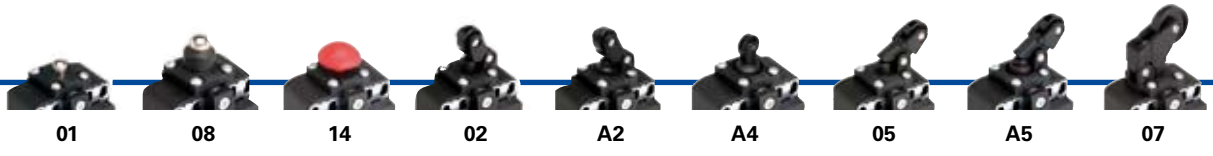
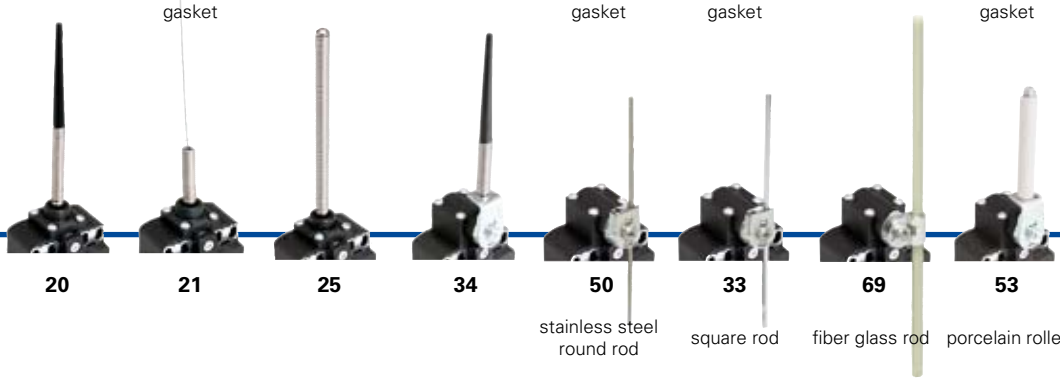
Selection diagram



01 | **08** external rubber gasket | **14** | **02** | **A2** external rubber gasket | **A4** external rubber gasket | **05** | **A5** external rubber gasket | **07**



20 | **21** | **25** | **34** | **50** stainless steel round rod | **33** square rod | **69** fiber glass rod | **53** porcelain roller

WITH RESET

01-W3 | **02-W3** | **05-W3** | **07-W3** | **15-W3** | **30-W3** | **31-W3** | **51-W3**

ACTUATORS

CONTACT BLOCKS

5 1NO+1NC snap action | **6** 1NO+1NC slow action | **7** 1NO+1NC slow action overlapped | **9** 2NC slow action | **10** 2NO slow action | **11** 2NC snap action | **12** 2NO snap action | **13** 2NC slow action shifted and spaced | **14** 2NC slow action shifted

15 2NO slow action shifted | **16** 2NC slow action independent | **18** 1NO+1NC slow action closer | **20** 1NO+2NC slow action | **21** 3NC slow action | **22** 2NO+1NC slow action | **2** 2x(1NO-1NC) snap action | **E1** 1NO-1NC electronic PNP

CONDUIT ENTRY

Threaded conduit entries

	PG 13,5 (standard)
A	PG 11
M1	M16x1,5
M2	M20x1,5

With assembled cable gland

PG 13,5	**K121**	for Ø 6 to Ø 12 mm cables range, from right
	K221	for Ø 6 to Ø 12 mm cables range, from left
	K125	for Ø 3 to Ø 7 mm cables range, from right
	K225	for Ø 3 to Ø 7 mm cables range, from left
M20x1,5	**K123**	for Ø 6 to Ø 12 mm cables range, from right
	K223	for Ø 6 to Ø 12 mm cables range, from left
	K127	for Ø 3 to Ø 7 mm cables range, from right
	K227	for Ø 3 to Ø 7 mm cables range, from left

With M12 plastic connector assembled and wired

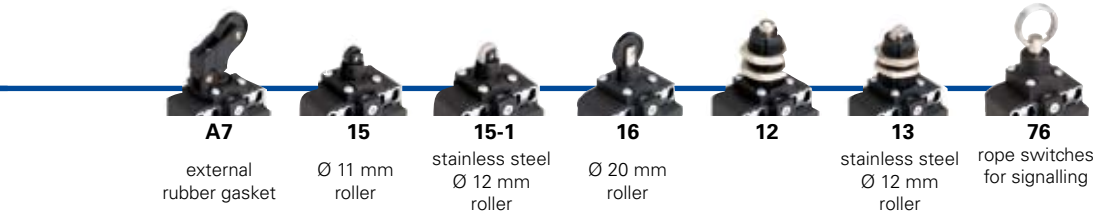
K71	4 poles from right
K72	4 poles from left
K46	8 poles from right
K47	8 poles from left

With M12 metal connector assembled and wired

K41	8 poles from right
K42	8 poles from left
K61	4 poles from right
K62	4 poles from left

product option

accessory sold separately



A7 external rubber gasket

15 Ø 11 mm roller

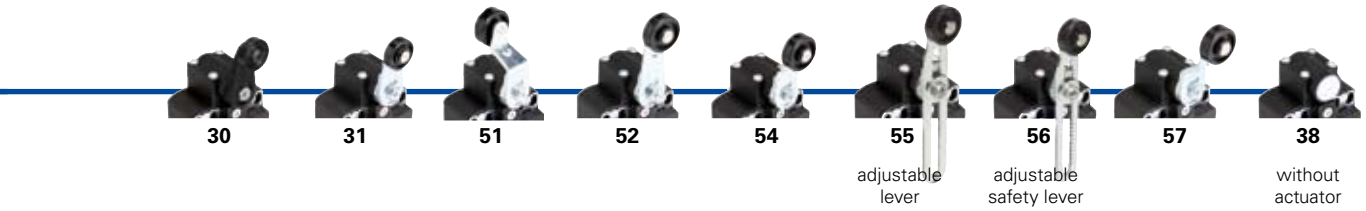
15-1 stainless steel Ø 12 mm roller

16 Ø 20 mm roller

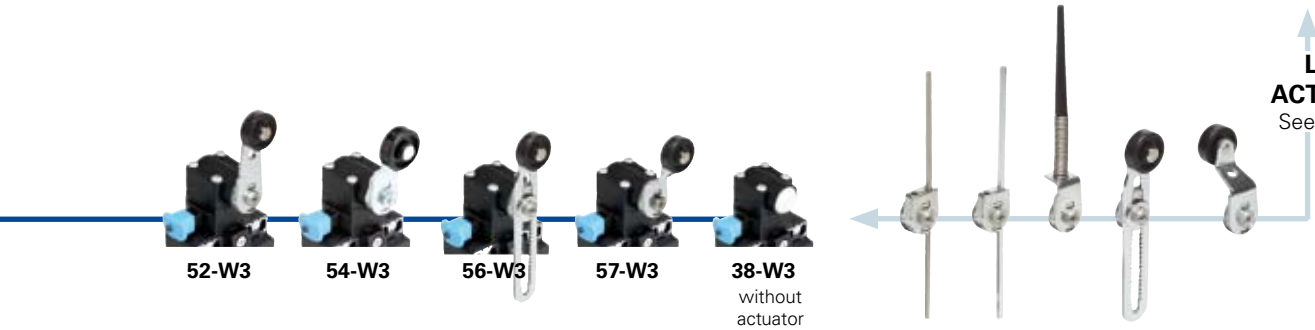
12

13 stainless steel Ø 12 mm roller

76 rope switches for signalling



30 **31** **51** **52** **54** **55** adjustable lever **56** adjustable safety lever **57** **38** without actuator



52-W3 **54-W3** **56-W3** **57-W3** **38-W3** without actuator

LOOSE ACTUATORS
See page 2/75

Code structure

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

article: **FX 502** — options: **-1W3XGM2K71**

Housing

FX	polymer housing, two conduit entries

Contact blocks

5	1NO+1NC, snap action
6	1NO+1NC, slow action
7	1NO+1NC, slow action overlapped
...	.....

Actuators

01	short plunger
02	roller lever
05	offset roller lever
...	.....

Suffix

	no suffix (standard)
1	with stainless steel roller: - Ø 12 mm for actuator A4, 15 - Ø 14 mm for actuators A2, 02, A5, 05 - Ø 20 mm for actuators 30, 31, 51, 52, 54, 55, 56, 57
2	with Ø 35 mm polymer roller (see special loose actuators on page 2/76)
3	with Ø 50 mm rubber roller (see special loose actuators on page 2/76)
4	with Ø 50 mm overhanging rubber roller (see special loose actuators on page 2/76)

Reset hooking

	without reset (standard)
W3	simultaneous reset hooking

External metallic parts

	zinc plated steel (standard)
X	stainless steel

Contacts type

	silver contacts (standard)
G	silver contacts gold plated 1 µm (contact block 2 excluded)

Preinstalled cable gland or connectors

	no cable gland or connector (standard)
K121	with right assembled cable gland suitable for Ø 6 to Ø 12 mm cables range
...	.....
K71	with 4 poles M12 plastic connector
...	.....

For the complete list of all combinations, please contact our technical office.

Threaded conduit entry

	PG 13,5 (standard)
A	PG 11
M1	M16x1,5
M2	M20x1,5

Position switches **FX** series

Main data

- Polymer housing, two conduit entries
- Protection degree IP67
- 17 contact blocks available
- 43 actuators available
- External stainless steel parts versions
- M12 assembled connector versions
- Silver contacts gold plated versions

Technical data

Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin and with double insulation ⧈
Two knock out threaded conduit entries
Protection degree: IP67 according to EN 60529

General data

Ambient temperature: from -25°C to +80°C
Version for operation in ambient temperature from -40°C to +80° C on request
Max actuation frequency: 3600 operations cycles[1]/hour
Mechanical endurance: 20 million operations cycles[1]
Assembling position: any
Driving torque for installation: see pages 7/1-7/10
(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Cross section of the conductors (flexible copper wire)

Contact blocks 20, 21, 22, 33, 34:	min.	1 x 0,34 mm²	(1 x AWG 22)
	max.	2 x 1,5 mm²	(2 x AWG 16)
Contact blocks 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 18:	min.	1 x 0,5 mm²	(1 x AWG 20)
	max.	2 x 2,5 mm²	(2 x AWG 14)
Contact block 2:	min.	1 x 0,5 mm²	(1 x AWG 20)
	max.	2 x 1,5 mm²	(2 x AWG 16)

In conformity with standards:
IEC 60947-5-1, EN 60947-5-1, EN 60947-1, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, IEC 60529, EN 60529, NFC 63-140, VDE 0660-200, VDE 0113.
Approvals:
IEC 60947-5-1, UL 508, GB14048.5-2001.

Markings and quality marks:

Approval IMQ: EG610
Approval UL: E131787
Approval CCC: 2007010305230013
Approval EZU: 1010151

In conformity with requirements requested by:
Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and Electromagnetic Compatibility 2004/108/EC.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1, VDE 0660-206.

Installation for safety applications:
Use only switches marked with the symbol ⊖. The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in the **standard EN 60947-5-1, encl. K, par. 2**. The switch must be actuated with **at least up to the positive opening travel** shown in the travels diagrams on page 7/6. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the min. force.

⚠ **If not expressly indicated in this chapter, for the right installation and the correct utilization of all articles see requirements indicated from page 7/1 to page 7/10.**

Electrical data

Utilization categories

without connector

Thermal current (Ith): 10 A
Rated insulation voltage (Ui): 500 Vac 600 Vdc
400Vac500Vdc (contact blocks 2, 11, 12, 20, 21, 22, 33, 34)
Rated impulse withstand voltage (U_{imp}): 6 kV
4 kV (contact blocks 20, 21, 22, 33, 34)
Conditional shot circuit current: 1000 A according to EN 60947-5-1
Protection against short circuits: fuse 10 A 500 V type aM
Pollution degree: 3

Alternate 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)	6	1,1	0,4

with 4 poles M12 connector

Thermal current (Ith): 4 A
Rated insulation voltage (Ui): 250 Vac 300 Vdc
Protection against short circuits: fuse 4 A 500 V type gG
Pollution degree: 3

Alternate 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)	4	1,1	0,4

with 8 poles M12 connector

Thermal current (Ith): 2 A
Rated insulation voltage (Ui): 30 Vac 36 Vdc
Protection against short circuits: fuse 2 A 500 V type gG
Pollution degree: 3

Alternate current: AC15 (50...60 Hz)

Ue (V)	24
Ie (A)	2

Direct current: DC13

Ue (V)	24
Ie (A)	2

Data type approved by IMQ, CCC and EZU

Rated insulation voltage (Ui): 500 Vac
400 Vac (for contact blocks 2, 11, 12, 20, 21, 22, 33, 34)
Thermal current (Ith): 10 A
Protection against short circuits: fuse 10 A 500 V type aM
Rated impulse withstand voltage (U_{imp}): 6 kV
4 kV (for contact blocks 20, 21, 22, 33, 34)
Protection degree: IP67
MV terminals (screw clamps)
Pollution degree 3
Utilization category: AC15
Operation voltage (Ue): 400 Vac (50 Hz)
Operation current (Ie): 3 A
Forms of the contact element: Za, Zb, Za+Za, Y+Y, X+X, Y+Y+X, Y+Y+Y, Y+X+X
Positive opening of contacts on contact block 5, 6, 7, 9, 11, 13, 14, 16, 18, 20, 21, 22, 33, 34

In conformity with standards: EN 60947-1, EN 60947-5-1+ A1:2009, fundamental requirements of the Low Voltage Directive 2006/95/CE.

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

Data type approved by UL

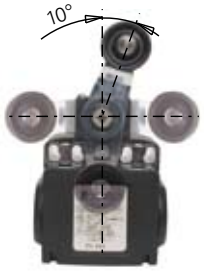
Utilization categories Q300 (69 VA, 125-250 Vdc)
A600 (720 VA, 120-600 Vac)
Data of the housing type 1, 4X "indoor use only", 12, 13
For all contact blocks except 2 and 3 use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7,1 lb in (0.8 Nm).
For contact blocks 2 and 3 use 60 or 75 °C copper (Cu) conductor and wire size No. 14 AWG. Terminal tightening torque of 12 lb in (1.4 Nm).

In conformity with standard: UL 508

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

Adjustable levers

In switches with revolving lever it is possible to adjust the lever with 10° steps for the whole 360° range. The positive movement transmission is always guaranteed thanks to the particular geometrical coupling between the lever and the revolving shaft as prescribed for safety applications by the German standard BG-GS-ET-15.



Overturning levers

It's possible to fasten the lever on switches on straight or reverse side, maintaining the positive coupling.
In this way it is possible to obtain two different work plans of the lever.

Rotating heads

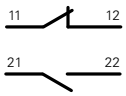
In all switches, it is possible to rotate the head in 90° steps.

Working operation of contact block 16 with independent contacts

The contact block 16 has two NC contacts**, both with positive opening** activated independently according to the lever turning direction.

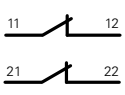
Lever turned to left

Contacts diagram



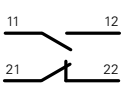
Lever not turned

Contacts diagram



Lever turned to right

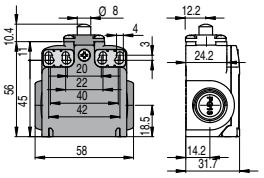
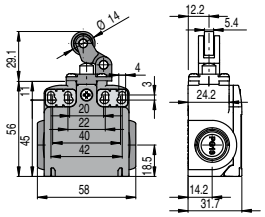
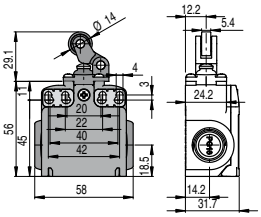
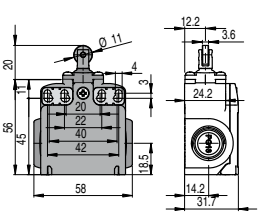
Contacts diagram

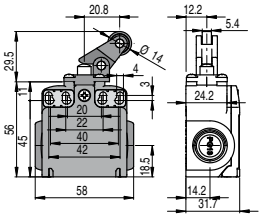
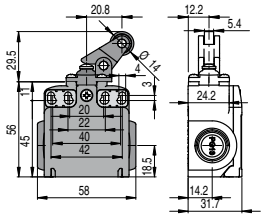
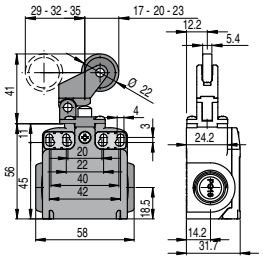
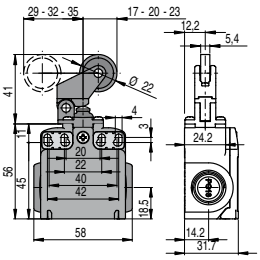


Position switches **FX** series

Contacts type:

- R = snap action
- L = slow action
- LO = slow action overlapped
- LS = slow action shifted
- LV = slow action shifted and spaced
- LI = slow action independent
- LA = slow action closer
- = electronic PNP

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

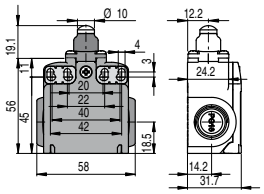
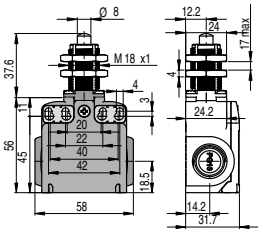
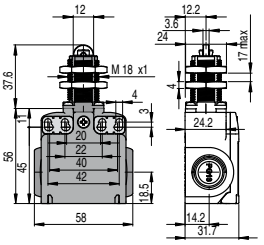
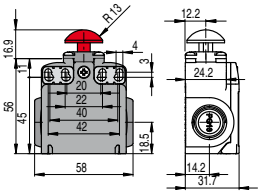
Contact blocks									
		With stainless steel roller on request 		With external rubber gasket With stainless steel roller on request 				With external rubber gasket 	
5	R	FX 505	1NO+1NC	FX 5A5	1NO+1NC	FX 507	1NO+1NC	FX 5A7	1NO+1NC
6	L	FX 605	1NO+1NC	FX 6A5	1NO+1NC	FX 607	1NO+1NC	FX 6A7	1NO+1NC
7	LO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

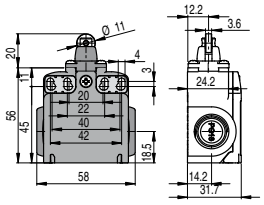
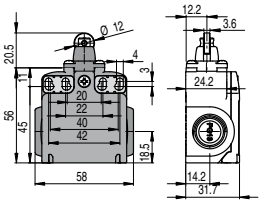
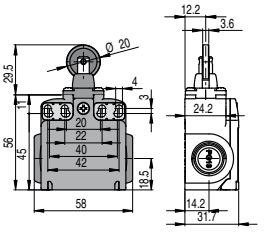
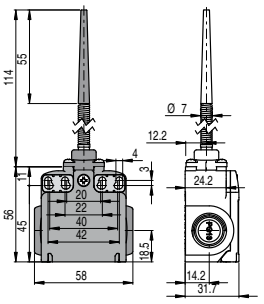
Accessories See page 6/1

All measures in the drawings are in mm

Contacts type:

R = snap action
L = slow action
LO = slow action overlapped
LS = slow action shifted
LV = slow action shifted and spaced
LI = slow action independent
LA = slow action closer
= electronic PNP

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

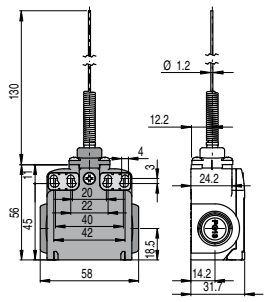
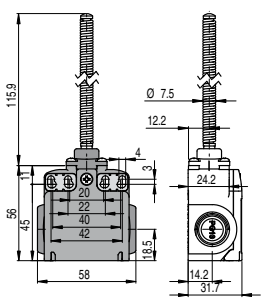
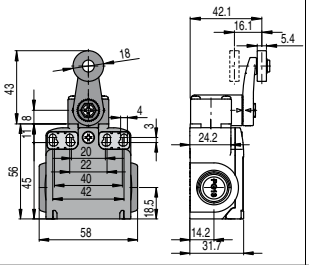
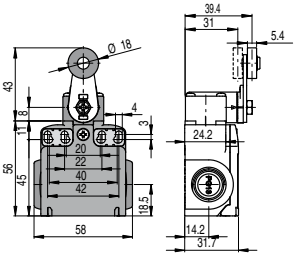
Contact blocks		Ø 11 mm polymer roller	Ø 12 mm stainless steel roller		With external rubber gasket
					
5	R	FX 515 1NO+1NC	FX 515-1 1NO+1NC	FX 516 1NO+1NC	FX 520 1NO+1NC
6	L	FX 615 1NO+1NC	FX 615-1 1NO+1NC	FX 616 1NO+1NC	
7	LO	FX 715 1NO+1NC	FX 715-1 1NO+1NC	FX 716 1NO+1NC	
9	L	FX 915 2NC	FX 915-1 2NC	FX 916 2NC	
10	L	FX 1015 2NO	FX 1015-1 2NO	FX 1016 2NO	FX 1020 2NO
11	R	FX 1115 2NC	FX 1115-1 2NC	FX 1116 2NC	
12	R	FX 1215 2NO	FX 1215-1 2NO	FX 1216 2NO	FX 1220 2NO
13	LV	FX 1315 2NC	FX 1315-1 2NC	FX 1316 2NC	
14	LS	FX 1415 2NC	FX 1415-1 2NC	FX 1416 2NC	
15	LS	FX 1515 2NO	FX 1515-1 2NO	FX 1516 2NO	
18	LA	FX 1815 1S+1Ö	FX 1815-1 1S+1Ö	FX 1816 1S+1Ö	FX 1820 1NO+1NC
20	L	FX 2015 1NO+2NC	FX 2015-1 1NO+2NC	FX 2016 1NO+2NC	FX 2020 1NO+2NC
21	L	FX 2115 3NC	FX 2115-1 3NC	FX 2116 3NC	FX 2120 3NC
22	L	FX 2215 2NO+1NC	FX 2215-1 2NO+1NC	FX 2216 2NO+1NC	FX 2220 2NO+1NC
2	R	FX 215 2x(1NO-1NC)	FX 215-1 2x(1NO-1NC)	FX 216 2x(1NO-1NC)	FX 220 2x(1NO-1NC)
E1		FX E115 1NO-1NC	FX E115-1 1NO-1NC	FX E116 1NO-1NC	FX E120 1NO-1NC
Max speed		page 7/5 - type 2	page 7/5 - type 2	page 7/5 - type 2	1 m/s
Min. force		8 N (25 N ⊖)	8 N (25 N ⊖)	8 N (25 N ⊖)	0,07 Nm
Travel diagrams		page 7/6 - group 1	page 7/6 - group 1	page 7/6 - group 1	page 7/6 - group 4

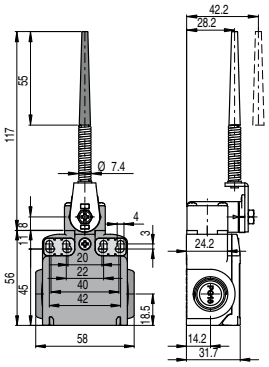
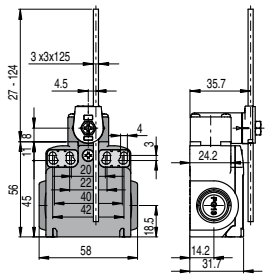
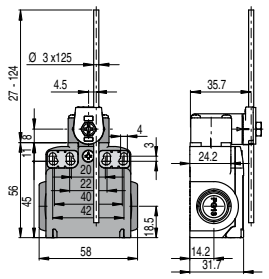
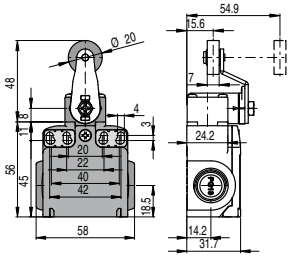
Items with code on the **green** background are available in stock

Position switches **FX** series

Contacts type:

- R = snap action
- L = slow action
- LO = slow action overlapped
- LS = slow action shifted
- LV = slow action shifted and spaced
- LI = slow action independent
- LA = slow action closer
- = electronic PNP

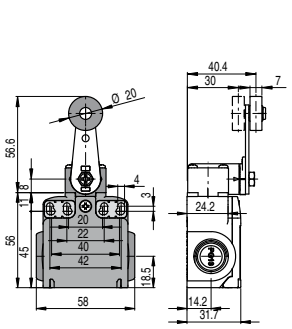
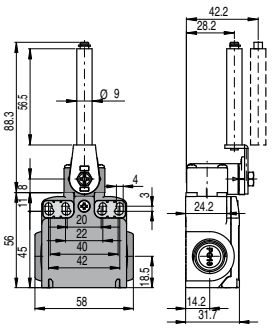
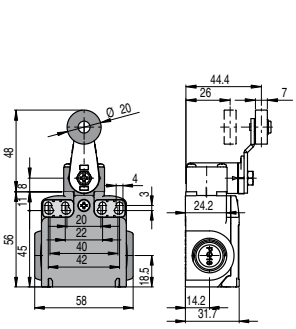
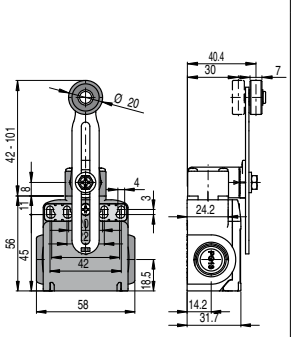
Contact blocks		With external rubber gasket		With external rubber gasket		With Ø 20 mm stainless steel roller on request		Other rollers available. See page 2/76	
									
5	R	FX 521	1NO+1NC	FX 525	1NO+1NC	FX 530	1NO+1NC	FX 531	1NO+1NC
6	L					FX 630	1NO+1NC	FX 631	1NO+1NC
7	LO					FX 730	1NO+1NC	FX 731	1NO+1NC
9	L					FX 930	2NC	FX 931	2NC
10	L	FX 1021	2NO	FX 1025	2NO	FX 1030	2NO	FX 1031	2NO
11	R					FX 1130	2NC	FX 1131	2NC
12	R	FX 1221	2NO	FX 1225	2NO	FX 1230	2NO	FX 1231	2NO
13	LV					FX 1330	2NC	FX 1331	2NC
14	LS					FX 1430	2NC	FX 1431	2NC
15	LS					FX 1530	2NO	FX 1531	2NO
16	LI					FX 1630	2NC	FX 1631	2NC
18	LA	FX 1821	1NO+1NC	FX 1825	1NO+1NC	FX 1830	1NO+1NC	FX 1831	1NO+1NC
20	L	FX 2021	1NO+2NC	FX 2025	1NO+2NC	FX 2030	1NO+2NC	FX 2031	1NO+2NC
21	L	FX 2121	3NC	FX 2125	3NC	FX 2130	3NC	FX 2131	3NC
22	L	FX 2221	2NO+1NC	FX 2225	2NO+1NC	FX 2230	2NO+1NC	FX 2231	2NO+1NC
2	R	FX 221	2x(1NO-1NC)	FX 225	2x(1NO-1NC)	FX 230	2x(1NO-1NC)	FX 231	2x(1NO-1NC)
E1		FX E121	1NO-1NC	FX E125	1NO-1NC	FX E130	1NO-1NC	FX E131	1NO-1NC
Max speed		1 m/s		1 m/s		page 7/5 - type 1		page 7/5 - type 1	
Min. force		0,07 Nm		0,12 Nm		0,06 Nm (0,25 Nm)		0,06 Nm (0,25 Nm)	
Travel diagrams		page 7/6 - group 4		page 7/6 - group 4		page 7/6 - group 5		page 7/6 - group 5	

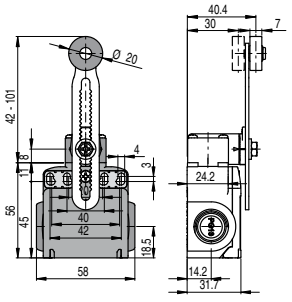
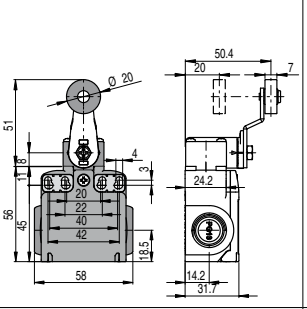
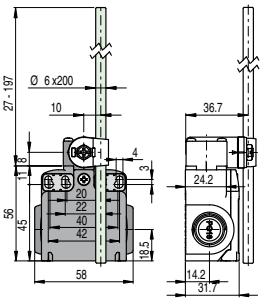
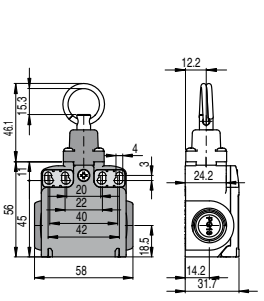
Contact blocks		3x3 mm square rod				Ø 3 mm stainless steel round rod		Other rollers available. See page 2/76	
									
5	R	FX 533	1NO+1NC	FX 534	1NO+1NC	FX 550	1NO+1NC	FX 551	1NO+1NC
6	L	FX 633	1NO+1NC	FX 634	1NO+1NC	FX 650	1NO+1NC	FX 651	1NO+1NC
7	LO	FX 733	1NO+1NC	FX 734	1NO+1NC	FX 750	1NO+1NC	FX 751	1NO+1NC
9	L	FX 933	2NC	FX 934	2NC	FX 950	2NC	FX 951	2NC
10	L	FX 1033	2NO	FX 1034	2NO	FX 1050	2NO	FX 1051	2NO
11	R	FX 1133	2NC	FX 1134	2NC	FX 1150	2NC	FX 1151	2NC
12	R	FX 1233	2NO	FX 1234	2NO	FX 1250	2NO	FX 1251	2NO
13	LV	FX 1333	2NC	FX 1334	2NC	FX 1350	2NC	FX 1351	2NC
14	LS	FX 1433	2NC	FX 1434	2NC	FX 1450	2NC	FX 1451	2NC
15	LS	FX 1533	2NO	FX 1534	2NO	FX 1550	2NO	FX 1551	2NO
16	LI	FX 1633	2NC	FX 1634	2NC	FX 1650	2NC	FX 1651	2NC
18	LA	FX 1833	1S+1Ö	FX 1834	1S+1Ö	FX 1850	1S+1Ö	FX 1851	1NO+1NC
20	L	FX 2033	1NO+2NC	FX 2034	1NO+2NC	FX 2050	1NO+2NC	FX 2051	1NO+2NC
21	L	FX 2133	3NC	FX 2134	3NC	FX 2150	3NC	FX 2151	3NC
22	L	FX 2233	2NO+1NC	FX 2234	2NO+1NC	FX 2250	2NO+1NC	FX 2251	2NO+1NC
2	R	FX 233	2x(1NO-1NC)	FX 234	2x(1NO-1NC)	FX 250	2x(1NO-1NC)	FX 251	2x(1NO-1NC)
E1		FX E133	1NO-1NC	FX E134	1NO-1NC	FX E150	1NO-1NC	FX E151	1NO-1NC
Max speed		1,5 m/s		1,5 m/s		1,5 m/s		page 7/5 - type 1	
Min. force		0,06 Nm		0,06 Nm		0,06 Nm		0,06 Nm (0,25 Nm)	
Travel diagrams		page 7/6 - group 5		page 7/6 - group 5		page 7/6 - group 5		page 7/6 - group 5	

Accessories See page 6/1

Contacts type:

R = snap action
L = slow action
LO = slow action overlapped
LS = slow action shifted
LV = slow action shifted and spaced
LI = slow action independent
LA = slow action closer
= electronic PNP

Contact blocks		Other rollers available. See page 2/76	Porcelain roller	Other rollers available. See page 2/76	Other rollers available. See page 2/76
					
5	R	FX 552 → 1NO+1NC	FX 553-E0V9 → 1NO+1NC	FX 554 → 1NO+1NC	FX 555 → (1) 1NO+1NC
6	L	FX 652 → 1NO+1NC	FX 653-E0V9 → 1NO+1NC	FX 654 → 1NO+1NC	FX 655 → (1) 1NO+1NC
7	LO	FX 752 → 1NO+1NC	FX 753-E0V9 → 1NO+1NC	FX 754 → 1NO+1NC	FX 755 → (1) 1NO+1NC
9	L	FX 952 → 2NC	FX 953-E0V9 → 2NC	FX 954 → 2NC	FX 955 → (1) 2NC
10	L	FX 1052 2NO	FX 1053-E0V9 2NO	FX 1054 2NO	FX 1055 2NO
11	R	FX 1152 → 2NC		FX 1154 → 2NC	FX 1155 → (1) 2NC
12	R	FX 1252 2NO	FX 1253-E0V9 2NO	FX 1254 2NO	FX 1255 2NO
13	LV	FX 1352 → 2NC	FX 1353-E0V9 → 2NC	FX 1354 → 2NC	FX 1355 → (1) 2NC
14	LS	FX 1452 → 2NC	FX 1453-E0V9 → 2NC	FX 1454 → 2NC	FX 1455 → (1) 2NC
15	LS	FX 1552 2NO	FX 1553-E0V9 2NO	FX 1554 2NO	FX 1555 2NO
16	LI	FX 1652 → 2NC		FX 1654 → 2NC	FX 1655 → (1) 2NC
18	LA	FX 1852 → 1S+1Ö	FX 1853-E0V9 → 1S+1Ö	FX 1854 → 1S+1Ö	FX 1855 → (1) 1S+1Ö
20	L	FX 2052 → 1NO+2NC	FX 2053-E0V9 → 1NO+2NC	FX 2054 → 1NO+2NC	FX 2055 → (1) 1NO+2NC
21	L	FX 2152 → 3NC	FX 2153-E0V9 → 3NC	FX 2154 → 3NC	FX 2155 → (1) 3NC
22	L	FX 2252 → 2NO+1NC	FX 2253-E0V9 → 2NO+1NC	FX 2254 → 2NO+1NC	FX 2255 → (1) 2NO+1NC
2	R	FX 252 2x(1NO-1NC)	FX 253-E0 2x(1NO-1NC)	FX 254 2x(1NO-1NC)	FX 255 2x(1NO-1NC)
E1		FX E152 1NO-1NC	FX E153-E0V9 1NO-1NC	FX E154 1NO-1NC	FX E155 1NO-1NC
Max speed		page 7/5 - type 1	0,5 m/s	page 7/5 - type 1	page 7/5 - type 1
Min. force		0,06 Nm (0,25 Nm →)	0,03 Nm (0,25 Nm →)	0,06 Nm (0,25 Nm →)	0,06 Nm (0,25 Nm →)
Travel diagrams		page 7/6 - group 5	page 7/6 - group 6	page 7/6 - group 5	page 7/6 - group 5

Contact blocks		Other rollers available. See page 2/76	Other rollers available. See page 2/76	Fiber glass rod	Rope switches for signalling
					
5	R	FX 556 → 1NO+1NC	FX 557 → 1NO+1NC	FX 569 1NO+1NC	FX 576 1NO+1NC
6	L	FX 656 → 1NO+1NC	FX 657 → 1NO+1NC	FX 669 1NO+1NC	FX 676 1NO+1NC
7	LO	FX 756 → 1NO+1NC	FX 757 → 1NO+1NC	FX 769 1NO+1NC	FX 776 1NO+1NC
9	L	FX 956 → 2NC	FX 957 → 2NC	FX 969 2NC	FX 976 2NO
10	L	FX 1056 2NO	FX 1057 2NO	FX 1069 2NO	FX 1076 2NC
11	R	FX 1156 → 2NC	FX 1157 → 2NC	FX 1169 2NC	FX 1176 2NO
12	R	FX 1256 2NO	FX 1257 2NO	FX 1269 2NO	FX 1276 2NC
13	LV	FX 1356 → 2NC	FX 1357 → 2NC	FX 1369 2NC	FX 1376 2NO
14	LS	FX 1456 → 2NC	FX 1457 → 2NC	FX 1469 2NC	FX 1476 2NO
15	LS	FX 1556 2NO	FX 1557 2NO	FX 1569 2NO	FX 1576 2NC
16	LI	FX 1656 → 2NC	FX 1657 → 2NC	FX 1669 2NC	
18	LA	FX 1856 → 1S+1Ö	FX 1857 → 1NC+1NO	FX 1869 1NC+1NO	FX 1876 1NO+1NC
20	L	FX 2056 → 1NO+2NC	FX 2057 → 1NO+2NC	FX 2069 1NO+2NC	FX 2076 2NO+1NC
21	L	FX 2156 → 3NC	FX 2157 → 3NC	FX 2169 3NC	FX 2176 3NO
22	L	FX 2256 → 2NO+1NC	FX 2257 → 2NO+1NC	FX 2269 2NO+1NC	FX 2276 1NO+2NC
2	R	FX 256 2x(1NO-1NC)	FX 257 2x(1NO-1NC)	FX 269 2x(1NO-1NC)	FX 276 2x(1NO-1NC)
E1		FX E156 1NO-1NC	FX E157 1NO-1NC	FX E169 1NO-1NC	
Max speed		page 7/5 - type 1	page 7/5 - type 1	1,5 m/s	0,5 m/s
Min. force		0,06 Nm (0,25 Nm →)	0,06 Nm (0,25 Nm →)	0,06 Nm	initial 20 N - final 40 N
Travel diagrams		page 7/6 - group 5	page 7/6 - group 5	page 7/6 - group 5	page 7/6 - group 7

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

(1) Positive opening only with lever adjusted on the max. See page 2/75.

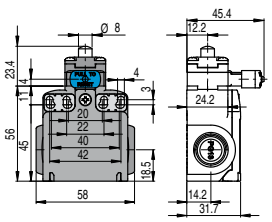
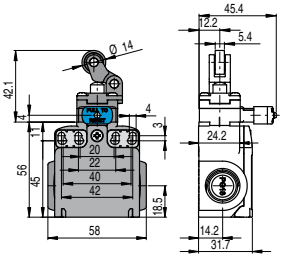
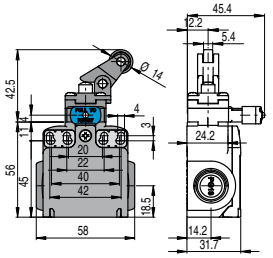
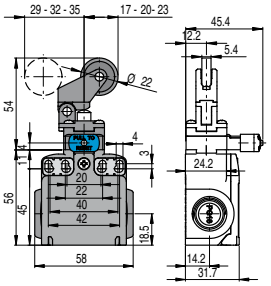
Position switches **FX** series with reset

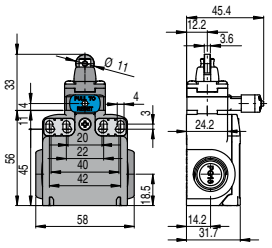
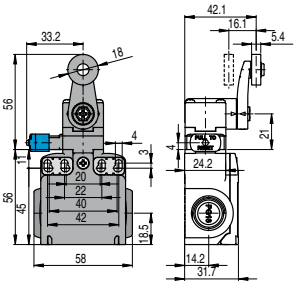
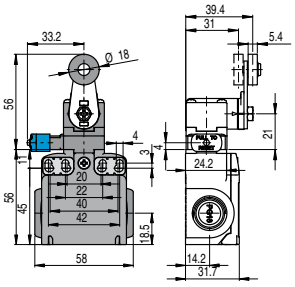
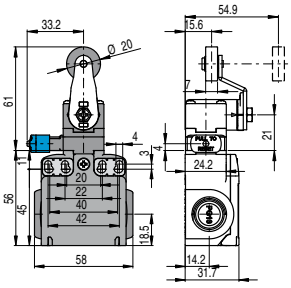
Pizzato Elettrica has developed a reset device code W3 to make perfectly simultaneous the actuator and the contact block tripping. The new device is a block inserted between the switch body and the head, and could be rotated independently from this last one. This new device has following advantages:

* The reset device integrate in any standard actuation head
* Contact blocks with snap action are no more necessary because the tripping movement is made by the reset device itself
* The reset device can be rotated independently from the head for the maximum flexibility during the assembling.

Contacts type:

R = snap action
L = slow action

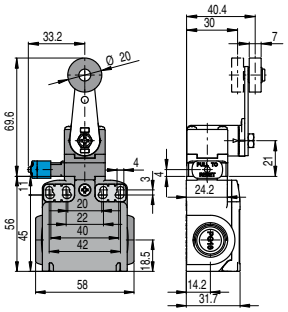
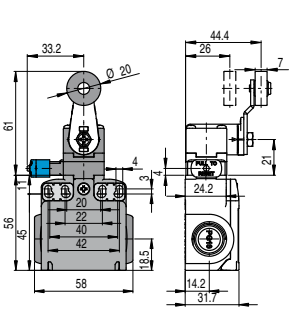
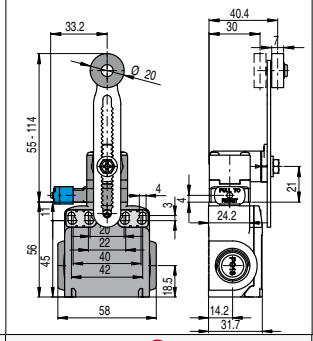
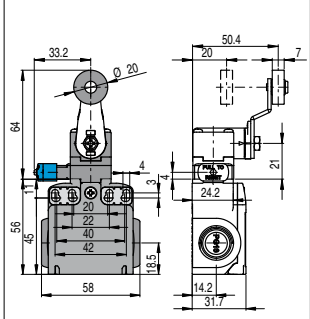
Contact blocks					
			With stainless steel roller on request 	With stainless steel roller on request 	
6	L	FX 601-W3 1NO+1NC	FX 602-W3 1NO+1NC	FX 605-W3 1NO+1NC	FX 607-W3 1NO+1NC
9	L	FX 901-W3 2NC	FX 902-W3 2NC	FX 905-W3 2NC	FX 907-W3 2NC
10	L	FX 1001-W3 2NO	FX 1002-W3 2NO	FX 1005-W3 2NO	FX 1007-W3 2NO
20	L	FX 2001-W3 1NO+2NC	FX 2002-W3 1NO+2NC	FX 2005-W3 1NO+2NC	FX 2007-W3 1NO+2NC
21	L	FX 2101-W3 3NC	FX 2102-W3 3NC	FX 2105-W3 3NC	FX 2107-W3 3NC
22	L	FX 2201-W3 2NO+1NC	FX 2202-W3 2NO+1NC	FX 2205-W3 2NO+1NC	FX 2207-W3 2NO+1NC
2	R	FX 201-W3 2NO+2NC	FX 202-W3 2NO+2NC	FX 205-W3 2NO+2NC	FX 207-W3 2NO+2NC
Max speed		page 7/5 - type 4	page 7/5 - type 3	page 7/5 - type 3	page 7/5 - type 3
Min. force		8 N (25 N →)	6 N (25 N →)	6 N (25 N →)	4 N (25 N →)
Travel diagrams		page 7/7 - group 1	page 7/7 - group 2	page 7/7 - group 2	page 7/7 - group 3

		With stainless steel roller on request 	With Ø 20 mm stainless steel roller on request 	Other rollers available. See page 2/76 	Other rollers available. See page 2/76 
6	L	FX 615-W3 1NO+1NC	FX 630-W3 1NO+1NC	FX 631-W3 1NO+1NC	FX 651-W3 1NO+1NC
9	L	FX 915-W3 2NC	FX 930-W3 2NC	FX 931-W3 2NC	FX 951-W3 2NC
10	L	FX 1015-W3 2NO	FX 1030-W3 2NO	FX 1031-W3 2NO	FX 1051-W3 2NO
20	L	FX 2015-W3 1NO+2NC	FX 2030-W3 1NO+2NC	FX 2031-W3 1NO+2NC	FX 2051-W3 1NO+2NC
21	L	FX 2115-W3 3NC	FX 2130-W3 3NC	FX 2131-W3 3NC	FX 2151-W3 3NC
22	L	FX 2215-W3 2NO+1NC	FX 2230-W3 2NO+1NC	FX 2231-W3 2NO+1NC	FX 2251-W3 2NO+1NC
2	R	FX 215-W3 2NO+2NC	FX 230-W3 2NO+2NC	FX 231-W3 2NO+2NC	FX 251-W3 2NO+2NC
Max speed		page 7/5 - type 2	page 7/5 - type 1	page 7/5 - type 1	page 7/5 - type 1
Min. force		8 N (25 N →)	0,06 Nm (0,25 Nm →)	0,06 Nm (0,25 Nm →)	0,06 Nm (0,25 Nm →)
Travel diagrams		page 7/7 - group 1	page 7/7 - group 4	page 7/7 - group 4	page 7/7 - group 4

Accessories See page 6/1

Contacts type:

R = snap action
L = slow action

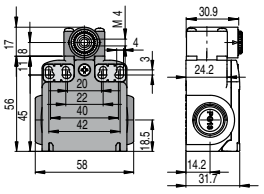
Contact blocks		Other rollers available. See page 2/76	Other rollers available. See page 2/76	Other rollers available. See page 2/76	Other rollers available. See page 2/76
					
6	L	FX 652-W3 → 1NO+1NC	FX 654-W3 → 1NO+1NC	FX 656-W3 → 1NO+1NC	FX 657-W3 → 1NO+1NC
9	L	FX 952-W3 → 2NC	FX 954-W3 → 2NC	FX 956-W3 → 2NC	FX 957-W3 → 2NC
10	L	FX 1052-W3 2NO	FX 1054-W3 2NO	FX 1056-W3 2NO	FX 1057-W3 2NO
20	L	FX 2052-W3 → 1NO+2NC	FX 2054-W3 → 1NO+2NC	FX 2056-W3 → 1NO+2NC	FX 2057-W3 → 1NO+2NC
21	L	FX 2152-W3 → 3NC	FX 2154-W3 → 3NC	FX 2156-W3 → 3NC	FX 2157-W3 → 3NC
22	L	FX 2252-W3 → 2NO+1NC	FX 2254-W3 → 2NO+1NC	FX 2256-W3 → 2NO+1NC	FX 2257-W3 → 2NO+1NC
2	R	FX 252-W3 2NO+2NC	FX 254-W3 2NO+2NC	FX 256-W3 2NO+2NC	FX 257-W3 2NO+2NC
Max speed		page 7/5 - type 1	page 7/5 - type 1	page 7/5 - type 1	page 7/5 - type 1
Min. force		0,06 Nm (0,25 Nm →)	0,06 Nm (0,25 Nm →)	0,06 Nm (0,25 Nm →)	0,06 Nm (0,25 Nm →)
Travel diagrams		page 7/7 - group 4	page 7/7 - group 4	page 7/7 - group 4	page 7/7 - group 4

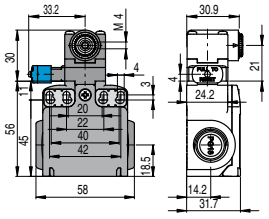
Items with code on the **green** background are available in stock

Position switches with revolving lever without actuator

Contacts type:

- R = snap action
- L = slow action
- LO = slow action overlapped
- LS = slow action shifted
- LV = slow action shifted and spaced
- LI = slow action independent
- LA = slow action closer
- = electronic PNP





Contact blocks				With manual reset knob	
5	R	FX 538	1NO+1NC		
6	L	FX 638	1NO+1NC	FX 638-W3	1NO+1NC
7	LO	FX 738	1NO+1NC		
9	L	FX 938	2NC	FX 938-W3	2NC
10	L	FX 1038	2NO	FX 1038-W3	2NO
11	R	FX 1138	2NC		
12	R	FX 1238	2NO		
13	LV	FX 1338	2NC		
14	LS	FX 1438	2NC		
15	LS	FX 1538	2NO		
16	LI	FX 1638	2NC		
18	LA	FX 1838	1NO+1NC		
20	L	FX 2038	1NO+2NC	FX 2038-W3	1NO+2NC
21	L	FX 2138	3NC	FX 2138-W3	3NC
22	L	FX 2238	2NO+1NC	FX 2238-W3	2NO+1NC
2	R	FX 238	2x(1NO-1NC)	FX 238-W3	2NO+2NC
E1		FX E138	1NO-1NC		
Min. force		0,06 Nm (0,25 Nm ⊖)		0,06 Nm (0,25 Nm ⊖)	
Travel diagrams		page 7/6 - group 5		page 7/7 - group 4	

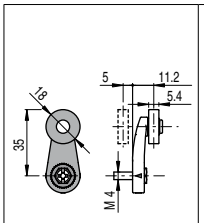
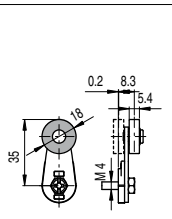
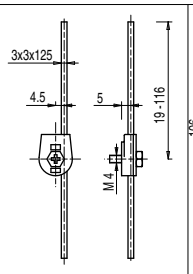
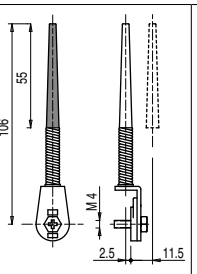
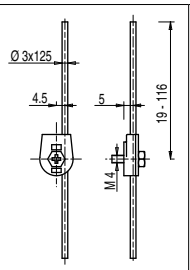
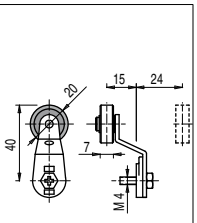
IMPORTANT

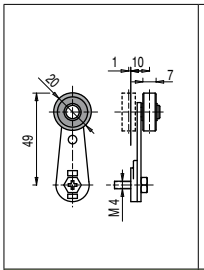
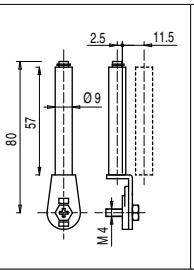
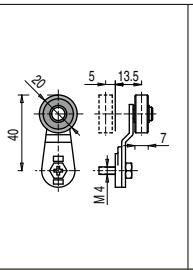
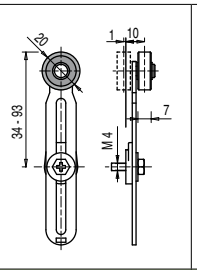
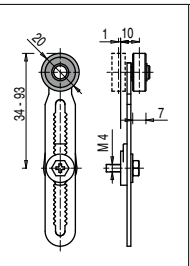
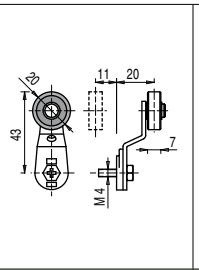
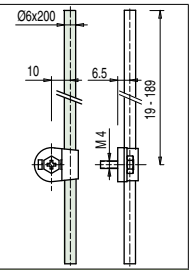
For safety applications: join only switches and actuators marked with symbol ⊖.

For more information about safety applications see page 7/1.

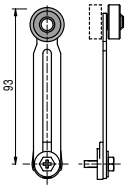
Loose actuators

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

Polymer roller Ø 18 mm	Polymer roller Ø 18 mm	Adjustable square rod 3x3x125 mm	Flexible rod actuator	Adjustable round rod Ø 3x125 mm	Polymer roller Ø 20 mm
					
VF LE30 ⊖	VF LE31 ⊖	VF LE33	VF LE34	VF LE50	VF LE51 ⊖

Polymer roller Ø 20 mm	Porcelain roller	Polymer roller Ø 20 mm	Adjustable actuator with polymer roller	Adjustable safety actuator with polymer roller	Polymer roller Ø 20 mm	Adjustable fiber glass rod
						
VF LE52 ⊖	VF LE53 ⊖ (2)	VF LE54 ⊖	VF LE55 ⊖ (1)	VF LE56 ⊖	VF LE57 ⊖	VF LE69

- Only orders for multiple quantities of the packs are accepted.
- (1) Actuator VF LE55 suits to safety applications only if adjusted to its max length, as you can see in figure beside. If you need an adjustable lever for safety applications, use the adjustable safety lever VF LE56.
- (2) The position switch obtained by assembling the switch FX •38 (e.g. FX 538, FX 638) with the actuator VF LE53 will not present the same travel diagrams and actuating forces as the position switch FX •53-E0V9 (e.g. FX 553-E0V9, FX 653-E0V9...).
- (4) The actuator cannot be oriented to inside direction because it will mechanically interfere with the switch head.

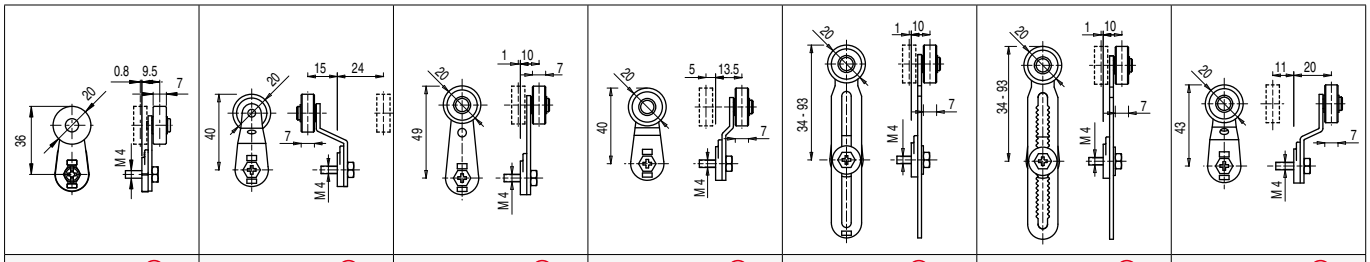


Accessories See page 6/1

Special loose actuators

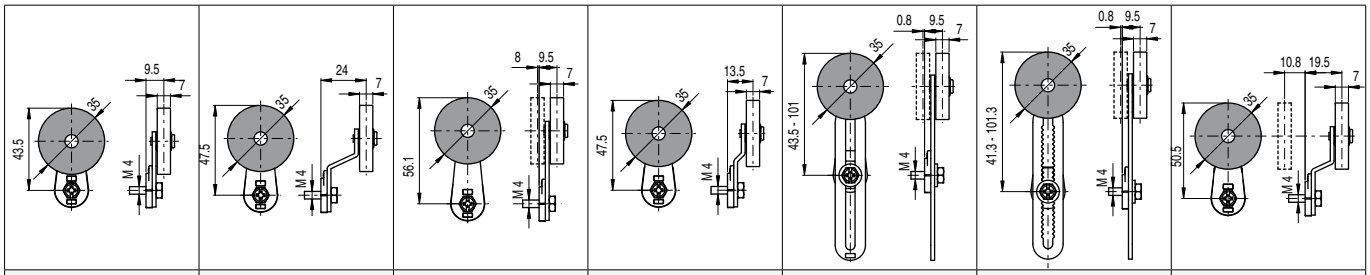
IMPORTANT: These loose actuators can be used with items of series FR, FM, FX, FZ, FK only.

Ø 20 mm stainless steel rollers



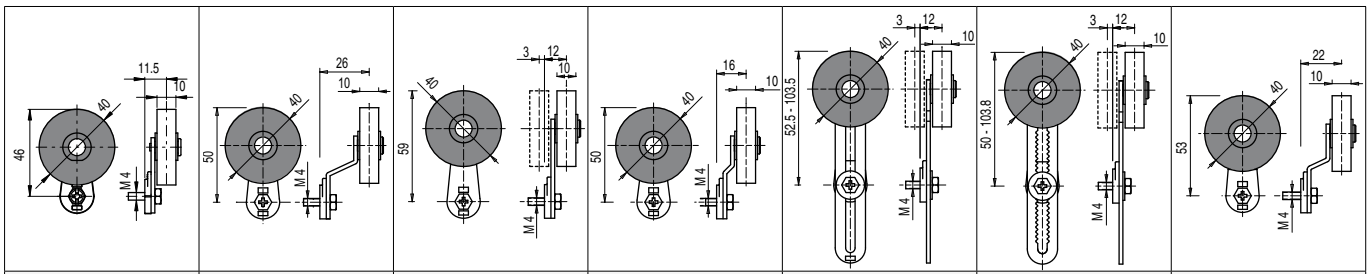
VF LE31-1 | VF LE51-1 | VF LE52-1 | VF LE54-1 | VF LE55-1 (1) | VF LE56-1 | VF LE57-1

Ø 35 mm polymer rollers



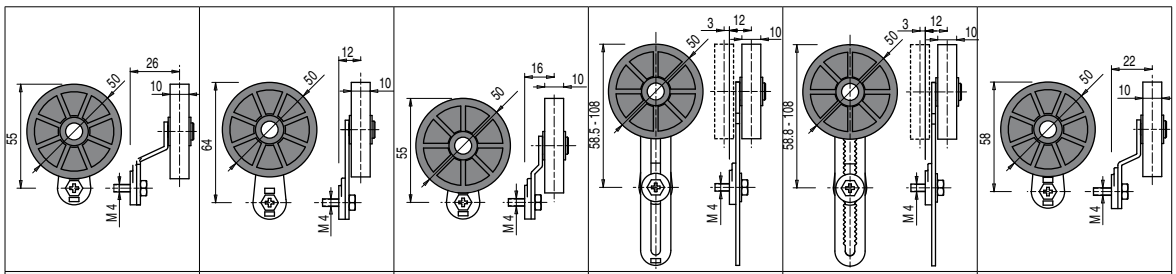
VF LE31-2 (4) | VF LE51-2 (4) | VF LE52-2 | VF LE54-2 (4) | VF LE55-2 (1) | VF LE56-2 | VF LE57-2

Ø 40 mm rubber rollers



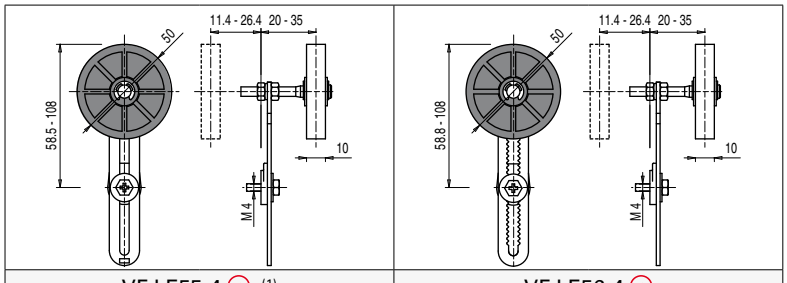
VF LE31-R5 (4) | VF LE51-R5 (4) | VF LE52-R5 | VF LE54-R5 (4) | VF LE55-R5 (1) | VF LE56-R5 | VF LE57-R5 (4)

Ø 50 mm rubber rollers



VF LE51-3 (4) | VF LE52-3 (4) | VF LE54-3 (4) | VF LE55-3 (1) | VF LE56-3 | VF LE57-3 (4)

Ø 50 mm overhanging rubber rollers



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

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