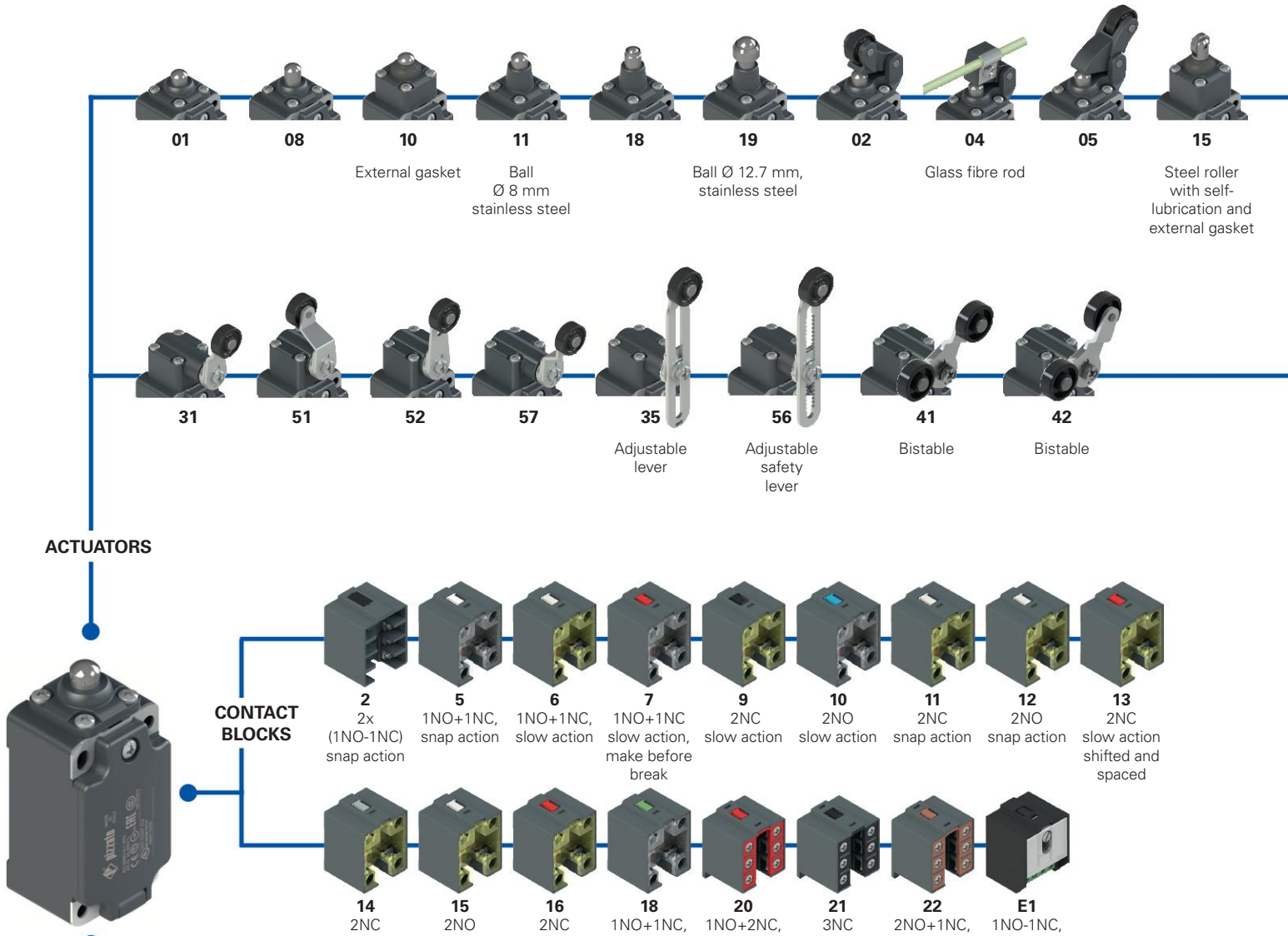
Selection diagram





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

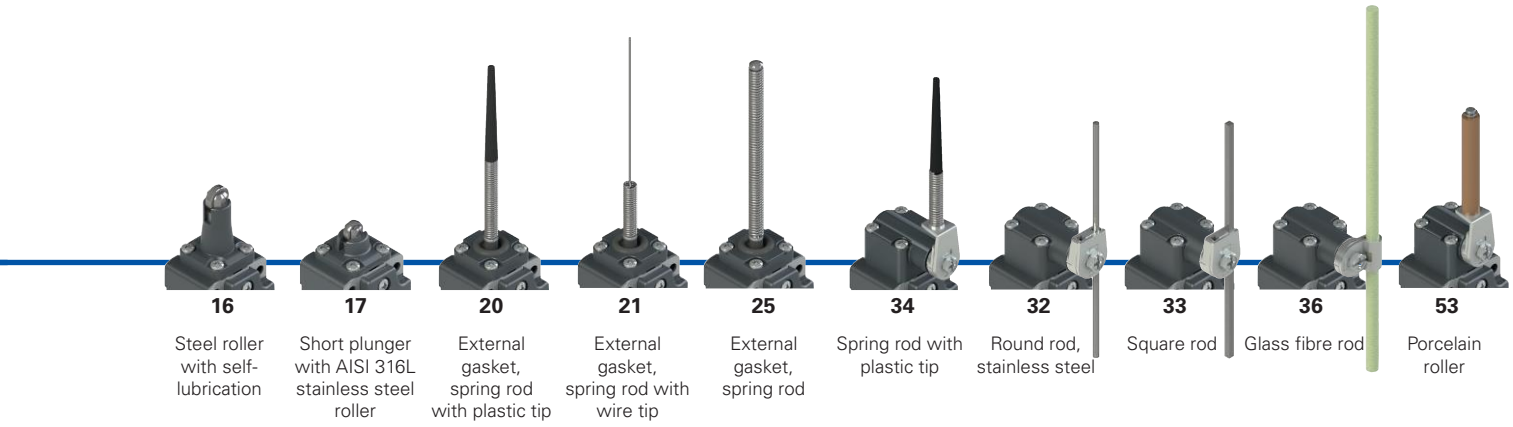
With cable gland	
K23	for cables Ø 6 … 12 mm
K27	for cables Ø 3 … 7 mm

With M12 plastic connector	
K70	4-pole, bottom
K45	8-pole, bottom

With M12 metal connector	
K40	8-pole, bottom
K60	4-pole, bottom

Product options

Sold separately as accessory



16 Steel roller with self-lubrication

17 Short plunger with AISI 316L stainless steel roller

20 External gasket, spring rod with plastic tip

21 External gasket, spring rod with wire tip

25 External gasket, spring rod

34 Spring rod with plastic tip

32 Round rod, stainless steel

33 Square rod

36 Glass fibre rod

53 Porcelain roller



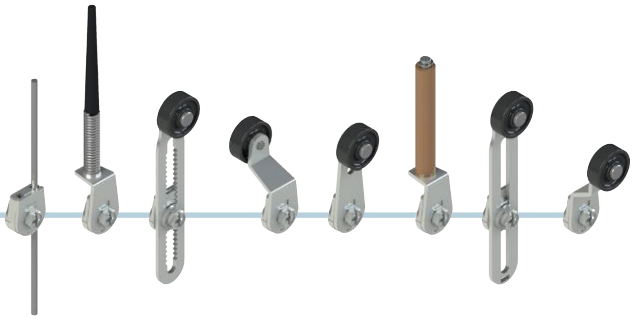
09 Rope switch for signalling

76 Rope switch for signalling

38 Without actuator

58 Without actuator

40 Bistable without actuator



SEPARATE ACTUATORS
See page 33

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
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	steel, with self-lubrication, Ø 20 mm (for actuators 02, 05, 31, 35, 51, 52, 56, 57)
R41	316L 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 56)

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
- 29 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:	M20x1.5 (standard)
Protection degree acc. to EN 60529:	IP67 with cable gland of equal or higher protection degree

General data

Ambient temperature:	-25°C … +80°C (standard) -40°C … +80°C (T6 option)
Max. actuation frequency:	3600 operating cycles/hour
Mechanical endurance:	20 million operating cycles
Mounting position:	any
Safety parameter B_{10D}:	40,000,000 for NC contacts
Mechanical interlock, not coded:	type 1 acc. to EN ISO 14119
Tightening torques for installation:	see page 219
Wire cross-sections and wire stripping lengths:	see page 239

In compliance with standards:
IEC 60947-5-1, EN 60947-5-1, IEC 60947-1, EN 60947-1, EN 50041, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, EN IEC 63000, UL 508, CSA C22.2 No. 14.
Approvals:
IEC 60947-5-1, UL 508, CSA C22.2 No. 14, GB/T14048.5

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1.

Quality marks:

IMQ approval:	EG605
UL approval:	E131787
CCC approval:	2024010305654835
EAC approval:	RU Д-IT.PA07.B.37848/24

Installation for safety applications:
Use only switches marked with the ⊖ symbol beside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as required by **EN ISO 14119, paragraph 5.4** for specific interlock applications and **EN ISO 13849-2 tables D3** (well-tried components) and **D.8** (fault exclusions) for safety applications in general. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 220. 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 chapter Utilization requirements from page 217 to page 232.**

	Electrical data		Utilization category
without connector	Thermal current (I_{th}):	10 A	Alternating current: AC15 (50÷60 Hz)
	Rated insulation voltage (U_i):	500 Vac 600 Vdc 400 Vac 500 Vdc (contact blocks 2, 11, 12, 20, 21, 22)	Ue (V) 250 400 500 Ie (A) 6 4 1
	Rated impulse withstand voltage (U_{imp}):	6 kV 4 kV (contact blocks 20, 21, 22)	Direct current: DC13
	Conditional short circuit current:	1000 A acc. to EN 60947-5-1	Ue (V) 24 125 250
	Protection against short circuits:	type aM fuse 10 A 500 V	Ie (A) 3 0.55 0.3
	Pollution degree:	3	
with M12 connector, 4-pole	Thermal current (I_{th}):	4 A	Alternating current: AC15 (50÷60 Hz)
	Rated insulation voltage (U_i):	250 Vac 300 Vdc	Ue (V) 24 120 250
	Protection against short circuits:	type gG fuse 4 A 500 V	Ie (A) 4 4 4
	Pollution degree:	3	Direct current: DC13
			Ue (V) 24 125 250
			Ie (A) 3 0.55 0.3
with M12 connector, 8-pole	Thermal current (I_{th}):	2 A	Alternating current: AC15 (50÷60 Hz)
	Rated insulation voltage (U_i):	30 Vac 36 Vdc	Ue (V) 24
	Protection against short circuits:	type gG fuse 2 A 500 V	Ie (A) 2
	Pollution degree:	3	Direct current: DC13
			Ue (V) 24
			Ie (A) 2

Features approved by IMQ

Rated insulation voltage (U_i):	500 Vac 400 Vac (for contact blocks 2, 11, 12, 20, 21, 22, 28, 29, 30, 33, 34, 37)
Conventional free air thermal current (I_{th}):	10 A
Protection against short circuits:	type aM fuse 10 A 500 V
Rated impulse withstand voltage (U_{imp}):	6 kV 4 kV (for contact blocks 20, 21, 22, 28, 29, 30, 33, 34)
Protection degree of the housing:	IP67
MV terminals (screw terminals)	
Pollution degree:	3
Utilization category:	AC15
Operating voltage (U_e):	400 Vac (50 Hz)
Operating current (I_e):	3 A

Forms of the contact element: Za, Za+Za, X+X, Zb, Y+Y, Y+Y+X, Y+Y+Y, Y+X+X, Y, X.
Positive opening of contacts on contact blocks 5, 6, 7, 8, 9, 11, 13, 14, 16, 17, 18, 19, 20, 21, 22, 28, 29, 30, 33, 34, 37, 38, 39, 66.
In compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

Features approved by UL

Electrical Ratings: Q300 pilot duty (69 VA, 125-250 V dc)
A600 pilot duty (720 VA, 120-600 V ac)

Environmental Ratings: Types 1, 4X, 12, 13

For all contact blocks except 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 12, 14 AWG. Tightening torque for terminal screws of 7.1 lb in (0.8 Nm).

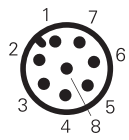
For contact blocks 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 14 AWG. Tightening torque for terminal screws of 12 lb in (1.4 Nm).

The hub is to be connected to the conduit before the hub is connected to the enclosure.

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

Wiring diagram for M12 connectors

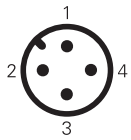
Contact block 2 — 2x(1NO-1NC)



M12 connector, 8-pole

Contacts	Pin no.
NO	3-4
NC	5-6
NO	7-8
NC	1-2

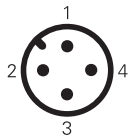
Contact block 5 — 1NO+1NC



M12 connector, 4-pole

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

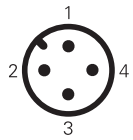
Contact block 6 — 1NO+1NC



M12 connector, 4-pole

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

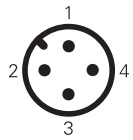
Contact block 7 — 1NO+1NC



M12 connector, 4-pole

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

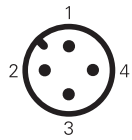
Contact block 9 — 2NC



M12 connector, 4-pole

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

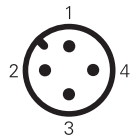
Contact block 10 — 2NO



M12 connector, 4-pole

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

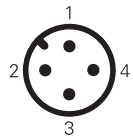
Contact block 11 — 2NC



M12 connector, 4-pole

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

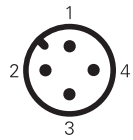
Contact block 12 — 2NO



M12 connector, 4-pole

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

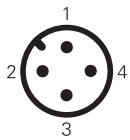
Contact block 13 — 2NC



M12 connector, 4-pole

Contacts	Pin no.
NC (1°)	1-2
NC (2°)	3-4

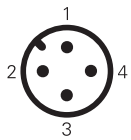
Contact block 14 — 2NC



M12 connector, 4-pole

Contacts	Pin no.
NC (1°)	1-2
NC (2°)	3-4

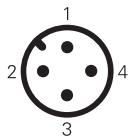
Contact block 15 — 2NO



M12 connector, 4-pole

Contacts	Pin no.
NO (1°)	1-2
NO (2°)	3-4

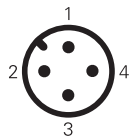
Contact block 16 — 2NC



M12 connector, 4-pole

Contacts	Pin no.
NC, lever to the right 1-2	
NC, lever to the left 3-4	

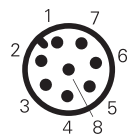
Contact block 18 — 1NO+1NC



M12 connector, 4-pole

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

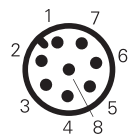
Contact block 20 — 1NO+2NC



M12 connector, 8-pole

Contacts	Pin no.
NC	3-4
NC	5-6
NO	7-8

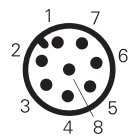
Contact block 21 — 3NC



M12 connector, 8-pole

Contacts	Pin no.
NC	3-4
NC	5-6
NC	7-8

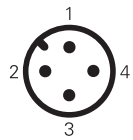
Contact block 22 — 2NO+1NC



M12 connector, 8-pole

Contacts	Pin no.
NC	3-4
NO	5-6
NO	7-8

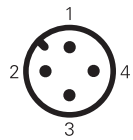
Contact block 33 — 1NO+1NC



M12 connector, 4-pole

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

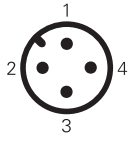
Contact block 34 — 2NC



M12 connector, 4-pole

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

Contact block E1 — PNP

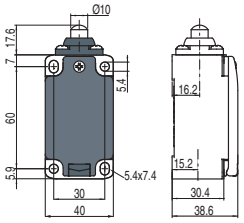
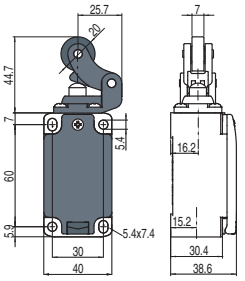
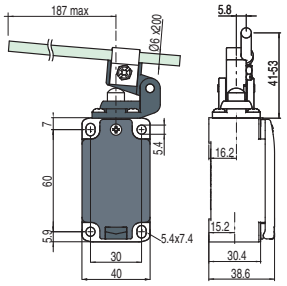
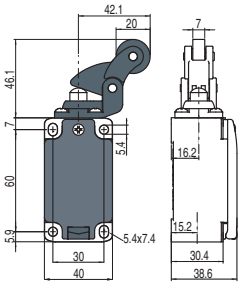


M12 connector, 4-pole

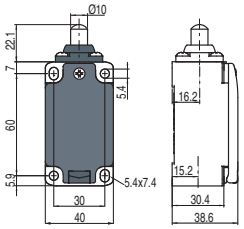
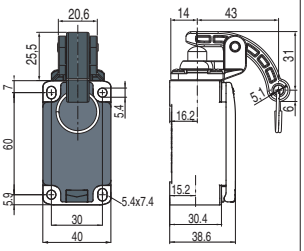
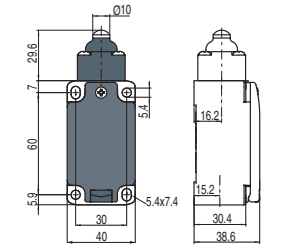
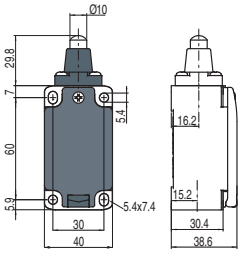
Contacts	Pin no.
+	1
-	3
NC	2
NO	4

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
- = electronic, PNP

Contact block								
				With steel roller with self-lubrication or 316L stainless steel on request 				With steel roller with self-lubrication or 316L stainless steel on request 
2	R	FP 201-M2	2x(1NO-1NC)	FP 202-M2	2x(1NO-1NC)	FP 204-M2	2x(1NO-1NC)	FP 205-M2	2x(1NO-1NC)
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
E1		FP E101-M2	1NO-1NC	FP E102-M2	1NO-1NC	FP E104-M2	1NO-1NC	FP E105-M2	1NO-1NC
Max. speed		page 219 - type 4		page 219 - type 3		0.5 m/s		page 219 - type 3	
Actuating force		8 N (25 N ⊕)		6 N (25 N ⊕)		0.17 Nm		6 N (25 N ⊕)	
Travel diagrams		page 220 - group 1		page 220 - group 2		page 220 - group 1		page 220 - group 2	

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

Contact block								
				Rope switch for signalling 		External gasket 			
2	R	FP 208-M2	2x(1NO-1NC)	FP 209-M2	2x(1NO-1NC)	FP 210-M2	2x(1NO-1NC)	FP 211-M2	2x(1NO-1NC)
5	R	FP 508-M2	1NO+1NC	FP 509-M2	1NO+1NC	FP 510-M2	1NO+1NC	FP 511-M2	1NO+1NC
6	L	FP 608-M2	1NO+1NC	FP 609-M2	1NO+1NC	FP 610-M2	1NO+1NC	FP 611-M2	1NO+1NC
7	LO	FP 708-M2	1NO+1NC	FP 709-M2	1NO+1NC	FP 710-M2	1NO+1NC	FP 711-M2	1NO+1NC
9	L	FP 908-M2	2NC	FP 909-M2	2NC	FP 910-M2	2NC	FP 911-M2	2NC
10	L	FP 1008-M2	2NO	FP 1009-M2	2NO	FP 1010-M2	2NO	FP 1011-M2	2NO
11	R	FP 1108-M2	2NC	FP 1109-M2	2NC	FP 1110-M2	2NC	FP 1111-M2	2NC
12	R	FP 1208-M2	2NO	FP 1209-M2	2NO	FP 1210-M2	2NO	FP 1211-M2	2NO
13	LV	FP 1308-M2	2NC	FP 1309-M2	2NC	FP 1310-M2	2NC	FP 1311-M2	2NC
14	LS	FP 1408-M2	2NC	FP 1409-M2	2NC	FP 1410-M2	2NC	FP 1411-M2	2NC
15	LS	FP 1508-M2	2NO	FP 1509-M2	2NO	FP 1510-M2	2NO	FP 1511-M2	2NO
18	LA	FP 1808-M2	1NO+1NC	FP 1809-M2	1NO+1NC	FP 1810-M2	1NO+1NC	FP 1811-M2	1NO+1NC
20	L	FP 2008-M2	1NO+2NC	FP 2009-M2	1NO+2NC	FP 2010-M2	1NO+2NC	FP 2011-M2	1NO+2NC
21	L	FP 2108-M2	3NC	FP 2109-M2	3NC	FP 2110-M2	3NC	FP 2111-M2	3NC
22	L	FP 2208-M2	2NO+1NC	FP 2209-M2	2NO+1NC	FP 2210-M2	2NO+1NC	FP 2211-M2	2NO+1NC
E1		FP E108-M2	1NO-1NC	FP E109-M2	1NO-1NC	FP E110-M2	1NO-1NC	FP E111-M2	1NO-1NC
Max. speed		page 219 - type 4		0.5 m/s		page 219 - type 4		page 219 - type 4	
Actuating force		8 N (25 N ⊕)		7 N		11 N (25 N ⊕)		8 N (25 N ⊕)	
Travel diagrams		page 220 - group 1		/		page 220 - group 1		page 220 - group 1	

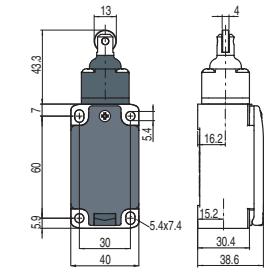
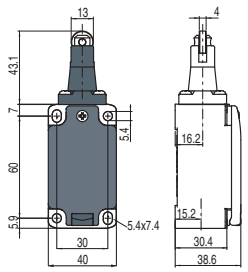
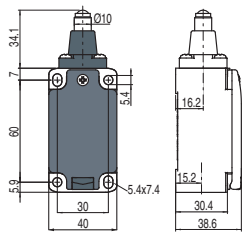
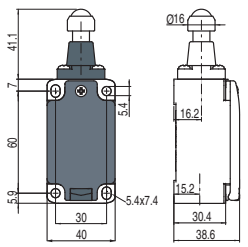
All values in the drawings are in mm

Accessories See page 195

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

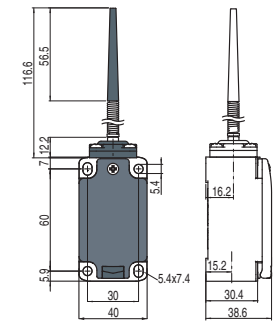
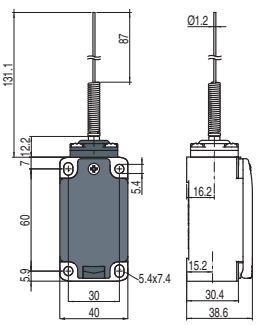
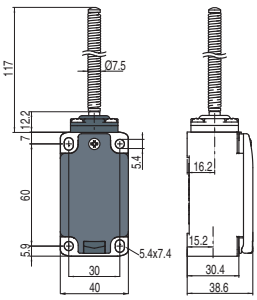
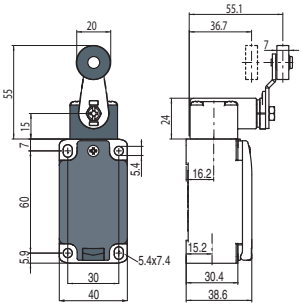
Contact type
R = snap action
L = slow action
LO = slow action, make before break
LS = slow action, shifted
LV = slow action, shifted and spaced
LI = slow action, independent
LA = slow action, close
= electronic, PNP

Contact block

		External gasket		External gasket		Ball, Ø 8 mm, stainless steel		Ball, Ø 12.7 mm, stainless steel	
									
2	R	FP 215-M2	2x(1NO-1NC)	FP 216-M2	2x(1NO-1NC)	FP 218-M2	2x(1NO-1NC)	FP 219-M2	2x(1NO-1NC)
5	R	FP 515-M2 ⊖	1NO+1NC	FP 516-M2 ⊖	1NO+1NC	FP 518-M2 ⊖	1NO+1NC	FP 519-M2 ⊖	1NO+1NC
6	L	FP 615-M2 ⊖	1NO+1NC	FP 616-M2 ⊖	1NO+1NC	FP 618-M2 ⊖	1NO+1NC	FP 619-M2 ⊖	1NO+1NC
7	LO	FP 715-M2 ⊖	1NO+1NC	FP 716-M2 ⊖	1NO+1NC	FP 718-M2 ⊖	1NO+1NC	FP 719-M2 ⊖	1NO+1NC
9	L	FP 915-M2 ⊖	2NC	FP 916-M2 ⊖	2NC	FP 918-M2 ⊖	2NC	FP 919-M2 ⊖	2NC
10	L	FP 1015-M2	2NO	FP 1016-M2	2NO	FP 1018-M2	2NO	FP 1019-M2	2NO
11	R	FP 1115-M2 ⊖	2NC	FP 1116-M2 ⊖	2NC	FP 1118-M2 ⊖	2NC	FP 1119-M2 ⊖	2NC
12	R	FP 1215-M2	2NO	FP 1216-M2	2NO	FP 1218-M2	2NO	FP 1219-M2	2NO
13	LV	FP 1315-M2 ⊖	2NC	FP 1316-M2 ⊖	2NC	FP 1318-M2 ⊖	2NC	FP 1319-M2 ⊖	2NC
14	LS	FP 1415-M2 ⊖	2NC	FP 1416-M2 ⊖	2NC	FP 1418-M2 ⊖	2NC	FP 1419-M2 ⊖	2NC
15	LS	FP 1515-M2	2NO	FP 1516-M2	2NO	FP 1518-M2	2NO	FP 1519-M2	2NO
18	LA	FP 1815-M2 ⊖	1NO+1NC	FP 1816-M2 ⊖	1NO+1NC	FP 1818-M2 ⊖	1NO+1NC	FP 1819-M2 ⊖	1NO+1NC
20	L	FP 2015-M2 ⊖	1NO+2NC	FP 2016-M2 ⊖	1NO+2NC	FP 2018-M2 ⊖	1NO+2NC	FP 2019-M2 ⊖	1NO+2NC
21	L	FP 2115-M2 ⊖	3NC	FP 2116-M2 ⊖	3NC	FP 2118-M2 ⊖	3NC	FP 2119-M2 ⊖	3NC
22	L	FP 2215-M2 ⊖	2NO+1NC	FP 2216-M2 ⊖	2NO+1NC	FP 2218-M2 ⊖	2NO+1NC	FP 2219-M2 ⊖	2NO+1NC
E1		FP E115-M2	1NO-1NC	FP E116-M2	1NO-1NC	FP E118-M2	1NO-1NC	FP E119-M2	1NO-1NC
Max. speed		page 219 - type 2		page 219 - type 2		page 219 - type 4		page 219 - type 4	
Actuating force		11 N (25 N ⊖)		8 N (25 N ⊖)		8 N (25 N ⊖)		8 N (25 N ⊖)	
Travel diagrams		page 220 - group 1		page 220 - group 1		page 220 - group 1		page 220 - group 1	

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

Contact block

		External gasket		External gasket		External gasket		Other rollers available. See page 34	
									
2	R	FP 220-M2	2x(1NO-1NC)	FP 221-M2	2x(1NO-1NC)	FP 225-M2	2x(1NO-1NC)	FP 231-M2	2x(1NO-1NC)
5	R	FP 520-M2	1NO+1NC	FP 521-M2	1NO+1NC	FP 525-M2	1NO+1NC	FP 531-M2 ⊖	1NO+1NC
6	L	/		/		/		FP 631-M2 ⊖	1NO+1NC
7	LO	/		/		/		FP 731-M2 ⊖	1NO+1NC
9	L	/		/		/		FP 931-M2 ⊖	2NC
10	L	FP 1020-M2	2NO	FP 1021-M2	2NO	FP 1025-M2	2NO	FP 1031-M2	2NO
11	R	/		/		/		FP 1131-M2 ⊖	2NC
12	R	/		/		/		FP 1231-M2	2NO
13	LV	/		/		/		FP 1331-M2 ⊖	2NC
14	LS	/		/		/		FP 1431-M2 ⊖	2NC
15	LS	/		/		/		FP 1531-M2	2NO
16	LI	/		/		/		FP 1631-M2 ⊖	2NC
18	LA	FP 1820-M2	1NO+1NC	FP 1821-M2	1NO+1NC	FP 1825-M2	1NO+1NC	FP 1831-M2 ⊖	1NO+1NC
20	L	FP 2020-M2	1NO+2NC	FP 2021-M2	1NO+2NC	FP 2025-M2	1NO+2NC	FP 2031-M2 ⊖	1NO+2NC
21	L	FP 2120-M2	3NC	FP 2121-M2	3NC	FP 2125-M2	3NC	FP 2131-M2 ⊖	3NC
22	L	FP 2220-M2	2NO+1NC	FP 2221-M2	2NO+1NC	FP 2225-M2	2NO+1NC	FP 2231-M2 ⊖	2NO+1NC
E1		FP E120-M2	1NO-1NC	FP E121-M2	1NO-1NC	FP E125-M2	1NO-1NC	FP E131-M2	1NO-1NC
Max. speed		1 m/s		1 m/s		1 m/s		page 219 - type 1	
Actuating force		0.09 Nm		0.08 Nm		0.14 Nm		0.1 Nm (0.25 Nm ⊖)	
Travel diagrams		page 220 - group 3		page 220 - group 3		page 220 - group 3		page 220 - group 4	

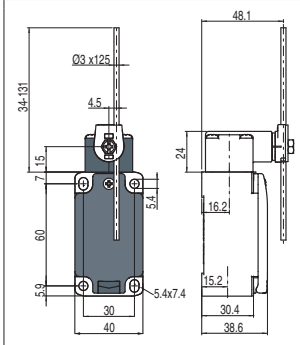
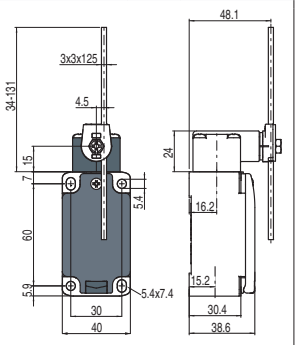
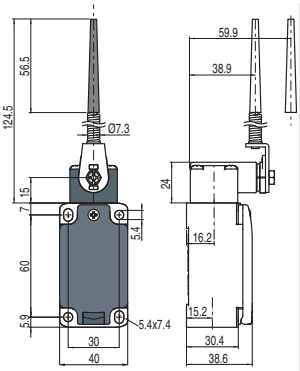
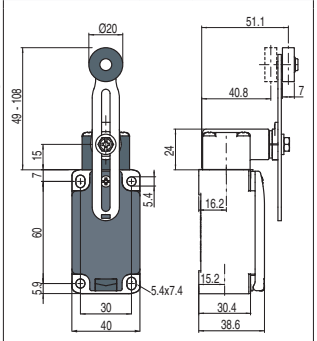
All values in the drawings are in mm

Accessories See page 195

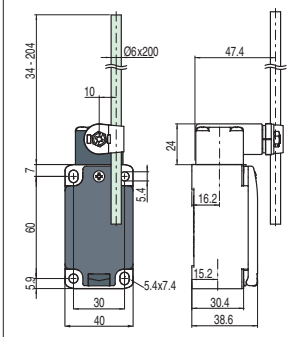
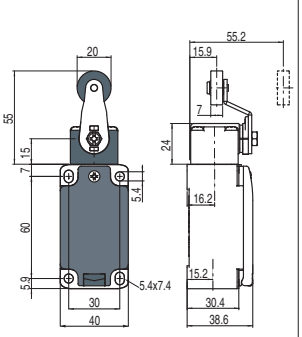
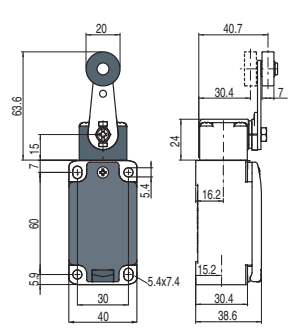
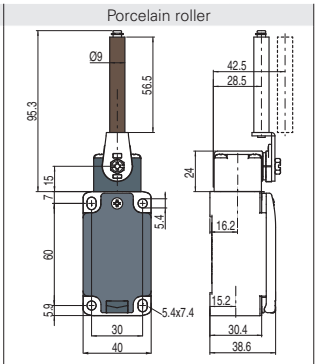
➔ The 2D and 3D files are available at **www.pizzato.com**

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
- = electronic, PNP

Contact block		Round rod, Ø 3 mm, stainless steel		Square rod, 3x3 mm				Other rollers available. See page 34	
									
2	R	FP 232-M2	2x(1NO-1NC)	FP 233-M2	2x(1NO-1NC)	FP 234-M2	2x(1NO-1NC)	FP 235-M2	2x(1NO-1NC)
5	R	FP 532-M2	1NO+1NC	FP 533-M2	1NO+1NC	FP 534-M2	1NO+1NC	FP 535-M2 (1)	1NO+1NC
6	L	FP 632-M2	1NO+1NC	FP 633-M2	1NO+1NC	FP 634-M2	1NO+1NC	FP 635-M2 (1)	1NO+1NC
7	LO	FP 732-M2	1NO+1NC	FP 733-M2	1NO+1NC	FP 734-M2	1NO+1NC	FP 735-M2 (1)	1NO+1NC
9	L	FP 932-M2	2NC	FP 933-M2	2NC	FP 934-M2	2NC	FP 935-M2 (1)	2NC
10	L	FP 1032-M2	2NO	FP 1033-M2	2NO	FP 1034-M2	2NO	FP 1035-M2	2NO
11	R	FP 1132-M2	2NC	FP 1133-M2	2NC	FP 1134-M2	2NC	FP 1135-M2 (1)	2NC
12	R	FP 1232-M2	2NO	FP 1233-M2	2NO	FP 1234-M2	2NO	FP 1235-M2	2NO
13	LV	FP 1332-M2	2NC	FP 1333-M2	2NC	FP 1334-M2	2NC	FP 1335-M2 (1)	2NC
14	LS	FP 1432-M2	2NC	FP 1433-M2	2NC	FP 1434-M2	2NC	FP 1435-M2 (1)	2NC
15	LS	FP 1532-M2	2NO	FP 1533-M2	2NO	FP 1534-M2	2NO	FP 1535-M2	2NO
16	LI	FP 1632-M2	2NC	FP 1633-M2	2NC	FP 1634-M2	2NC	FP 1635-M2 (1)	2NC
18	LA	FP 1832-M2	1NO+1NC	FP 1833-M2	1NO+1NC	FP 1834-M2	1NO+1NC	FP 1835-M2 (1)	1NO+1NC
20	L	FP 2032-M2	1NO+2NC	FP 2033-M2	1NO+2NC	FP 2034-M2	1NO+2NC	FP 2035-M2 (1)	1NO+2NC
21	L	FP 2132-M2	3NC	FP 2133-M2	3NC	FP 2134-M2	3NC	FP 2135-M2 (1)	3NC
22	L	FP 2232-M2	2NO+1NC	FP 2233-M2	2NO+1NC	FP 2234-M2	2NO+1NC	FP 2235-M2 (1)	2NO+1NC
E1		FP E132-M2	1NO-1NC	FP E133-M2	1NO-1NC	FP E134-M2	1NO-1NC	FP E135-M2	1NO-1NC
Max. speed		1.5 m/s		1.5 m/s		1 m/s		page 219 - type 1	
Actuating force		0.1 Nm		0.1 Nm		0.1 Nm		0.1 Nm (0.25 Nm →)	
Travel diagrams		page 220 - group 4		page 220 - group 4		page 220 - group 4		page 220 - group 4	

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

Contact block		Glass fibre rod		Other rollers available. See page 34		Other rollers available. See page 34		Porcelain roller	
									
2	R	FP 236-M2	2x(1NO-1NC)	FP 251-M2	2x(1NO-1NC)	FP 252-M2	2x(1NO-1NC)	FP 253-E11M2	2x(1NO-1NC)
5	R	FP 536-M2	1NO+1NC	FP 551-M2 →	1NO+1NC	FP 552-M2 →	1NO+1NC	FP 553-E11M2V9 →	1NO+1NC
6	L	FP 636-M2	1NO+1NC	FP 651-M2 →	1NO+1NC	FP 652-M2 →	1NO+1NC	FP 653-E11M2V9 →	1NO+1NC
7	LO	FP 736-M2	1NO+1NC	FP 751-M2 →	1NO+1NC	FP 752-M2 →	1NO+1NC	FP 753-E11M2V9 →	1NO+1NC
9	L	FP 936-M2	2NC	FP 951-M2 →	2NC	FP 952-M2 →	2NC	FP 953-E11M2V9 →	2NC
10	L	FP 1036-M2	2NO	FP 1051-M2	2NO	FP 1052-M2	2NO	FP 1053-E11M2V9	2NO
11	R	FP 1136-M2	2NC	FP 1151-M2 →	2NC	FP 1152-M2 →	2NC	/	
12	R	FP 1236-M2	2NO	FP 1251-M2	2NO	FP 1252-M2	2NO	FP 1253-E11M2V9	2NO
13	LV	FP 1336-M2	2NC	FP 1351-M2 →	2NC	FP 1352-M2 →	2NC	FP 1353-E11M2V9 →	2NC
14	LS	FP 1436-M2	2NC	FP 1451-M2 →	2NC	FP 1452-M2 →	2NC	FP 1453-E11M2V9 →	2NC
15	LS	FP 1536-M2	2NO	FP 1551-M2	2NO	FP 1552-M2	2NO	FP 1553-E11M2V9	2NO
16	LI	FP 1636-M2	2NC	/		/		/	
18	LA	FP 1836-M2	1NO+1NC	FP 1851-M2 →	1NO+1NC	FP 1852-M2 →	1NO+1NC	FP 1853-E11M2V9 →	1NO+1NC
20	L	FP 2036-M2	1NO+2NC	FP 2051-M2 →	1NO+2NC	FP 2052-M2 →	1NO+2NC	FP 2053-E11M2V9 →	1NO+2NC
21	L	FP 2136-M2	3NC	FP 2151-M2 →	3NC	FP 2152-M2 →	3NC	FP 2153-E11M2V9 →	3NC
22	L	FP 2236-M2	2NO+1NC	FP 2251-M2 →	2NO+1NC	FP 2252-M2 →	2NO+1NC	FP 2253-E11M2V9 →	2NO+1NC
E1		FP E136-M2	1NO-1NC	FP E151-M2	1NO-1NC	FP E152-M2	1NO-1NC	FP E153-E11M2V9	1NO-1NC
Max. speed		1.5 m/s		page 219 - type 1		page 219 - type 1		0.5 m/s	
Actuating force		0.1 Nm		0.06 Nm (0.25 Nm →)		0.06 Nm (0.25 Nm →)		0.03 Nm (0.25 Nm →)	
Travel diagrams		page 220 - group 4		page 220 - group 4		page 220 - group 4		page 220 - group 5	

(1) Positive opening only with actuator set to max. See page 34.

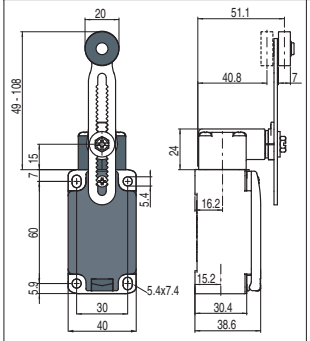
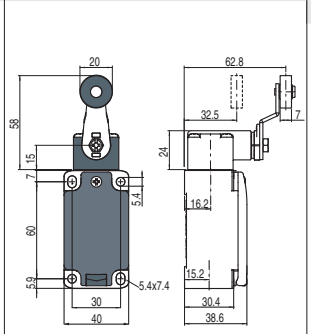
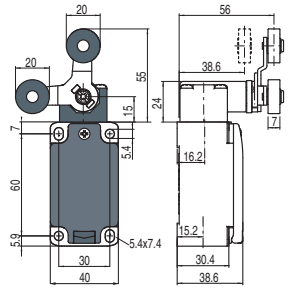
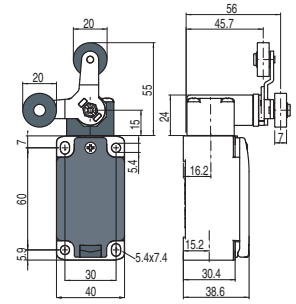
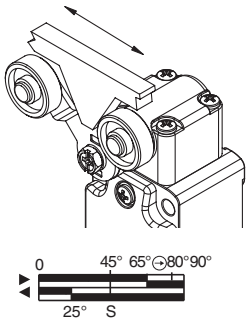
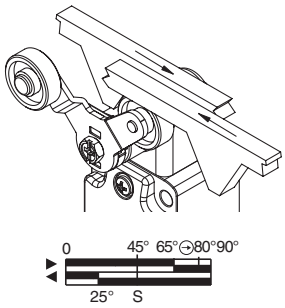
All values in the drawings are in mm

Accessories See page 195

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

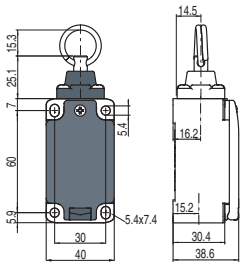
Contact type

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
⅄ = electronic, PNP

Contact block		Other rollers available. See page 34		Other rollers available. See page 34		With steel roller with self-lubrication or 316L stainless steel on request	With steel roller with self-lubrication or 316L stainless steel on request
							
2	R	FP 256-M2	2x(1NO-1NC)	FP 257-M2	2x(1NO-1NC)	/	/
5	R	FP 556-M2 ⊖	1NO+1NC	FP 557-M2 ⊖	1NO+1NC	FP 541-M2 ⊖ 1NO+1NC	FP 542-M2 ⊖ 1NO+1NC
6	L	FP 656-M2 ⊖	1NO+1NC	FP 657-M2 ⊖	1NO+1NC	Bistable switch with lyra lever, single track	Bistable switch with lyra lever, dual track
7	LO	FP 756-M2 ⊖	1NO+1NC	FP 757-M2 ⊖	1NO+1NC		
9	L	FP 956-M2 ⊖	2NC	FP 957-M2 ⊖	2NC		
10	L	FP 1056-M2	2NO	FP 1057-M2	2NO		
11	R	FP 1156-M2 ⊖	2NC	FP 1157-M2 ⊖	2NC		
12	R	FP 1256-M2	2NO	FP 1257-M2	2NO		
13	LV	FP 1356-M2 ⊖	2NC	FP 1357-M2 ⊖	2NC		
14	LS	FP 1456-M2 ⊖	2NC	FP 1457-M2 ⊖	2NC		
15	LS	FP 1556-M2	2NO	FP 1557-M2	2NO		
16	LI	FP 1656-M2 ⊖	2NC	FP 1657-M2 ⊖	2NC		
18	LA	FP 1856-M2 ⊖	1NO+1NC	FP 1857-M2 ⊖	1NO+1NC		
20	L	FP 2056-M2 ⊖	1NO+2NC	FP 2057-M2 ⊖	1NO+2NC		
21	L	FP 2156-M2 ⊖	3NC	FP 2157-M2 ⊖	3NC		
22	L	FP 2256-M2 ⊖	2NO+1NC	FP 2257-M2 ⊖	2NO+1NC		
E1	⅄	FP E156-M2	1NO-1NC	FP E157-M2	1NO-1NC		
Max. speed		page 219 - type 1		page 219 - type 1		0.5 m/s with cam at 30°	0.5 m/s with cam at 30°
Actuating force		0.1 Nm (0.25 Nm ⊖)		0.1 Nm (0.25 Nm ⊖)		0.21 Nm (0.36 Nm ⊖)	0.21 Nm (0.36 Nm ⊖)
Travel diagrams		page 220 - group 4		page 220 - group 4		/	/
						S = mechanical switching point positive opening on contacts 21-22 only	S = mechanical switching point positive opening on contacts 21-22 only

Contact type

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

Contact block		Rope switch for signalling	
			
2	R	FP 276-M2	2x(1NO-1NC)
5	R	FP 576-M2	1NO+1NC
6	L	FP 676-M2	1NO+1NC
7	LO	FP 776-M2	1NO+1NC
9	L	FP 976-M2	2NO
10	L	FP 1076-M2	2NC
11	R	FP 1176-M2	2NO
12	R	FP 1276-M2	2NC
13	LV	FP 1376-M2	2NO
14	LS	FP 1476-M2	2NO
15	LS	FP 1576-M2	2NC
16	LI	/	
18	LA	FP 1876-M2	1NO+1NC
20	L	FP 2076-M2	2NO+1NC
21	L	FP 2176-M2	3NO
22	L	FP 2276-M2	1NO+2NC
E1	⅄	/	
Max. speed		0.5 m/s	
Actuating force		initial 20 N - final 40 N	
Travel diagrams		page 220 - group 6	

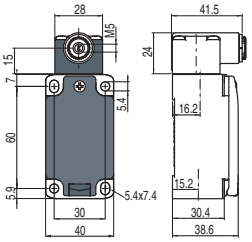
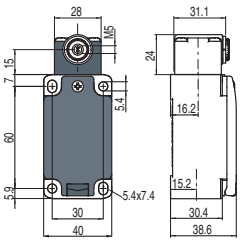
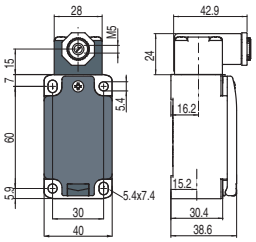
All values in the drawings are in mm

Accessories See page 195

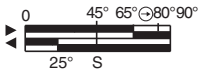
➔ The 2D and 3D files are available at **www.pizzato.com**

Position switches with swivelling lever without actuator

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

Contact block		Regular head		Compact head		
						
2	R	FP 238-M2	2x(1NO-1NC)	FP 258-M2	2x(1NO-1NC)	/
5	R	FP 538-M2 ⊖	1NO+1NC	FP 558-M2 ⊖	1NO+1NC	FP 540-M2 ⊖ 1NO+1NC
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	
E1		FP E138-M2	1NO-1NC	FP E158-M2	1NO-1NC	
Actuating force		0.1 Nm (0.25 Nm ⊖)		0.06 Nm (0.25 Nm ⊖)		0.21 Nm (0.36 Nm ⊖)
Travel diagrams		page 220 - group 4		page 220 - group 4		/

Bistable switch

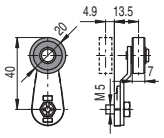
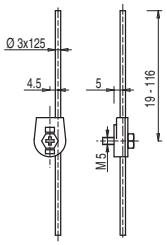
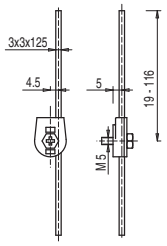
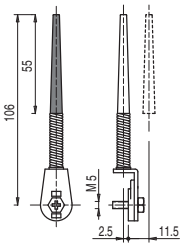
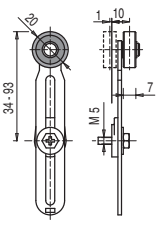
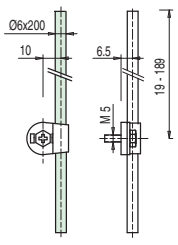


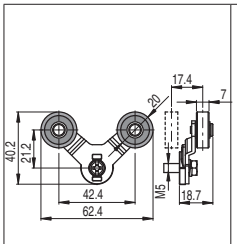
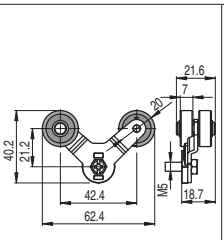
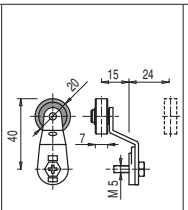
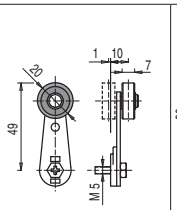
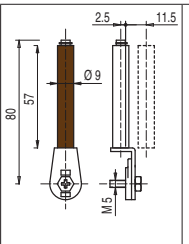
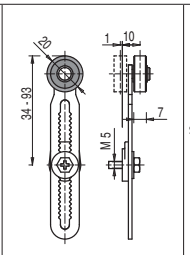
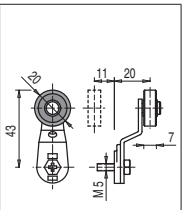
S = mechanical switching point
positive opening on contacts 21-22 only

IMPORTANT
For safety applications: join only switches and actuators marked with symbol ⊖ next to the product code.
For more information about safety applications see details on page 217.

Separate actuators

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

Technopolymer roller Ø 20 mm	Adjustable round rod Ø 3x125 mm	Adjustable square rod, 3x3x125 mm	Spring rod with plastic tip	Adjustable actuator with technopolymer roller	Adjustable glass fibre rod
					
VF L31 ⊖	VF L32 (3)	VF L33 (3)	VF L34	VF L35 ⊖ (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 ⊖	VF L42 ⊖	VF L51 ⊖	VF L52 ⊖	VF L53 ⊖ (2)	VF L56 ⊖ (3)	VF L57 ⊖

All values in the drawings are in mm

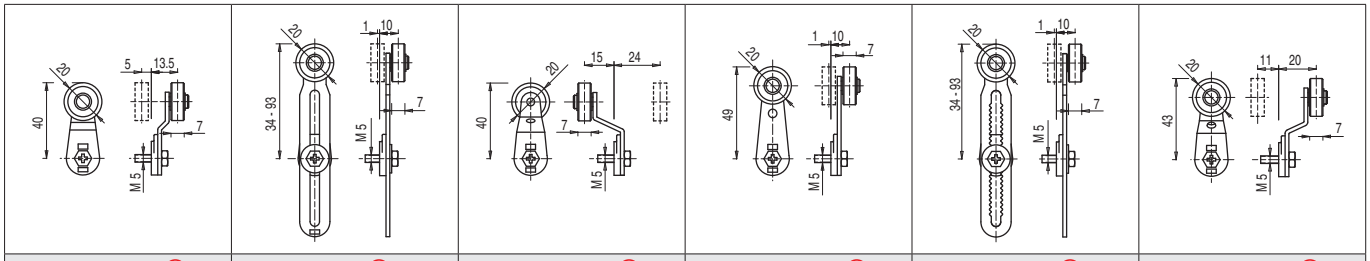
Accessories See page 195

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

Special separate actuators

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

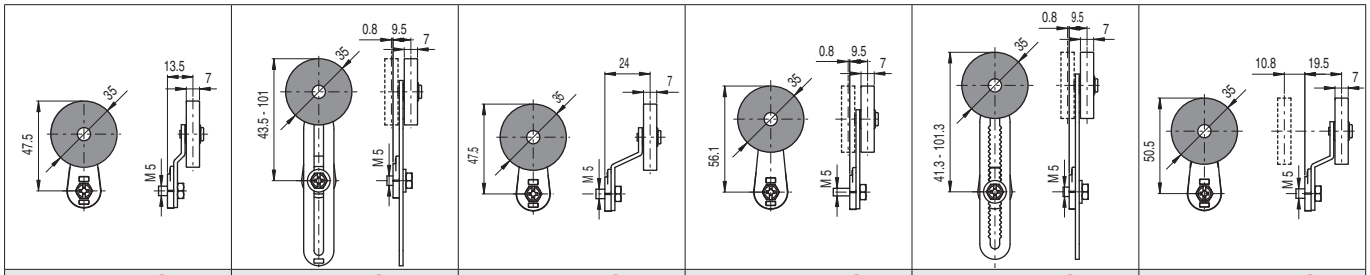
Steel rollers, Ø 20 mm, with self-lubrication



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

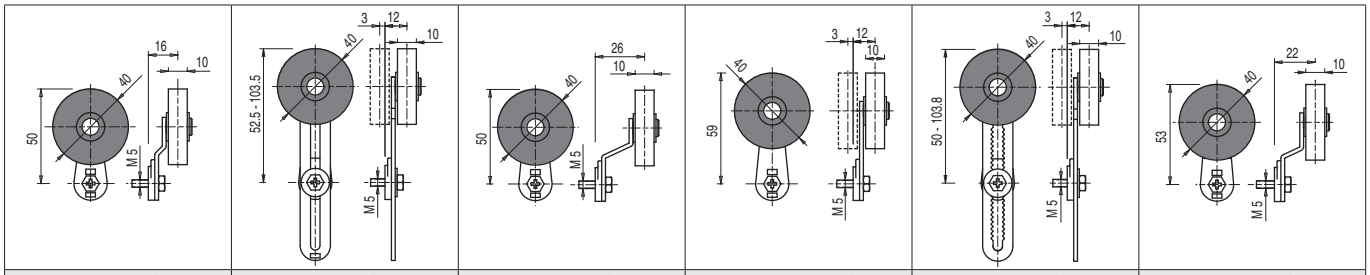
Note: To order with 316L stainless steel roller: replace R24 with R41 in the order numbers.

Technopolymer rollers, Ø 35 mm



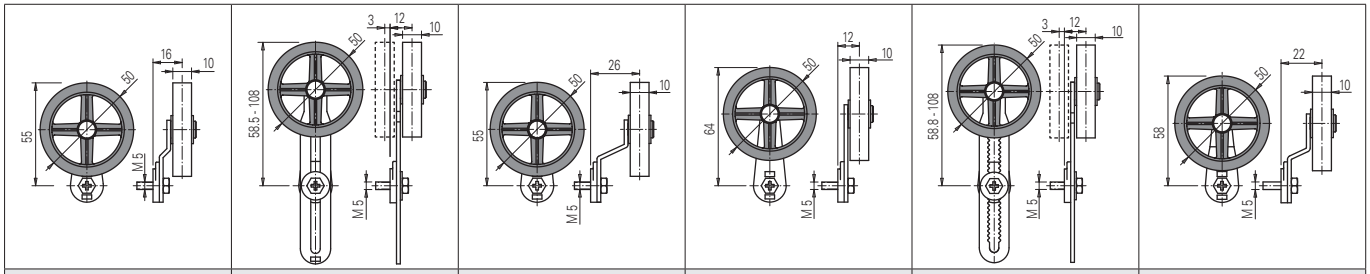
VF L31-R25 (4) | VF L35-R25 (1) (3) | VF L51-R25 (4) | VF L52-R25 | VF L56-R25 (3) | VF L57-R25

Rubber rollers, Ø 40 mm



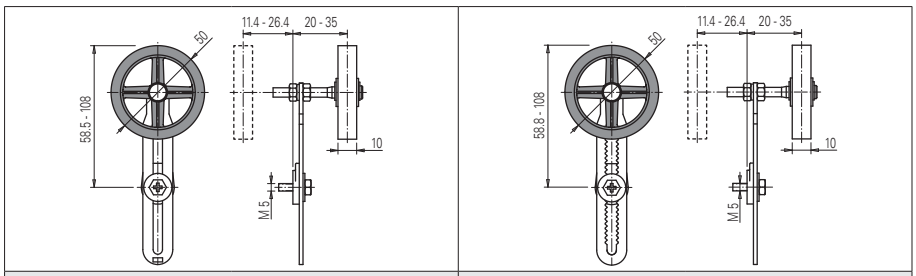
VF L31-R5 (4) | VF L35-R5 (1) (3) | VF L51-R5 (4) | VF L52-R5 | VF L56-R5 (3) | VF L57-R5 (4)

Rubber rollers, Ø 50 mm



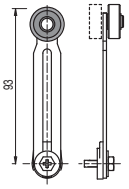
VF L31-R26 (4) | VF L35-R26 (1) (3) | VF L51-R26 (4) | VF L52-R26 (4) | VF L56-R26 (3) | VF L57-R26 (4)

Protruding rubber rollers, Ø 50 mm



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

- (1) Lever 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.



All values in the drawings are in mm

Accessories See page 195

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