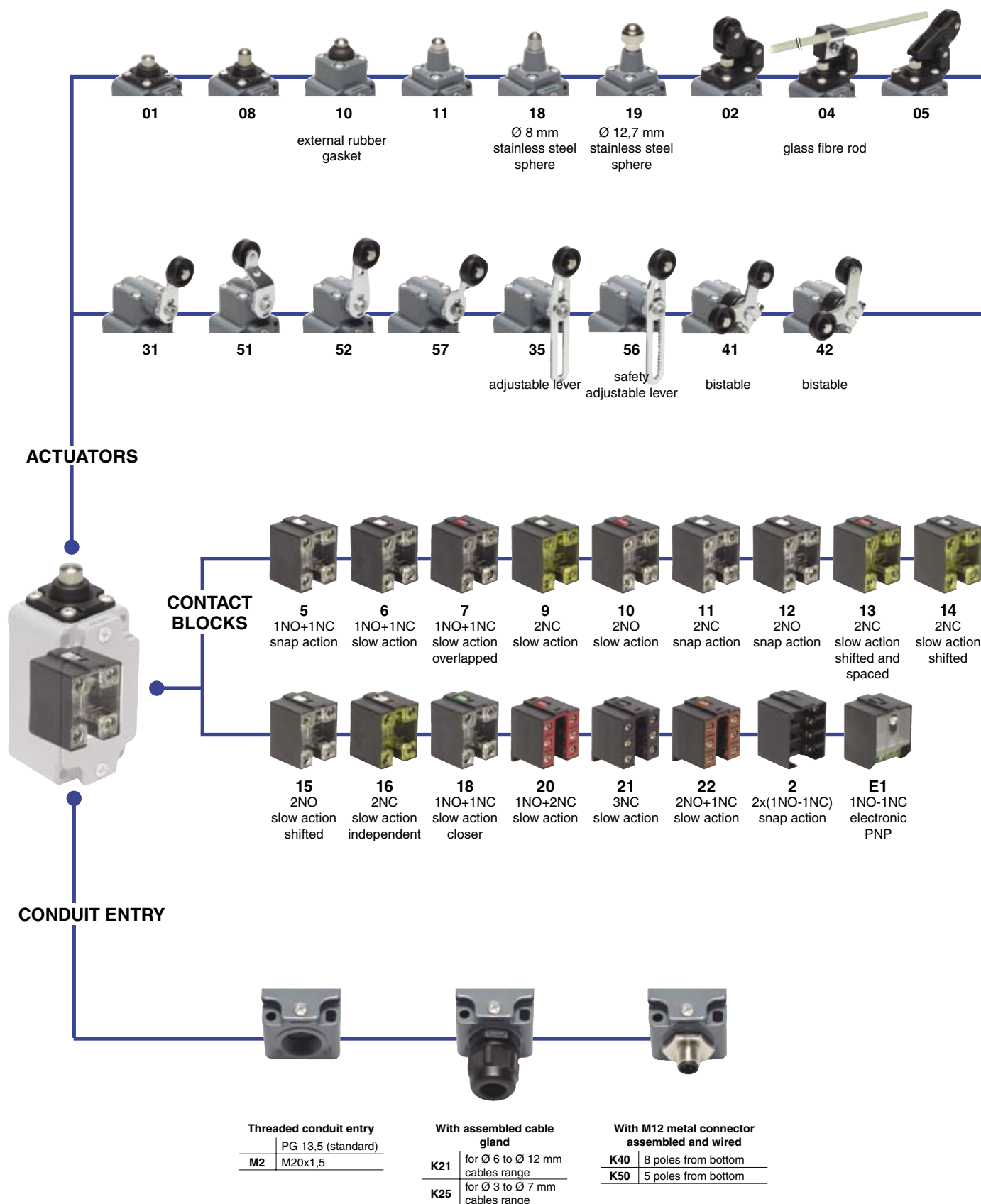
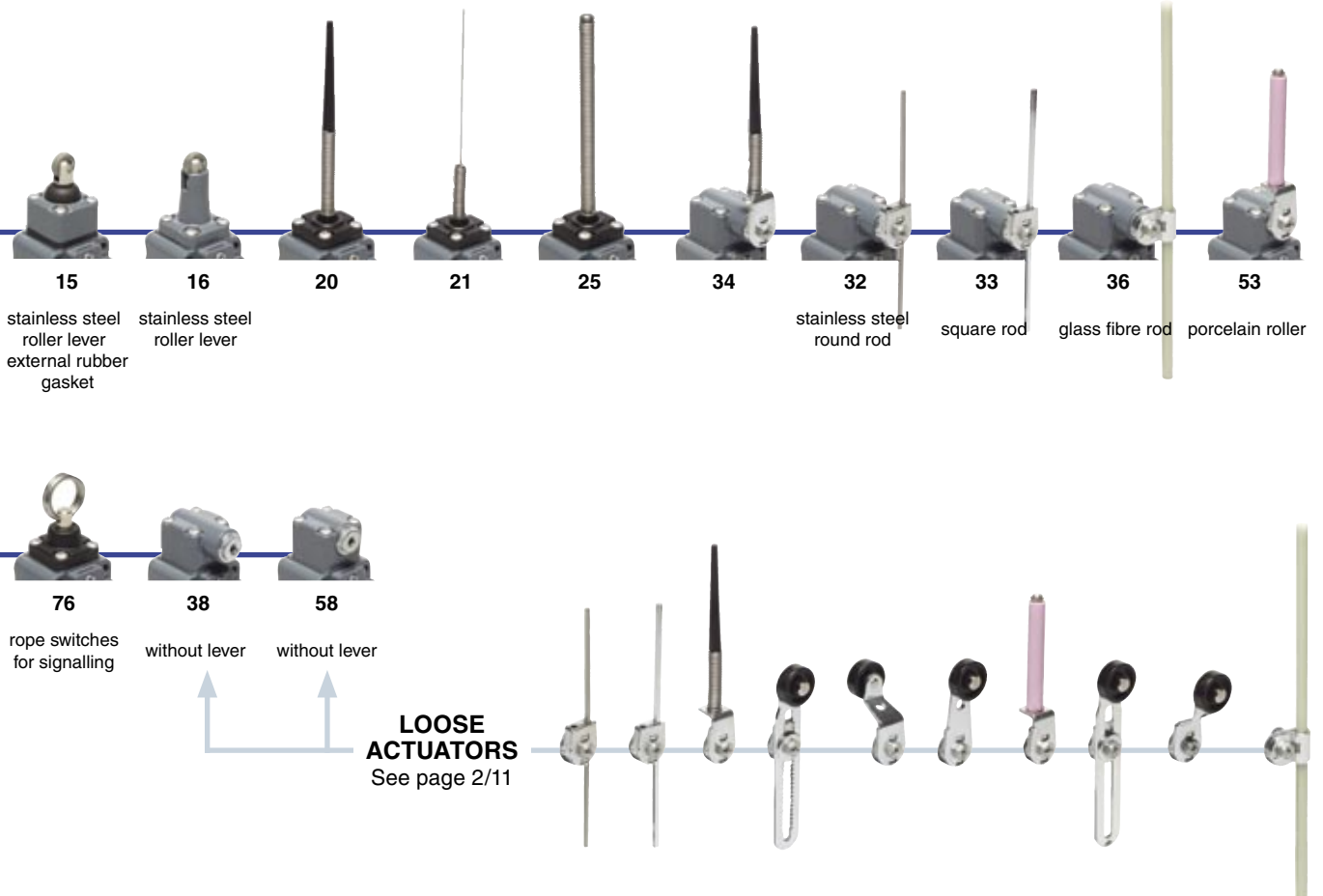


Selection diagram



product option
 accessory sold separately

**Code structure**

Attention! The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

FD 502-1GM2K50

Housing		Preinstalled cable gland or connectors	
FD	metal housing, one conduit entry		no cable gland or connector (standard)
Contact blocks		K21	with assembled cable gland suitable for Ø 6 to Ø 12 mm cables range
5	1NO+1NC, snap action	K40	with M12 metal connector assembled and wired, 8 poles (only for contact blocks 2, 20, 21, 22)
6	1NO+1NC, slow action	...	
7	1NO+1NC, slow action overlapped	For the complete list of all combinations, please contact our technical office.	
...		Threaded conduit entry	
Actuators			PG 13,5 (standard)
01	short plunger	M2	M20x1,5
02	roller lever	Contacts type	
05	offset roller lever		silver contacts (standard)
...		G	silver contacts gold plated 1 µm (contact block 2 excluded)
Suffix			
	no suffix (standard)		
1	with Ø 20 mm stainless steel roller for actuators 02, 05, 31, 35, 51, 52, 56, 57, 41, 42		
2	with Ø 35 mm polymer roller (see special loose actuators on page 2/12)		
3	with Ø 50 mm rubber roller (see special loose actuators on page 2/12)		
4	with Ø 50 mm overhanging rubber roller (see special loose actuators on page 2/12)		



Main data

- Metal housing, one conduit entry
- Protection degree IP67
- 17 contact blocks available
- 28 actuators available
- M12 assembled connector versions
- Silver contacts gold plated versions

Markings and quality marks:



Approval IMQ: EG605
Approval UL: E131787
Approval CSA: LA 93682-1
Approval EZU: 1010151

Technical data

Housing

Metal housing, coated with baked epoxy powder
One threaded conduit entry
Protection degree: IP67



General data

Ambient temperature: from -25°C to +80°C
Version for operation in ambient temperature from -40°C to +80°C on request
Max operating frequency: 3600 operations cycles¹/hour
Mechanical endurance: 20 million operations cycles¹
Assembling position: any
(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by IEC 947-5-1 standard.

Cross section of the conductors (flexible copper wire)

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 conformity with standards:

IEC 947-5-1, IEC 337-1, EN 60947-5-1, CEI EN 60947-5-1, CEI 17-45, EN 50041, CEI 17-31, IEC 204-1, EN 60204-1, CEI 44-5, EN 1088, EN ISO 12100-1, EN ISO 12100-2, IEC 529, EN 60529, CEI 70-1, NFC 63-140, VDE 0660-200, VDE 0113, CENELEC EN 50013.

Approvals:

IEC 947-5-1, UL 508, CSA C22-2 nr.14.

In conformity with requirements requested by:

Low Voltage Directive 73/23/EEC and subsequent modifications and completions.
Machinery Directive 98/37/EEC.
Electromagnetic Compatibility 89/336/EEC and subsequent modifications and completions.

Positive contact opening in conformity with standards:

IEC 947-5-1, EN 60947-5-1, CEI EN 60947-5-1, VDE 0660-206.

Installation for safety applications:

Use only switches marked with the symbol . The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) as stated in the **standard CEI EN 60947-5-1, encl. K, par. 2**. The switch must be actuated with **at least up to the positive opening travel** shown in the travels diagrams on page 6/14. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the min. force.

For the correct installation of all articles, please see “Utilization requirements” chapter, from page 6/1 to page 6/4.

Electrical data			Utilization categories			
without connector	Thermal current (I _{th}):	10 A	Alternate current: AC15 (50...60 Hz)			
	Rated insulation voltage (U _i):	500 VAC 600 VDC	U _e (V)	250	400	500
	Protection against short circuits:	400 VAC for contact blocks 20, 21, 22, 33, 34	I _e (A)	6	4	1
with 5 poles M12 connector	Pollution degree:	3	Direct current: DC13			
			U _e (V)	24	125	250
			I _e (A)	6	1,1	0,4
with 8 poles M12 connector	Thermal current (I _{th}):	4 A	Alternate current: AC15 (50...60 Hz)			
	Rated insulation voltage (U _i):	250 VAC 300 VDC	U _e (V)	24	120	250
	Protection against short circuits:	fuse 4 A 500 V type gG	I _e (A)	4	4	4
	Pollution degree:	3	Direct current: DC13			
			U _e (V)	24	125	250
			I _e (A)	4	1,1	0,4
	Thermal current (I _{th}):	2 A	Alternate current: AC15 (50...60 Hz)			
	Rated insulation voltage (U _i):	30 VAC 36 VDC	U _e (V)	24		
	Protection against short circuits:	fuse 2 A 500 V type gG	I _e (A)	2		
	Pollution degree:	3	Direct current: DC13			
			U _e (V)	24		
			I _e (A)	2		

Data type approved by IMQ and EZU

Rated insulation voltage (Ui): 500 VAC
400 VAC for contact blocks 20, 21, 22, 33, 34

Thermal current (Ith): 10 A

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

Protection degree: IP67

MV terminals (screw clamps)

Pollution degree 3

Utilization category: AC15

Operation voltage (Ue): 400 VAC (50 Hz)

Operation current (Ie): 3 A

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

Positive opening of contacts on contact block 5, 6, 7, 9, 11, 12, 13, 14, 16, 18, 20, 21, 22, 33, 34

In conformity with standards: EN60947-1, EN 60947-5-1 and subsequent modifications and completions, fundamental requirements of the Low Voltage Directive 73/23 EEC and subsequent modifications and completions.

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

Data type approved by UL

Utilization categories Q300 (69 VA, 125-250 VDC)
A600 (720 VA, 120-600 VAC)

Data of the housing type 1, 4X (indoor use only), 12, 13

In conformity with standard: UL 508

For all contact blocks except 2 and 3 use 60 or 75 °C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7,1 Lb-In.

For contact blocks 2 and 3 use 60 or 75 °C copper (Cu) conductor and wire size No. 14 AWG. Terminal tightening torque of 12 Lb-In.

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

Data type approved by CSA

Utilization categories Q300 (69 VA, 125-250 VDC)
A600 (720 VA, 120-600 VAC)

Data of the housing type 1, 4X (indoor use only), 12, 13

In conformity with standard: CSA C22-2 nr.14

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

Adjustable levers

In switches with revolving lever it is possible to adjust the lever with 10° steps for the whole 360° range. The positive movement transmission is always guaranteed thanks to the particular geometrical coupling between the lever and the revolving shaft as prescribed for safety applications by the German standard BG-GS-ET-15.

**Overturning levers**

It's possible to fasten the lever on switches on straight or reverse side, maintaining the positive coupling. In this way it is possible to obtain two different work plans of the lever.

**Rotating heads**

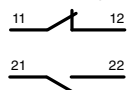
In all switches, it is possible to rotate the head in 90° steps.

**Working operation of contact block 16 with independent contacts**

The contact block 16 has two NC contacts, **both with positive opening** activated independently according to the lever turning direction.

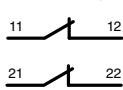
Lever turned to left

Contacts diagram



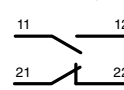
Lever not turned

Contacts diagram

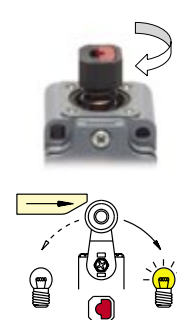
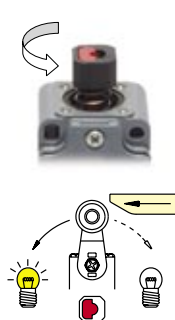
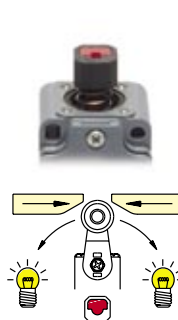
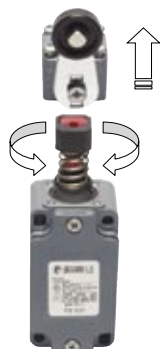


Lever turned to right

Contacts diagram

**Unidirectional heads**

In the switches with revolving lever, it is possible to select the directional operation by removing the four screws of the head and revolving the internal piston (contact block 16 excluded).



Contacts type:

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

Contact blocks

		With stainless steel roller on request		With stainless steel roller on request
5	R	FD 501 → 1NO+1NC	FD 502 → 1NO+1NC	FD 504 1NO+1NC
6	L	FD 601 → 1NO+1NC	FD 602 → 1NO+1NC	FD 604 1NO+1NC
7	LO	FD 701 → 1NO+1NC	FD 702 → 1NO+1NC	FD 704 1NO+1NC
9	L	FD 901 → 2NC	FD 902 → 2NC	FD 904 2NC
10	L	FD 1001 2NO	FD 1002 2NO	FD 1004 2NO
11	R	FD 1101 → 2NC	FD 1102 → 2NC	FD 1104 2NC
12	R	FD 1201 2NO	FD 1202 2NO	FD 1204 2NO
13	LV	FD 1301 → 2NC	FD 1302 → 2NC	FD 1304 2NC
14	LS	FD 1401 → 2NC	FD 1402 → 2NC	FD 1404 2NC
15	LS	FD 1501 2NO	FD 1502 2NO	FD 1504 2NO
18	LA	FD 1801 → 1NO+1NC	FD 1802 → 1NO+1NC	FD 1804 1NO+1NC
20	L	FD 2001 → 1NO+2NC	FD 2002 → 1NO+2NC	FD 2004 1NO+2NC
21	L	FD 2101 → 3NC	FD 2102 → 3NC	FD 2104 3NC
22	L	FD 2201 → 2NO+1NC	FD 2202 → 2NO+1NC	FD 2204 2NO+1NC
2	R	FD 201 2x(1NO-1NC)	FD 202 2x(1NO-1NC)	FD 204 2x(1NO-1NC)
E1		FD E101 1NO-1NC	FD E102 1NO-1NC	FD E104 1NO-1NC
Max speed		page 6/2 - type 4	page 6/2 - type 3	0,5 m/s
Min. force		8 N (25 N →)	6 N (25 N →)	0,17 Nm
Travel diagrams		page 6/14 - group 1	page 6/14 - group 2	page 6/14 - group 1

		With external rubber gasket		With external rubber gasket
5	R	FD 508 → 1NO+1NC	FD 510 → 1NO+1NC	FD 511 → 1NO+1NC
6	L	FD 608 → 1NO+1NC	FD 610 → 1NO+1NC	FD 611 → 1NO+1NC
7	LO	FD 708 → 1NO+1NC	FD 710 → 1NO+1NC	FD 711 → 1NO+1NC
9	L	FD 908 → 2NC	FD 910 → 2NC	FD 911 → 2NC
10	L	FD 1008 2NO	FD 1010 2NO	FD 1011 2NO
11	R	FD 1108 → 2NC	FD 1110 → 2NC	FD 1111 → 2NC
12	R	FD 1208 2NO	FD 1210 2NO	FD 1211 2NO
13	LV	FD 1308 → 2NC	FD 1310 → 2NC	FD 1311 → 2NC
14	LS	FD 1408 → 2NC	FD 1410 → 2NC	FD 1411 → 2NC
15	LS	FD 1508 2NO	FD 1510 2NO	FD 1511 2NO
18	LA	FD 1808 → 1NO+1NC	FD 1810 → 1NO+1NC	FD 1811 → 1NO+1NC
20	L	FD 2008 → 1NO+2NC	FD 2010 → 1NO+2NC	FD 2011 → 1NO+2NC
21	L	FD 2108 → 3NC	FD 2110 → 3NC	FD 2111 → 3NC
22	L	FD 2208 → 2NO+1NC	FD 2210 → 2NO+1NC	FD 2211 → 2NO+1NC
2	R	FD 208 2x(1NO-1NC)	FD 210 2x(1NO-1NC)	FD 211 2x(1NO-1NC)
E1		FD E108 1NO-1NC	FD E110 1NO-1NC	FD E111 1NO-1NC
Max speed		page 6/2 - type 4	page 6/2 - type 4	page 6/2 - type 4
Min. force		8 N (25 N →)	11 N (25 N →)	8 N (25 N →)
Travel diagrams		page 6/14 - group 1	page 6/14 - group 1	page 6/14 - group 1

Accessories
See page 5/1

Items with code on the green background are available in stock

All measures in the drawings are in mm

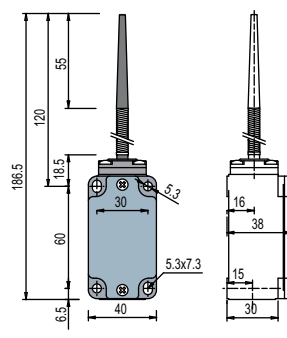
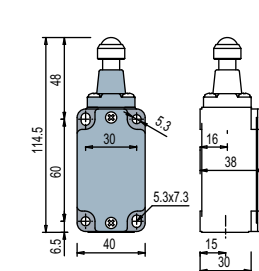
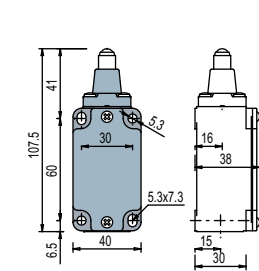
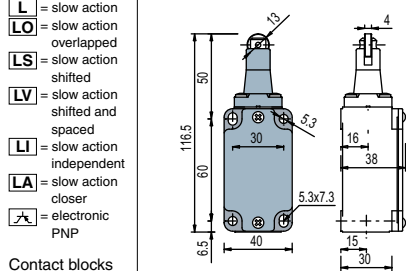
Contacts type:

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

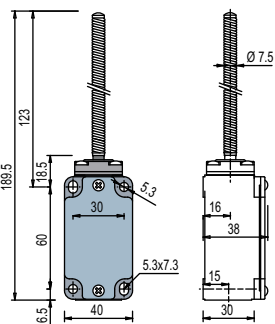
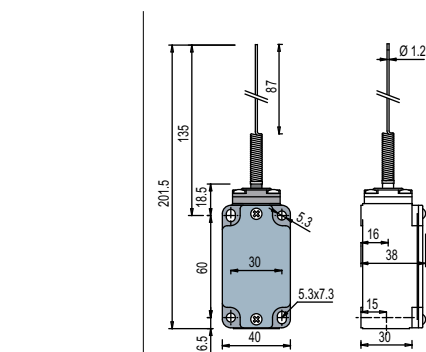
Contact blocks

Ø 8 mm stainless steel sphere

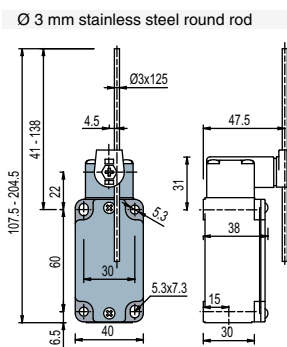
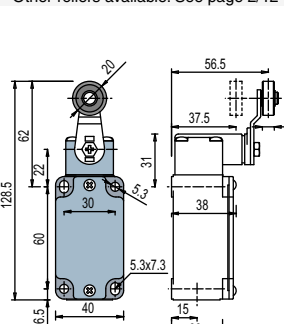
Ø 12,7 mm stainless steel sphere



5	R	FD 516	➔ 1NO+1NC	FD 518	➔ 1NO+1NC	FD 519	➔ 1NO+1NC	FD 520	1NO+1NC
6	L	FD 616	➔ 1NO+1NC	FD 618	➔ 1NO+1NC	FD 619	➔ 1NO+1NC		
7	LO	FD 716	➔ 1NO+1NC	FD 718	➔ 1NO+1NC	FD 719	➔ 1NO+1NC		
9	L	FD 916	➔ 2NC	FD 918	➔ 2NC	FD 919	➔ 2NC		
10	L	FD 1016	2NO	FD 1018	2NO	FD 1019	2NO	FD 1020	2NO
11	R	FD 1116	➔ 2NC	FD 1118	➔ 2NC	FD 1119	➔ 2NC		
12	R	FD 1216	2NO	FD 1218	2NO	FD 1219	2NO	FD 1220	2NO
13	LV	FD 1316	➔ 2NC	FD 1318	➔ 2NC	FD 1319	➔ 2NC		
14	LS	FD 1416	➔ 2NC	FD 1418	➔ 2NC	FD 1419	➔ 2NC		
15	LS	FD 1516	2NO	FD 1518	2NO	FD 1519	2NO		
18	LA	FD 1816	➔ 1NO+1NC	FD 1818	➔ 1NO+1NC	FD 1819	➔ 1NO+1NC	FD 1820	1NO+1NC
20	L	FD 2016	➔ 1NO+2NC	FD 2018	➔ 1NO+2NC	FD 2019	➔ 1NO+2NC	FD 2020	1NO+2NC
21	L	FD 2116	➔ 3NC	FD 2118	➔ 3NC	FD 2119	➔ 3NC	FD 2120	3NC
22	L	FD 2216	➔ 2NO+1NC	FD 2218	➔ 2NO+1NC	FD 2219	➔ 2NO+1NC	FD 2220	2NO+1NC
2	R	FD 216	2x(1NO-1NC)	FD 218	2x(1NO-1NC)	FD 219	2x(1NO-1NC)	FD 220	2x(1NO-1NC)
E1		FD E116	1NO-1NC	FD E118	1NO-1NC	FD E119	1NO-1NC	FD E120	1NO-1NC
Max speed		page 6/2 - type 2		page 6/2 - type 4		page 6/2 - type 4		1 m/s	
Min. force		8 N (25 N ➔)		8 N (25 N ➔)		8 N (25 N ➔)		0,09 Nm	
Travel diagrams		page 6/14 - group 1		page 6/14 - group 1		page 6/14 - group 1		page 6/14 - group 3	



Other rollers available. See page 2/12



Contact blocks

5	R	FD 521	1NO+1NC	FD 525	1NO+1NC	FD 531	➔ 1NO+1NC	FD 532	1NO+1NC
6	L					FD 631	➔ 1NO+1NC	FD 632	1NO+1NC
7	LO					FD 731	➔ 1NO+1NC	FD 732	1NO+1NC
9	L					FD 931	➔ 2NC	FD 932	2NC
10	L	FD 1021	2NO	FD 1025	2NO	FD 1031	2NO	FD 1032	2NO
11	R					FD 1131	➔ 2NC	FD 1132	2NC
12	R	FD 1221	2NO	FD 1225	2NO	FD 1231	2NO	FD 1232	2NO
13	LV					FD 1331	➔ 2NC	FD 1332	2NC
14	LS					FD 1431	➔ 2NC	FD 1432	2NC
15	LS					FD 1531	2NO	FD 1532	2NO
16	LI					FD 1631	➔ 2NC	FD 1632	2NC
18	LA	FD 1821	1NO+1NC	FD 1825	1NO+1NC	FD 1831	➔ 1NO+1NC	FD 1832	1NO+1NC
20	L	FD 2021	1NO+2NC	FD 2025	1NO+2NC	FD 2031	➔ 1NO+2NC	FD 2032	1NO+2NC
21	L	FD 2121	3NC	FD 2125	3NC	FD 2131	➔ 3NC	FD 2132	3NC
22	L	FD 2221	2NO+1NC	FD 2225	2NO+1NC	FD 2231	➔ 2NO+1NC	FD 2232	2NO+1NC
2	R	FD 221	2x(1NO-1NC)	FD 225	2x(1NO-1NC)	FD 231	2x(1NO-1NC)	FD 232	2x(1NO-1NC)
E1		FD E121	1NO-1NC	FD E125	1NO-1NC	FD E131	1NO-1NC	FD E132	1NO-1NC
Max speed		1 m/s		1 m/s		page 6/2 - type 1		1,5 m/s	
Min. force		0,08 Nm		0,14 Nm		0,15 Nm (0,25 Nm ➔)		0,15 Nm	
Travel diagrams		page 6/14 - group 3		page 6/14 - group 3		page 6/14 - group 4		page 6/14 - group 4	

Accessories
See page 5/1

Items with code on the green background are available in stock

2 Position switches FD series

Contacts type:

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

Contact blocks

5		FD 533	1NO+1NC	FD 534	1NO+1NC	FD 535		FD 536	1NO+1NC
6		FD 633	1NO+1NC	FD 634	1NO+1NC	FD 635		FD 636	1NO+1NC
7		FD 733	1NO+1NC	FD 734	1NO+1NC	FD 735		FD 736	1NO+1NC
9		FD 933	2NC	FD 934	2NC	FD 935		FD 936	2NC
10		FD 1033	2NO	FD 1034	2NO	FD 1035	2NO	FD 1036	2NO
11		FD 1133	2NC	FD 1134	2NC	FD 1135		FD 1136	2NC
12		FD 1233	2NO	FD 1234	2NO	FD 1235	2NO	FD 1236	2NO
13		FD 1333	2NC	FD 1334	2NC	FD 1335		FD 1336	2NC
14		FD 1433	2NC	FD 1434	2NC	FD 1435		FD 1436	2NC
15		FD 1533	2NO	FD 1534	2NO	FD 1535	2NO	FD 1536	2NO
16		FD 1633	2NC	FD 1634	2NC	FD 1635		FD 1636	2NC
18		FD 1833	1NO+1NC	FD 1834	1NO+1NC	FD 1835		FD 1836	1NO+1NC
20		FD 2033	1NO+2NC	FD 2034	1NO+2NC	FD 2035		FD 2036	1NO+2NC
21		FD 2133	3NC	FD 2134	3NC	FD 2135		FD 2136	3NC
22		FD 2233	2NO+1NC	FD 2234	2NO+1NC	FD 2235		FD 2236	2NO+1NC
2		FD 233	2x(1NO-1NC)	FD 234	2x(1NO-1NC)	FD 235	2x(1NO-1NC)	FD 236	2x(1NO-1NC)
E1		FD E133	1NO-1NC	FD E134	1NO-1NC	FD E135	1NO-1NC	FD E136	1NO-1NC
Max speed		1,5 m/s		1 m/s		page 6/2 - type 1		1,5 m/s	
Min. force		0,15 Nm		0,15 Nm		0,15 Nm (0,25 Nm		0,15 Nm	
Travel diagrams		page 6/14 - group 4		page 6/14 - group 4		page 6/14 - group 4		page 6/14 - group 4	

Contact blocks																
5		FD 551		1NO+1NC	FD 552		1NO+1NC	FD 553-E11V9		1NO+1NC	FD 556		1NO+1NC			
6		FD 651		1NO+1NC	FD 652		1NO+1NC	FD 653-E11V9		1NO+1NC	FD 656		1NO+1NC			
7		FD 751		1NO+1NC	FD 752		1NO+1NC	FD 753-E11V9		1NO+1NC	FD 756		1NO+1NC			
9		FD 951		2NC	FD 952		2NC	FD 953-E11V9		2NC	FD 956		2NC			
10		FD 1051		2NO	FD 1052		2NO	FD 1053-E11V9		2NO	FD 1056		2NO			
11		FD 1151		2NC	FD 1152		2NC				FD 1156		2NC			
12		FD 1251		2NO	FD 1252		2NO	FD 1253-E11V9		2NO	FD 1256		2NO			
13		FD 1351		2NC	FD 1352		2NC	FD 1353-E11V9		2NC	FD 1356		2NC			
14		FD 1451		2NC	FD 1452		2NC	FD 1453-E11V9		2NC	FD 1456		2NC			
15		FD 1551		2NO	FD 1552		2NO	FD 1553-E11V9		2NO	FD 1556		2NO			
16											FD 1656		2NC			
18		FD 1851		1NO+1NC	FD 1852		1NO+1NC	FD 1853-E11V9		1NO+1NC	FD 1856		1NO+1NC			
20		FD 2051		1NO+2NC	FD 2052		1NO+2NC	FD 2053-E11V9		1NO+2NC	FD 2056		1NO+2NC			
21		FD 2151		3NC	FD 2152		3NC	FD 2153-E11V9		3NC	FD 2156		3NC			
22		FD 2251		2NO+1NC	FD 2252		2NO+1NC	FD 2253-E11V9		2NO+1NC	FD 2256		2NO+1NC			
2		FD 251		2x(1NO-1NC)	FD 252		2x(1NO-1NC)	FD 253-E11		2x(1NO-1NC)	FD 256		2x(1NO-1NC)			
E1		FD E151		1NO-1NC	FD E152		1NO-1NC	FD E153-E11V9		1NO-1NC	FD E156		1NO-1NC			
Max speed	page 6/2 - type 1				page 6/2 - type 1				0,5 m/s				page 6/2 - type 1			
Min. force	0,09 Nm (0,25 Nm)				0,09 Nm (0,25 Nm)				0,06 Nm (0,25 Nm)				0,15 Nm (0,25 Nm)			
Travel diagrams	page 6/14 - group 4				page 6/14 - group 4				page 6/14 - group 5				page 6/14 - group 4			

Accessories
See page 5/1

Items with code on the green background are available in stock

(1) Positive opening only with lever adjusted on the max. See page 2/11

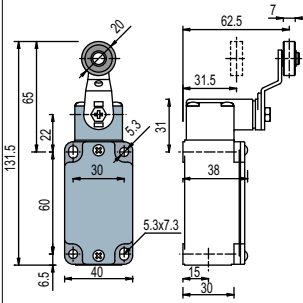
Contacts type:

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

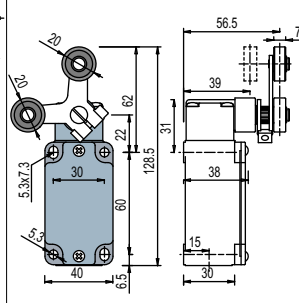
Contact blocks

5	R	FD 557	1NO+1NC
6	L	FD 657	1NO+1NC
7	LO	FD 757	1NO+1NC
9	L	FD 957	2NC
10	L	FD 1057	2NO
11	R	FD 1157	2NC
12	R	FD 1257	2NO
13	LV	FD 1357	2NC
14	LS	FD 1457	2NC
15	LS	FD 1557	2NO
16	LI	FD 1657	2NC
18	LA	FD 1857	1NO+1NC
20	L	FD 2057	1NO+2NC
21	L	FD 2157	3NC
22	L	FD 2257	2NO+1NC
2	R	FD 257	2x(1NO-1NC)
E1		FD E157	1NO-1NC
Max speed		page 6/2 - type 1	
Min. force		0,15 Nm (0,25 Nm )	
Travel diagrams		page 6/14 - group 4	

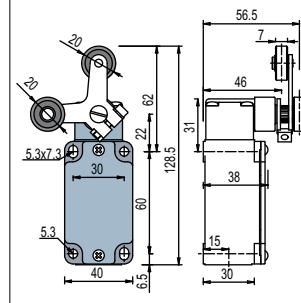
Other rollers available. See page 2/12



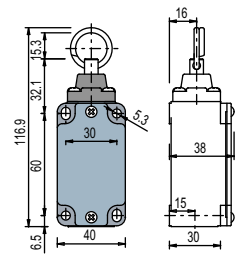
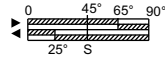
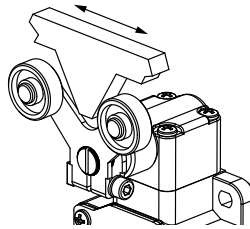
With stainless steel rollers on request



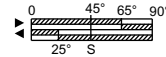
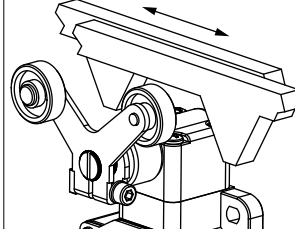
With stainless steel rollers on request



Rope switches for signalling

FD 541 1NO+1NC
Bistable switch with single track lyra lever

S = mechanical snap point

FD 542 1NO+1NC
Bistable switch with double tracks lyra lever

S = mechanical snap point

FD 576	1NO+1NC
FD 676	1NO+1NC
FD 776	1NO+1NC
FD 976	2NO
FD 1076	2NC
FD 1176	2NO
FD 1276	2NC
FD 1376	2NO
FD 1476	2NO
FD 1576	2NC
FD 1876	1NO+1NC
FD 2076	2NO+1NC
FD 2176	3NO
FD 2276	1NO+2NC
FD 276	2x(1NO-1NC)

0,5 m/s	
initial 20 N - final 40 N	
page 6/14 - group 6	

Accessories
See page 5/1Items with code on the **green**
background are available in
stock

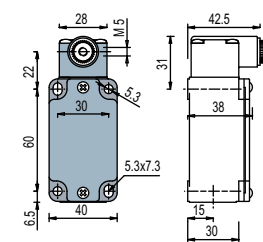
Position switches with revolving lever without actuator

Contacts type:

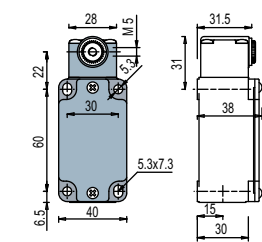
- R** = snap action
- L** = slow action
- LO** = slow action overlapped
- LS** = slow action shifted
- LV** = slow action shifted and spaced
- LI** = slow action independent
- LA** = slow action closer
- A** = electronic PNP

Contact blocks

Regular head



Compact head



IMPORTANT

For safety applications: join only switches and actuators marked with symbol $\ominus$.
For more information about safety applications see page 6/1.

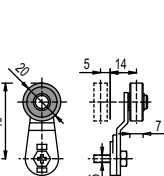
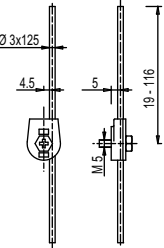
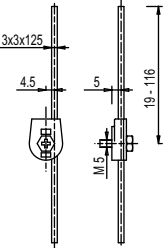
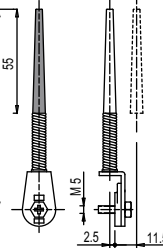
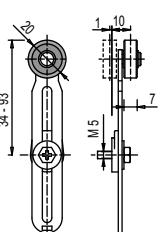
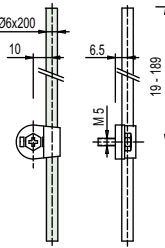
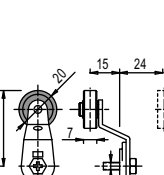
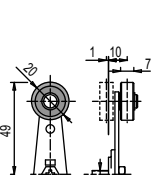
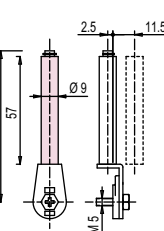
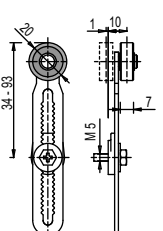
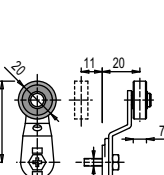
5	R	FD 538	$\ominus$ 1NO+1NC	FD 558	$\ominus$ 1NO+1NC
6	L	FD 638	$\ominus$ 1NO+1NC	FD 658	$\ominus$ 1NO+1NC
7	LO	FD 738	$\ominus$ 1NO+1NC	FD 758	$\ominus$ 1NO+1NC
9	L	FD 938	$\ominus$ 2NC	FD 958	$\ominus$ 2NC
10	L	FD 1038	2NO	FD 1058	2NO
11	R	FD 1138	$\ominus$ 2NC	FD 1158	$\ominus$ 2NC
12	R	FD 1238	2NO	FD 1258	2NO
13	LV	FD 1338	$\ominus$ 2NC	FD 1358	$\ominus$ 2NC
14	LS	FD 1438	$\ominus$ 2NC	FD 1458	$\ominus$ 2NC
15	LS	FD 1538	2NO	FD 1558	2NO
16	LI	FD 1638	$\ominus$ 2NC		
18	LA	FD 1838	$\ominus$ 1NO+1NC	FD 1858	$\ominus$ 1NO+1NC
20	L	FD 2038	$\ominus$ 1NO+2NC	FD 2058	$\ominus$ 1NO+2NC
21	L	FD 2138	$\ominus$ 3NC	FD 2158	$\ominus$ 3NC
22	L	FD 2238	$\ominus$ 2NO+1NC	FD 2258	$\ominus$ 2NO+1NC
2	R	FD 238	2x(1NO-1NC)	FD 258	2x(1NO-1NC)
E1	A	FD E138	1NO-1NC	FD E158	1NO-1NC
Min. force		0,15 Nm (0,25 Nm $\ominus$)		0,09 Nm (0,25 Nm $\ominus$)	
Travel diagrams		page 6/14 - group 4		page 6/14 - group 4	

Items with code on the **green** background are available in stock

Accessories
See page 5/1

Loose actuators

IMPORTANT: These loose actuators can be used with items of series FD, FP, FL, FC only

 10 pcs pack	Polymer roller Ø 20 mm 	Adjustable round rod Ø 3x125 mm 	Adjustable square rod 3x3x125 mm 	Flexible rod actuator 	Adjustable actuator with polymer roller 	Adjustable glass fibre rod 
	Article	VF L31 	VF L32 ⁽³⁾	VF L33 ⁽³⁾	VF L34	VF L35  ^{(1) (3)}
 10 pcs pack	Polymer roller Ø 20 mm 	Polymer roller Ø 20 mm 	Porcelain roller 	Adjustable safety actuator with polymer roller 	Polymer roller Ø 20 mm 	
	Article	VF L51 	VF L52 	VF L53  ⁽²⁾	VF L56  ⁽³⁾	VF L57 

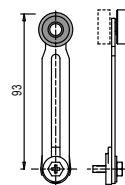
- Only orders for multiple quantities of the packs are accepted.

- ⁽¹⁾ Actuator VF L35 suits to safety applications only if adjusted to its max length, as you can see in figure beside. If you need an adjustable lever for safety applications, use the adjustable safety lever VF L56.

- ⁽²⁾ The position switch obtained by assembling the switch FD •58 (e.g. FD 558, FD 658) with the actuator VF L53 will not present the same travel diagrams and actuating forces as the position switch FD •53-E11V9 (e.g. FD 553-E11V9, FD 653-E11V9...).

- ⁽³⁾ If it is installed with switch FD •58 (e.g. FD 558, FD 658...), the actuator can mechanically interfere with the housing of the switch. The interference could happen or not according to the actuator and the head fixing position.

- ⁽⁴⁾ The actuator cannot be oriented to inside direction because it will mechanically interfere with the switch head.



Special loose actuators**IMPORTANT:** These loose actuators can be used with items of series FD, FP, FL, FC only

Ø 20 mm stainless steel rollers						
10 pcs pack						
Article	VF L31-1 (1)	VF L35-1 (1) (3)	VF L51-1 (1)	VF L52-1 (1)	VF L56-1 (3)	VF L57-1 (1)
Ø 35 mm polymer rollers						
10 pcs pack						
Article	VF L31-2 (4)	VF L35-2 (1) (3)	VF L51-2 (4)	VF L52-2 (1)	VF L56-2 (3)	VF L57-2 (1)
Ø 40 mm rubber rollers						
10 pcs pack						
Article	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)
Ø 50 mm rubber rollers						
10 pcs pack						
Article	VF L31-3 (4)	VF L35-3 (1) (3)	VF L51-3 (4)	VF L52-3 (4)	VF L56-3 (3)	VF L57-3 (4)
Ø 50 mm overhanging rubber rollers						
10 pcs pack						
Article	VF L35-4 (1) (3)	VF L56-4 (3)				