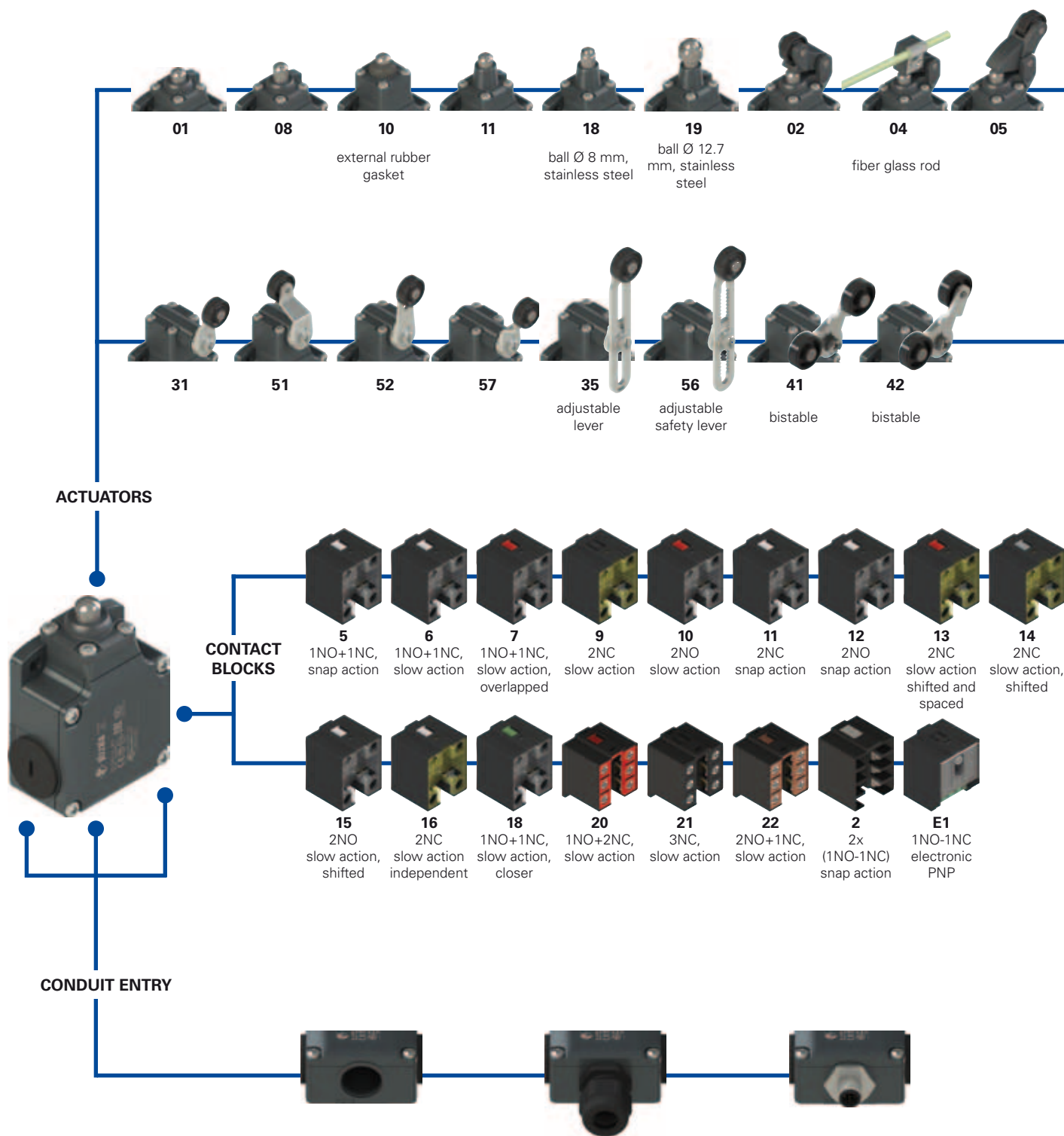


Selection diagram



Threaded conduit entries

M2	M20x1.5 (standard)
	PG 13.5

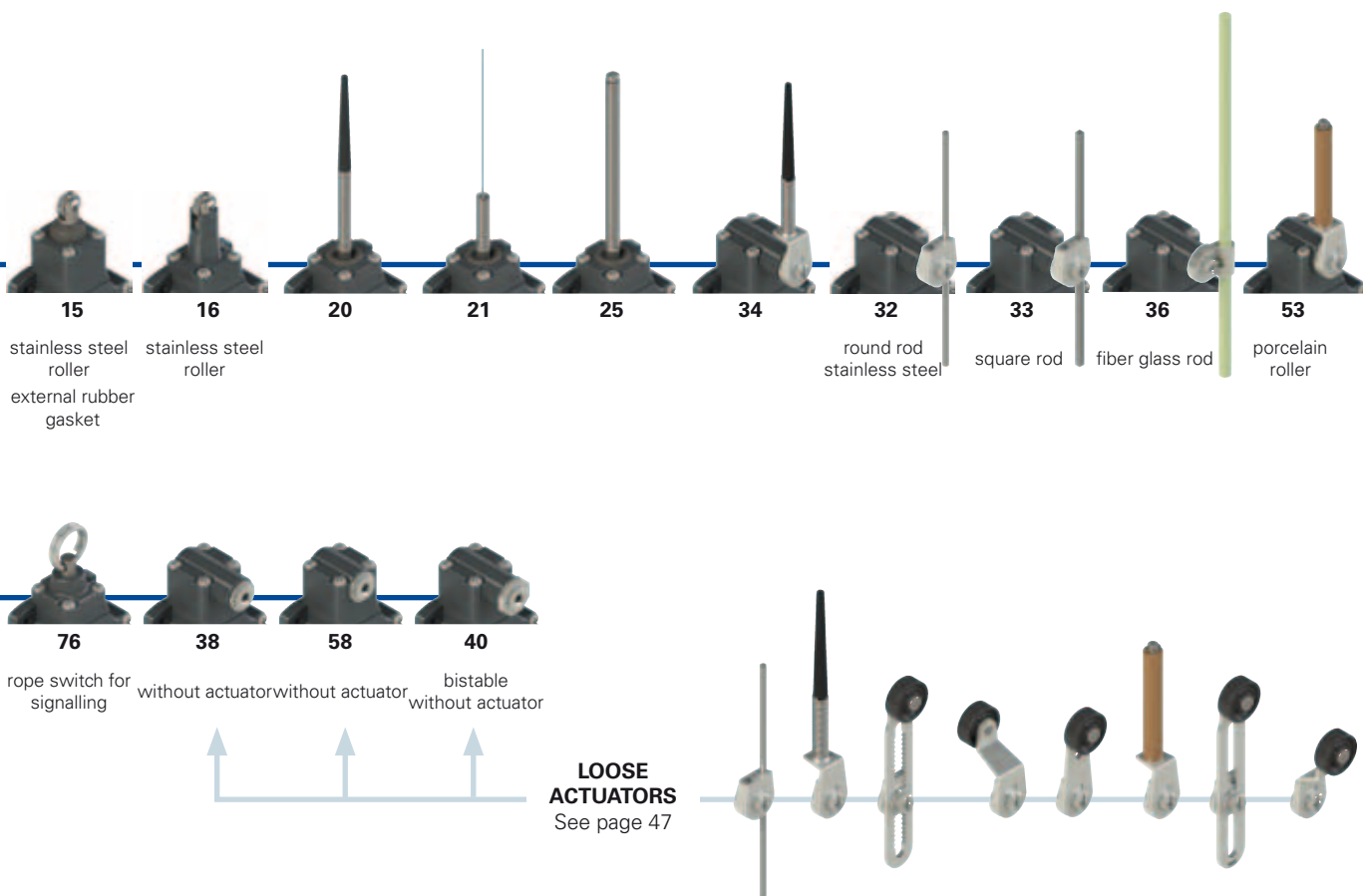
With cable gland

K23	for cables from Ø 6 to Ø 12 mm from below
K123	for cables from Ø 6 to Ø 12 mm from the right
K223	for cables from Ø 6 to Ø 12 mm from the left
K27	for cables from Ø 3 to Ø 7 mm from below
K127	for cables from Ø 3 to Ø 7 mm from the right
K227	for cables from Ø 3 to Ø 7 mm from the left

With M12 metal connector

K40	8 poles, bottom
K41	8 poles, right
K42	8 poles, left
K50	5 poles, bottom
K51	5 poles, right
K52	5 poles, left

—●— product options
 —→— accessory sold separately



LOOSE ACTUATORS
See page 47

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
FL 502-GM2K50R24T6

Housing		Ambient temperature	
FL	metal, three conduit entries		-25°C ... +80°C (standard)
Contact blocks		T6	-40°C ... +80°C
5	1NO+1NC, snap action	Rollers	
6	1NO+1NC, slow action		standard roller
7	1NO+1NC, slow action, overlapped	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)
Actuators		R5	rubber, Ø 40 mm (for actuators 31, 35, 51, 52, 56, 57)
01	short plunger	R26	rubber, Ø 50 mm (for actuators 31, 35, 51, 52, 56, 57)
02	roller lever	R27	rubber, protruding, Ø 50 mm (for actuators 35 e 36)
05	angled roller lever	Pre-installed cable glands or connectors	
...		without cable gland or connector (standard)
Contact type		K23	cable gland for cables Ø 6...Ø 12 mm
	silver contacts (standard)	K50	M12 metal connector, 5 poles
G	silver contacts with 1 µm gold coating (not for contact block 2)	Please contact our technical service for the complete list of possible combinations.	
Threaded conduit entries			
M2	M20x1.5 (standard)		
	PG 13.5		



Main features

- Metal housing, three conduit entries
- 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 ДМ94.В.01024

Technical data

Housing

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

General data

Ambient temperature:	-25°C ... +80°C
Max. actuation frequency:	3600 operating 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, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, UL 508, CSA 22.2 No.14 .

Approvals:

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

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, VDE 0660-206.

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.**

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

Alternating current: AC15 (50±60 Hz)		
U _e (V)	250	400
I _e (A)	6	4
Direct current: DC13		
U _e (V)	24	125
I _e (A)	6	1.1

Alternating current: AC15 (50±60 Hz)		
U _e (V)	24	120
I _e (A)	4	4
Direct current: DC13		
U _e (V)	24	125
I _e (A)	4	1.1

Alternating current: AC15 (50±60 Hz)		
U _e (V)	24	
I _e (A)	2	
Direct current: DC13		
U _e (V)	24	
I _e (A)	2	



Characteristics approved by IMQ

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

Conventional free air thermal current (Ith): 10 A

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

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

Protection degree of the housing: IP67

MV terminals (screw terminals)

Pollution degree 3

Utilization category: AC15

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

Operating current (Ie): 3 A

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

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

In conformity with standards: EN 60947-1, EN 60947-5-1+A1:2009, fundamental requirements of the Low Voltage Directive 2006/95/EC.

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

Characteristics approved by UL

Utilization categories Q300 (69 VA, 125 ... 250 Vdc)
 A600 (720 VA, 120 ... 600 Vac)

Data of housing type 1, 4X "indoor use only", 12, 13

For all contact blocks except 2 and 3 use 60 or 75°C copper (Cu) conductor, rigid or flexible, wire size AWG 12/14. Terminal tightening torque of 7.1 lb in (0.8 Nm).

For contact blocks 2 and 3 use 60 or 75 °C copper (Cu) conductor, rigid or flexible, wire size AWG 14. Terminal tightening torque of 12 lb in (1.4 Nm).

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

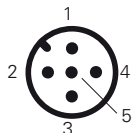
Please contact our technical service for the list of approved products.

Connection diagram for M12 connectors

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

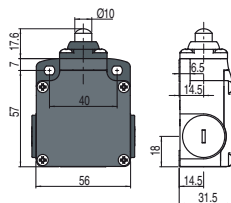
Contact block E1
PNP



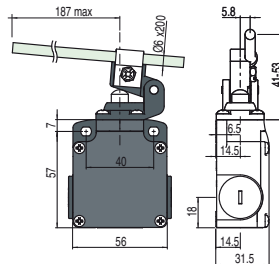
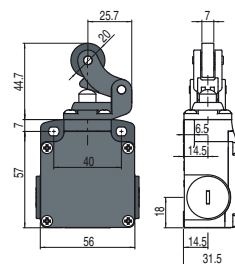
M12 connector, 5 poles

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

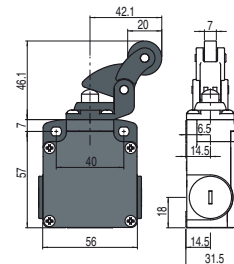
- Contact type:
- R** = snap action
 - L** = slow action
 - LO** = slow action overlapped
 - LS** = slow action shifted
 - LV** = slow action shifted and spaced
 - LI** = slow action independent
 - LA** = slow action closer
 - ⏏** = electronic PNP



With stainless steel roller on request

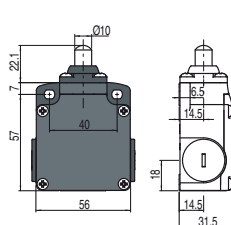


With stainless steel roller on request

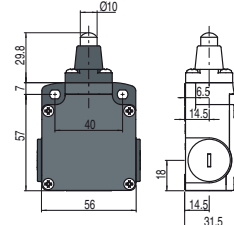
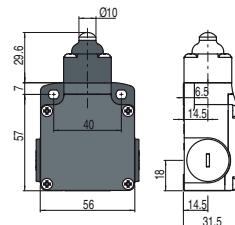


Contact blocks

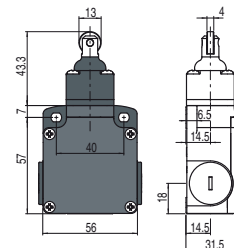
5	R	FL 501-M2	➔ 1NO+1NC	FL 502-M2	➔ 1NO+1NC	FL 504-M2	1NO+1NC	FL 505-M2	➔ 1NO+1NC
6	L	FL 601-M2	➔ 1NO+1NC	FL 602-M2	➔ 1NO+1NC	FL 604-M2	1NO+1NC	FL 605-M2	➔ 1NO+1NC
7	LO	FL 701-M2	➔ 1NO+1NC	FL 702-M2	➔ 1NO+1NC	FL 704-M2	1NO+1NC	FL 705-M2	➔ 1NO+1NC
9	L	FL 901-M2	➔ 2NC	FL 902-M2	➔ 2NC	FL 904-M2	2NC	FL 905-M2	➔ 2NC
10	L	FL 1001-M2	2NO	FL 1002-M2	2NO	FL 1004-M2	2NO	FL 1005-M2	2NO
11	R	FL 1101-M2	➔ 2NC	FL 1102-M2	➔ 2NC	FL 1104-M2	2NC	FL 1105-M2	➔ 2NC
12	R	FL 1201-M2	2NO	FL 1202-M2	2NO	FL 1204-M2	2NO	FL 1205-M2	2NO
13	LV	FL 1301-M2	➔ 2NC	FL 1302-M2	➔ 2NC	FL 1304-M2	2NC	FL 1305-M2	➔ 2NC
14	LS	FL 1401-M2	➔ 2NC	FL 1402-M2	➔ 2NC	FL 1404-M2	2NC	FL 1405-M2	➔ 2NC
15	LS	FL 1501-M2	2NO	FL 1502-M2	2NO	FL 1504-M2	2NO	FL 1505-M2	2NO
18	LA	FL 1801-M2	➔ 1NO+1NC	FL 1802-M2	➔ 1NO+1NC	FL 1804-M2	1NO+1NC	FL 1805-M2	➔ 1NO+1NC
20	L	FL 2001-M2	➔ 1NO+2NC	FL 2002-M2	➔ 1NO+2NC	FL 2004-M2	1NO+2NC	FL 2005-M2	➔ 1NO+2NC
21	L	FL 2101-M2	➔ 3NC	FL 2102-M2	➔ 3NC	FL 2104-M2	3NC	FL 2105-M2	➔ 3NC
22	L	FL 2201-M2	➔ 2NO+1NC	FL 2202-M2	➔ 2NO+1NC	FL 2204-M2	2NO+1NC	FL 2205-M2	➔ 2NO+1NC
2	R	FL 201-M2	2x(1NO-1NC)	FL 202-M2	2x(1NO-1NC)	FL 204-M2	2x(1NO-1NC)	FL 205-M2	2x(1NO-1NC)
E1	⏏	FL E101-M2	1NO-1NC	FL E102-M2	1NO-1NC	FL E104-M2	1NO-1NC	FL E105-M2	1NO-1NC
Max. speed		page 237 - type 4		page 237 - type 3		0.5 m/s		page 237 - type 3	
Min. force		8 N (25 N ➔)		6 N (25 N ➔)		0.17 Nm		6 N (25 N ➔)	
Travel diagrams		page 238 - group 1		page 238 - group 2		page 238 - group 1		page 238 - group 2	



With external rubber gasket



With external rubber gasket



Contact blocks

5	R	FL 508-M2	➔ 1NO+1NC	FL 510-M2	➔ 1NO+1NC	FL 511-M2	➔ 1NO+1NC	FL 515-M2	➔ 1NO+1NC
6	L	FL 608-M2	➔ 1NO+1NC	FL 610-M2	➔ 1NO+1NC	FL 611-M2	➔ 1NO+1NC	FL 615-M2	➔ 1NO+1NC
7	LO	FL 708-M2	➔ 1NO+1NC	FL 710-M2	➔ 1NO+1NC	FL 711-M2	➔ 1NO+1NC	FL 715-M2	➔ 1NO+1NC
9	L	FL 908-M2	➔ 2NC	FL 910-M2	➔ 2NC	FL 911-M2	➔ 2NC	FL 915-M2	➔ 2NC
10	L	FL 1008-M2	2NO	FL 1010-M2	2NO	FL 1011-M2	2NO	FL 1015-M2	2NO
11	R	FL 1108-M2	➔ 2NC	FL 1110-M2	➔ 2NC	FL 1111-M2	➔ 2NC	FL 1115-M2	➔ 2NC
12	R	FL 1208-M2	2NO	FL 1210-M2	2NO	FL 1211-M2	2NO	FL 1215-M2	2NO
13	LV	FL 1308-M2	➔ 2NC	FL 1310-M2	➔ 2NC	FL 1311-M2	➔ 2NC	FL 1315-M2	➔ 2NC
14	LS	FL 1408-M2	➔ 2NC	FL 1410-M2	➔ 2NC	FL 1411-M2	➔ 2NC	FL 1415-M2	➔ 2NC
15	LS	FL 1508-M2	2NO	FL 1510-M2	2NO	FL 1511-M2	2NO	FL 1515-M2	2NO
18	LA	FL 1808-M2	➔ 1NO+1NC	FL 1810-M2	➔ 1NO+1NC	FL 1811-M2	➔ 1NO+1NC	FL 1815-M2	➔ 1NO+1NC
20	L	FL 2008-M2	➔ 1NO+2NC	FL 2010-M2	➔ 1NO+2NC	FL 2011-M2	➔ 1NO+2NC	FL 2015-M2	➔ 1NO+2NC
21	L	FL 2108-M2	➔ 3NC	FL 2110-M2	➔ 3NC	FL 2111-M2	➔ 3NC	FL 2115-M2	➔ 3NC
22	L	FL 2208-M2	➔ 2NO+1NC	FL 2210-M2	➔ 2NO+1NC	FL 2211-M2	➔ 2NO+1NC	FL 2215-M2	➔ 2NO+1NC
2	R	FL 208-M2	2x(1NO-1NC)	FL 210-M2	2x(1NO-1NC)	FL 211-M2	2x(1NO-1NC)	FL 215-M2	2x(1NO-1NC)
E1	⏏	FL E108-M2	1NO-1NC	FL E110-M2	1NO-1NC	FL E111-M2	1NO-1NC	FL E115-M2	1NO-1NC
Max. speed		page 237 - type 4		page 237 - type 4		page 237 - type 4		page 237 - type 2	
Min. force		8 N (25 N ➔)		11 N (25 N ➔)		8 N (25 N ➔)		11 N (25 N ➔)	
Travel diagrams		page 238 - group 1		page 238 - group 1		page 238 - group 1		page 238 - group 1	

All measures in the drawings are in mm

Items with code on green background are stock items

Accessories See page 225

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



Contact type:

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

Contact blocks

	Ball, Ø 8 mm, stainless steel	Ball, Ø 12.7 mm, stainless steel	With external rubber gasket
5 R	FL 516-M2 → 1NO+1NC	FL 518-M2 → 1NO+1NC	FL 519-M2 → 1NO+1NC
6 L	FL 616-M2 → 1NO+1NC	FL 618-M2 → 1NO+1NC	FL 619-M2 → 1NO+1NC
7 LO	FL 716-M2 → 1NO+1NC	FL 718-M2 → 1NO+1NC	FL 719-M2 → 1NO+1NC
9 L	FL 916-M2 → 2NC	FL 918-M2 → 2NC	FL 919-M2 → 2NC
10 L	FL 1016-M2 2NO	FL 1018-M2 2NO	FL 1019-M2 2NO
11 R	FL 1116-M2 → 2NC	FL 1118-M2 → 2NC	FL 1119-M2 → 2NC
12 R	FL 1216-M2 2NO	FL 1218-M2 2NO	FL 1219-M2 2NO
13 LV	FL 1316-M2 → 2NC	FL 1318-M2 → 2NC	FL 1319-M2 → 2NC
14 LS	FL 1416-M2 → 2NC	FL 1418-M2 → 2NC	FL 1419-M2 → 2NC
15 LS	FL 1516-M2 2NO	FL 1518-M2 2NO	FL 1519-M2 2NO
18 LA	FL 1816-M2 → 1NO+1NC	FL 1818-M2 → 1NO+1NC	FL 1819-M2 → 1NO+1NC
20 L	FL 2016-M2 → 1NO+2NC	FL 2018-M2 → 1NO+2NC	FL 2019-M2 → 1NO+2NC
21 L	FL 2116-M2 → 3NC	FL 2118-M2 → 3NC	FL 2119-M2 → 3NC
22 L	FL 2216-M2 → 2NO+1NC	FL 2218-M2 → 2NO+1NC	FL 2219-M2 → 2NO+1NC
2 R	FL 216-M2 2x(1NO-1NC)	FL 218-M2 2x(1NO-1NC)	FL 219-M2 2x(1NO-1NC)
E1 E	FL E116-M2 1NO-1NC	FL E118-M2 1NO-1NC	FL E119-M2 1NO-1NC
Max. speed	page 237 - type 2	page 237 - type 4	page 237 - type 4
Min. force	8 N (25 N →)	8 N (25 N →)	8 N (25 N →)
Travel diagrams	page 238 - group 1	page 238 - group 1	page 238 - group 1
			FL 520-M2 1NO+1NC
			FL 1020-M2 2NO
			FL 1820-M2 1NO+1NC
			FL 2020-M2 1NO+2NC
			FL 2120-M2 3NC
			FL 2220-M2 2NO+1NC
			FL 220-M2 2x(1NO-1NC)
			FL E120-M2 1NO-1NC
			1 m/s
			0.09 Nm
			page 238 - group 3

	With external rubber gasket	With external rubber gasket	Other rollers available. See on page 48	Round rod, Ø 3 mm, stainless steel
5 R	FL 521-M2 1NO+1NC	FL 525-M2 1NO+1NC	FL 531-M2 → 1NO+1NC	FL 532-M2 1NO+1NC
6 L			FL 631-M2 → 1NO+1NC	FL 632-M2 1NO+1NC
7 LO			FL 731-M2 → 1NO+1NC	FL 732-M2 1NO+1NC
9 L			FL 931-M2 → 2NC	FL 932-M2 2NC
10 L	FL 1021-M2 2NO	FL 1025-M2 2NO	FL 1031-M2 2NO	FL 1032-M2 2NO
11 R			FL 1131-M2 → 2NC	FL 1132-M2 2NC
12 R			FL 1231-M2 2NO	FL 1232-M2 2NO
13 LV			FL 1331-M2 → 2NC	FL 1332-M2 2NC
14 LS			FL 1431-M2 → 2NC	FL 1432-M2 2NC
15 LS			FL 1531-M2 2NO	FL 1532-M2 2NO
16 LI			FL 1631-M2 → 2NC	FL 1632-M2 2NC
18 LA	FL 1821-M2 1NO+1NC	FL 1825-M2 1NO+1NC	FL 1831-M2 → 1NO+1NC	FL 1832-M2 1NO+1NC
20 L	FL 2021-M2 1NO+2NC	FL 2025-M2 1NO+2NC	FL 2031-M2 → 1NO+2NC	FL 2032-M2 1NO+2NC
21 L	FL 2121-M2 3NC	FL 2125-M2 3NC	FL 2131-M2 → 3NC	FL 2132-M2 3NC
22 L	FL 2221-M2 2NO+1NC	FL 2225-M2 2NO+1NC	FL 2231-M2 → 2NO+1NC	FL 2232-M2 2NO+1NC
2 R	FL 221-M2 2x(1NO-1NC)	FL 225-M2 2x(1NO-1NC)	FL 231-M2 2x(1NO-1NC)	FL 232-M2 2x(1NO-1NC)
E1 E	FL E121-M2 1NO-1NC	FL E125-M2 1NO-1NC	FL E131-M2 1NO-1NC	FL 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

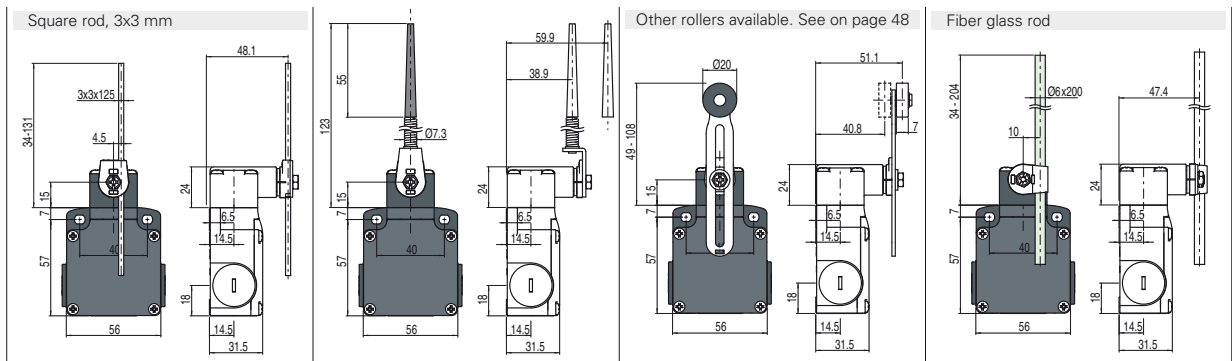
All measures in the drawings are in mm

Items with code on green background are stock items

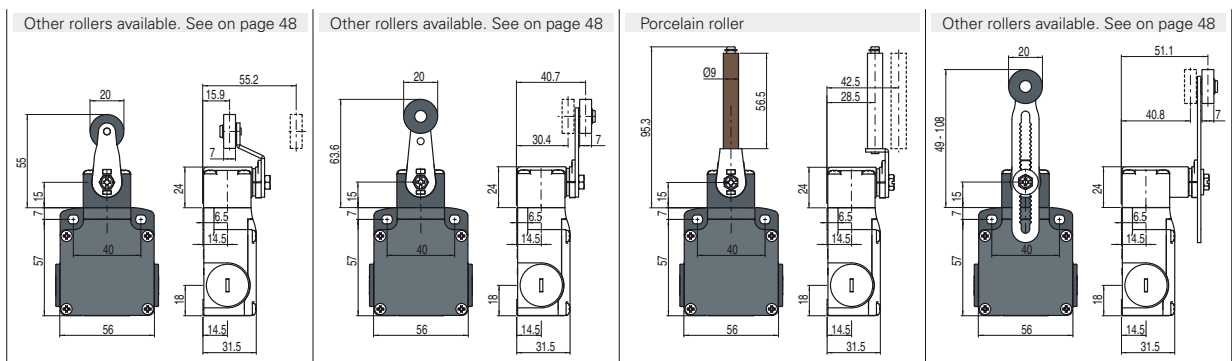
Accessories See page 225

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



Contact blocks	FL 551-M2	FL 552-M2	FL 553-E11M2V9	FL 556-M2
5	R FL 551-M2 (1) 1NO+1NC	FL 552-M2 (1) 1NO+1NC	FL 553-E11M2V9 (1) 1NO+1NC	FL 556-M2 (1) 1NO+1NC
6	L FL 651-M2 (1) 1NO+1NC	FL 652-M2 (1) 1NO+1NC	FL 653-E11M2V9 (1) 1NO+1NC	FL 656-M2 (1) 1NO+1NC
7	LO FL 751-M2 (1) 1NO+1NC	FL 752-M2 (1) 1NO+1NC	FL 753-E11M2V9 (1) 1NO+1NC	FL 756-M2 (1) 1NO+1NC
9	L FL 951-M2 (1) 2NC	FL 952-M2 (1) 2NC	FL 953-E11M2V9 (1) 2NC	FL 956-M2 (1) 2NC
10	L FL 1051-M2 2NO	FL 1052-M2 2NO	FL 1053-E11M2V9 2NO	FL 1056-M2 2NO
11	R FL 1151-M2 (1) 2NC	FL 1152-M2 (1) 2NC	FL 1153-E11M2V9 2NC	FL 1156-M2 (1) 2NC
12	R FL 1251-M2 2NO	FL 1252-M2 2NO	FL 1253-E11M2V9 2NO	FL 1256-M2 2NO
13	LV FL 1351-M2 (1) 2NC	FL 1352-M2 (1) 2NC	FL 1353-E11M2V9 (1) 2NC	FL 1356-M2 (1) 2NC
14	LS FL 1451-M2 (1) 2NC	FL 1452-M2 (1) 2NC	FL 1453-E11M2V9 (1) 2NC	FL 1456-M2 (1) 2NC
15	LS FL 1551-M2 2NO	FL 1552-M2 2NO	FL 1553-E11M2V9 2NO	FL 1556-M2 2NO
16	LI FL 1651-M2 2NC	FL 1652-M2 2NC	FL 1653-E11M2V9 2NC	FL 1656-M2 (1) 2NC
18	LA FL 1851-M2 (1) 1NO+1NC	FL 1852-M2 (1) 1NO+1NC	FL 1853-E11M2V9 (1) 1NO+1NC	FL 1856-M2 (1) 1NO+1NC
20	L FL 2051-M2 (1) 1NO+2NC	FL 2052-M2 (1) 1NO+2NC	FL 2053-E11M2V9 (1) 1NO+2NC	FL 2056-M2 (1) 1NO+2NC
21	L FL 2151-M2 (1) 3NC	FL 2152-M2 (1) 3NC	FL 2153-E11M2V9 (1) 3NC	FL 2156-M2 (1) 3NC
22	L FL 2251-M2 (1) 2NO+1NC	FL 2252-M2 (1) 2NO+1NC	FL 2253-E11M2V9 (1) 2NO+1NC	FL 2256-M2 (1) 2NO+1NC
2	R FL 251-M2 2x(1NO-1NC)	FL 252-M2 2x(1NO-1NC)	FL 253-E11M2 2x(1NO-1NC)	FL 256-M2 2x(1NO-1NC)
E1	⏏ FL E151-M2 1NO-1NC	FL E152-M2 1NO-1NC	FL E153-E11M2V9 1NO-1NC	FL E156-M2 1NO-1NC
Max. speed	page 237 - type 1	page 237 - type 1	0.5 m/s	page 237 - type 1
Min. force	0.06 Nm (0.25 Nm (1))	0.06 Nm (0.25 Nm (1))	0.03 Nm (0.25 Nm (1))	0.1 Nm (0.25 Nm (1))
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 47.

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

	Other rollers available. See on page 48	With stainless steel roller on request	With stainless steel roller on request	Rope switch for signalling
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 R FL 557-M2 ➔ 1NO+1NC 6 L FL 657-M2 ➔ 1NO+1NC 7 LO FL 757-M2 ➔ 1NO+1NC 9 L FL 957-M2 ➔ 2NC 10 L FL 1057-M2 2NO 11 R FL 1157-M2 ➔ 2NC 12 R FL 1257-M2 2NO 13 LV FL 1357-M2 ➔ 2NC 14 LS FL 1457-M2 ➔ 2NC 15 LS FL 1557-M2 2NO 16 LI FL 1657-M2 ➔ 2NC 18 LA FL 1857-M2 ➔ 1NO+1NC 20 L FL 2057-M2 ➔ 1NO+2NC 21 L FL 2157-M2 ➔ 3NC 22 L FL 2257-M2 ➔ 2NO+1NC 2 R FL 257-M2 2x(1NO-1NC) E1 FL E157-M2 1NO-1NC	FL 541-M2 ➔ 1NO+1NC Bistable switch with single track lyra lever 0 45° 65° 80° 90° 25° S S = mechanical switching point positive opening on contact 21-22 only	FL 542-M2 ➔ 1NO+1NC Bistable switch with dual track lyra lever 0 45° 65° 80° 90° 25° S S = mechanical switching point positive opening on contact 21-22 only	FL 576-M2 1NO+1NC FL 676-M2 1NO+1NC FL 776-M2 1NO+1NC FL 976-M2 2NO FL 1076-M2 2NC FL 1176-M2 2NO FL 1276-M2 2NC FL 1376-M2 2NO FL 1476-M2 2NO FL 1576-M2 2NC FL 1876-M2 1NO+1NC FL 2076-M2 2NO+1NC FL 2176-M2 3NO FL 2276-M2 1NO+2NC FL 276-M2 2x(1NO-1NC)	
Max. speed Min. force Travel diagrams	page 237 - type 1 0.1 Nm (0.25 Nm ➔) page 238 - group 4	0.5 m/s with cam at 30° 0.21 Nm (0.36 Nm ➔)	0.5 m/s with cam at 30° 0.21 Nm (0.36 Nm ➔)	0.5 m/s initial 20 N - final 40 N page 238 - group 6

All measures in the drawings are in mm

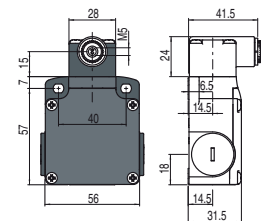
Position switches with revolving lever without actuator

All measures in the drawings are in mm

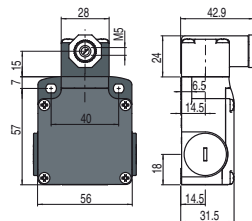
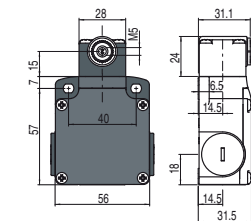
Contact type:

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

Regular head



Compact head



IMPORTANT

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

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

Contact blocks

5	R	FL 538-M2 ⊕	1NO+1NC	FL 558-M2 ⊕	1NO+1NC	FL 540-M2 ⊕	1NO+1NC	
6	L	FL 638-M2 ⊕	1NO+1NC	FL 658-M2 ⊕	1NO+1NC	Bistable switch S = mechanical switching point positive opening on contact 21-22 only		
7	LO	FL 738-M2 ⊕	1NO+1NC	FL 758-M2 ⊕	1NO+1NC			
9	L	FL 938-M2 ⊕	2NC	FL 958-M2 ⊕	2NC			
10	L	FL 1038-M2 ⊕	2NC	FL 1058-M2 ⊕	2NO			
11	R	FL 1138-M2 ⊕	2NC	FL 1158-M2 ⊕	2NC			
12	R	FL 1238-M2 ⊕	2NO	FL 1258-M2 ⊕	2NO			
13	LV	FL 1338-M2 ⊕	2NC	FL 1358-M2 ⊕	2NC			
14	LS	FL 1438-M2 ⊕	2NC	FL 1458-M2 ⊕	2NC			
15	LS	FL 1538-M2 ⊕	2NO	FL 1558-M2 ⊕	2NO			
16	LI	FL 1638-M2 ⊕	2NC					
18	LA	FL 1838-M2 ⊕	1NO+1NC	FL 1858-M2 ⊕	1NO+1NC			
20	L	FL 2038-M2 ⊕	1NO+2NC	FL 2058-M2 ⊕	1NO+2NC			
21	L	FL 2138-M2 ⊕	3NC	FL 2158-M2 ⊕	3NC			
22	L	FL 2238-M2 ⊕	2NO+1NC	FL 2258-M2 ⊕	2NO+1NC			
2	R	FL 238-M2 ⊕	2x(1NO-1NC)	FL 258-M2 ⊕	2x(1NO-1NC)			
E1	⏏	FL E138-M2 ⊕	1NO-1NC	FL 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 ⊕)	

All measures in the drawings are in mm

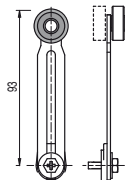
Loose actuators

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