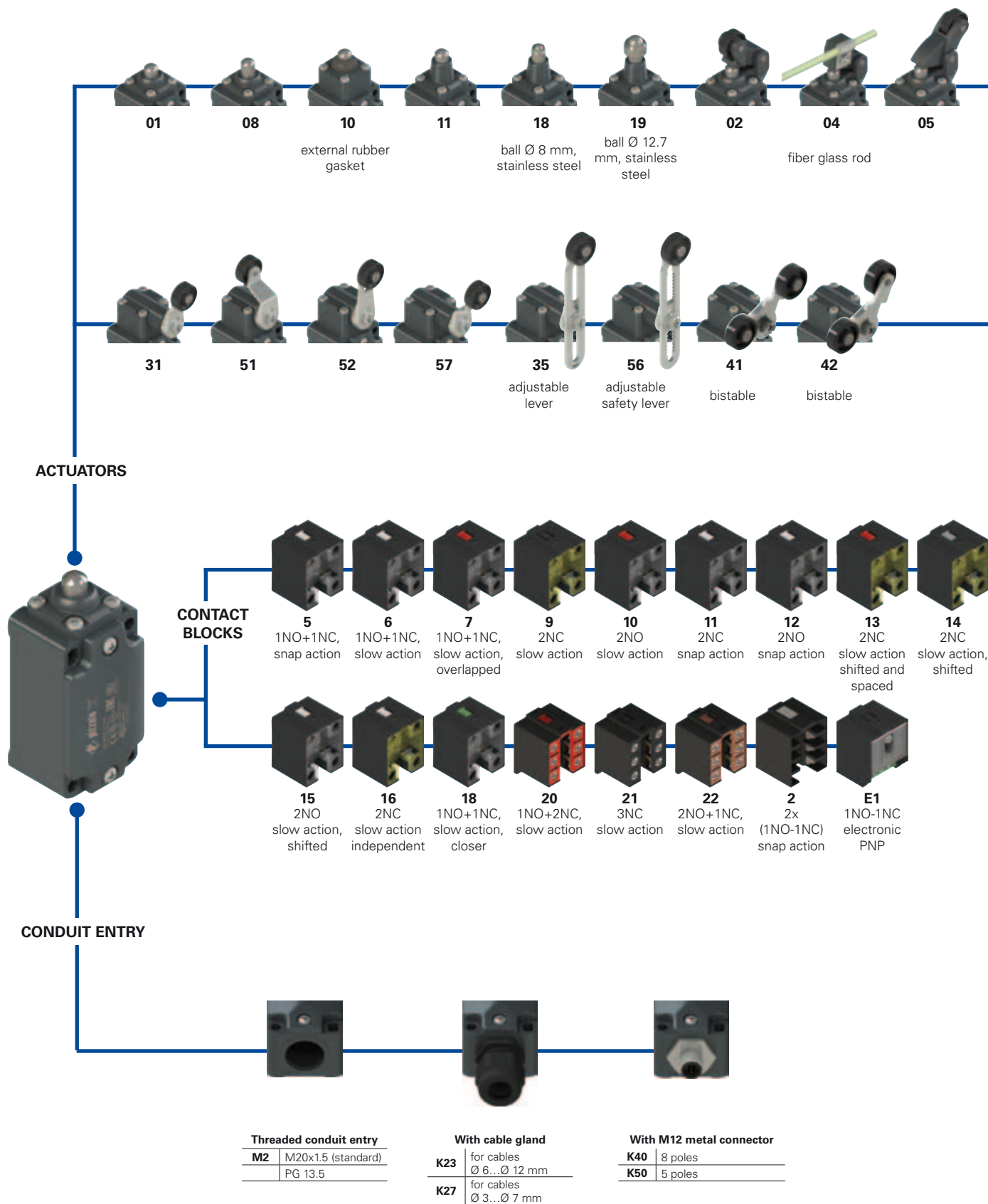
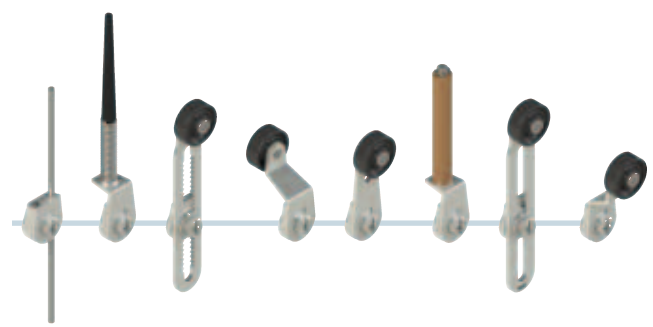
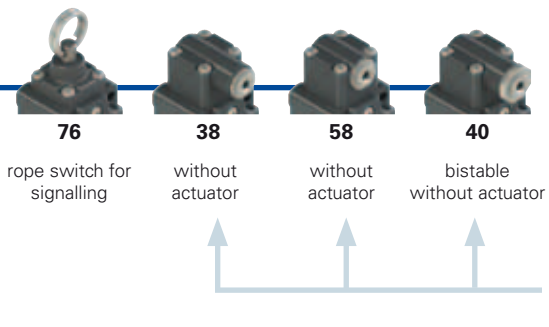
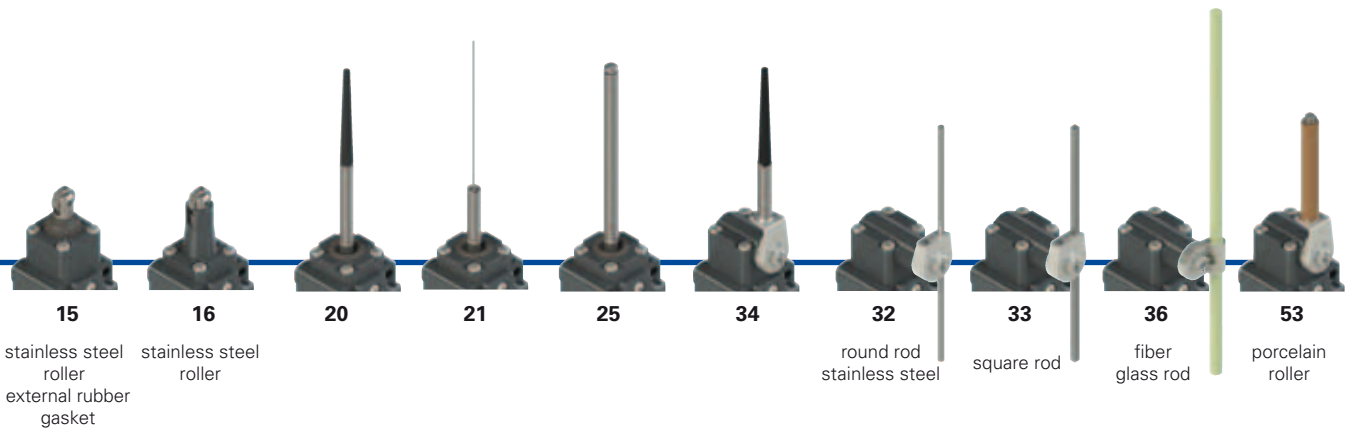


Selection diagram



● 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
FD 502-GM2K50R24T6

Housing
FD metal, 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
K40	M12 metal connector, 8 poles
K50	M12 metal connector, 5 poles

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



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

Markings and quality marks:



IMQ approval:	EG605
UL approval:	E131787
CCC approval:	2007010305230000
EAC approval:	RU C-IT DM94.B.01024

Installation for safety applications:

Use only switches marked with the symbol ⊕ 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.**

Technical data

Housing

Metal housing, baked powder coating	M20x1.5 (standard)
One threaded conduit entry:	IP67 according to EN 60529 with cable gland having equal or higher protection degree
Protection degree:	

General data

Ambient temperature:	-25°C ... +80°C
Max. actuation frequency:	3600 operating cycles ¹ /hour
Mechanical endurance:	20 million operating cycles ¹
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 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.

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.

Electrical data

Utilization category

without connector	with M12 connector 5 poles	with M12 connector 8 poles	
Thermal current (I _{th}):	10 A	4 A	2 A
Rated insulation voltage (U _i):	500 Vac 600 Vdc 400 Vac 500 Vdc (contact blocks 2, 11, 12, 20, 21, 22, 33, 34)	250 Vac 300 Vdc	30 Vac 36 Vdc
Rated impulse withstand voltage (U _{imp}):	6 kV 4 kV (contact blocks 20, 21, 22, 33, 34)	Protection against short circuits: type gG fuse 4 A 500 V	Protection against short circuits: type gG fuse 2 A 500 V
Conditional short circuit current:	1000 A according to EN 60947-5-1	Pollution degree:	3
Protection against short circuits:	type aM fuse 10 A 500 V		
Pollution degree:	3		
		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 IMO**

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 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 Vdc)

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).

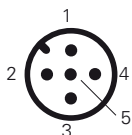
In conformity with standard: UL 508, CSA 22.2 No.14

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

Connection diagram for M12 connectors

Contact block 2 1NO-1NC+1NO-1NC	Contact block 5 1NO+1NC	Contact block 6 1NO+1NC	Contact block 7 1NO+1NC	Contact block 9 2NC	Contact block 10 2NO	Contact block 11 2NC	Contact block 12 2NO	Contact block 13 2NC
M12 connector, 8 poles	M12 connector, 5 poles	M12 connector, 5 poles	M12 connector, 5 poles	M12 connector, 5 poles	M12 connector, 5 poles	M12 connector, 5 poles	M12 connector, 5 poles	M12 connector, 5 poles
Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.
NO 3-4	NC 1-2	NC 1-2	NC 1-2	NC 1-2	NO 1-2	NC 1-2	NO 1-2	NC (1°) 1-2
NC 5-6	NO 3-4	NO 3-4	NO 3-4	NC 3-4	NO 3-4	NC 3-4	NO 3-4	NC (2°) 3-4
NC 7-8	ground 5	ground 5	ground 5	ground 5	ground 5	ground 5	ground 5	ground 5
NO 1-2								
Contact block 14 2NC	Contact block 15 2NO	Contact block 16 2NC	Contact block 18 1NO+1NC	Contact block 20 2NC+1NO	Contact block 21 3NC	Contact block 22 1NC+2NO	Contact block 33 1NC+1NO	Contact block 34 2NC
M12 connector, 5 poles	M12 connector, 5 poles	M12 connector, 5 poles	M12 connector, 5 poles	M12 connector, 8 poles	M12 connector, 8 poles	M12 connector, 8 poles	M12 connector, 5 poles	M12 connector, 5 poles
Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.	Contacts Pin no.
NC (1°) 1-2	NO (1°) 1-2	NC, lever at the right 1-2	NC 1-2	NC 3-4	NC 3-4	NC 3-4	NC 1-2	NC 1-2
NC (2°) 3-4	NO (2°) 3-4	NC, lever to the left 3-4	NO 3-4	NC 5-6	NC 5-6	NO 5-6	NO 3-4	NC 3-4
ground 5	ground 5	ground 5	ground 5	NO 7-8	NC 7-8	NO 7-8	ground 5	ground 5
				ground 1	ground 1	ground 1		

Contact block E1
PNP



M12 connector, 5 poles

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

- 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
 - PNP** = electronic PNP

Contact blocks

		With stainless steel roller on request		With stainless steel roller on request
5	R FD 501-M2	1NO+1NC	FD 502-M2	1NO+1NC
6	L FD 601-M2	1NO+1NC	FD 602-M2	1NO+1NC
7	LO FD 701-M2	1NO+1NC	FD 702-M2	1NO+1NC
9	L FD 901-M2	2NC	FD 902-M2	2NC
10	L FD 1001-M2	2NO	FD 1002-M2	2NO
11	R FD 1101-M2	2NC	FD 1102-M2	2NC
12	R FD 1201-M2	2NO	FD 1202-M2	2NO
13	LV FD 1301-M2	2NC	FD 1302-M2	2NC
14	LS FD 1401-M2	2NC	FD 1402-M2	2NC
15	LS FD 1501-M2	2NO	FD 1502-M2	2NO
18	LA FD 1801-M2	1NO+1NC	FD 1802-M2	1NO+1NC
20	L FD 2001-M2	1NO+2NC	FD 2002-M2	1NO+2NC
21	L FD 2101-M2	3NC	FD 2102-M2	3NC
22	L FD 2201-M2	2NO+1NC	FD 2202-M2	2NO+1NC
2	R FD 201-M2	2x(1NO-1NC)	FD 202-M2	2x(1NO-1NC)
E1	PNP FD E101-M2	1NO-1NC	FD E102-M2	1NO-1NC
Max. speed	page 237 - type 4		page 237 - type 3	
Min. force	8 N (25 N \ominus)		6 N (25 N \ominus)	
Travel diagrams	page 238 - group 1		page 238 - group 2	

		With external rubber gasket		With external rubber gasket
5	R FD 508-M2	1NO+1NC	FD 510-M2	1NO+1NC
6	L FD 608-M2	1NO+1NC	FD 610-M2	1NO+1NC
7	LO FD 708-M2	1NO+1NC	FD 710-M2	1NO+1NC
9	L FD 908-M2	2NC	FD 910-M2	2NC
10	L FD 1008-M2	2NO	FD 1010-M2	2NO
11	R FD 1108-M2	2NC	FD 1110-M2	2NC
12	R FD 1208-M2	2NO	FD 1210-M2	2NO
13	LV FD 1308-M2	2NC	FD 1310-M2	2NC
14	LS FD 1408-M2	2NC	FD 1410-M2	2NC
15	LS FD 1508-M2	2NO	FD 1510-M2	2NO
18	LA FD 1808-M2	1NO+1NC	FD 1810-M2	1NO+1NC
20	L FD 2008-M2	1NO+2NC	FD 2010-M2	1NO+2NC
21	L FD 2108-M2	3NC	FD 2110-M2	3NC
22	L FD 2208-M2	2NO+1NC	FD 2210-M2	2NO+1NC
2	R FD 208-M2	2x(1NO-1NC)	FD 210-M2	2x(1NO-1NC)
E1	PNP FD E108-M2	1NO-1NC	FD E110-M2	1NO-1NC
Max. speed	page 237 - type 4		page 237 - type 4	
Min. force	8 N (25 N \ominus)		11 N (25 N \ominus)	
Travel diagrams	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

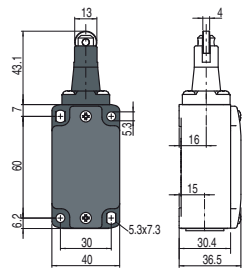
→ The 2D/3D files are available at www.pizzato.com



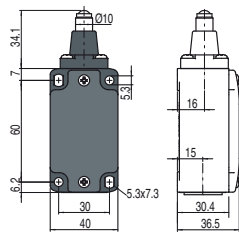
Contact type:

- 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
- A** = electronic PNP

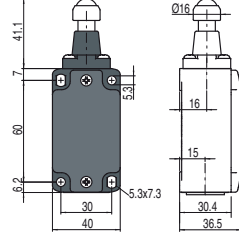
Contact blocks



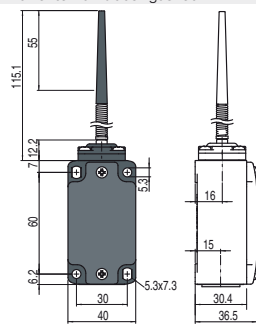
Ball, Ø 8 mm, stainless steel



Ball, Ø 12.7 mm, stainless steel

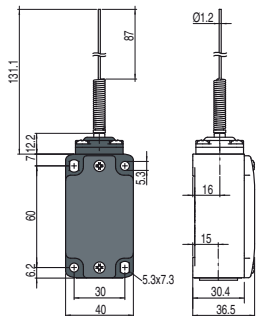


With external rubber gasket

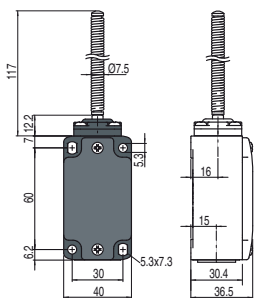


5	R	FD 516-M2	➔ 1NO+1NC	FD 518-M2	➔ 1NO+1NC	FD 519-M2	➔ 1NO+1NC	FD 520-M2	1NO+1NC
6	L	FD 616-M2	➔ 1NO+1NC	FD 618-M2	➔ 1NO+1NC	FD 619-M2	➔ 1NO+1NC		
7	LO	FD 716-M2	➔ 1NO+1NC	FD 718-M2	➔ 1NO+1NC	FD 719-M2	➔ 1NO+1NC		
9	L	FD 916-M2	➔ 2NC	FD 918-M2	➔ 2NC	FD 919-M2	➔ 2NC		
10	L	FD 1016-M2	2NO	FD 1018-M2	2NO	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	A	FD E116-M2	1NO-1NC	FD E118-M2	1NO-1NC	FD E119-M2	1NO-1NC	FD 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	

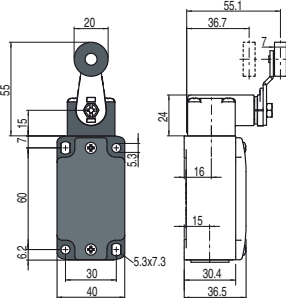
With external rubber gasket



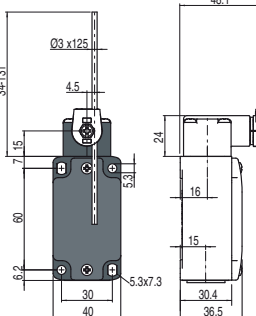
With external rubber gasket



Other rollers available. See on page 28



Round rod, Ø 3 mm, stainless steel



Contact blocks

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	A	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 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	

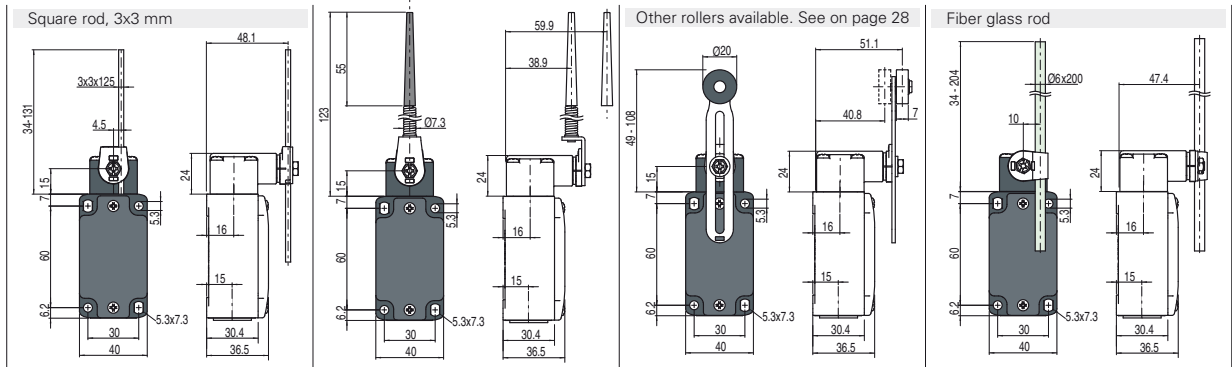
All measures in the drawings are in mm

Items with code on green background are stock items

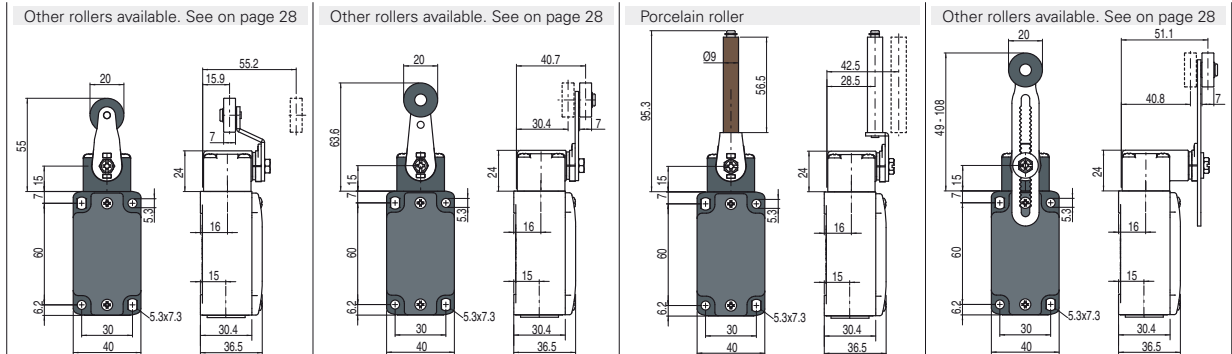
Accessories See page 225

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	5	6	7	9	10	11	12	13	14	15	16	18	20	21	22	2	E1
	R	L	LO	L	L	R	R	LV	LS	LS	LI	LA	L	L	L	R	⏏
	FD 533-M2	FD 633-M2	FD 733-M2	FD 933-M2	FD 1033-M2	FD 1133-M2	FD 1233-M2	FD 1333-M2	FD 1433-M2	FD 1533-M2	FD 1633-M2	FD 1833-M2	FD 2033-M2	FD 2133-M2	FD 2233-M2	FD 233-M2	FD E133-M2
	1NO+1NC	1NO+1NC	1NO+1NC	2NC	2NO	2NC	2NO	2NC	2NC	2NO	2NC	1NO+1NC	1NO+2NC	3NC	2NO+1NC	2x(1NO-1NC)	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	5	6	7	9	10	11	12	13	14	15	16	18	20	21	22	2	E1
	R	L	LO	L	L	R	R	LV	LS	LS	LI	LA	L	L	L	R	⏏
	FD 551-M2	FD 651-M2	FD 751-M2	FD 951-M2	FD 1051-M2	FD 1151-M2	FD 1251-M2	FD 1351-M2	FD 1451-M2	FD 1551-M2	FD 1656-M2	FD 1851-M2	FD 2051-M2	FD 2151-M2	FD 2251-M2	FD 251-M2	FD E151-M2
	⊕ 1NO+1NC	⊕ 1NO+1NC	⊕ 1NO+1NC	⊕ 2NC	2NO	⊕ 2NC	2NO	⊕ 2NC	⊕ 2NC	2NO	⊕ 2NC	⊕ 1NO+1NC	⊕ 1NO+2NC	⊕ 3NC	⊕ 2NO+1NC	2x(1NO-1NC)	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 27.

All measures in the drawings are in mm

Items with code on green background are stock items

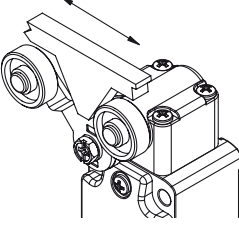
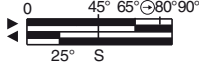
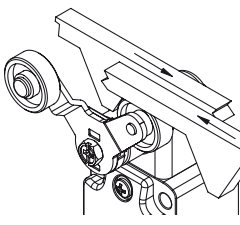
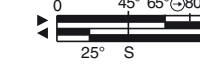
Accessories See page 225

→ 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 28	With stainless steel roller on request	With stainless steel roller 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 single track lyra lever	Bistable switch with dual track lyra lever	FD 676-M2 1NO+1NC
7	LO FD 757-M2 ⊕ 1NO+1NC			FD 776-M2 1NO+1NC
9	L FD 957-M2 ⊕ 2NC	  S = mechanical switching point positive opening on contact 21-22 only	  S = mechanical switching point positive opening on contact 21-22 only	FD 976-M2 2NO
10	L FD 1057-M2 2NO			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			FD 1876-M2 1NO+1NC
18	LA FD 1857-M2 ⊕ 1NO+1NC			FD 2076-M2 2NO+1NC
20	L FD 2057-M2 ⊕ 1NO+2NC			FD 2176-M2 3NC
21	L FD 2157-M2 ⊕ 3NC	FD 2276-M2 1NO+2NC		
22	L FD 2257-M2 ⊕ 2NO+1NC	FD 276-M2 2x(1NO-1NC)		
2	R FD 257-M2 2x(1NO-1NC)			
E1	A FD 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

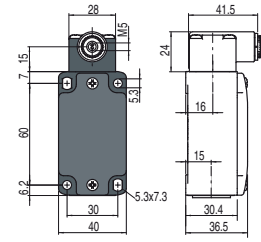
Position switches with revolving lever without actuator

All measures in the drawings are in mm

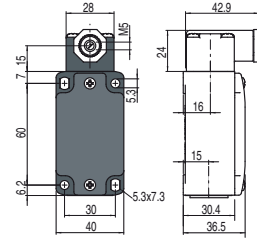
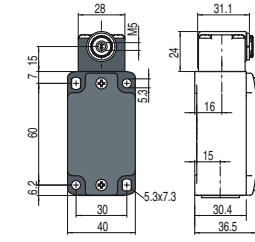
Contact type:

- 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
- PNP** = 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	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	Bistable switch S mechanical switching point positive opening on contact 21-22 only	
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	PNP	FD E138-M2 ⊕	1NO-1NC	FD 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°	
Travel diagrams		page 238 - group 4		page 238 - group 4		0.21 Nm (0.36 Nm ⊕)	

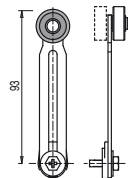
Loose actuators

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 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 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