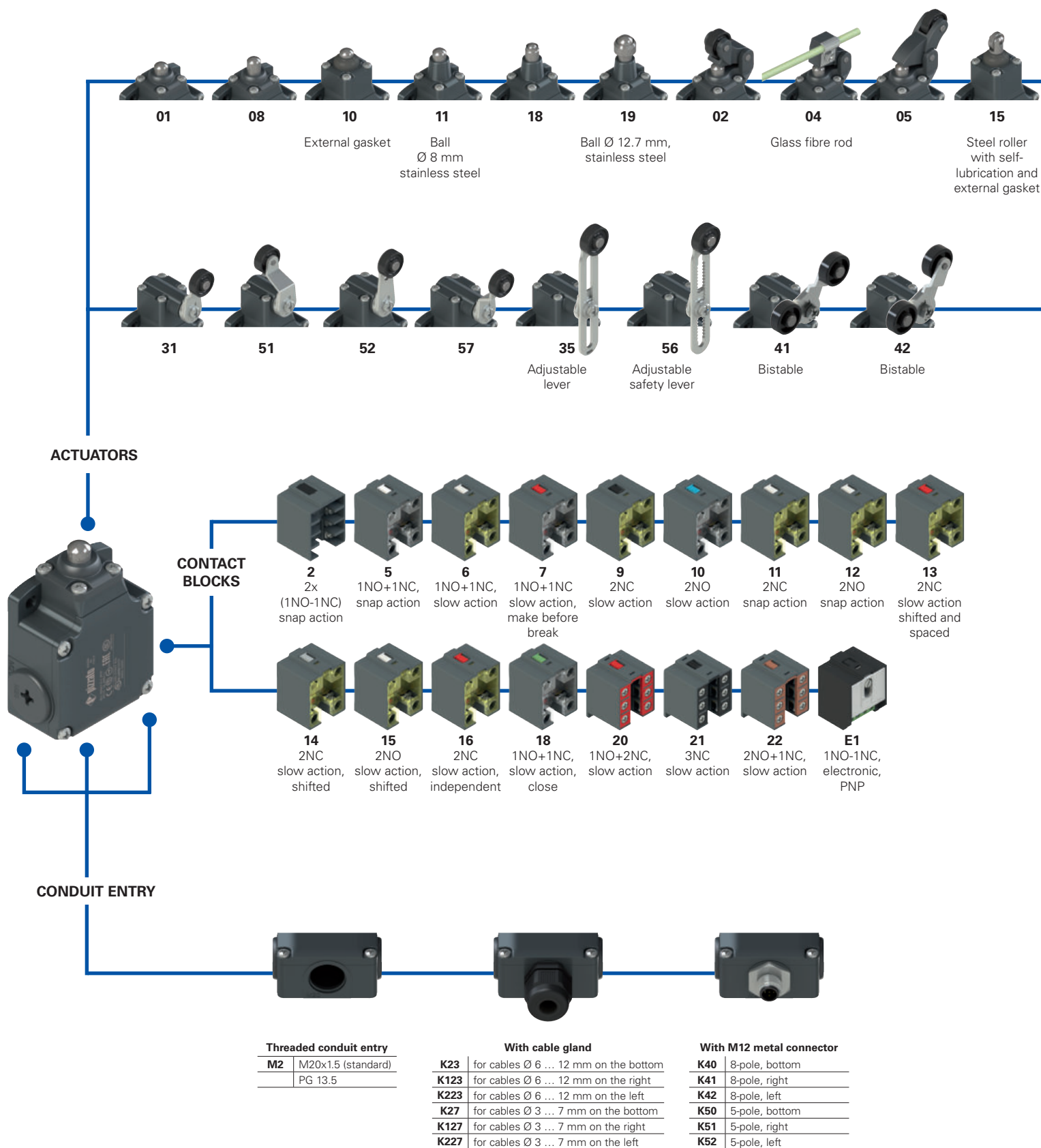
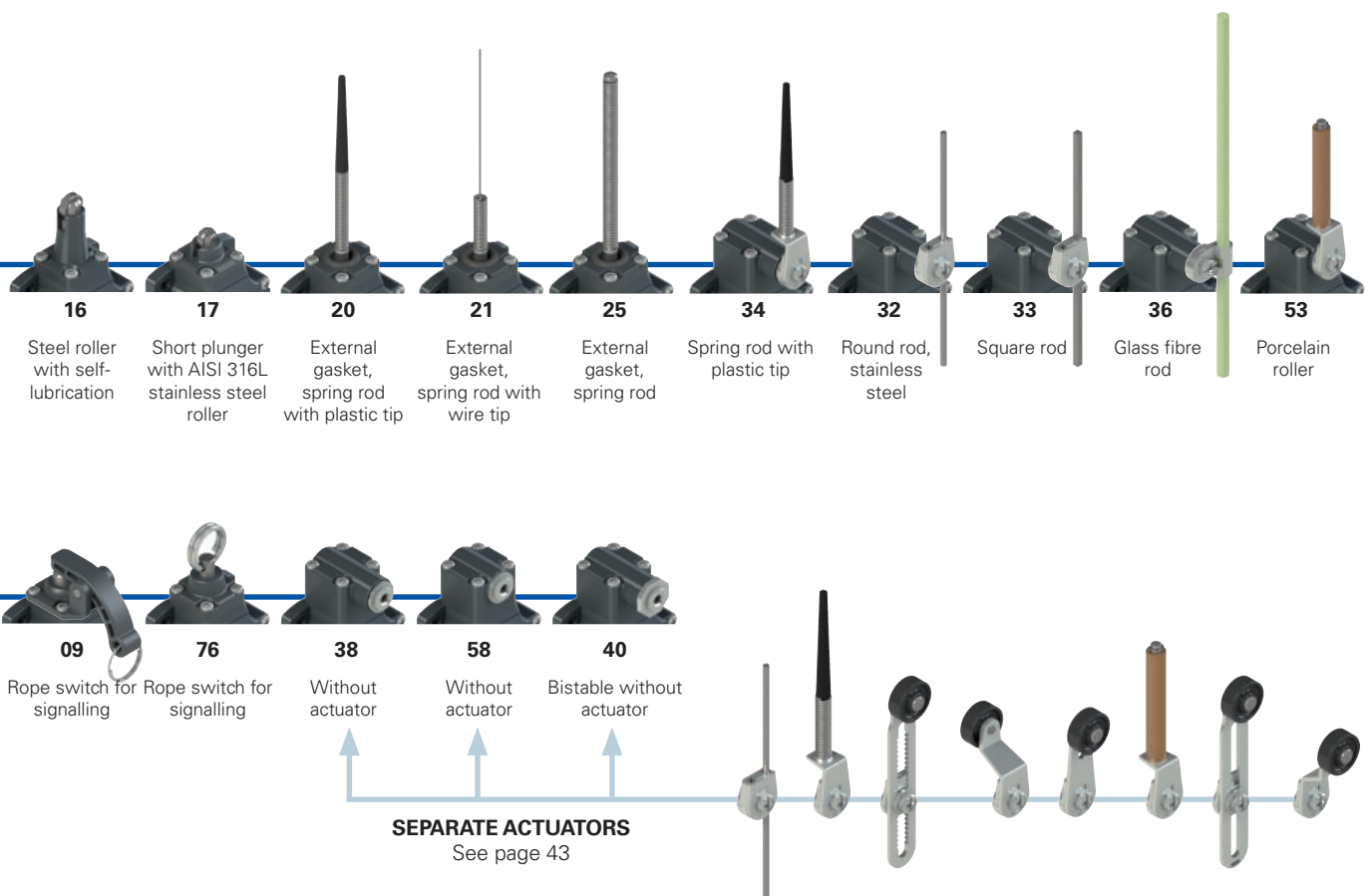


## Selection diagram



● Product options  
→ Sold separately as accessory


**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	
<b>FL</b>	metal, three conduit entries

Contact block	
<b>5</b>	1NO+1NC, snap action
<b>6</b>	1NO+1NC, slow action
<b>7</b>	1NO+1NC, slow action, make before break
...	...

Actuators	
<b>01</b>	short plunger
<b>02</b>	roller lever
<b>05</b>	angled lever with roller
...	...

Contact type	
	silver contacts (standard)
<b>G</b>	silver contacts, 1 µm gold coating
<b>G1</b>	silver contacts, 2.5 µm gold coating (not for contact block 2, 20, 21, 22)

Threaded conduit entry	
<b>M2</b>	M20x1.5 (standard)
	PG 13.5

Ambient temperature	
	-25°C ... +80°C (standard)
<b>T6</b>	-40°C ... +80°C

Rollers	
	standard roller
<b>R24</b>	Steel, with self-lubrication, Ø 20 mm (for actuators 02, 05, 31, 35, 51, 52, 56, 57)
<b>R41</b>	316L stainless steel, Ø 20 mm (for actuators 02, 05, 31, 35, 51, 52, 56, 57)
<b>R25</b>	technopolymer, Ø 35 mm (for actuators 31, 35, 51, 52, 56, 57)
<b>R5</b>	rubber, Ø 40 mm (for actuators 31, 35, 51, 52, 56, 57)
<b>R26</b>	rubber, Ø 50 mm (for actuators 31, 35, 51, 52, 56, 57)
<b>R27</b>	rubber, protruding, Ø 50 mm (for actuators 35 and 56)

Pre-installed cable glands or connectors	
	no cable gland or connector (standard)
<b>K23</b>	cable gland for cables Ø 6 ... 12 mm
<b>K50</b>	M12 metal connector, 5-pole

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



### Main features

- Metal housing, three conduit entries
- Protection degree IP67
- 17 contact blocks available
- 29 actuators available
- Versions with M12 connector
- Versions with gold-plated silver contacts

### Technical data

#### Housing

Metal housing, powder-coated  
 Three threaded conduit entries: M20x1.5 (standard)  
 Protection degree acc. to EN 60529: IP67 with cable gland of equal or higher protection degree

#### General data

Ambient temperature: -25°C ... +80°C (standard)  
 -40°C ... +80°C (T6 option)  
 Max. actuation frequency: 3600 operating cycles/hour  
 Mechanical endurance: 20 million operating cycles  
 Mounting position: any  
 Safety parameter  $B_{10D}$ : 40,000,000 for NC contacts  
 Mechanical interlock, not coded: type 1 acc. to EN ISO 14119  
 Tightening torques for installation: see page 229  
 Wire cross-sections and wire stripping lengths: see page 249

#### In compliance 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, EN IEC 63000, UL 508, CSA C22.2 No. 14.

#### Approvals:

IEC 60947-5-1, UL 508, CSA C22.2 No. 14, GB/T14048.5.

#### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### Quality marks:



IMQ approval: EG605  
 UL approval: E131787  
 CCC approval: 2021000305000099  
 EAC approval: RU C-IT.YT03.B.00035/19

### Installation for safety applications:

Use only switches marked with the  $\ominus$  symbol beside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as required by **EN ISO 14119, paragraph 5.4** for specific interlock applications and **EN ISO 13849-2 tables D3** (well-tried components) and **D.8** (fault exclusions) for safety applications in general. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 230. 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 227 to 242.**

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



### Features approved by IMQ

Rated insulation voltage (U<sub>i</sub>): 500 Vac  
 400 Vac (for contact blocks 2, 11, 12, 20, 21, 22, 28, 29, 30, 33, 34, 37)  
 Conventional free air thermal current (I<sub>th</sub>): 10 A  
 Protection against short circuits: type aM fuse 10 A 500 V  
 Rated impulse withstand voltage (U<sub>imp</sub>): 6 kV  
 4 kV (for contact blocks 20, 21, 22, 28, 29, 30, 33, 34)  
 Protection degree of the housing: IP67  
 MV terminals (screw terminals): 3  
 Pollution degree: AC15  
 Utilization category: 400 Vac (50 Hz)  
 Operating voltage (U<sub>e</sub>): 3 A  
 Operating current (I<sub>e</sub>):  
 Forms of the contact element: Za, Za+Za, X+X, Zb, Y+Y, Y+Y+X, Y+Y+Y, Y+X+X, Y, X.  
 Positive opening of contacts on contact blocks 5, 6, 7, 8, 9, 11, 13, 14, 16, 17, 18, 19, 20, 21, 22, 28, 29, 30, 33, 34, 37, 38, 39, 66.  
 In compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

### Features approved by UL

Electrical Ratings: Q300 pilot duty (69 VA, 125-250 V dc)  
 A600 pilot duty (720 VA, 120-600 V ac)  
 Environmental Ratings: Types 1, 4X, 12, 13  
 For all contact blocks except 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 12, 14 AWG. Tightening torque for terminal screws of 7.1 lb in (0.8 Nm).  
 For contact blocks 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 14 AWG. Tightening torque for terminal screws of 12 lb in (1.4 Nm).

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

### Wiring diagram for M12 connectors

Contact block 2 2x(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-pole	M12 connector, 5-pole	M12 connector, 5-pole	M12 connector, 5-pole	M12 connector, 5-pole	M12 connector, 5-pole	M12 connector, 5-pole	M12 connector, 5-pole	M12 connector, 5-pole
<b>Contacts Pin no.</b> NO 3-4 NC 5-6 NC 7-8 NO 1-2	<b>Contacts Pin no.</b> NC 1-2 NO 3-4 ground 5	<b>Contacts Pin no.</b> NC 1-2 NO 3-4 ground 5	<b>Contacts Pin no.</b> NC 1-2 NO 3-4 ground 5	<b>Contacts Pin no.</b> NC 1-2 NO 3-4 ground 5	<b>Contacts Pin no.</b> NO 1-2 NO 3-4 ground 5	<b>Contacts Pin no.</b> NC 1-2 NC 3-4 ground 5	<b>Contacts Pin no.</b> NC 1-2 NO 3-4 ground 5	<b>Contacts Pin no.</b> NC (1°) 1-2 NC (2°) 3-4 ground 5
Contact block 14 2NC	Contact block 15 2NO	Contact block 16 2NC	Contact block 18 1NO+1NC	Contact block 20 1NO+2NC	Contact block 21 3NC	Contact block 22 2NO+1NC	Contact block 33 1NO+1NC	Contact block 34 2NC
M12 connector, 5-pole	M12 connector, 5-pole	M12 connector, 5-pole	M12 connector, 5-pole	M12 connector, 8-pole	M12 connector, 8-pole	M12 connector, 8-pole	M12 connector, 5-pole	M12 connector, 5-pole
<b>Contacts Pin no.</b> NC (1°) 1-2 NC (2°) 3-4 ground 5	<b>Contacts Pin no.</b> NO (1°) 1-2 NO (2°) 3-4 ground 5	<b>Contacts Pin no.</b> NC, lever to the right 1-2 NC, lever to the left 3-4 ground 5	<b>Contacts Pin no.</b> NC 1-2 NO 3-4 ground 5	<b>Contacts Pin no.</b> NC 3-4 NO 5-6 NO 7-8 ground 1	<b>Contacts Pin no.</b> NC 3-4 NC 5-6 NC 7-8 ground 1	<b>Contacts Pin no.</b> NC 3-4 NO 5-6 NO 7-8 ground 1	<b>Contacts Pin no.</b> NC 1-2 NO 3-4 ground 5	<b>Contacts Pin no.</b> NC 1-2 NC 3-4 ground 5

Contact block E1  
PNP

M12 connector, 5-pole

<b>Contacts Pin no.</b>	
+	1
-	3
NC	2
NO	4
ground	5

# FL series position switches

Contact type		With steel roller with self-lubrication or 316L stainless steel on request		With steel roller with self-lubrication or 316L stainless steel on request				
<b>R</b> = snap action	<b>L</b> = slow action	<b>LO</b> = slow action, make before break	<b>LS</b> = slow action, shifted	<b>LV</b> = slow action, shifted and spaced	<b>LI</b> = slow action, independent			
<b>LA</b> = slow action, close	<b>⚡</b> = electronic, PNP							
Contact block		Contact block		Contact block				
2 <b>R</b>	FL 201-M2	2x(1NO-1NC)	FL 202-M2	2x(1NO-1NC)	FL 204-M2	2x(1NO-1NC)	FL 205-M2	2x(1NO-1NC)
5 <b>R</b>	FL 501-M2	1NO+1NC	FL 502-M2	1NO+1NC	FL 504-M2	1NO+1NC	FL 505-M2	1NO+1NC
6 <b>L</b>	FL 601-M2	1NO+1NC	FL 602-M2	1NO+1NC	FL 604-M2	1NO+1NC	FL 605-M2	1NO+1NC
7 <b>LO</b>	FL 701-M2	1NO+1NC	FL 702-M2	1NO+1NC	FL 704-M2	1NO+1NC	FL 705-M2	1NO+1NC
9 <b>L</b>	FL 901-M2	2NC	FL 902-M2	2NC	FL 904-M2	2NC	FL 905-M2	2NC
10 <b>L</b>	FL 1001-M2	2NO	FL 1002-M2	2NO	FL 1004-M2	2NO	FL 1005-M2	2NO
11 <b>R</b>	FL 1101-M2	2NC	FL 1102-M2	2NC	FL 1104-M2	2NC	FL 1105-M2	2NC
12 <b>R</b>	FL 1201-M2	2NO	FL 1202-M2	2NO	FL 1204-M2	2NO	FL 1205-M2	2NO
13 <b>LV</b>	FL 1301-M2	2NC	FL 1302-M2	2NC	FL 1304-M2	2NC	FL 1305-M2	2NC
14 <b>LS</b>	FL 1401-M2	2NC	FL 1402-M2	2NC	FL 1404-M2	2NC	FL 1405-M2	2NC
15 <b>LS</b>	FL 1501-M2	2NO	FL 1502-M2	2NO	FL 1504-M2	2NO	FL 1505-M2	2NO
18 <b>LA</b>	FL 1801-M2	1NO+1NC	FL 1802-M2	1NO+1NC	FL 1804-M2	1NO+1NC	FL 1805-M2	1NO+1NC
20 <b>L</b>	FL 2001-M2	1NO+2NC	FL 2002-M2	1NO+2NC	FL 2004-M2	1NO+2NC	FL 2005-M2	1NO+2NC
21 <b>L</b>	FL 2101-M2	3NC	FL 2102-M2	3NC	FL 2104-M2	3NC	FL 2105-M2	3NC
22 <b>L</b>	FL 2201-M2	2NO+1NC	FL 2202-M2	2NO+1NC	FL 2204-M2	2NO+1NC	FL 2205-M2	2NO+1NC
E1 <b>⚡</b>	FL E101-M2	1NO-1NC	FL E102-M2	1NO-1NC	FL E104-M2	1NO-1NC	FL E105-M2	1NO-1NC
Max. speed	page 229 - type 4		page 229 - type 3		0.5 m/s		page 229 - type 3	
Actuating force	8 N (25 N ⊕)		6 N (25 N ⊕)		0.17 Nm		6 N (25 N ⊕)	
Travel diagrams	page 230 - group 1		page 230 - group 2		page 230 - group 1		page 230 - group 2	

Contact type		Rope switch for signalling		External gasket				
<b>R</b> = snap action	<b>L</b> = slow action	<b>LO</b> = slow action, make before break	<b>LS</b> = slow action, shifted	<b>LV</b> = slow action, shifted and spaced	<b>LI</b> = slow action, independent			
<b>LA</b> = slow action, close	<b>⚡</b> = electronic, PNP							
Contact block		Contact block		Contact block				
2 <b>R</b>	FL 208-M2	2x(1NO-1NC)	FL 209-M2	2x(1NO-1NC)	FL 210-M2	2x(1NO-1NC)	FL 211-M2	2x(1NO-1NC)
5 <b>R</b>	FL 508-M2	1NO+1NC	FL 509-M2	1NO+1NC	FL 510-M2	1NO+1NC	FL 511-M2	1NO+1NC
6 <b>L</b>	FL 608-M2	1NO+1NC	FL 609-M2	1NO+1NC	FL 610-M2	1NO+1NC	FL 611-M2	1NO+1NC
7 <b>LO</b>	FL 708-M2	1NO+1NC	FL 709-M2	1NO+1NC	FL 710-M2	1NO+1NC	FL 711-M2	1NO+1NC
9 <b>L</b>	FL 908-M2	2NC	FL 909-M2	2NC	FL 910-M2	2NC	FL 911-M2	2NC
10 <b>L</b>	FL 1008-M2	2NO	FL 1009-M2	2NO	FL 1010-M2	2NO	FL 1011-M2	2NO
11 <b>R</b>	FL 1108-M2	2NC	FL 1109-M2	2NC	FL 1110-M2	2NC	FL 1111-M2	2NC
12 <b>R</b>	FL 1208-M2	2NO	FL 1209-M2	2NO	FL 1210-M2	2NO	FL 1211-M2	2NO
13 <b>LV</b>	FL 1308-M2	2NC	FL 1309-M2	2NC	FL 1310-M2	2NC	FL 1311-M2	2NC
14 <b>LS</b>	FL 1408-M2	2NC	FL 1409-M2	2NC	FL 1410-M2	2NC	FL 1411-M2	2NC
15 <b>LS</b>	FL 1508-M2	2NO	FL 1509-M2	2NO	FL 1510-M2	2NO	FL 1511-M2	2NO
18 <b>LA</b>	FL 1808-M2	1NO+1NC	FL 1809-M2	1NO+1NC	FL 1810-M2	1NO+1NC	FL 1811-M2	1NO+1NC
20 <b>L</b>	FL 2008-M2	1NO+2NC	FL 2009-M2	1NO+2NC	FL 2010-M2	1NO+2NC	FL 2011-M2	1NO+2NC
21 <b>L</b>	FL 2108-M2	3NC	FL 2109-M2	3NC	FL 2110-M2	3NC	FL 2111-M2	3NC
22 <b>L</b>	FL 2208-M2	2NO+1NC	FL 2209-M2	2NO+1NC	FL 2210-M2	2NO+1NC	FL 2211-M2	2NO+1NC
E1 <b>⚡</b>	FL E108-M2	1NO-1NC	FL E109-M2	1NO-1NC	FL E110-M2	1NO-1NC	FL E111-M2	1NO-1NC
Max. speed	page 229 - type 4		0.5 m/s		page 229 - type 4		page 229 - type 4	
Actuating force	8 N (25 N ⊕)		7 N		11 N (25 N ⊕)		8 N (25 N ⊕)	
Travel diagrams	page 230 - group 1		/		page 230 - group 1		page 230 - group 1	

All values in the drawings are in mm

Accessories See page 207

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



Contact type	External gasket		Ball, Ø 8 mm, stainless steel		Ball, Ø 12.7 mm, stainless steel			
<b>R</b> = snap action								
<b>L</b> = slow action								
<b>LO</b> = slow action, make before break								
<b>LS</b> = slow action, shifted								
<b>LV</b> = slow action, shifted and spaced								
<b>LI</b> = slow action, independent								
<b>LA</b> = slow action, close								
<b>E1</b> = electronic, PNP								
Max. speed	page 229 - type 2		page 229 - type 2		page 229 - type 4		page 229 - type 4	
Actuating force	11 N (25 N		8 N (25 N		8 N (25 N		8 N (25 N	
Travel diagrams	page 230 - group 1		page 230 - group 1		page 230 - group 1		page 230 - group 1	

Contact type	External gasket		External gasket		External gasket		Other rollers available. See page 44	
<b>R</b> = snap action								
<b>L</b> = slow action								
<b>LO</b> = slow action, make before break								
<b>LS</b> = slow action, shifted								
<b>LV</b> = slow action, shifted and spaced								
<b>LI</b> = slow action, independent								
<b>LA</b> = slow action, close								
<b>E1</b> = electronic, PNP								
Max. speed	1 m/s		1 m/s		1 m/s		page 229 - type 1	
Actuating force	0.09 Nm		0.08 Nm		0.14 Nm		0.1 Nm (0.25 Nm	
Travel diagrams	page 230 - group 3		page 230 - group 3		page 230 - group 3		page 230 - group 4	

All values in the drawings are in mm

Accessories See page 207

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)

# FL series position switches

		Round rod, Ø 3 mm, stainless steel		Square rod, 3x3 mm		Other rollers available. See page 44				
Contact type										
Contact block										
			FL 232-M2	2x(1NO-1NC)	FL 233-M2	2x(1NO-1NC)	FL 234-M2	2x(1NO-1NC)	FL 235-M2	2x(1NO-1NC)
5		FL 532-M2	1NO+1NC	FL 533-M2	1NO+1NC	FL 534-M2	1NO+1NC	FL 535-M2		1NO+1NC
6		FL 632-M2	1NO+1NC	FL 633-M2	1NO+1NC	FL 634-M2	1NO+1NC	FL 635-M2		1NO+1NC
7		FL 732-M2	1NO+1NC	FL 733-M2	1NO+1NC	FL 734-M2	1NO+1NC	FL 735-M2		1NO+1NC
9		FL 932-M2	2NC	FL 933-M2	2NC	FL 934-M2	2NC	FL 935-M2		2NC
10		FL 1032-M2	2NO	FL 1033-M2	2NO	FL 1034-M2	2NO	FL 1035-M2		2NO
11		FL 1132-M2	2NC	FL 1133-M2	2NC	FL 1134-M2	2NC	FL 1135-M2		2NC
12		FL 1232-M2	2NO	FL 1233-M2	2NO	FL 1234-M2	2NO	FL 1235-M2		2NO
13		FL 1332-M2	2NC	FL 1333-M2	2NC	FL 1334-M2	2NC	FL 1335-M2		2NC
14		FL 1432-M2	2NC	FL 1433-M2	2NC	FL 1434-M2	2NC	FL 1435-M2		2NC
15		FL 1532-M2	2NO	FL 1533-M2	2NO	FL 1534-M2	2NO	FL 1535-M2		2NO
16		FL 1632-M2	2NC	FL 1633-M2	2NC	FL 1634-M2	2NC	FL 1635-M2		2NC
18		FL 1832-M2	1NO+1NC	FL 1833-M2	1NO+1NC	FL 1834-M2	1NO+1NC	FL 1835-M2		1NO+1NC
20		FL 2032-M2	1NO+2NC	FL 2033-M2	1NO+2NC	FL 2034-M2	1NO+2NC	FL 2035-M2		1NO+2NC
21		FL 2132-M2	3NC	FL 2133-M2	3NC	FL 2134-M2	3NC	FL 2135-M2		3NC
22		FL 2232-M2	2NO+1NC	FL 2233-M2	2NO+1NC	FL 2234-M2	2NO+1NC	FL 2235-M2		2NO+1NC
E1		FL E132-M2	1NO-1NC	FL E133-M2	1NO-1NC	FL E134-M2	1NO-1NC	FL E135-M2		1NO-1NC
Max. speed		1.5 m/s		1.5 m/s		1 m/s		page 229 - type 1		
Actuating force		0.1 Nm		0.1 Nm		0.1 Nm		0.1 Nm (0.25 Nm		
Travel diagrams		page 230 - group 4		page 230 - group 4		page 230 - group 4		page 230 - group 4		

		Glass fibre rod		Other rollers available. See page 44		Other rollers available. See page 44		Porcelain roller				
Contact type												
Contact block												
			FL 236-M2	2x(1NO-1NC)	FL 251-M2	2x(1NO-1NC)	FL 252-M2	2x(1NO-1NC)	FL 253-E11M2	2x(1NO-1NC)		
5		FL 536-M2	1NO+1NC	FL 551-M2		1NO+1NC	FL 552-M2		1NO+1NC	FL 553-E11M2V9		1NO+1NC
6		FL 636-M2	1NO+1NC	FL 651-M2		1NO+1NC	FL 652-M2		1NO+1NC	FL 653-E11M2V9		1NO+1NC
7		FL 736-M2	1NO+1NC	FL 751-M2		1NO+1NC	FL 752-M2		1NO+1NC	FL 753-E11M2V9		1NO+1NC
9		FL 936-M2	2NC	FL 951-M2		2NC	FL 952-M2		2NC	FL 953-E11M2V9		2NC
10		FL 1036-M2	2NO	FL 1051-M2		2NO	FL 1052-M2		2NO	FL 1053-E11M2V9		2NO
11		FL 1136-M2	2NC	FL 1151-M2		2NC	FL 1152-M2		2NC	/		
12		FL 1236-M2	2NO	FL 1251-M2		2NO	FL 1252-M2		2NO	FL 1253-E11M2V9		2NO
13		FL 1336-M2	2NC	FL 1351-M2		2NC	FL 1352-M2		2NC	FL 1353-E11M2V9		2NC
14		FL 1436-M2	2NC	FL 1451-M2		2NC	FL 1452-M2		2NC	FL 1453-E11M2V9		2NC
15		FL 1536-M2	2NO	FL 1551-M2		2NO	FL 1552-M2		2NO	FL 1553-E11M2V9		2NO
16		FL 1636-M2	2NC	/			/			/		
18		FL 1836-M2	1NO+1NC	FL 1851-M2		1NO+1NC	FL 1852-M2		1NO+1NC	FL 1853-E11M2V9		1NO+1NC
20		FL 2036-M2	1NO+2NC	FL 2051-M2		1NO+2NC	FL 2052-M2		1NO+2NC	FL 2053-E11M2V9		1NO+2NC
21		FL 2136-M2	3NC	FL 2151-M2		3NC	FL 2152-M2		3NC	FL 2153-E11M2V9		3NC
22		FL 2236-M2	2NO+1NC	FL 2251-M2		2NO+1NC	FL 2252-M2		2NO+1NC	FL 2253-E11M2V9		2NO+1NC
E1		FL E136-M2	1NO-1NC	FL E151-M2		1NO-1NC	FL E152-M2		1NO-1NC	FL E153-E11M2V9		1NO-1NC
Max. speed		1.5 m/s		page 229 - type 1		page 229 - type 1		0.5 m/s				
Actuating force		0.1 Nm		0.06 Nm (0.25 Nm		0.06 Nm (0.25 Nm		0.03 Nm (0.25 Nm				
Travel diagrams		page 230 - group 4		page 230 - group 4		page 230 - group 4		page 230 - group 5				

(1) Positive opening only with actuator set to max. See page 44.

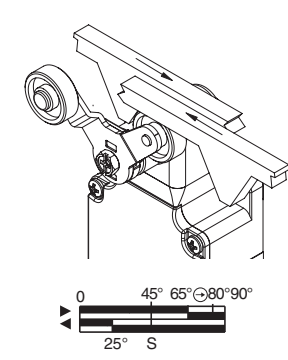
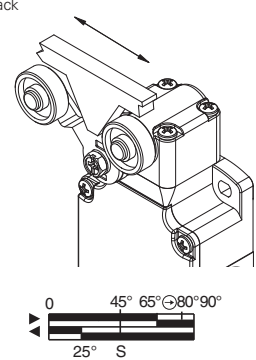
All values in the drawings are in mm

Accessories See page 207

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



Contact type	Other rollers available. See page 44		Other rollers available. See page 44		With steel roller with self-lubrication or 316L stainless steel on request	With steel roller with self-lubrication or 316L stainless steel on request
<b>R</b> = snap action <b>L</b> = slow action <b>LO</b> = slow action, make before break <b>LS</b> = slow action, shifted <b>LV</b> = slow action, shifted and spaced <b>LI</b> = slow action, independent <b>LA</b> = slow action, close <b>⏏</b> = electronic, PNP						
Contact block						
2	<b>R</b>	FL 256-M2	2x(1NO-1NC)	FL 257-M2	2x(1NO-1NC)	/
5	<b>R</b>	FL 556-M2	1NO+1NC	FL 557-M2	1NO+1NC	FL 541-M2 1NO+1NC
6	<b>L</b>	FL 656-M2	1NO+1NC	FL 657-M2	1NO+1NC	Bistable switch with lyra lever, single track
7	<b>LO</b>	FL 756-M2	1NO+1NC	FL 757-M2	1NO+1NC	
9	<b>L</b>	FL 956-M2	2NC	FL 957-M2	2NC	Bistable switch with lyra lever, dual track
10	<b>L</b>	FL 1056-M2	2NO	FL 1057-M2	2NO	
11	<b>R</b>	FL 1156-M2	2NC	FL 1157-M2	2NC	
12	<b>R</b>	FL 1256-M2	2NO	FL 1257-M2	2NO	
13	<b>LV</b>	FL 1356-M2	2NC	FL 1357-M2	2NC	
14	<b>LS</b>	FL 1456-M2	2NC	FL 1457-M2	2NC	
15	<b>LS</b>	FL 1556-M2	2NO	FL 1557-M2	2NO	
16	<b>LI</b>	FL 1656-M2	2NC	FL 1657-M2	2NC	
18	<b>LA</b>	FL 1856-M2	1NO+1NC	FL 1857-M2	1NO+1NC	
20	<b>L</b>	FL 2056-M2	1NO+2NC	FL 2057-M2	1NO+2NC	
21	<b>L</b>	FL 2156-M2	3NC	FL 2157-M2	3NC	
22	<b>L</b>	FL 2256-M2	2NO+1NC	FL 2257-M2	2NO+1NC	
E1	<b>⏏</b>	FL E156-M2	1NO-1NC	FL E157-M2	1NO-1NC	
Max. speed	page 229 - type 1		page 229 - type 1		0.5 m/s with cam at 30°	0.5 m/s with cam at 30°
Actuating force	0.1 Nm (0.25 Nm ↻)		0.1 Nm (0.25 Nm ↻)		0.21 Nm (0.36 Nm ↻)	0.21 Nm (0.36 Nm ↻)
Travel diagrams	page 230 - group 4		page 230 - group 4		/	/



Contact type	Rope switch for signalling		
<b>R</b> = snap action <b>L</b> = slow action <b>LO</b> = slow action, make before break <b>LS</b> = slow action, shifted <b>LV</b> = slow action, shifted and spaced <b>LI</b> = slow action, independent <b>LA</b> = slow action, close <b>⏏</b> = electronic, PNP			
Contact block			
2	<b>R</b>	FL 276-M2	2x(1NO-1NC)
5	<b>R</b>	FL 576-M2	1NO+1NC
6	<b>L</b>	FL 676-M2	1NO+1NC
7	<b>LO</b>	FL 776-M2	1NO+1NC
9	<b>L</b>	FL 976-M2	2NO
10	<b>L</b>	FL 1076-M2	2NC
11	<b>R</b>	FL 1176-M2	2NO
12	<b>R</b>	FL 1276-M2	2NC
13	<b>LV</b>	FL 1376-M2	2NO
14	<b>LS</b>	FL 1476-M2	2NO
15	<b>LS</b>	FL 1576-M2	2NC
16	<b>LI</b>	/	
18	<b>LA</b>	FL 1876-M2	1NO+1NC
20	<b>L</b>	FL 2076-M2	2NO+1NC
21	<b>L</b>	FL 2176-M2	3NO
22	<b>L</b>	FL 2276-M2	1NO+2NC
E1	<b>⏏</b>	/	
Max. speed	0.5 m/s		
Actuating force	initial 20 N - final 40 N		
Travel diagrams	page 230 - group 6		

All values in the drawings are in mm

Accessories See page 207

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



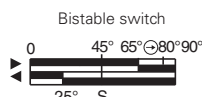
## Position switches with swivelling lever without actuator

Contact type	Regular head	Compact head	
<b>R</b> = snap action			
<b>L</b> = slow action			
<b>LO</b> = slow action, make before break			
<b>LS</b> = slow action, shifted			
<b>LV</b> = slow action, shifted and spaced			
<b>LI</b> = slow action, independent			
<b>LA</b> = slow action, close			
<b>△</b> = electronic, PNP			
Contact block			
2	<b>R</b> FL 238-M2 2x(1NO-1NC)	<b>R</b> FL 258-M2 2x(1NO-1NC)	/
5	<b>R</b> FL 538-M2 ⊕ 1NO+1NC	<b>R</b> FL 558-M2 ⊕ 1NO+1NC	<b>FL 540-M2</b> ⊕ 1NO+1NC
6	<b>L</b> FL 638-M2 ⊕ 1NO+1NC	<b>L</b> FL 658-M2 ⊕ 1NO+1NC	
7	<b>LO</b> FL 738-M2 ⊕ 1NO+1NC	<b>LO</b> FL 758-M2 ⊕ 1NO+1NC	
9	<b>L</b> FL 938-M2 ⊕ 2NC	<b>L</b> FL 958-M2 ⊕ 2NC	
10	<b>L</b> FL 1038-M2 2NO	<b>L</b> FL 1058-M2 2NO	
11	<b>R</b> FL 1138-M2 ⊕ 2NC	<b>R</b> FL 1158-M2 ⊕ 2NC	
12	<b>R</b> FL 1238-M2 2NO	<b>R</b> FL 1258-M2 2NO	
13	<b>LV</b> FL 1338-M2 ⊕ 2NC	<b>LV</b> FL 1358-M2 ⊕ 2NC	
14	<b>LS</b> FL 1438-M2 ⊕ 2NC	<b>LS</b> FL 1458-M2 ⊕ 2NC	
15	<b>LS</b> FL 1538-M2 2NO	<b>LS</b> FL 1558-M2 2NO	
16	<b>LI</b> FL 1638-M2 ⊕ 2NC	/	
18	<b>LA</b> FL 1838-M2 ⊕ 1NO+1NC	<b>LA</b> FL 1858-M2 ⊕ 1NO+1NC	
20	<b>L</b> FL 2038-M2 ⊕ 1NO+2NC	<b>L</b> FL 2058-M2 ⊕ 1NO+2NC	
21	<b>L</b> FL 2138-M2 ⊕ 3NC	<b>L</b> FL 2158-M2 ⊕ 3NC	
22	<b>L</b> FL 2238-M2 ⊕ 2NO+1NC	<b>L</b> FL 2258-M2 ⊕ 2NO+1NC	
E1	<b>△</b> FL E138-M2 1NO-1NC	<b>△</b> FL E158-M2 1NO-1NC	
Actuating force	0.1 Nm (0.25 Nm ⊕)	0.06 Nm (0.25 Nm ⊕)	0.21 Nm (0.36 Nm ⊕)
Travel diagrams	page 230 - group 4	page 230 - group 4	/

### 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 225.



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

## Separate actuators

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

Technopolymer roller Ø 20 mm	Adjustable round rod Ø 3x125 mm	Adjustable square rod, 3x3x125 mm	Spring rod with plastic tip	Adjustable actuator with technopolymer roller	Adjustable glass fibre rod	
<b>VF L31</b> ⊕	<b>VF L32</b> (3)	<b>VF L33</b> (3)	<b>VF L34</b>	<b>VF L35</b> ⊕ (1) (3)	<b>VF L36</b> (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
<b>VF L41</b> ⊕	<b>VF L42</b> ⊕	<b>VF L51</b> ⊕	<b>VF L52</b> ⊕	<b>VF L53</b> ⊕ (2)	<b>VF L56</b> ⊕ (3)	<b>VF L57</b> ⊕

All values in the drawings are in mm

Accessories See page 207

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



## Special separate actuators

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

Steel rollers, Ø 20 mm, with self-lubrication

VF L31-R24 (1)	VF L35-R24 (1) (3)	VF L51-R24 (2)	VF L52-R24 (2)	VF L56-R24 (2) (3)	VF L57-R24 (2)

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

Technopolymer rollers, Ø 35 mm

VF L31-R25 (4)	VF L35-R25 (1) (3)	VF L51-R25 (4)	VF L52-R25 (2)	VF L56-R25 (2) (3)	VF L57-R25 (2)

Rubber rollers, Ø 40 mm

VF L31-R5 (4)	VF L35-R5 (1) (3)	VF L51-R5 (4)	VF L52-R5 (2)	VF L56-R5 (2) (3)	VF L57-R5 (4)

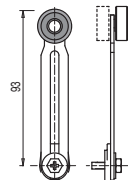
Rubber rollers, Ø 50 mm

VF L31-R26 (4)	VF L35-R26 (1) (3)	VF L51-R26 (4)	VF L52-R26 (4)	VF L56-R26 (2) (3)	VF L57-R26 (4)

Protruding rubber rollers, Ø 50 mm

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

- (1) Lever VF L35 can only be used in safety applications if adjusted to its max. length, as shown in the figure to the right. If an adjustable lever is required for safety applications, use the VF L56 adjustable safety lever.
- (2) The position switch obtained by assembling switch 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 may hit the housing of the switch upon actuation. This possible interference depends on the fixing position of actuator and switch head.
- (4) The actuator cannot be rotated to the inside because it will hit the switch head upon actuation.



All values in the drawings are in mm

Accessories See page 207

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)