

Позиционные выключатели FX

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +(727)345-47-04

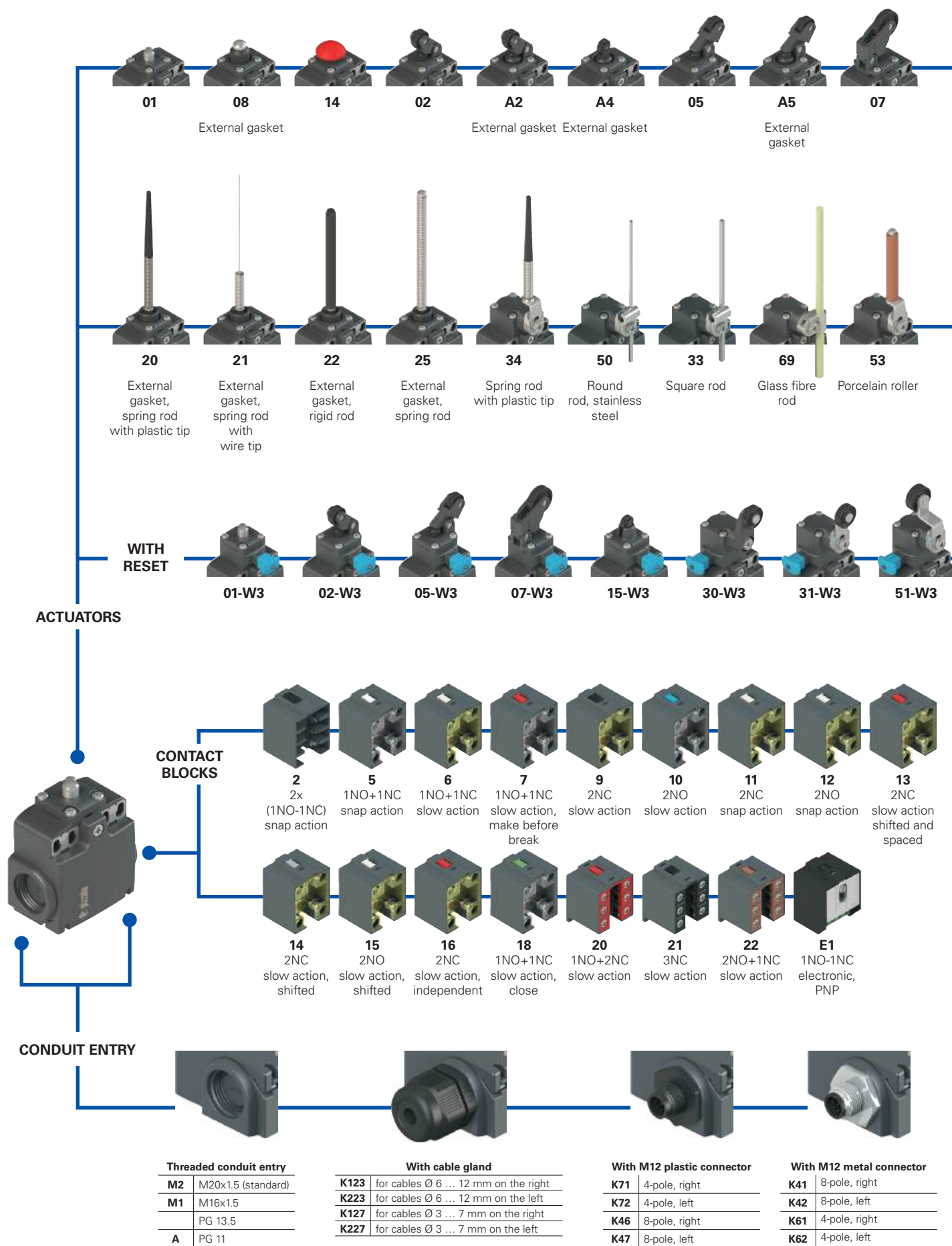
Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

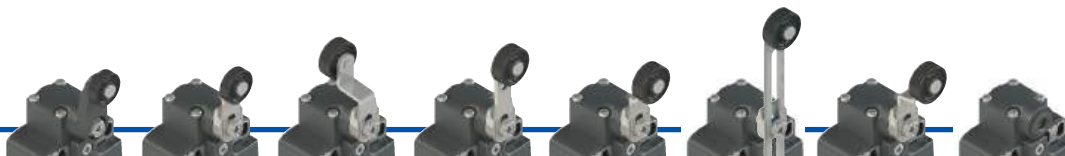
эл.почта: poz@nt-rt.ru || сайт: <https://pizzato.nt-rt.ru/>

Selection diagram





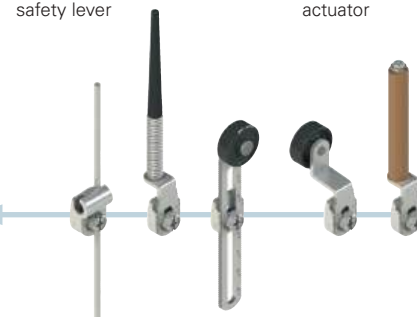
A7 External gasket
15 Roller Ø 11 mm
15-R28 Steel roller, Ø 12 mm, with self-lubrication
16 Roller Ø 20 mm
12
13 Steel roller, Ø 12 mm, with self-lubrication
76 Rope switch for signalling



30
31
51
52
54
56 Adjustable safety lever
57
38 Without actuator



52-W3
54-W3
56-W3
57-W3
38-W3 Without actuator



SEPARATE ACTUATORS
See page 89

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

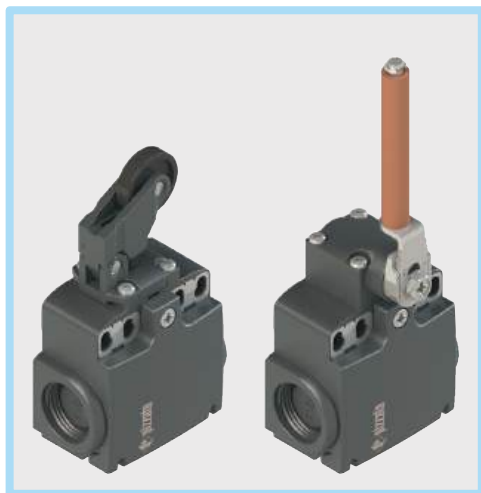
M2	M20x1.5 (standard)
M1	M16x1.5
	PG 13.5
A	PG11

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
- Hinged cover, fixed with single captive screw
- Metal plates on mounting holes of the housing
- Protection degree IP67 and up to IP69K for actuators without external gasket
- 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-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 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:

IP67 acc. to EN 60529 (with cable gland of equal or higher protection degree)

Protection degree with actuators 01, 02, 05, 07, 10, 12, 13, 14, 15, 15-R28, 16, 17, 30, 31, 33, 34, 38, 50, 51, 52, 53, 54, 56, 57, 69, 76:

IP69K acc. to ISO 20653 (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	Thermal current (I_{th}):	10 A	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			
	Rated insulation voltage (U):	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	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			
	Rated insulation voltage (U):	250 Vac 300 Vdc				
	Protection against short circuits:	type gG fuse 4 A 500 V				
	Pollution degree:	3				
with M12 connector, 8-pole	Thermal current (I_{th}):	2 A	Alternating current: AC15 (50÷60 Hz) Ue (V) 24 Ie (A) 2 Direct current: DC13 Ue (V) 24 Ie (A) 2			
	Rated insulation voltage (U):	30 Vac 36 Vdc				
	Protection against short circuits:	type gG fuse 2 A 500 V				
	Pollution degree:	3				



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) 10 A
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_o):	400 Vac (50 Hz)
Operating current (I_o):	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.
NO	3-4	NC	1-2	NC	1-2	NC	1-2	NO	1-2
NC	5-6	NO	3-4	NO	3-4	NO	3-4	NC (1°)	1-2
NC	7-8							NC (2°)	3-4
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.
NC (1°)	1-2	NO (1°)	1-2	NC, lever to the right	1-2	NC	3-4	NC	1-2
NC (2°)	3-4	NO (2°)	3-4	NC, lever to the left	3-4	NO	5-6	NO	3-4
							5-6		
							7-8		

Contact block E1
PNP

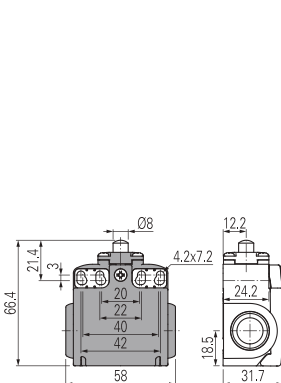
M12 connector,
4-pole

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

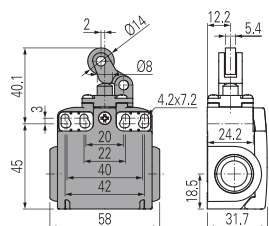
Contact type

- 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

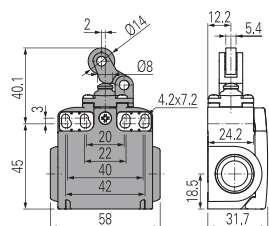


With steel roller with self-lubrication or 316L stainless steel on request



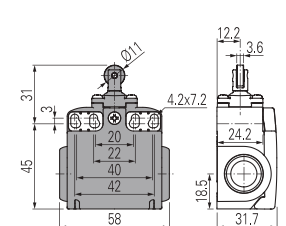
External gasket

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

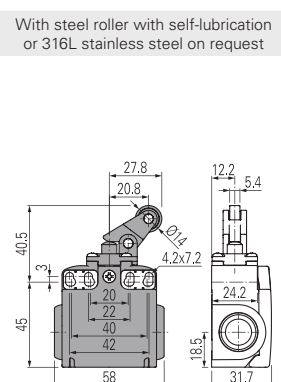


2	R	FX 201-M2	2x(1NO-1NC)	FX 202-M2	2x(1NO-1NC)	FX 2A2-M2	2x(1NO-1NC)	FX 2A4-M2	2x(1NO-1NC)
5	R	FX 501-M2	➔ 1NO+1NC	FX 502-M2	➔ 1NO+1NC	FX 5A2-M2	➔ 1NO+1NC	FX 5A4-M2	➔ 1NO+1NC
6	L	FX 601-M2	➔ 1NO+1NC	FX 602-M2	➔ 1NO+1NC	FX 6A2-M2	➔ 1NO+1NC	FX 6A4-M2	➔ 1NO+1NC
7	LO	FX 701-M2	➔ 1NO+1NC	FX 702-M2	➔ 1NO+1NC	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 231 - type 4		page 231 - type 3		page 231 - type 3		page 231 - type 5	
Actuating force		8 N (25 N ➔)		6 N (25 N ➔)		4.3 N (25 N ➔)		4.3 N (25 N ➔)	
Travel diagrams		page 232 - group 1		page 232 - group 2		page 232 - group 2		page 232 - group 1	

Contact type

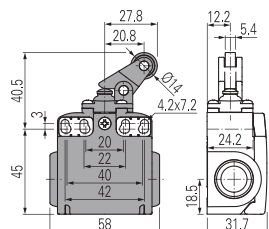
- R** = snap action
- L** = slow action
- LO** = slow action, make before break
- LS** = slow action, shifted
- LV** = slow action, shifted and spaced
- LI** = slow action, independent
- LA** = slow action, close
- ⚡** = electronic, PNP

Contact block



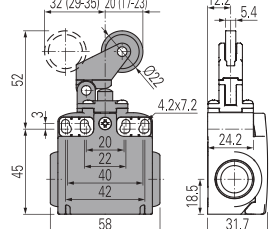
External gasket

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



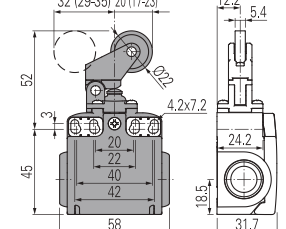
External gasket

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



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 231 - type 3		page 231 - type 3		page 231 - type 3		page 231 - type 3	
Actuating force		6 N (25 N ➔)		4.3 N (25 N ➔)		4 N (25 N ➔)		3 N (25 N ➔)	
Travel diagrams		page 232 - group 2		page 232 - group 2		page 232 - group 3		page 232 - group 3	

All values in the drawings are in mm

Accessories See page 207

➔ The 2D and 3D files are available at



Contact type		External gasket					
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 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		FX E108-M2	1NO-1NC	FX E112-M2	1NO-1NC	FX E113-M2	1NO-1NC
Max. speed		page 231 - type 4		page 231 - type 4		page 231 - type 2	
Actuating force		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	

Contact type		Roller, Ø 11 mm, technopolymer		Steel roller, Ø 12 mm, with self-lubrication With 316L stainless steel roller on request		External gasket Spring rod	
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 215-M2	2x(1NO-1NC)	FX 215-M2R28	2x(1NO-1NC)	FX 216-M2	2x(1NO-1NC)
5	R	FX 515-M2	1NO+1NC	FX 515-M2R28	1NO+1NC	FX 516-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
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
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
20	L	FX 2015-M2	1NO+2NC	FX 2015-M2R28	1NO+2NC	FX 2016-M2	1NO+2NC
21	L	FX 2115-M2	3NC	FX 2115-M2R28	3NC	FX 2116-M2	3NC
22	L	FX 2215-M2	2NO+1NC	FX 2215-M2R28	2NO+1NC	FX 2216-M2	2NO+1NC
E1		FX E115-M2	1NO-1NC	FX E115-M2R28	1NO-1NC	FX E116-M2	1NO-1NC
Max. speed		page 231 - type 2		page 231 - type 2		page 231 - type 2	
Actuating force		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	

FX 220-M2	2x(1NO-1NC)
FX 520-M2	1NO+1NC
/	/
/	/
FX 1020-M2	2NO
/	/
FX 1220-M2	2NO
/	/
/	/
FX 1820-M2	1NO+1NC
FX 2020-M2	1NO+2NC
FX 2120-M2	3NC
FX 2220-M2	2NO+1NC
FX E120-M2	1NO-1NC
Max. speed	1 m/s
Actuating force	0.07 Nm
Travel diagrams	page 232 - group 4

All values in the drawings are in mm

Accessories See page 207

➔ The 2D and 3D files are available at

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

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

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

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

		With steel roller with self-lubrication or 316L stainless steel on request		With steel roller with self-lubrication or 316L stainless steel on request			
2	R	FX 201-W3M2	2x(1NO-1NC)	FX 202-W3M2	2x(1NO-1NC)	FX 205-W3M2	2x(1NO-1NC)
6	L	FX 601-W3M2	➔ 1NO+1NC	FX 602-W3M2	➔ 1NO+1NC	FX 605-W3M2	➔ 1NO+1NC
9	L	FX 901-W3M2	➔ 2NC	FX 902-W3M2	➔ 2NC	FX 905-W3M2	➔ 2NC
10	L	FX 1001-W3M2	2NO	FX 1002-W3M2	2NO	FX 1005-W3M2	2NO
20	L	FX 2001-W3M2	➔ 1NO+2NC	FX 2002-W3M2	➔ 1NO+2NC	FX 2005-W3M2	➔ 1NO+2NC
21	L	FX 2101-W3M2	➔ 3NC	FX 2102-W3M2	➔ 3NC	FX 2105-W3M2	➔ 3NC
22	L	FX 2201-W3M2	➔ 2NO+1NC	FX 2202-W3M2	➔ 2NO+1NC	FX 2205-W3M2	➔ 2NO+1NC
Max. speed		page 231 - type 4		page 231 - type 3		page 231 - type 3	
Actuating force		4.5 N (25 N ➔)		4 N (25 N ➔)		2.5 N (25 N ➔)	
Travel diagrams		page 233 - group 1		page 233 - group 2		page 233 - group 3	

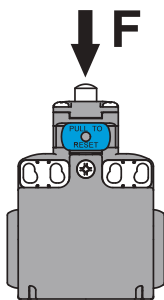
Contact type
R = snap action
L = slow action

		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	
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 ➔)		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)	
Travel diagrams		page 233 - group 1		page 233 - group 4		page 233 - group 4		page 233 - 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 ➔)		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)		0.07 Nm (0.25 Nm ➔)	
Travel diagrams		page 233 - group 4		page 233 - group 4		page 233 - group 4		page 233 - 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

Contact block

			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 232 - group 5	page 233 - group 4	

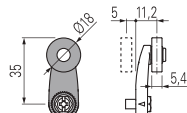
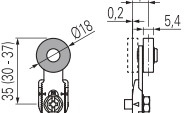
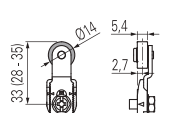
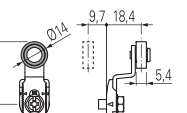
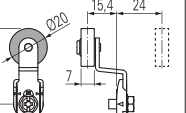
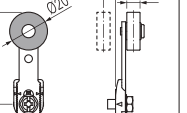
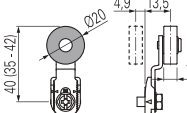
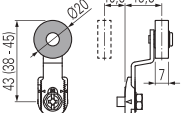
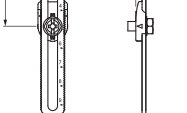
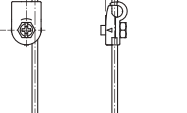
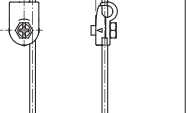
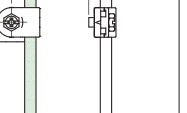
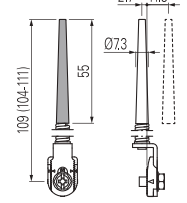
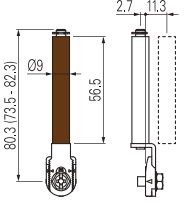
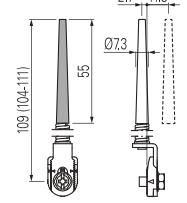
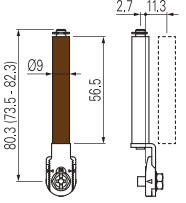
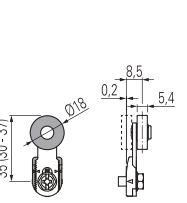
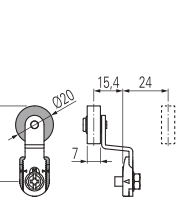
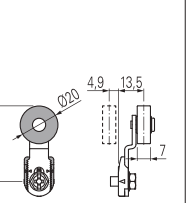
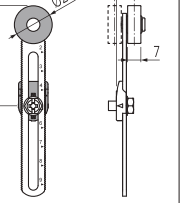
IMPORTANT

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.

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	Technopolymer roller Ø 14 mm	Technopolymer roller Ø 14 mm	Technopolymer roller Ø 20 mm	Technopolymer roller Ø 20 mm
					
VN A00KA 	VN A00KB 	VN A00KC 	VN A00KD 	VN A00KE 	VN A00KF 
Technopolymer roller Ø 20 mm	Technopolymer roller Ø 20 mm	Adjustable safety actuator with technopolymer roller	Adjustable square rod, 3x3x125 mm	Adjustable round rod Ø 3x125 mm	Adjustable glass fibre rod
					
VN A00KG 	VN A00KH 	VN A00KP 	VN A00LB	VN A00LE	VN A00LH
Spring rod with plastic tip	Porcelain roller	Technopolymer roller Ø 14 mm	Technopolymer roller Ø 14 mm	Technopolymer roller Ø 20 mm	Adjustable safety lever with technopolymer roller Ø 20 mm
		With metallic parts in stainless steel			
					
VN A00LL	VN A00LP  (2)	VN A00KB-V38 	VN A00KE-V38 	VN A00KG-V38 	VN A00KP-V38 

All values in the drawings are in mm

Accessories See page 207

→ The 2D and 3D files are available at

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

VN A00KB-R24 →	VN A00KE-R24 →	VN A00KF-R24 →	VN A00KG-R24 →	VN A00KH-R24 →	VN A00KP-R24 →

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

Technopolymer rollers, Ø 35 mm

VN A00KB-R25 → (1)	VN A00KE-R25 → (1)	VN A00KF-R25 →	VN A00KG-R25 → (1)	VN A00KH-R25 →	VN A00KP-R25 →

Rubber rollers, Ø 40 mm

VN A00KB-R5 → (1)	VN A00KE-R5 → (1)	VN A00KF-R5 →	VN A00KG-R5 → (1)	VN A00KH-R5 → (1)	VN A00KP-R5 →

Rubber rollers, Ø 50 mm

VN A00KE-R26 → (1)	VN A00KF-R26 → (1)	VN A00KG-R26 → (1)	VN A00KH-R26 → (1)	VN A00KP-R26 →

Protruding rubber rollers, Ø 50 mm

VN A00KP-R27 →

- (1) The actuator cannot be rotated to the inside because it will hit the switch head upon actuation.

- (2) The position switch obtained by assembling switch FX •38-M2 (e.g. FX 538-M2, FX 638-M2, ...) with actuator VN A00LP will not present the same travel diagrams and actuating forces as switch FX •53-E0M2V9 (e.g. FX 553-E0M2V9, FX 653-E0M2V9, ...).

Note: To check the correspondence with previous lever codes, please consult the table "Changed article codes" on page 289. Example: VF LE30 -> VN A00KA.

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: poz@nt-rt.ru || сайт: <https://pizzato.nt-rt.ru/>