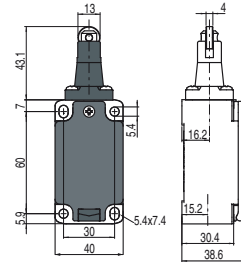
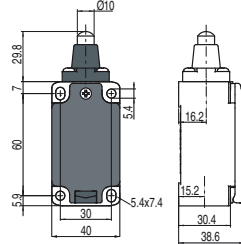
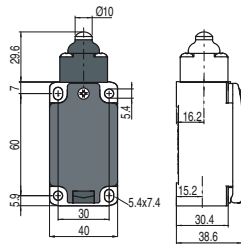
Contact type:

**R** = snap action  
**L** = slow action



Contact block

5	<b>R</b>	FP 501-XM2	⊕ 1NO+1NC	FP 502-XM2	⊕ 1NO+1NC	FP 505-XM2	⊕ 1NO+1NC	FP 508-XM2	⊕ 1NO+1NC
6	<b>L</b>	FP 601-XM2	⊕ 1NO+1NC	FP 602-XM2	⊕ 1NO+1NC	FP 605-XM2	⊕ 1NO+1NC	FP 608-XM2	⊕ 1NO+1NC
9	<b>L</b>	FP 901-XM2	⊕ 2NC	FP 902-XM2	⊕ 2NC	FP 905-XM2	⊕ 2NC	FP 908-XM2	⊕ 2NC
20	<b>L</b>	FP 2001-XM2	⊕ 1NO+2NC	FP 2002-XM2	⊕ 1NO+2NC	FP 2005-XM2	⊕ 1NO+2NC	FP 2008-XM2	⊕ 1NO+2NC
2	<b>R</b>	FP 201-XM2	2x(1NO-1NC)	FP 202-XM2	2x(1NO-1NC)	FP 205-XM2	2x(1NO-1NC)	FP 208-XM2	2x(1NO-1NC)
Max. speed		page 213 - type 4		page 213 - type 3		page 213 - type 3		page 213 - type 4	
Actuating force		8 N (25 N ⊕)		6 N (25 N ⊕)		6 N (25 N ⊕)		8 N (25 N ⊕)	
Travel diagrams		page 214 - group 1		page 214 - group 2		page 214 - group 2		page 214 - group 1	



Contact block

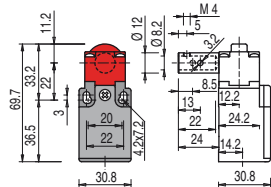
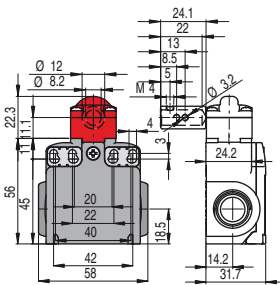
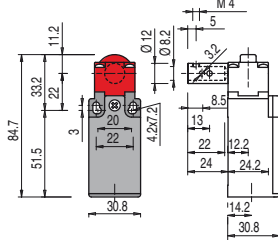
5	<b>R</b>	FP 510-XM2	⊕ 1NO+1NC	FP 511-XM2	⊕ 1NO+1NC	FP 516-XM2	⊕ 1NO+1NC		
6	<b>L</b>	FP 610-XM2	⊕ 1NO+1NC	FP 611-XM2	⊕ 1NO+1NC	FP 616-XM2	⊕ 1NO+1NC		
9	<b>L</b>	FP 910-XM2	⊕ 2NC	FP 911-XM2	⊕ 2NC	FP 916-XM2	⊕ 2NC		
20	<b>L</b>	FP 2010-XM2	⊕ 1NO+2NC	FP 2011-XM2	⊕ 1NO+2NC	FP 2016-XM2	⊕ 1NO+2NC		
2	<b>R</b>	FP 210-XM2	2x(1NO-1NC)	FP 211-XM2	2x(1NO-1NC)	FP 216-XM2	2x(1NO-1NC)		
Max. speed		page 213 - type 4		page 213 - type 4		page 213 - type 2			
Actuating force		11 N (25 N ⊕)		8 N (25 N ⊕)		8 N (25 N ⊕)			
Travel diagrams		page 214 - group 1		page 214 - group 1		page 214 - group 1			

Safety switches for hinges

All values in the drawings are in mm

Contact type:

**L** = slow action



Contact block

18	<b>L</b>	FR 1896-XM2	⊕ 1NO+1NC	FX 1896-XM2	⊕ 1NO+1NC	/	
9	<b>L</b>	FR 996-XM2	⊕ 2NC	FX 996-XM2	⊕ 2NC	/	
20	<b>L</b>	FR 2096-XM2	⊕ 1NO+2NC	FX 2096-XM2	⊕ 1NO+2NC	/	
33	<b>L</b>	/	/	/	/	FK 3396-XM1	⊕ 1NO+1NC
34	<b>L</b>	/	/	/	/	FK 3496-XM1	⊕ 2NC
Actuating force		0,15 Nm (0,4 Nm ⊕)		0,15 Nm (0,4 Nm ⊕)		0,15 Nm (0,4 Nm ⊕)	
Travel diagrams		page 218 - group 9		page 218 - group 9		page 218 - group 9	

⚠ If not expressly indicated in this chapter, for correct installation and utilization of all articles see the instructions given on pages 211 to 222.

Accessories See page 197

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



### Safety switches with separate actuator

All values in the drawings are in mm

Contact type: R = snap action L = slow action	without actuator		without actuator		without actuator		without actuator	
Contact block								
6 L	FR 693-XM2	1NO+1NC	FX 693-XM2	1NO+1NC	FW 692-XM2	1NO+1NC	/	/
9 L	FR 993-XM2	2NC	FX 993-XM2	2NC	FW 992-XM2	2NC	/	/
20 L	FR 2093-XM2	1NO+2NC	FX 2093-XM2	1NO+2NC	FW 2092-XM2	1NO+2NC	/	/
33 L	/	/	/	/	/	/	FK 3393-XM1	1NO+1NC
34 L	/	/	/	/	/	/	FK 3493-XM1	2NC
Actuating force	10 N (18 N ⊕)		10 N (18 N ⊕)		10 N (18 N ⊕)		10 N (18 N ⊕)	
Travel diagrams	page 218 - group 8		page 218 - group 8		page 218 - group 8		page 218 - group 8	

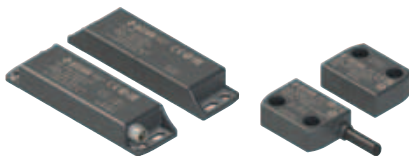
### Stainless steel actuators

All values in the drawings are in mm

**IMPORTANT:** These actuators can be used only with items of the FR, FX, FK and FW series (e.g. FR 693-XM2).  
Low level of coding acc. to EN ISO 14119.

Article	Description	Article	Description
<b>VF KEYD</b>	Straight actuator	<b>VF KEYD1</b>	Angled actuator
<b>VF KEYD5</b>	Extended actuator	<b>VF KEYD6</b>	Extended actuator, angled
<b>VF KEYD8</b>	Universal actuator	<b>VF KEYD10</b>	Profiled actuator

### 3 FR series magnetic safety sensors



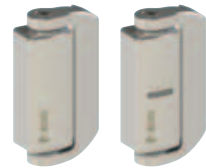
See General Catalogue Safety  
Pizzato Elettrica 2017-2018, pages 25 / 31

### 4 ST series safety sensors with RFID technology



See General Catalogue Safety  
Pizzato Elettrica 2017-2018, page 37

### 5 HX series stainless steel safety switches



See General Catalogue Safety  
Pizzato Elettrica 2017-2018, page 57

Items with code on **green** background are stock items

**Accessories** See page 197

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