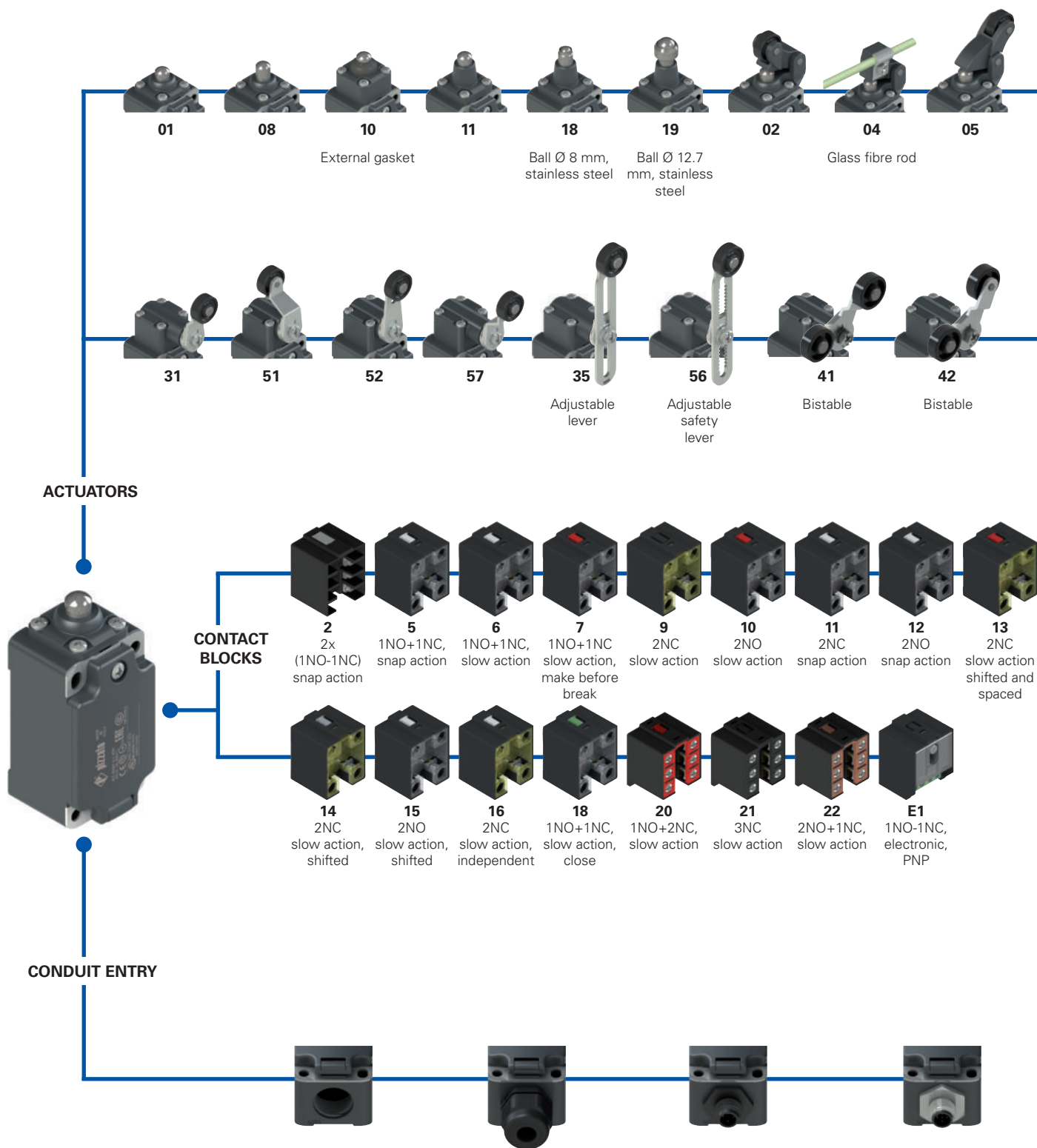


## Selection diagram



**Threaded conduit entry**

<b>M2</b>	M20x1.5 (standard) PG 13.5
-----------	-------------------------------

**With cable gland**

<b>K23</b>	for cables Ø 6 ... 12 mm
<b>K27</b>	for cables Ø 3 ... 7 mm

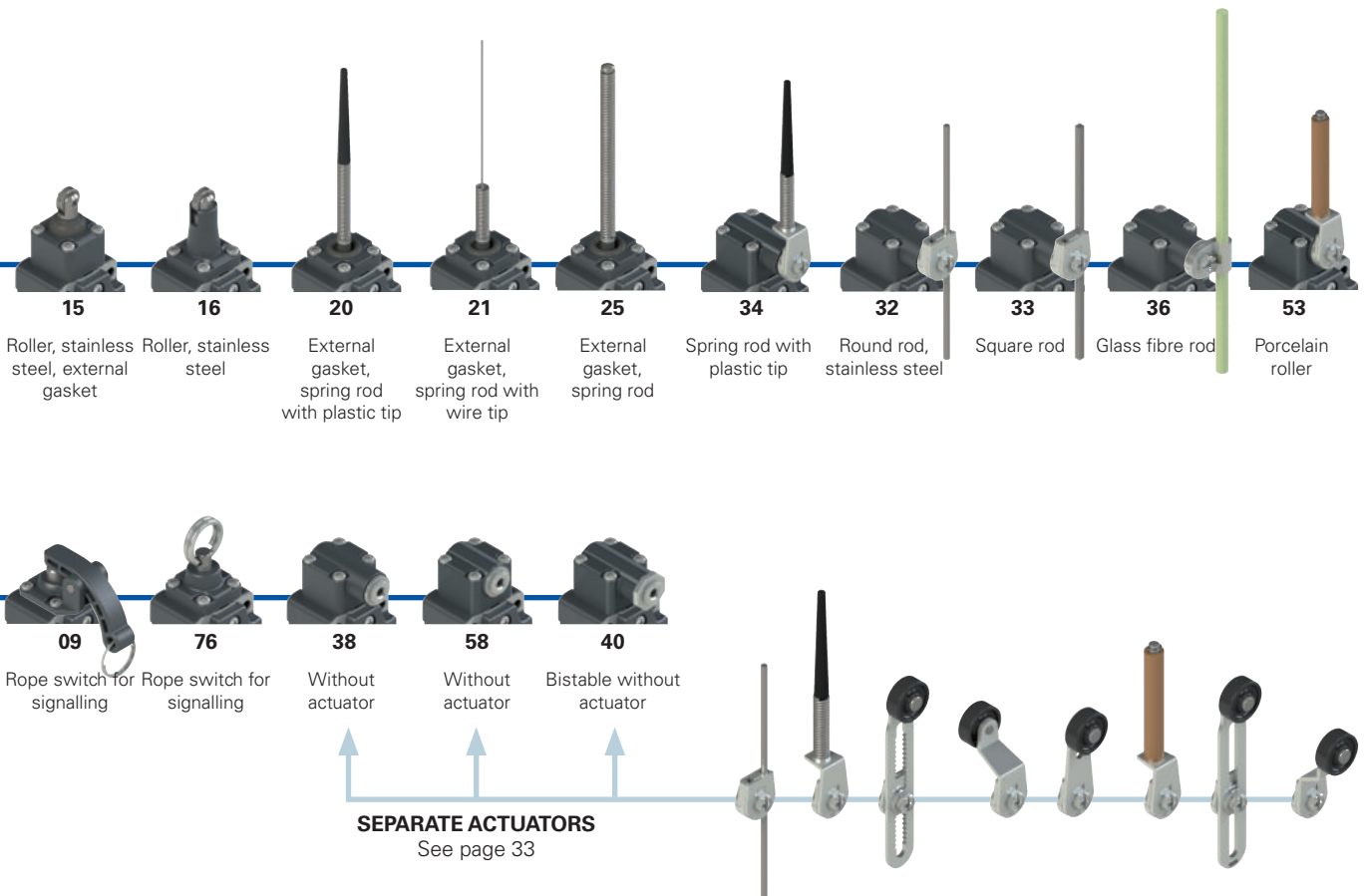
**With M12 plastic connector**

<b>K70</b>	4-pole, bottom
<b>K45</b>	8-pole, bottom

**With M12 metal connector**

<b>K40</b>	8-pole, bottom
<b>K60</b>	4-pole, bottom

● 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  
**FP 502-GM2K70R24T6**

<b>Housing</b>	<b>FP</b> technopolymer, one conduit entry	<b>Ambient temperature</b>	-25°C ... +80°C (standard)
<b>Contact block</b>	<b>5</b> 1NO+1NC, snap action	<b>T6</b>	-40°C ... +80°C
	<b>6</b> 1NO+1NC, slow action	<b>Rollers</b>	standard roller
	<b>7</b> 1NO+1NC, slow action, make before break	<b>R24</b>	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>Actuators</b>	<b>01</b> short plunger	<b>R5</b>	rubber, Ø 40 mm (for actuators 31, 35, 51, 52, 56, 57)
	<b>02</b> roller lever	<b>R26</b>	rubber, Ø 50 mm (for actuators 31, 35, 51, 52, 56, 57)
	<b>05</b> angled lever with roller	<b>R27</b>	rubber, protruding, Ø 50 mm (for actuators 35 and 56)
	...	<b>Pre-installed cable glands or connectors</b>	no cable gland or connector (standard)
<b>Contact type</b>	silver contacts (standard)	<b>K23</b>	cable gland for cables Ø 6 ... 12 mm
	<b>G</b> silver contacts, 1 µm gold coating	<b>K27</b>	cable gland for cables Ø 3 ... 7 mm
	<b>G1</b> silver contacts, 2.5 µm gold coating (not for contact block 2, 20, 21, 22)	<b>K45</b>	M12 plastic connector, 8-pole
		<b>K70</b>	M12 plastic connector, 4-pole
		For the complete list of possible combinations please contact our technical department.	
	<b>Threaded conduit entry</b>		
	<b>M2</b> M20x1.5 (standard)		
	PG 13.5		




### Main features

- Technopolymer housing, one conduit entry
- Protection degree IP67
- Stainless steel fixing plates
- 17 contact blocks available
- 29 actuators available
- Versions with M12 connector
- Versions with gold-plated silver contacts

### Technical data

#### Housing

Housing made of glass fibre reinforced technopolymer, self-extinguishing, shock-proof and with double insulation:   
 One threaded conduit entry: M20x1.5 (standard)  
 Protection degree acc. to EN 60529: IP67 with cable gland of equal or higher protection degree

#### General data

Ambient temperature: -25°C ... +80°C (standard)  
 -40°C ... +80°C (T6 option)  
 Max. actuation frequency: 3600 operating cycles/hour  
 Mechanical endurance: 20 million operating cycles  
 Mounting position: any  
 Safety parameter B<sub>10D</sub>: 40,000,000 for NC contacts  
 Mechanical interlock, not coded: type 1 acc. to EN ISO 14119  
 Tightening torques for installation: see page 227  
 Wire cross-sections and wire stripping lengths: see page 247

#### 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 60529, EN 60529, EN IEC 63000, UL 508, CSA 22.2 No.14.

#### Approvals:

IEC 60947-5-1, UL 508, CSA 22.2 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: 2020970305002282  
 EAC approval: RU C-IT.YT03.B.00035/19

### 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-tries 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 228. 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 225 to 240.**

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



### Features approved by IMQ

Rated insulation voltage ( $U_i$ ): 500 Vac  
 400 Vac (for contact blocks 2, 11, 12, 20, 21, 22, 28, 29, 30, 33, 34, 37)

Conventional free air thermal current ( $I_{th}$ ): 10 A

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

Rated impulse withstand voltage ( $U_{imp}$ ): 6 kV  
 4 kV (for contact blocks 20, 21, 22, 28, 29, 30, 33, 34)

Protection degree of the housing: IP67

MV terminals (screw terminals)

Pollution degree: 3

Utilization category: AC15

Operating voltage ( $U_o$ ): 400 Vac (50 Hz)

Operating current ( $I_o$ ): 3 A

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

Positive opening of contacts on contact blocks 5, 6, 7, 8, 9, 11, 13, 14, 16, 17, 18, 19, 20, 21, 22, 28, 29, 30, 33, 34, 37, 38, 39, 66.

In compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

### Features approved by UL

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

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

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

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

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

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

### Wiring diagram for M12 connectors

Contact block 2 2x(1NO-1NC)	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, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	
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	NO	1-2
NC	5-6	NO	3-4	NO	3-4	NO	3-4	NC (1°)	1-2
NC	7-8							NO (2°)	3-4
NO	1-2								


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, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 4-pole	M12 connector, 8-pole	M12 connector, 8-pole	M12 connector, 8-pole	M12 connector, 4-pole	M12 connector, 4-pole	
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 to the right	1-2	NC	3-4	NC	1-2
NC (2°)	3-4	NO (2°)	3-4	NC, lever to the left	3-4	NO	5-6	NO	3-4
					NO	7-8			NC
					NC	7-8			NC
					NO	7-8			NC

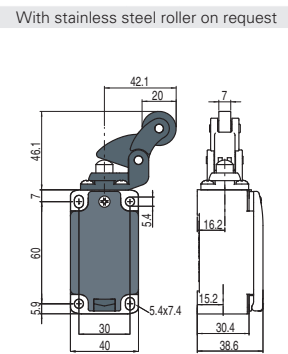
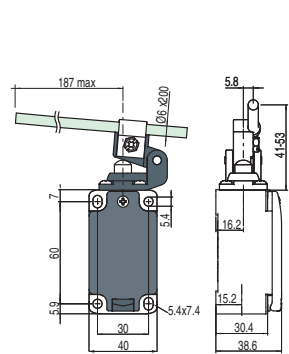
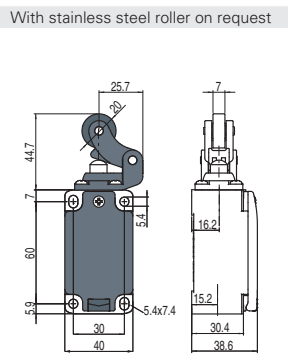
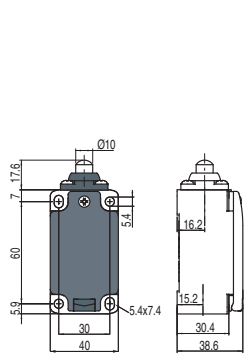
Contact block E1  
PNP

M12 connector, 4-pole


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


# 2 FP series position switches

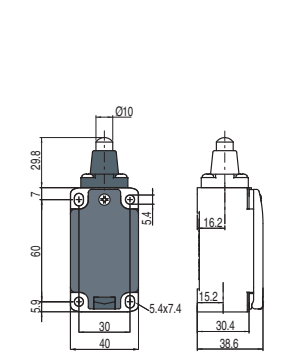
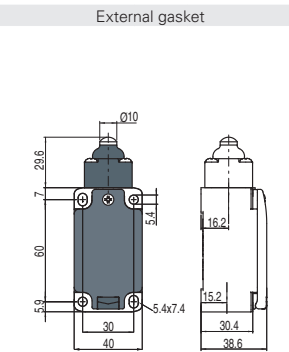
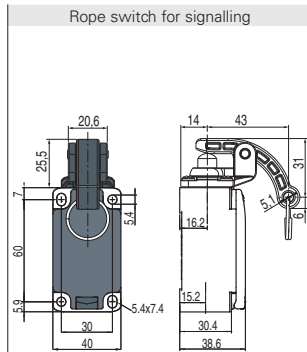
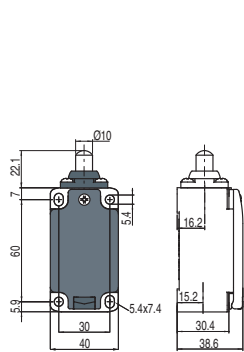
- Contact type
- R** = snap action
  - L** = slow action
  - LO** = slow action, make before break
  - LS** = slow action, shifted
  - LV** = slow action, shifted and spaced
  - LI** = slow action, independent
  - LA** = slow action, close
  -  = electronic, PNP




Contact block

2	<b>R</b>	FP 201-M2	2x(1NO-1NC)	FP 202-M2	2x(1NO-1NC)	FP 204-M2	2x(1NO-1NC)	FP 205-M2	2x(1NO-1NC)
5	<b>R</b>	FP 501-M2	1NO+1NC	FP 502-M2	1NO+1NC	FP 504-M2	1NO+1NC	FP 505-M2	1NO+1NC
6	<b>L</b>	FP 601-M2	1NO+1NC	FP 602-M2	1NO+1NC	FP 604-M2	1NO+1NC	FP 605-M2	1NO+1NC
7	<b>LO</b>	FP 701-M2	1NO+1NC	FP 702-M2	1NO+1NC	FP 704-M2	1NO+1NC	FP 705-M2	1NO+1NC
9	<b>L</b>	FP 901-M2	2NC	FP 902-M2	2NC	FP 904-M2	2NC	FP 905-M2	2NC
10	<b>L</b>	FP 1001-M2	2NO	FP 1002-M2	2NO	FP 1004-M2	2NO	FP 1005-M2	2NO
11	<b>R</b>	FP 1101-M2	2NC	FP 1102-M2	2NC	FP 1104-M2	2NC	FP 1105-M2	2NC
12	<b>R</b>	FP 1201-M2	2NO	FP 1202-M2	2NO	FP 1204-M2	2NO	FP 1205-M2	2NO
13	<b>LV</b>	FP 1301-M2	2NC	FP 1302-M2	2NC	FP 1304-M2	2NC	FP 1305-M2	2NC
14	<b>LS</b>	FP 1401-M2	2NC	FP 1402-M2	2NC	FP 1404-M2	2NC	FP 1405-M2	2NC
15	<b>LS</b>	FP 1501-M2	2NO	FP 1502-M2	2NO	FP 1504-M2	2NO	FP 1505-M2	2NO
18	<b>LA</b>	FP 1801-M2	1NO+1NC	FP 1802-M2	1NO+1NC	FP 1804-M2	1NO+1NC	FP 1805-M2	1NO+1NC
20	<b>L</b>	FP 2001-M2	1NO+2NC	FP 2002-M2	1NO+2NC	FP 2004-M2	1NO+2NC	FP 2005-M2	1NO+2NC
21	<b>L</b>	FP 2101-M2	3NC	FP 2102-M2	3NC	FP 2104-M2	3NC	FP 2105-M2	3NC
22	<b>L</b>	FP 2201-M2	2NO+1NC	FP 2202-M2	2NO+1NC	FP 2204-M2	2NO+1NC	FP 2205-M2	2NO+1NC
E1		FP E101-M2	1NO-1NC	FP E102-M2	1NO-1NC	FP E104-M2	1NO-1NC	FP E105-M2	1NO-1NC
Max. speed	page 227 - type 4		page 227 - type 3		0.5 m/s		page 227 - type 3		
Actuating force	8 N (25 N ⊕)		6 N (25 N ⊕)		0.17 Nm		6 N (25 N ⊕)		
Travel diagrams	page 228 - group 1		page 228 - group 2		page 228 - group 1		page 228 - group 2		

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



Contact block

2	<b>R</b>	FP 208-M2	2x(1NO-1NC)	FP 209-M2	2x(1NO-1NC)	FP 210-M2	2x(1NO-1NC)	FP 211-M2	2x(1NO-1NC)
5	<b>R</b>	FP 508-M2	1NO+1NC	FP 509-M2	1NO+1NC	FP 510-M2	1NO+1NC	FP 511-M2	1NO+1NC
6	<b>L</b>	FP 608-M2	1NO+1NC	FP 609-M2	1NO+1NC	FP 610-M2	1NO+1NC	FP 611-M2	1NO+1NC
7	<b>LO</b>	FP 708-M2	1NO+1NC	FP 709-M2	1NO+1NC	FP 710-M2	1NO+1NC	FP 711-M2	1NO+1NC
9	<b>L</b>	FP 908-M2	2NC	FP 909-M2	2NC	FP 910-M2	2NC	FP 911-M2	2NC
10	<b>L</b>	FP 1008-M2	2NO	FP 1009-M2	2NO	FP 1010-M2	2NO	FP 1011-M2	2NO
11	<b>R</b>	FP 1108-M2	2NC	FP 1109-M2	2NC	FP 1110-M2	2NC	FP 1111-M2	2NC
12	<b>R</b>	FP 1208-M2	2NO	FP 1209-M2	2NO	FP 1210-M2	2NO	FP 1211-M2	2NO
13	<b>LV</b>	FP 1308-M2	2NC	FP 1309-M2	2NC	FP 1310-M2	2NC	FP 1311-M2	2NC
14	<b>LS</b>	FP 1408-M2	2NC	FP 1409-M2	2NC	FP 1410-M2	2NC	FP 1411-M2	2NC
15	<b>LS</b>	FP 1508-M2	2NO	FP 1509-M2	2NO	FP 1510-M2	2NO	FP 1511-M2	2NO
18	<b>LA</b>	FP 1808-M2	1NO+1NC	FP 1809-M2	1NO+1NC	FP 1810-M2	1NO+1NC	FP 1811-M2	1NO+1NC
20	<b>L</b>	FP 2008-M2	1NO+2NC	FP 2009-M2	1NO+2NC	FP 2010-M2	1NO+2NC	FP 2011-M2	1NO+2NC
21	<b>L</b>	FP 2108-M2	3NC	FP 2109-M2	3NC	FP 2110-M2	3NC	FP 2111-M2	3NC
22	<b>L</b>	FP 2208-M2	2NO+1NC	FP 2209-M2	2NO+1NC	FP 2210-M2	2NO+1NC	FP 2211-M2	2NO+1NC
E1		FP E108-M2	1NO-1NC	FP E109-M2	1NO-1NC	FP E110-M2	1NO-1NC	FP E111-M2	1NO-1NC
Max. speed	page 227 - type 4		0.5 m/s		page 227 - type 4		page 227 - type 4		
Actuating force	8 N (25 N ⊕)		7 N		11 N (25 N ⊕)		8 N (25 N ⊕)		
Travel diagrams	page 228 - group 1		/		page 228 - group 1		page 228 - 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												
Contact block	2	5	6	7	9	10	11	12	13	14	15	18	20	21	22	E1	
	FP 215-M2	FP 515-M2	FP 615-M2	FP 715-M2	FP 915-M2	FP 1015-M2	FP 1115-M2	FP 1215-M2	FP 1315-M2	FP 1415-M2	FP 1515-M2	FP 1815-M2	FP 2015-M2	FP 2115-M2	FP 2215-M2	FP E115-M2	
	2x(1NO-1NC)	1NO+1NC	1NO+1NC	1NO+1NC	2NC	2NO	2NC	2NO	2NC	2NC	2NO	1NO+1NC	1NO+2NC	3NC	2NO+1NC	1NO-1NC	
Max. speed	page 227 - type 2		page 227 - type 2		page 227 - type 4		page 227 - type 4										
Actuating force	11 N (25 N		8 N (25 N		8 N (25 N		8 N (25 N										
Travel diagrams	page 228 - group 1		page 228 - group 1		page 228 - group 1		page 228 - group 1										

Contact type	External gasket		External gasket		External gasket		Other rollers available. See page 34										
Contact block	2	5	6	7	9	10	11	12	13	14	15	16	18	20	21	22	E1
	FP 220-M2	FP 520-M2	/	/	/	FP 1020-M2	/	/	/	/	/	/	FP 1820-M2	FP 2020-M2	FP 2120-M2	FP 2220-M2	FP E120-M2
	2x(1NO-1NC)	1NO+1NC	/	/	/	2NO	/	/	/	/	/	/	1NO+1NC	1NO+2NC	3NC	2NO+1NC	1NO-1NC
Max. speed	1 m/s		1 m/s		1 m/s		page 227 - type 1										
Actuating force	0.09 Nm		0.08 Nm		0.14 Nm		0.1 Nm (0.25 Nm										
Travel diagrams	page 228 - group 3		page 228 - group 3		page 228 - group 3		page 228 - group 4										

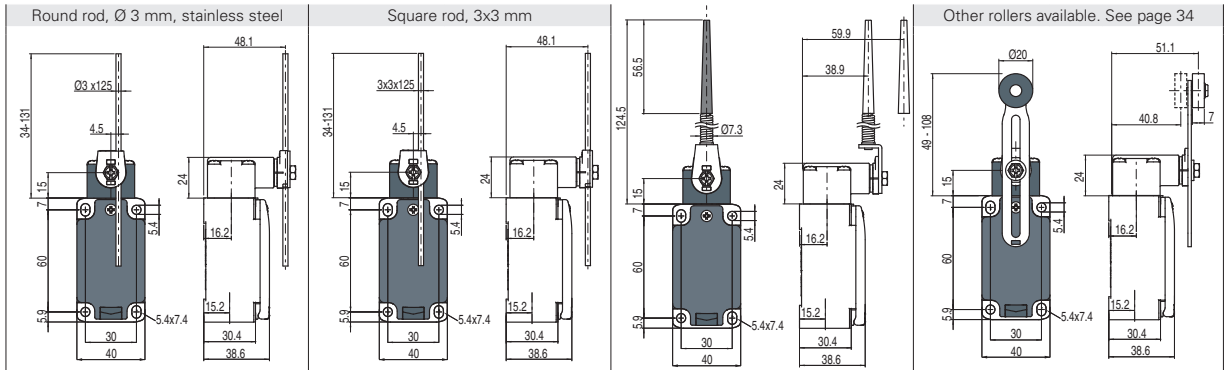
All values in the drawings are in mm

Accessories See page 207

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

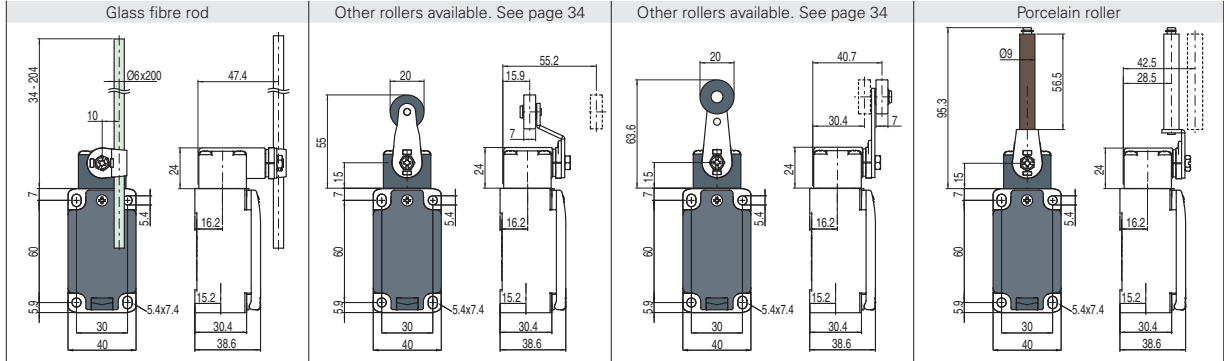


- Contact type
- R** = snap action
  - L** = slow action
  - LO** = slow action, make before break
  - LS** = slow action, shifted
  - LV** = slow action, shifted and spaced
  - LI** = slow action, independent
  - LA** = slow action, close
  - ⏏** = electronic, PNP



Contact block	Round rod, Ø 3 mm, stainless steel	Square rod, 3x3 mm	Other rollers available. See page 34
2	<b>R</b> FP 232-M2 2x(1NO-1NC)	FP 233-M2 2x(1NO-1NC)	FP 234-M2 2x(1NO-1NC)
5	<b>R</b> FP 532-M2 1NO+1NC	FP 533-M2 1NO+1NC	FP 534-M2 1NO+1NC
6	<b>L</b> FP 632-M2 1NO+1NC	FP 633-M2 1NO+1NC	FP 634-M2 1NO+1NC
7	<b>LO</b> FP 732-M2 1NO+1NC	FP 733-M2 1NO+1NC	FP 734-M2 1NO+1NC
9	<b>L</b> FP 932-M2 2NC	FP 933-M2 2NC	FP 934-M2 2NC
10	<b>L</b> FP 1032-M2 2NO	FP 1033-M2 2NO	FP 1034-M2 2NO
11	<b>R</b> FP 1132-M2 2NC	FP 1133-M2 2NC	FP 1134-M2 2NC
12	<b>R</b> FP 1232-M2 2NO	FP 1233-M2 2NO	FP 1234-M2 2NO
13	<b>LV</b> FP 1332-M2 2NC	FP 1333-M2 2NC	FP 1334-M2 2NC
14	<b>LS</b> FP 1432-M2 2NC	FP 1433-M2 2NC	FP 1434-M2 2NC
15	<b>LS</b> FP 1532-M2 2NO	FP 1533-M2 2NO	FP 1534-M2 2NO
16	<b>LI</b> FP 1632-M2 2NC	FP 1633-M2 2NC	FP 1634-M2 2NC
18	<b>LA</b> FP 1832-M2 1NO+1NC	FP 1833-M2 1NO+1NC	FP 1834-M2 1NO+1NC
20	<b>L</b> FP 2032-M2 1NO+2NC	FP 2033-M2 1NO+2NC	FP 2034-M2 1NO+2NC
21	<b>L</b> FP 2132-M2 3NC	FP 2133-M2 3NC	FP 2134-M2 3NC
22	<b>L</b> FP 2232-M2 2NO+1NC	FP 2233-M2 2NO+1NC	FP 2234-M2 2NO+1NC
E1	<b>⏏</b> FP E132-M2 1NO-1NC	FP E133-M2 1NO-1NC	FP E134-M2 1NO-1NC
Max. speed	1.5 m/s	1.5 m/s	1 m/s
Actuating force	0.1 Nm	0.1 Nm	0.1 Nm
Travel diagrams	page 228 - group 4	page 228 - group 4	page 228 - group 4

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



Contact block	Glass fibre rod	Other rollers available. See page 34	Other rollers available. See page 34	Porcelain roller
2	<b>R</b> FP 236-M2 2x(1NO-1NC)	FP 251-M2 2x(1NO-1NC)	FP 252-M2 2x(1NO-1NC)	FP 253-E11M2 2x(1NO-1NC)
5	<b>R</b> FP 536-M2 1NO+1NC	FP 551-M2 1NO+1NC	FP 552-M2 1NO+1NC	FP 553-E11M2V9 1NO+1NC
6	<b>L</b> FP 636-M2 1NO+1NC	FP 651-M2 1NO+1NC	FP 652-M2 1NO+1NC	FP 653-E11M2V9 1NO+1NC
7	<b>LO</b> FP 736-M2 1NO+1NC	FP 751-M2 1NO+1NC	FP 752-M2 1NO+1NC	FP 753-E11M2V9 1NO+1NC
9	<b>L</b> FP 936-M2 2NC	FP 951-M2 2NC	FP 952-M2 2NC	FP 953-E11M2V9 2NC
10	<b>L</b> FP 1036-M2 2NO	FP 1051-M2 2NO	FP 1052-M2 2NO	FP 1053-E11M2V9 2NO
11	<b>R</b> FP 1136-M2 2NC	FP 1151-M2 2NC	FP 1152-M2 2NC	/
12	<b>R</b> FP 1236-M2 2NO	FP 1251-M2 2NO	FP 1252-M2 2NO	FP 1253-E11M2V9 2NO
13	<b>LV</b> FP 1336-M2 2NC	FP 1351-M2 2NC	FP 1352-M2 2NC	FP 1353-E11M2V9 2NC
14	<b>LS</b> FP 1436-M2 2NC	FP 1451-M2 2NC	FP 1452-M2 2NC	FP 1453-E11M2V9 2NC
15	<b>LS</b> FP 1536-M2 2NO	FP 1551-M2 2NO	FP 1552-M2 2NO	FP 1553-E11M2V9 2NO
16	<b>LI</b> FP 1636-M2 2NC	/	/	/
18	<b>LA</b> FP 1836-M2 1NO+1NC	FP 1851-M2 1NO+1NC	FP 1852-M2 1NO+1NC	FP 1853-E11M2V9 1NO+1NC
20	<b>L</b> FP 2036-M2 1NO+2NC	FP 2051-M2 1NO+2NC	FP 2052-M2 1NO+2NC	FP 2053-E11M2V9 1NO+2NC
21	<b>L</b> FP 2136-M2 3NC	FP 2151-M2 3NC	FP 2152-M2 3NC	FP 2153-E11M2V9 3NC
22	<b>L</b> FP 2236-M2 2NO+1NC	FP 2251-M2 2NO+1NC	FP 2252-M2 2NO+1NC	FP 2253-E11M2V9 2NO+1NC
E1	<b>⏏</b> FP E136-M2 1NO-1NC	FP E151-M2 1NO-1NC	FP E152-M2 1NO-1NC	FP E153-E11M2V9 1NO-1NC
Max. speed	1.5 m/s	page 227 - type 1	page 227 - 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 228 - group 4	page 228 - group 4	page 228 - group 4	page 228 - group 5

(1) Apertura positiva solo con azionatore regolato al massimo. Vedere pagina 34.

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 34		Other rollers available. See page 34		With stainless steel rollers on request		With stainless steel rollers on request		
<ul style="list-style-type: none"> <li><b>R</b> = snap action</li> <li><b>L</b> = slow action</li> <li><b>LO</b> = slow action, make before break</li> <li><b>LS</b> = slow action, shifted</li> <li><b>LV</b> = slow action, shifted and spaced</li> <li><b>LI</b> = slow action, independent</li> <li><b>LA</b> = slow action, close</li> <li><b>A</b> = electronic, PNP</li> </ul>									
Contact block									
2	<b>R</b>	FP 256-M2	2x(1NO-1NC)	FP 257-M2	2x(1NO-1NC)	/	/		
5	<b>R</b>	FP 556-M2	1NO+1NC	FP 557-M2	1NO+1NC	FP 541-M2	1NO+1NC	FP 542-M2	
6	<b>L</b>	FP 656-M2	1NO+1NC	FP 657-M2	1NO+1NC	Bistable switch with lyra lever, single track		Bistable switch with lyra lever, dual track	
7	<b>LO</b>	FP 756-M2	1NO+1NC	FP 757-M2	1NO+1NC				
9	<b>L</b>	FP 956-M2	2NC	FP 957-M2	2NC	0 45° 65° 80° 90°		0 45° 65° 80° 90°	
10	<b>L</b>	FP 1056-M2	2NO	FP 1057-M2	2NO	25° S		25° S	
11	<b>R</b>	FP 1156-M2	2NC	FP 1157-M2	2NC	S = mechanical switching point		S = mechanical switching point	
12	<b>R</b>	FP 1256-M2	2NO	FP 1257-M2	2NO	positive opening on contacts 21-22 only		positive opening on contacts 21-22 only	
13	<b>LV</b>	FP 1356-M2	2NC	FP 1357-M2	2NC				
14	<b>LS</b>	FP 1456-M2	2NC	FP 1457-M2	2NC				
15	<b>LS</b>	FP 1556-M2	2NO	FP 1557-M2	2NO				
16	<b>LI</b>	FP 1656-M2	2NC	FP 1657-M2	2NC				
18	<b>LA</b>	FP 1856-M2	1NO+1NC	FP 1857-M2	1NO+1NC				
20	<b>L</b>	FP 2056-M2	1NO+2NC	FP 2057-M2	1NO+2NC				
21	<b>L</b>	FP 2156-M2	3NC	FP 2157-M2	3NC				
22	<b>L</b>	FP 2256-M2	2NO+1NC	FP 2257-M2	2NO+1NC				
E1	<b>A</b>	FP E156-M2	1NO-1NC	FP E157-M2	1NO-1NC				
Max. speed	page 227 - type 1		page 227 - 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 228 - group 4		page 228 - group 4		/		/		

Contact type	Rope switch for signalling		
<ul style="list-style-type: none"> <li><b>R</b> = snap action</li> <li><b>L</b> = slow action</li> <li><b>LO</b> = slow action, make before break</li> <li><b>LS</b> = slow action, shifted</li> <li><b>LV</b> = slow action, shifted and spaced</li> <li><b>LI</b> = slow action, independent</li> <li><b>LA</b> = slow action, close</li> <li><b>A</b> = electronic, PNP</li> </ul>			
Contact block			
2	<b>R</b>	FP 276-M2	2x(1NO-1NC)
5	<b>R</b>	FP 576-M2	1NO+1NC
6	<b>L</b>	FP 676-M2	1NO+1NC
7	<b>LO</b>	FP 776-M2	1NO+1NC
9	<b>L</b>	FP 976-M2	2NO
10	<b>L</b>	FP 1076-M2	2NC
11	<b>R</b>	FP 1176-M2	2NO
12	<b>R</b>	FP 1276-M2	2NC
13	<b>LV</b>	FP 1376-M2	2NO
14	<b>LS</b>	FP 1476-M2	2NO
15	<b>LS</b>	FP 1576-M2	2NC
16	<b>LI</b>	/	
18	<b>LA</b>	FP 1876-M2	1NO+1NC
20	<b>L</b>	FP 2076-M2	2NO+1NC
21	<b>L</b>	FP 2176-M2	3NO
22	<b>L</b>	FP 2276-M2	1NO+2NC
E1	<b>A</b>	/	
Max. speed	0.5 m/s		
Actuating force	initial 20 N - final 40 N		
Travel diagrams	page 228 - 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)



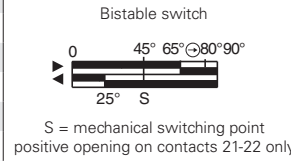
## Position switches with swivelling lever without actuator

- Contact type
- 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
  - A** = electronic, PNP

Contact block

	Regular head	Compact head	
2	<b>R</b> FP 238-M2	2x(1NO-1NC)	FP 258-M2
5	<b>R</b> FP 538-M2	1NO+1NC	FP 558-M2
6	<b>L</b> FP 638-M2	1NO+1NC	FP 658-M2
7	<b>LO</b> FP 738-M2	1NO+1NC	FP 758-M2
9	<b>L</b> FP 938-M2	2NC	FP 958-M2
10	<b>L</b> FP 1038-M2	2NO	FP 1058-M2
11	<b>R</b> FP 1138-M2	2NC	FP 1158-M2
12	<b>R</b> FP 1238-M2	2NO	FP 1258-M2
13	<b>LV</b> FP 1338-M2	2NC	FP 1358-M2
14	<b>LS</b> FP 1438-M2	2NC	FP 1458-M2
15	<b>LS</b> FP 1538-M2	2NO	FP 1558-M2
16	<b>LI</b> FP 1638-M2	2NC	/
18	<b>LA</b> FP 1838-M2	1NO+1NC	FP 1858-M2
20	<b>L</b> FP 2038-M2	1NO+2NC	FP 2058-M2
21	<b>L</b> FP 2138-M2	3NC	FP 2158-M2
22	<b>L</b> FP 2238-M2	2NO+1NC	FP 2258-M2
E1	<b>A</b> FP E138-M2	1NO-1NC	FP E158-M2
Actuating force	0.1 Nm (0.25 Nm $\rightarrow$ )	0.06 Nm (0.25 Nm $\rightarrow$ )	0.21 Nm (0.36 Nm $\rightarrow$ )
Travel diagrams	page 228 - group 4	page 228 - group 4	/

**IMPORTANT**  
**For safety applications:** join only switches and actuators marked with symbol  $\rightarrow$  next to the product code.  
 For more information about safety applications see details on page 225.



## Separate actuators

**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	Spring rod with plastic tip	Adjustable actuator with technopolymer roller	Adjustable glass fibre rod	
VF L31 $\rightarrow$	VF L32 $\rightarrow$ (3)	VF L33 $\rightarrow$ (3)	VF L34	VF L35 $\rightarrow$ (1) (3)	VF L36 $\rightarrow$ (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 $\rightarrow$	VF L42 $\rightarrow$	VF L51 $\rightarrow$	VF L52 $\rightarrow$	VF L53 $\rightarrow$ (2)	VF L56 $\rightarrow$ (3)	VF L57 $\rightarrow$



## Special separate actuators

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

Stainless steel rollers,  $\varnothing$  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,  $\varnothing$  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,  $\varnothing$  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)

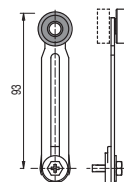
Rubber rollers,  $\varnothing$  50 mm

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,  $\varnothing$  50 mm

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

- (1) Lever VF L35 can only be used in safety applications if adjusted to its max. length, as shown in the figure to the right. If an adjustable lever is required for safety applications, use the VF L56 adjustable safety lever.
- (2) The position switch obtained by assembling switch FP •58-M2 (e.g. FP 558-M2, FP 658-M2, ...) with actuator VF L53 will not present the same travel diagrams and actuating forces as switch FP •53-E11M2V9 (e.g. FP 553-E11M2V9, FP 653-E11M2V9, ...)
- (3) If installed with switch FP •58-M2 (e.g. FP 558-M2, FP 658-M2, ...) the actuator may hit the housing of the switch upon actuation. This possible interference depends on the fixing position of actuator and switch head.
- (4) The actuator cannot be rotated to the inside because it will hit the switch head upon actuation.



All values in the drawings are in mm

Accessories See page 207

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