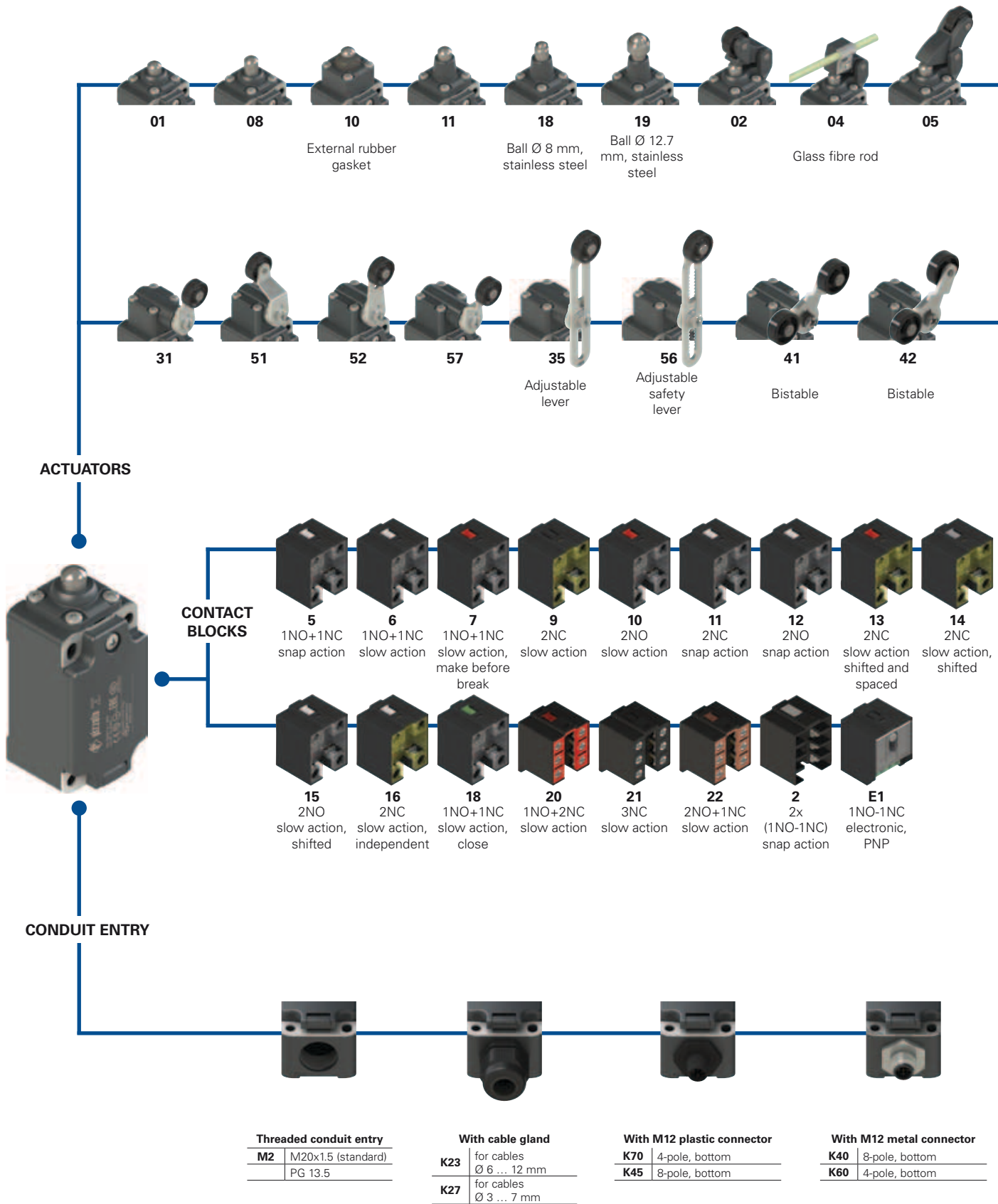
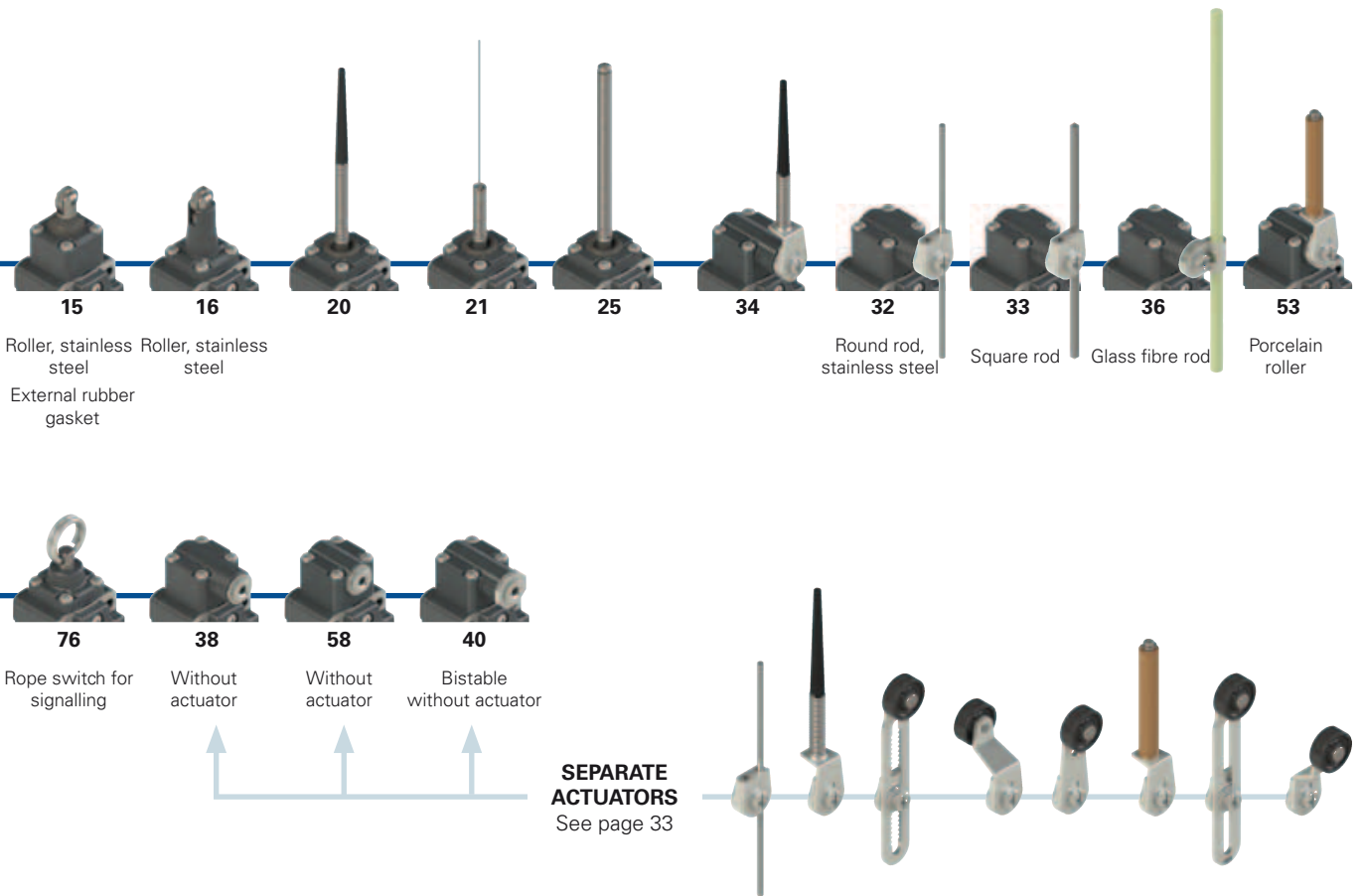


Selection diagram



● product options
→ Sold separately as accessory


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

article
options
options
FP 502-GM2K70R24T6

Housing
FP technopolymer, one conduit entry

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

Contact type
 silver contacts (standard)
G silver contacts, 1 µm gold coating (not for contact block 2)
G1 silver contacts, 2.5 µm gold coating (not for contact block 2, 20, 21, 22)

Threaded conduit entry
M2 M20x1.5 (standard)
 PG 13.5

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

Rollers
 standard roller
R24 stainless steel Ø 20 mm (for actuators 02, 05, 31, 35, 51, 52, 56, 57)
R25 technopolymer, Ø 35 mm (for actuators 31, 35, 51, 52, 56, 57)
R5 rubber, Ø 40 mm (for actuators 31, 35, 51, 52, 56, 57)
R26 rubber, Ø 50 mm (for actuators 31, 35, 51, 52, 56, 57)
R27 rubber, protruding, Ø 50 mm (for actuators 35 and 36)

Pre-installed cable glands or connectors
 no cable gland or connector (standard)
K23 cable gland for cables Ø 6 ... 12 mm
K27 cable gland for cables Ø 3 ... 7 mm
K45 M12 plastic connector, 8-pole
K70 M12 plastic connector, 4-pole

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



Main features

- Technopolymer housing, one conduit entry
- Protection degree IP67
- Stainless steel fixing plates
- 17 contact blocks available
- 28 actuators available
- Versions with M12 connector
- Versions with gold-plated silver contacts

Technical data

Housing

Housing made of glass fibre reinforced technopolymer, self-extinguishing, shock-proof and with double insulation:
 One threaded conduit entry: \square M20x1.5 (standard)
 Protection degree: IP67 acc. to EN 60529 with cable gland presenting same or higher protection degree

General data

Ambient temperature: -25°C ... +80°C
 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 211-222

Cable cross section (flexible copper strands)

Contact blocks 20, 21, 22, 33, 34:	min. 1 x 0.34 mm ²	(1 x AWG 22)
	max. 2 x 1.5 mm ²	(2 x AWG 16)
Contact blocks 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 18:	min. 1 x 0.5 mm ²	(1 x AWG 20)
	max. 2 x 2.5 mm ²	(2 x AWG 14)
Contact block 2:	min. 1 x 0.5 mm ²	(1 x AWG 20)
	max. 2 x 1.5 mm ²	(2 x AWG 16)

In compliance with standards:

IEC 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50041, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, UL 508, CSA 22.2 No.14.

Approvals:

IEC 60947-5-1, UL 508, CSA 22.2 No.14, GB14048.5-2001.

Quality marks:



IMQ approval: EG605
 UL approval: E131787
 CCC approval: 2007010305230014
 EAC approval: RU C-IT.AQ35.B.00454

Compliance with the requirements of:

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

Positive contact opening in conformity with standards:

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

Installation for safety applications:

Use only switches marked with the symbol \ominus next to the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as required by **EN ISO 14119, paragraph 5.4** for specific interlock applications and **EN ISO 13849-2 tables D3** (well-tried components) and **D.8** (fault exclusions) for safety applications in general. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 214. 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 211 to 222.

	Electrical data	Utilization category
without connector	Thermal current (I_{th}):	10 A
	Rated insulation voltage (U):	500 Vac 600 Vdc 400 Vac 500 Vdc (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)
with M12 connector 4-pole	Thermal current (I_{th}):	4 A
	Rated insulation voltage (U):	250 Vac 300 Vdc
	Protection against short circuits:	type gG fuse 4 A 500 V
with M12 connector 8-pole	Thermal current (I_{th}):	2 A
	Rated insulation voltage (U):	30 Vac 36 Vdc
	Protection against short circuits:	type gG fuse 2 A 500 V
Pollution degree:		3
Alternating current: AC15 (50±60 Hz)		Ue (V) 250 400 500
Direct current: DC13		Ue (V) 24 125 250
le (A) 6 4 1		le (A) 6 1.1 0.4
Alternating current: AC15 (50±60 Hz)		Ue (V) 24 120 250
Direct current: DC13		Ue (V) 24 125 250
le (A) 4 4 4		le (A) 4 1.1 0.4
Alternating current: AC15 (50±60 Hz)		Ue (V) 24
Direct current: DC13		Ue (V) 24
le (A) 2		le (A) 2



Features approved by IMQ

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

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

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

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

Protection degree of the housing: IP67

MV terminals (screw terminals) Pollution degree: 3

Utilization category: AC15

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

Operating current (I_e): 3 A

Forms of the contact element: Za, Zb, Za+Za, Y+Y, X+X, Y+Y+X, Y+Y+Y, Y+X+X

Positive opening of contacts on contact blocks 5, 6, 7, 9, 11, 13, 14, 16, 18, 20, 21, 22, 33, 34

In compliance with standards: EN 60947-1, EN 60947-5-1+ A1:2009, fundamental requirements of the Low Voltage Directive 2014/35/EU.

Features approved by UL

Utilization category Q300 (69 VA, 125-250 Vdc)
A600 (720 VA, 120-600 Vac)

Housing features type 1, 4X "indoor use only", 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).

In compliance with standard: UL 508, CSA 22.2 No.14

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

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

Wiring diagram for M12 connectors

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

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

Contact block E1
PNP

M12 connector, 4-pole

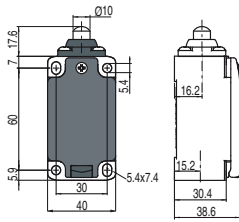
Contacts	Pin no.
+	1
-	3
NC	2
NO	4

2 FP series position switches

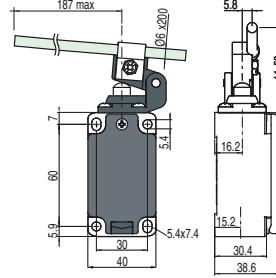
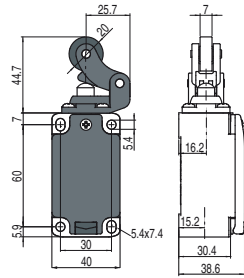
Contact type:

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

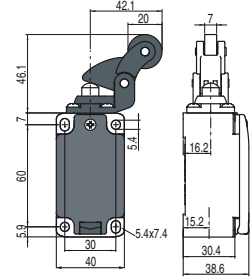
Contact block



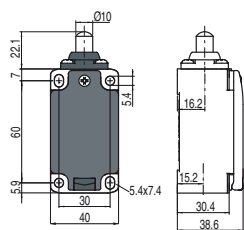
With stainless steel roller on request



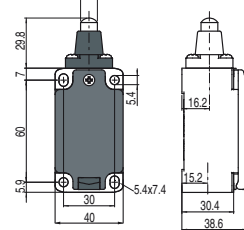
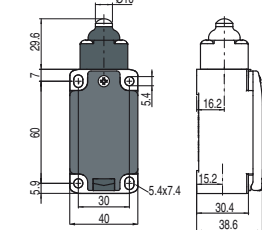
With stainless steel roller on request



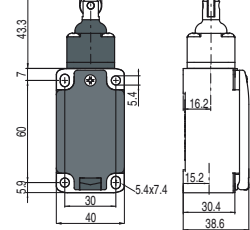
5	R	FP 501-M2	1NO+1NC	FP 502-M2	1NO+1NC	FP 504-M2	1NO+1NC	FP 505-M2	1NO+1NC
6	L	FP 601-M2	1NO+1NC	FP 602-M2	1NO+1NC	FP 604-M2	1NO+1NC	FP 605-M2	1NO+1NC
7	LO	FP 701-M2	1NO+1NC	FP 702-M2	1NO+1NC	FP 704-M2	1NO+1NC	FP 705-M2	1NO+1NC
9	L	FP 901-M2	2NC	FP 902-M2	2NC	FP 904-M2	2NC	FP 905-M2	2NC
10	L	FP 1001-M2	2NO	FP 1002-M2	2NO	FP 1004-M2	2NO	FP 1005-M2	2NO
11	R	FP 1101-M2	2NC	FP 1102-M2	2NC	FP 1104-M2	2NC	FP 1105-M2	2NC
12	R	FP 1201-M2	2NO	FP 1202-M2	2NO	FP 1204-M2	2NO	FP 1205-M2	2NO
13	LV	FP 1301-M2	2NC	FP 1302-M2	2NC	FP 1304-M2	2NC	FP 1305-M2	2NC
14	LS	FP 1401-M2	2NC	FP 1402-M2	2NC	FP 1404-M2	2NC	FP 1405-M2	2NC
15	LS	FP 1501-M2	2NO	FP 1502-M2	2NO	FP 1504-M2	2NO	FP 1505-M2	2NO
18	LA	FP 1801-M2	1NO+1NC	FP 1802-M2	1NO+1NC	FP 1804-M2	1NO+1NC	FP 1805-M2	1NO+1NC
20	L	FP 2001-M2	1NO+2NC	FP 2002-M2	1NO+2NC	FP 2004-M2	1NO+2NC	FP 2005-M2	1NO+2NC
21	L	FP 2101-M2	3NC	FP 2102-M2	3NC	FP 2104-M2	3NC	FP 2105-M2	3NC
22	L	FP 2201-M2	2NO+1NC	FP 2202-M2	2NO+1NC	FP 2204-M2	2NO+1NC	FP 2205-M2	2NO+1NC
2	R	FP 201-M2	2x(1NO-1NC)	FP 202-M2	2x(1NO-1NC)	FP 204-M2	2x(1NO-1NC)	FP 205-M2	2x(1NO-1NC)
E1	PNP	FP E101-M2	1NO-1NC	FP E102-M2	1NO-1NC	FP E104-M2	1NO-1NC	FP E105-M2	1NO-1NC
Max. speed		page 213 - type 4		page 213 - type 3		0.5 m/s		page 213 - type 3	
Actuating force		8 N (25 N ⊕)		6 N (25 N ⊕)		0.17 Nm		6 N (25 N ⊕)	
Travel diagrams		page 214 - group 1		page 214 - group 2		page 214 - group 1		page 214 - group 2	



With external rubber gasket



With external rubber gasket



Contact block

5	R	FP 508-M2	1NO+1NC	FP 510-M2	1NO+1NC	FP 511-M2	1NO+1NC	FP 515-M2	1NO+1NC
6	L	FP 608-M2	1NO+1NC	FP 610-M2	1NO+1NC	FP 611-M2	1NO+1NC	FP 615-M2	1NO+1NC
7	LO	FP 708-M2	1NO+1NC	FP 710-M2	1NO+1NC	FP 711-M2	1NO+1NC	FP 715-M2	1NO+1NC
9	L	FP 908-M2	2NC	FP 910-M2	2NC	FP 911-M2	2NC	FP 915-M2	2NC
10	L	FP 1008-M2	2NO	FP 1010-M2	2NO	FP 1011-M2	2NO	FP 1015-M2	2NO
11	R	FP 1108-M2	2NC	FP 1110-M2	2NC	FP 1111-M2	2NC	FP 1115-M2	2NC
12	R	FP 1208-M2	2NO	FP 1210-M2	2NO	FP 1211-M2	2NO	FP 1215-M2	2NO
13	LV	FP 1308-M2	2NC	FP 1310-M2	2NC	FP 1311-M2	2NC	FP 1315-M2	2NC
14	LS	FP 1408-M2	2NC	FP 1410-M2	2NC	FP 1411-M2	2NC	FP 1415-M2	2NC
15	LS	FP 1508-M2	2NO	FP 1510-M2	2NO	FP 1511-M2	2NO	FP 1515-M2	2NO
18	LA	FP 1808-M2	1NO+1NC	FP 1810-M2	1NO+1NC	FP 1811-M2	1NO+1NC	FP 1815-M2	1NO+1NC
20	L	FP 2008-M2	1NO+2NC	FP 2010-M2	1NO+2NC	FP 2011-M2	1NO+2NC	FP 2015-M2	1NO+2NC
21	L	FP 2108-M2	3NC	FP 2110-M2	3NC	FP 2111-M2	3NC	FP 2115-M2	3NC
22	L	FP 2208-M2	2NO+1NC	FP 2210-M2	2NO+1NC	FP 2211-M2	2NO+1NC	FP 2215-M2	2NO+1NC
2	R	FP 208-M2	2x(1NO-1NC)	FP 210-M2	2x(1NO-1NC)	FP 211-M2	2x(1NO-1NC)	FP 215-M2	2x(1NO-1NC)
E1	PNP	FP E108-M2	1NO-1NC	FP E110-M2	1NO-1NC	FP E111-M2	1NO-1NC	FP E115-M2	1NO-1NC
Max. speed		page 213 - type 4		page 213 - type 4		page 213 - type 4		page 213 - type 2	
Actuating force		8 N (25 N ⊕)		11 N (25 N ⊕)		8 N (25 N ⊕)		11 N (25 N ⊕)	
Travel diagrams		page 214 - group 1		page 214 - group 1		page 214 - group 1		page 214 - group 1	

All values in the drawings are in mm

Items with code on green background are stock items

Accessories See page 197

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



Contact type:

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

Contact block

	Ball, Ø 8 mm, stainless steel	Ball, Ø 12.7 mm, stainless steel	With external rubber gasket
5	R FP 516-M2 1NO+1NC	FP 518-M2 1NO+1NC	FP 519-M2 1NO+1NC
6	L FP 616-M2 1NO+1NC	FP 618-M2 1NO+1NC	FP 619-M2 1NO+1NC
7	LO FP 716-M2 1NO+1NC	FP 718-M2 1NO+1NC	FP 719-M2 1NO+1NC
9	L FP 916-M2 2NC	FP 918-M2 2NC	FP 919-M2 2NC
10	L FP 1016-M2 2NO	FP 1018-M2 2NO	FP 1019-M2 2NO
11	R FP 1116-M2 2NC	FP 1118-M2 2NC	FP 1119-M2 2NC
12	R FP 1216-M2 2NO	FP 1218-M2 2NO	FP 1219-M2 2NO
13	LV FP 1316-M2 2NC	FP 1318-M2 2NC	FP 1319-M2 2NC
14	LS FP 1416-M2 2NC	FP 1418-M2 2NC	FP 1419-M2 2NC
15	LS FP 1516-M2 2NO	FP 1518-M2 2NO	FP 1519-M2 2NO
18	LA FP 1816-M2 1NO+1NC	FP 1818-M2 1NO+1NC	FP 1819-M2 1NO+1NC
20	L FP 2016-M2 1NO+2NC	FP 2018-M2 1NO+2NC	FP 2019-M2 1NO+2NC
21	L FP 2116-M2 3NC	FP 2118-M2 3NC	FP 2119-M2 3NC
22	L FP 2216-M2 2NO+1NC	FP 2218-M2 2NO+1NC	FP 2219-M2 2NO+1NC
2	R FP 216-M2 2x(1NO-1NC)	FP 218-M2 2x(1NO-1NC)	FP 219-M2 2x(1NO-1NC)
E1	A FP E116-M2 1NO-1NC	FP E118-M2 1NO-1NC	FP E119-M2 1NO-1NC
Max. speed	page 213 - type 2	page 213 - type 4	page 213 - type 4
Actuating force	8 N (25 N ⊕)	8 N (25 N ⊕)	8 N (25 N ⊕)
Travel diagrams	page 214 - group 1	page 214 - group 1	page 214 - group 1
			1 m/s
			0.09 Nm
			page 214 - group 3

	With external rubber gasket	With external rubber gasket	Other rollers available. See page 34	Round rod, Ø 3 mm, stainless steel
5	R FP 521-M2 1NO+1NC	FP 525-M2 1NO+1NC	FP 531-M2 1NO+1NC	FP 532-M2 1NO+1NC
6	L		FP 631-M2 1NO+1NC	FP 632-M2 1NO+1NC
7	LO		FP 731-M2 1NO+1NC	FP 732-M2 1NO+1NC
9	L		FP 931-M2 2NC	FP 932-M2 2NC
10	L FP 1021-M2 2NO	FP 1025-M2 2NO	FP 1031-M2 2NO	FP 1032-M2 2NO
11	R		FP 1131-M2 2NC	FP 1132-M2 2NC
12	R		FP 1231-M2 2NO	FP 1232-M2 2NO
13	LV		FP 1331-M2 2NC	FP 1332-M2 2NC
14	LS		FP 1431-M2 2NC	FP 1432-M2 2NC
15	LS		FP 1531-M2 2NO	FP 1532-M2 2NO
16	LI		FP 1631-M2 2NC	FP 1632-M2 2NC
18	LA FP 1821-M2 1NO+1NC	FP 1825-M2 1NO+1NC	FP 1831-M2 1NO+1NC	FP 1832-M2 1NO+1NC
20	L FP 2021-M2 1NO+2NC	FP 2025-M2 1NO+2NC	FP 2031-M2 1NO+2NC	FP 2032-M2 1NO+2NC
21	L FP 2121-M2 3NC	FP 2125-M2 3NC	FP 2131-M2 3NC	FP 2132-M2 3NC
22	L FP 2221-M2 2NO+1NC	FP 2225-M2 2NO+1NC	FP 2231-M2 2NO+1NC	FP 2232-M2 2NO+1NC
2	R FP 221-M2 2x(1NO-1NC)	FP 225-M2 2x(1NO-1NC)	FP 231-M2 2x(1NO-1NC)	FP 232-M2 2x(1NO-1NC)
E1	A FP E121-M2 1NO-1NC	FP E125-M2 1NO-1NC	FP E131-M2 1NO-1NC	FP E132-M2 1NO-1NC
Max. speed	1 m/s	1 m/s	page 213 - type 1	1.5 m/s
Actuating force	0.08 Nm	0.14 Nm	0.1 Nm (0.25 Nm ⊕)	0.1 Nm
Travel diagrams	page 214 - group 3	page 214 - group 3	page 214 - group 4	page 214 - group 4

All values in the drawings are in mm

Items with code on green background are stock items

Accessories See page 197

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

2 FP series position switches

Contact type:

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

Contact block

	Square rod, 3x3 mm	Other rollers available. See page 34	Glass fibre rod
5	R FP 533-M2 1NO+1NC	FP 534-M2 1NO+1NC	FP 535-M2 ⊕ (1) 1NO+1NC
6	L FP 633-M2 1NO+1NC	FP 634-M2 1NO+1NC	FP 635-M2 ⊕ (1) 1NO+1NC
7	LO FP 733-M2 1NO+1NC	FP 734-M2 1NO+1NC	FP 735-M2 ⊕ (1) 1NO+1NC
9	L FP 933-M2 2NC	FP 934-M2 2NC	FP 935-M2 ⊕ (1) 2NC
10	L FP 1033-M2 2NO	FP 1034-M2 2NO	FP 1035-M2 2NO
11	R FP 1133-M2 2NC	FP 1134-M2 2NC	FP 1135-M2 ⊕ (1) 2NC
12	R FP 1233-M2 2NO	FP 1234-M2 2NO	FP 1235-M2 2NO
13	LV FP 1333-M2 2NC	FP 1334-M2 2NC	FP 1335-M2 ⊕ (1) 2NC
14	LS FP 1433-M2 2NC	FP 1434-M2 2NC	FP 1435-M2 ⊕ (1) 2NC
15	LS FP 1533-M2 2NO	FP 1534-M2 2NO	FP 1535-M2 2NO
16	LI FP 1633-M2 2NC	FP 1634-M2 2NC	FP 1635-M2 ⊕ (1) 2NC
18	LA FP 1833-M2 1NO+1NC	FP 1834-M2 1NO+1NC	FP 1835-M2 ⊕ (1) 1NO+1NC
20	L FP 2033-M2 1NO+2NC	FP 2034-M2 1NO+2NC	FP 2035-M2 ⊕ (1) 1NO+2NC
21	L FP 2133-M2 3NC	FP 2134-M2 3NC	FP 2135-M2 ⊕ (1) 3NC
22	L FP 2233-M2 2NO+1NC	FP 2234-M2 2NO+1NC	FP 2235-M2 ⊕ (1) 2NO+1NC
2	R FP 233-M2 2x(1NO-1NC)	FP 234-M2 2x(1NO-1NC)	FP 235-M2 2x(1NO-1NC)
E1	PNP FP E133-M2 1NO-1NC	FP E134-M2 1NO-1NC	FP E135-M2 1NO-1NC
Max. speed	1.5 m/s	1 m/s	page 213 - type 1
Actuating force	0.1 Nm	0.1 Nm	0.1 Nm (0.25 Nm ⊕)
Travel diagrams	page 214 - group 4	page 214 - group 4	page 214 - group 4

	Other rollers available. See page 34	Other rollers available. See page 34	Porcelain roller	Other rollers available. See page 34
5	R FP 551-M2 ⊕ 1NO+1NC	FP 552-M2 ⊕ 1NO+1NC	FP 553-E11M2V9 ⊕ 1NO+1NC	FP 556-M2 ⊕ 1NO+1NC
6	L FP 651-M2 ⊕ 1NO+1NC	FP 652-M2 ⊕ 1NO+1NC	FP 653-E11M2V9 ⊕ 1NO+1NC	FP 656-M2 ⊕ 1NO+1NC
7	LO FP 751-M2 ⊕ 1NO+1NC	FP 752-M2 ⊕ 1NO+1NC	FP 753-E11M2V9 ⊕ 1NO+1NC	FP 756-M2 ⊕ 1NO+1NC
9	L FP 951-M2 ⊕ 2NC	FP 952-M2 ⊕ 2NC	FP 953-E11M2V9 ⊕ 2NC	FP 956-M2 ⊕ 2NC
10	L FP 1051-M2 2NO	FP 1052-M2 2NO	FP 1053-E11M2V9 2NO	FP 1056-M2 2NO
11	R FP 1151-M2 ⊕ 2NC	FP 1152-M2 ⊕ 2NC	FP 1153-E11M2V9 2NC	FP 1156-M2 ⊕ 2NC
12	R FP 1251-M2 2NO	FP 1252-M2 2NO	FP 1253-E11M2V9 2NO	FP 1256-M2 2NO
13	LV FP 1351-M2 ⊕ 2NC	FP 1352-M2 ⊕ 2NC	FP 1353-E11M2V9 ⊕ 2NC	FP 1356-M2 ⊕ 2NC
14	LS FP 1451-M2 ⊕ 2NC	FP 1452-M2 ⊕ 2NC	FP 1453-E11M2V9 ⊕ 2NC	FP 1456-M2 ⊕ 2NC
15	LS FP 1551-M2 2NO	FP 1552-M2 2NO	FP 1553-E11M2V9 2NO	FP 1556-M2 2NO
16	LI FP 1651-M2 ⊕ 2NC	FP 1652-M2 ⊕ 2NC	FP 1653-E11M2V9 ⊕ 2NC	FP 1656-M2 ⊕ 2NC
18	LA FP 1851-M2 ⊕ 1NO+1NC	FP 1852-M2 ⊕ 1NO+1NC	FP 1853-E11M2V9 ⊕ 1NO+1NC	FP 1856-M2 ⊕ 1NO+1NC
20	L FP 2051-M2 ⊕ 1NO+2NC	FP 2052-M2 ⊕ 1NO+2NC	FP 2053-E11M2V9 ⊕ 1NO+2NC	FP 2056-M2 ⊕ 1NO+2NC
21	L FP 2151-M2 ⊕ 3NC	FP 2152-M2 ⊕ 3NC	FP 2153-E11M2V9 ⊕ 3NC	FP 2156-M2 ⊕ 3NC
22	L FP 2251-M2 ⊕ 2NO+1NC	FP 2252-M2 ⊕ 2NO+1NC	FP 2253-E11M2V9 ⊕ 2NO+1NC	FP 2256-M2 ⊕ 2NO+1NC
2	R FP 251-M2 2x(1NO-1NC)	FP 252-M2 2x(1NO-1NC)	FP 253-E11M2 2x(1NO-1NC)	FP 256-M2 2x(1NO-1NC)
E1	PNP FP E151-M2 1NO-1NC	FP E152-M2 1NO-1NC	FP E153-E11M2V9 1NO-1NC	FP E156-M2 1NO-1NC
Max. speed	page 213 - type 1	page 213 - type 1	0.5 m/s	page 213 - type 1
Actuating force	0.06 Nm (0.25 Nm ⊕)	0.06 Nm (0.25 Nm ⊕)	0.03 Nm (0.25 Nm ⊕)	0.1 Nm (0.25 Nm ⊕)
Travel diagrams	page 214 - group 4	page 214 - group 4	page 214 - group 5	page 214 - group 4

(1) Positive opening only with actuator set to max. See page 33.

All values in the drawings are in mm

Items with code on green background are stock items

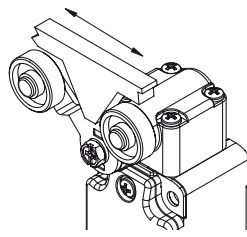
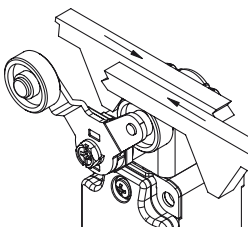
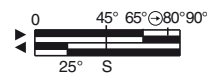
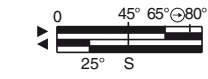
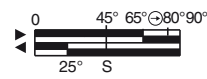
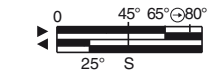
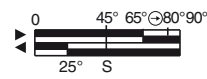
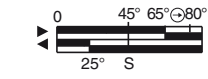
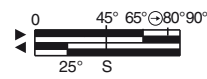
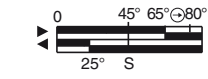
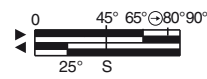
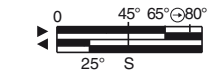
Accessories See page 197

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

Contact type:

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

Contact block

	Other rollers available. See page 34	With stainless steel rollers on request	With stainless steel rollers on request	Rope switch for signalling
5	R FP 557-M2 (⊕) 1NO+1NC	FP 541-M2 (⊕) 1NO+1NC	FP 542-M2 (⊕) 1NO+1NC	FP 576-M2 1NO+1NC
6	L FP 657-M2 (⊕) 1NO+1NC	Bistable switch with lyra lever, single track	Bistable switch with lyra lever, dual track	FP 676-M2 1NO+1NC
7	LO FP 757-M2 (⊕) 1NO+1NC			FP 776-M2 1NO+1NC
9	L FP 957-M2 (⊕) 2NC			FP 976-M2 2NO
10	L FP 1057-M2 2NO			FP 1076-M2 2NC
11	R FP 1157-M2 (⊕) 2NC	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	FP 1176-M2 2NO
12	R FP 1257-M2 2NO			FP 1276-M2 2NC
13	LV FP 1357-M2 (⊕) 2NC	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	FP 1376-M2 2NO
14	LS FP 1457-M2 (⊕) 2NC			FP 1476-M2 2NO
15	LS FP 1557-M2 2NO	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	FP 1576-M2 2NC
16	LI FP 1657-M2 (⊕) 2NC			FP 1876-M2 1NO+1NC
18	LA FP 1857-M2 (⊕) 1NO+1NC	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	FP 2076-M2 2NO+1NC
20	L FP 2057-M2 (⊕) 1NO+2NC			FP 2176-M2 3NO
21	L FP 2157-M2 (⊕) 3NC	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	FP 2276-M2 1NO+2NC
22	L FP 2257-M2 (⊕) 2NO+1NC			FP 276-M2 2x(1NO-1NC)
2	R FP 257-M2 2x(1NO-1NC)			
E1	A FP E157-M2 1NO-1NC			
Max. speed	page 213 - type 1	0.5 m/s with cam at 30°	0.5 m/s with cam at 30°	0.5 m/s
Actuating force	0.1 Nm (0.25 Nm ⊕)	0.21 Nm (0.36 Nm ⊕)	0.21 Nm (0.36 Nm ⊕)	initial 20 N - final 40 N
Travel diagrams	page 214 - group 4			page 214 - group 6

All values in the drawings are in mm

Position switches with swivelling lever without actuator

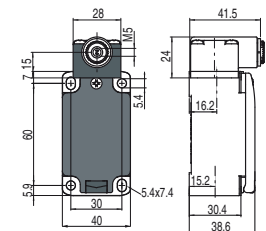
All values in the drawings are in mm

Contact type:

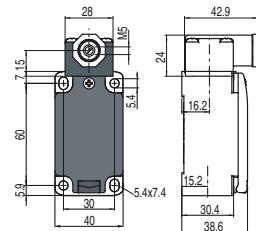
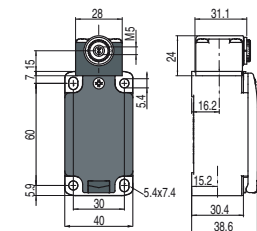
- R** = snap action
- L** = slow action
- LO** = slow action make before break
- LS** = slow action shifted
- LV** = slow action shifted and spaced
- LI** = slow action independent
- LA** = slow action close
- PNP** = electronic PNP

Contact block

Regular head



Compact head



IMPORTANT

For safety applications: join only switches and actuators marked with symbol \rightarrow next to the product code.

For more information about safety applications see details on page 211.

5	R	FP 538-M2 \rightarrow	1NO+1NC	FP 558-M2 \rightarrow	1NO+1NC	FP 540-M2 \rightarrow 1NO+1NC Bistable switch S = mechanical switching point positive opening on contacts 21-22 only
6	L	FP 638-M2 \rightarrow	1NO+1NC	FP 658-M2 \rightarrow	1NO+1NC	
7	LO	FP 738-M2 \rightarrow	1NO+1NC	FP 758-M2 \rightarrow	1NO+1NC	
9	L	FP 938-M2 \rightarrow	2NC	FP 958-M2 \rightarrow	2NC	
10	L	FP 1038-M2	2NO	FP 1058-M2	2NO	
11	R	FP 1138-M2 \rightarrow	2NC	FP 1158-M2 \rightarrow	2NC	
12	R	FP 1238-M2	2NO	FP 1258-M2	2NO	
13	LV	FP 1338-M2 \rightarrow	2NC	FP 1358-M2 \rightarrow	2NC	
14	LS	FP 1438-M2 \rightarrow	2NC	FP 1458-M2 \rightarrow	2NC	
15	LS	FP 1538-M2	2NO	FP 1558-M2	2NO	
16	LI	FP 1638-M2 \rightarrow	2NC			
18	LA	FP 1838-M2 \rightarrow	1NO+1NC	FP 1858-M2 \rightarrow	1NO+1NC	
20	L	FP 2038-M2 \rightarrow	1NO+2NC	FP 2058-M2 \rightarrow	1NO+2NC	
21	L	FP 2138-M2 \rightarrow	3NC	FP 2158-M2 \rightarrow	3NC	
22	L	FP 2238-M2 \rightarrow	2NO+1NC	FP 2258-M2 \rightarrow	2NO+1NC	
2	R	FP 238-M2	2x(1NO-1NC)	FP 258-M2	2x(1NO-1NC)	
E1	PNP	FP E138-M2	1NO+1NC	FP E158-M2	1NO+1NC	
Actuating force		0.1 Nm (0.25 Nm \rightarrow)		0.06 Nm (0.25 Nm \rightarrow)		
Travel diagrams		page 214 - group 4		page 214 - group 4		
					0.5 m/s with cam at 30° 0.21 Nm (0.36 Nm \rightarrow)	

Separate actuators

All values in the drawings are in mm

IMPORTANT: These separate actuators can be used only with items of the FD, FP, FL, FC series.

Technopolymer roller Ø 20 mm	Adjustable round rod Ø 3x125 mm	Adjustable square rod, 3x3x125 mm	Flexible rod with pointed end	Adjustable actuator with technopolymer roller	Adjustable glass fibre rod	
VF L31 \rightarrow	VF L32 ⁽³⁾	VF L33 ⁽³⁾	VF L34	VF L35 \rightarrow ^{(1) (3)}	VF L36 ⁽³⁾	
Lyra actuator, single track	Lyra actuator, dual track	Technopolymer roller, Ø 20 mm	Technopolymer roller, Ø 20 mm	Porcelain roller	Adjustable safety actuator with technopolymer roller	Technopolymer roller, Ø 20 mm
VF L41 \rightarrow	VF L42 \rightarrow	VF L51 \rightarrow	VF L52 \rightarrow	VF L53 \rightarrow ⁽²⁾	VF L56 \rightarrow ⁽³⁾	VF L57 \rightarrow

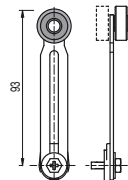
(1) Actuator VF L35 can only be used in safety applications if adjusted to its max. length, as shown in the figure to the right.

If an adjustable lever is required for safety applications, use the VF L56 adjustable safety lever.

(2) The position switch obtained by assembling switch FP •58-M2 (e.g. FP 558-M2, FP 658-M2...) with actuator VF L53 will not present the same travel diagrams and actuating forces as switch FP •53-E11M2V9 (e.g. FP 553-E11M2V9, FP 653-E11M2V9...).

(3) If installed with switch FP •58-M2 (e.g. FP 558-M2, FP 658-M2...) the actuator may hit the housing of the switch upon actuation. This possible interference depends on the fixing position of actuator and switch head.

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



Items with code on green background are stock items

Accessories See page 197

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



Special separate actuators

All values in the drawings are in mm

IMPORTANT: These separate actuators can be used only with items of the FD, FP, FL, FC series.

Stainless steel rollers, Ø 20 mm

VF L31-R24 (4)	VF L35-R24 (1) (3)	VF L51-R24 (4)	VF L52-R24 (4)	VF L56-R24 (3)	VF L57-R24 (4)

Technopolymer rollers, Ø 35 mm

VF L31-R25 (4)	VF L35-R25 (1) (3)	VF L51-R25 (4)	VF L52-R25 (4)	VF L56-R25 (3)	VF L57-R25 (4)

Rubber rollers, Ø 40 mm

VF L31-R5 (4)	VF L35-R5 (1) (3)	VF L51-R5 (4)	VF L52-R5 (4)	VF L56-R5 (3)	VF L57-R5 (4)

Rubber rollers, Ø 50 mm

VF L31-R26 (4)	VF L35-R26 (1) (3)	VF L51-R26 (4)	VF L52-R26 (4)	VF L56-R26 (3)	VF L57-R26 (4)

Protruding rubber rollers, Ø 50 mm

VF L35-R27 (1) (3)	VF L56-R27 (3)

Accessories See page 197

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