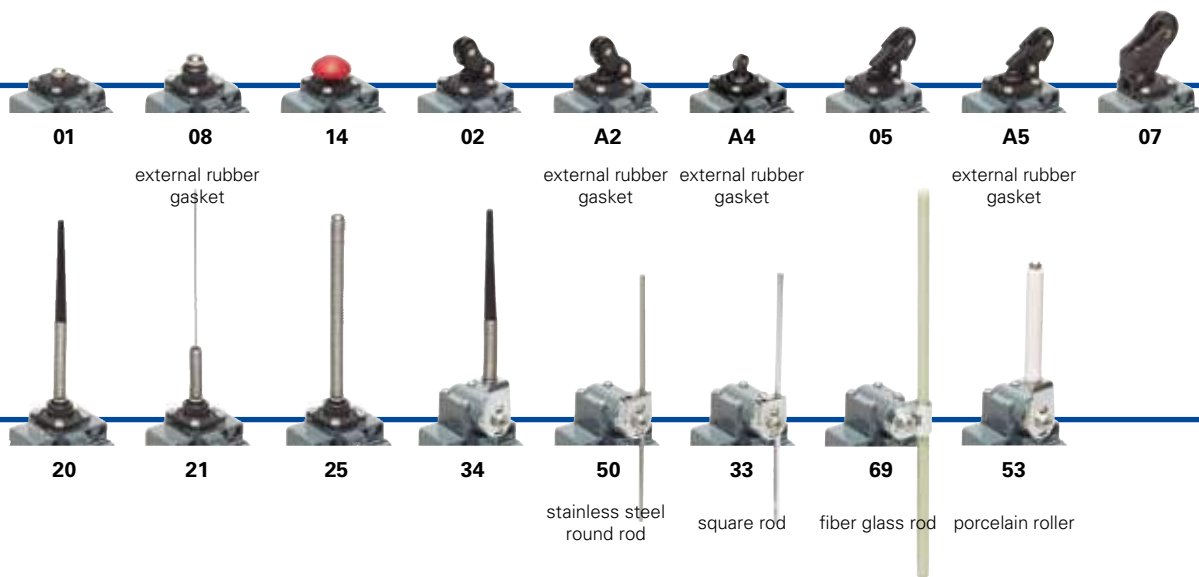
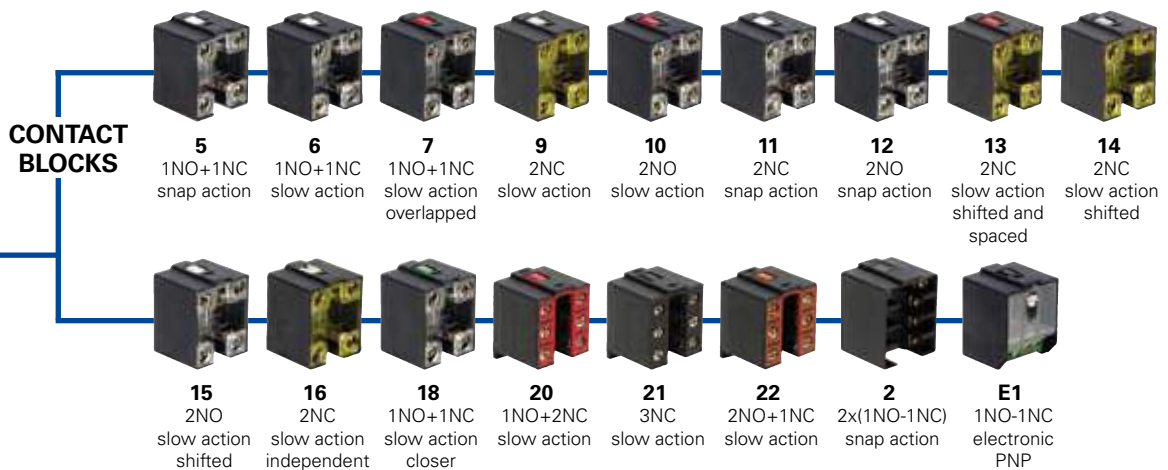


Selection diagram



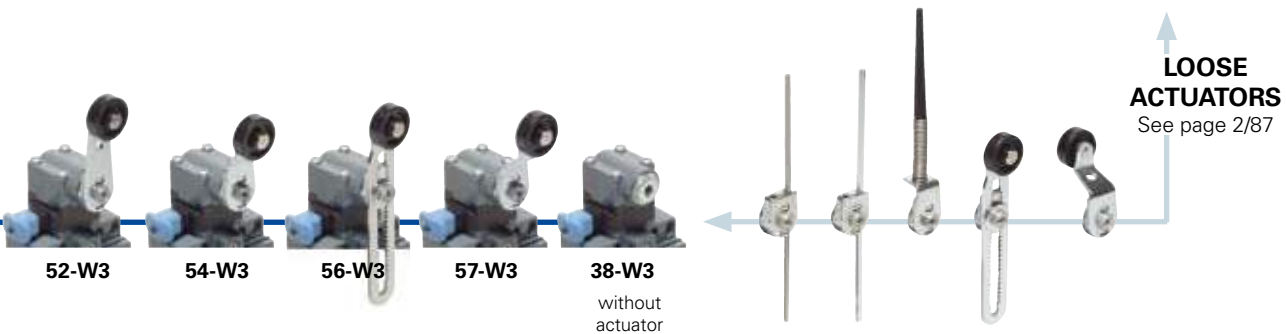
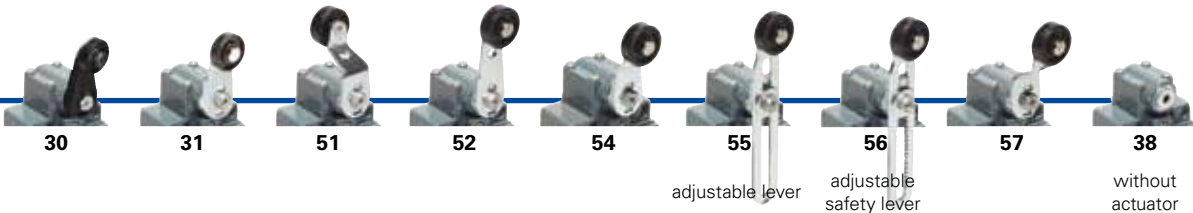
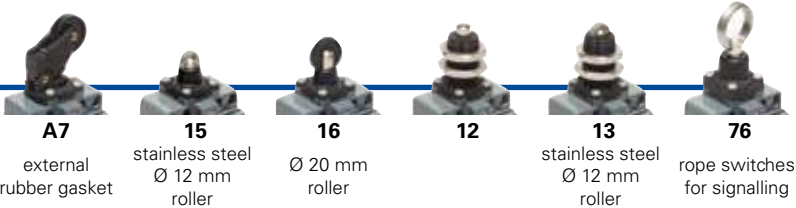
ACTUATORS



CONDUIT ENTRIES

Threaded conduit entries		With assembled cable gland		With M12 metal connector assembled and wired		
	PG 13,5 (standard)	PG 13,5	K121	for Ø 6 to Ø 12 mm cables range, from right	K41	8 poles from right
M2	M20x1,5		K221	for Ø 6 to Ø 12 mm cables range, from left	K42	8 poles from left
			K125	for Ø 3 to Ø 7 mm cables range, from right	K51	5 poles from right
			K225	for Ø 3 to Ø 7 mm cables range, from left	K52	5 poles 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		

● product option  
 → accessory sold separately



**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  
**FZ 502-1W3GM2K51**

Housing	
<b>FZ</b>	Metal housing, two conduit entries
Contact blocks	
<b>5</b>	1NO+1NC, snap action
<b>6</b>	1NO+1NC, slow action
<b>7</b>	1NO+1NC, slow action overlapped
...	.....
Actuators	
<b>01</b>	short plunger
<b>02</b>	roller lever
<b>05</b>	offset roller lever
...	.....
Suffix	
	no suffix (standard)
<b>1</b>	with stainless steel roller: - Ø 14 mm for actuators A2, 02, A5, 05 - Ø 20 mm for actuators 30, 31, 51, 52, 54, 55, 56, 57
<b>2</b>	with Ø 35 mm polymer roller (see special loose actuators on page 2/88)
<b>3</b>	with Ø 50 mm rubber roller (see special loose actuators on page 2/88)
<b>4</b>	with Ø 50 mm overhanging rubber roller (see special loose actuators on page 2/88)

Preinstalled cable gland or connectors	
	no cable gland or connector (standard)
<b>K121</b>	with right assembled cable gland suitable for Ø 6 to Ø 12 mm cables range
...	.....
<b>K51</b>	with 5 poles M12 metal connector from right
...	.....

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

Threaded conduit entry	
	PG 13,5 (standard)
<b>M2</b>	M20x1,5

Contacts type	
	silver contacts (standard)
<b>G</b>	silver contacts gold plated 1 µm (contact block 2 excluded)

Reset hooking	
	without reset (standard)
<b>W3</b>	simultaneous reset hooking



**Main data**

- Metal housing, two conduit entries
- Protection degree IP67
- 17 contact blocks available
- 42 actuators available
- M12 assembled connector versions
- Silver contacts gold plated versions

**Technical data**

**Housing**

Metal housing, coated with baked epoxy powder  
 Two 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<sup>1</sup>/hour  
 Mechanical endurance: 20 million operations cycles<sup>1</sup>  
 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 mm <sup>2</sup>	(1 x AWG 22)
	max.	2 x 1,5 mm <sup>2</sup>	(2 x AWG 16)
Contact blocks 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 18:	min.	1 x 0,5 mm <sup>2</sup>	(1 x AWG 20)
	max.	2 x 2,5 mm <sup>2</sup>	(2 x AWG 14)
Contact block 2:	min.	1 x 0,5 mm <sup>2</sup>	(1 x AWG 20)
	max.	2 x 1,5 mm <sup>2</sup>	(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: EG609  
 Approval UL: E131787  
 Approval CCC: 2007010305229998  
 Approval ECU: 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.**

	<b>Electrical data</b>	<b>Utilization categories</b>
without connector	Thermal current (I <sub>th</sub> ):	10 A
	Rated insulation voltage (U <sub>i</sub> ):	500 Vac 600 Vdc 400Vac500Vdc(contact blocks 2, 11, 12, 20, 21, 22, 33, 34)
	Rated impulse withstand voltage (U <sub>imp</sub> ):	6 kV 4 kV (contact blocks 20, 21, 22, 33, 34)
	Conditional short circuit current: Protection against short circuits: Pollution degree:	1000 A according to EN 60947-5-1 fuse 10 A 500 V type aM 3
with 5 poles M12 connector	Thermal current (I <sub>th</sub> ):	4 A
	Rated insulation voltage (U <sub>i</sub> ):	250 Vac 300 Vdc
	Protection against short circuits: Pollution degree:	fuse 4 A 500 V type gG 3
	Alternate current: AC15 (50...60 Hz) U <sub>e</sub> (V) 250 400 500 I <sub>e</sub> (A) 6 4 1 Direct current: DC13 U <sub>e</sub> (V) 24 125 250 I <sub>e</sub> (A) 6 1,1 0,4	
with 8 poles M12 connector	Thermal current (I <sub>th</sub> ):	2 A
	Rated insulation voltage (U <sub>i</sub> ):	30 Vac 36 Vdc
	Protection against short circuits: Pollution degree:	fuse 2 A 500 V type gG 3
	Alternate current: AC15 (50...60 Hz) U <sub>e</sub> (V) 24 I <sub>e</sub> (A) 2 Direct current: DC13 U <sub>e</sub> (V) 24 I <sub>e</sub> (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<sub>imp</sub>): 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

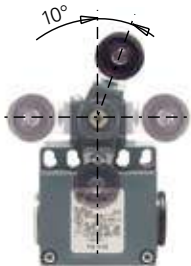
Utilization categories Q300 (69 VA, 125-250 Vdc)  
 A600 (720 VA, 120-600 Vac)  
 Data of the housing type 1, 4X "indoor use only", 12, 13  
 For all contact blocks except 2 and 3 use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7,1 lb in (0,8 Nm).  
 For 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

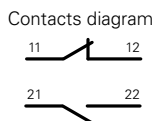
In all switches, it is possible to rotate the head in 90° steps.



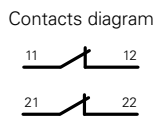
### Working operation of contact block 16 with independent contacts

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

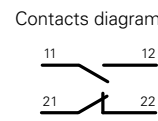
Lever turned to left



Lever not turned




Lever turned to right





# Position switches FZ 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 Ø 12 mm stainless steel roller
5	<b>R</b> FZ 501	⊕ 1NO+1NC	FZ 502 ⊕ 1NO+1NC	FZ 5A2 ⊕ 1NO+1NC
6	<b>L</b> FZ 601	⊕ 1NO+1NC	FZ 602 ⊕ 1NO+1NC	FZ 6A2 ⊕ 1NO+1NC
7	<b>LO</b> FZ 701	⊕ 1NO+1NC	FZ 702 ⊕ 1NO+1NC	FZ 7A2 ⊕ 1NO+1NC
9	<b>L</b> FZ 901	⊕ 2NC	FZ 902 ⊕ 2NC	FZ 9A2 ⊕ 2NC
10	<b>L</b> FZ 1001	2NO	FZ 1002 2NO	FZ 10A2 2NO
11	<b>R</b> FZ 1101	⊕ 2NC	FZ 1102 ⊕ 2NC	FZ 11A2 ⊕ 2NC
12	<b>R</b> FZ 1201	2NO	FZ 1202 2NO	FZ 12A2 2NO
13	<b>LV</b> FZ 1301	⊕ 2NC	FZ 1302 ⊕ 2NC	FZ 13A2 ⊕ 2NC
14	<b>LS</b> FZ 1401	⊕ 2NC	FZ 1402 ⊕ 2NC	FZ 14A2 ⊕ 2NC
15	<b>LS</b> FZ 1501	2NO	FZ 1502 2NO	FZ 15A2 2NO
18	<b>LA</b> FZ 1801	⊕ 1NO+1NC	FZ 1802 ⊕ 1NO+1NC	FZ 18A2 ⊕ 1NO+1NC
20	<b>L</b> FZ 2001	⊕ 1NO+2NC	FZ 2002 ⊕ 1NO+2NC	FZ 20A2 ⊕ 1NO+2NC
21	<b>L</b> FZ 2101	⊕ 3NC	FZ 2102 ⊕ 3NC	FZ 21A2 ⊕ 3NC
22	<b>L</b> FZ 2201	⊕ 2NO+1NC	FZ 2202 ⊕ 2NO+1NC	FZ 22A2 ⊕ 2NO+1NC
2	<b>R</b> FZ 201	2x(1NO-1NC)	FZ 202 2x(1NO-1NC)	FZ 2A2 2x(1NO-1NC)
E1	 FZ E101	1NO-1NC	FZ E102 1NO-1NC	FZ E1A2 1NO-1NC
Max speed	page 7/5 - type 4		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 ⊕)
Travel diagrams	page 7/6 - group 1		page 7/6 - group 2	page 7/6 - group 2

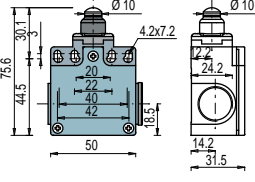
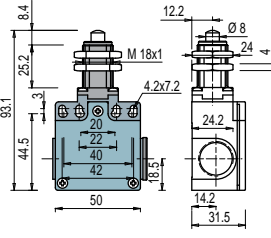
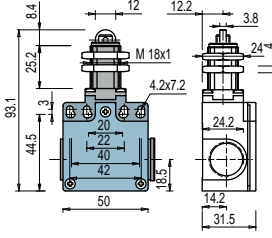
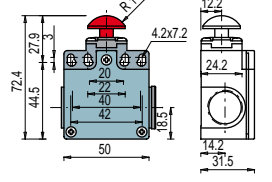
	With stainless steel roller on request	With external rubber gasket With stainless steel roller on request	With external rubber gasket	With external rubber gasket
5	<b>R</b> FZ 505	⊕ 1NO+1NC	FZ 5A5 ⊕ 1NO+1NC	FZ 507 ⊕ 1NO+1NC
6	<b>L</b> FZ 605	⊕ 1NO+1NC	FZ 6A5 ⊕ 1NO+1NC	FZ 607 ⊕ 1NO+1NC
7	<b>LO</b> FZ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

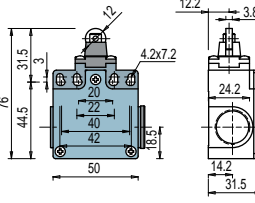
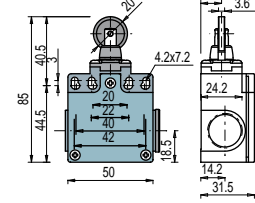
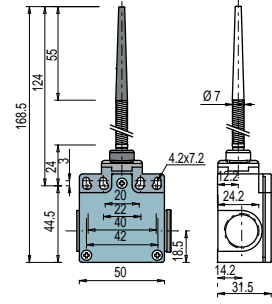
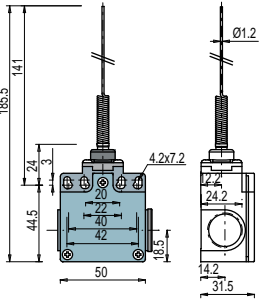
Accessories See page 6/1

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	<b>R</b> FZ 508	<b>⊕</b> 1NO+1NC	FZ 512	<b>⊕</b> 1NO+1NC
6	<b>L</b> FZ 608	<b>⊕</b> 1NO+1NC	FZ 612	<b>⊕</b> 1NO+1NC
7	<b>LO</b> FZ 708	<b>⊕</b> 1NO+1NC	FZ 712	<b>⊕</b> 1NO+1NC
9	<b>L</b> FZ 908	<b>⊕</b> 2NC	FZ 912	<b>⊕</b> 2NC
10	<b>L</b> FZ 1008	2NO	FZ 1012	2NO
11	<b>R</b> FZ 1108	<b>⊕</b> 2NC	FZ 1112	<b>⊕</b> 2NC
12	<b>R</b> FZ 1208	2NO	FZ 1212	2NO
13	<b>LV</b> FZ 1308	<b>⊕</b> 2NC	FZ 1312	<b>⊕</b> 2NC
14	<b>LS</b> FZ 1408	<b>⊕</b> 2NC	FZ 1412	<b>⊕</b> 2NC
15	<b>LS</b> FZ 1508	2NO	FZ 1512	2NO
18	<b>LA</b> FZ 1808	<b>⊕</b> 1NO+1NC	FZ 1812	<b>⊕</b> 1S+1Ö
20	<b>L</b> FZ 2008	<b>⊕</b> 1NO+2NC	FZ 2012	<b>⊕</b> 1NO+2NC
21	<b>L</b> FZ 2108	<b>⊕</b> 3NC	FZ 2112	<b>⊕</b> 3NC
22	<b>L</b> FZ 2208	<b>⊕</b> 2NO+1NC	FZ 2212	<b>⊕</b> 2NO+1NC
2	<b>R</b> FZ 208	2x(1NO-1NC)	FZ 212	2x(1NO-1NC)
E1	<b>⚡</b> FZ E108	1NO-1NC	FZ E112	1NO-1NC
Max speed	page 7/5 - type 4		page 7/5 - type 4	
Min. force	8 N (25 N <b>⊕</b> )		8 N (25 N <b>⊕</b> )	
Travel diagrams	page 7/6 - group 1		page 7/6 - group 1	

	Ø 12 mm stainless steel roller	With external rubber gasket		With external rubber gasket		
						
5	<b>R</b> FZ 515	<b>⊕</b> 1NO+1NC	FZ 520	1NO+1NC	FZ 521	1NO+1NC
6	<b>L</b> FZ 615	<b>⊕</b> 1NO+1NC	FZ 616	<b>⊕</b> 1NO+1NC		
7	<b>LO</b> FZ 715	<b>⊕</b> 1NO+1NC	FZ 716	<b>⊕</b> 1NO+1NC		
9	<b>L</b> FZ 915	<b>⊕</b> 2NC	FZ 916	<b>⊕</b> 2NC		
10	<b>L</b> FZ 1015	2NO	FZ 1016	2NO	FZ 1020	2NO
11	<b>R</b> FZ 1115	<b>⊕</b> 2NC	FZ 1116	<b>⊕</b> 2NC	FZ 1220	2NO
12	<b>R</b> FZ 1215	2NO	FZ 1216	2NO		
13	<b>LV</b> FZ 1315	<b>⊕</b> 2NC	FZ 1316	<b>⊕</b> 2NC		
14	<b>LS</b> FZ 1415	<b>⊕</b> 2NC	FZ 1416	<b>⊕</b> 2NC		
15	<b>LS</b> FZ 1515	2NO	FZ 1516	2NO		
18	<b>LA</b> FZ 1815	<b>⊕</b> 1S+1Ö	FZ 1816	<b>⊕</b> 1S+1Ö	FZ 1820	1NO+1NC
20	<b>L</b> FZ 2015	<b>⊕</b> 1NO+2NC	FZ 2016	<b>⊕</b> 1NO+2NC	FZ 2020	1NO+2NC
21	<b>L</b> FZ 2115	<b>⊕</b> 3NC	FZ 2116	<b>⊕</b> 3NC	FZ 2120	3NC
22	<b>L</b> FZ 2215	<b>⊕</b> 2NO+1NC	FZ 2216	<b>⊕</b> 2NO+1NC	FZ 2220	2NO+1NC
2	<b>R</b> FZ 215	2x(1NO-1NC)	FZ 216	2x(1NO-1NC)	FZ 220	2x(1NO-1NC)
E1	<b>⚡</b> FZ E115	1NO-1NC	FZ E116	1NO-1NC	FZ E120	1NO-1NC
Max speed	page 7/5 - type 2		page 7/5 - type 2		1 m/s	1 m/s
Min. force	8 N (25 N <b>⊕</b> )		8 N (25 N <b>⊕</b> )		0,07 Nm	0,07 Nm
Travel diagrams	page 7/6 - group 1		page 7/6 - group 1		page 7/6 - group 4	page 7/6 - group 4

Items with code on the green background are available in stock

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 Ø 20 mm stainless steel roller on request	Other rollers available. See page 2/88	3x3 mm square rod
5	<b>R</b> FZ 525	FZ 530	FZ 531	FZ 533
6	<b>L</b> FZ 525	FZ 630	FZ 631	FZ 633
7	<b>LO</b> FZ 525	FZ 730	FZ 731	FZ 733
9	<b>L</b> FZ 525	FZ 930	FZ 931	FZ 933
10	<b>L</b> FZ 1025	FZ 1030	FZ 1031	FZ 1033
11	<b>R</b> FZ 1225	FZ 1130	FZ 1131	FZ 1133
12	<b>R</b> FZ 1225	FZ 1230	FZ 1231	FZ 1233
13	<b>LV</b> FZ 1225	FZ 1330	FZ 1331	FZ 1333
14	<b>LS</b> FZ 1225	FZ 1430	FZ 1431	FZ 1433
15	<b>LS</b> FZ 1225	FZ 1530	FZ 1531	FZ 1533
16	<b>LI</b> FZ 1225	FZ 1630	FZ 1631	FZ 1633
18	<b>LA</b> FZ 1825	FZ 1830	FZ 1831	FZ 1833
20	<b>L</b> FZ 2025	FZ 2030	FZ 2031	FZ 2033
21	<b>L</b> FZ 2125	FZ 2130	FZ 2131	FZ 2133
22	<b>L</b> FZ 2225	FZ 2230	FZ 2231	FZ 2233
2	<b>R</b> FZ 225	FZ 230	FZ 231	FZ 233
E1	FZ E125	FZ E130	FZ E131	FZ E133
Max speed	1 m/s	page 7/5 - type 1	page 7/5 - type 1	1,5 m/s
Min. force	0,12 Nm	0,06 Nm (0,25 Nm ⊕)	0,06 Nm (0,25 Nm ⊕)	0,06 Nm
Travel diagrams	page 7/6 - group 4	page 7/6 - group 5	page 7/6 - group 5	page 7/6 - group 5

	Ø 3 mm stainless steel round rod	Other rollers available. See page 2/88	Other rollers available. See page 2/88
5	<b>R</b> FZ 534	FZ 550	FZ 551
6	<b>L</b> FZ 634	FZ 650	FZ 651
7	<b>LO</b> FZ 734	FZ 750	FZ 751
9	<b>L</b> FZ 934	FZ 950	FZ 951
10	<b>L</b> FZ 1034	FZ 1050	FZ 1051
11	<b>R</b> FZ 1134	FZ 1150	FZ 1151
12	<b>R</b> FZ 1234	FZ 1250	FZ 1251
13	<b>LV</b> FZ 1334	FZ 1350	FZ 1351
14	<b>LS</b> FZ 1434	FZ 1450	FZ 1451
15	<b>LS</b> FZ 1534	FZ 1550	FZ 1551
16	<b>LI</b> FZ 1634	FZ 1650	FZ 1651
18	<b>LA</b> FZ 1834	FZ 1850	FZ 1851
20	<b>L</b> FZ 2034	FZ 2050	FZ 2051
21	<b>L</b> FZ 2134	FZ 2150	FZ 2151
22	<b>L</b> FZ 2234	FZ 2250	FZ 2251
2	<b>R</b> FZ 234	FZ 250	FZ 251
E1	FZ E134	FZ E150	FZ E151
Max speed	1,5 m/s	1,5 m/s	page 7/5 - type 1
Min. force	0,06 Nm	0,06 Nm	0,06 Nm (0,25 Nm ⊕)
Travel diagrams	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

	Porcelain roller	Other rollers available. See page 2/88	Other rollers available. See page 2/88	Other rollers available. See page 2/88
5	<b>R</b> FZ 553-E0V9	1NO+1NC	FZ 554	1NO+1NC
6	<b>L</b> FZ 653-E0V9	1NO+1NC	FZ 654	1NO+1NC
7	<b>LO</b> FZ 753-E0V9	1NO+1NC	FZ 754	1NO+1NC
9	<b>L</b> FZ 953-E0V9	2NC	FZ 954	2NC
10	<b>L</b> FZ 1053-E0V9	2NO	FZ 1054	2NO
11	<b>R</b> FZ 1253-E0V9	2NO	FZ 1154	2NC
12	<b>R</b> FZ 1253-E0V9	2NO	FZ 1254	2NO
13	<b>LV</b> FZ 1353-E0V9	2NC	FZ 1354	2NC
14	<b>LS</b> FZ 1453-E0V9	2NC	FZ 1454	2NC
15	<b>LS</b> FZ 1553-E0V9	2NO	FZ 1554	2NO
16	<b>LI</b> FZ 1653-E0V9	2NC	FZ 1654	2NC
18	<b>LA</b> FZ 1853-E0V9	1S+1Ö	FZ 1854	1S+1Ö
20	<b>L</b> FZ 2053-E0V9	1NO+2NC	FZ 2054	1NO+2NC
21	<b>L</b> FZ 2153-E0V9	3NC	FZ 2154	3NC
22	<b>L</b> FZ 2253-E0V9	2NO+1NC	FZ 2254	2NO+1NC
2	<b>R</b> FZ 253-E0	2x(1NO-1NC)	FZ 254	2x(1NO-1NC)
E1	<b>⚡</b> FZ E153-E0V9	1NO-1NC	FZ E154	1NO-1NC
Max speed	0,5 m/s	page 7/5 - type 1	page 7/5 - type 1	page 7/5 - type 1
Min. force	0,03 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 7/6 - group 6	page 7/6 - group 5	page 7/6 - group 5	page 7/6 - group 5

	Other rollers available. See page 2/88	Fiber glass rod	Rope switches for signalling	
5	<b>R</b> FZ 557	1NO+1NC	FZ 576	1NO+1NC
6	<b>L</b> FZ 657	1NO+1NC	FZ 676	1NO+1NC
7	<b>LO</b> FZ 757	1NO+1NC	FZ 776	1NO+1NC
9	<b>L</b> FZ 957	2NC	FZ 976	2NO
10	<b>L</b> FZ 1057	2NO	FZ 1076	2NC
11	<b>R</b> FZ 1157	2NC	FZ 1176	2NO
12	<b>R</b> FZ 1257	2NO	FZ 1276	2NC
13	<b>LV</b> FZ 1357	2NC	FZ 1376	2NO
14	<b>LS</b> FZ 1457	2NC	FZ 1476	2NO
15	<b>LS</b> FZ 1557	2NO	FZ 1576	2NC
16	<b>LI</b> FZ 1657	2NC		
18	<b>LA</b> FZ 1857	1S+1Ö	FZ 1876	1NO+1NC
20	<b>L</b> FZ 2057	1NO+2NC	FZ 2076	2NO+1NC
21	<b>L</b> FZ 2157	3NC	FZ 2176	3NO
22	<b>L</b> FZ 2257	2NO+1NC	FZ 2276	1NO+2NC
2	<b>R</b> FZ 257	2x(1NO-1NC)	FZ 276	2x(1NO-1NC)
E1	<b>⚡</b> FZ E157	1NO-1NC	FZ E169	1NO-1NC
Max speed	page 7/5 - type 1	1,5 m/s	0,5 m/s	
Min. force	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 7	

Items with code on the green background are available in stock

(1) Positive opening only with lever adjusted on the max. See page 2/87.  
General Catalog 2011-2012





# Position switches FZ series with reset

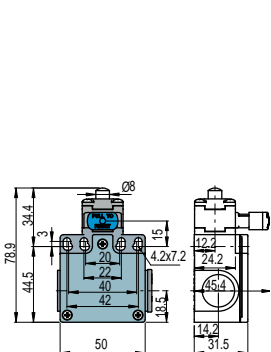


Pizzato Eletttrica has developed a reset device code W3 to make perfectly simultaneous the actuator and the contact block tripping. The new device is a block inserted between the switch body and the head, and could be rotated independently from this last one. This new device has following advantages:

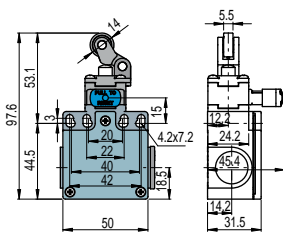
- \* The reset device integrate in any standard actuation head
- \* Contact blocks with snap action are no more necessary because the tripping movement is made by the reset device itself
- \* The reset device can be rotated independently from the head for the maximum flexibility during the assembling.

Contacts type:

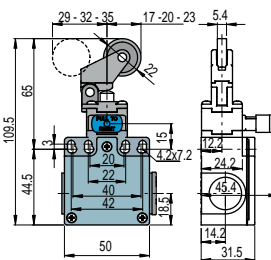
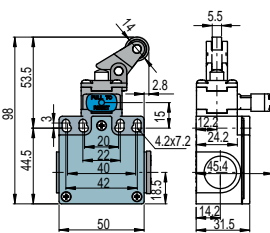
- R** = snap action
- L** = slow action



With stainless steel roller on request

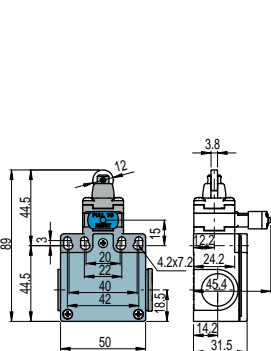


With stainless steel roller on request

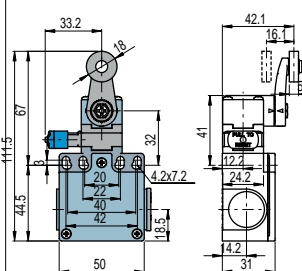


Contact blocks

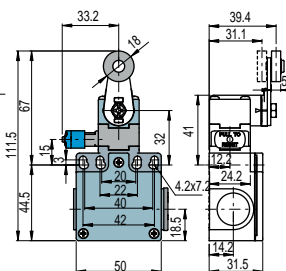
6	<b>L</b>	FZ 601-W3	➔ 1NO+1NC	FZ 602-W3	➔ 1NO+1NC	FZ 605-W3	➔ 1NO+1NC	FZ 607-W3	➔ 1NO+1NC
9	<b>L</b>	FZ 901-W3	➔ 2NC	FZ 902-W3	➔ 2NC	FZ 905-W3	➔ 2NC	FZ 907-W3	➔ 2NC
10	<b>L</b>	FZ 1001-W3	2NO	FZ 1002-W3	2NO	FZ 1005-W3	2NO	FZ 1007-W3	2NO
20	<b>L</b>	FZ 2001-W3	➔ 1NO+2NC	FZ 2002-W3	➔ 1NO+2NC	FZ 2005-W3	➔ 1NO+2NC	FZ 2007-W3	➔ 1NO+2NC
21	<b>L</b>	FZ 2101-W3	➔ 3NC	FZ 2102-W3	➔ 3NC	FZ 2105-W3	➔ 3NC	FZ 2107-W3	➔ 3NC
22	<b>L</b>	FZ 2201-W3	➔ 2NO+1NC	FZ 2202-W3	➔ 2NO+1NC	FZ 2205-W3	➔ 2NO+1NC	FZ 2207-W3	➔ 2NO+1NC
2	<b>R</b>	FZ 201-W3	2NO+2NC	FZ 202-W3	2NO+2NC	FZ 205-W3	2NO+2NC	FZ 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	



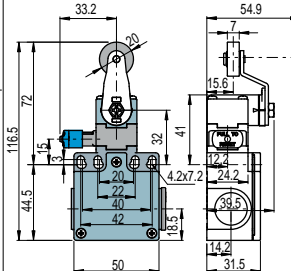
With Ø 20 mm stainless steel roller on request



Other rollers available. See page 2/88



Other rollers available. See page 2/88



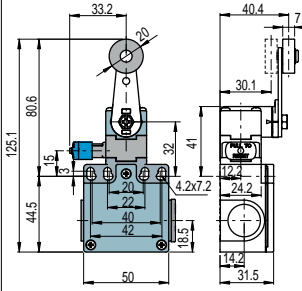
Contact blocks

6	<b>L</b>	FZ 615-W3	➔ 1NO+1NC	FZ 630-W3	➔ 1NO+1NC	FZ 631-W3	➔ 1NO+1NC	FZ 651-W3	➔ 1NO+1NC
9	<b>L</b>	FZ 915-W3	➔ 2NC	FZ 930-W3	➔ 2NC	FZ 931-W3	➔ 2NC	FZ 951-W3	➔ 2NC
10	<b>L</b>	FZ 1015-W3	2NO	FZ 1030-W3	2NO	FZ 1031-W3	2NO	FZ 1051-W3	2NO
20	<b>L</b>	FZ 2015-W3	➔ 1NO+2NC	FZ 2030-W3	➔ 1NO+2NC	FZ 2031-W3	➔ 1NO+2NC	FZ 2051-W3	➔ 1NO+2NC
21	<b>L</b>	FZ 2115-W3	➔ 3NC	FZ 2130-W3	➔ 3NC	FZ 2131-W3	➔ 3NC	FZ 2151-W3	➔ 3NC
22	<b>L</b>	FZ 2215-W3	➔ 2NO+1NC	FZ 2230-W3	➔ 2NO+1NC	FZ 2231-W3	➔ 2NO+1NC	FZ 2251-W3	➔ 2NO+1NC
2	<b>R</b>	FZ 215-W3	2NO+2NC	FZ 230-W3	2NO+2NC	FZ 231-W3	2NO+2NC	FZ 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	

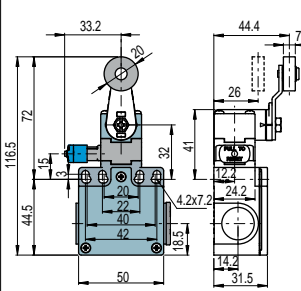
Contacts type:

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

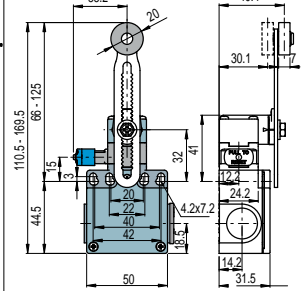
Other rollers available. See page 2/88



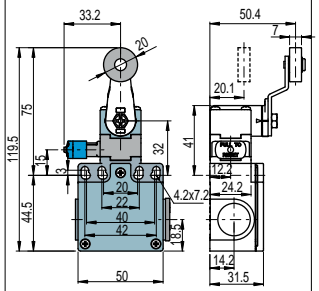
Other rollers available. See page 2/88



Other rollers available. See page 2/88



Other rollers available. See page 2/88



Contact blocks

6	<b>L</b>	FZ 652-W3	➔	1NO+1NC
9	<b>L</b>	FZ 952-W3	➔	2NC
10	<b>L</b>	FZ 1052-W3		2NO
20	<b>L</b>	FZ 2052-W3	➔	1NO+2NC
21	<b>L</b>	FZ 2152-W3	➔	3NC
22	<b>L</b>	FZ 2252-W3	➔	2NO+1NC
2	<b>R</b>	FZ 252-W3		2NO+2NC
Max speed		page 7/5 - type 1		
Min. force		0,06 Nm (0,25 Nm ➔)		
Travel diagrams		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

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

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.

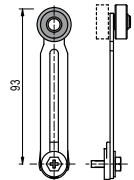
Polymer roller Ø 18 mm	Polymer roller Ø 18 mm	Adjustable square rod 3x3x125 mm	Flexible rod actuator	Adjustable round rod Ø 3x125 mm	Polymer roller Ø 20 mm	
VF LE30 ⊕	VF LE31 ⊕	VF LE33	VF LE34	VF LE50	VF LE51 ⊕	
Polymer roller Ø 20 mm	Porcelain roller	Polymer roller Ø 20 mm	Adjustable actuator with polymer 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 FZ •38 (e.g. FZ 538, FZ 638) with the actuator VF LE53 will not present the same travel diagrams and actuating forces as the position switch FZ •53-E0V9 (e.g. FZ 553-E0V9, FZ 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 (4)	VF LE51-1 (4)	VF LE52-1 (4)	VF LE54-1 (4)	VF LE55-1 (1)	VF LE56-1 (4)	VF LE57-1 (4)

Ø 35 mm polymer rollers

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

Ø 40 mm rubber rollers

VF LE31-R5 (4)	VF LE51-R5 (4)	VF LE52-R5 (4)	VF LE54-R5 (4)	VF LE55-R5 (1)	VF LE56-R5 (4)	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 (4)	VF LE57-3 (4)

Ø 50 mm overhanging rubber rollers

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

Items with code on the green background are available in stock