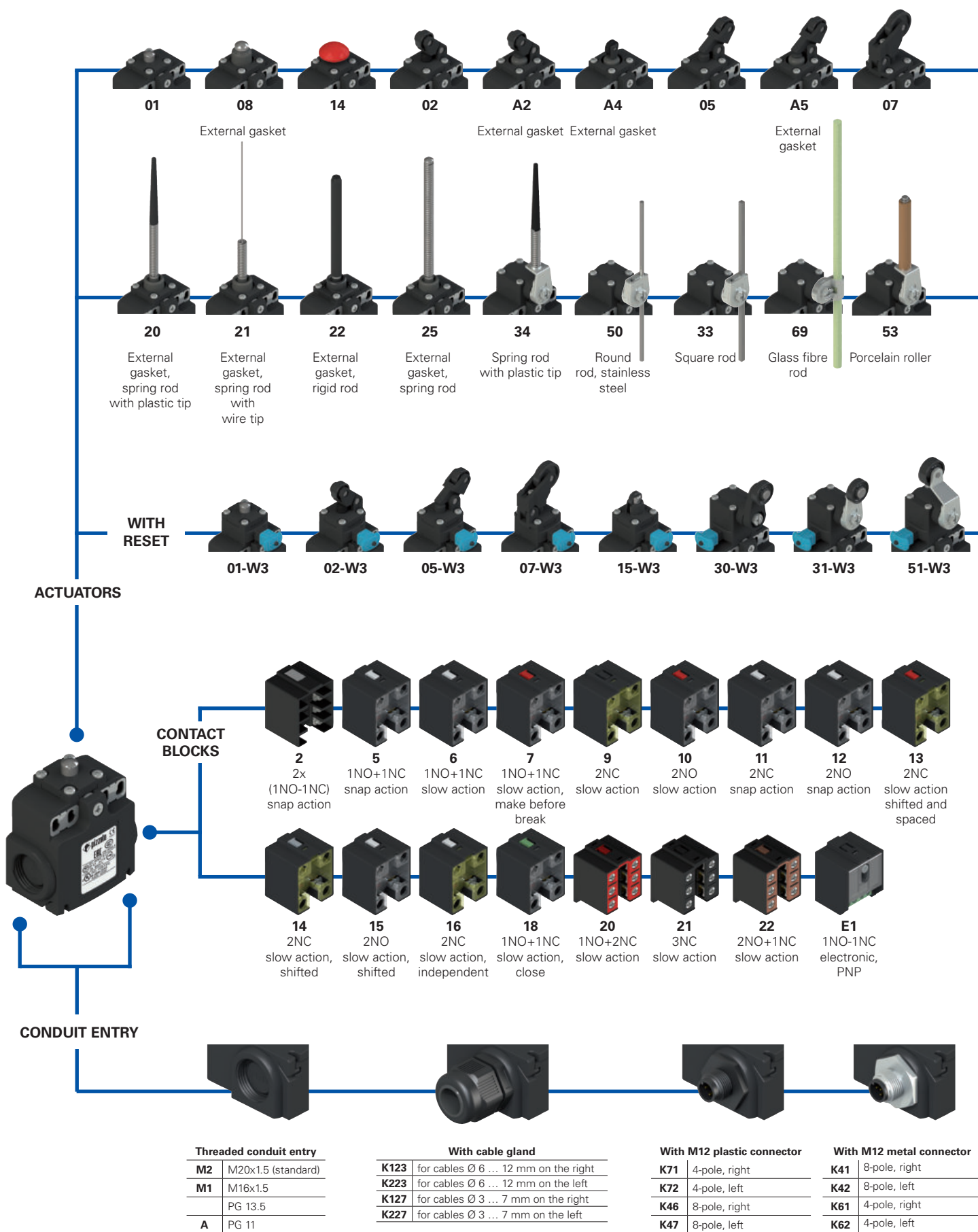
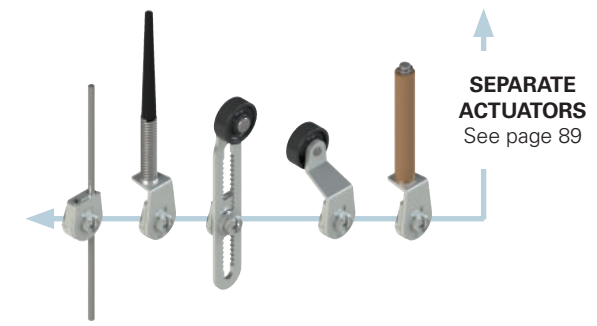
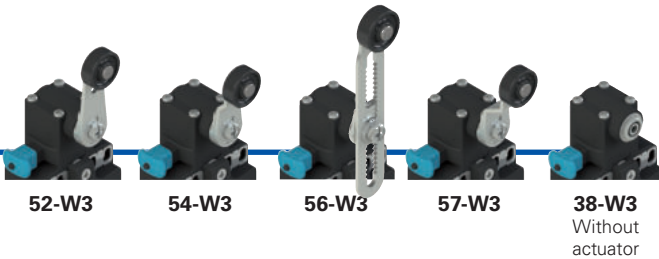
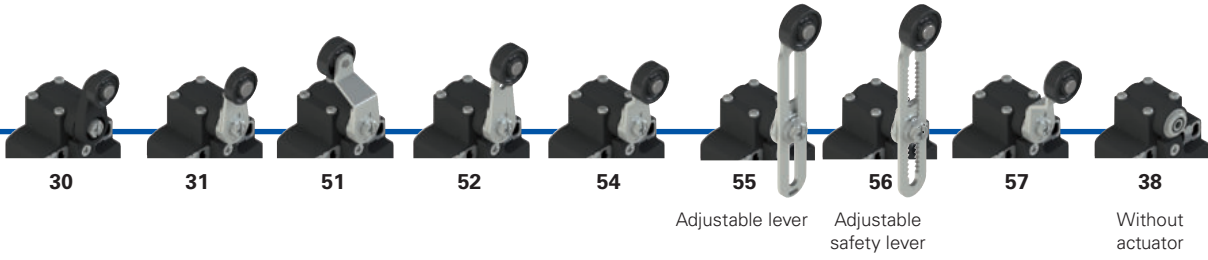
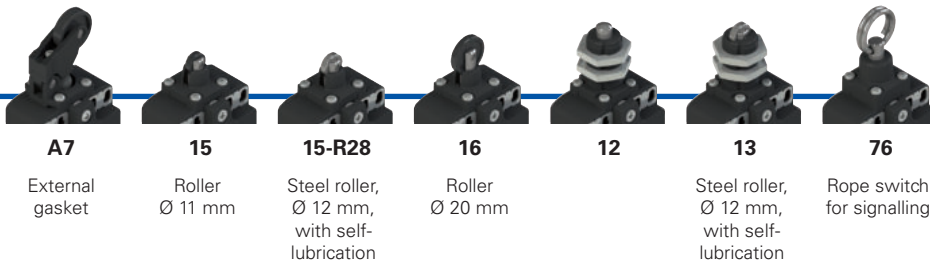


Selection diagram



● 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

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

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

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	Steel, with self-lubrication, Ø 12 mm (for actuators A4, 15)
R44	316L stainless steel, Ø 12 mm (for actuators A4, 13, 15)
R23	Steel, with self-lubrication, Ø 14 mm (for actuators A2, 02, A5, 05, 30, 31, 51, 52, 54, 55, 56, 57)
R43	316L stainless steel, Ø 14 mm (for actuators A2, 02, A5, 05, 30, 31, 51, 52, 54, 55, 56, 57)
R24	Steel, with self-lubrication, Ø 20 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)
R41	316L stainless steel, Ø 20 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)
R36	Steel, with self-lubrication, 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

Quality marks:



IMQ approval:	EG610
UL approval:	E131787
CCC approval:	2021000305000101
EAC approval:	RU C-IT.YT03.B.00035/19

Installation for safety applications:

Use only switches marked with the \ominus symbol beside 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-ried 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 232. 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 227 to 242.

Technical data

Housing

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

Two knock-out threaded conduit entries.

M20x1.5 (standard)

Protection degree acc. to EN 60529:

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 231

Wire cross-sections and wire stripping lengths: see page 249

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 C22.2 No. 14.

Approvals:

IEC 60947-5-1, UL 508, CSA C22.2 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.

Electrical data

Utilization category

without connector	with M12 connector, 4-pole	with M12 connector, 8-pole	
Thermal current (I_{th}):	10 A	4 A	2 A
Rated insulation voltage (U_r):	500 Vac 600 Vdc 400 Vac 500 Vdc (contact blocks 2, 11, 12, 20, 21, 22)	250 Vac 300 Vdc	30 Vac 36 Vdc
Rated impulse withstand voltage (U_{imp}):	6 kV 4 kV (contact blocks 20, 21, 22)		
Conditional short circuit current:	1000 A acc. to EN 60947-5-1		
Protection against short circuits:	type aM fuse 10 A 500 V	type gG fuse 4 A 500 V	type gG fuse 2 A 500 V
Pollution degree:	3	3	3
Utilization category			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
Utilization category			Alternating current: AC15 (50±60 Hz)
Ue (V)			24 120 250
Ie (A)			4 4 4
Direct current: DC13			
Ue (V)			24 125 250
Ie (A)			3 0.55 0.3
Utilization category			Alternating current: AC15 (50±60 Hz)
Ue (V)			24
Ie (A)			2
Direct current: DC13			
Ue (V)			24
Ie (A)			2



Features approved by IMQ

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_e): 400 Vac (50 Hz)

Operating current (I_e): 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

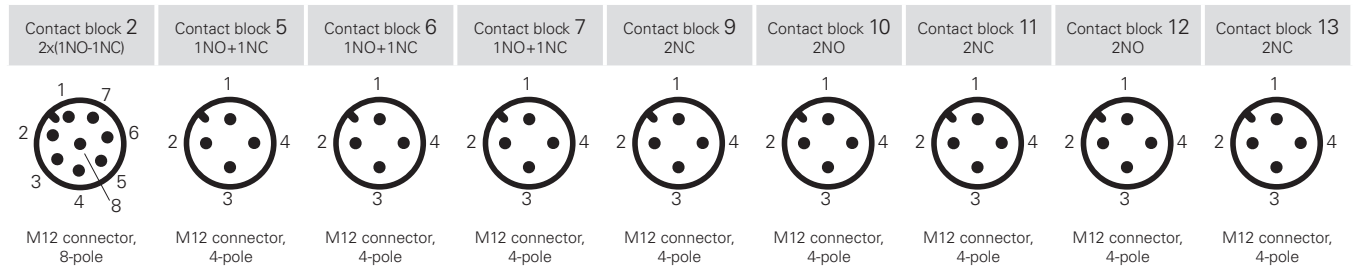
For all contact blocks except 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 12, 14 AWG. Tightening torque for terminal screws of 7.1 lb in (0.8 Nm).

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).

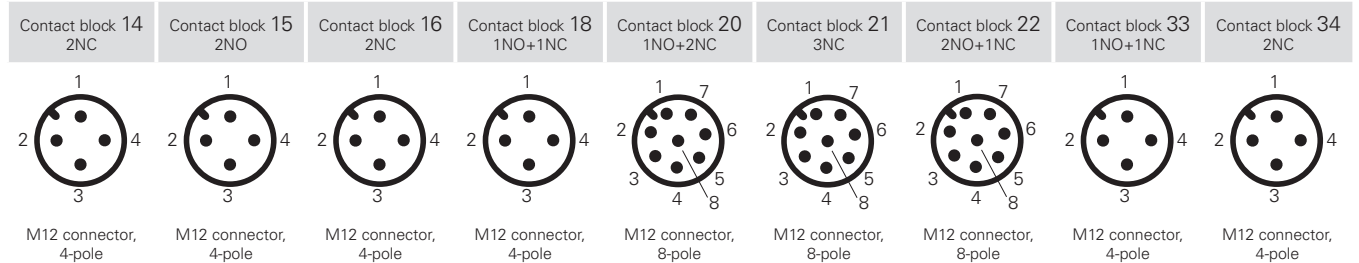
The hub is to be connected to the conduit before the hub is connected to the enclosure.

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

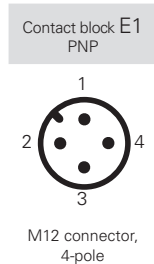
Wiring diagram for M12 connectors



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	NC (1°)	1-2
NC	5-6	NO	3-4	NO	3-4	NO	3-4	NO	3-4	NC	3-4	NO	3-4	NC (2°)	3-4
NC	7-8														
NO	1-2														



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 (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
									7-8	NC	7-8	NO	7-8		

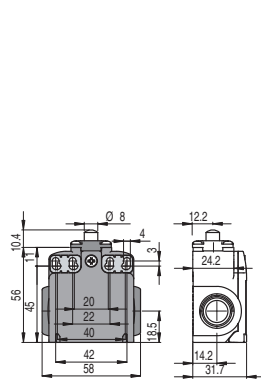


Contacts	Pin no.
+	1
-	3
NC	2
NO	4

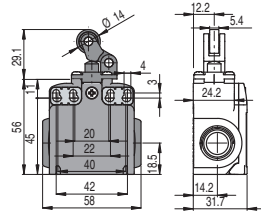
FX series position switches

- 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

Contact block

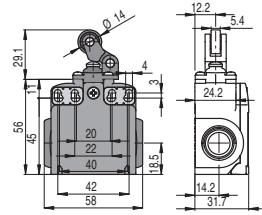


With steel roller with self-lubrication or 316L stainless steel on request



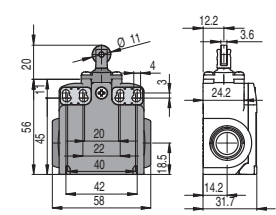
External gasket

With steel roller with self-lubrication or 316L stainless steel on request



External gasket

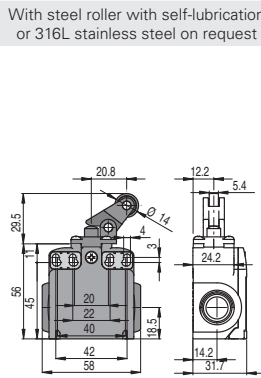
With Ø 12 mm steel roller with self-lubrication or 316L stainless steel on request



			With steel roller with self-lubrication or 316L stainless steel on request	External gasket	External gasket
2	R	FX 201-M2	2x(1NO-1NC)	FX 202-M2	2x(1NO-1NC)
5	R	FX 501-M2	1NO+1NC	FX 502-M2	1NO+1NC
6	L	FX 601-M2	1NO+1NC	FX 602-M2	1NO+1NC
7	LO	FX 701-M2	1NO+1NC	FX 702-M2	1NO+1NC
9	L	FX 901-M2	2NC	FX 902-M2	2NC
10	L	FX 1001-M2	2NO	FX 1002-M2	2NO
11	R	FX 1101-M2	2NC	FX 1102-M2	2NC
12	R	FX 1201-M2	2NO	FX 1202-M2	2NO
13	LV	FX 1301-M2	2NC	FX 1302-M2	2NC
14	LS	FX 1401-M2	2NC	FX 1402-M2	2NC
15	LS	FX 1501-M2	2NO	FX 1502-M2	2NO
18	LA	FX 1801-M2	1NO+1NC	FX 1802-M2	1NO+1NC
20	L	FX 2001-M2	1NO+2NC	FX 2002-M2	1NO+2NC
21	L	FX 2101-M2	3NC	FX 2102-M2	3NC
22	L	FX 2201-M2	2NO+1NC	FX 2202-M2	2NO+1NC
E1	⏏	FX E101-M2	1NO-1NC	FX E102-M2	1NO-1NC
Max. speed		page 231 - type 4		page 231 - type 3	
Actuating force		8 N (25 N ⊕)		4.3 N (25 N ⊕)	
Travel diagrams		page 232 - group 1		page 232 - group 2	

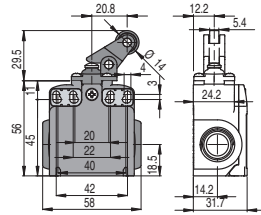
- Contact type
- R** = snap action
 - L** = slow action
 - LO** = slow action, make before break
 - LS** = slow action, shifted
 - LV** = slow action, shifted and spaced
 - LI** = slow action, independent
 - LA** = slow action, close
 - ⏏** = electronic, PNP

Contact block



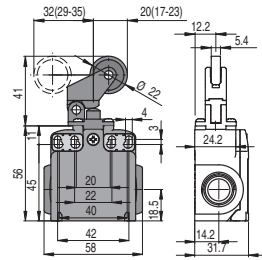
External gasket

With steel roller with self-lubrication or 316L stainless steel on request



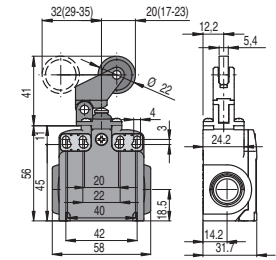
External gasket

With steel roller with self-lubrication or 316L stainless steel on request



External gasket

With steel roller with self-lubrication or 316L stainless steel on request



			With steel roller with self-lubrication or 316L stainless steel on request	External gasket	External gasket
2	R	FX 205-M2	2x(1NO-1NC)	FX 2A5-M2	2x(1NO-1NC)
5	R	FX 505-M2	1NO+1NC	FX 5A5-M2	1NO+1NC
6	L	FX 605-M2	1NO+1NC	FX 6A5-M2	1NO+1NC
7	LO	FX 705-M2	1NO+1NC	FX 7A5-M2	1NO+1NC
9	L	FX 905-M2	2NC	FX 9A5-M2	2NC
10	L	FX 1005-M2	2NO	FX 10A5-M2	2NO
11	R	FX 1105-M2	2NC	FX 11A5-M2	2NC
12	R	FX 1205-M2	2NO	FX 12A5-M2	2NO
13	LV	FX 1305-M2	2NC	FX 13A5-M2	2NC
14	LS	FX 1405-M2	2NC	FX 14A5-M2	2NC
15	LS	FX 1505-M2	2NO	FX 15A5-M2	2NO
18	LA	FX 1805-M2	1NO+1NC	FX 18A5-M2	1NO+1NC
20	L	FX 2005-M2	1NO+2NC	FX 20A5-M2	1NO+2NC
21	L	FX 2105-M2	3NC	FX 21A5-M2	3NC
22	L	FX 2205-M2	2NO+1NC	FX 22A5-M2	2NO+1NC
E1	⏏	FX E105-M2	1NO-1NC	FX E1A5-M2	1NO-1NC
Max. speed		page 231 - type 3		page 231 - type 3	
Actuating force		6 N (25 N ⊕)		4.3 N (25 N ⊕)	
Travel diagrams		page 232 - group 2		page 232 - group 3	

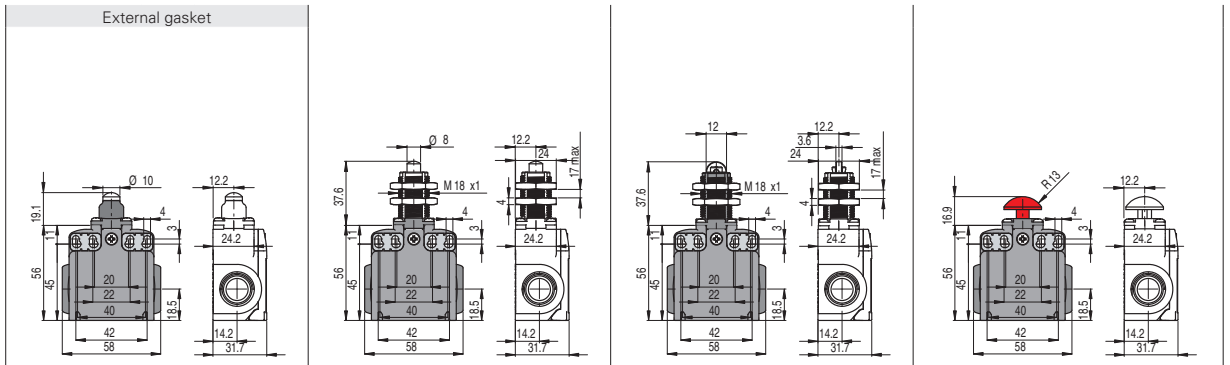
All values in the drawings are in mm

Accessories See page 207

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

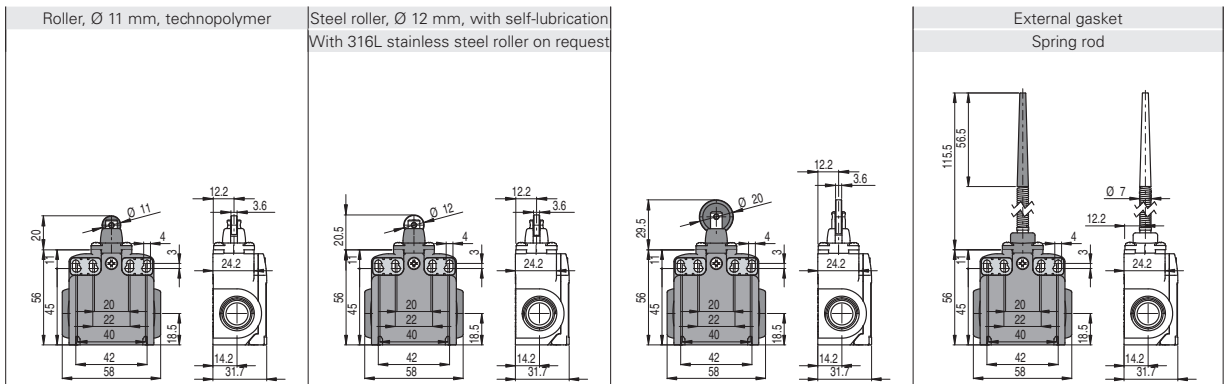


- Contact type
- R** = snap action
 - L** = slow action
 - LO** = slow action, make before break
 - LS** = slow action, shifted
 - LV** = slow action, shifted and spaced
 - LI** = slow action, independent
 - LA** = slow action, close
 - E1** = electronic, PNP



Contact block		FX 208-M2		FX 212-M2		FX 213-M2		FX 214-M2	
2	R	FX 208-M2	2x(1NO-1NC)	FX 212-M2	2x(1NO-1NC)	FX 213-M2	2x(1NO-1NC)	FX 214-M2	2x(1NO-1NC)
5	R	FX 508-M2	1NO+1NC	FX 512-M2	1NO+1NC	FX 513-M2	1NO+1NC	FX 514-M2	1NO+1NC
6	L	FX 608-M2	1NO+1NC	FX 612-M2	1NO+1NC	FX 613-M2	1NO+1NC	FX 614-M2	1NO+1NC
7	LO	FX 708-M2	1NO+1NC	FX 712-M2	1NO+1NC	FX 713-M2	1NO+1NC	FX 714-M2	1NO+1NC
9	L	FX 908-M2	2NC	FX 912-M2	2NC	FX 913-M2	2NC	FX 914-M2	2NC
10	L	FX 1008-M2	2NO	FX 1012-M2	2NO	FX 1013-M2	2NO	FX 1014-M2	2NO
11	R	FX 1108-M2	2NC	FX 1112-M2	2NC	FX 1113-M2	2NC	FX 1114-M2	2NC
12	R	FX 1208-M2	2NO	FX 1212-M2	2NO	FX 1213-M2	2NO	FX 1214-M2	2NO
13	LV	FX 1308-M2	2NC	FX 1312-M2	2NC	FX 1313-M2	2NC	FX 1314-M2	2NC
14	LS	FX 1408-M2	2NC	FX 1412-M2	2NC	FX 1413-M2	2NC	FX 1414-M2	2NC
15	LS	FX 1508-M2	2NO	FX 1512-M2	2NO	FX 1513-M2	2NO	FX 1514-M2	2NO
18	LA	FX 1808-M2	1NO+1NC	FX 1812-M2	1NO+1NC	FX 1813-M2	1NO+1NC	FX 1814-M2	1NO+1NC
20	L	FX 2008-M2	1NO+2NC	FX 2012-M2	1NO+2NC	FX 2013-M2	1NO+2NC	FX 2014-M2	1NO+2NC
21	L	FX 2108-M2	3NC	FX 2112-M2	3NC	FX 2113-M2	3NC	FX 2114-M2	3NC
22	L	FX 2208-M2	2NO+1NC	FX 2212-M2	2NO+1NC	FX 2213-M2	2NO+1NC	FX 2214-M2	2NO+1NC
E1	E1	FX E108-M2	1NO-1NC	FX E112-M2	1NO-1NC	FX E113-M2	1NO-1NC	FX E114-M2	1NO-1NC
Max. speed		page 231 - type 4		page 231 - type 4		page 231 - type 2		page 231 - type 4	
Actuating force		8 N (25 N)		8 N (25 N)		8 N (25 N)		8 N (25 N)	
Travel diagrams		page 232 - group 1		page 232 - group 1		page 232 - group 1		page 232 - 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
 - E1** = electronic, PNP



Contact block		FX 215-M2		FX 215-M2R28		FX 216-M2		FX 220-M2	
2	R	FX 215-M2	2x(1NO-1NC)	FX 215-M2R28	2x(1NO-1NC)	FX 216-M2	2x(1NO-1NC)	FX 220-M2	2x(1NO-1NC)
5	R	FX 515-M2	1NO+1NC	FX 515-M2R28	1NO+1NC	FX 516-M2	1NO+1NC	FX 520-M2	1NO+1NC
6	L	FX 615-M2	1NO+1NC	FX 615-M2R28	1NO+1NC	FX 616-M2	1NO+1NC	/	/
7	LO	FX 715-M2	1NO+1NC	FX 715-M2R28	1NO+1NC	FX 716-M2	1NO+1NC	/	/
9	L	FX 915-M2	2NC	FX 915-M2R28	2NC	FX 916-M2	2NC	/	/
10	L	FX 1015-M2	2NO	FX 1015-M2R28	2NO	FX 1016-M2	2NO	FX 1020-M2	2NO
11	R	FX 1115-M2	2NC	FX 1115-M2R28	2NC	FX 1116-M2	2NC	/	/
12	R	FX 1215-M2	2NO	FX 1215-M2R28	2NO	FX 1216-M2	2NO	FX 1220-M2	2NO
13	LV	FX 1315-M2	2NC	FX 1315-M2R28	2NC	FX 1316-M2	2NC	/	/
14	LS	FX 1415-M2	2NC	FX 1415-M2R28	2NC	FX 1416-M2	2NC	/	/
15	LS	FX 1515-M2	2NO	FX 1515-M2R28	2NO	FX 1516-M2	2NO	/	/
18	LA	FX 1815-M2	1NO+1NC	FX 1815-M2R28	1NO+1NC	FX 1816-M2	1NO+1NC	FX 1820-M2	1NO+1NC
20	L	FX 2015-M2	1NO+2NC	FX 2015-M2R28	1NO+2NC	FX 2016-M2	1NO+2NC	FX 2020-M2	1NO+2NC
21	L	FX 2115-M2	3NC	FX 2115-M2R28	3NC	FX 2116-M2	3NC	FX 2120-M2	3NC
22	L	FX 2215-M2	2NO+1NC	FX 2215-M2R28	2NO+1NC	FX 2216-M2	2NO+1NC	FX 2220-M2	2NO+1NC
E1	E1	FX E115-M2	1NO-1NC	FX E115-M2R28	1NO-1NC	FX E116-M2	1NO-1NC	FX E120-M2	1NO-1NC
Max. speed		page 231 - type 2		page 231 - type 2		page 231 - type 2		1 m/s	
Actuating force		8 N (25 N)		8 N (25 N)		8 N (25 N)		0.07 Nm	
Travel diagrams		page 232 - group 1		page 232 - group 1		page 232 - group 1		page 232 - 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

Contact block

		External gasket Spring rod	External gasket Rigid rod	External gasket Spring rod	With Ø 20 mm steel roller with self-lubrication or 316L stainless steel 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 231 - 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 232 - group 4	page 232 - group 4	page 232 - group 4	page 232 - 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

Contact block

		Other rollers available. See page 90	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)
5	R	FX 531-M2 1NO+1NC	FX 533-M2 1NO+1NC	FX 534-M2 1NO+1NC
6	L	FX 631-M2 1NO+1NC	FX 633-M2 1NO+1NC	FX 634-M2 1NO+1NC
7	LO	FX 731-M2 1NO+1NC	FX 733-M2 1NO+1NC	FX 734-M2 1NO+1NC
9	L	FX 931-M2 2NC	FX 933-M2 2NC	FX 934-M2 2NC
10	L	FX 1031-M2 2NO	FX 1033-M2 2NO	FX 1034-M2 2NO
11	R	FX 1131-M2 2NC	FX 1133-M2 2NC	FX 1134-M2 2NC
12	R	FX 1231-M2 2NO	FX 1233-M2 2NO	FX 1234-M2 2NO
13	LV	FX 1331-M2 2NC	FX 1333-M2 2NC	FX 1334-M2 2NC
14	LS	FX 1431-M2 2NC	FX 1433-M2 2NC	FX 1434-M2 2NC
15	LS	FX 1531-M2 2NO	FX 1533-M2 2NO	FX 1534-M2 2NO
16	LI	FX 1631-M2 2NC	FX 1633-M2 2NC	FX 1634-M2 2NC
18	LA	FX 1831-M2 1NO+1NC	FX 1833-M2 1NO+1NC	FX 1834-M2 1NO+1NC
20	L	FX 2031-M2 1NO+2NC	FX 2033-M2 1NO+2NC	FX 2034-M2 1NO+2NC
21	L	FX 2131-M2 3NC	FX 2133-M2 3NC	FX 2134-M2 3NC
22	L	FX 2231-M2 2NO+1NC	FX 2233-M2 2NO+1NC	FX 2234-M2 2NO+1NC
E1	⚡	FX E131-M2 1NO-1NC	FX E133-M2 1NO-1NC	FX E134-M2 1NO-1NC
Max. speed		page 231 - type 1	1.5 m/s	1.5 m/s
Actuating force		0.06 Nm (0.25 Nm)	0.06 Nm	0.06 Nm
Travel diagrams		page 232 - group 5	page 232 - group 5	page 232 - 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

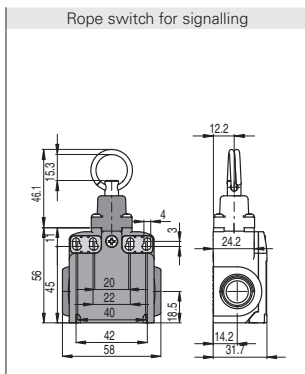


Contact type	Other rollers available. See page 90		Other rollers available. See page 90		Porcelain roller		Other rollers available. See page 90		
<ul style="list-style-type: none"> R = snap action L = slow action LO = slow action, make before break LS = slow action, shifted LV = slow action, shifted and spaced LI = slow action, independent LA = slow action, close ⌘ = 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	⌘	FX E151-M2	1NO-1NC	FX E152-M2	1NO-1NC	FX E153-E0M2V9	1NO-1NC	FX E154-M2	1NO-1NC
Max. speed	page 231 - type 1		page 231 - type 1		0.5 m/s		page 231 - type 1		
Actuating force	0.06 Nm (0.25 Nm \rightarrow)		0.06 Nm (0.25 Nm \rightarrow)		0.03 Nm (0.25 Nm \rightarrow)		0.06 Nm (0.25 Nm \rightarrow)		
Travel diagrams	page 232 - group 5		page 232 - group 5		page 232 - group 6		page 232 - 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 ⌘ = 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	⌘	FX E155-M2	1NO-1NC	FX E156-M2	1NO-1NC	FX E157-M2	1NO-1NC	FX E169-M2	1NO-1NC
Max. speed	page 231 - type 1		page 231 - type 1		page 231 - type 1		1.5 m/s		
Actuating force	0.06 Nm (0.25 Nm \rightarrow)		0.06 Nm (0.25 Nm \rightarrow)		0.06 Nm (0.25 Nm \rightarrow)		0.06 Nm		
Travel diagrams	page 232 - group 5		page 232 - group 5		page 232 - group 5		page 232 - 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
 - ⏏** = 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 232 - group 7		

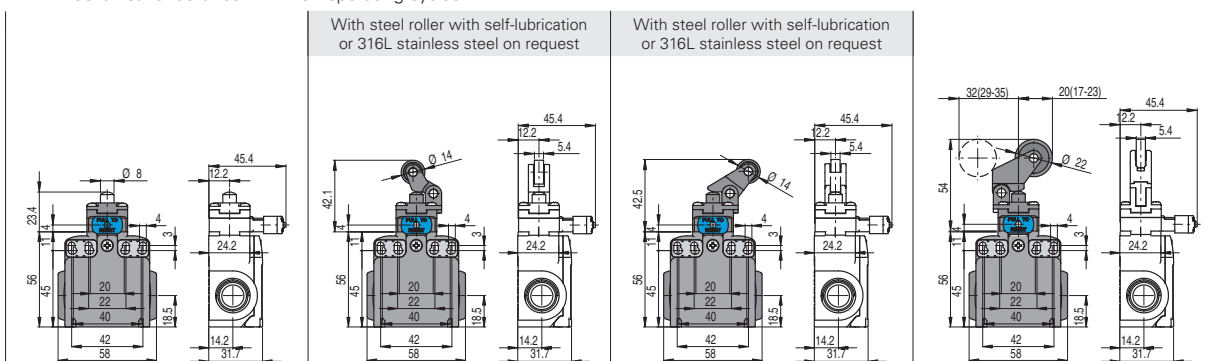
FX series position switches with reset



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

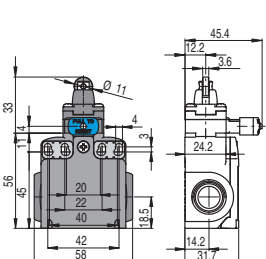
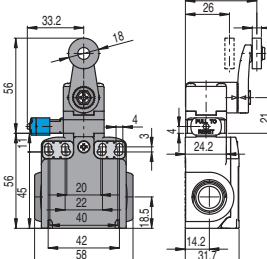
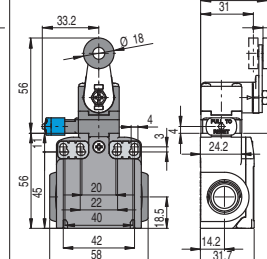
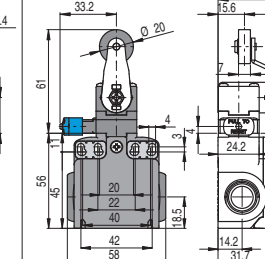


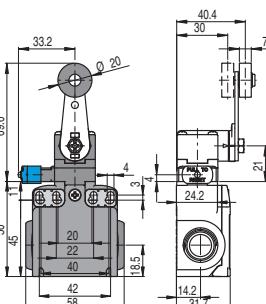
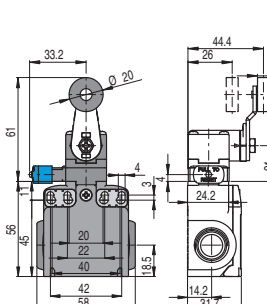
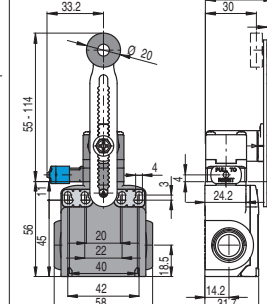
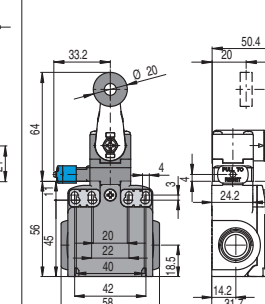
Contact block									
2	R	FX 201-W3M2	2x(1NO-1NC)	FX 202-W3M2	2x(1NO-1NC)	FX 205-W3M2	2x(1NO-1NC)	FX 207-W3M2	2x(1NO-1NC)
6	L	FX 601-W3M2	⊕ 1NO+1NC	FX 602-W3M2	⊕ 1NO+1NC	FX 605-W3M2	⊕ 1NO+1NC	FX 607-W3M2	⊕ 1NO+1NC
9	L	FX 901-W3M2	⊕ 2NC	FX 902-W3M2	⊕ 2NC	FX 905-W3M2	⊕ 2NC	FX 907-W3M2	⊕ 2NC
10	L	FX 1001-W3M2	2NO	FX 1002-W3M2	2NO	FX 1005-W3M2	2NO	FX 1007-W3M2	2NO
20	L	FX 2001-W3M2	⊕ 1NO+2NC	FX 2002-W3M2	⊕ 1NO+2NC	FX 2005-W3M2	⊕ 1NO+2NC	FX 2007-W3M2	⊕ 1NO+2NC
21	L	FX 2101-W3M2	⊕ 3NC	FX 2102-W3M2	⊕ 3NC	FX 2105-W3M2	⊕ 3NC	FX 2107-W3M2	⊕ 3NC
22	L	FX 2201-W3M2	⊕ 2NO+1NC	FX 2202-W3M2	⊕ 2NO+1NC	FX 2205-W3M2	⊕ 2NO+1NC	FX 2207-W3M2	⊕ 2NO+1NC
Max. speed	page 231 - type 4		page 231 - type 3		page 231 - type 3		page 231 - type 3		
Actuating force	4.5 N (25 N ⊕)		4 N (25 N ⊕)		4 N (25 N ⊕)		2.5 N (25 N ⊕)		
Travel diagrams	page 231 - group 1		page 231 - group 2		page 231 - group 2		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 steel roller with self-lubrication or 316L stainless steel on request		With Ø 20 mm steel roller with self-lubrication or 316L stainless steel on request		Other rollers available. See page 90		Other rollers available. See page 90	
R = snap action L = slow action									
Contact block									
2	R	FX 215-W3M2	2x(1NO-1NC)	FX 230-W3M2	2x(1NO-1NC)	FX 231-W3M2	2x(1NO-1NC)	FX 251-W3M2	2x(1NO-1NC)
6	L	FX 615-W3M2	1NO+1NC	FX 630-W3M2	1NO+1NC	FX 631-W3M2	1NO+1NC	FX 651-W3M2	1NO+1NC
9	L	FX 915-W3M2	2NC	FX 930-W3M2	2NC	FX 931-W3M2	2NC	FX 951-W3M2	2NC
10	L	FX 1015-W3M2	2NO	FX 1030-W3M2	2NO	FX 1031-W3M2	2NO	FX 1051-W3M2	2NO
20	L	FX 2015-W3M2	1NO+2NC	FX 2030-W3M2	1NO+2NC	FX 2031-W3M2	1NO+2NC	FX 2051-W3M2	1NO+2NC
21	L	FX 2115-W3M2	3NC	FX 2130-W3M2	3NC	FX 2131-W3M2	3NC	FX 2151-W3M2	3NC
22	L	FX 2215-W3M2	2NO+1NC	FX 2230-W3M2	2NO+1NC	FX 2231-W3M2	2NO+1NC	FX 2251-W3M2	2NO+1NC
Max. speed		page 231 - type 2		page 231 - type 1		page 231 - type 1		page 231 - type 1	
Actuating force		4.5 N (25 N \rightarrow)		0.07 Nm (0.25 Nm \rightarrow)		0.07 Nm (0.25 Nm \rightarrow)		0.07 Nm (0.25 Nm \rightarrow)	
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	
R = snap action L = slow action									
Contact block									
2	R	FX 252-W3M2	2x(1NO-1NC)	FX 254-W3M2	2x(1NO-1NC)	FX 256-W3M2	2x(1NO-1NC)	FX 257-W3M2	2x(1NO-1NC)
6	L	FX 652-W3M2	1NO+1NC	FX 654-W3M2	1NO+1NC	FX 656-W3M2	1NO+1NC	FX 657-W3M2	1NO+1NC
9	L	FX 952-W3M2	2NC	FX 954-W3M2	2NC	FX 956-W3M2	2NC	FX 957-W3M2	2NC
10	L	FX 1052-W3M2	2NO	FX 1054-W3M2	2NO	FX 1056-W3M2	2NO	FX 1057-W3M2	2NO
20	L	FX 2052-W3M2	1NO+2NC	FX 2054-W3M2	1NO+2NC	FX 2056-W3M2	1NO+2NC	FX 2057-W3M2	1NO+2NC
21	L	FX 2152-W3M2	3NC	FX 2154-W3M2	3NC	FX 2156-W3M2	3NC	FX 2157-W3M2	3NC
22	L	FX 2252-W3M2	2NO+1NC	FX 2254-W3M2	2NO+1NC	FX 2256-W3M2	2NO+1NC	FX 2257-W3M2	2NO+1NC
Max. speed		page 231 - type 1		page 231 - type 1		page 231 - type 1		page 231 - type 1	
Actuating force		0.07 Nm (0.25 Nm \rightarrow)		0.07 Nm (0.25 Nm \rightarrow)		0.07 Nm (0.25 Nm \rightarrow)		0.07 Nm (0.25 Nm \rightarrow)	
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.

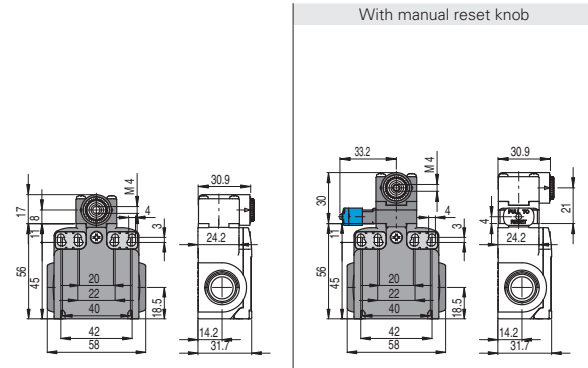
Actuators	Actuating force
01, 14, 15, 16	7 N
02, 05	6 N
07	3.5 N
30 ... 57	0.08 Nm

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

Example: FX 601-W3M2 \rightarrow 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					
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 232 - 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.

Steel rollers, Ø 20 mm, with self-lubrication

VF LE31-R24 (4)	VF LE51-R24 (4)	VF LE52-R24 (4)	VF LE54-R24 (4)	VF LE55-R24 (1) (1)	VF LE56-R24 (4)	VF LE57-R24 (4)

Note: To order with 316L stainless steel roller: replace R24 with R41 in the order numbers.

Technopolymer rollers, Ø 35 mm

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

Rubber rollers, Ø 40 mm

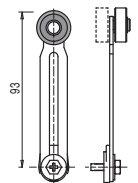
VF LE31-R5 (4) (4)	VF LE51-R5 (4) (4)	VF LE52-R5 (4)	VF LE54-R5 (4) (4)	VF LE55-R5 (1) (1)	VF LE56-R5 (4)	VF LE57-R5 (4) (4)

Rubber rollers, Ø 50 mm

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

Protruding rubber rollers, Ø 50 mm

VF LE55-R27 (1) (1)	VF LE56-R27 (4) (4)



- (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 LE53 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