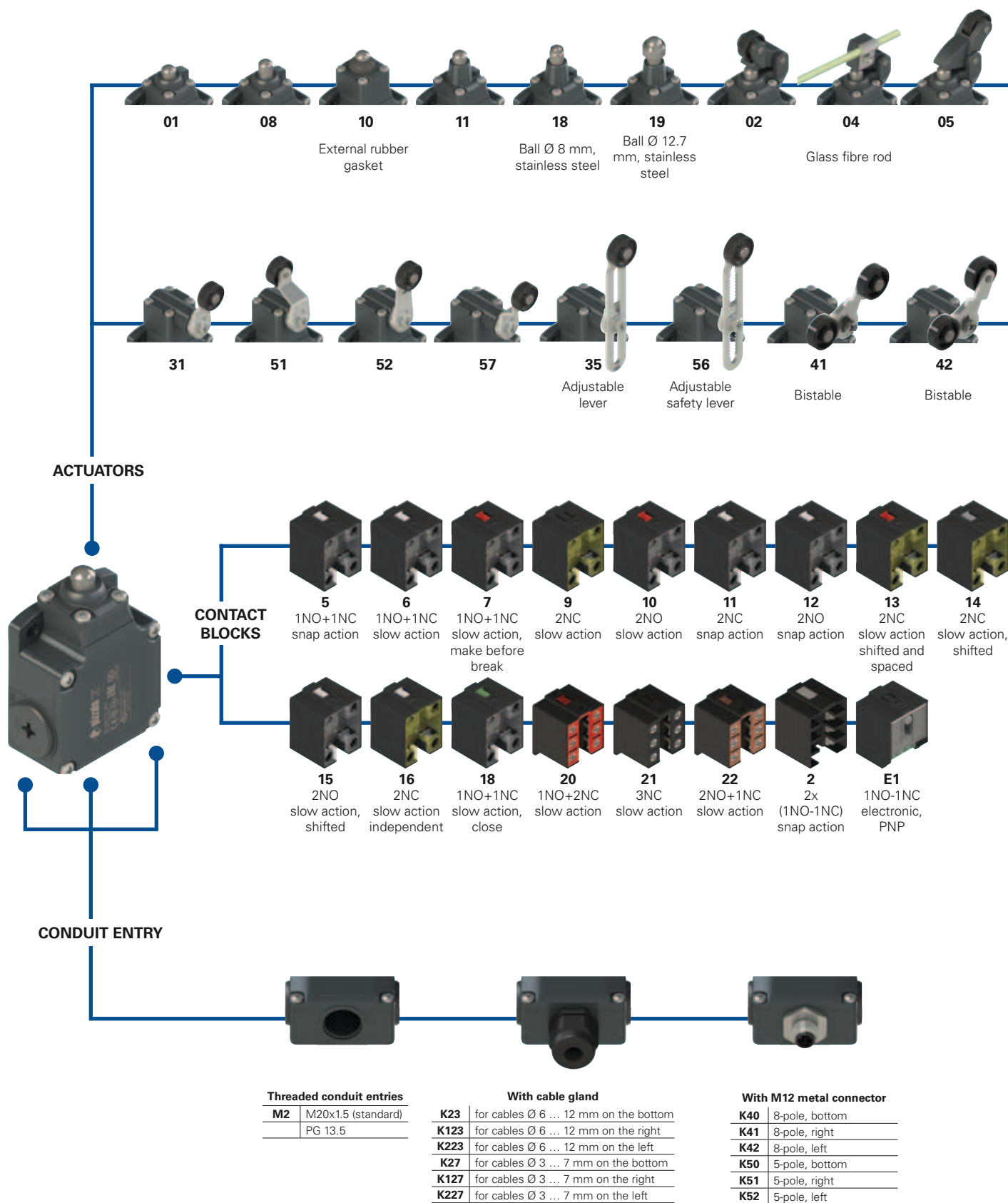
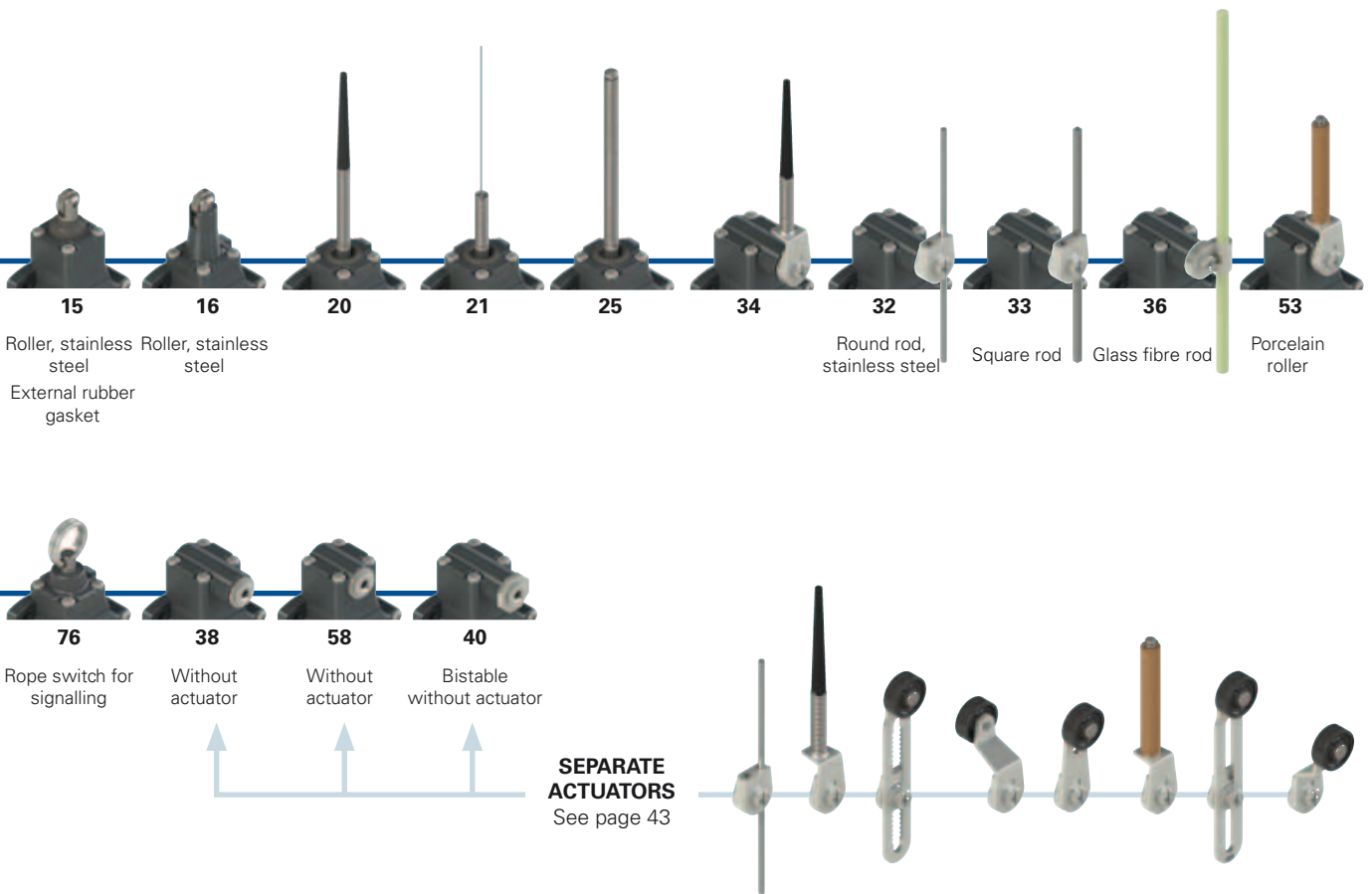


Selection diagram



● 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

FL metal, three conduit entries

Contact block

5	1NO+1NC, snap action
6	1NO+1NC, slow action
7	1NO+1NC, slow action, make before break
...

Actuators

01	short plunger
02	roller lever
05	angled lever with roller
...

Contact type

	silver contacts (standard)
G	silver contacts, 1 µm gold coating (except contact block 2)
G1	silver contacts, 2.5 µm gold coating (not for contact block 2, 20, 21, 22)

Threaded conduit entries

M2	M20x1.5 (standard)
	PG 13.5

Ambient temperature

	-25°C ... +80°C (standard)
T6	-40°C ... +80°C

Rollers

	standard roller
R24	stainless steel Ø 20 mm (for actuators 02, 05, 31, 35, 51, 52, 56, 57)
R25	technopolymer, Ø 35 mm (for actuators 31, 35, 51, 52, 56, 57)
R5	rubber, Ø 40 mm (for actuators 31, 35, 51, 52, 56, 57)
R26	rubber, Ø 50 mm (for actuators 31, 35, 51, 52, 56, 57)
R27	rubber, protruding, Ø 50 mm (for actuators 35 and 36)

Pre-installed cable glands or connectors

	no cable gland or connector (standard)
K23	cable gland for cables Ø 6 ... 12 mm
K50	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
- 28 actuators available
- Versions with M12 connector
- Versions with gold-plated silver contacts

Quality marks:



IMQ approval:	EG605
UL approval:	E131787
CCC approval:	2007010305230000
EAC approval:	RU C-IT.AQ35.B.00454

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-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 214. 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 211 to 222.

Technical data

Housing

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

General data

Ambient temperature:	-25°C ... +80°C
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 211-222

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 blocks 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 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, UL 508, CSA 22.2 No.14.

Approvals:

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

Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU.

Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1, VDE 0660-206.

Electrical data

Utilization category

without connector	with M12 connector 5-pole	with M12 connector 8-pole	
Thermal current (I_{th}):	10 A	4 A	2 A
Rated insulation voltage (U):	500 Vac 600 Vdc 400 Vac 500 Vdc (contact blocks 2, 11, 12, 20, 21, 22, 33, 34)	250 Vac 300 Vdc	30 Vac 36 Vdc
Rated impulse withstand voltage (U_{imp}):	6 kV 4 kV (contact blocks 20, 21, 22, 33, 34)		
Conditional short circuit current:	1000 A acc. to EN 60947-5-1		
Protection against short circuits:	type aM fuse 10 A 500 V	type gG fuse 4 A 500 V	type gG fuse 2 A 500 V
Pollution degree:	3	3	3
Utilization category			
Alternating current: AC15 (50±60 Hz)			
Ue (V)	250	400	500
Ie (A)	6	4	1
Direct current: DC13			
Ue (V)	24	125	250
Ie (A)	6	1.1	0.4
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)	4	1.1	0.4
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_i): 500 Vac
 400 Vac (for contact blocks 2, 11, 12, 20, 21, 22, 33, 34)
 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, 33, 34)
 Protection degree of the housing: IP67
 MV terminals (screw terminals)
 Pollution degree: 3
 Utilization category: AC15
 Operating voltage (U_e): 400 Vac (50 Hz)
 Operating current (I_e): 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 compliance with standards: EN 60947-1, EN 60947-5-1 + A1:2009, fundamental requirements of the Low Voltage Directive 2014/35/EU.

Features approved by UL

Utilization category Q300 (69 VA, 125-250 Vdc)
 A600 (720 VA, 120-600 Vac)
 Housing features type 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).
 In compliance with standard: UL 508, CSA 22.2 No.14

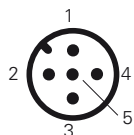
Please contact our technical department for the list of approved products.

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

Wiring 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
Contacts Pin no. NO 3-4 NC 5-6 NC 7-8 NO 1-2	Contacts Pin no. NC 1-2 NO 3-4 ground 5	Contacts Pin no. NC 1-2 NO 3-4 ground 5	Contacts Pin no. NC 1-2 NO 3-4 ground 5	Contacts Pin no. NC 1-2 NC 3-4 ground 5	Contacts Pin no. NO 1-2 NO 3-4 ground 5	Contacts Pin no. NC 1-2 NC 3-4 ground 5	Contacts Pin no. NO 1-2 NO 3-4 ground 5	Contacts Pin no. 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 2NC+1NO	Contact block 21 3NC	Contact block 22 1NC+2NO	Contact block 33 1NC+1NO	Contact block 34 2NC
Contacts Pin no. NC (1°) 1-2 NC (2°) 3-4 ground 5	Contacts Pin no. NO (1°) 1-2 NO (2°) 3-4 ground 5	Contacts Pin no. NC, lever to the right 1-2 NC, lever to the left 3-4 ground 5	Contacts Pin no. NC 1-2 NO 3-4 ground 5	Contacts Pin no. NC 3-4 NC 5-6 NO 7-8 ground 1	Contacts Pin no. NC 3-4 NC 5-6 NC 7-8 ground 1	Contacts Pin no. NC 3-4 NO 5-6 NO 7-8 ground 1	Contacts Pin no. NC 1-2 NO 3-4 ground 5	Contacts Pin no. NC 1-2 NC 3-4 ground 5

Contact block E1
PNP



M12 connector, 5-pole

Contacts	Pin no.
+	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
 - PNP** = electronic PNP

Contact block

		With stainless steel roller on request	With stainless steel roller on request	With stainless steel roller on request
5	R FL 501-M2	1NO+1NC	FL 502-M2	1NO+1NC
6	L FL 601-M2	1NO+1NC	FL 602-M2	1NO+1NC
7	LO FL 701-M2	1NO+1NC	FL 702-M2	1NO+1NC
9	L FL 901-M2	2NC	FL 902-M2	2NC
10	L FL 1001-M2	2NO	FL 1002-M2	2NO
11	R FL 1101-M2	2NC	FL 1102-M2	2NC
12	R FL 1201-M2	2NO	FL 1202-M2	2NO
13	LV FL 1301-M2	2NC	FL 1302-M2	2NC
14	LS FL 1401-M2	2NC	FL 1402-M2	2NC
15	LS FL 1501-M2	2NO	FL 1502-M2	2NO
18	LA FL 1801-M2	1NO+1NC	FL 1802-M2	1NO+1NC
20	L FL 2001-M2	1NO+2NC	FL 2002-M2	1NO+2NC
21	L FL 2101-M2	3NC	FL 2102-M2	3NC
22	L FL 2201-M2	2NO+1NC	FL 2202-M2	2NO+1NC
2	R FL 201-M2	2x(1NO-1NC)	FL 202-M2	2x(1NO-1NC)
E1	PNP FL E101-M2	1NO-1NC	FL E102-M2	1NO-1NC
Max. speed	page 213 - type 4		page 213 - type 3	
Actuating force	8 N (25 N ⊕)		6 N (25 N ⊕)	
Travel diagrams	page 214 - group 1		page 214 - group 2	
			0.5 m/s	page 213 - type 3
			0.17 Nm	6 N (25 N ⊕)
			page 214 - group 1	page 214 - group 2

		With external rubber gasket	With external rubber gasket	With external rubber gasket
5	R FL 508-M2	1NO+1NC	FL 510-M2	1NO+1NC
6	L FL 608-M2	1NO+1NC	FL 610-M2	1NO+1NC
7	LO FL 708-M2	1NO+1NC	FL 710-M2	1NO+1NC
9	L FL 908-M2	2NC	FL 910-M2	2NC
10	L FL 1008-M2	2NO	FL 1010-M2	2NO
11	R FL 1108-M2	2NC	FL 1110-M2	2NC
12	R FL 1208-M2	2NO	FL 1210-M2	2NO
13	LV FL 1308-M2	2NC	FL 1310-M2	2NC
14	LS FL 1408-M2	2NC	FL 1410-M2	2NC
15	LS FL 1508-M2	2NO	FL 1510-M2	2NO
18	LA FL 1808-M2	1NO+1NC	FL 1810-M2	1NO+1NC
20	L FL 2008-M2	1NO+2NC	FL 2010-M2	1NO+2NC
21	L FL 2108-M2	3NC	FL 2110-M2	3NC
22	L FL 2208-M2	2NO+1NC	FL 2210-M2	2NO+1NC
2	R FL 208-M2	2x(1NO-1NC)	FL 210-M2	2x(1NO-1NC)
E1	PNP FL E108-M2	1NO-1NC	FL E110-M2	1NO-1NC
Max. speed	page 213 - type 4		page 213 - type 4	
Actuating force	8 N (25 N ⊕)		11 N (25 N ⊕)	
Travel diagrams	page 214 - group 1		page 214 - group 1	
			page 213 - type 4	page 213 - type 2
			8 N (25 N ⊕)	11 N (25 N ⊕)
			page 214 - group 1	page 214 - group 1

All values in the drawings are in mm

Items with code on green background are stock items

Accessories See page 197

→ The 2D and 3D files are available at 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

	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 ⏏	FL E116-M2 1NO-1NC	FL E118-M2 1NO-1NC	FL E119-M2 1NO-1NC
Max. speed	page 213 - type 2	page 213 - type 4	page 213 - type 4
Actuating force	8 N (25 N →)	8 N (25 N →)	8 N (25 N →)
Travel diagrams	page 214 - group 1	page 214 - group 1	page 214 - 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 214 - group 3

	With external rubber gasket	With external rubber gasket	Other rollers available. See page 44	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 ⏏	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 213 - type 1	1.5 m/s
Actuating force	0.08 Nm	0.14 Nm	0.1 Nm (0.25 Nm →)	0.1 Nm
Travel diagrams	page 214 - group 3	page 214 - group 3	page 214 - group 4	page 214 - group 4

All values in the drawings are in mm

Items with code on green background are stock items

Accessories See page 197

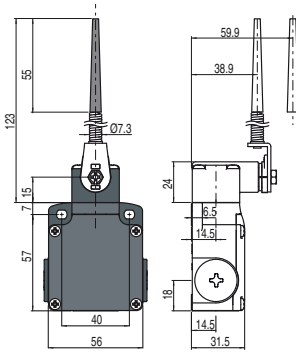
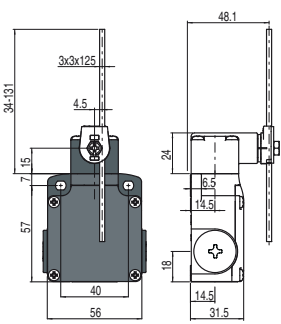
→ The 2D and 3D files are available at www.pizzato.com

Contact type:

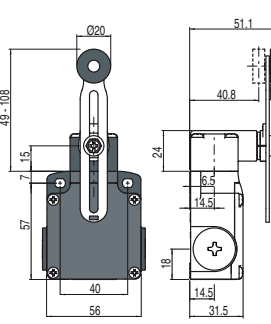
- R** = snap action
- L** = slow action
- LO** = slow action make before break
- LS** = slow action shifted
- LV** = slow action shifted and spaced
- LI** = slow action independent
- LA** = slow action close
- Λ** = electronic PNP

Contact block

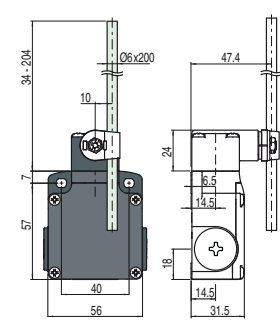
Square rod, 3x3 mm



Other rollers available. See page 44

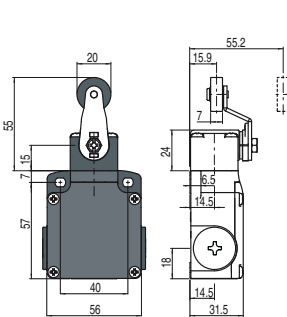


Glass fibre rod

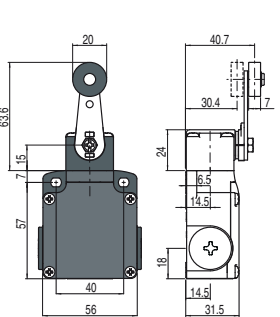


5	R	FL 533-M2	1NO+1NC	FL 534-M2	1NO+1NC	FL 535-M2 (1)	1NO+1NC	FL 536-M2	1NO+1NC
6	L	FL 633-M2	1NO+1NC	FL 634-M2	1NO+1NC	FL 635-M2 (1)	1NO+1NC	FL 636-M2	1NO+1NC
7	LO	FL 733-M2	1NO+1NC	FL 734-M2	1NO+1NC	FL 735-M2 (1)	1NO+1NC	FL 736-M2	1NO+1NC
9	L	FL 933-M2	2NC	FL 934-M2	2NC	FL 935-M2 (1)	2NC	FL 936-M2	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	Λ	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 213 - type 1		1.5 m/s	
Actuating force		0.1 Nm		0.1 Nm		0.1 Nm (0.25 Nm (1))		0.1 Nm	
Travel diagrams		page 214 - group 4		page 214 - group 4		page 214 - group 4		page 214 - group 4	

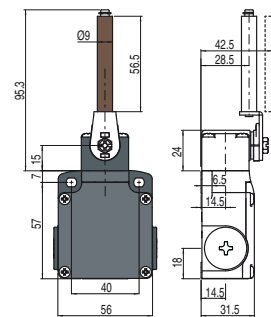
Other rollers available. See page 44



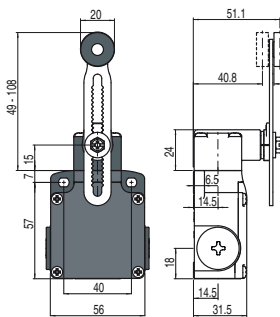
Other rollers available. See page 44



Porcelain roller



Other rollers available. See page 44



Contact block

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 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	Λ	FL E151-M2	1NO-1NC	FL E152-M2	1NO-1NC	FL E153-E11M2V9	1NO-1NC	FL E156-M2	1NO-1NC
Max. speed		page 213 - type 1		page 213 - type 1		0.5 m/s		page 213 - type 1	
Actuating 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 214 - group 4		page 214 - group 4		page 214 - group 5		page 214 - group 4	

(1) Positive opening only with actuator set to max. See page 43.

All values in the drawings are in mm

Items with code on green background are stock items

Accessories See page 197

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

		Other rollers available. See page 44	With stainless steel rollers on request	With stainless steel rollers on request	Rope switch for signalling
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					
5	R	FL 557-M2	FL 541-M2	FL 542-M2	FL 576-M2
6	L	FL 657-M2	Bistable switch with lyra lever, single track S = mechanical switching point positive opening on contacts 21-22 only	Bistable switch with lyra lever, dual track S = mechanical switching point positive opening on contacts 21-22 only	FL 676-M2
7	LO	FL 757-M2			FL 776-M2
9	L	FL 957-M2			FL 976-M2
10	L	FL 1057-M2			FL 1076-M2
11	R	FL 1157-M2			FL 1176-M2
12	R	FL 1257-M2			FL 1276-M2
13	LV	FL 1357-M2			FL 1376-M2
14	LS	FL 1457-M2			FL 1476-M2
15	LS	FL 1557-M2			FL 1576-M2
16	LI	FL 1657-M2			FL 1876-M2
18	LA	FL 1857-M2			FL 2076-M2
20	L	FL 2057-M2			FL 2176-M2
21	L	FL 2157-M2			FL 2276-M2
22	L	FL 2257-M2			FL 276-M2
2	R	FL 257-M2			
E1		FL E157-M2			
Max. speed		page 213 - type 1	0.5 m/s with cam at 30°	0.5 m/s with cam at 30°	0.5 m/s
Actuating force		0.1 Nm (0.25 Nm	0.21 Nm (0.36 Nm	0.21 Nm (0.36 Nm	initial 20 N - final 40 N
Travel diagrams		page 214 - group 4			page 214 - group 6

All values in the drawings are in mm

Position switches with swivelling lever without actuator

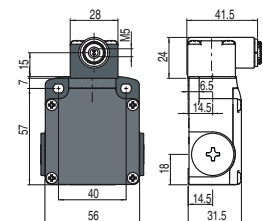
All values in the drawings are in mm

Contact type:

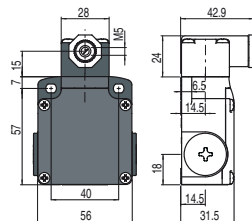
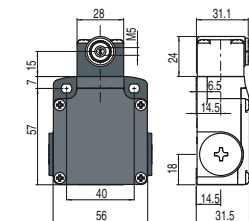
- R** = snap action
- L** = slow action
- LO** = slow action make before break
- LS** = slow action shifted
- LV** = slow action shifted and spaced
- LI** = slow action independent
- LA** = slow action close
- ⚡** = electronic PNP

Contact block


Regular head






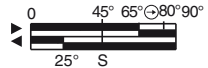


































Compact head



IMPORTANT

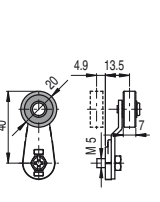
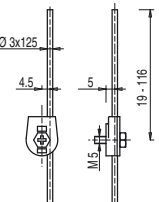
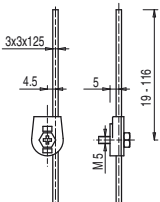
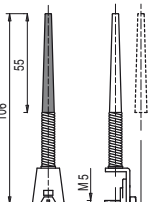
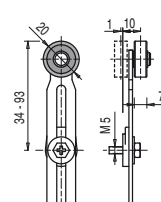
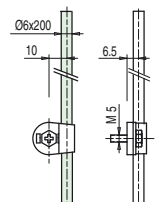


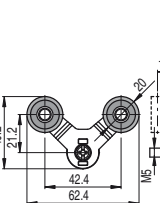
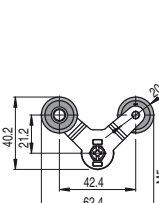
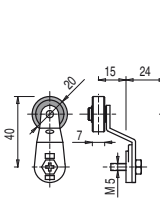
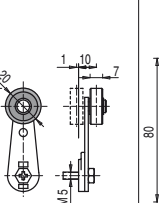
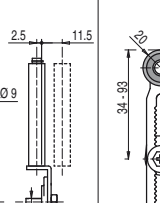
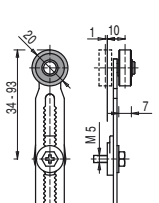
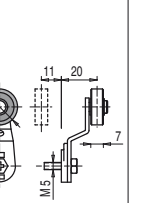







For safety applications: join only switches and actuators marked with symbol  next to the product code. For more information about safety applications see details on page 211.

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 contacts 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 	2NO	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			
Actuating force		0.1 Nm (0.25 Nm )		0.06 Nm (0.25 Nm )			0.5 m/s with cam at 30°	
Travel diagrams		page 214 - group 4		page 214 - group 4			0.21 Nm (0.36 Nm )	

Separate actuators

All values in the drawings are in mm

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	Flexible rod with pointed end	Adjustable actuator with technopolymer roller	Adjustable glass fibre rod	
						
VF L31 	VF L32 ⁽³⁾	VF L33 ⁽³⁾	VF L34	VF L35  ^{(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 	VF L42 	VF L51 	VF L52 	VF L53  ⁽²⁾	VF L56  ⁽³⁾	VF L57 

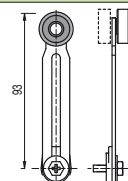
(1) Actuator VF L35 can only be used in safety applications if adjusted to its max. length, as shown in the figure to the right.

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.



Items with code on green background are stock items

Accessories See page 197

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



Special separate actuators

All values in the drawings are in mm

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 (4)	VF L35-R24 (1) (3)	VF L51-R24 (4)	VF L52-R24 (4)	VF L56-R24 (3)	VF L57-R24 (4)

Technopolymer rollers, Ø 35 mm

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

Rubber rollers, Ø 40 mm

VF L31-R5 (4)	VF L35-R5 (1) (3)	VF L51-R5 (4)	VF L52-R5 (4)	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 197

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