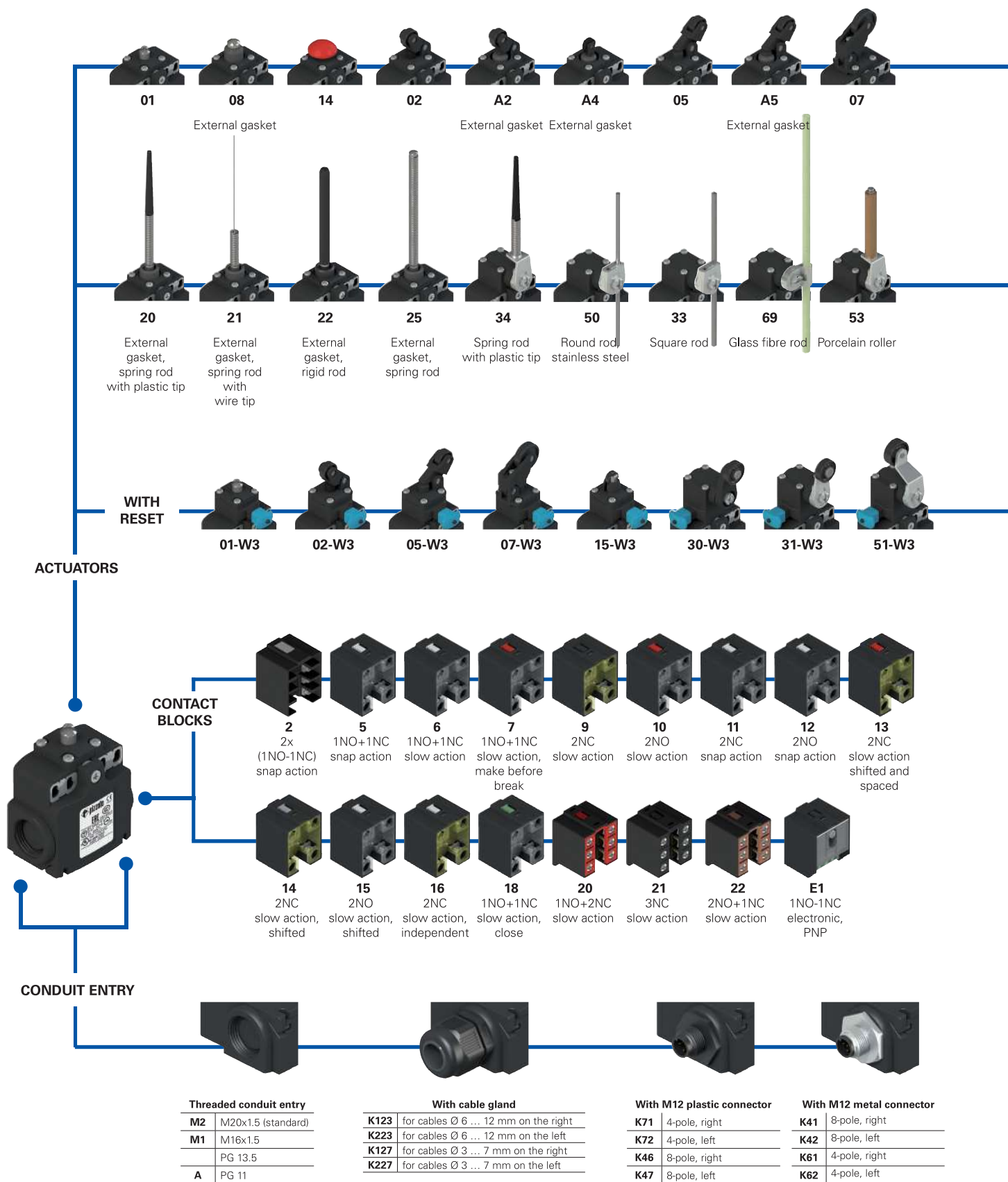
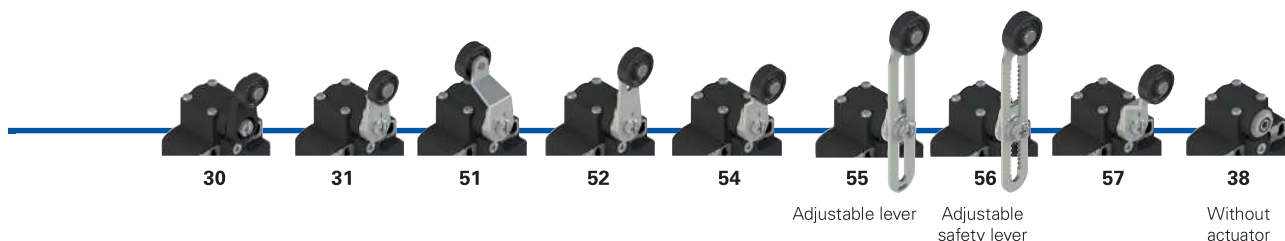
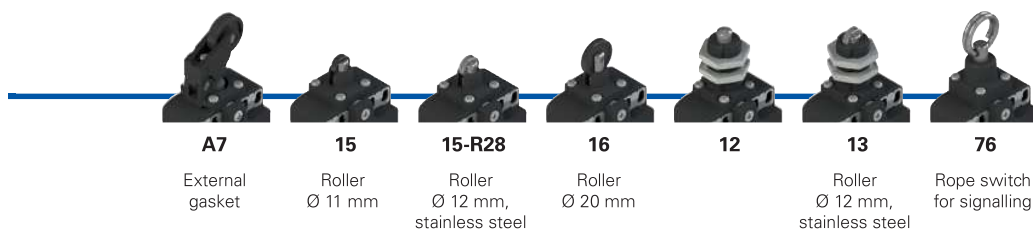


Selection diagram



Product options
 Sold separately as accessory


Code structure

Attention! The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

article options options
FX 502-W3XGM2K71R23T6

Housing	
FX	technopolymer, two conduit entries

Contact block	
5	1NO+1NC, snap action
6	1NO+1NC, slow action
7	1NO+1NC, slow action, make before break
...

Actuators	
01	short plunger
02	roller lever
05	angled lever with roller
...

Reset	
	without reset (standard)
W3	simultaneous reset
W4	simultaneous reset, increased force

External metallic parts	
	zinc-plated steel (standard)
X	stainless steel

Ambient temperature	
	-25°C ... +80°C (standard)
T6	-40°C ... +80°C

Pre-installed cable glands or connectors	
	no cable gland or connector (standard)
K123	cable gland for cables Ø 6 ... 12 mm on the right
K71	M12 plastic connector, 4-pole, right

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

Threaded conduit entry	
M2	M20x1.5 (standard)
M1	M16x1.5
	PG 13.5
A	PG11
Rollers	
	standard roller
R28	stainless steel Ø 12 mm (for actuators A4, 15)
R23	stainless steel Ø 14 mm (for actuators A2, 02, A5, 05, 30, 31, 51, 52, 54, 55, 56, 57)
R24	stainless steel Ø 20 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)
R36	stainless steel Ø 16 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)
R25	technopolymer, Ø 35 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)
R5	rubber, Ø 40 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)
R26	rubber, Ø 50 mm (for actuators 51, 52, 54, 55, 56, 57)
R27	rubber, protruding, Ø 50 mm (for actuators 55, 56)
Contact type	
	silver contacts (standard)
G	silver contacts, 1 µm gold coating
G1	silver contacts, 2.5 µm gold coating (not for contact block 2, 20, 21, 22)



Main features

- Technopolymer housing, two conduit entries
- Protection degree IP67
- 17 contact blocks available
- 45 actuators available
- Versions with external parts in stainless steel
- Versions with M12 connector
- Versions with gold-plated silver contacts

Technical data

Housing

Housing made of glass fibre reinforced technopolymer, self-extinguishing, shock-proof and with double insulation:

Two knock-out threaded conduit entries.

Protection degree acc. to EN 60529:

M20x1.5 (standard)

IP67 with cable gland of equal or higher protection degree

General data

Ambient temperature: -25°C ... +80°C (standard)

-40°C ... +80°C (T6 option)

Max. actuation frequency: 3600 operating cycles/hour

Mechanical endurance: 20 million operating cycles

Mounting position: any

Safety parameter B_{10D} : 40,000,000 for NC contacts

Mechanical interlock, not coded: type 1 acc. to EN ISO 14119

Tightening torques for installation: see page 229

Wire cross-sections and wire stripping lengths: see page 247

In compliance with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, EN IEC 63000, UL 508, CSA 22.2 No.14.

Approvals:

IEC 60947-5-1, UL 508, CSA 22.2 No.14, GB/T14048.5

Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU,

RoHS Directive 2011/65/EU.

Positive contact opening in conformity with standards:

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

Quality marks:



IMQ approval: EG610
 UL approval: E131787
 CCC approval: 2020970305002284
 EAC approval: RU C-IT.YT03.B.00035/19

Installation for safety applications:

Use only switches marked with the symbol \ominus next to the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as required by **EN ISO 14119, paragraph 5.4** for specific interlock applications and **EN ISO 13849-2 tables D3** (well-tried components) and **D.8** (fault exclusions) for safety applications in general. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 230. Actuate the switch **at least with the positive opening force**, reported in brackets below each article, next to the actuating force value.

⚠ If not expressly indicated in this chapter, for correct installation and utilization of all articles see the instructions given on pages 225 to 240.

	Electrical data	Utilization category
without connector	Thermal current (I_{th}):	10 A
	Rated insulation voltage (U_i):	500 Vac 600 Vdc 400 Vac 500 Vdc (contact blocks 2, 11, 12, 20, 21, 22)
	Rated impulse withstand voltage (U_{imp}):	6 kV 4 kV (contact blocks 20, 21, 22)
	Conditional short circuit current: Protection against short circuits: Pollution degree:	1000 A acc. to EN 60947-5-1 type aM fuse 10 A 500 V 3
with M12 connector, 4-pole	Thermal current (I_{th}):	4 A
	Rated insulation voltage (U_i):	250 Vac 300 Vdc
	Protection against short circuits: Pollution degree:	type gG fuse 4 A 500 V 3
		Alternating current: AC15 (50÷60 Hz) Ue (V) 250 400 500 Ie (A) 6 4 1 Direct current: DC13 Ue (V) 24 125 250 Ie (A) 3 0.55 0.3
with M12 connector, 8-pole	Thermal current (I_{th}):	2 A
	Rated insulation voltage (U_i):	30 Vac 36 Vdc
	Protection against short circuits: Pollution degree:	type gG fuse 2 A 500 V 3
		Alternating current: AC15 (50÷60 Hz) Ue (V) 24 Ie (A) 2 Direct current: DC13 Ue (V) 24 Ie (A) 2

Features approved by IMO

Rated insulation voltage (U_i): 500 Vac
400 Vac (for contact blocks 2, 11, 12, 20, 21, 22, 28, 29, 30, 37, 33, 34)

Conventional free air thermal current (I_{th}): 10 A

Protection against short circuits: type aM fuse 10 A 500 V

Rated impulse withstand voltage (U_{imp}): 6 kV
4 kV (for contact blocks 20, 21, 22, 28, 29, 30, 33, 34)

Protection degree of the housing: IP67

MV terminals (screw terminals)

Pollution degree: 3

Utilization category: AC15

Operating voltage (U_g): 400 Vac (50 Hz)

Operating current (I_g): 3 A

Forms of the contact element: Za, Za+Za, X+X, Zb, Y+Y, Y+Y+X, Y+Y+Y, Y+X+X, Y, X.
Positive opening of contacts on contact blocks 5, 6, 7, 8, 9, 11, 13, 14, 16, 17, 18, 19, 20, 21, 22, 28, 29, 30, 33, 34, 37, 38, 39, 66.
In compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

Features approved by UL

Electrical Ratings: Q300 pilot duty (69 VA, 125-250 V dc)
A600 pilot duty (720 VA, 120-600 V ac)

Environmental Ratings: Types 1, 4X, 12, 13

For all contact blocks except 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 12, 14 AWG. Tightening torque for terminal screws of 7.1 lb in (0.8 Nm).

For contact blocks 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 14 AWG. Tightening torque for terminal screws of 12 lb in (1.4 Nm).

The hub is to be connected to the conduit before the hub is connected to the enclosure.

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

Wiring diagram for M12 connectors

Contact block 2 2x(1NO-1NC)	Contact block 5 1NO+1NC	Contact block 6 1NO+1NC	Contact block 7 1NO+1NC	Contact block 9 2NC	Contact block 10 2NO	Contact block 11 2NC	Contact block 12 2NO	Contact block 13 2NC
M12 connector, 8-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole
Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.
NO 3-4	NC 1-2	NC 1-2	NC 1-2	NC 1-2	NO 1-2	NC 1-2	NO 1-2	NC (1°) 1-2
NC 5-6	NO 3-4	NO 3-4	NO 3-4	NC 3-4	NO 3-4	NC 3-4	NO 3-4	NC (2°) 3-4
NC 7-8								
NO 1-2								

Contact block 14 2NC	Contact block 15 2NO	Contact block 16 2NC	Contact block 18 1NO+1NC	Contact block 20 1NO+2NC	Contact block 21 3NC	Contact block 22 2NO+1NC	Contact block 33 1NO+1NC	Contact block 34 2NC
M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 8-pole	M12 connector, 8-pole	M12 connector, 8-pole	M12 connector, 4-pole	M12 connector, 4-pole
Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.
NC (1°) 1-2	NO (1°) 1-2	NC, lever to the right 1-2	NC 1-2	NC 3-4	NC 3-4	NC 3-4	NC 1-2	NC 1-2
NC (2°) 3-4	NO (2°) 3-4	NC, lever to the left 3-4	NO 3-4	NC 5-6	NC 5-6	NO 5-6	NO 3-4	NC 3-4
				NO 7-8	NC 7-8	NO 7-8		

Contact block E1 PNP
M12 connector, 4-pole
Contacts Pin no.
+ 1
- 3
NC 2
NO 4

- Contact type
- R** = snap action
 - L** = slow action
 - LO** = slow action, make before break
 - LS** = slow action, shifted
 - LV** = slow action, shifted and spaced
 - LI** = slow action, independent
 - LA** = slow action, close
 - ⚡** = electronic, PNP

Contact block

		With stainless steel roller on request		External gasket		External gasket		
				With stainless steel roller on request		With Ø 12 mm stainless steel roller on request		
2	R FX 201-M2	2x(1NO-1NC)	FX 202-M2	2x(1NO-1NC)	FX 2A2-M2	2x(1NO-1NC)	FX 2A4-M2	2x(1NO-1NC)
5	R FX 501-M2	1NO+1NC	FX 502-M2	1NO+1NC	FX 5A2-M2	1NO+1NC	FX 5A4-M2	1NO+1NC
6	L FX 601-M2	1NO+1NC	FX 602-M2	1NO+1NC	FX 6A2-M2	1NO+1NC	FX 6A4-M2	1NO+1NC
7	LO FX 701-M2	1NO+1NC	FX 702-M2	1NO+1NC	FX 7A2-M2	1NO+1NC	FX 7A4-M2	1NO+1NC
9	L FX 901-M2	2NC	FX 902-M2	2NC	FX 9A2-M2	2NC	FX 9A4-M2	2NC
10	L FX 1001-M2	2NO	FX 1002-M2	2NO	FX 10A2-M2	2NO	FX 10A4-M2	2NO
11	R FX 1101-M2	2NC	FX 1102-M2	2NC	FX 11A2-M2	2NC	FX 11A4-M2	2NC
12	R FX 1201-M2	2NO	FX 1202-M2	2NO	FX 12A2-M2	2NO	FX 12A4-M2	2NO
13	LV FX 1301-M2	2NC	FX 1302-M2	2NC	FX 13A2-M2	2NC	FX 13A4-M2	2NC
14	LS FX 1401-M2	2NC	FX 1402-M2	2NC	FX 14A2-M2	2NC	FX 14A4-M2	2NC
15	LS FX 1501-M2	2NO	FX 1502-M2	2NO	FX 15A2-M2	2NO	FX 15A4-M2	2NO
18	LA FX 1801-M2	1NO+1NC	FX 1802-M2	1NO+1NC	FX 18A2-M2	1NO+1NC	FX 18A4-M2	1NO+1NC
20	L FX 2001-M2	1NO+2NC	FX 2002-M2	1NO+2NC	FX 20A2-M2	1NO+2NC	FX 20A4-M2	1NO+2NC
21	L FX 2101-M2	3NC	FX 2102-M2	3NC	FX 21A2-M2	3NC	FX 21A4-M2	3NC
22	L FX 2201-M2	2NO+1NC	FX 2202-M2	2NO+1NC	FX 22A2-M2	2NO+1NC	FX 22A4-M2	2NO+1NC
E1	⚡ FX E101-M2	1NO-1NC	FX E102-M2	1NO-1NC	FX E1A2-M2	1NO-1NC	FX E1A4-M2	1NO-1NC
Max. speed	page 229 - type 4		page 229 - type 3		page 229 - type 3		page 229 - type 5	
Actuating force	8 N (25 N \ominus)		6 N (25 N \ominus)		4.3 N (25 N \ominus)		4.3 N (25 N \ominus)	
Travel diagrams	page 230 - group 1		page 230 - group 2		page 230 - group 2		page 230 - group 1	

- Contact type
- R** = snap action
 - L** = slow action
 - LO** = slow action, make before break
 - LS** = slow action, shifted
 - LV** = slow action, shifted and spaced
 - LI** = slow action, independent
 - LA** = slow action, close
 - ⚡** = electronic, PNP

Contact block

		With stainless steel roller on request		External gasket		External gasket		
				With stainless steel roller on request				
2	R FX 205-M2	2x(1NO-1NC)	FX 2A5-M2	2x(1NO-1NC)	FX 207-M2	2x(1NO-1NC)	FX 2A7-M2	2x(1NO-1NC)
5	R FX 505-M2	1NO+1NC	FX 5A5-M2	1NO+1NC	FX 507-M2	1NO+1NC	FX 5A7-M2	1NO+1NC
6	L FX 605-M2	1NO+1NC	FX 6A5-M2	1NO+1NC	FX 607-M2	1NO+1NC	FX 6A7-M2	1NO+1NC
7	LO FX 705-M2	1NO+1NC	FX 7A5-M2	1NO+1NC	FX 707-M2	1NO+1NC	FX 7A7-M2	1NO+1NC
9	L FX 905-M2	2NC	FX 9A5-M2	2NC	FX 907-M2	2NC	FX 9A7-M2	2NC
10	L FX 1005-M2	2NO	FX 10A5-M2	2NO	FX 1007-M2	2NO	FX 10A7-M2	2NO
11	R FX 1105-M2	2NC	FX 11A5-M2	2NC	FX 1107-M2	2NC	FX 11A7-M2	2NC
12	R FX 1205-M2	2NO	FX 12A5-M2	2NO	FX 1207-M2	2NO	FX 12A7-M2	2NO
13	LV FX 1305-M2	2NC	FX 13A5-M2	2NC	FX 1307-M2	2NC	FX 13A7-M2	2NC
14	LS FX 1405-M2	2NC	FX 14A5-M2	2NC	FX 1407-M2	2NC	FX 14A7-M2	2NC
15	LS FX 1505-M2	2NO	FX 15A5-M2	2NO	FX 1507-M2	2NO	FX 15A7-M2	2NO
18	LA FX 1805-M2	1NO+1NC	FX 18A5-M2	1NO+1NC	FX 1807-M2	1NO+1NC	FX 18A7-M2	1NO+1NC
20	L FX 2005-M2	1NO+2NC	FX 20A5-M2	1NO+2NC	FX 2007-M2	1NO+2NC	FX 20A7-M2	1NO+2NC
21	L FX 2105-M2	3NC	FX 21A5-M2	3NC	FX 2107-M2	3NC	FX 21A7-M2	3NC
22	L FX 2205-M2	2NO+1NC	FX 22A5-M2	2NO+1NC	FX 2207-M2	2NO+1NC	FX 22A7-M2	2NO+1NC
E1	⚡ FX E105-M2	1NO-1NC	FX E1A5-M2	1NO-1NC	FX E107-M2	1NO-1NC	FX E1A7-M2	1NO-1NC
Max. speed	page 229 - type 3		page 229 - type 3		page 229 - type 3		page 229 - type 3	
Actuating force	6 N (25 N \ominus)		4.3 N (25 N \ominus)		4 N (25 N \ominus)		3 N (25 N \ominus)	
Travel diagrams	page 230 - group 2		page 230 - group 2		page 230 - group 3		page 230 - group 3	

All values in the drawings are in mm

Accessories See page 207

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

- Contact type
- R** = snap action
 - L** = slow action
 - LO** = slow action, make before break
 - LS** = slow action, shifted
 - LV** = slow action, shifted and spaced
 - LI** = slow action, independent
 - LA** = slow action, close
 - Λ** = electronic, PNP

Contact block

	External gasket						
2	R	FX 208-M2	2x(1NO-1NC)	FX 212-M2	2x(1NO-1NC)	FX 213-M2	2x(1NO-1NC)
5	R	FX 508-M2	1NO+1NC	FX 512-M2	1NO+1NC	FX 513-M2	1NO+1NC
6	L	FX 608-M2	1NO+1NC	FX 612-M2	1NO+1NC	FX 613-M2	1NO+1NC
7	LO	FX 708-M2	1NO+1NC	FX 712-M2	1NO+1NC	FX 713-M2	1NO+1NC
9	L	FX 908-M2	2NC	FX 912-M2	2NC	FX 913-M2	2NC
10	L	FX 1008-M2	2NO	FX 1012-M2	2NO	FX 1013-M2	2NO
11	R	FX 1108-M2	2NC	FX 1112-M2	2NC	FX 1113-M2	2NC
12	R	FX 1208-M2	2NO	FX 1212-M2	2NO	FX 1213-M2	2NO
13	LV	FX 1308-M2	2NC	FX 1312-M2	2NC	FX 1313-M2	2NC
14	LS	FX 1408-M2	2NC	FX 1412-M2	2NC	FX 1413-M2	2NC
15	LS	FX 1508-M2	2NO	FX 1512-M2	2NO	FX 1513-M2	2NO
18	LA	FX 1808-M2	1NO+1NC	FX 1812-M2	1NO+1NC	FX 1813-M2	1NO+1NC
20	L	FX 2008-M2	1NO+2NC	FX 2012-M2	1NO+2NC	FX 2013-M2	1NO+2NC
21	L	FX 2108-M2	3NC	FX 2112-M2	3NC	FX 2113-M2	3NC
22	L	FX 2208-M2	2NO+1NC	FX 2212-M2	2NO+1NC	FX 2213-M2	2NO+1NC
E1	Λ	FX E108-M2	1NO-1NC	FX E112-M2	1NO-1NC	FX E113-M2	1NO-1NC
Max. speed		page 229 - type 4		page 229 - type 4		page 229 - type 2	
Actuating force		8 N (25 N ⊕)		8 N (25 N ⊕)		8 N (25 N ⊕)	
Travel diagrams		page 230 - group 1		page 230 - group 1		page 230 - group 1	

- Contact type
- R** = snap action
 - L** = slow action
 - LO** = slow action, make before break
 - LS** = slow action, shifted
 - LV** = slow action, shifted and spaced
 - LI** = slow action, independent
 - LA** = slow action, close
 - Λ** = electronic, PNP

Contact block

	Roller, Ø 11 mm, technopolymer	Roller, Ø 12 mm, stainless steel	External gasket Spring rod
2	R	FX 215-M2	2x(1NO-1NC)
5	R	FX 515-M2	1NO+1NC
6	L	FX 615-M2	1NO+1NC
7	LO	FX 715-M2	1NO+1NC
9	L	FX 915-M2	2NC
10	L	FX 1015-M2	2NO
11	R	FX 1115-M2	2NC
12	R	FX 1215-M2	2NO
13	LV	FX 1315-M2	2NC
14	LS	FX 1415-M2	2NC
15	LS	FX 1515-M2	2NO
18	LA	FX 1815-M2	1NO+1NC
20	L	FX 2015-M2	1NO+2NC
21	L	FX 2115-M2	3NC
22	L	FX 2215-M2	2NO+1NC
E1	Λ	FX E115-M2	1NO-1NC
Max. speed		page 229 - type 2	1 m/s
Actuating force		8 N (25 N ⊕)	0.07 Nm
Travel diagrams		page 230 - group 1	page 230 - group 4

All values in the drawings are in mm

Accessories See page 207

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

FX series position switches

- Contact type
- R** = snap action
 - L** = slow action
 - LO** = slow action, make before break
 - LS** = slow action, shifted
 - LV** = slow action, shifted and spaced
 - LI** = slow action, independent
 - LA** = slow action, close
 - △** = electronic, PNP

	External gasket Spring rod		External gasket Rigid rod		External gasket Spring rod		With Ø 20 mm stainless steel roller on request		
2	R	FX 221-M2	2x(1NO-1NC)	FX 222-M2	2x(1NO-1NC)	FX 225-M2	2x(1NO-1NC)	FX 230-M2	2x(1NO-1NC)
5	R	FX 521-M2	1NO+1NC	/	/	FX 525-M2	1NO+1NC	FX 530-M2	1NO+1NC
6	L	/	/	/	/	/	/	FX 630-M2	1NO+1NC
7	LO	/	/	/	/	/	/	FX 730-M2	1NO+1NC
9	L	/	/	/	/	/	/	FX 930-M2	2NC
10	L	FX 1021-M2	2NO	FX 1022-M2	2NO	FX 1025-M2	2NO	FX 1030-M2	2NO
11	R	/	/	/	/	/	/	FX 1130-M2	2NC
12	R	FX 1221-M2	2NO	FX 1222-M2	2NO	FX 1225-M2	2NO	FX 1230-M2	2NO
13	LV	/	/	/	/	/	/	FX 1330-M2	2NC
14	LS	/	/	/	/	/	/	FX 1430-M2	2NC
15	LS	/	/	/	/	/	/	FX 1530-M2	2NO
16	LI	/	/	/	/	/	/	FX 1630-M2	2NC
18	LA	FX 1821-M2	1NO+1NC	FX 1822-M2	1NO+1NC	FX 1825-M2	1NO+1NC	FX 1830-M2	1NO+1NC
20	L	FX 2021-M2	1NO+2NC	FX 2022-M2	1NO+2NC	FX 2025-M2	1NO+2NC	FX 2030-M2	1NO+2NC
21	L	FX 2121-M2	3NC	FX 2122-M2	3NC	FX 2125-M2	3NC	FX 2130-M2	3NC
22	L	FX 2221-M2	2NO+1NC	FX 2222-M2	2NO+1NC	FX 2225-M2	2NO+1NC	FX 2230-M2	2NO+1NC
E1	△	FX E121-M2	1NO-1NC	FX E122-M2	1NO-1NC	FX E125-M2	1NO-1NC	FX E130-M2	1NO-1NC
Max. speed	1 m/s		1 m/s		1 m/s		page 229 - type 1		
Actuating force	0.07 Nm		0.12 Nm (0.25 Nm)		0.12 Nm		0.06 Nm (0.25 Nm)		
Travel diagrams	page 230 - group 4		page 230 - group 4		page 230 - group 4		page 230 - group 5		

- Contact type
- R** = snap action
 - L** = slow action
 - LO** = slow action, make before break
 - LS** = slow action, shifted
 - LV** = slow action, shifted and spaced
 - LI** = slow action, independent
 - LA** = slow action, close
 - △** = electronic, PNP

	Other rollers available. See page 90		Square rod, 3x3 mm		Square rod, 3x3 mm		Round rod, Ø 3 mm, stainless steel		
2	R	FX 231-M2	2x(1NO-1NC)	FX 233-M2	2x(1NO-1NC)	FX 234-M2	2x(1NO-1NC)	FX 250-M2	2x(1NO-1NC)
5	R	FX 531-M2	1NO+1NC	FX 533-M2	1NO+1NC	FX 534-M2	1NO+1NC	FX 550-M2	1NO+1NC
6	L	FX 631-M2	1NO+1NC	FX 633-M2	1NO+1NC	FX 634-M2	1NO+1NC	FX 650-M2	1NO+1NC
7	LO	FX 731-M2	1NO+1NC	FX 733-M2	1NO+1NC	FX 734-M2	1NO+1NC	FX 750-M2	1NO+1NC
9	L	FX 931-M2	2NC	FX 933-M2	2NC	FX 934-M2	2NC	FX 950-M2	2NC
10	L	FX 1031-M2	2NO	FX 1033-M2	2NO	FX 1034-M2	2NO	FX 1050-M2	2NO
11	R	FX 1131-M2	2NC	FX 1133-M2	2NC	FX 1134-M2	2NC	FX 1150-M2	2NC
12	R	FX 1231-M2	2NO	FX 1233-M2	2NO	FX 1234-M2	2NO	FX 1250-M2	2NO
13	LV	FX 1331-M2	2NC	FX 1333-M2	2NC	FX 1334-M2	2NC	FX 1350-M2	2NC
14	LS	FX 1431-M2	2NC	FX 1433-M2	2NC	FX 1434-M2	2NC	FX 1450-M2	2NC
15	LS	FX 1531-M2	2NO	FX 1533-M2	2NO	FX 1534-M2	2NO	FX 1550-M2	2NO
16	LI	FX 1631-M2	2NC	FX 1633-M2	2NC	FX 1634-M2	2NC	FX 1650-M2	2NC
18	LA	FX 1831-M2	1NO+1NC	FX 1833-M2	1NO+1NC	FX 1834-M2	1NO+1NC	FX 1850-M2	1NO+1NC
20	L	FX 2031-M2	1NO+2NC	FX 2033-M2	1NO+2NC	FX 2034-M2	1NO+2NC	FX 2050-M2	1NO+2NC
21	L	FX 2131-M2	3NC	FX 2133-M2	3NC	FX 2134-M2	3NC	FX 2150-M2	3NC
22	L	FX 2231-M2	2NO+1NC	FX 2233-M2	2NO+1NC	FX 2234-M2	2NO+1NC	FX 2250-M2	2NO+1NC
E1	△	FX E131-M2	1NO-1NC	FX E133-M2	1NO-1NC	FX E134-M2	1NO-1NC	FX E150-M2	1NO-1NC
Max. speed	page 229 - type 1		1.5 m/s		1.5 m/s		1.5 m/s		
Actuating force	0.06 Nm (0.25 Nm)		0.06 Nm		0.06 Nm		0.06 Nm		
Travel diagrams	page 230 - group 5		page 230 - group 5		page 230 - group 5		page 230 - group 5		

All values in the drawings are in mm

Accessories See page 207

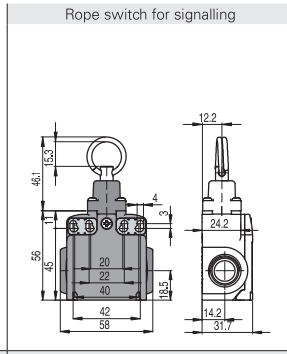
→ The 2D and 3D files are available at www.pizzato.com

Contact type	Other rollers available. See page 90		Other rollers available. See page 90		Porcelain roller		Other rollers available. See page 90	
<ul style="list-style-type: none"> R = snap action L = slow action LO = slow action, make before break LS = slow action, shifted LV = slow action, shifted and spaced LI = slow action, independent LA = slow action, close Λ = electronic, PNP 								
Contact block	2 R FX 251-M2	2x(1NO-1NC)	FX 252-M2	2x(1NO-1NC)	FX 253-E0M2	2x(1NO-1NC)	FX 254-M2	2x(1NO-1NC)
	5 R FX 551-M2	1NO+1NC	FX 552-M2	1NO+1NC	FX 553-E0M2V9	1NO+1NC	FX 554-M2	1NO+1NC
	6 L FX 651-M2	1NO+1NC	FX 652-M2	1NO+1NC	FX 653-E0M2V9	1NO+1NC	FX 654-M2	1NO+1NC
	7 LO FX 751-M2	1NO+1NC	FX 752-M2	1NO+1NC	FX 753-E0M2V9	1NO+1NC	FX 754-M2	1NO+1NC
	9 L FX 951-M2	2NC	FX 952-M2	2NC	FX 953-E0M2V9	2NC	FX 954-M2	2NC
	10 L FX 1051-M2	2NO	FX 1052-M2	2NO	FX 1053-E0M2V9	2NO	FX 1054-M2	2NO
	11 R FX 1151-M2	2NC	FX 1152-M2	2NC	/		FX 1154-M2	2NC
	12 R FX 1251-M2	2NO	FX 1252-M2	2NO	FX 1253-E0M2V9	2NO	FX 1254-M2	2NO
	13 LV FX 1351-M2	2NC	FX 1352-M2	2NC	FX 1353-E0M2V9	2NC	FX 1354-M2	2NC
	14 LS FX 1451-M2	2NC	FX 1452-M2	2NC	FX 1453-E0M2V9	2NC	FX 1454-M2	2NC
	15 LS FX 1551-M2	2NO	FX 1552-M2	2NO	FX 1553-E0M2V9	2NO	FX 1554-M2	2NO
	16 LI FX 1651-M2	2NC	FX 1652-M2	2NC	/		FX 1654-M2	2NC
	18 LA FX 1851-M2	1NO+1NC	FX 1852-M2	1NO+1NC	FX 1853-E0M2V9	1NO+1NC	FX 1854-M2	1NO+1NC
	20 L FX 2051-M2	1NO+2NC	FX 2052-M2	1NO+2NC	FX 2053-E0M2V9	1NO+2NC	FX 2054-M2	1NO+2NC
	21 L FX 2151-M2	3NC	FX 2152-M2	3NC	FX 2153-E0M2V9	3NC	FX 2154-M2	3NC
	22 L FX 2251-M2	2NO+1NC	FX 2252-M2	2NO+1NC	FX 2253-E0M2V9	2NO+1NC	FX 2254-M2	2NO+1NC
	E1 Λ FX E151-M2	1NO-1NC	FX E152-M2	1NO-1NC	FX E153-E0M2V9	1NO-1NC	FX E154-M2	1NO-1NC
Max. speed	page 229 - type 1		page 229 - type 1		0.5 m/s		page 229 - type 1	
Actuating force	0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)		0.03 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)	
Travel diagrams	page 230 - group 5		page 230 - group 5		page 230 - group 6		page 230 - group 5	

Contact type	Other rollers available. See page 90		Other rollers available. See page 90		Other rollers available. See page 90		Glass fibre rod	
<ul style="list-style-type: none"> R = snap action L = slow action LO = slow action, make before break LS = slow action, shifted LV = slow action, shifted and spaced LI = slow action, independent LA = slow action, close Λ = electronic, PNP 								
Contact block	2 R FX 255-M2	2x(1NO-1NC)	FX 256-M2	2x(1NO-1NC)	FX 257-M2	2x(1NO-1NC)	FX 269-M2	2x(1NO-1NC)
	5 R FX 555-M2	1NO+1NC	FX 556-M2	1NO+1NC	FX 557-M2	1NO+1NC	FX 569-M2	1NO+1NC
	6 L FX 655-M2	1NO+1NC	FX 656-M2	1NO+1NC	FX 657-M2	1NO+1NC	FX 669-M2	1NO+1NC
	7 LO FX 755-M2	1NO+1NC	FX 756-M2	1NO+1NC	FX 757-M2	1NO+1NC	FX 769-M2	1NO+1NC
	9 L FX 955-M2	2NC	FX 956-M2	2NC	FX 957-M2	2NC	FX 969-M2	2NC
	10 L FX 1055-M2	2NO	FX 1056-M2	2NO	FX 1057-M2	2NO	FX 1069-M2	2NO
	11 R FX 1155-M2	2NC	FX 1156-M2	2NC	FX 1157-M2	2NC	FX 1169-M2	2NC
	12 R FX 1255-M2	2NO	FX 1256-M2	2NO	FX 1257-M2	2NO	FX 1269-M2	2NO
	13 LV FX 1355-M2	2NC	FX 1356-M2	2NC	FX 1357-M2	2NC	FX 1369-M2	2NC
	14 LS FX 1455-M2	2NC	FX 1456-M2	2NC	FX 1457-M2	2NC	FX 1469-M2	2NC
	15 LS FX 1555-M2	2NO	FX 1556-M2	2NO	FX 1557-M2	2NO	FX 1569-M2	2NO
	16 LI FX 1655-M2	2NC	FX 1656-M2	2NC	FX 1657-M2	2NC	FX 1669-M2	2NC
	18 LA FX 1855-M2	1NO+1NC	FX 1856-M2	1NO+1NC	FX 1857-M2	1NO+1NC	FX 1869-M2	1NO+1NC
	20 L FX 2055-M2	1NO+2NC	FX 2056-M2	1NO+2NC	FX 2057-M2	1NO+2NC	FX 2069-M2	1NO+2NC
	21 L FX 2155-M2	3NC	FX 2156-M2	3NC	FX 2157-M2	3NC	FX 2169-M2	3NC
	22 L FX 2255-M2	2NO+1NC	FX 2256-M2	2NO+1NC	FX 2257-M2	2NO+1NC	FX 2269-M2	2NO+1NC
	E1 Λ FX E155-M2	1NO-1NC	FX E156-M2	1NO-1NC	FX E157-M2	1NO-1NC	FX E169-M2	1NO-1NC
Max. speed	page 229 - type 1		page 229 - type 1		page 229 - type 1		1.5 m/s	
Actuating force	0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)		0.06 Nm (0.25 Nm ⊕)		0.06 Nm	
Travel diagrams	page 230 - group 5		page 230 - group 5		page 230 - group 5		page 230 - group 5	

(1) Positive opening only with actuator set to max. See page 90.
All values in the drawings are in mm.

- Contact type
- R** = snap action
 - L** = slow action
 - LO** = slow action, make before break
 - LS** = slow action, shifted
 - LV** = slow action, shifted and spaced
 - LI** = slow action, independent
 - LA** = slow action, close
 - A** = electronic, PNP



Contact block			
2	R	FX 276-M2	2x(1NO-1NC)
5	R	FX 576-M2	1NO+1NC
6	L	FX 676-M2	1NO+1NC
7	LO	FX 776-M2	1NO+1NC
9	L	FX 976-M2	2NO
10	L	FX 1076-M2	2NC
11	R	FX 1176-M2	2NO
12	R	FX 1276-M2	2NC
13	LV	FX 1376-M2	2NO
14	LS	FX 1476-M2	2NO
15	LS	FX 1576-M2	2NC
18	LA	FX 1876-M2	1NO+1NC
20	L	FX 2076-M2	2NO+1NC
21	L	FX 2176-M2	3NO
22	L	FX 2276-M2	1NO+2NC
Max. speed		0.5 m/s	
Actuating force		initial 20 N - final 40 N	
Travel diagrams		page 230 - group 7	

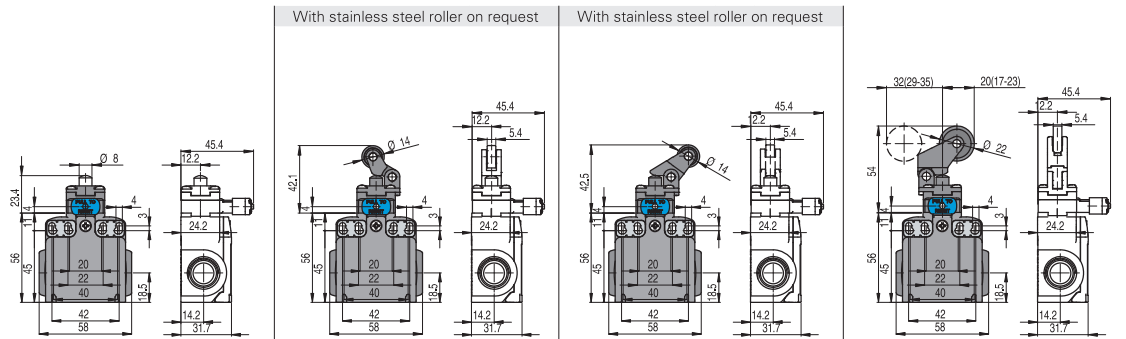
FX series position switches with reset



The majority of switches can be equipped with a reset device (option W3) which enables the simultaneous actuation of actuator and contact block. The device is a module that is mounted between the body and the head of the switch that can be rotated independently from the head. The reset device has the following advantages:

- can be integrated into the majority of standard actuator heads;
- contact blocks with snap action are no more necessary because the tripping movement is executed by the reset device itself;
- can be rotated independently from the head ensuring maximum flexibility during installation;
- can be delivered with two different actuating forces: standard and increased for vibration applications;
- mechanical endurance: 1 million operating cycles.

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

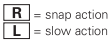
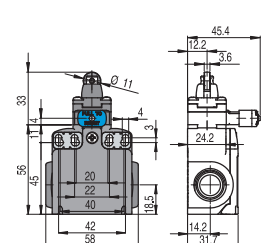
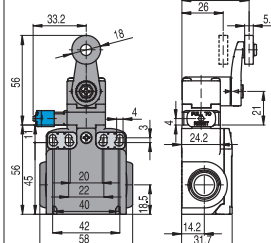
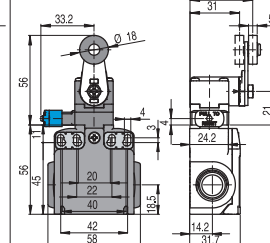
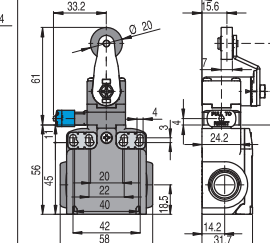


















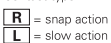
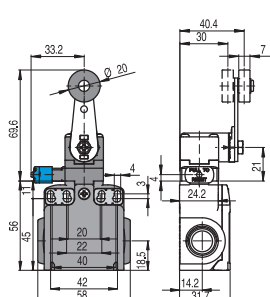
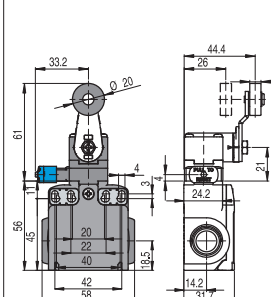
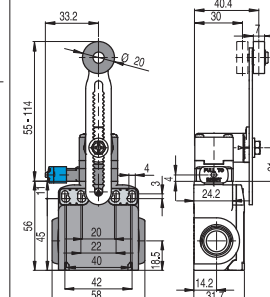
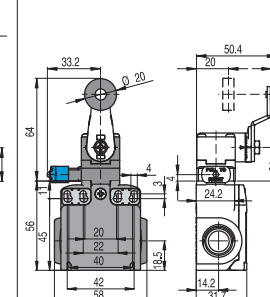
















Contact block			With stainless steel roller on request	With stainless steel roller on request	
2	R	FX 201-W3M2	FX 202-W3M2	FX 205-W3M2	FX 207-W3M2
6	L	FX 601-W3M2	FX 602-W3M2	FX 605-W3M2	FX 607-W3M2
9	L	FX 901-W3M2	FX 902-W3M2	FX 905-W3M2	FX 907-W3M2
10	L	FX 1001-W3M2	FX 1002-W3M2	FX 1005-W3M2	FX 1007-W3M2
20	L	FX 2001-W3M2	FX 2002-W3M2	FX 2005-W3M2	FX 2007-W3M2
21	L	FX 2101-W3M2	FX 2102-W3M2	FX 2105-W3M2	FX 2107-W3M2
22	L	FX 2201-W3M2	FX 2202-W3M2	FX 2205-W3M2	FX 2207-W3M2
Max. speed		page 229 - type 4		page 229 - type 3	
Actuating force		4.5 N (25 N ⊕)		4 N (25 N ⊕)	
Travel diagrams		page 231 - group 1		page 231 - group 3	

All values in the drawings are in mm

Accessories See page 207

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

Contact type	With Ø 12 mm stainless steel roller on request	With Ø 20 mm stainless steel roller on request	Other rollers available. See page 90	Other rollers available. See page 90
				
Contact block	2  FX 215-W3M2 2x(1NO-1NC) 6  FX 615-W3M2  1NO+1NC 9  FX 915-W3M2  2NC 10  FX 1015-W3M2 2NO 20  FX 2015-W3M2  1NO+2NC 21  FX 2115-W3M2  3NC 22  FX 2215-W3M2  2NO+1NC	2x(1NO-1NC) 2x(1NO-1NC) 2NO 2NO 2NO 2NO+2NC 3NC 2NO+1NC	2x(1NO-1NC) 1NO+1NC 2NC 2NO 1NO+2NC 3NC 2NO+1NC	2x(1NO-1NC) 1NO+1NC 2NC 2NO 1NO+2NC 3NC 2NO+1NC
Max. speed	page 229 - type 2	page 229 - type 1	page 229 - type 1	page 229 - type 1
Actuating force	4.5 N (25 N )	0.07 Nm (0.25 Nm )	0.07 Nm (0.25 Nm )	0.07 Nm (0.25 Nm )
Travel diagrams	page 231 - group 1	page 231 - group 4	page 231 - group 4	page 231 - group 4

Contact type	Other rollers available. See page 90	Other rollers available. See page 90	Other rollers available. See page 90	Other rollers available. See page 90
				
Contact block	2  FX 252-W3M2 2x(1NO-1NC) 6  FX 652-W3M2  1NO+1NC 9  FX 952-W3M2  2NC 10  FX 1052-W3M2 2NO 20  FX 2052-W3M2  1NO+2NC 21  FX 2152-W3M2  3NC 22  FX 2252-W3M2  2NO+1NC	2x(1NO-1NC) 2x(1NO-1NC) 2NO 2NO 2NO 2NO+2NC 3NC 2NO+1NC	2x(1NO-1NC) 1NO+1NC 2NC 2NO 1NO+2NC 3NC 2NO+1NC	2x(1NO-1NC) 1NO+1NC 2NC 2NO 1NO+2NC 3NC 2NO+1NC
Max. speed	page 229 - type 1	page 229 - type 1	page 229 - type 1	page 229 - type 1
Actuating force	0.07 Nm (0.25 Nm )	0.07 Nm (0.25 Nm )	0.07 Nm (0.25 Nm )	0.07 Nm (0.25 Nm )
Travel diagrams	page 231 - group 4	page 231 - group 4	page 231 - group 4	page 231 - group 4

Increased actuating force



The switch can be delivered with increased actuating force (option W4). Ideal for vibration applications.

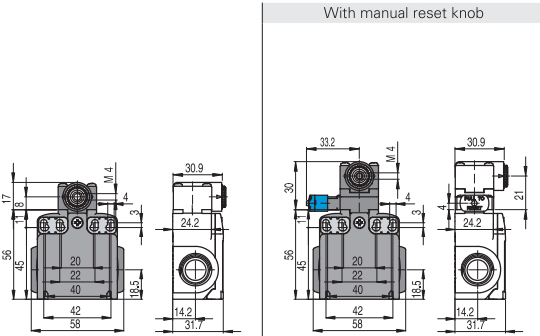
Actuators	Actuating force
01, 14, 15, 16	7 N
02, 05	6 N
07	3.5 N
30 ... 57	0.08 Nm

To order the switch with reset and increased actuating force, replace the -W3 option with -W4 in the order code.

Example: FX 601-W3M2 → FX 601-W4M2

Position switches with swivelling lever without actuator

- Contact type
- R** = snap action
 - L** = slow action
 - LO** = slow action, make before break
 - LS** = slow action, shifted
 - LV** = slow action, shifted and spaced
 - LI** = slow action, independent
 - LA** = slow action, close
 - ⚡** = electronic, PNP



IMPORTANT

For safety applications: join only switches and actuators marked with symbol ⊕ next to the product code. For more information about safety applications see details on page 225.

Contact block		Without manual reset knob		With manual reset knob	
2	R	FX 238-M2	2x(1NO-1NC)	FX 238-W3M2	2x(1NO-1NC)
5	R	FX 538-M2	⊕ 1NO+1NC	/	/
6	L	FX 638-M2	⊕ 1NO+1NC	FX 638-W3M2	⊕ 1NO+1NC
7	LO	FX 738-M2	⊕ 1NO+1NC	/	/
9	L	FX 938-M2	⊕ 2NC	FX 938-W3M2	⊕ 2NC
10	L	FX 1038-M2	2NO	FX 1038-W3M2	2NO
11	R	FX 1138-M2	⊕ 2NC	/	/
12	R	FX 1238-M2	2NO	/	/
13	LV	FX 1338-M2	⊕ 2NC	/	/
14	LS	FX 1438-M2	⊕ 2NC	/	/
15	LS	FX 1538-M2	2NO	/	/
16	LI	FX 1638-M2	⊕ 2NC	/	/
18	LA	FX 1838-M2	⊕ 1NO+1NC	/	/
20	L	FX 2038-M2	⊕ 1NO+2NC	FX 2038-W3M2	⊕ 1NO+2NC
21	L	FX 2138-M2	⊕ 3NC	FX 2138-W3M2	⊕ 3NC
22	L	FX 2238-M2	⊕ 2NO+1NC	FX 2238-W3M2	⊕ 2NO+1NC
E1	⚡	FX E138-M2	1NO-1NC	/	/
Actuating force		0.06 Nm (0.25 Nm ⊕)		0.07 Nm (0.25 Nm ⊕)	
Travel diagrams		page 230 - group 5		page 231 - group 4	

Separate actuators

IMPORTANT: These separate actuators can be used only with items of the FR, FM, FX, FZ and FK series.

Technopolymer roller Ø 18 mm	Technopolymer roller Ø 18 mm	Adjustable square rod, 3x3x125 mm	Spring rod with plastic tip	Adjustable round rod Ø 3x125 mm	Technopolymer roller Ø 20 mm	
VF LE30 ⊕	VF LE31 ⊕	VF LE33	VF LE34	VF LE50	VF LE51 ⊕	
Technopolymer roller Ø 20 mm	Porcelain roller	Technopolymer roller Ø 20 mm	Adjustable actuator with technopolymer roller	Adjustable safety actuator with technopolymer roller	Technopolymer roller Ø 20 mm	Adjustable glass fibre rod
VF LE52 ⊕	VF LE53 ⊕ (2)	VF LE54 ⊕	VF LE55 ⊕ (1)	VF LE56 ⊕	VF LE57 ⊕	VF LE69

All values in the drawings are in mm

Accessories See page 207

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

Special separate actuators

IMPORTANT: These separate actuators can be used only with items of the FR, FM, FX, FZ and FK series.

Stainless steel rollers, Ø 20 mm

VF LE31-R24 (1)	VF LE51-R24 (1)	VF LE52-R24 (1)	VF LE54-R24 (1)	VF LE55-R24 (1) (1)	VF LE56-R24 (1)	VF LE57-R24 (1)

Technopolymer rollers, Ø 35 mm

VF LE31-R25 (4)	VF LE51-R25 (4)	VF LE52-R25 (1)	VF LE54-R25 (4)	VF LE55-R25 (1) (1)	VF LE56-R25 (1)	VF LE57-R25 (1)

Rubber rollers, Ø 40 mm

VF LE31-R5 (4)	VF LE51-R5 (4)	VF LE52-R5 (1)	VF LE54-R5 (4)	VF LE55-R5 (1) (1)	VF LE56-R5 (1)	VF LE57-R5 (4)

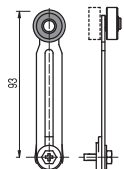
Rubber rollers, Ø 50 mm

VF LE51-R26 (4)	VF LE52-R26 (4)	VF LE54-R26 (4)	VF LE55-R26 (1) (1)	VF LE56-R26 (1)	VF LE57-R26 (4)

Protruding rubber rollers, Ø 50 mm

VF LE55-R27 (1)	VF LE56-R27 (1)

- (1) Lever VF LE55 can only be used in safety applications if adjusted to its max. length, as shown in the figure to the right. If an adjustable lever is required for safety applications, use the VF LE56 adjustable safety lever.
- (2) The position switch obtained by assembling switch FX •38-M2 (e.g. FX 538-M2, FX 638-M2, ...) with actuator VF L53 will not present the same travel diagrams and actuating forces as switch FX •53-E0M2V9 (e.g. FX 553-E0M2V9, FX 653-E0M2V9, ...)
- (4) The actuator cannot be rotated to the inside because it will hit the switch head upon actuation.



All values in the drawings are in mm

Accessories See page 207

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