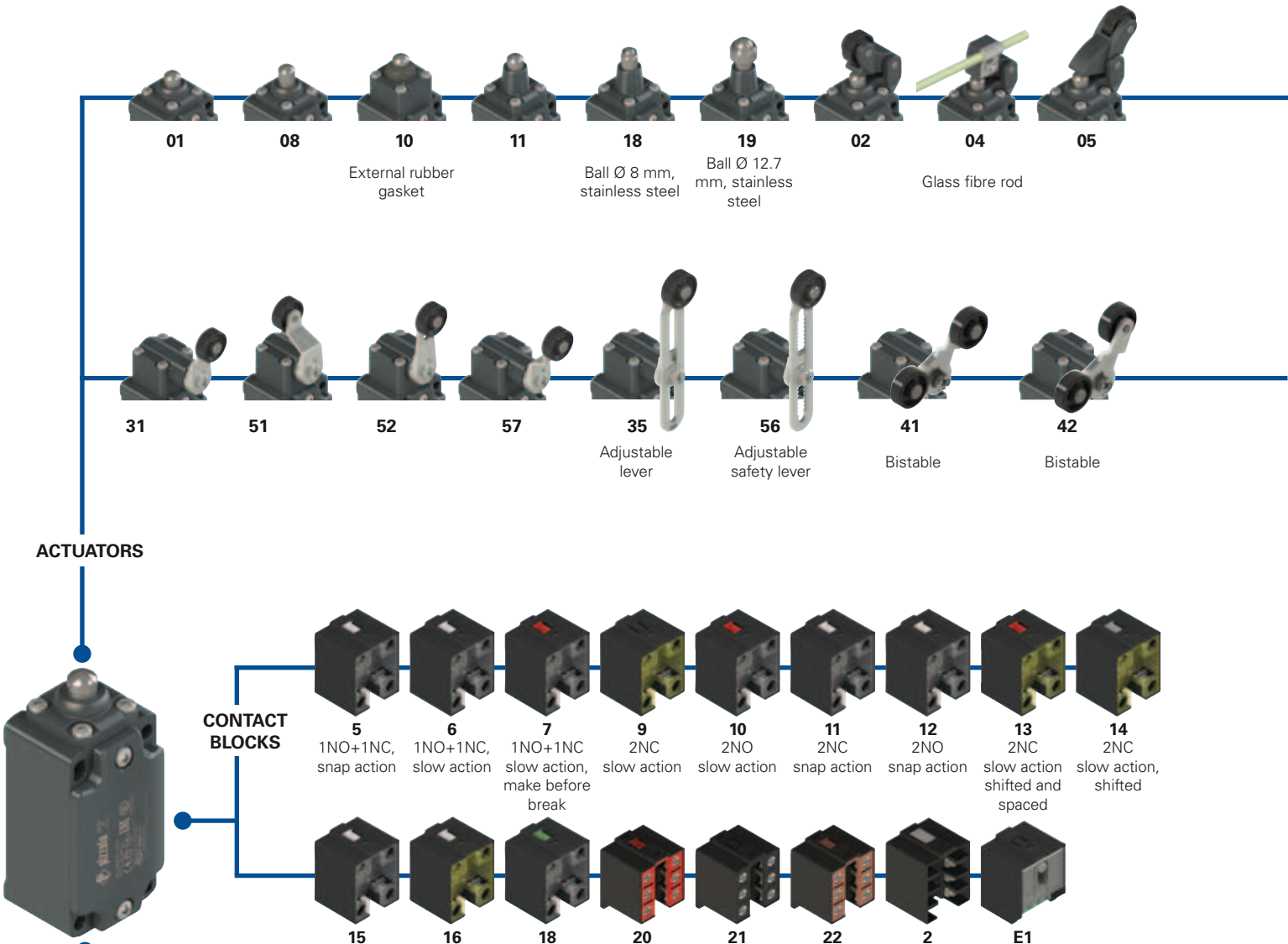
Selection diagram



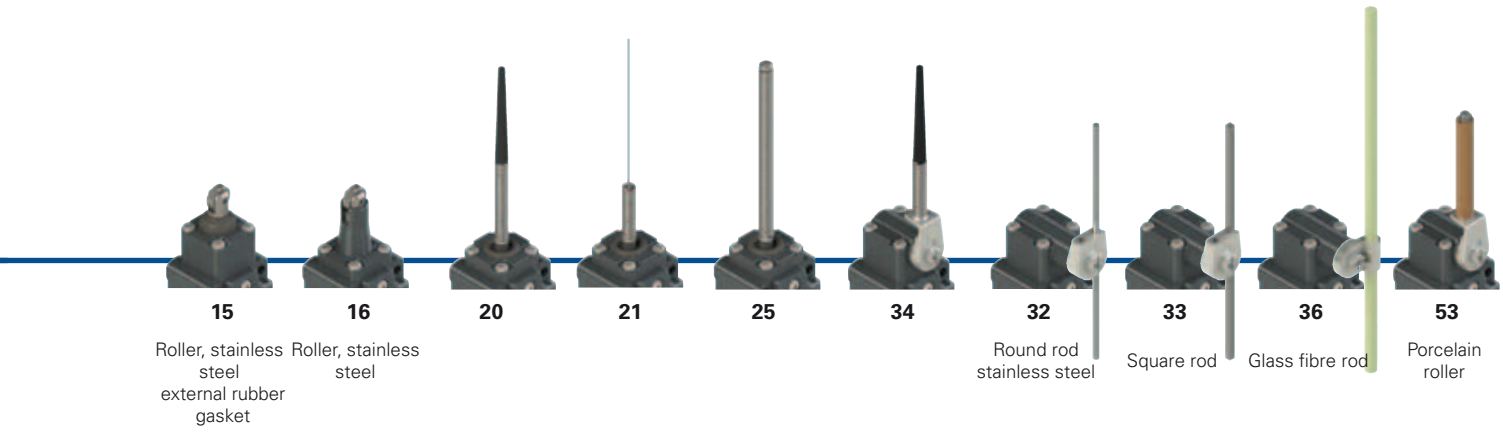
Threaded conduit entry	
M2	M20x1.5 (standard)
	PG 13.5

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

With M12 metal connector	
K40	8-pole
K50	5-pole

product options

Sold separately as accessory



15 Roller, stainless steel external rubber gasket

16 Roller, stainless steel

20

21

25

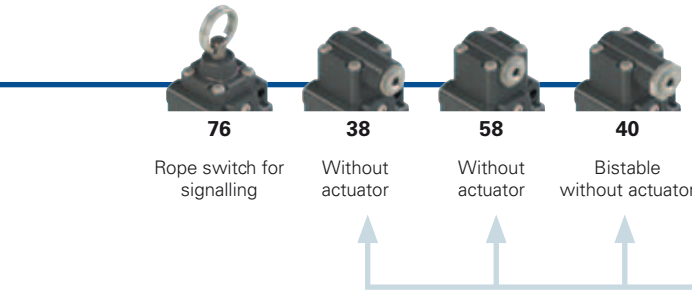
34

32 Round rod stainless steel

33 Square rod

36 Glass fibre rod

53 Porcelain roller



76 Rope switch for signalling

38 Without actuator

58 Without actuator

40 Bistable without actuator

SEPARATE ACTUATORS
See page 23

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

FD 502-GM2K50R24T6

Housing

FD	metal, 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 (except 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
K40	M12 metal connector, 8-pole
K50	M12 metal connector, 5-pole

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

Main features

- Metal 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

Metal housing, powder-coated	
One threaded conduit entry:	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 mm²	(1 x AWG 22)
	max.	2 x 1.5 mm²	(2 x AWG 16)
Contact blocks 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 18:	min.	1 x 0.5 mm²	(1 x AWG 20)
	max.	2 x 2.5 mm²	(2 x AWG 14)
Contact block 2:	min.	1 x 0.5 mm²	(1 x AWG 20)
	max.	2 x 1.5 mm²	(2 x AWG 16)

In 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 529, 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:	2007010305230000
EAC approval:	RU C-IT.АД35.В.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 ⊖ 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 (Ith):	10 A	Alternating current: AC15 (50÷60 Hz)
	Rated insulation voltage (Ui):	500 Vac 600 Vdc 400 Vac 500 Vdc (contact blocks 2, 11, 12, 20, 21, 22, 33, 34)	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, 33, 34)	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) 6 1.1 0.4
	Pollution degree:	3	
with M12 connector 5-pole	Thermal current (Ith):	4 A	Alternating current: AC15 (50÷60 Hz)
	Rated insulation voltage (Ui):	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) 4 1.1 0.4
with M12 connector 8-pole	Thermal current (Ith):	2 A	Alternating current: AC15 (50÷60 Hz)
	Rated insulation voltage (Ui):	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 (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 block 5, 6, 7, 9, 11, 13, 14, 16, 18, 20, 21, 22, 33, 34, 66
In compliance with standards: EN 60947-1, EN 60947-5-1+ A1:2009, 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

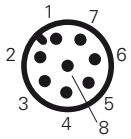
Utilization category Q300 (69 VA, 125-250 Vdc)
A600 (720 VA, 120-600 Vac)
Housing features type 1, 4X, 12, 13
For all contact blocks except 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 12, 14 AWG. Tightening torque for terminal screws of 7.1 lb in (0.8 Nm).
For contact 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).

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

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

Wiring diagram for M12 connectors

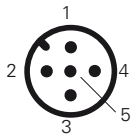
Contact block 2
1NO-1NC+1NO-1NC



M12 connector, 8-pole

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

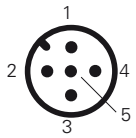
Contact block 5
1NO+1NC



M12 connector, 5-pole

Contacts	Pin no.
NC	1-2
NO	3-4
ground	5

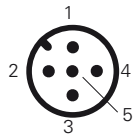
Contact block 6
1NO+1NC



M12 connector, 5-pole

Contacts	Pin no.
NC	1-2
NO	3-4
ground	5

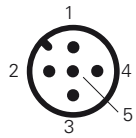
Contact block 7
1NO+1NC



M12 connector, 5-pole

Contacts	Pin no.
NC	1-2
NO	3-4
ground	5

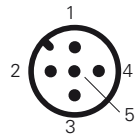
Contact block 9
2NC



M12 connector, 5-pole

Contacts	Pin no.
NC	1-2
NC	3-4
ground	5

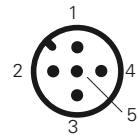
Contact block 10
2NO



M12 connector, 5-pole

Contacts	Pin no.
NO	1-2
NO	3-4
ground	5

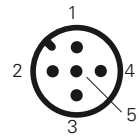
Contact block 11
2NC



M12 connector, 5-pole

Contacts	Pin no.
NC	1-2
NC	3-4
ground	5

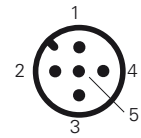
Contact block 12
2NO



M12 connector, 5-pole

Contacts	Pin no.
NO	1-2
NO	3-4
ground	5

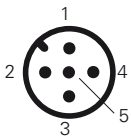
Contact block 13
2NC



M12 connector, 5-pole

Contacts	Pin no.
NC (1°)	1-2
NC (2°)	3-4
ground	5

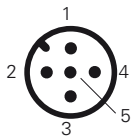
Contact block 14
2NC



M12 connector, 5-pole

Contacts	Pin no.
NC (1°)	1-2
NC (2°)	3-4
ground	5

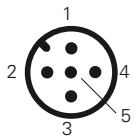
Contact block 15
2NO



M12 connector, 5-pole

Contacts	Pin no.
NO (1°)	1-2
NO (2°)	3-4
ground	5

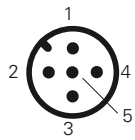
Contact block 16
2NC



M12 connector, 5-pole

Contacts	Pin no.
NC, lever to the right	1-2
NC, lever to the left	3-4
ground	5

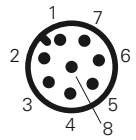
Contact block 18
1NO+1NC



M12 connector, 5-pole

Contacts	Pin no.
NC	1-2
NO	3-4
ground	5

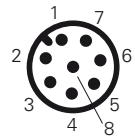
Contact block 20
2NC+1NO



M12 connector, 8-pole

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

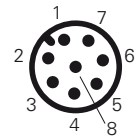
Contact block 21
3NC



M12 connector, 8-pole

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

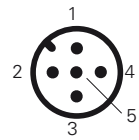
Contact block 22
1NC+2NO



M12 connector, 8-pole

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

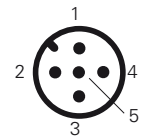
Contact block 33
1NC+1NO



M12 connector, 5-pole

Contacts	Pin no.
NC	1-2
NO	3-4
ground	5

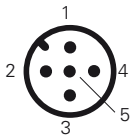
Contact block 34
2NC



M12 connector, 5-pole

Contacts	Pin no.
NC	1-2
NC	3-4
ground	5

Contact block E1
PNP



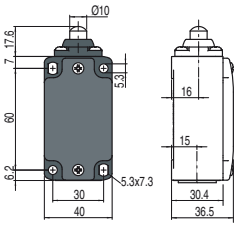
M12 connector, 5-pole

Contacts	Pin no.
+	1
-	3
NC	2
NO	4
ground	5

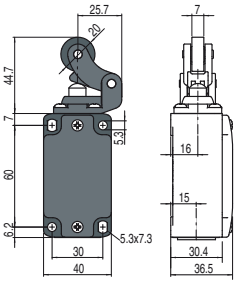
FD series position switches

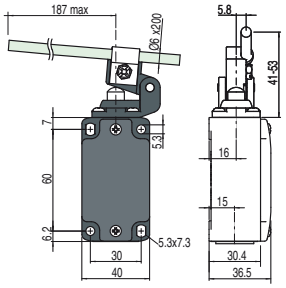
Contact type:

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

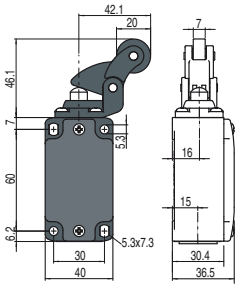


With stainless steel roller on request



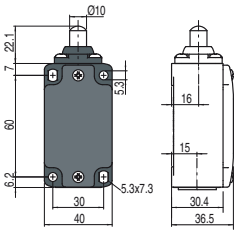


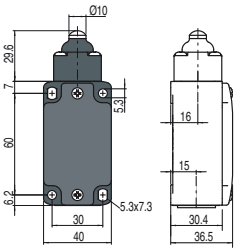
With stainless steel roller on request

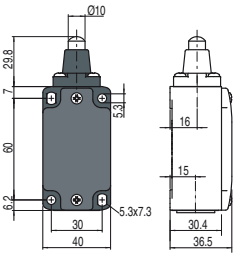


Contact block					
5	R	FD 501-M2 1NO+1NC	FD 502-M2 1NO+1NC	FD 504-M2 1NO+1NC	FD 505-M2 1NO+1NC
6	L	FD 601-M2 1NO+1NC	FD 602-M2 1NO+1NC	FD 604-M2 1NO+1NC	FD 605-M2 1NO+1NC
7	LO	FD 701-M2 1NO+1NC	FD 702-M2 1NO+1NC	FD 704-M2 1NO+1NC	FD 705-M2 1NO+1NC
9	L	FD 901-M2 2NC	FD 902-M2 2NC	FD 904-M2 2NC	FD 905-M2 2NC
10	L	FD 1001-M2 2NO	FD 1002-M2 2NO	FD 1004-M2 2NO	FD 1005-M2 2NO
11	R	FD 1101-M2 2NC	FD 1102-M2 2NC	FD 1104-M2 2NC	FD 1105-M2 2NC
12	R	FD 1201-M2 2NO	FD 1202-M2 2NO	FD 1204-M2 2NO	FD 1205-M2 2NO
13	LV	FD 1301-M2 2NC	FD 1302-M2 2NC	FD 1304-M2 2NC	FD 1305-M2 2NC
14	LS	FD 1401-M2 2NC	FD 1402-M2 2NC	FD 1404-M2 2NC	FD 1405-M2 2NC
15	LS	FD 1501-M2 2NO	FD 1502-M2 2NO	FD 1504-M2 2NO	FD 1505-M2 2NO
18	LA	FD 1801-M2 1NO+1NC	FD 1802-M2 1NO+1NC	FD 1804-M2 1NO+1NC	FD 1805-M2 1NO+1NC
20	L	FD 2001-M2 1NO+2NC	FD 2002-M2 1NO+2NC	FD 2004-M2 1NO+2NC	FD 2005-M2 1NO+2NC
21	L	FD 2101-M2 3NC	FD 2102-M2 3NC	FD 2104-M2 3NC	FD 2105-M2 3NC
22	L	FD 2201-M2 2NO+1NC	FD 2202-M2 2NO+1NC	FD 2204-M2 2NO+1NC	FD 2205-M2 2NO+1NC
2	R	FD 201-M2 2x(1NO-1NC)	FD 202-M2 2x(1NO-1NC)	FD 204-M2 2x(1NO-1NC)	FD 205-M2 2x(1NO-1NC)
E1		FD E101-M2 1NO-1NC	FD E102-M2 1NO-1NC	FD E104-M2 1NO-1NC	FD 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

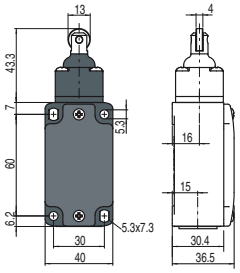
With external rubber gasket







With external rubber gasket



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

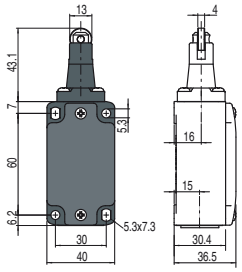
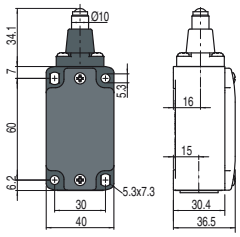
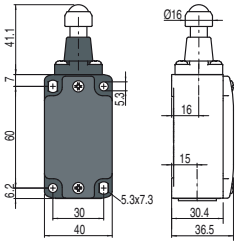
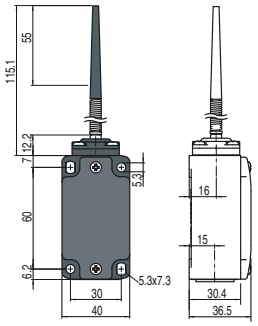
Items with code on **green** background are stock items

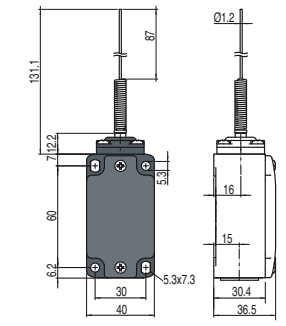
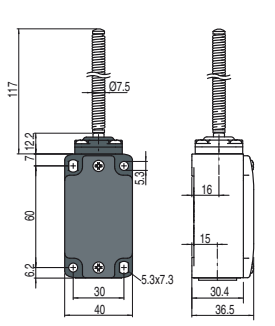
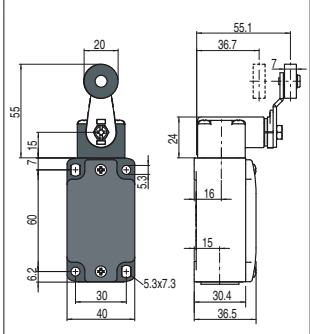
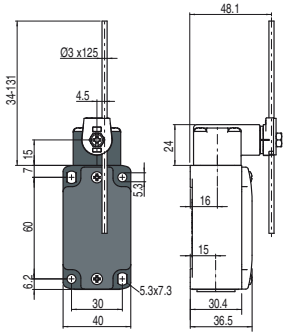
Accessories See page 197

→ 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
= electronic PNP

Contact block								
				 Ball, Ø 8 mm, stainless steel		 Ball, Ø 12.7 mm, stainless steel		 With external rubber gasket	
5	R	FD 516-M2	1NO+1NC	FD 518-M2	1NO+1NC	FD 519-M2	1NO+1NC	FD 520-M2	1NO+1NC
6	L	FD 616-M2	1NO+1NC	FD 618-M2	1NO+1NC	FD 619-M2	1NO+1NC		
7	LO	FD 716-M2	1NO+1NC	FD 718-M2	1NO+1NC	FD 719-M2	1NO+1NC		
9	L	FD 916-M2	2NC	FD 918-M2	2NC	FD 919-M2	2NC		
10	L	FD 1016-M2	2NO	FD 1018-M2	2NO	FD 1019-M2	2NO	FD 1020-M2	2NO
11	R	FD 1116-M2	2NC	FD 1118-M2	2NC	FD 1119-M2	2NC		
12	R	FD 1216-M2	2NO	FD 1218-M2	2NO	FD 1219-M2	2NO		
13	LV	FD 1316-M2	2NC	FD 1318-M2	2NC	FD 1319-M2	2NC		
14	LS	FD 1416-M2	2NC	FD 1418-M2	2NC	FD 1419-M2	2NC		
15	LS	FD 1516-M2	2NO	FD 1518-M2	2NO	FD 1519-M2	2NO		
18	LA	FD 1816-M2	1NO+1NC	FD 1818-M2	1NO+1NC	FD 1819-M2	1NO+1NC	FD 1820-M2	1NO+1NC
20	L	FD 2016-M2	1NO+2NC	FD 2018-M2	1NO+2NC	FD 2019-M2	1NO+2NC	FD 2020-M2	1NO+2NC
21	L	FD 2116-M2	3NC	FD 2118-M2	3NC	FD 2119-M2	3NC	FD 2120-M2	3NC
22	L	FD 2216-M2	2NO+1NC	FD 2218-M2	2NO+1NC	FD 2219-M2	2NO+1NC	FD 2220-M2	2NO+1NC
2	R	FD 216-M2	2x(1NO-1NC)	FD 218-M2	2x(1NO-1NC)	FD 219-M2	2x(1NO-1NC)	FD 220-M2	2x(1NO-1NC)
E1		FD E116-M2	1NO-1NC	FD E118-M2	1NO-1NC	FD E119-M2	1NO-1NC	FD E120-M2	1NO-1NC
Max. speed		page 213 - type 2		page 213 - type 4		page 213 - type 4		1 m/s	
Actuating force		8 N (25 N)		8 N (25 N)		8 N (25 N)		0.09 Nm	
Travel diagrams		page 214 - group 1		page 214 - group 1		page 214 - group 1		page 214 - group 3	

Contact block								
		 With external rubber gasket		 With external rubber gasket		 Other rollers available. See page 24		 Round rod, Ø 3 mm, stainless steel	
5	R	FD 521-M2	1NO+1NC	FD 525-M2	1NO+1NC	FD 531-M2	1NO+1NC	FD 532-M2	1NO+1NC
6	L					FD 631-M2	1NO+1NC	FD 632-M2	1NO+1NC
7	LO					FD 731-M2	1NO+1NC	FD 732-M2	1NO+1NC
9	L					FD 931-M2	2NC	FD 932-M2	2NC
10	L	FD 1021-M2	2NO	FD 1025-M2	2NO	FD 1031-M2	2NO	FD 1032-M2	2NO
11	R					FD 1131-M2	2NC	FD 1132-M2	2NC
12	R					FD 1231-M2	2NO	FD 1232-M2	2NO
13	LV					FD 1331-M2	2NC	FD 1332-M2	2NC
14	LS					FD 1431-M2	2NC	FD 1432-M2	2NC
15	LS					FD 1531-M2	2NO	FD 1532-M2	2NO
16	LI					FD 1631-M2	2NC	FD 1632-M2	2NC
18	LA	FD 1821-M2	1NO+1NC	FD 1825-M2	1NO+1NC	FD 1831-M2	1NO+1NC	FD 1832-M2	1NO+1NC
20	L	FD 2021-M2	1NO+2NC	FD 2025-M2	1NO+2NC	FD 2031-M2	1NO+2NC	FD 2032-M2	1NO+2NC
21	L	FD 2121-M2	3NC	FD 2125-M2	3NC	FD 2131-M2	3NC	FD 2132-M2	3NC
22	L	FD 2221-M2	2NO+1NC	FD 2225-M2	2NO+1NC	FD 2231-M2	2NO+1NC	FD 2232-M2	2NO+1NC
2	R	FD 221-M2	2x(1NO-1NC)	FD 225-M2	2x(1NO-1NC)	FD 231-M2	2x(1NO-1NC)	FD 232-M2	2x(1NO-1NC)
E1		FD E121-M2	1NO-1NC	FD E125-M2	1NO-1NC	FD E131-M2	1NO-1NC	FD 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

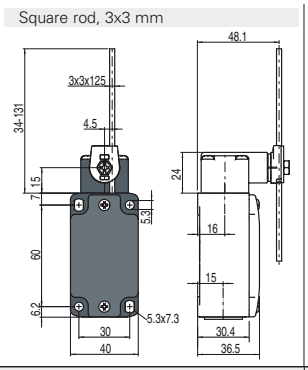
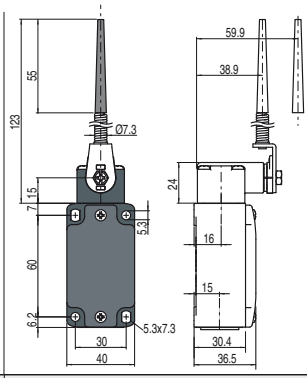
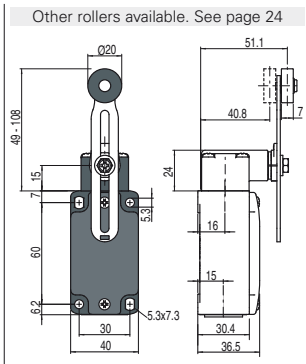
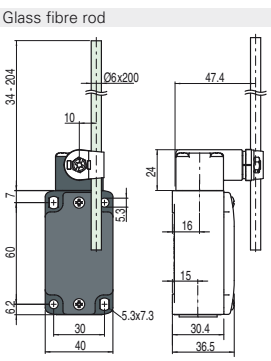
Accessories See page 197

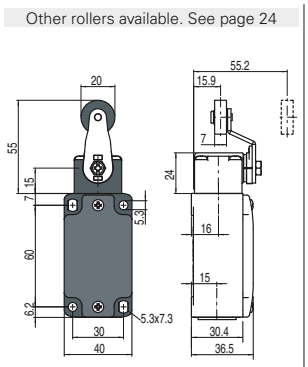
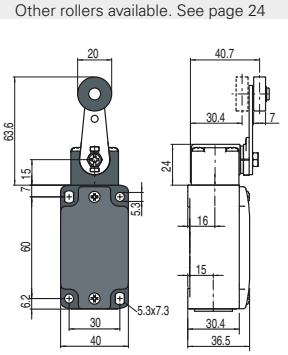
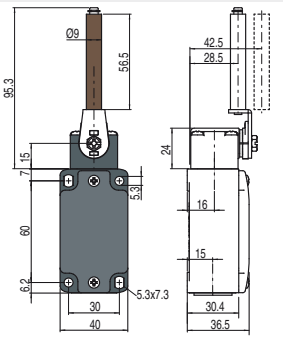
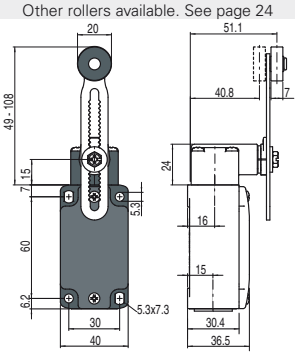
➔ The 2D and 3D files are available at **www.pizzato.com**

FD 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		Square rod, 3x3 mm		Other rollers available. See page 24	Glass fibre rod
					
5	R	FD 533-M2 1NO+1NC	FD 534-M2 1NO+1NC	FD 535-M2 (1) 1NO+1NC	FD 536-M2 1NO+1NC
6	L	FD 633-M2 1NO+1NC	FD 634-M2 1NO+1NC	FD 635-M2 (1) 1NO+1NC	FD 636-M2 1NO+1NC
7	LO	FD 733-M2 1NO+1NC	FD 734-M2 1NO+1NC	FD 735-M2 (1) 1NO+1NC	FD 736-M2 1NO+1NC
9	L	FD 933-M2 2NC	FD 934-M2 2NC	FD 935-M2 (1) 2NC	FD 936-M2 2NC
10	L	FD 1033-M2 2NO	FD 1034-M2 2NO	FD 1035-M2 2NO	FD 1036-M2 2NO
11	R	FD 1133-M2 2NC	FD 1134-M2 2NC	FD 1135-M2 (1) 2NC	FD 1136-M2 2NC
12	R	FD 1233-M2 2NO	FD 1234-M2 2NO	FD 1235-M2 2NO	FD 1236-M2 2NO
13	LV	FD 1333-M2 2NC	FD 1334-M2 2NC	FD 1335-M2 (1) 2NC	FD 1336-M2 2NC
14	LS	FD 1433-M2 2NC	FD 1434-M2 2NC	FD 1435-M2 (1) 2NC	FD 1436-M2 2NC
15	LS	FD 1533-M2 2NO	FD 1534-M2 2NO	FD 1535-M2 2NO	FD 1536-M2 2NO
16	LI	FD 1633-M2 2NC	FD 1634-M2 2NC	FD 1635-M2 (1) 2NC	FD 1636-M2 2NC
18	LA	FD 1833-M2 1NO+1NC	FD 1834-M2 1NO+1NC	FD 1835-M2 (1) 1NO+1NC	FD 1836-M2 1NO+1NC
20	L	FD 2033-M2 1NO+2NC	FD 2034-M2 1NO+2NC	FD 2035-M2 (1) 1NO+2NC	FD 2036-M2 1NO+2NC
21	L	FD 2133-M2 3NC	FD 2134-M2 3NC	FD 2135-M2 (1) 3NC	FD 2136-M2 3NC
22	L	FD 2233-M2 2NO+1NC	FD 2234-M2 2NO+1NC	FD 2235-M2 (1) 2NO+1NC	FD 2236-M2 2NO+1NC
2	R	FD 233-M2 2x(1NO-1NC)	FD 234-M2 2x(1NO-1NC)	FD 235-M2 2x(1NO-1NC)	FD 236-M2 2x(1NO-1NC)
E1		FD E133-M2 1NO-1NC	FD E134-M2 1NO-1NC	FD E135-M2 1NO-1NC	FD E136-M2 1NO-1NC
Max. speed		1.5 m/s	1 m/s	page 213 - type 1	1.5 m/s
Actuating force		0.1 Nm	0.1 Nm	0.1 Nm (0.25 Nm)	0.1 Nm
Travel diagrams		page 214 - group 4	page 214 - group 4	page 214 - group 4	page 214 - group 4

Contact block		Other rollers available. See page 24	Other rollers available. See page 24	Porcelain roller	Other rollers available. See page 24
					
5	R	FD 551-M2 1NO+1NC	FD 552-M2 1NO+1NC	FD 553-E11M2V9 1NO+1NC	FD 556-M2 1NO+1NC
6	L	FD 651-M2 1NO+1NC	FD 652-M2 1NO+1NC	FD 653-E11M2V9 1NO+1NC	FD 656-M2 1NO+1NC
7	LO	FD 751-M2 1NO+1NC	FD 752-M2 1NO+1NC	FD 753-E11M2V9 1NO+1NC	FD 756-M2 1NO+1NC
9	L	FD 951-M2 2NC	FD 952-M2 2NC	FD 953-E11M2V9 2NC	FD 956-M2 2NC
10	L	FD 1051-M2 2NO	FD 1052-M2 2NO	FD 1053-E11M2V9 2NO	FD 1056-M2 2NO
11	R	FD 1151-M2 2NC	FD 1152-M2 2NC		FD 1156-M2 2NC
12	R	FD 1251-M2 2NO	FD 1252-M2 2NO	FD 1253-E11M2V9 2NO	FD 1256-M2 2NO
13	LV	FD 1351-M2 2NC	FD 1352-M2 2NC	FD 1353-E11M2V9 2NC	FD 1356-M2 2NC
14	LS	FD 1451-M2 2NC	FD 1452-M2 2NC	FD 1453-E11M2V9 2NC	FD 1456-M2 2NC
15	LS	FD 1551-M2 2NO	FD 1552-M2 2NO	FD 1553-E11M2V9 2NO	FD 1556-M2 2NO
16	LI				FD 1656-M2 2NC
18	LA	FD 1851-M2 1NO+1NC	FD 1852-M2 1NO+1NC	FD 1853-E11M2V9 1NO+1NC	FD 1856-M2 1NO+1NC
20	L	FD 2051-M2 1NO+2NC	FD 2052-M2 1NO+2NC	FD 2053-E11M2V9 1NO+2NC	FD 2056-M2 1NO+2NC
21	L	FD 2151-M2 3NC	FD 2152-M2 3NC	FD 2153-E11M2V9 3NC	FD 2156-M2 3NC
22	L	FD 2251-M2 2NO+1NC	FD 2252-M2 2NO+1NC	FD 2253-E11M2V9 2NO+1NC	FD 2256-M2 2NO+1NC
2	R	FD 251-M2 2x(1NO-1NC)	FD 252-M2 2x(1NO-1NC)	FD 253-E11M2 2x(1NO-1NC)	FD 256-M2 2x(1NO-1NC)
E1		FD E151-M2 1NO-1NC	FD E152-M2 1NO-1NC	FD E153-E11M2V9 1NO-1NC	FD 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 23.

All values in the drawings are in mm

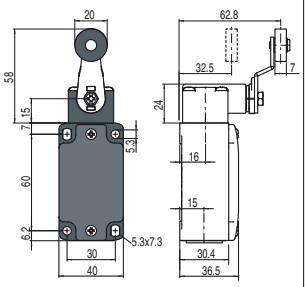
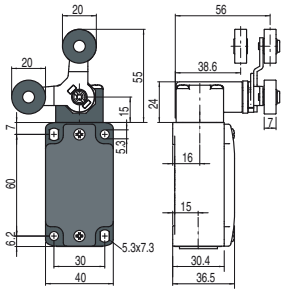
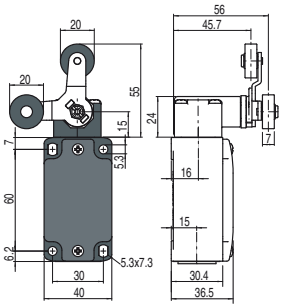
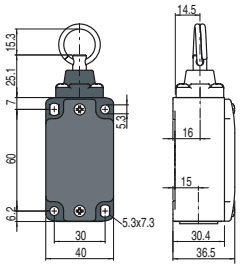
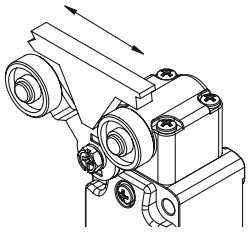
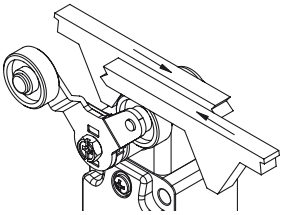
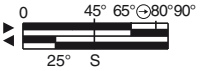
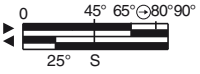
Items with code on **green** background are stock items

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
= electronic PNP

Contact block		Other rollers available. See page 24	With stainless steel rollers on request	With stainless steel rollers on request	Rope switch for signalling
					
5	R	FD 557-M2 1NO+1NC	FD 541-M2 1NO+1NC	FD 542-M2 1NO+1NC	FD 576-M2 1NO+1NC
6	L	FD 657-M2 1NO+1NC	Bistable switch with lyra lever, single track	Bistable switch with lyra lever, dual track	FD 676-M2 1NO+1NC
7	LO	FD 757-M2 1NO+1NC			FD 776-M2 1NO+1NC
9	L	FD 957-M2 2NC			FD 976-M2 2NO
10	L	FD 1057-M2 2NO	S = mechanical switching point positive opening on contacts 21-22 only	S = mechanical switching point positive opening on contacts 21-22 only	FD 1076-M2 2NC
11	R	FD 1157-M2 2NC			FD 1176-M2 2NO
12	R	FD 1257-M2 2NO			FD 1276-M2 2NC
13	LV	FD 1357-M2 2NC			FD 1376-M2 2NO
14	LS	FD 1457-M2 2NC			FD 1476-M2 2NO
15	LS	FD 1557-M2 2NO			FD 1576-M2 2NC
16	LI	FD 1657-M2 2NC			
18	LA	FD 1857-M2 1NO+1NC			FD 1876-M2 1NO+1NC
20	L	FD 2057-M2 1NO+2NC			FD 2076-M2 2NO+1NC
21	L	FD 2157-M2 3NC			FD 2176-M2 3NC
22	L	FD 2257-M2 2NO+1NC			FD 2276-M2 1NO+2NC
2	R	FD 257-M2 2x(1NO-1NC)			FD 276-M2 2x(1NO-1NC)
E1		FD 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

Items with code on **green** background are stock items

Accessories See page 197

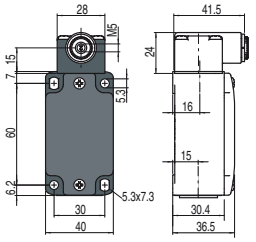
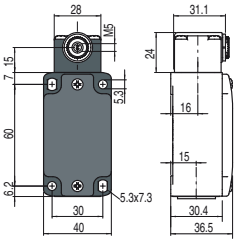
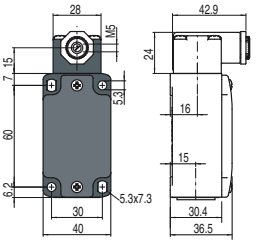
→ The 2D and 3D files are available at **www.pizzato.com**

Position switches with swivelling lever without actuator

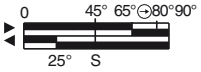
All values in the drawings are in mm

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
- = electronic PNP

Contact block		Regular head	Compact head	
				
5	R	FD 538-M2 → 1NO+1NC	FD 558-M2 → 1NO+1NC	FD 540-M2 → 1NO+1NC
6	L	FD 638-M2 → 1NO+1NC	FD 658-M2 → 1NO+1NC	
7	LO	FD 738-M2 → 1NO+1NC	FD 758-M2 → 1NO+1NC	
9	L	FD 938-M2 → 2NC	FD 958-M2 → 2NC	
10	L	FD 1038-M2 2NO	FD 1058-M2 2NO	
11	R	FD 1138-M2 → 2NC	FD 1158-M2 → 2NC	
12	R	FD 1238-M2 2NO	FD 1258-M2 2NO	
13	LV	FD 1338-M2 → 2NC	FD 1358-M2 → 2NC	
14	LS	FD 1438-M2 → 2NC	FD 1458-M2 → 2NC	
15	LS	FD 1538-M2 2NO	FD 1558-M2 2NO	
16	LI	FD 1638-M2 → 2NC		
18	LA	FD 1838-M2 → 1NO+1NC	FD 1858-M2 → 1NO+1NC	
20	L	FD 2038-M2 → 1NO+2NC	FD 2058-M2 → 1NO+2NC	
21	L	FD 2138-M2 → 3NC	FD 2158-M2 → 3NC	
22	L	FD 2238-M2 → 2NO+1NC	FD 2258-M2 → 2NO+1NC	
2	R	FD 238-M2 2x(1NO-1NC)	FD 258-M2 2x(1NO-1NC)	
E1		FD E138-M2 1NO-1NC	FD E158-M2 1NO-1NC	
Actuating force		0.1 Nm (0.25 Nm →)	0.06 Nm (0.25 Nm →)	0.5 m/s with cam at 30°
Travel diagrams		page 214 - group 4	page 214 - group 4	0.21 Nm (0.36 Nm →)

Bistable switch



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

IMPORTANT

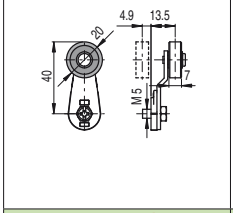
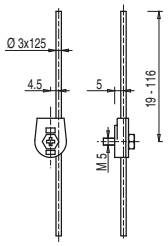
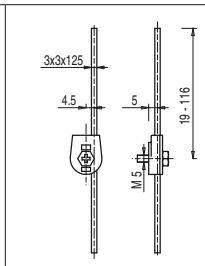
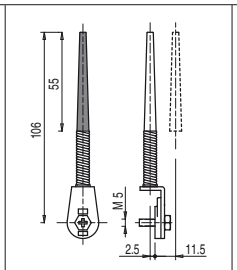
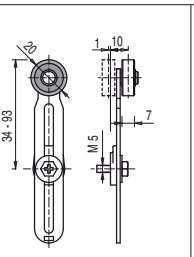
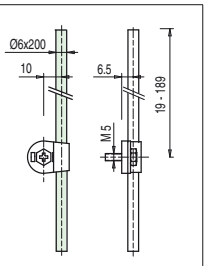
For safety applications: join only switches and actuators marked with symbol → next to the product code.

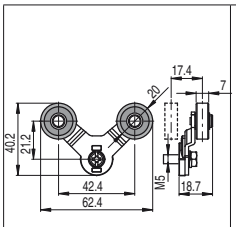
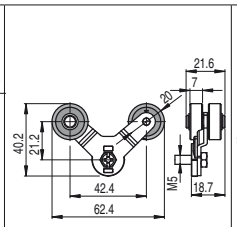
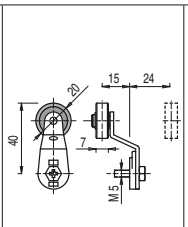
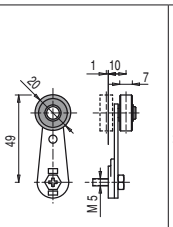
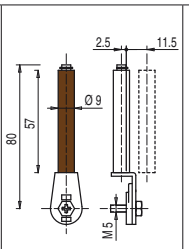
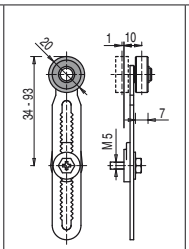
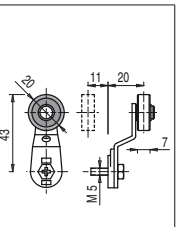
For more information about safety applications see details on page 211.

Separate actuators

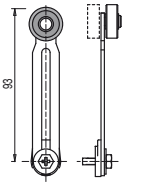
All values in the drawings are in mm

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 →	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 →

- (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 FD •58-M2 (e.g. FD 558-M2, FD 658-M2…) with actuator VF L53 will not present the same travel diagrams and actuating forces as switch FD •53-E11M2V9 (e.g. FD 553-E11M2V9, FD 653-E11M2V9…).
- (3) If installed with switch FD •58-M2 (e.g. FC 558-M2, FD 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

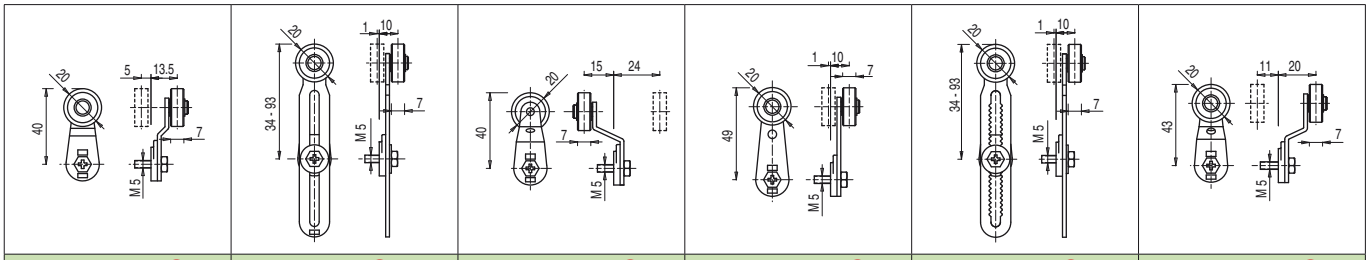
→ The 2D and 3D files are available at **www.pizzato.com**

Special separate actuators

All values in the drawings are in mm

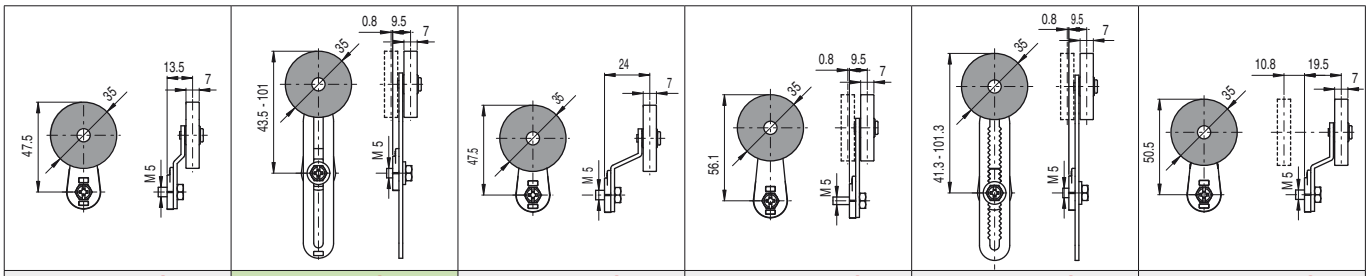
IMPORTANT: These separate actuators can be used only with items of the FD, FP, FL, FC series.

Stainless steel rollers, Ø 20 mm



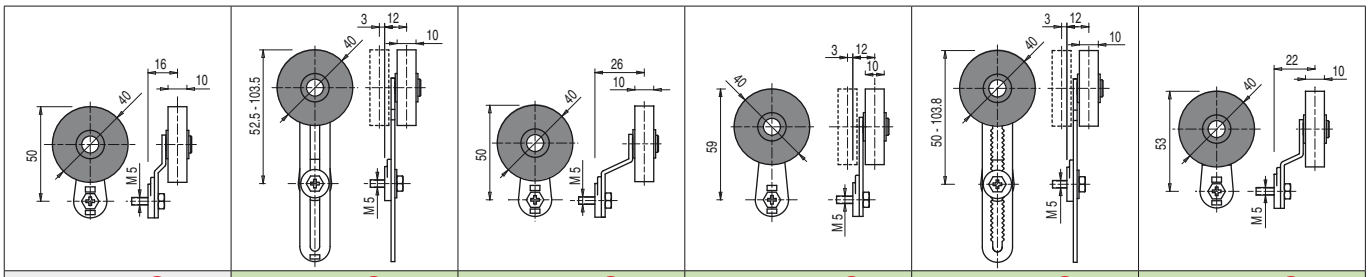
VF L31-R24 | VF L35-R24 (1) (3) | VF L51-R24 | VF L52-R24 | VF L56-R24 (3) | VF L57-R24

Technopolymer rollers, Ø 35 mm



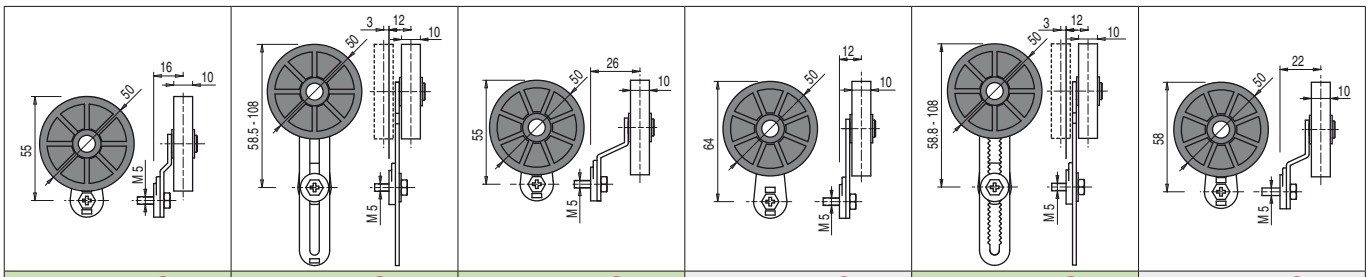
VF L31-R25 (4) | VF L35-R25 (1) (3) | VF L51-R25 (4) | VF L52-R25 | VF L56-R25 (3) | VF L57-R25

Rubber rollers, Ø 40 mm



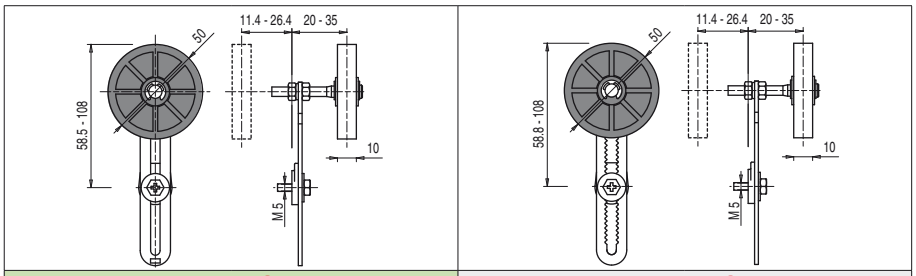
VF L31-R5 (4) | VF L35-R5 (1) (3) | VF L51-R5 (4) | VF L52-R5 | VF L56-R5 (3) | VF L57-R5 (4)

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)

Accessories See page 197

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