

LD-LP-LL Position Switches

- Metal or Polymer housing, one or three conduit entries
- Protection degree IP67
- 19 contact blocks available
- 28 actuators available
- M12 assembled connector versions
- Silver contacts gold plated versions
- IP67 according to EN 60529
- Bifurcated contacts
- Double-break contacts with electrically separate NO and NC
- Removeable contact block for ease of wiring
- RoHS 2 compliant



LL Series



LD Series



LP Series



Approval UL: E146236

Options & Ordering Codes

Note: The feasibility of a code number does not mean the effective availability of a product

	LD	C5	A02	1	G	20	X50	
Housing								Preinstalled Cable Glands or Connectors
metal, one conduit entry	LD							no cable gland or connector (standard)
polymer, one conduit entry	LP							X21 assembled cable gland*
metal, three conduit entries	LL							X50 5 poles M12 assembled metal connector
								Other glands and connectors available upon request * See conduit entry on Page 5
Contact Blocks								Threaded Conduit Entry
1NO+1NC, snap action		C5						PG 13.5 (standard)
1NO+1NC, slow action		C6						20 M20 x 1.5
1NO+1NC, slow action overlapped		C7						
Other contact blocks available upon request								
Actuators								Contacts Type
short plunger			A01					silver contacts (standard)
roller lever			A02					G silver contacts gold plated 1µm (contact C2 excluded)
offset roller lever			A05					
Other actuators available upon request								
Suffix								
no suffix (standard)								
with Ø 20 mm stainless steel roller for actuators: A02, A05, A31, A35, A51, A52, A56, A57, A41, A42				1				
with Ø 35 mm polymer roller				2				
with Ø 50 mm rubber roller				3				
with Ø 50 mm overhanging rubber roller				4				

Specifications

Rated insulation voltage (Ui):	500 Vac 400 Vac (for contact blocks C2, C11, C12, C20, C21, C22)
Thermal current (Ith):	10 A
Protection against short circuits:	fuse 10 A 500 V type aM
Rated impulse withstand voltage (Uimp):	6 kV 4 kV (for contact blocks C20, C21, C22)
Protection degree:	IP67
MV terminals (screw clamps)	3
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	C5, C6, C7, C9, C11, C13, C14, C16, C18, C20, C21, C22
In conformity with standards:	EN 60947-1, EN 60947-5-1+ A1:2009, fundamental requirements of the Low Voltage Directive 2006/95/CE.

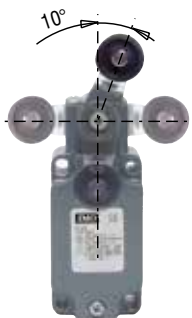
Data type approved by UL

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
For all contact blocks except C2 and C3 use 60 or 75°C copper (Cu) conductor and wire size No. 12-14 AWG. Terminal tightening torque of 7,1 lb in (0.8 Nm).
For contact blocks C2 and C3 use 60 or 75°C copper (Cu) conductor and wire size No. 14 AWG. Terminal tightening torque of 12 lb in (1.4 Nm).

In conformity with standard: UL 508

Adjustable levers



The switches with rotating lever can be adjusted in 10 degree steps over the 360° rotational movement.

The design of the coupling between lever and the shaft guarantees positive transmission as require for the use of these devices in safety applications according to German standard BG-GS-ET-15

Overturning levers

Roller levers can be fitted with roller facing front or back.



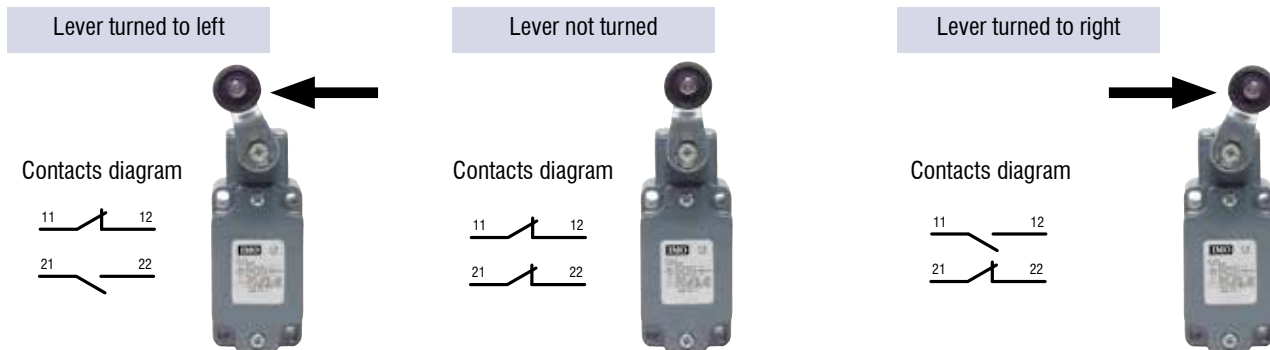
Rotating heads

The head can be rotated in 90° steps.



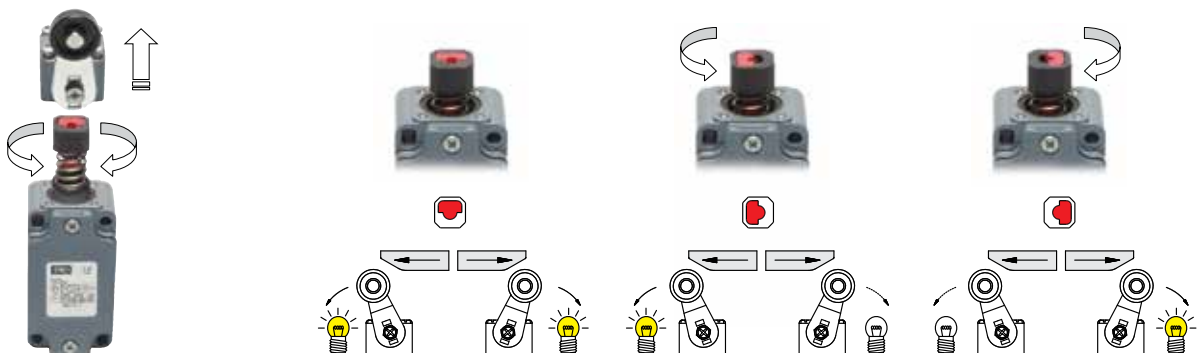
Working operation of contact block C16 with independent contacts

The contact block C16 has two NC contacts, both with positive opening activated independently according to the lever turning direction.



Unidirectional heads

The switches fitted with actuator head suitable for rotating levers, can be set to operate as unidirectional, either clockwise or anticlockwise. This can be achieved by removing the head and repositioning the internal piston (excluding C16 contact block).



LD Series



LP Series



LL Series



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 actuation frequency: 3600 operations cycles1/hour
 Mechanical endurance: 20 million operations cycles
 Assembling position: any

(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.

Cross section of the conductors (flexible copper wire)

Contact blocks C20, C21, C22, C33, C34:	min. 1 x 0,34 mm ² (1 x AWG 22)	max. 2 x 1,5 mm ² (2 x AWG 16)
Contact blocks C5, C6, C7, C9, C10, C11, C12, C13, C14, C15, C16, C18:	min. 1 x 0,5 mm ² (1 x AWG 20)	max. 2 x 2,5 mm ² (2 x AWG 14)
Contact block C2:	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 60947-5-1, EN 60947-5-1, EN 60947-1, EN 50041, IEC 60204-1, EN 60204-1, EN 1088, EN ISO 12100-1, EN ISO 12100-2, IEC 60529, EN 60529, NFC 63-140, VDE 0660-200, VDE 0113.

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and Electromagnetic Compatibility 2004/108/EC.

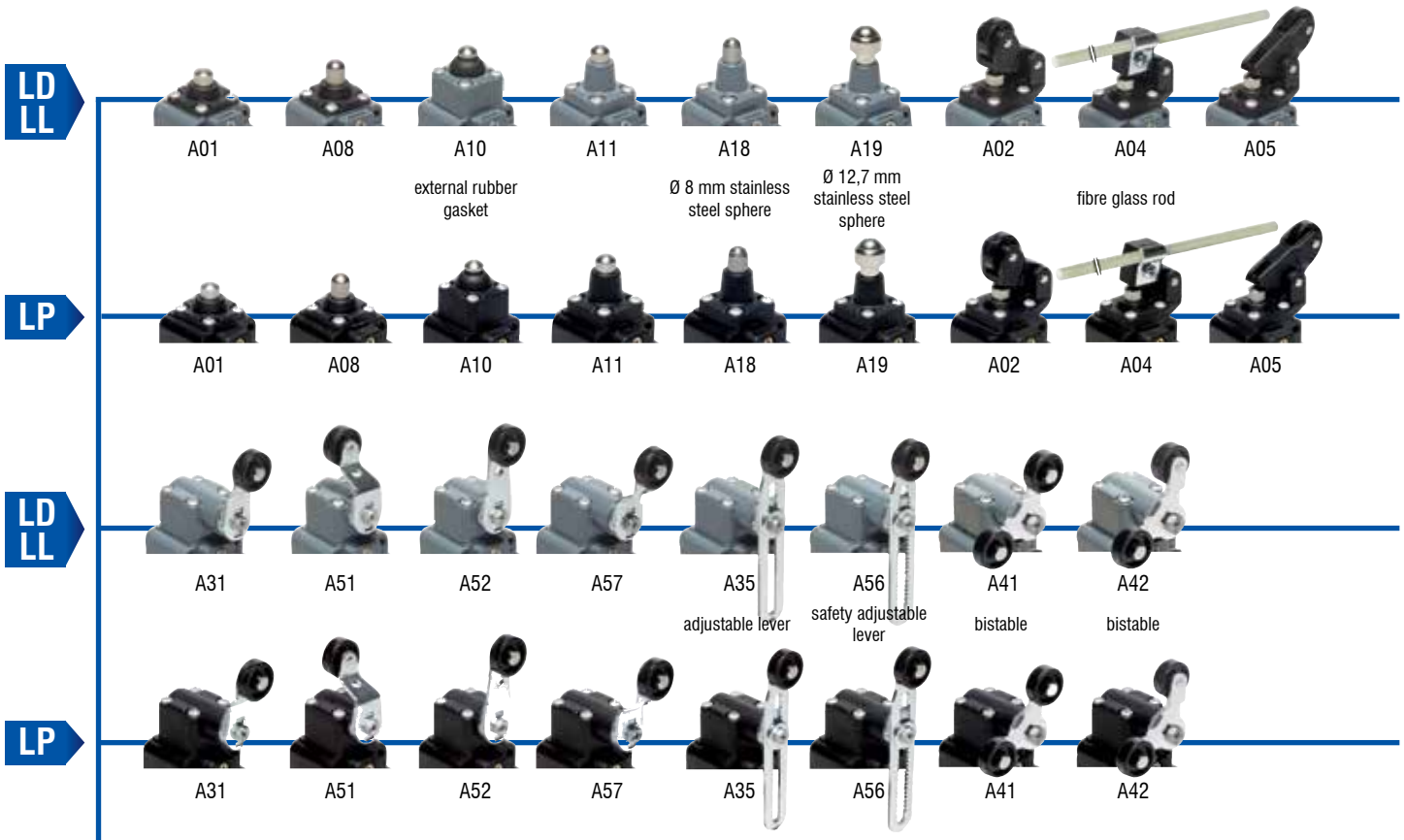
Positive contact opening in conformity with standards:

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

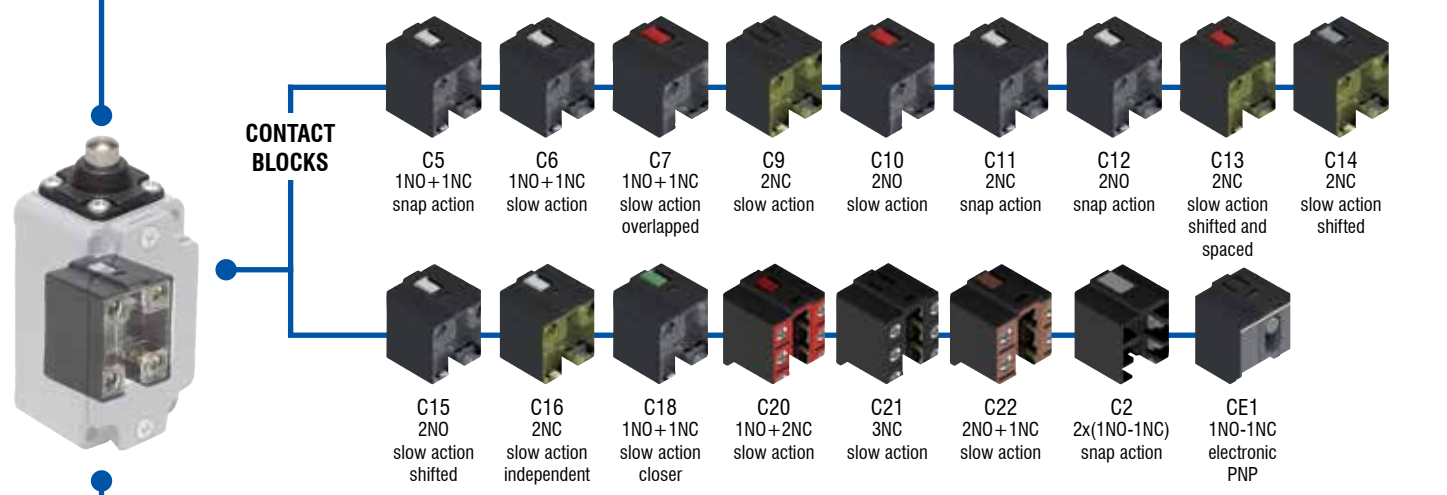
⚠ Installation for persons protection applications:

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 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. 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.

Selection diagram for LD-LP-LL series

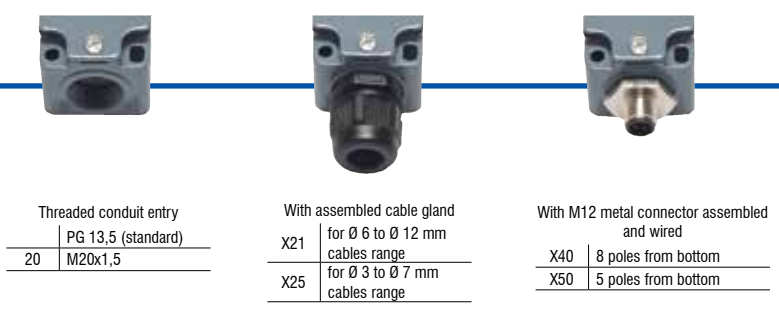


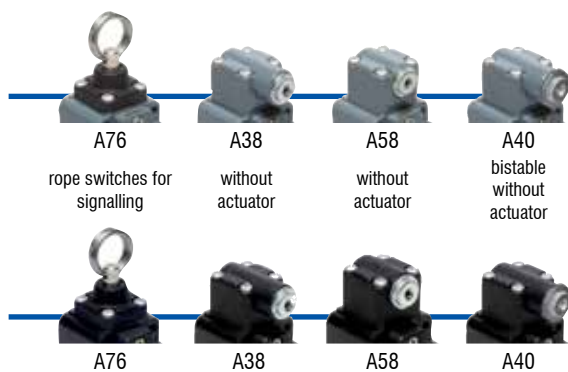
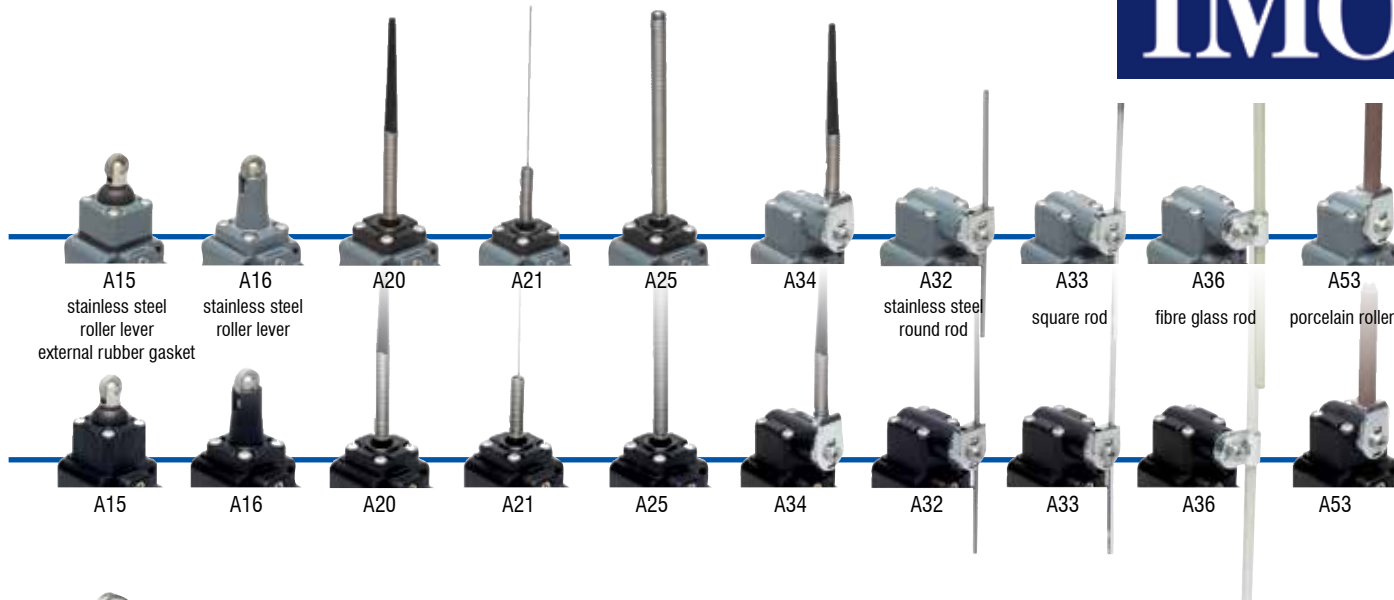
ACTUATORS



CONTACT BLOCKS

CONDUIT ENTRY LD SERIES





LOOSE ACTUATORS



CONDUIT ENTRY LL SERIES



Threaded conduit entries

	PG 13,5 (standard)
20	M20x1,5

With assembled cable gland

X21	for Ø 6 to Ø 12 mm cables range, from bottom
X121	for Ø 6 to Ø 12 mm cables range, from right
X221	for Ø 6 to Ø 12 mm cables range, from left
X25	for Ø 3 to Ø 7 mm cables range, from bottom
X125	for Ø 3 to Ø 7 mm cables range, from right
X225	for Ø 3 to Ø 7 mm cables range, from left

With M12 metal connector assembled and wired

X40	8 poles from bottom
X41	8 poles from right
X42	8 poles from left
X50	5 poles from bottom
X51	5 poles from right
X52	5 poles from left

CONDUIT ENTRY LP SERIES



Threaded conduit entry

	PG 13,5 (standard)
20	M20x1,5

With assembled cable gland

X21	for Ø 6 to Ø 12 mm cables range
X25	for Ø 3 to Ø 7 mm cables range

With M12 plastic connector assembled and wired

X70	4 poles from bottom
X45	8 poles from bottom

With M12 metal connector assembled and wired

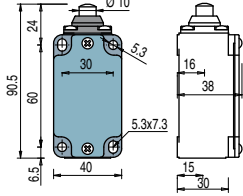
X40	8 poles from bottom
X60	4 poles from bottom

Diagrams for LD Series

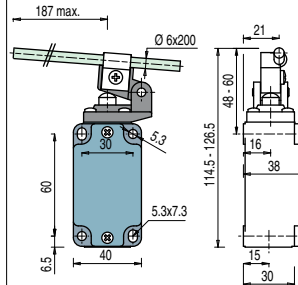
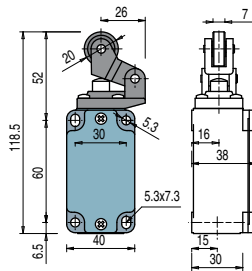
Contacts type:

- 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
- = electronic PNP

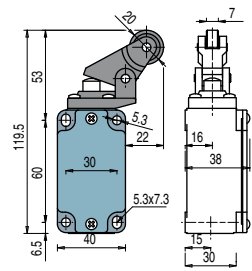
Contact blocks



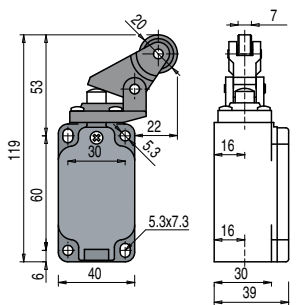
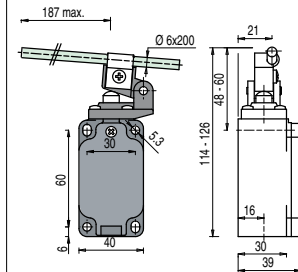
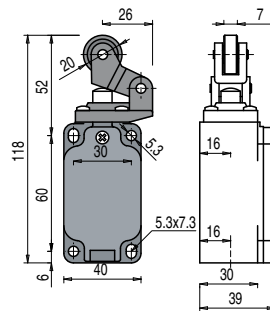
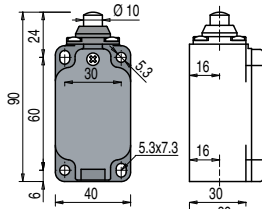
With stainless steel roller on request



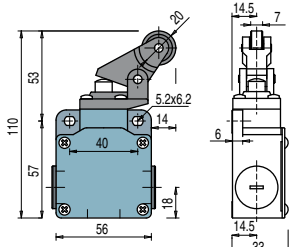
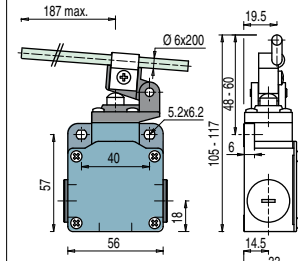
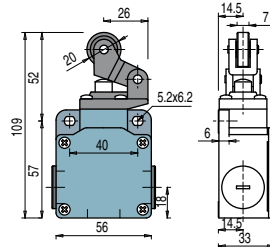
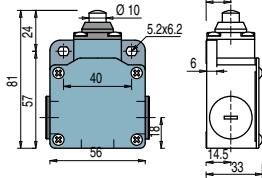
With stainless steel roller on request



Diagrams for LP Series



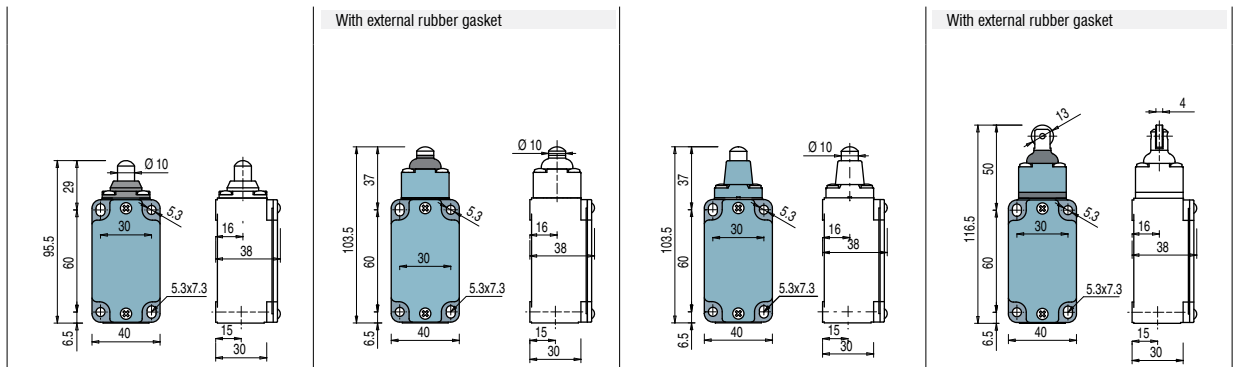
Diagrams for LL Series



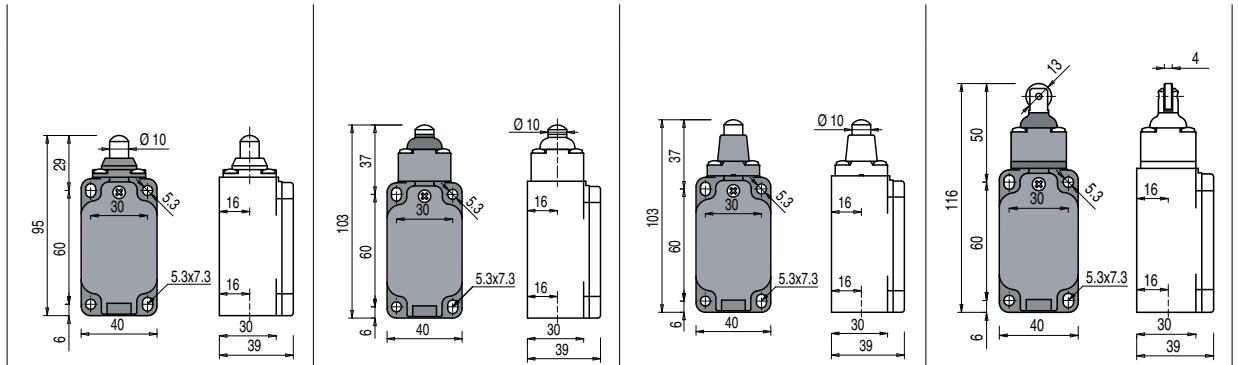
C5	R	LDC5A01	1NO+1NC	LDC5A02	1NO+1NC	LDC5A04	1NO+1NC	LDC5A05	1NO+1NC
C6	L	LDC6A01	1NO+1NC	LDC6A02	1NO+1NC	LDC6A04	1NO+1NC	LDC6A05	1NO+1NC
C7	LO	LDC7A01	1NO+1NC	LDC7A02	1NO+1NC	LDC7A04	1NO+1NC	LDC7A05	1NO+1NC
C9	L	LDC9A01	2NC	LDC9A02	2NC	LDC9A04	2NC	LDC9A05	2NC
C10	L	LDC10A01	2NO	LDC10A02	2NO	LDC10A04	2NO	LDC10A05	2NO
C11	R	LDC11A01	2NC	LDC11A02	2NC	LDC11A04	2NC	LDC11A05	2NC
C12	R	LDC12A01	2NO	LDC12A02	2NO	LDC12A04	2NO	LDC12A05	2NO
C13	LV	LDC13A01	2NC	LDC13A02	2NC	LDC13A04	2NC	LDC13A05	2NC
C14	LS	LDC14A01	2NC	LDC14A02	2NC	LDC14A04	2NC	LDC14A05	2NC
C15	LS	LDC15A01	2NO	LDC15A02	2NO	LDC15A04	2NO	LDC15A05	2NO
C18	LA	LDC18A01	1NO+1NC	LDC18A02	1NO+1NC	LDC18A04	1NO+1NC	LDC18A05	1NO+1NC
C20	L	LDC20A01	1NO+2NC	LDC20A02	1NO+2NC	LDC20A04	1NO+2NC	LDC20A05	1NO+2NC
C21	L	LDC21A01	3NC	LDC21A02	3NC	LDC21A04	3NC	LDC21A05	3NC
C22	L	LDC22A01	2NO+1NC	LDC22A02	2NO+1NC	LDC22A04	2NO+1NC	LDC22A05	2NO+1NC
C2	R	LDC2A01	2x(1NO-1NC)	LDC2A02	2x(1NO-1NC)	LDC2A04	2x(1NO-1NC)	LDC2A05	2x(1NO-1NC)
CE1		LDCE1A01	1NO-1NC	LDCE1A02	1NO-1NC	LDCE1A04	1NO-1NC	LDCE1A05	1NO-1NC
Max. Speed		type 4		type 3		0,5 m/s		type 3	
Min. Force		8 N (25 N)		6 N (25 N)		0,17 Nm		6 N (25 N)	
Travel Diagrams		group 1		group 2		group 1		group 2	

Note: LD options shown. For LP and LL replace LD with respective series.

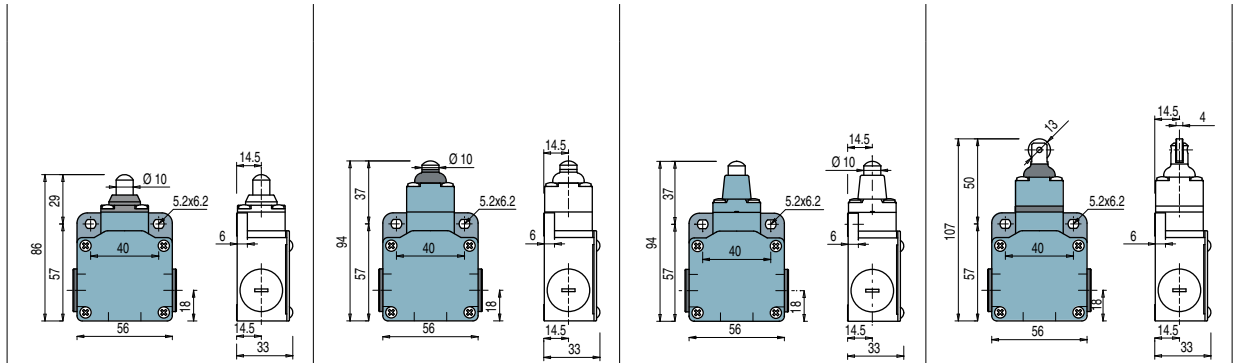
Diagrams for LD Series



Diagrams for LP Series



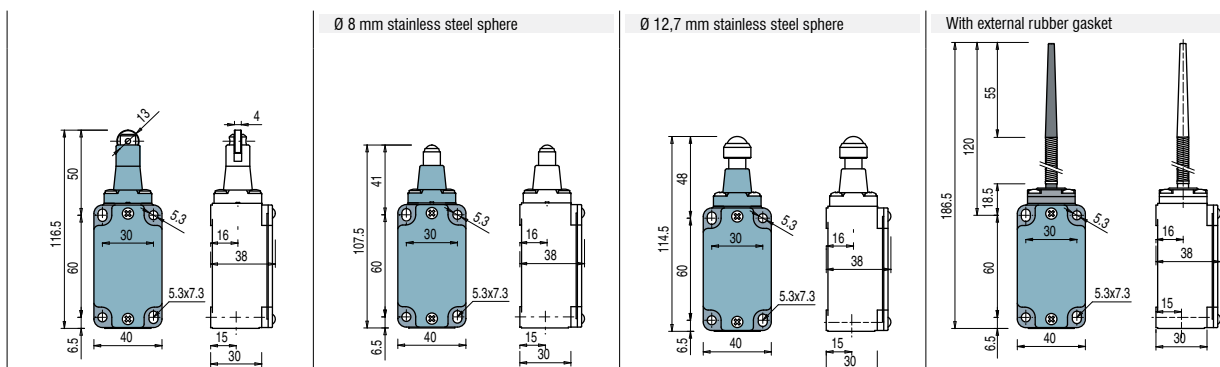
Diagrams for LL Series



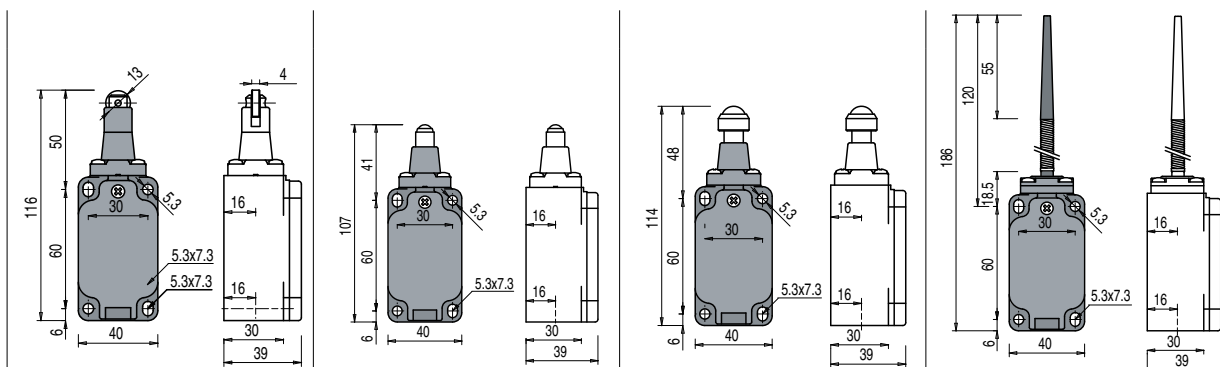
C5	R	LDC5A08	➔ 1NO+1NC	LDC5A10	➔ 1NO+1NC	LDC5A11	➔ 1NO+1NC	LDC5A15	➔ 1NO+1NC
C6	L	LDC6A08	➔ 1NO+1NC	LDC6A10	➔ 1NO+1NC	LDC6A11	➔ 1NO+1NC	LDC6A15	➔ 1NO+1NC
C7	LO	LDC7A08	➔ 1NO+1NC	LDC7A10	➔ 1NO+1NC	LDC7A11	➔ 1NO+1NC	LDC7A15	➔ 1NO+1NC
C9	L	LDC9A08	➔ 2NC	LDC9A10	➔ 2NC	LDC9A11	➔ 2NC	LDC9A15	➔ 2NC
C10	L	LDC10A08	2NO	LDC10A10	2NO	LDC10A11	2NO	LDC10A15	2NO
C11	R	LDC11A08	➔ 2NC	LDC11A10	➔ 2NC	LDC11A11	➔ 2NC	LDC11A15	➔ 2NC
C12	R	LDC12A08	2NO	LDC12A10	2NO	LDC12A11	2NO	LDC12A15	2NO
C13	LV	LDC13A08	➔ 2NC	LDC13A10	➔ 2NC	LDC13A11	➔ 2NC	LDC13A15	➔ 2NC
C14	LS	LDC14A08	➔ 2NC	LDC14A10	➔ 2NC	LDC14A11	➔ 2NC	LDC14A15	➔ 2NC
C15	LS	LDC15A08	2NO	LDC15A10	2NO	LDC15A11	2NO	LDC15A15	2NO
C18	LA	LDC18A08	➔ 1NO+1NC	LDC18A10	➔ 1NO+1NC	LDC18A11	➔ 1NO+1NC	LDC18A15	➔ 1NO+1NC
C20	L	LDC20A08	➔ 1NO+2NC	LDC20A10	➔ 1NO+2NC	LDC20A11	➔ 1NO+2NC	LDC20A15	➔ 1NO+2NC
C21	L	LDC21A08	➔ 3NC	LDC21A10	➔ 3NC	LDC21A11	➔ 3NC	LDC21A15	➔ 3NC
C22	L	LDC22A08	➔ 2NO+1NC	LDC22A10	➔ 2NO+1NC	LDC22A11	➔ 2NO+1NC	LDC22A15	➔ 2NO+1NC
C2	R	LDC2A08	2x(1NO-1NC)	LDC2A10	2x(1NO-1NC)	LDC2A11	2x(1NO-1NC)	LDC2A15	2x(1NO-1NC)
CE1	LA	LDCE1A08	1NO-1NC	LDCE1A10	1NO-1NC	LDCE1A11	1NO-1NC	LDCE1A15	1NO-1NC
Max. Speed		type 4		type 4		type 4		type 2	
Min. Force		8 N (25 N ➔)		11 N (25 N ➔)		8 N (25 N ➔)		11 N (25 N ➔)	
Travel Diagrams		group 1		group 1		group 1		group 1	

Note: LD options shown. For LP and LL replace LD with respective series.

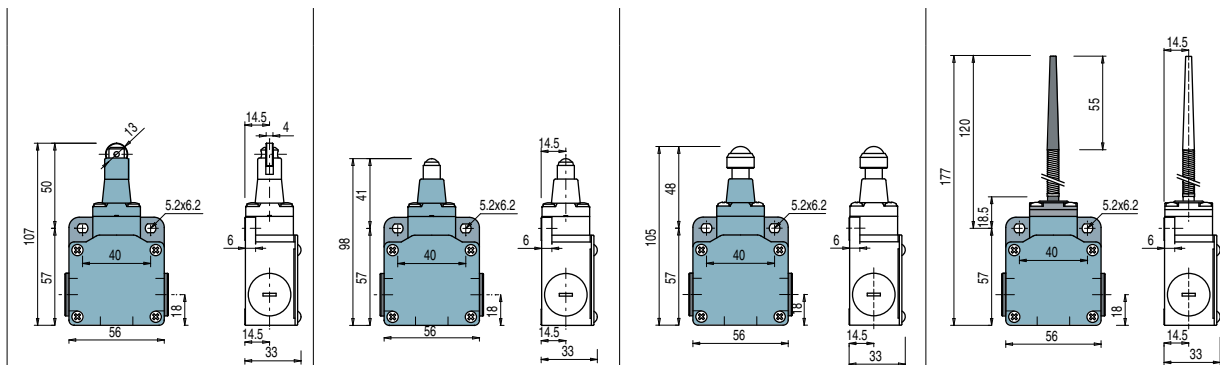
Diagrams for LD Series



Diagrams for LP Series



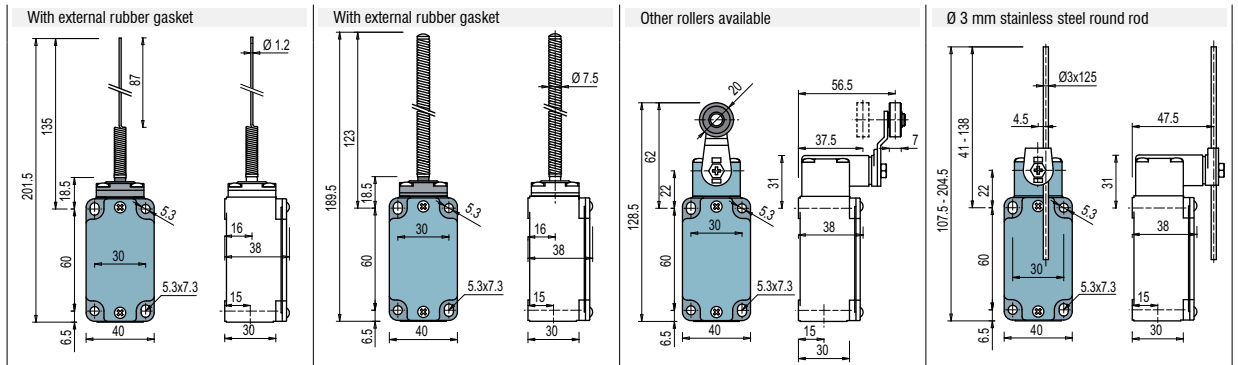
Diagrams for LL Series



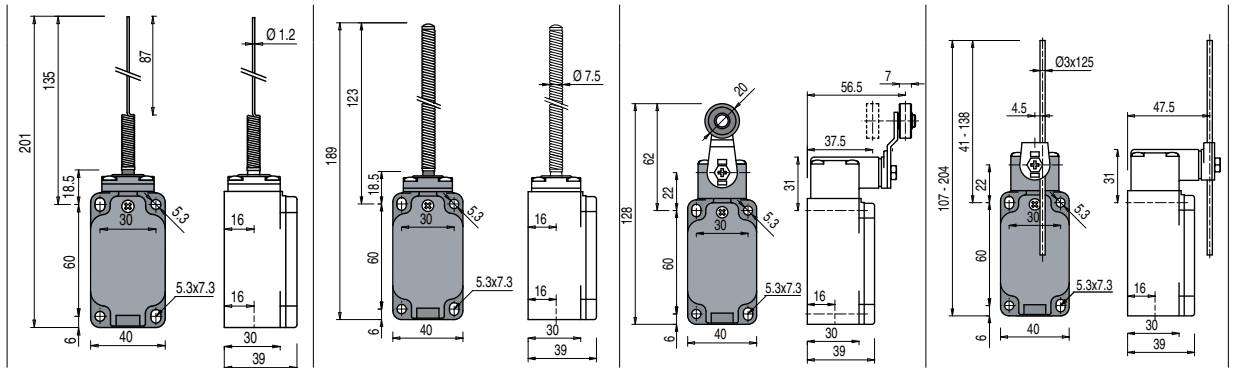
C5	R	LDC5A16	↻ 1NO+1NC	LDC5A18	↻ 1NO+1NC	LDC5A19	↻ 1NO+1NC	LDC5A20	1NO+1NC
C6	L	LDC6A16	↻ 1NO+1NC	LDC6A18	↻ 1NO+1NC	LDC6A19	↻ 1NO+1NC		
C7	LO	LDC7A16	↻ 1NO+1NC	LDC7A18	↻ 1NO+1NC	LDC7A19	↻ 1NO+1NC		
C9	L	LDC9A16	↻ 2NC	LDC9A18	↻ 2NC	LDC9A19	↻ 2NC		
C10	L	LDC10A16	2NO	LDC10A18	2NO	LDC10A19	2NO	LDC10A20	2NO
C11	R	LDC11A16	↻ 2NC	LDC11A18	↻ 2NC	LDC11A19	↻ 2NC		
C12	R	LDC12A16	2NO	LDC12A18	2NO	LDC12A19	2NO		
C13	LV	LDC13A16	↻ 2NC	LDC13A18	↻ 2NC	LDC13A19	↻ 2NC		
C14	LS	LDC14A16	↻ 2NC	LDC14A18	↻ 2NC	LDC14A19	↻ 2NC		
C15	LS	LDC15A16	2NO	LDC15A18	2NO	LDC15A19	2NO		
C18	LA	LDC18A16	↻ 1NO+1NC	LDC18A18	↻ 1NO+1NC	LDC18A19	↻ 1NO+1NC	LDC18A20	1NO+1NC
C20	L	LDC20A16	↻ 1NO+2NC	LDC20A18	↻ 1NO+2NC	LDC20A19	↻ 1NO+2NC	LDC20A20	1NO+2NC
C21	L	LDC21A16	↻ 3NC	LDC21A18	↻ 3NC	LDC21A19	↻ 3NC	LDC21A20	3NC
C22	L	LDC22A16	↻ 2NO+1NC	LDC22A18	↻ 2NO+1NC	LDC22A19	↻ 2NO+1NC	LDC22A20	2NO+1NC
C2	R	LDC2A16	2x(1NO-1NC)	LDC2A18	2x(1NO-1NC)	LDC2A19	2x(1NO-1NC)	LDC2A20	2x(1NO-1NC)
CE1	△	LDCE1A16	1NO-1NC	LDCE1A18	1NO-1NC	LDCE1A19	1NO-1NC	LDCE1A20	1NO-1NC
Max. Speed		type 2		type 4		type 4		1 m/s	
Min. Force		8 N (25 N ↻)		8 N (25 N ↻)		8 N (25 N ↻)		0,09 Nm	
Travel Diagrams		group 1		group 1		group 1		group 3	

Note: LD options shown. For LP and LL replace LD with respective series.

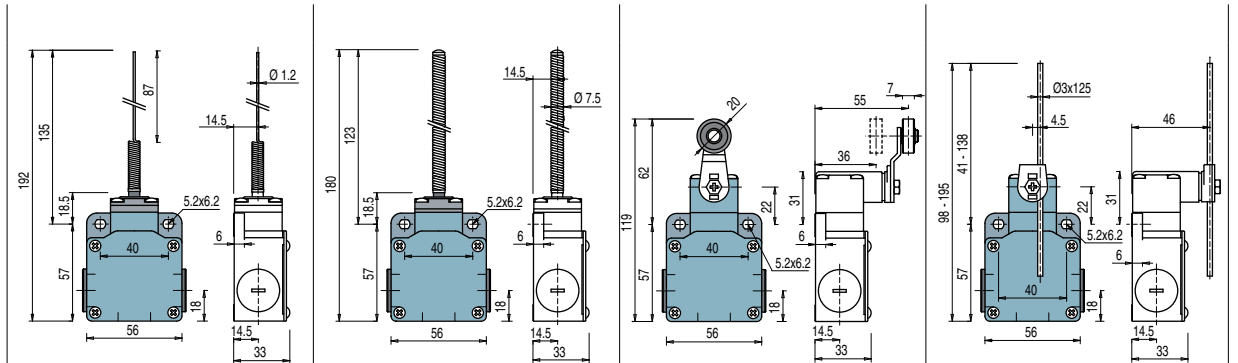
Diagrams for LD Series



Diagrams for LP Series



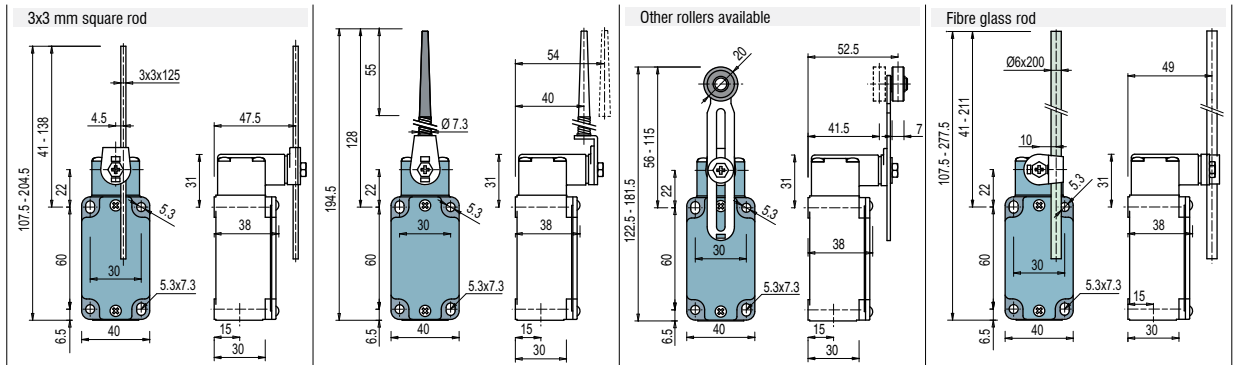
Diagrams for LL Series



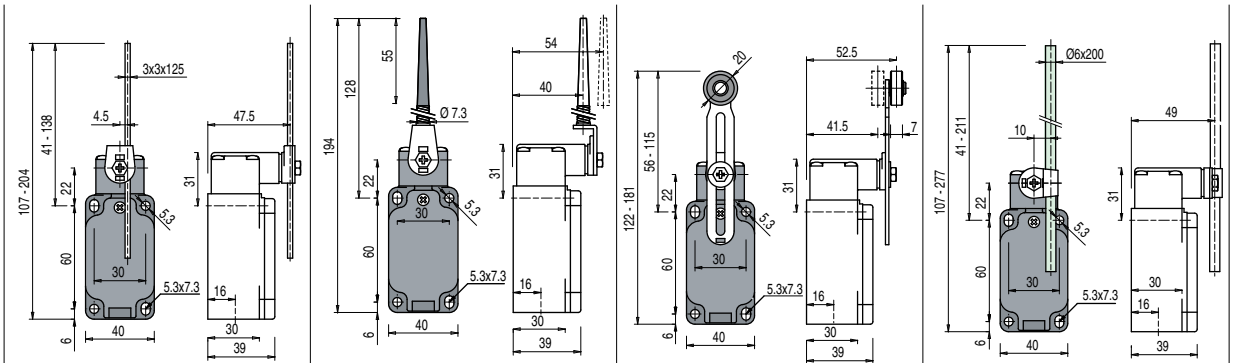
C5	R	LDC5A21	1NO+1NC	LDC5A25	1NO+1NC	LDC5A31	⊕ 1NO+1NC	LDC5A32	1NO+1NC
C6	L					LDC6A31	⊕ 1NO+1NC	LDC6A32	1NO+1NC
C7	LO					LDC7A31	⊕ 1NO+1NC	LDC7A32	1NO+1NC
C9	L					LDC9A31	⊕ 2NC	LDC9A32	2NC
C10	L	LDC10A21	2NO	LDC10A25	2NO	LDC10A31	2NO	LDC10A32	2NO
C11	R					LDC11A31	⊕ 2NC	LDC11A32	2NC
C12	R					LDC12A31	2NO	LDC12A32	2NO
C13	LV					LDC13A31	⊕ 2NC	LDC13A32	2NC
C14	LS					LDC14A31	⊕ 2NC	LDC14A32	2NC
C15	LS					LDC15A31	2NO	LDC15A32	2NO
C16	LI					LDC16A31	⊕ 2NC	LDC16A32	2NC
C18	LA	LDC18A21	1NO+1NC	LDC18A25	1NO+1NC	LDC18A31	⊕ 1NO+1NC	LDC18A32	1NO+1NC
C20	L	LDC20A21	1NO+2NC	LDC20A25	1NO+2NC	LDC20A31	⊕ 1NO+2NC	LDC20A32	1NO+2NC
C21	L	LDC21A21	3NC	LDC21A25	3NC	LDC21A31	⊕ 3NC	LDC21A32	3NC
C22	L	LDC22A21	2NO+1NC	LDC22A25	2NO+1NC	LDC22A31	⊕ 2NO+1NC	LDC22A32	2NO+1NC
C2	R	LDC2A21	2x(1NO-1NC)	LDC2A25	2x(1NO-1NC)	LDC2A31	2x(1NO-1NC)	LDC2A32	2x(1NO-1NC)
CE1	Λ	LDCe1A21	1NO-1NC	LDCe1A25	1NO-1NC	LDCe1A31	1NO-1NC	LDCe1A32	1NO-1NC
Max. Speed		1 m/s		1 m/s		type 1		1,5 m/s	
Min. Force		0,08 Nm		0,14 Nm		0,1 Nm (0,25 Nm ⊕)		0,1 Nm	
Travel Diagrams		group 3		group 3		group 4		group 4	

Note: LD options shown. For LP and LL replace LD with respective series.

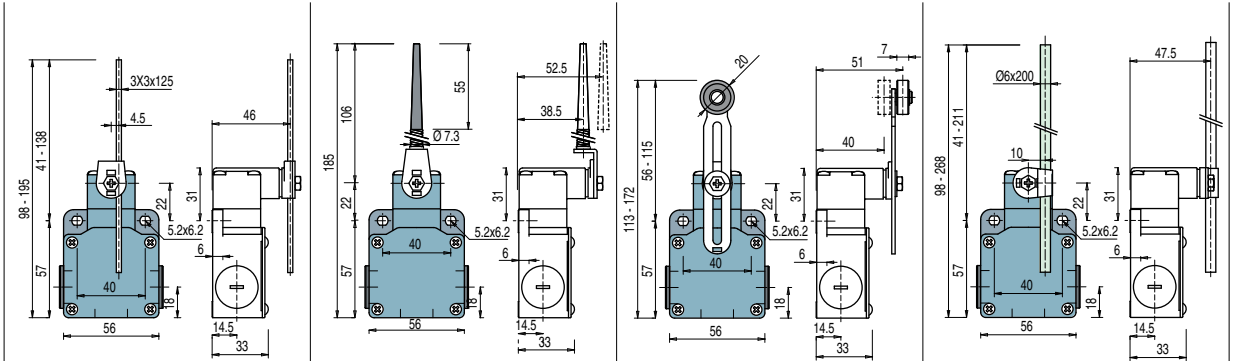
Diagrams for LD Series



Diagrams for LP Series



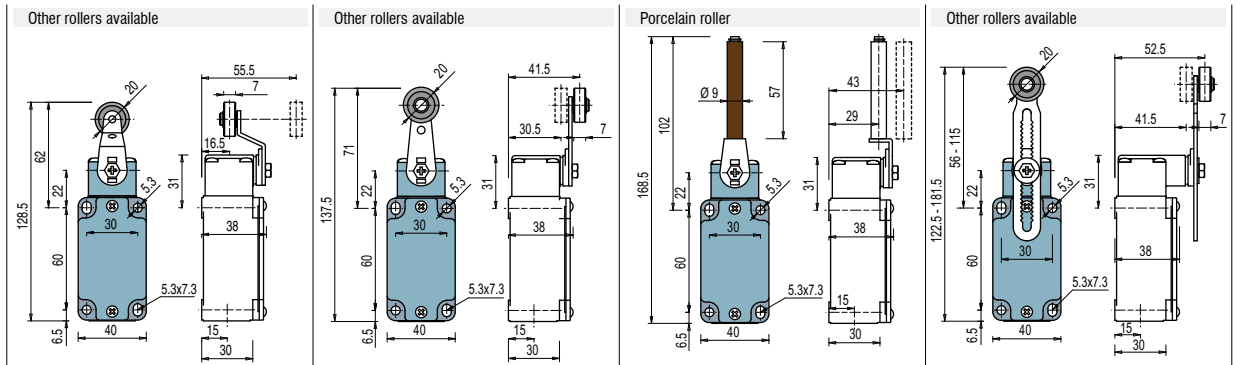
Diagrams for LL Series



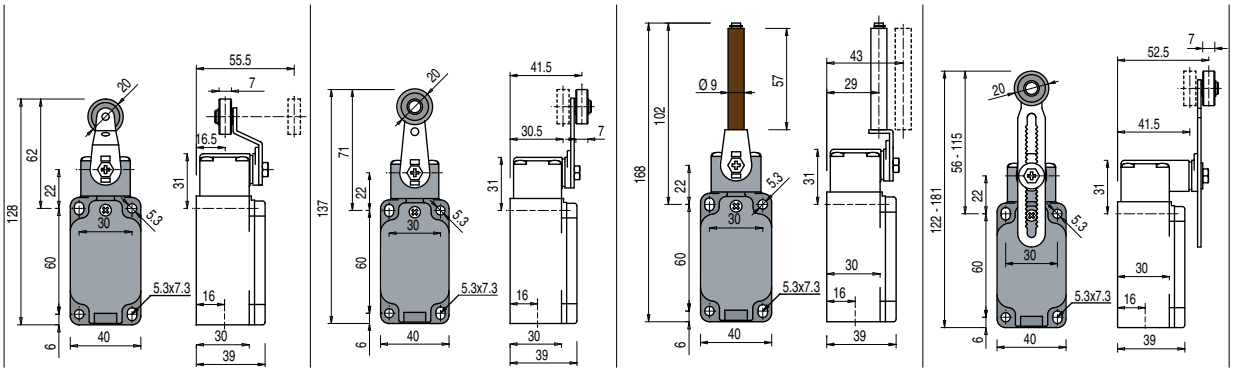
C5	R	LDC5A33	1NO+1NC	LDC5A34	1NO+1NC	LDC5A35	⊕ ⁽¹⁾ 1NO+1NC	LDC5A36	1NO+1NC
C6	L	LDC6A33	1NO+1NC	LDC6A34	1NO+1NC	LDC6A35	⊕ ⁽¹⁾ 1NO+1NC	LDC6A36	1NO+1NC
C7	LO	LDC7A33	1NO+1NC	LDC7A34	1NO+1NC	LDC7A35	⊕ ⁽¹⁾ 1NO+1NC	LDC7A36	1NO+1NC
C9	L	LDC9A33	2NC	LDC9A34	2NC	LDC9A35	⊕ ⁽¹⁾ 2NC	LDC9A36	2NC
C10	L	LDC10A33	2NO	LDC10A34	2NO	LDC10A35	2NO	LDC10A36	2NO
C11	R	LDC11A33	2NC	LDC11A34	2NC	LDC11A35	⊕ ⁽¹⁾ 2NC	LDC11A36	2NC
C12	R	LDC12A33	2NO	LDC12A34	2NO	LDC12A35	2NO	LDC12A36	2NO
C13	W	LDC13A33	2NC	LDC13A34	2NC	LDC13A35	⊕ ⁽¹⁾ 2NC	LDC13A36	2NC
C14	LS	LDC14A33	2NC	LDC14A34	2NC	LDC14A35	⊕ ⁽¹⁾ 2NC	LDC14A36	2NC
C15	LS	LDC15A33	2NO	LDC15A34	2NO	LDC15A35	2NO	LDC15A36	2NO
C16	LI	LDC16A33	2NC	LDC16A34	2NC	LDC16A35	⊕ ⁽¹⁾ 2NC	LDC16A36	2NC
C18	LA	LDC18A33	1NO+1NC	LDC18A34	1NO+1NC	LDC18A35	⊕ ⁽¹⁾ 1NO+1NC	LDC18A36	1NO+1NC
C20	L	LDC20A33	1NO+2NC	LDC20A34	1NO+2NC	LDC20A35	⊕ ⁽¹⁾ 1NO+2NC	LDC20A36	1NO+2NC
C21	L	LDC21A33	3NC	LDC21A34	3NC	LDC21A35	⊕ ⁽¹⁾ 3NC	LDC21A36	3NC
C22	L	LDC22A33	2NO+1NC	LDC22A34	2NO+1NC	LDC22A35	⊕ ⁽¹⁾ 2NO+1NC	LDC22A36	2NO+1NC
C2	R	LDC2A33	2x(1NO-1NC)	LDC2A34	2x(1NO-1NC)	LDC2A35	2x(1NO-1NC)	LDC2A36	2x(1NO-1NC)
CE1	A	LDCE1A33	1NO-1NC	LDCE1A34	1NO-1NC	LDCE1A35	1NO-1NC	LDCE1A36	1NO-1NC
Max. Speed		1,5 m/s		1 m/s		type 1		1,5 m/s	
Min. Force		0,1 Nm		0,1 Nm		0,1 Nm (0,25 Nm ⊕)		0,1 Nm	
Travel Diagrams		group 4		group 4		group 4		group 4	

Note: LD options shown. For LP and LL replace LD with respective series.

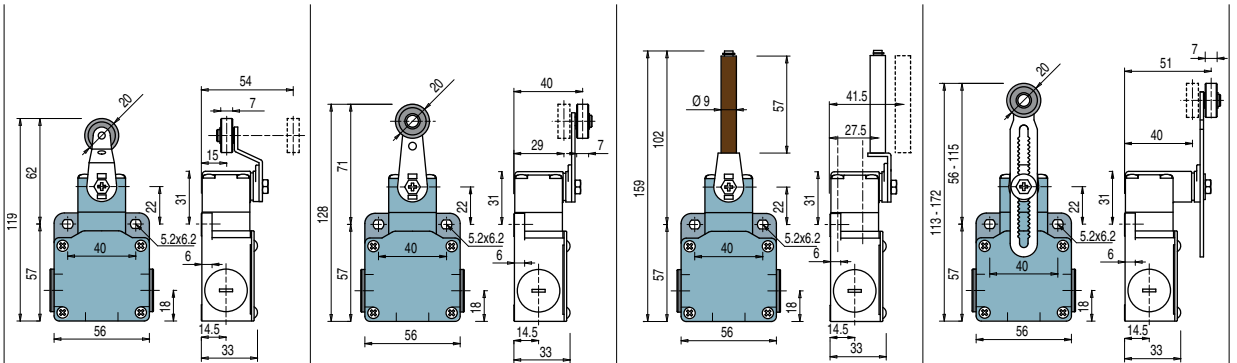
Diagrams for LD Series



Diagrams for LP Series



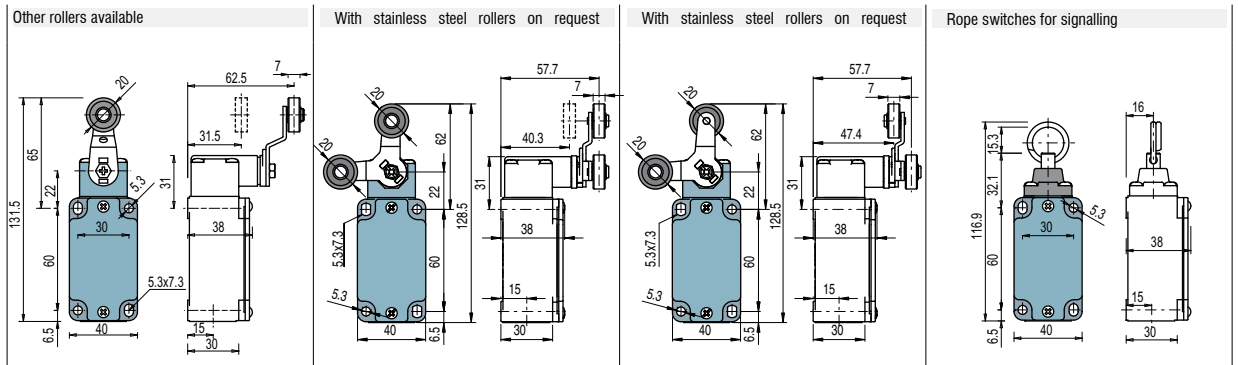
Diagrams for LL Series



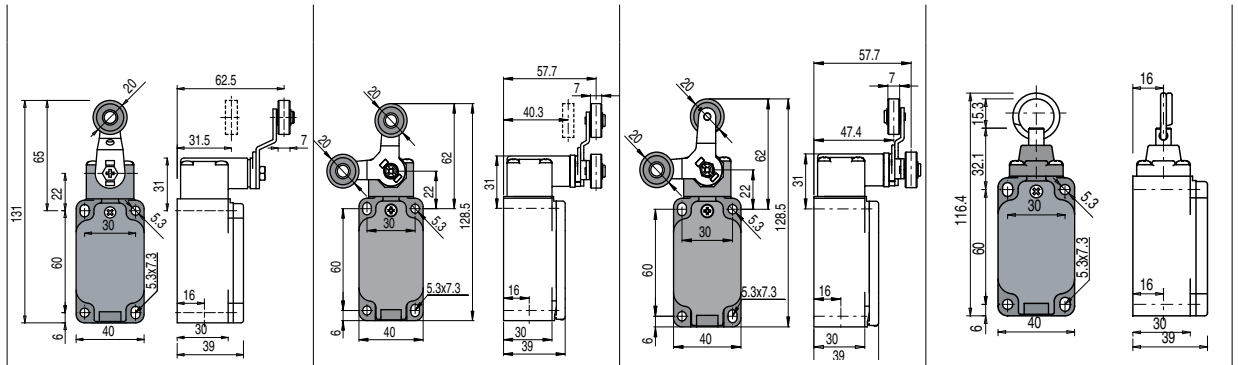
C5	R	LDC5A51	➔ 1NO+1NC	LDC5A52	➔ 1NO+1NC	LDC5A53-J11ST	➔ 1NO+1NC	LDC5A56	➔ 1NO+1NC
C6	L	LDC6A51	➔ 1NO+1NC	LDC6A52	➔ 1NO+1NC	LDC6A53-J11ST	➔ 1NO+1NC	LDC6A56	➔ 1NO+1NC
C7	LO	LDC7A51	➔ 1NO+1NC	LDC7A52	➔ 1NO+1NC	LDC7A53-J11ST	➔ 1NO+1NC	LDC7A56	➔ 1NO+1NC
C9	L	LDC9A51	➔ 2NC	LDC9A52	➔ 2NC	LDC9A53-J11ST	➔ 2NC	LDC9A56	➔ 2NC
C10	L	LDC10A51	2NO	LDC10A52	2NO	LDC10A53-J11ST	2NO	LDC10A56	2NO
C11	R	LDC11A51	➔ 2NC	LDC11A52	➔ 2NC	LDC12A53-J11ST	2NO	LDC11A56	➔ 2NC
C12	R	LDC12A51	2NO	LDC12A52	2NO	LDC13A53-J11ST	➔ 2NC	LDC12A56	2NO
C13	W	LDC13A51	➔ 2NC	LDC13A52	➔ 2NC	LDC14A53-J11ST	➔ 2NC	LDC13A56	➔ 2NC
C14	LS	LDC14A51	➔ 2NC	LDC14A52	➔ 2NC	LDC15A53-J11ST	2NO	LDC14A56	➔ 2NC
C15	LS	LDC15A51	2NO	LDC15A52	2NO	LDC16A56	2NO	LDC15A56	2NO
C16	LI							LDC16A56	➔ 2NC
C18	LA	LDC18A51	➔ 1NO+1NC	LDC18A52	➔ 1NO+1NC	LDC18A53-J11ST	➔ 1NO+1NC	LDC18A56	➔ 1NO+1NC
C20	L	LDC20A51	➔ 1NO+2NC	LDC20A52	➔ 1NO+2NC	LDC20A53-J11ST	➔ 1NO+2NC	LDC20A56	➔ 1NO+2NC
C21	L	LDC21A51	➔ 3NC	LDC21A52	➔ 3NC	LDC21A53-J11ST	➔ 3NC	LDC21A56	➔ 3NC
C22	L	LDC22A51	➔ 2NO+1NC	LDC22A52	➔ 2NO+1NC	LDC22A53-J11ST	➔ 2NO+1NC	LDC22A56	➔ 2NO+1NC
C2	R	LDC2A51	2x(1NO-1NC)	LDC2A52	2x(1NO-1NC)	LDC2A53-J11	2x(1NO-1NC)	LDC2A56	2x(1NO-1NC)
CE1	A	LDCE1A51	1NO-1NC	LDCE1A52	1NO-1NC	LDCE1A53-J11ST	1NO-1NC	LDCE1A56	1NO-1NC
Max. Speed		type 1		type 1		0,5 m/s		type 1	
Min. Force		0,06 Nm (0,25 Nm ➔)		0,06 Nm (0,25 Nm ➔)		0,03 Nm (0,25 Nm ➔)		0,1 Nm (0,25 Nm ➔)	
Travel Diagrams		group 4		group 4		group 5		group 4	

Note: LD options shown. For LP and LL replace LD with respective series.

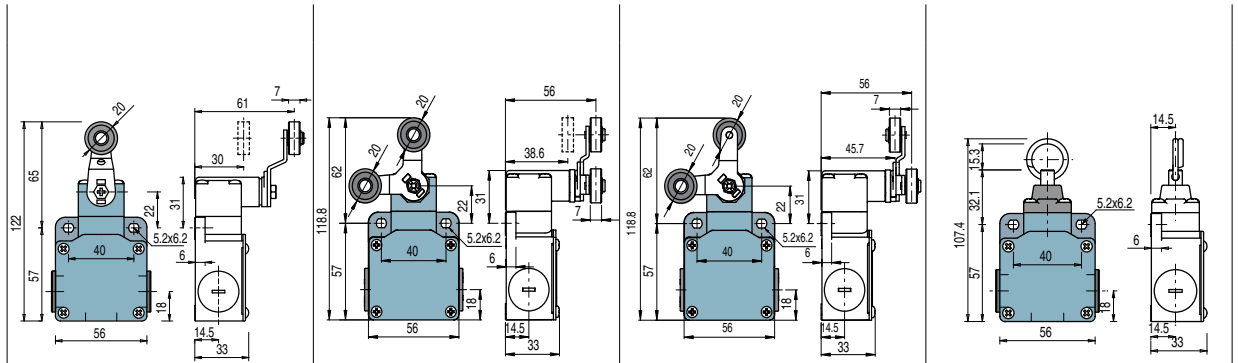
Diagrams for LD Series



Diagrams for LP Series



Diagrams for LL Series

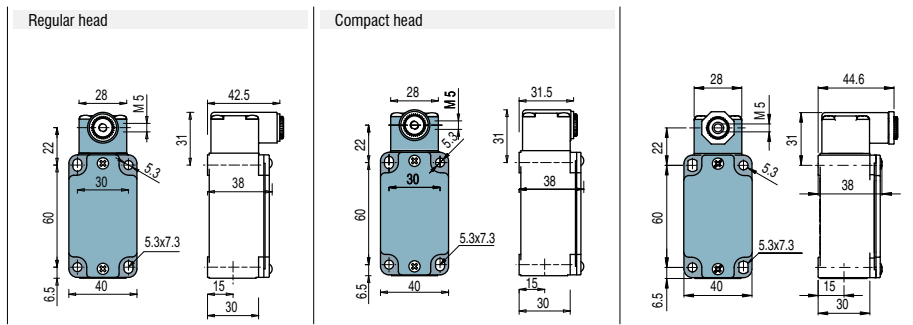


C5		LDC5A57		1NO+1NC	LDC5A41		1NO+1NC	LDC5A42		1NO+1NC	LDC5A76	1NO+1NC	
C6		LDC6A57		1NO+1NC	Bistable switch with single track lyra lever		0 45° 65° 80° 90° 25° S	S = mechanical snap point positive opening with 21-22 contact only		0 45° 65° 80° 90° 25° S	S = mechanical snap point positive opening with 21-22 contact only	LDC6A76	1NO+1NC
C7		LDC7A57		1NO+1NC								LDC7A76	1NO+1NC
C9		LDC9A57		2NC	Bistable switch with double track lyra lever		0 45° 65° 80° 90° 25° S	S = mechanical snap point positive opening with 21-22 contact only		0 45° 65° 80° 90° 25° S	S = mechanical snap point positive opening with 21-22 contact only	LDC9A76	2NO
C10		LDC10A57		2NO								LDC10A76	2NC
C11		LDC11A57		2NC	LDC11A76	2NO							
C12		LDC12A57		2NO	LDC12A76	2NC							
C13		LDC13A57		2NC	LDC13A76	2NO							
C14		LDC14A57		2NC	LDC14A76	2NO							
C15		LDC15A57		2NO	LDC15A76	2NC							
C16		LDC16A57		2NC	LDC18A76	1NO+1NC							
C18		LDC18A57		1NO+1NC	LDC20A76	2NO+1NC							
C20		LDC20A57		1NO+2NC	LDC21A76	3NC							
C21		LDC21A57		3NC	LDC22A76	1NO+2NC							
C22		LDC22A57		2NO+1NC	LDC2A76	2x(1NO-1NC)							
C2		LDC2A57		2x(1NO-1NC)									
CE1		LDCE1A57		1NO-1NC									
Max. Speed		type 1		0,5 m/s with 30° cam				0,5 m/s					
Min. 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		group 4										group 6	

Note: LD options shown. For LP and LL replace LD with respective series.

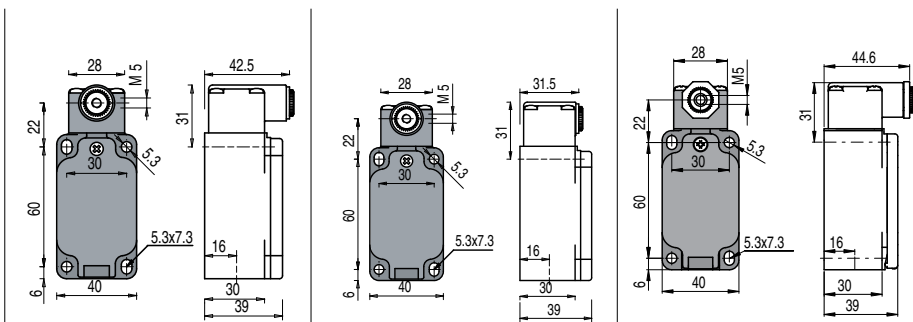
Position switches with revolving lever without actuator

Diagrams for LD Series

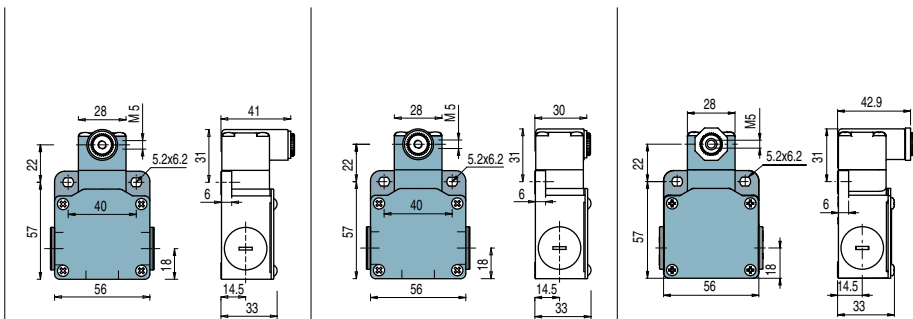


IMPORTANT
For safety applications: join only switches and actuators marked with symbol

Diagrams for LP Series



Diagrams for LL Series



C5		LDC5A38	1NO+1NC	LDC5A58	1NO+1NC	LDC5A40	1NO+1NC		
C6		LDC6A38	1NO+1NC	LDC6A58	1NO+1NC		Bistable switch S = mechanical snap point positive opening with 21-22 contact only		
C7		LDC7A38	1NO+1NC	LDC7A58	1NO+1NC				
C9		LDC9A38	2NC	LDC9A58	2NC				
C10		LDC10A38	2NO	LDC10A58	2NO				
C11		LDC11A38	2NC	LDC11A58	2NC				
C12		LDC12A38	2NO	LDC12A58	2NO				
C13		LDC13A38	2NC	LDC13A58	2NC				
C14		LDC14A38	2NC	LDC14A58	2NC				
C15		LDC15A38	2NO	LDC15A58	2NO				
C16		LDC16A38	2NC						
C18		LDC18A38	1NO+1NC	LDC18A58	1NO+1NC				
C20		LDC20A38	1NO+2NC	LDC20A58	1NO+2NC				
C21		LDC21A38	3NC	LDC21A58	3NC				
C22		LDC22A38	2NO+1NC	LDC22A58	2NO+1NC				
C2		LDC2A38	2x(1NO-1NC)	LDC2A58	2x(1NO-1NC)				
CE1		LDCE1A38	1NO-1NC	LDCE1A58	1NO-1NC				
Min. Force		0,1 Nm (0,25 Nm)		0,06 Nm (0,25 Nm)		0,5 m/s with 30° cam			
Travel Diagrams		group 4		group 4		0,21 Nm (0,36 Nm)			

Note: LD options shown. For LP and LL replace LD with respective series.

Loose actuators

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 fiber glass rod	
AC-SA31 (1)	AC-SA32 (3)	AC-SA33 (3)	AC-SA34	AC-SA35 (1) (3)	AC-SA36 (3)	
Single track lyra actuator	Double tracks lyra actuator	Polymer roller Ø 20 mm	Polymer roller Ø 20 mm	Porcelain roller	Adjustable safety actuator with polymer roller	Polymer roller Ø 20 mm
AC-SA41 (1)	AC-SA42 (1)	AC-SA51 (1)	AC-SA52 (1)	AC-SA53 (2)	AC-SA56 (3)	AC-SA57 (1)

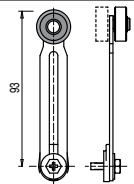
- Only orders for multiple quantities of the packs are accepted.

- (1) Actuator AC-SA35 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 AC-SA56.

- (2) The position switch obtained by assembling the switch LD X A58 (e.g. LDC5A58, LDC6A58) with the actuator AC-SA53 will not present the same travel diagrams and actuating forces as the position switch LD X A53-J11ST (e.g. LDC5A53-J11ST, LDC6A53-J11ST...).

- (3) If it is installed with switch LD X A58 (e.g. LDC5A58, LDC6A58...), 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

Ø 20 mm stainless steel rollers

AC-SA31-1 (1)	AC-SA35-1 (1) (3)	AC-SA51-1 (1)	AC-SA52-1 (1)	AC-SA56-1 (3)	AC-SA57-1 (1)

Ø 35 mm polymer rollers

AC-SA31-2 (4)	AC-SA35-2 (1) (3)	AC-SA51-2 (4)	AC-SA52-2 (1)	AC-SA56-2 (3)	AC-SA57-2 (1)

Ø 40 mm rubber rollers

AC-SA31-R5 (4)	AC-SA35-R5 (1) (3)	AC-SA51-R5 (4)	AC-SA52-R5 (1)	AC-SA56-R5 (3)	AC-SA57-R5 (4)

Ø 50 mm rubber rollers

AC-SA31-3 (4)	AC-SA35-3 (1) (3)	AC-SA51-3 (4)	AC-SA52-3 (4)	AC-SA56-3 (3)	AC-SA57-3 (4)

Ø 50 mm overhanging rubber rollers

AC-SA35-4 (1) (3)	AC-SA56-4 (3)

LL Series



LD Series



LP Series



Electrical data

Utilization categories

without connector

Thermal current (I_{th}): 10 A
 Rated insulation voltage (U_i): 500 Vac 600 Vdc
 400 Vac 500 Vdc (contact blocks C2, C11, C12, C20, C21, C22, C33, C34)
 Rated impulse withstand voltage (U_{imp}): 6 kV
 4 kV (contact blocks C20, C21, C22, C33, C34)
 Conditional short circuit current: 1000 A according to EN 60947-5-1
 Protection against short circuits: fuse 10 A 500 V type aM
 Pollution degree: 3

Alternate current: AC15 (50...60 Hz)

U _e (V)	250	400	500
I _e (A)	6	4	1

 Direct current: DC13

U _e (V)	24	125	250
I _e (A)	6	1,1	0,4

with 5 poles M12 connector

Thermal current (I_{th}): 4 A
 Rated insulation voltage (U_i): 250 Vac 300 Vdc
 Protection against short circuits: fuse 4 A 500 V type gG
 Pollution degree: 3

Alternate current: AC15 (50...60 Hz)

U _e (V)	24	120	250
I _e (A)	4	4	4

 Direct current: DC13

U _e (V)	24	125	250
I _e (A)	4	1,1	0,4

with 8 poles M12 connector

Thermal current (I_{th}): 2 A
 Rated insulation voltage (U_i): 30 Vac 36 Vdc
 Protection against short circuits: fuse 2 A 500 V type gG
 Pollution degree: 3

Alternate current: AC15 (50...60 Hz)

U _e (V)	24
I _e (A)	2

 Direct current: DC13

U _e (V)	24
I _e (A)	2

Travel Diagrams



Contact Block	Contact Arrangement	Type of Action	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
C2	2x(NO+NC)	Snap						
C3	NO+NC	Snap						
C5	NO+NC	Snap						
C6	NO+NC	Slow BBM						
C7	NO+NC	Slow MBB						
C9	2NC	Slow						
C10	2NO	Slow						
C11	2NC	Snap						
C12	2NO	Snap						
C13	2NC	Slow 2 BPs						
C14	2NC	Slow 2 BPs						
C15	2NO	Slow 2 BPs						
C16	2NC	Slow bi-direction						
C18	NO+NC	Slow BBM						

Travel Diagrams



Contact Block	Contact Arrangement	Type of Action	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
C20	NO+2NC	Slow BBM						
C21	3NC	Slow						
C22	2NO+NC	Slow BBM						

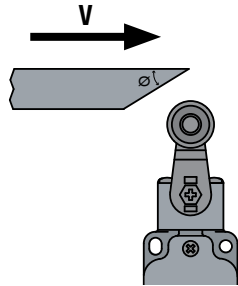
ABBREVIATIONS:

BP Break Point BBM Break Before Make MBB Make Before Break OL Overlap EB Early Break

Maximum and minimum actuation speed

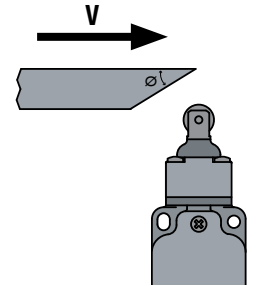
Lever with roller - Type 1

Ø	Vmax (m/s)	Vmin (mm/s)		0.07
		L	R	
15°	2.5	9		
30°	1.5	8		
45°	1	7		
60°	0.75	7		



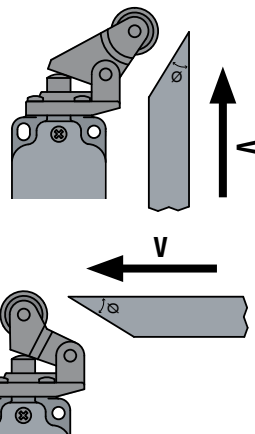
Plunger with roller - Type 2

Ø	Vmax (m/s)	Vmin (mm/s)		0.01
		L	R	
15°	1	4	0.04	
30°	0.5	2	0.02	
45°	0.3	1	0.01	



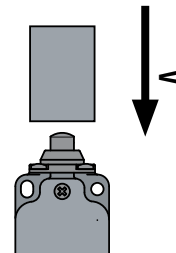
Lever with roller - Type 3

Ø	Vmax (m/s)	Vmin (mm/s)		0.015
		L	R	
15°	1	5	0.05	
30°	0.5	2.5	0.025	
45°	0.3	1.5	0.015	



Plunger with roller - Type 4

Vmax (m/s)	Vmin (mm/s)		0.01
	L	R	
0.5	1		



Contacts Type:

- R = snap action
- L = slow action

Driving Torques

1	Cover screws	0.8...1.2Nm
2	Head screws	0.8...1.2Nm
3	Lever screws	0.8...1.2Nm
4	Protection plugs	(conduit entry M20/PG13.5) 1.2...1.6Nm
		(conduit entry M16/PG11) 1.0...1.4Nm
5	Contact block screws	0.6...0.8Nm
6	M5 screws of the housing fastening with washer (LP, LS Series)	2.0...3.0Nm

