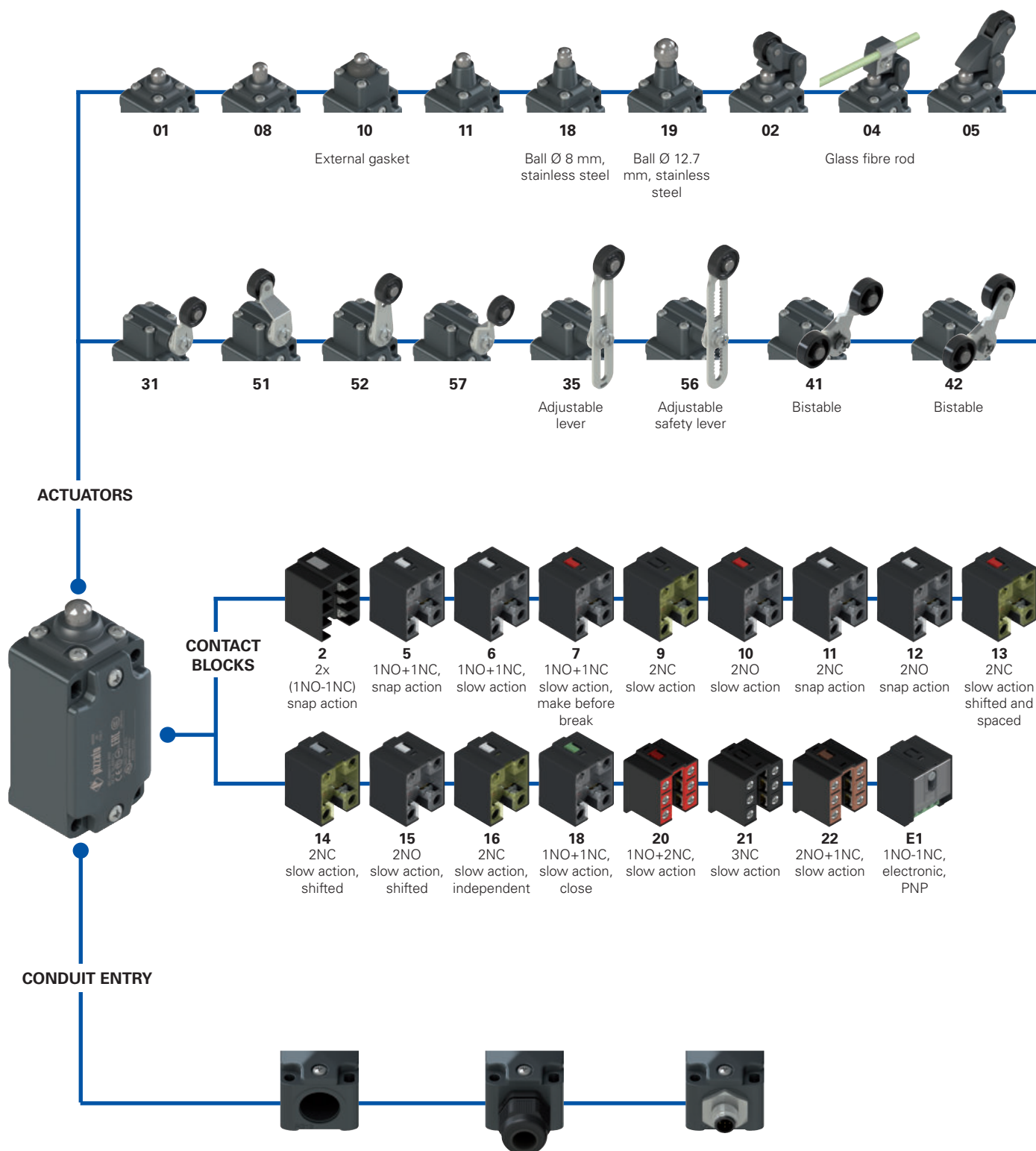


## Selection diagram

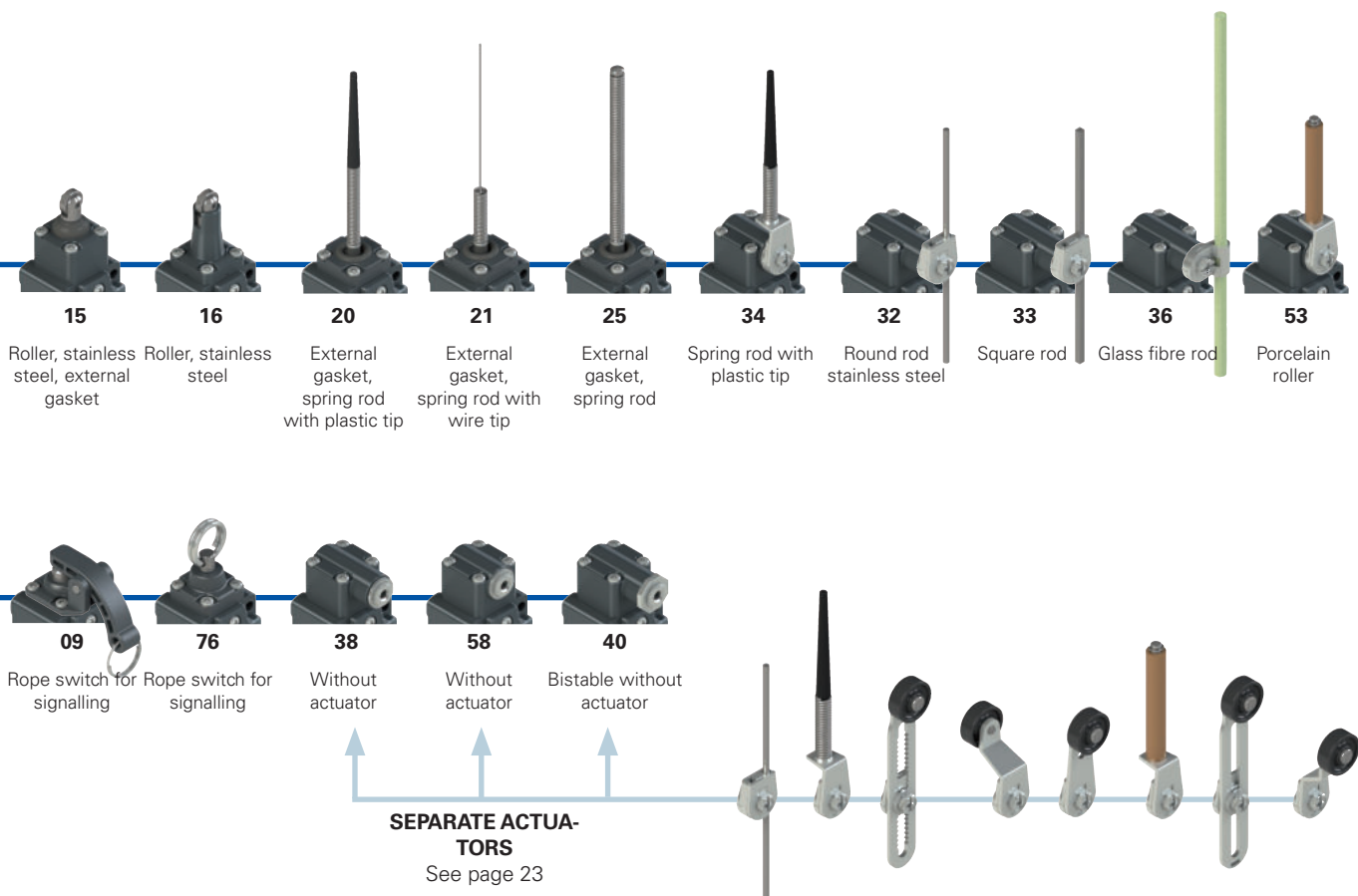


Threaded conduit entry	
M2	M20x1.5 (standard) PG 13.5

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

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

- Product options
- Sold separately as accessory



**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	
<b>FD 502</b>		<b>-GM2</b>		<b>K50R24T6</b>	
Housing		Contact block		Ambient temperature	
<b>FD</b>	metal, one conduit entry	<b>5</b>	1NO+1NC, snap action		-25°C ... +80°C (standard)
		<b>6</b>	1NO+1NC, slow action	<b>T6</b>	-40°C ... +80°C
		<b>7</b>	1NO+1NC, slow action, make before break	Rollers	
		...	.....		standard roller
Actuators				<b>R24</b>	stainless steel Ø 20 mm (for actuators 02, 05, 31, 35, 51, 52, 56, 57)
<b>01</b>	short plunger			<b>R25</b>	technopolymer, Ø 35 mm (for actuators 31, 35, 51, 52, 56, 57)
<b>02</b>	roller lever			<b>R5</b>	rubber, Ø 40 mm (for actuators 31, 35, 51, 52, 56, 57)
<b>05</b>	angled lever with roller			<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)
Contact type		Pre-installed cable glands or connectors			
	silver contacts (standard)		no cable gland or connector (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>K40</b>	M12 metal connector, 8-pole
<b>G1</b>	silver contacts, 2.5 µm gold coating (not for contact block 2, 20, 21, 22)	<b>K50</b>	M12 metal connector, 5-pole		
		Threaded conduit entry			
		<b>M2</b>	M20x1.5 (standard)		
			PG 13.5		

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



### Main features

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

### Technical data

#### Housing

Metal housing, powder-coated  
One threaded conduit entry: M20x1.5 (standard)  
Protection degree 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 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  $\ominus$  next to the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as required by **EN ISO 14119, paragraph 5.4** for specific interlock applications and **EN ISO 13849-2 tables D3** (well-tried components) and **D.8** (fault exclusions) for safety applications in general. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 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
	Rated insulation voltage (U <sub>i</sub> ):	500 Vac 600 Vdc 400 Vac 500 Vdc (contact blocks 2, 11, 12, 20, 21, 22)
	Rated impulse withstand voltage (U <sub>imp</sub> ):	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 <sub>th</sub> ):	4 A
	Rated insulation voltage (U <sub>i</sub> ):	250 Vac 300 Vdc
	Protection against short circuits: Pollution degree:	type gG fuse 4 A 500 V 3
		Alternating current: AC15 (50÷60 Hz) U <sub>e</sub> (V) 24 120 250 I <sub>e</sub> (A) 4 4 4 Direct current: DC13 U <sub>e</sub> (V) 24 125 250 I <sub>e</sub> (A) 3 0.55 0.3
with M12 connector, 8-pole	Thermal current (I <sub>th</sub> ):	2 A
	Rated insulation voltage (U <sub>i</sub> ):	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 <sub>e</sub> (V) 24 I <sub>e</sub> (A) 2 Direct current: DC13 U <sub>e</sub> (V) 24 I <sub>e</sub> (A) 2



### Features approved by IMQ

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

Conventional free air thermal current (Ith): 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)

Pollution degree: 3

Utilization category: AC15

Operating voltage (U<sub>e</sub>): 400 Vac (50 Hz)

Operating current (I<sub>e</sub>): 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).

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

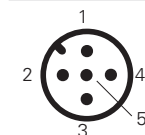
### Wiring diagram for M12 connectors

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>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>
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 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>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>	<b>Contacts Pin no.</b>
NC (1°) 1-2	NO (1°) 1-2	NC, lever to 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		

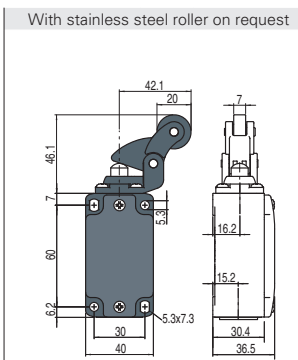
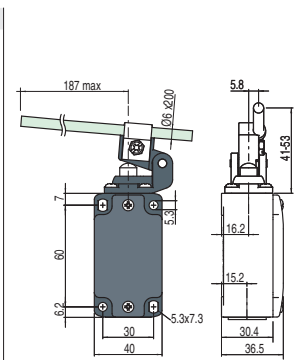
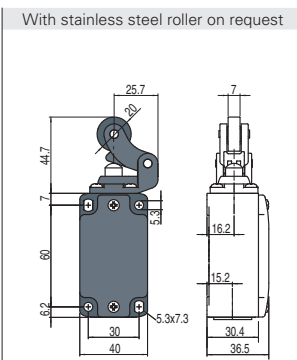
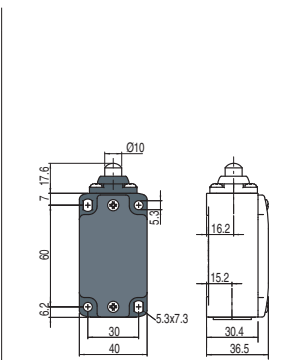
#### Contact block E1 PNP



M12 connector, 5-pole

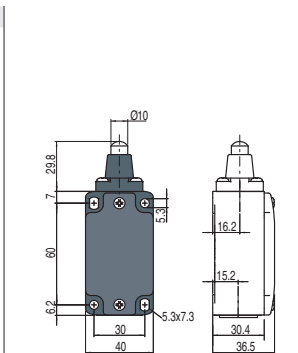
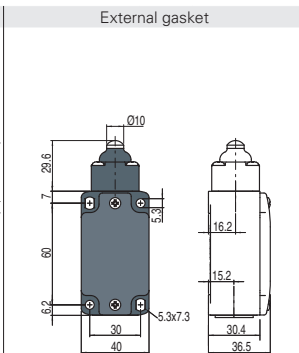
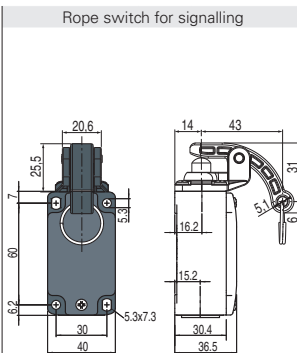
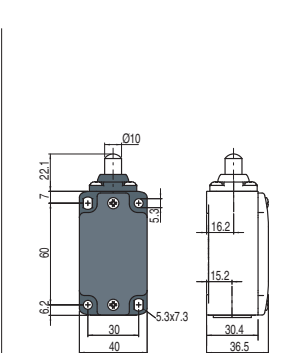
<b>Contacts Pin no.</b>
+ 1
- 3
NC 2
NO 4
ground 5

- 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	5	6	7	9	10	11	12	13	14	15	18	20	21	22	E1
	<b>R</b>	<b>R</b>	<b>L</b>	<b>LO</b>	<b>L</b>	<b>L</b>	<b>R</b>	<b>R</b>	<b>LV</b>	<b>LS</b>	<b>LS</b>	<b>LA</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>⚡</b>
	FD 201-M2	FD 501-M2	FD 601-M2	FD 701-M2	FD 901-M2	FD 1001-M2	FD 1101-M2	FD 1201-M2	FD 1301-M2	FD 1401-M2	FD 1501-M2	FD 1801-M2	FD 2001-M2	FD 2101-M2	FD 2201-M2	FD E101-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
	FD 202-M2	FD 502-M2	FD 602-M2	FD 702-M2	FD 902-M2	FD 1002-M2	FD 1102-M2	FD 1202-M2	FD 1302-M2	FD 1402-M2	FD 1502-M2	FD 1802-M2	FD 2002-M2	FD 2102-M2	FD 2202-M2	FD E102-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
	FD 204-M2	FD 504-M2	FD 604-M2	FD 704-M2	FD 904-M2	FD 1004-M2	FD 1104-M2	FD 1204-M2	FD 1304-M2	FD 1404-M2	FD 1504-M2	FD 1804-M2	FD 2004-M2	FD 2104-M2	FD 2204-M2	FD E104-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
	FD 205-M2	FD 505-M2	FD 605-M2	FD 705-M2	FD 905-M2	FD 1005-M2	FD 1105-M2	FD 1205-M2	FD 1305-M2	FD 1405-M2	FD 1505-M2	FD 1805-M2	FD 2005-M2	FD 2105-M2	FD 2205-M2	FD E105-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 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	5	6	7	9	10	11	12	13	14	15	18	20	21	22	E1
	<b>R</b>	<b>R</b>	<b>L</b>	<b>LO</b>	<b>L</b>	<b>L</b>	<b>R</b>	<b>R</b>	<b>LV</b>	<b>LS</b>	<b>LS</b>	<b>LA</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>⚡</b>
	FD 208-M2	FD 508-M2	FD 608-M2	FD 708-M2	FD 908-M2	FD 1008-M2	FD 1108-M2	FD 1208-M2	FD 1308-M2	FD 1408-M2	FD 1508-M2	FD 1808-M2	FD 2008-M2	FD 2108-M2	FD 2208-M2	FD E108-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
	FD 209-M2	FD 509-M2	FD 609-M2	FD 709-M2	FD 909-M2	FD 1009-M2	FD 1109-M2	FD 1209-M2	FD 1309-M2	FD 1409-M2	FD 1509-M2	FD 1809-M2	FD 2009-M2	FD 2109-M2	FD 2209-M2	FD E109-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
	FD 210-M2	FD 510-M2	FD 610-M2	FD 710-M2	FD 910-M2	FD 1010-M2	FD 1110-M2	FD 1210-M2	FD 1310-M2	FD 1410-M2	FD 1510-M2	FD 1810-M2	FD 2010-M2	FD 2110-M2	FD 2210-M2	FD E110-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
	FD 211-M2	FD 511-M2	FD 611-M2	FD 711-M2	FD 911-M2	FD 1011-M2	FD 1111-M2	FD 1211-M2	FD 1311-M2	FD 1411-M2	FD 1511-M2	FD 1811-M2	FD 2011-M2	FD 2111-M2	FD 2211-M2	FD E111-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 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	
<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						
= electronic, PNP						
Max. speed	page 227 - type 2		page 227 - type 2		page 227 - type 4	
Actuating force	11 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	

Contact type	External gasket		External gasket		External gasket		Other rollers available. See page 24	
<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								
= electronic, PNP								
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)



# FD series position switches

		Round rod, Ø 3 mm, stainless steel		Square rod, 3x3 mm				Other rollers available. See page 24	
<p>Contact type</p> <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>⏏</b> = electronic, PNP</li> </ul>									
<p>Contact block</p>									
2	<b>R</b>	FD 232-M2	2x(1NO-1NC)	FD 233-M2	2x(1NO-1NC)	FD 234-M2	2x(1NO-1NC)	FD 235-M2	2x(1NO-1NC)
5	<b>R</b>	FD 532-M2	1NO+1NC	FD 533-M2	1NO+1NC	FD 534-M2	1NO+1NC	FD 535-M2	⊕ <sup>(1)</sup> 1NO+1NC
6	<b>L</b>	FD 632-M2	1NO+1NC	FD 633-M2	1NO+1NC	FD 634-M2	1NO+1NC	FD 635-M2	⊕ <sup>(1)</sup> 1NO+1NC
7	<b>LO</b>	FD 732-M2	1NO+1NC	FD 733-M2	1NO+1NC	FD 734-M2	1NO+1NC	FD 735-M2	⊕ <sup>(1)</sup> 1NO+1NC
9	<b>L</b>	FD 932-M2	2NC	FD 933-M2	2NC	FD 934-M2	2NC	FD 935-M2	⊕ <sup>(1)</sup> 2NC
10	<b>L</b>	FD 1032-M2	2NO	FD 1033-M2	2NO	FD 1034-M2	2NO	FD 1035-M2	2NO
11	<b>R</b>	FD 1132-M2	2NC	FD 1133-M2	2NC	FD 1134-M2	2NC	FD 1135-M2	⊕ <sup>(1)</sup> 2NC
12	<b>R</b>	FD 1232-M2	2NO	FD 1233-M2	2NO	FD 1234-M2	2NO	FD 1235-M2	2NO
13	<b>LV</b>	FD 1332-M2	2NC	FD 1333-M2	2NC	FD 1334-M2	2NC	FD 1335-M2	⊕ <sup>(1)</sup> 2NC
14	<b>LS</b>	FD 1432-M2	2NC	FD 1433-M2	2NC	FD 1434-M2	2NC	FD 1435-M2	⊕ <sup>(1)</sup> 2NC
15	<b>LS</b>	FD 1532-M2	2NO	FD 1533-M2	2NO	FD 1534-M2	2NO	FD 1535-M2	2NO
16	<b>LI</b>	FD 1632-M2	2NC	FD 1633-M2	2NC	FD 1634-M2	2NC	FD 1635-M2	⊕ <sup>(1)</sup> 2NC
18	<b>LA</b>	FD 1832-M2	1NO+1NC	FD 1833-M2	1NO+1NC	FD 1834-M2	1NO+1NC	FD 1835-M2	⊕ <sup>(1)</sup> 1NO+1NC
20	<b>L</b>	FD 2032-M2	1NO+2NC	FD 2033-M2	1NO+2NC	FD 2034-M2	1NO+2NC	FD 2035-M2	⊕ <sup>(1)</sup> 1NO+2NC
21	<b>L</b>	FD 2132-M2	3NC	FD 2133-M2	3NC	FD 2134-M2	3NC	FD 2135-M2	⊕ <sup>(1)</sup> 3NC
22	<b>L</b>	FD 2232-M2	2NO+1NC	FD 2233-M2	2NO+1NC	FD 2234-M2	2NO+1NC	FD 2235-M2	⊕ <sup>(1)</sup> 2NO+1NC
E1	<b>⏏</b>	FD E132-M2	1NO-1NC	FD E133-M2	1NO-1NC	FD E134-M2	1NO-1NC	FD E135-M2	1NO-1NC
Max. speed		1.5 m/s		1.5 m/s		1 m/s		page 227 - type 1	
Actuating force		0.1 Nm		0.1 Nm		0.1 Nm		0.1 Nm (0.25 Nm ⊖)	
Travel diagrams		page 228 - group 4		page 228 - group 4		page 228 - group 4		page 228 - group 4	

		Glass fibre rod		Other rollers available. See page 24		Other rollers available. See page 24		Porcelain roller	
<p>Contact type</p> <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>⏏</b> = electronic, PNP</li> </ul>									
<p>Contact block</p>									
2	<b>R</b>	FD 236-M2	2x(1NO-1NC)	FD 251-M2	2x(1NO-1NC)	FD 252-M2	2x(1NO-1NC)	FD 253-E11M2	2x(1NO-1NC)
5	<b>R</b>	FD 536-M2	1NO+1NC	FD 551-M2	⊕ <sup>(1)</sup> 1NO+1NC	FD 552-M2	⊕ <sup>(1)</sup> 1NO+1NC	FD 553-E11M2V9	⊕ <sup>(1)</sup> 1NO+1NC
6	<b>L</b>	FD 636-M2	1NO+1NC	FD 651-M2	⊕ <sup>(1)</sup> 1NO+1NC	FD 652-M2	⊕ <sup>(1)</sup> 1NO+1NC	FD 653-E11M2V9	⊕ <sup>(1)</sup> 1NO+1NC
7	<b>LO</b>	FD 736-M2	1NO+1NC	FD 751-M2	⊕ <sup>(1)</sup> 1NO+1NC	FD 752-M2	⊕ <sup>(1)</sup> 1NO+1NC	FD 753-E11M2V9	⊕ <sup>(1)</sup> 1NO+1NC
9	<b>L</b>	FD 936-M2	2NC	FD 951-M2	⊕ <sup>(1)</sup> 2NC	FD 952-M2	⊕ <sup>(1)</sup> 2NC	FD 953-E11M2V9	⊕ <sup>(1)</sup> 2NC
10	<b>L</b>	FD 1036-M2	2NO	FD 1051-M2	2NO	FD 1052-M2	2NO	FD 1053-E11M2V9	2NO
11	<b>R</b>	FD 1136-M2	2NC	FD 1151-M2	⊕ <sup>(1)</sup> 2NC	FD 1152-M2	⊕ <sup>(1)</sup> 2NC	/	/
12	<b>R</b>	FD 1236-M2	2NO	FD 1251-M2	2NO	FD 1252-M2	2NO	FD 1253-E11M2V9	2NO
13	<b>LV</b>	FD 1336-M2	2NC	FD 1351-M2	⊕ <sup>(1)</sup> 2NC	FD 1352-M2	⊕ <sup>(1)</sup> 2NC	FD 1353-E11M2V9	⊕ <sup>(1)</sup> 2NC
14	<b>LS</b>	FD 1436-M2	2NC	FD 1451-M2	⊕ <sup>(1)</sup> 2NC	FD 1452-M2	⊕ <sup>(1)</sup> 2NC	FD 1453-E11M2V9	⊕ <sup>(1)</sup> 2NC
15	<b>LS</b>	FD 1536-M2	2NO	FD 1551-M2	2NO	FD 1552-M2	2NO	FD 1553-E11M2V9	2NO
16	<b>LI</b>	FD 1636-M2	2NC	/	/	/	/	/	/
18	<b>LA</b>	FD 1836-M2	1NO+1NC	FD 1851-M2	⊕ <sup>(1)</sup> 1NO+1NC	FD 1852-M2	⊕ <sup>(1)</sup> 1NO+1NC	FD 1853-E11M2V9	⊕ <sup>(1)</sup> 1NO+1NC
20	<b>L</b>	FD 2036-M2	1NO+2NC	FD 2051-M2	⊕ <sup>(1)</sup> 1NO+2NC	FD 2052-M2	⊕ <sup>(1)</sup> 1NO+2NC	FD 2053-E11M2V9	⊕ <sup>(1)</sup> 1NO+2NC
21	<b>L</b>	FD 2136-M2	3NC	FD 2151-M2	⊕ <sup>(1)</sup> 3NC	FD 2152-M2	⊕ <sup>(1)</sup> 3NC	FD 2153-E11M2V9	⊕ <sup>(1)</sup> 3NC
22	<b>L</b>	FD 2236-M2	2NO+1NC	FD 2251-M2	⊕ <sup>(1)</sup> 2NO+1NC	FD 2252-M2	⊕ <sup>(1)</sup> 2NO+1NC	FD 2253-E11M2V9	⊕ <sup>(1)</sup> 2NO+1NC
E1	<b>⏏</b>	FD E136-M2	1NO-1NC	FD E151-M2	1NO-1NC	FD E152-M2	1NO-1NC	FD 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	

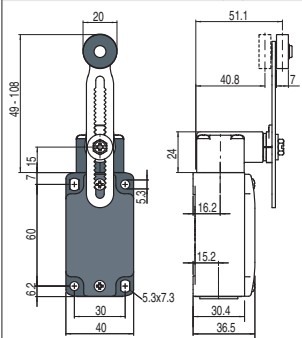
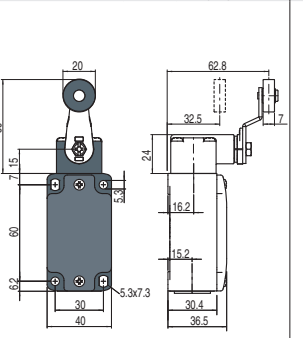
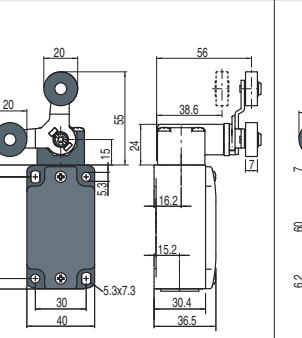
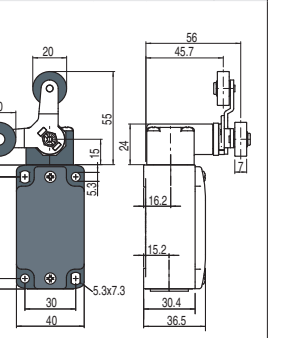
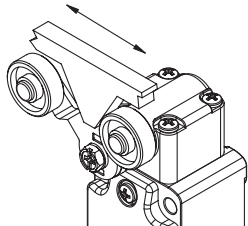
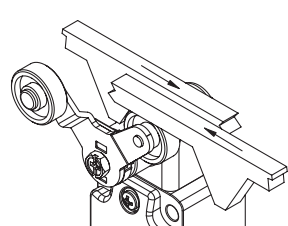
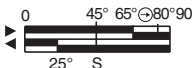
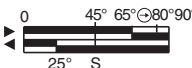
<sup>(1)</sup> Positive opening only with actuator set to max. See page 24.

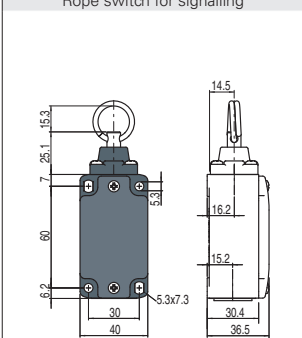
All values in the drawings are in mm

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 24		Other rollers available. See page 24		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>Λ</b> = electronic, PNP</li> </ul>									
Contact block									
2	<b>R</b>	FD 256-M2	2x(1NO-1NC)	FD 257-M2	2x(1NO-1NC)	/	/		
5	<b>R</b>	FD 556-M2	1NO+1NC	FD 557-M2	1NO+1NC	FD 541-M2	1NO+1NC	FD 542-M2	
6	<b>L</b>	FD 656-M2	1NO+1NC	FD 657-M2	1NO+1NC	Bistable switch with lyra lever, single track		Bistable switch with lyra lever, dual track	
7	<b>LO</b>	FD 756-M2	1NO+1NC	FD 757-M2	1NO+1NC				
9	<b>L</b>	FD 956-M2	2NC	FD 957-M2	2NC				
10	<b>L</b>	FD 1056-M2	2NO	FD 1057-M2	2NO				
11	<b>R</b>	FD 1156-M2	2NC	FD 1157-M2	2NC				
12	<b>R</b>	FD 1256-M2	2NO	FD 1257-M2	2NO				
13	<b>LV</b>	FD 1356-M2	2NC	FD 1357-M2	2NC				
14	<b>LS</b>	FD 1456-M2	2NC	FD 1457-M2	2NC				
15	<b>LS</b>	FD 1556-M2	2NO	FD 1557-M2	2NO				
16	<b>LI</b>	FD 1656-M2	2NC	FD 1657-M2	2NC				
18	<b>LA</b>	FD 1856-M2	1NO+1NC	FD 1857-M2	1NO+1NC				
20	<b>L</b>	FD 2056-M2	1NO+2NC	FD 2057-M2	1NO+2NC	 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>		 <p>S = mechanical switching point positive opening on contacts 21-22 only</p>	
21	<b>L</b>	FD 2156-M2	3NC	FD 2157-M2	3NC				
22	<b>L</b>	FD 2256-M2	2NO+1NC	FD 2257-M2	2NO+1NC				
E1	<b>Λ</b>	FD E156-M2	1NO-1NC	FD 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>Λ</b> = electronic, PNP</li> </ul>			
Contact block			
2	<b>R</b>	FD 276-M2	2x(1NO-1NC)
5	<b>R</b>	FD 576-M2	1NO+1NC
6	<b>L</b>	FD 676-M2	1NO+1NC
7	<b>LO</b>	FD 776-M2	1NO+1NC
9	<b>L</b>	FD 976-M2	2NO
10	<b>L</b>	FD 1076-M2	2NC
11	<b>R</b>	FD 1176-M2	2NO
12	<b>R</b>	FD 1276-M2	2NC
13	<b>LV</b>	FD 1376-M2	2NO
14	<b>LS</b>	FD 1476-M2	2NO
15	<b>LS</b>	FD 1576-M2	2NC
16	<b>LI</b>	/	
18	<b>LA</b>	FD 1876-M2	1NO+1NC
20	<b>L</b>	FD 2076-M2	2NO+1NC
21	<b>L</b>	FD 2176-M2	3NO
22	<b>L</b>	FD 2276-M2	1NO+2NC
E1	<b>Λ</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)



# 2 FD series position switches

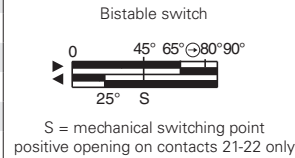
## Position switches with swivelling lever without actuator

- 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
  - ⏏** = electronic, PNP

Contact block

	Regular head	Compact head	
2	<b>R</b> FD 238-M2	2x(1NO-1NC)	FD 258-M2
5	<b>R</b> FD 538-M2	1NO+1NC	FD 558-M2
6	<b>L</b> FD 638-M2	1NO+1NC	FD 658-M2
7	<b>LO</b> FD 738-M2	1NO+1NC	FD 758-M2
9	<b>L</b> FD 938-M2	2NC	FD 958-M2
10	<b>L</b> FD 1038-M2	2NO	FD 1058-M2
11	<b>R</b> FD 1138-M2	2NC	FD 1158-M2
12	<b>R</b> FD 1238-M2	2NO	FD 1258-M2
13	<b>LV</b> FD 1338-M2	2NC	FD 1358-M2
14	<b>LS</b> FD 1438-M2	2NC	FD 1458-M2
15	<b>LS</b> FD 1538-M2	2NO	FD 1558-M2
16	<b>LI</b> FD 1638-M2	2NC	/
18	<b>LA</b> FD 1838-M2	1NO+1NC	FD 1858-M2
20	<b>L</b> FD 2038-M2	1NO+2NC	FD 2058-M2
21	<b>L</b> FD 2138-M2	3NC	FD 2158-M2
22	<b>L</b> FD 2238-M2	2NO+1NC	FD 2258-M2
E1	<b>⏏</b> FD E138-M2	1NO-1NC	FD 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 (3)	 VF L33 (3)	 VF L34	 VF L35 $\rightarrow$ (1) (3)	 VF L36 (3)	
Lyra actuator, single track	Lyra actuator, dual track	Technopolymer roller, Ø 20 mm	Technopolymer roller, Ø 20 mm	Porcelain roller	Adjustable safety actuator with technopolymer roller	Technopolymer roller, Ø 20 mm
 VF L41 $\rightarrow$	 VF L42 $\rightarrow$	 VF L51 $\rightarrow$	 VF L52 $\rightarrow$	 VF L53 $\rightarrow$ (2)	 VF L56 $\rightarrow$ (3)	 VF L57 $\rightarrow$

All values in the drawings are in mm

Accessories See page 207

$\rightarrow$  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, FC series.

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)

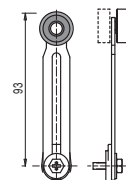
Rubber rollers, Ø 50 mm

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)

- (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 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. FD 558-M2, FD 658-M2, ...) the actuator may hit the housing of the switch upon actuation. This possible interference depends on the fixing position of actuator and switch head.
- (4) The actuator cannot be rotated to the inside because it will hit the switch head upon actuation.



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)