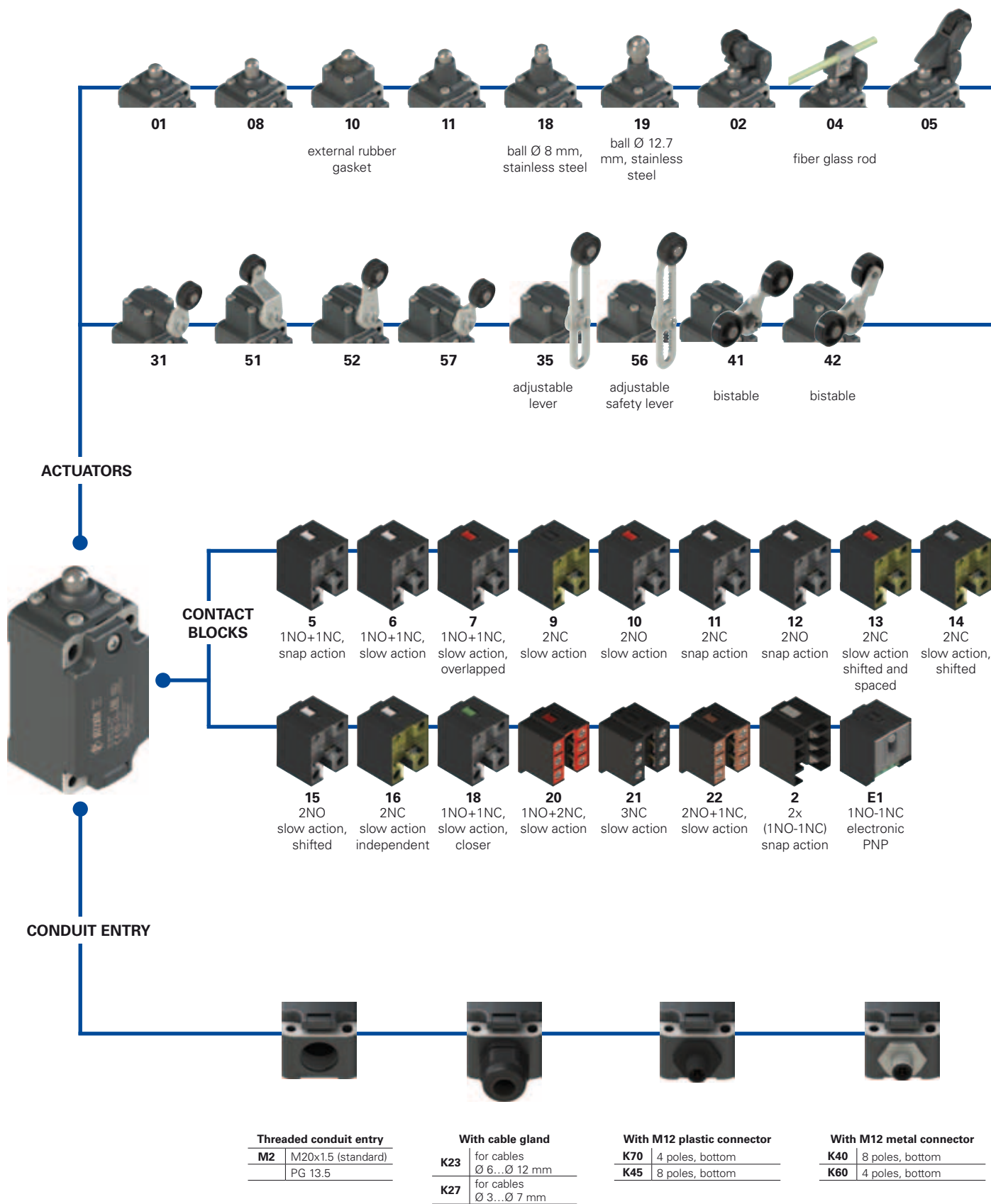
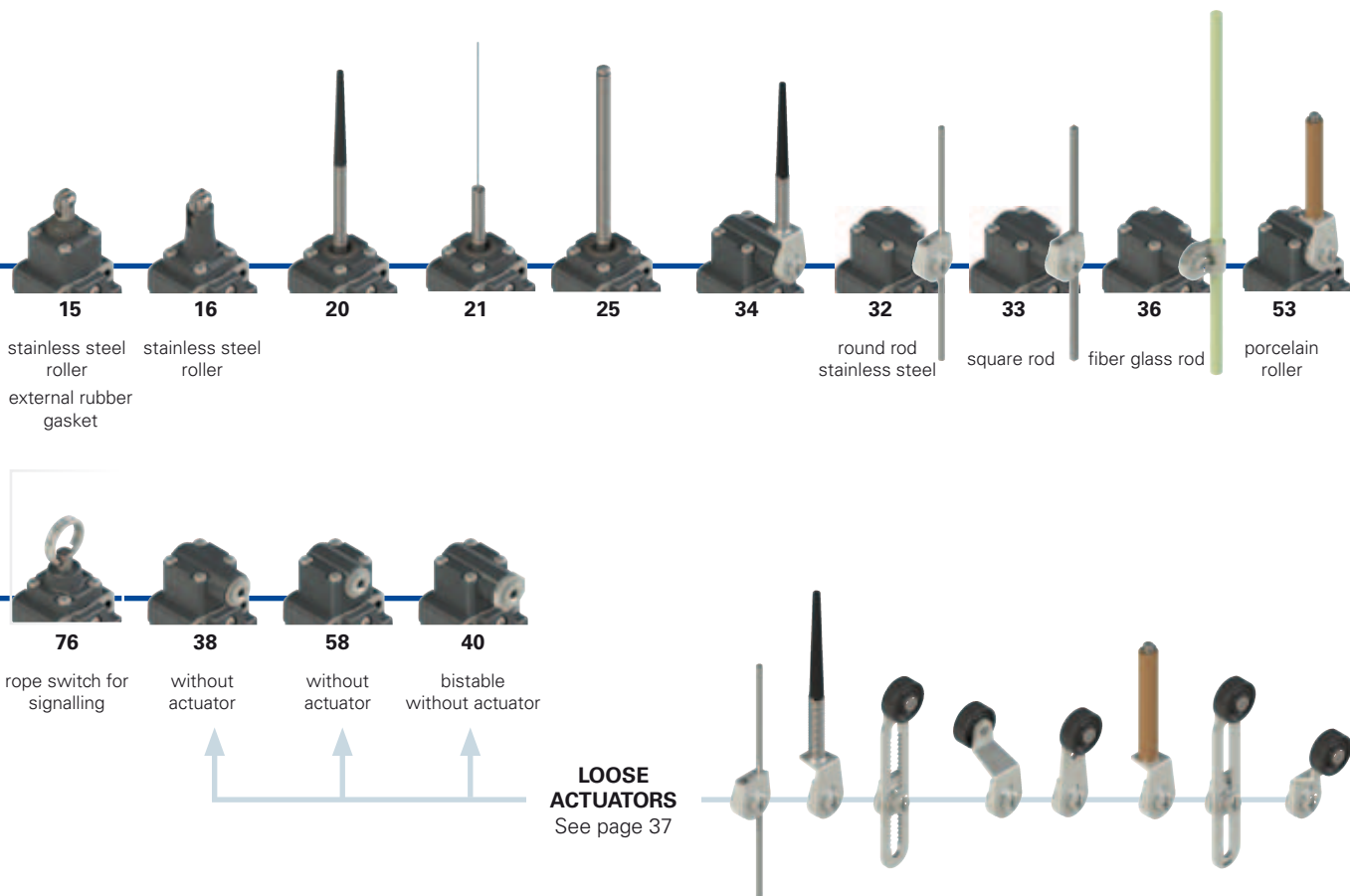


Selection diagram



● product options
→ 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
options
FP 502-GM2K70R24T6

Housing	
FP	technopolymer, one conduit entry

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	angled roller lever
...

Contact type	
	silver contacts (standard)
G	silver contacts with 1 µm gold coating (not for contact block 2)

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 e 36)

Pre-installed cable glands or connectors	
	without cable gland or connector (standard)
K23	cable gland for cables Ø 6...Ø 12 mm
K27	cable gland for cables Ø 3...Ø 7 mm
K45	M12 plastic connector, 8 poles
K70	M12 plastic connector, 4 poles

Please contact our technical service for the complete list of possible combinations.



Main features

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

Technical data

Housing

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

General data

Ambient temperature: -25°C ... +80°C
 Max. actuation frequency: 3600 operating cycles¹/hour
 Mechanical endurance: 20 million operating cycles¹
 Mounting position: any
 Safety parameters:
 B_{10d}: 40,000,000 for NC contacts
 Mechanical interlock, not coded: type 1 according to EN ISO 14119
 Tightening torques for installation: see pages 235-246
 (1) One operation cycle means two movements, one to close and one to open contacts, as defined in EN 60947-5-1.

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 block 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 conformity 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.

Markings and quality marks:



IMQ approval: EG605
 UL approval: E131787
 CCC approval: 2007010305230014
 EAC approval: RU C-IT DM94.B.01024

In conformity with the requirements of:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

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 aside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in **standard EN 60947-5-1, encl. K, par. 2**. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 238. Operate the switch **at least with the positive opening force**, indicated between brackets below each article, aside the minimum force value.

⚠ If not expressly indicated in this chapter, for correct installation and utilization of all articles see chapter utilization requirements from page 235 to page 246.

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



Characteristics approved by IMQ

Rated insulation voltage (Ui): 500 Vac
 400 Vac (for contact blocks 2, 11, 12, 20, 21, 22, 33, 34)
 Conventional free air thermal current (Ith): 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 (Ue): 400 Vac (50 Hz)
 Operating 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 blocks 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/EC.

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

Characteristics approved by UL

Utilization categories Q300 (69 VA, 125 ... 250 Vdc)
 A600 (720 VA, 120 ... 600 Vac)
 Data of 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, rigid or flexible, wire size AWG 12/14. 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, rigid or flexible, wire size AWG 14. Terminal tightening torque of 12 lb in (1.4 Nm).
 In conformity with standard: UL 508, CSA 22.2 No.14

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

Connection diagram for M12 connectors

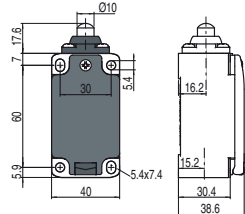
Contact block 2 1NO-1NC+1NO-1NC M12 connector, 8 poles	Contact block 5 1NO+1NC M12 connector, 4 poles	Contact block 6 1NO+1NC M12 connector, 4 poles	Contact block 7 1NO+1NC M12 connector, 4 poles	Contact block 9 2NC M12 connector, 4 poles	Contact block 10 2NO M12 connector, 4 poles	Contact block 11 2NC M12 connector, 4 poles	Contact block 12 2NO M12 connector, 4 poles	Contact block 13 2NC M12 connector, 4 poles																																																												
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Contact block E1
 PNP

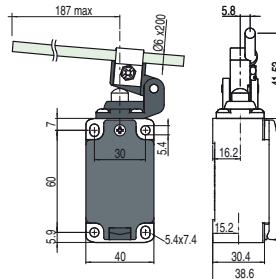
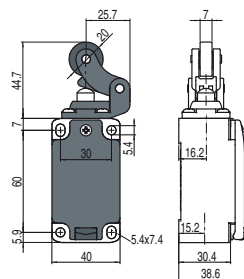
 M12 connector, 4 poles

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

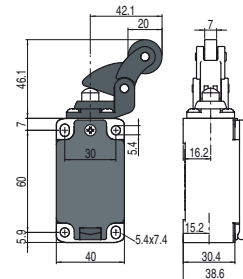
- Contact type:
- R** = snap action
 - L** = slow action
 - LO** = slow action overlapped
 - LS** = slow action shifted
 - LV** = slow action shifted and spaced
 - LI** = slow action independent
 - LA** = slow action closer
 - ⏏** = electronic PNP



With stainless steel roller on request

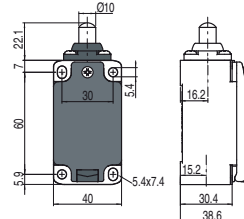


With stainless steel roller on request

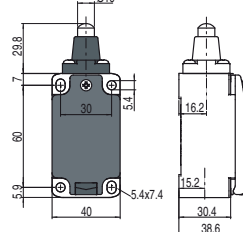
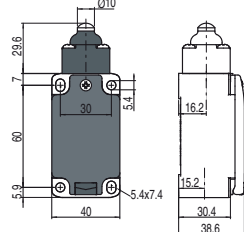


Contact blocks

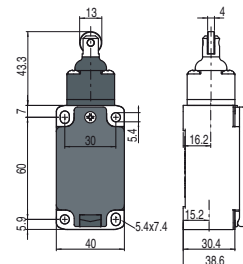
5	R	FP 501-M2	⊕	1NO+1NC	FP 502-M2	⊖	1NO+1NC	FP 504-M2	1NO+1NC	FP 505-M2	⊕	1NO+1NC
6	L	FP 601-M2	⊕	1NO+1NC	FP 602-M2	⊕	1NO+1NC	FP 604-M2	1NO+1NC	FP 605-M2	⊕	1NO+1NC
7	LO	FP 701-M2	⊕	1NO+1NC	FP 702-M2	⊕	1NO+1NC	FP 704-M2	1NO+1NC	FP 705-M2	⊕	1NO+1NC
9	L	FP 901-M2	⊕	2NC	FP 902-M2	⊕	2NC	FP 904-M2	2NC	FP 905-M2	⊕	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	⏏	FP E101-M2		1NO-1NC	FP E102-M2		1NO-1NC	FP E104-M2	1NO-1NC	FP E105-M2		1NO-1NC
Max. speed		page 237 - type 4		page 237 - type 3		0.5 m/s		page 237 - type 3				
Min. force		8 N (25 N ⊕)		6 N (25 N ⊕)		0.17 Nm		6 N (25 N ⊕)				
Travel diagrams		page 238 - group 1		page 238 - group 2		page 238 - group 1		page 238 - group 2				



With external rubber gasket



With external rubber gasket



Contact blocks

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	⏏	FP E108-M2		1NO-1NC	FP E110-M2		1NO-1NC	FP E111-M2	1NO-1NC	FP E115-M2		1NO-1NC	
Max. speed		page 237 - type 4		page 237 - type 4		page 237 - type 4		page 237 - type 4		page 237 - type 2			
Min. force		8 N (25 N ⊕)		11 N (25 N ⊕)		8 N (25 N ⊕)		8 N (25 N ⊕)		11 N (25 N ⊕)			
Travel diagrams		page 238 - group 1		page 238 - group 1		page 238 - group 1		page 238 - group 1		page 238 - group 1			

All measures in the drawings are in mm

Items with code on green background are stock items

Accessories See page 225

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



Contact 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

		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	FP 520-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	FP 1020-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	FP 1820-M2	1NO+1NC
20	L FP 2016-M2	1NO+2NC	FP 2018-M2	1NO+2NC	FP 2019-M2	1NO+2NC	FP 2020-M2	1NO+2NC
21	L FP 2116-M2	3NC	FP 2118-M2	3NC	FP 2119-M2	3NC	FP 2120-M2	3NC
22	L FP 2216-M2	2NO+1NC	FP 2218-M2	2NO+1NC	FP 2219-M2	2NO+1NC	FP 2220-M2	2NO+1NC
2	R FP 216-M2	2x(1NO-1NC)	FP 218-M2	2x(1NO-1NC)	FP 219-M2	2x(1NO-1NC)	FP 220-M2	2x(1NO-1NC)
E1	⚡ FP E116-M2	1NO-1NC	FP E118-M2	1NO-1NC	FP E119-M2	1NO-1NC	FP E120-M2	1NO-1NC
Max. speed	page 237 - type 2		page 237 - type 4		page 237 - type 4		1 m/s	
Min. force	8 N (25 N ⊕)		8 N (25 N ⊕)		8 N (25 N ⊕)		0.09 Nm	
Travel diagrams	page 238 - group 1		page 238 - group 1		page 238 - group 1		page 238 - group 3	

	With external rubber gasket	With external rubber gasket	Other rollers available. See on page 38	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	⚡ 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 237 - type 1		1.5 m/s	
Min. force	0.08 Nm		0.14 Nm		0.1 Nm (0.25 Nm ⊕)		0.1 Nm	
Travel diagrams	page 238 - group 3		page 238 - group 3		page 238 - group 4		page 238 - group 4	

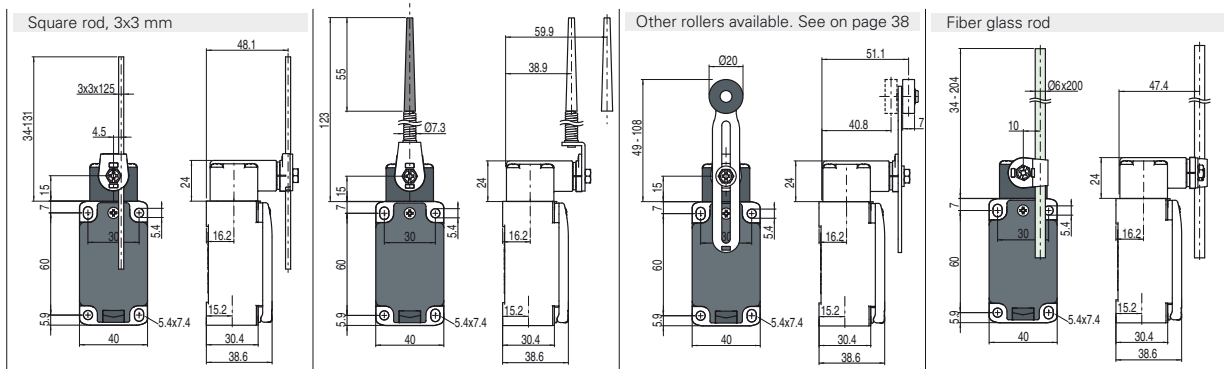
All measures in the drawings are in mm

Items with code on green background are stock items

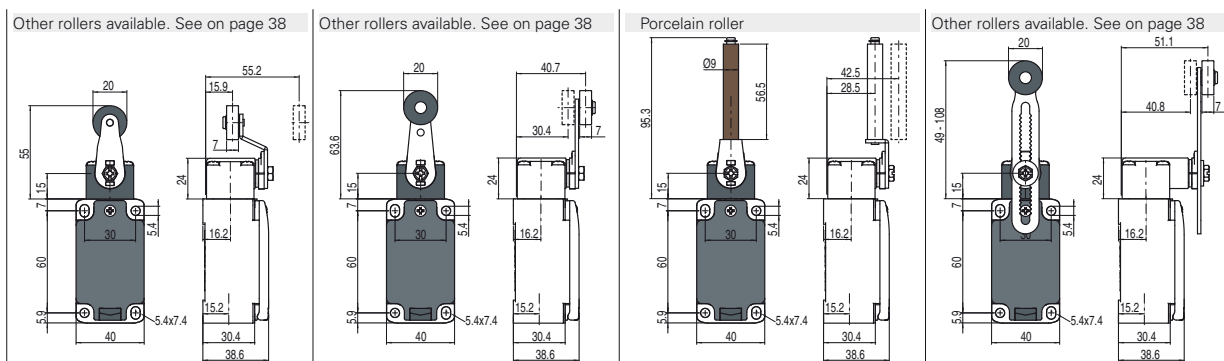
Accessories See page 225

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

- Contact 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	FP 533-M2	FP 534-M2	FP 535-M2	FP 536-M2
5	R FP 533-M2 1NO+1NC	FP 534-M2 1NO+1NC	FP 535-M2 ⊕ (1) 1NO+1NC	FP 536-M2 1NO+1NC
6	L FP 633-M2 1NO+1NC	FP 634-M2 1NO+1NC	FP 635-M2 ⊕ (1) 1NO+1NC	FP 636-M2 1NO+1NC
7	LO FP 733-M2 1NO+1NC	FP 734-M2 1NO+1NC	FP 735-M2 ⊕ (1) 1NO+1NC	FP 736-M2 1NO+1NC
9	L FP 933-M2 2NC	FP 934-M2 2NC	FP 935-M2 ⊕ (1) 2NC	FP 936-M2 2NC
10	L FP 1033-M2 2NO	FP 1034-M2 2NO	FP 1035-M2 2NO	FP 1036-M2 2NO
11	R FP 1133-M2 2NC	FP 1134-M2 2NC	FP 1135-M2 ⊕ (1) 2NC	FP 1136-M2 2NC
12	R FP 1233-M2 2NO	FP 1234-M2 2NO	FP 1235-M2 2NO	FP 1236-M2 2NO
13	LV FP 1333-M2 2NC	FP 1334-M2 2NC	FP 1335-M2 ⊕ (1) 2NC	FP 1336-M2 2NC
14	LS FP 1433-M2 2NC	FP 1434-M2 2NC	FP 1435-M2 ⊕ (1) 2NC	FP 1436-M2 2NC
15	LS FP 1533-M2 2NO	FP 1534-M2 2NO	FP 1535-M2 2NO	FP 1536-M2 2NO
16	LI FP 1633-M2 2NC	FP 1634-M2 2NC	FP 1635-M2 ⊕ (1) 2NC	FP 1636-M2 2NC
18	LA FP 1833-M2 1NO+1NC	FP 1834-M2 1NO+1NC	FP 1835-M2 ⊕ (1) 1NO+1NC	FP 1836-M2 1NO+1NC
20	L FP 2033-M2 1NO+2NC	FP 2034-M2 1NO+2NC	FP 2035-M2 ⊕ (1) 1NO+2NC	FP 2036-M2 1NO+2NC
21	L FP 2133-M2 3NC	FP 2134-M2 3NC	FP 2135-M2 ⊕ (1) 3NC	FP 2136-M2 3NC
22	L FP 2233-M2 2NO+1NC	FP 2234-M2 2NO+1NC	FP 2235-M2 ⊕ (1) 2NO+1NC	FP 2236-M2 2NO+1NC
2	R FP 233-M2 2x(1NO-1NC)	FP 234-M2 2x(1NO-1NC)	FP 235-M2 2x(1NO-1NC)	FP 236-M2 2x(1NO-1NC)
E1	⏏ FP E133-M2 1NO-1NC	FP E134-M2 1NO-1NC	FP E135-M2 1NO-1NC	FP E136-M2 1NO-1NC
Max. speed	1.5 m/s	1 m/s	page 237 - type 1	1.5 m/s
Min. force	0.1 Nm	0.1 Nm	0.1 Nm (0.25 Nm ⊕)	0.1 Nm
Travel diagrams	page 238 - group 4	page 238 - group 4	page 238 - group 4	page 238 - group 4



Contact blocks	FP 551-M2	FP 552-M2	FP 553-E11M2V9	FP 556-M2
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	⏏ FP E151-M2 1NO-1NC	FP E152-M2 1NO-1NC	FP E153-E11M2V9 1NO-1NC	FP E156-M2 1NO-1NC
Max. speed	page 237 - type 1	page 237 - type 1	0.5 m/s	page 237 - type 1
Min. 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 238 - group 4	page 238 - group 4	page 238 - group 5	page 238 - group 4

(1) Positive opening only with actuator set to max. See page 37

All measures in the drawings are in mm

Items with code on green background are stock items

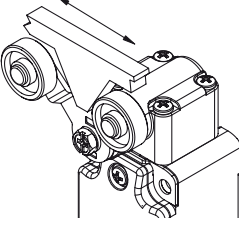
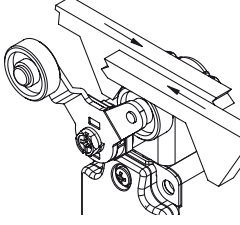
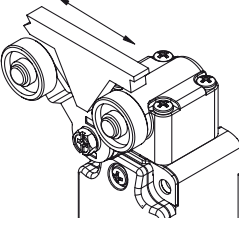
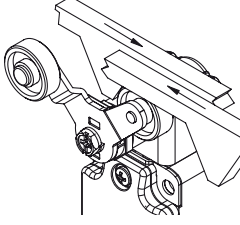
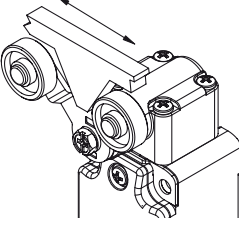
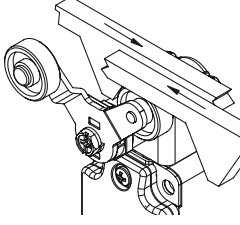
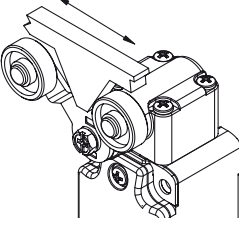
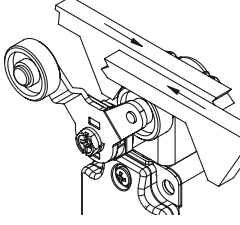
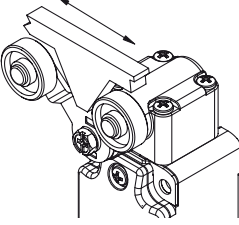
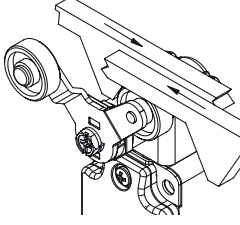
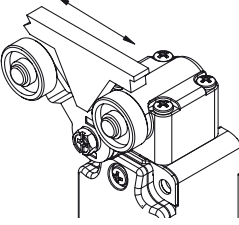
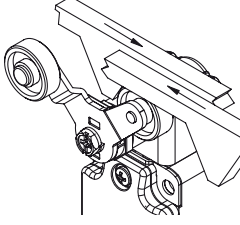
Accessories See page 225

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

Contact 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
- A** = electronic PNP

Contact blocks

	Other rollers available. See on page 38	With stainless steel roller on request	With stainless steel roller 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 single track lyra lever	Bistable switch with dual track lyra lever	FP 676-M2 1NO+1NC
7 LO	FP 757-M2 (⊕) 1NO+1NC			FP 776-M2 1NO+1NC
9 L	FP 957-M2 (⊕) 2NC	 <p>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 21-22 only</p>	 <p>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 21-22 only</p>	FP 976-M2 2NO
10 L	FP 1057-M2 2NO			FP 1076-M2 2NC
11 R	FP 1157-M2 (⊕) 2NC	 <p>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 21-22 only</p>	 <p>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 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>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 21-22 only</p>	 <p>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 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>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 21-22 only</p>	 <p>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 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>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 21-22 only</p>	 <p>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 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>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 21-22 only</p>	 <p>0 45° 65° ⊕ 80° 90° 25° S</p> <p>S = mechanical switching point positive opening on contact 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 237 - type 1	0.5 m/s with cam at 30°	0.5 m/s with cam at 30°	0.5 m/s
Min. 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 238 - group 4			page 238 - group 6

All measures in the drawings are in mm

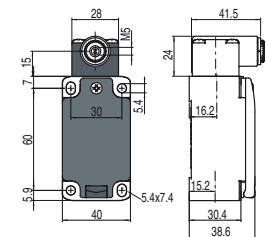
Position switches with revolving lever without actuator

All measures in the drawings are in mm

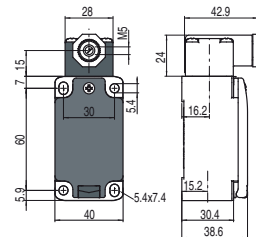
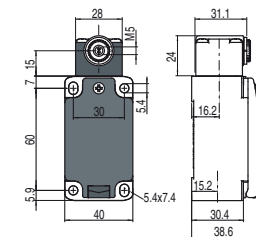
Contact type:

- 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

Regular head



Compact head



IMPORTANT

For safety applications: join only switches and actuators marked with symbol aside the product code.

For more information about safety applications see details on page 235.

Contact blocks

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

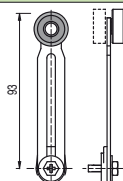
Loose actuators

All measures in the drawings are in mm

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

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 fiber glass rod	
VF L31	VF L32 ⁽³⁾	VF L33 ⁽³⁾	VF L34	VF L35 ^{(1) (3)}	VF L36 ⁽³⁾	
Single track lyra actuator	Dual track lyra actuator	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	VF L42	VF L51	VF L52	VF L53 ⁽²⁾	VF L56 ⁽³⁾	VF L57

- ⁽¹⁾ Actuator VF L35 can only be used in safety applications if adjusted to its max. length, as shown in figure beside. If you need an adjustable lever for safety applications, use the adjustable safety lever VF L56.
- ⁽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 could mechanically interfere with the housing of the switch. The interference could happen or not according to the actuator and the head fixing position.
- ⁽⁴⁾ The actuator cannot be rotated to the inside because it will mechanically interfere with the switch head.



Items with code on green background are stock items

Accessories See page 225

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



Special loose actuators

All measures in the drawings are in mm

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

Stainless steel rollers, Ø 20 mm

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

Technopolymer rollers, Ø 35 mm

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

Rubber rollers, Ø 40 mm

VF L31-R5 (4)	VF L35-R5 (1) (3)	VF L51-R5 (4)	VF L52-R5 (1)	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 225

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