

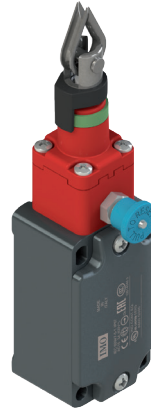
LD-LP-LL-LC Rope Safety Switches with reset for emergency stop

- Metal or polymer housing, from one or three conduit entries
- Protection degree IP67
- In conformity with EN ISO 13850
- 7 contact blocks available
- Transverse head or longitudinal head versions
- M12 assembled connector versions

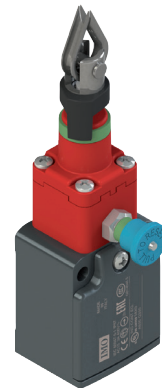


Options & Ordering Codes

LD Series



LC Series



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

LD C18 RRS - J7 G 20 X50 H6

Housing

| | |
|--------------------------------------|-----------|
| metal housing, one conduit entry | LD |
| metal housing, three conduit entries | LL |
| polymer housing, one conduit entry | LP |

Contact Blocks

| | |
|----------------------|------------|
| 1NO+1NC, slow action | C18 |
| 2NC, slow action | C9 |
| 1NO+2NC, slow action | C20 |
| 3NC, slow action | C21 |
| 2NO+1NC, slow action | C22 |
| 1NO+1NC, slow action | C33 |
| 2NC, slow action | C34 |

Actuating Head

| | |
|--|------------|
| longitudinal head | RRS |
| left transverse head (LD & LL housing only) | RRL |
| right transverse head (LD & LL housing only) | RRR |

Temperature

| |
|--------------------------|
| standard |
| H6 -40°C to +80°C |

Preinstalled Cable Glands or Connectors

| | |
|------------|--|
| | no cable gland or connector (standard) |
| X21 | with assembled cable gland suitable for Ø 6 to Ø 12mm cable ranges |
| X50 | 5 pole M12 assembled metal connector |
| X70 | 4 pole M12 assembled plastic connector |

Threaded Conduit Entry

| | |
|-----------|--------------------|
| | PG 13.5 (standard) |
| 20 | M20 x 1.5 |

Contact Type

| | |
|----------|----------------------------------|
| | silver contacts (standard) |
| G | silver contacts gold plated 1 µm |

Actuating Force

| | |
|-----------|--|
| | standard |
| J7 | initial 20N...final 40N (only for head RRS) |
| J9 | initial 13N...final 75N (only for heads RRL & RRR) |

LC C33 RRS - J7 G 16 X22

Housing

| | |
|----------------------------------|-----------|
| metal housing, one conduit entry | LC |
|----------------------------------|-----------|

Contact Blocks

| | |
|----------------------|------------|
| 1NO+1NC, slow action | C33 |
| 2NC, slow action | C34 |

Actuating Head (as above)

Actuating Force (as above)

Preinstalled Cable Glands or Connectors

| | |
|------------|--|
| | no cable gland or connector (standard) |
| X22 | with assembled cable gland suitable for Ø 5 to Ø 10mm cable ranges |
| X26 | with assembled cable gland suitable for Ø 3 to Ø 7mm cable ranges |

Threaded Conduit Entry

| | |
|-----------|------------------|
| | PG 11 (standard) |
| 16 | M16 x 1.5 |

Contact Type (as above)

Specifications


| | |
|--------------------------------|---|
| For safety applications up to: | SIL 3 acc. to EN 62061 PL e acc. to EN ISO 13849-1 |
| Safety parameters: | |
| B _{10d} : | 2,000,000 for NC contacts |
| Service life: | 20 years |
| Ambient temperature: | -25°C ... +80°C |
| Max. actuation frequency: | 1 cycle / 6 s |
| Mechanical endurance: | 1 million operating cycles ¹ |
| Max. actuation speed: | 0.5 m/s |
| Min. actuation speed: | 1 mm/s |

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

In conformity 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, EN ISO 13850, EN 418, UL 508, CSA 22.2 No.14 .

Housing

LP series housing made of glass fiber reinforced technopolymer, self-extinguishing, shock-proof and with double insulation: 
 LD, LL and LC series: metal housing, baked powder coating.
 LD, LP, LC series: one threaded conduit entry: PG13.5 (standard)
 LL series: three threaded conduit entries: PG13.5 (standard)
 Protection degree: IP67 acc. to EN 60529 with cable gland of equal or higher protection degree

In conformity with requirements requested by

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/122/EC.

Positive contact opening in conformity with standards

IEC 60947-5-1, EN 60947-5-1.

Max cable cross section (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 C18, C9: | min. 1 x 0.5 mm ² (1 x AWG 20) max. 2 x 2.5 mm ² (2 x AWG 14) |

Electrical data

Utilization category

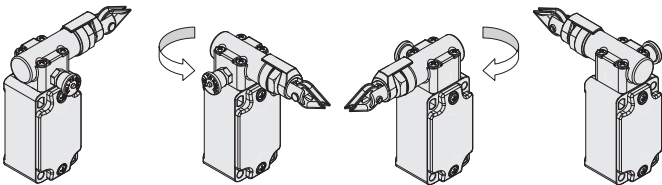
| without connector | with M12 connector 4 and 5 poles | with M12 connector 8 poles |
|--|--|--|
| Thermal current (I _{th}): 10 A Rated insulation voltage (U _i): 500 Vac 600 Vdc Rated impulse withstand voltage (U _{imp}): 400 Vac 500 Vdc (contact blocks C20, C21, C22, C33, C34) Conditional short circuit current: 6 kV Protection against short circuits: 4 kV (contact blocks C20, C21, C22, C33, C34) Pollution degree: 1000 A acc. to EN 60947-5-1 type aM fuse 10 A 500 V 3 | Thermal current (I _{th}): 4 A Rated insulation voltage (U _i): 250 Vac 300 Vdc Protection against short circuits: type gG fuse 4 A 500 V Pollution degree: 3 | Thermal current (I _{th}): 2 A Rated insulation voltage (U _i): 30 Vac 36 Vdc Protection against short circuits: type gG fuse 2 A 500 V Pollution degree: 3 |
| Alternating 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 | Alternating 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 | Alternating current: AC15 (50/60 Hz) U _e (V) 24 I _e (A) 2 Direct current: DC13 U _e (V) 24 I _e (A) 2 |

Description



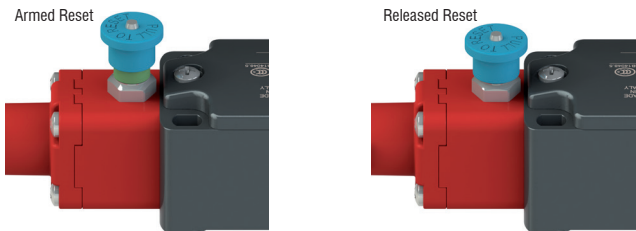
These rope operated safety switches can be installed on machines or conveyor belts and are used to activate the emergency stop of the machine on intervention with the rope, at any point. They allow for cost savings on machines of medium-large size, where normally numerous emergency stop push buttons can be replaced by one single rope switch. Provided with a self-control function, when fitted properly they constantly check for correct operation, signalling with the opening of the contacts with a manual intervention (emergency stop activation) of an eventual pull, loosening or breaking of the rope. After activation the contacts remain open, until they are reset.

Orientable heads



Removing the four fastening screws makes it possible to rotate the head in 90° steps.

Indicator for the state of the reset



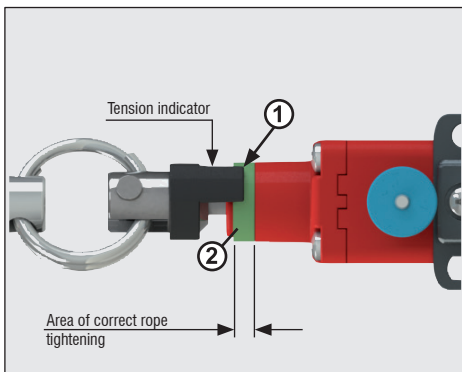
If the rope tensioning indicator is in the correct area, within the green band, the unit can be reset by pulling the blue button to close the safety contacts. The state of the switch can be quickly checked by observing the tension indicator's position with respect to the green band, and the blue button in the Released Reset/Armed Reset state.

Adjustment point indicator of the rope

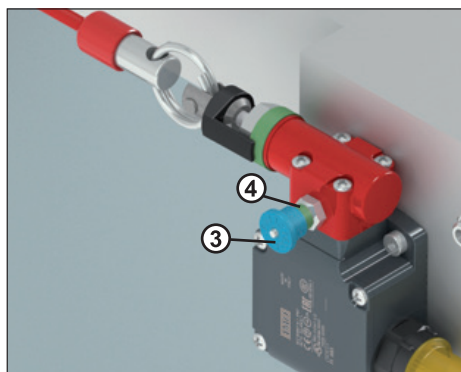
All switches are provided with a green band, this green band area is for setting the correct tensioning of the rope. The installer has to tension the rope until the black indicator is set to the middle of this green band.

When set, a pull or loosening of the rope allows the black indicator to travel to the outside of the correct tension area (green band), at this point the safety contacts are opened and the reset device is triggered.

Adjustment of the operating point



Tighten the rope connected to the switch, until the end of the indicator (1) reaches about the middle of the green ring (2).



Pull the knob (3) in order to close the safety contacts inside the switch. A green band (4) will be exposed to indicate the Armed reset condition.

Laser engraving



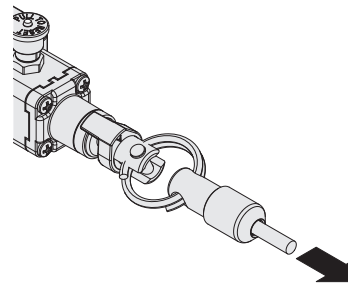
The markings of all devices are LASER printed on to the unit. As the markings are directly printed they are less likely to be rubbed off and do not fall off as found with some attached labels, making them suitable for extreme environments.

Protection degree IP67

IP67

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to IEC 60529.

Reduced actuating force



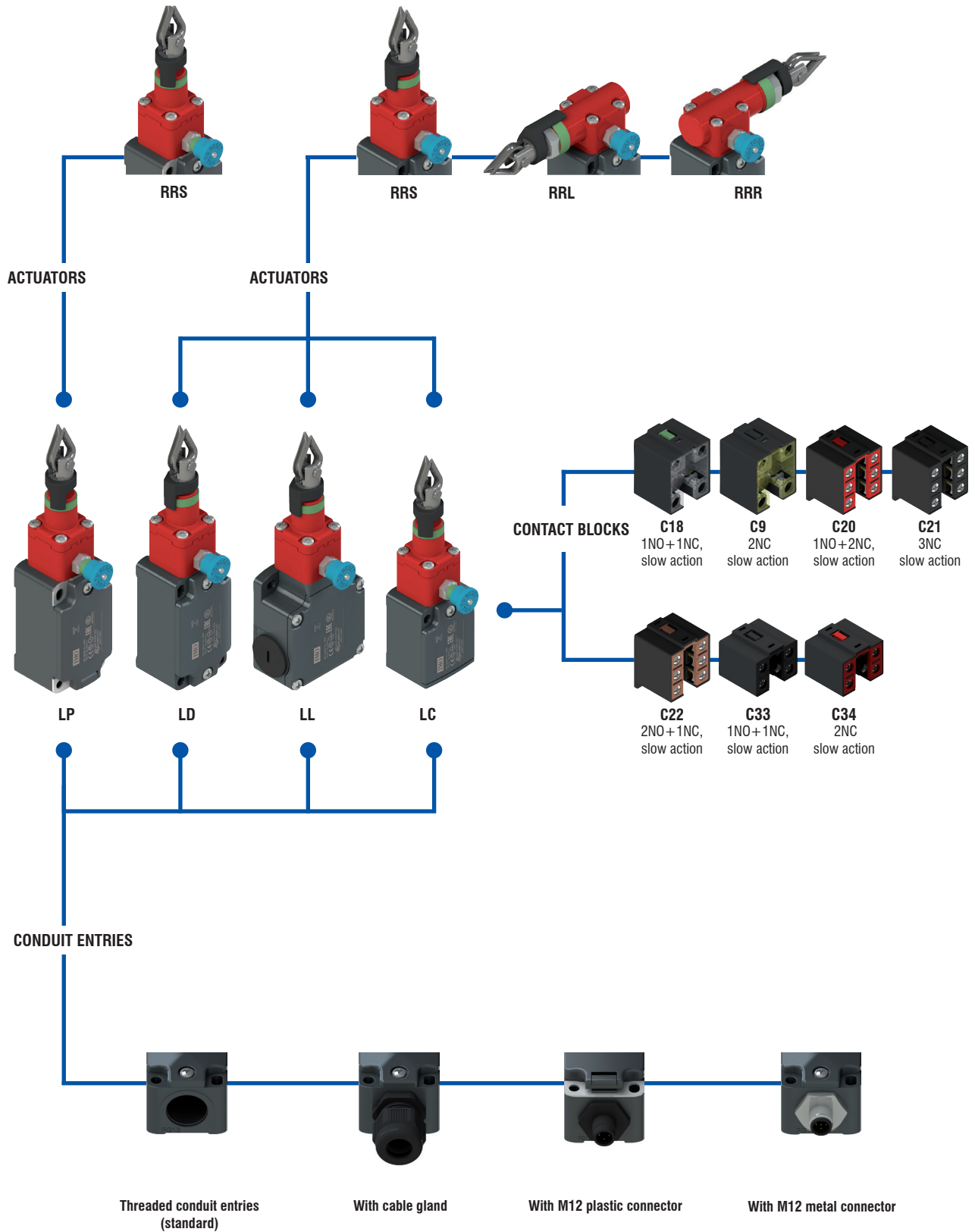
These switches can be supplied with a spring requiring less tension for movement hence reducing the effort needed to actuate the switch, while, maintaining the correct actuation of the electrical contacts.

Extended temperature range

-40°C

This switch range is also available in a special version with an ambient operating temperature range of -40°C to +80°C for low temperature environments such as cold stores and sterilisers.


Selection diagram

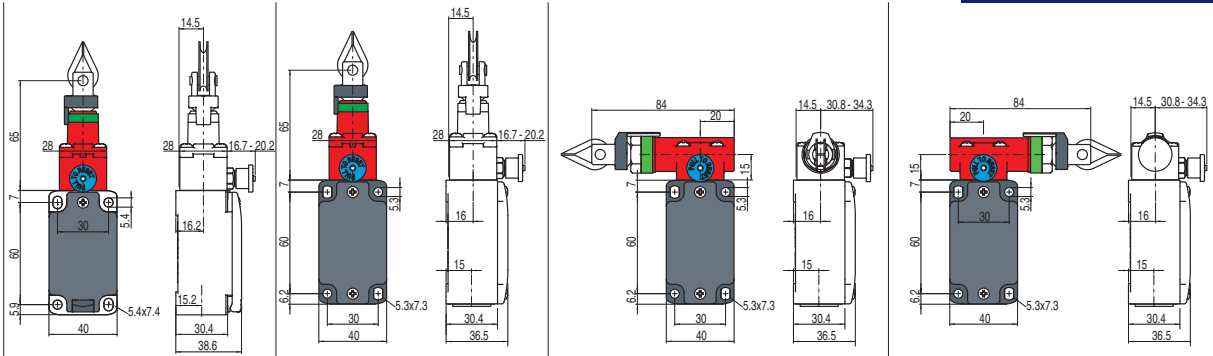


—●— Product option








































Dimensional drawings

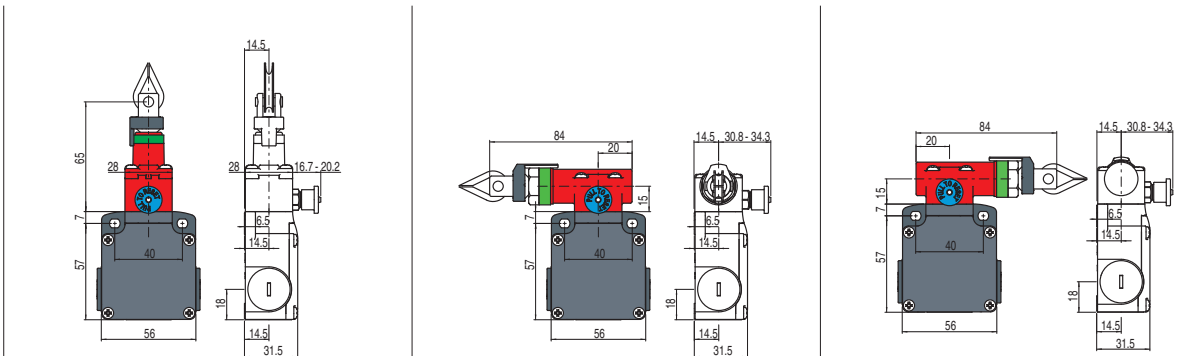
All measures in the drawings are in mm

Contact type:
 = slow action


































Contact blocks

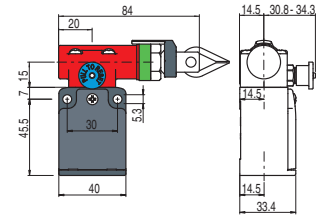
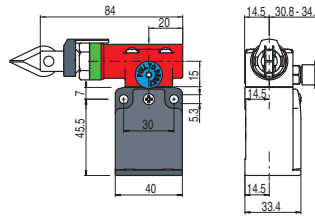
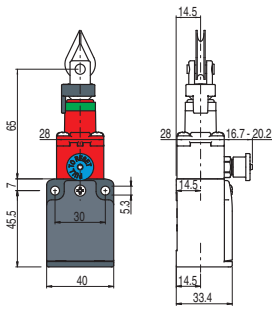
| | | | | | | | | | | | | | |
|-----------------|---|---|---|---------|---|---|---------|---|---|---------|--|---|---------|
| C18 |  | LPC18RRS |  | 1NO+1NC | LDC18RRS |  | 1NO+1NC | LDC18RRL |  | 1NO+1NC | LDC18RRR |  | 1NO+1NC |
| C9 |  | LPC9RRS |  | 2NC | LDC9RRS |  | 2NC | LDC9RRL |  | 2NC | LDC9RRR |  | 2NC |
| C20 |  | LPC20RRS |  | 1NO+2NC | LDC20RRS |  | 1NO+2NC | LDC20RRL |  | 1NO+2NC | LDC20RRR |  | 1NO+2NC |
| C21 |  | LPC21RRS |  | 3NC | LDC21RRS |  | 3NC | LDC21RRL |  | 3NC | LDC21RRR |  | 3NC |
| C22 |  | LPC22RRS |  | 2NO+1NC | LDC22RRS |  | 2NO+1NC | LDC22RRL |  | 2NO+1NC | LDC22RRR |  | 2NO+1NC |
| C33 |  | LPC33RRS |  | 1NO+1NC | LDC33RRS |  | 1NO+1NC | LDC33RRL |  | 1NO+1NC | LDC33RRR |  | 1NO+1NC |
| C34 |  | LPC34RRS |  | 2NC | LDC34RRS |  | 2NC | LDC34RRL |  | 2NC | LDC34RRR |  | 2NC |
| Min. force | | Initial 63 N...final 83 N (90 N ) | | | Initial 63 N...final 83 N (90 N ) | | | Initial 147 N...final 235 N (250 N ) | | | Initial 147 N...final 235 N (250 N ) | | |
| Travel diagrams | | group 1 | | | group 1 | | | group 2 | | | group 2 | | |



Contact blocks

| | | | | | | | | | | |
|-----------------|---|---|---|---------|--|---|---------|---|---|---------|
| C18 |  | LLC18RRS |  | 1NO+1NC | LLC18RRL |  | 1NO+1NC | LLC18RRR |  | 1NO+1NC |
| C9 |  | LLC9RRS |  | 2NC | LLC9RRL |  | 2NC | LLC9RRR |  | 2NC |
| C20 |  | LLC20RRS |  | 1NO+2NC | LLC20RRL |  | 1NO+2NC | LLC20RRR |  | 1NO+2NC |
| C21 |  | LLC21RRS |  | 3NC | LLC21RRL |  | 3NC | LLC21RRR |  | 3NC |
| C22 |  | LLC22RRS |  | 2NO+1NC | LLC22RRL |  | 2NO+1NC | LLC22RRR |  | 2NO+1NC |
| C33 |  | LLC33RRS |  | 1NO+1NC | LLC33RRL |  | 1NO+1NC | LLC33RRR |  | 1NO+1NC |
| C34 |  | LLC34RRS |  | 2NC | LLC34RRL |  | 2NC | LLC34RRR |  | 2NC |
| Min. force | | Initial 63 N...final 83 N (90 N ) | | | Initial 147 N...final 235 N (250 N ) | | | Initial 147 N...final 235 N (250 N ) | | |
| Travel diagrams | | group 1 | | | group 2 | | | group 2 | | |

Contact type:
 = slow action

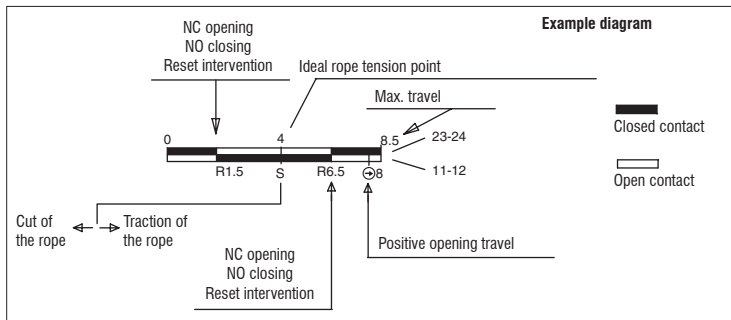


Contact blocks

| | | | | | | | | | | |
|-----------------|--|---|--|---------|--|--|---------|--|--|---------|
| C33 | | LCC33RRS | | 1NO+1NC | LCC33RRL | | 1NO+1NC | LCC33RRR | | 1NO+1NC |
| C34 | | LCC34RRS | | 2NC | LCC34RRL | | 2NC | LCC34RRR | | 2NC |
| Min. force | | Initial 63 N...final 83 N (90 N \rightarrow) | | | Initial 147 N...final 235 N (250 N \rightarrow) | | | Initial 147 N...final 235 N (250 N \rightarrow) | | |
| Travel diagrams | | group 1 | | | group 2 | | | group 2 | | |

How to read travel diagrams

All measures in the diagrams are in mm



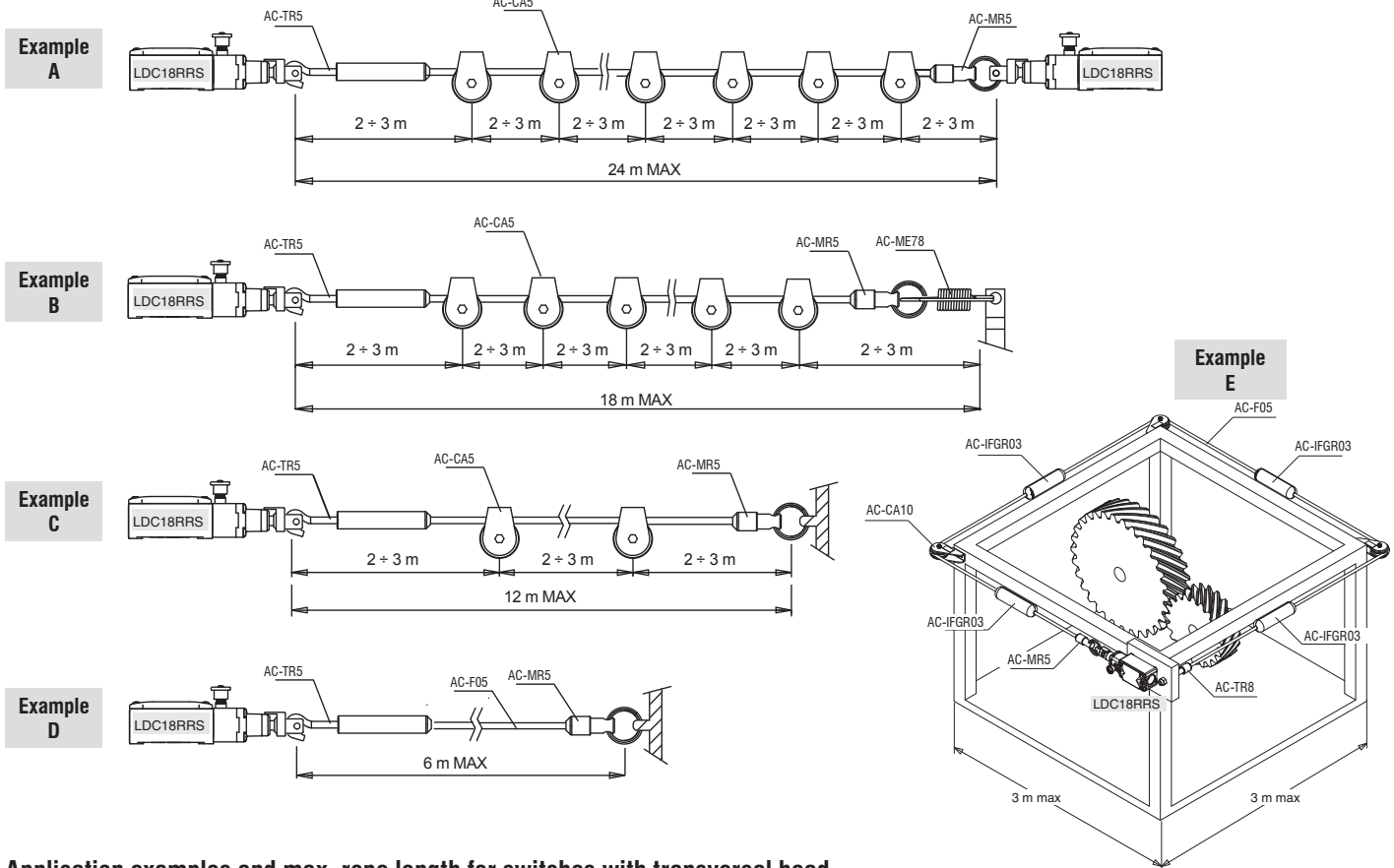
Travel diagrams table

| Contact blocks | Group 1 | Group 2 |
|----------------|---------|---------|
| C18 1NO+1NC | | |
| C9 2NC | | |
| C20 1NO+2NC | | |
| C21 3NC | | |
| C22 2NO+1NC | | |
| C33 1NC+1NO | | |
| C34 2NC | | |

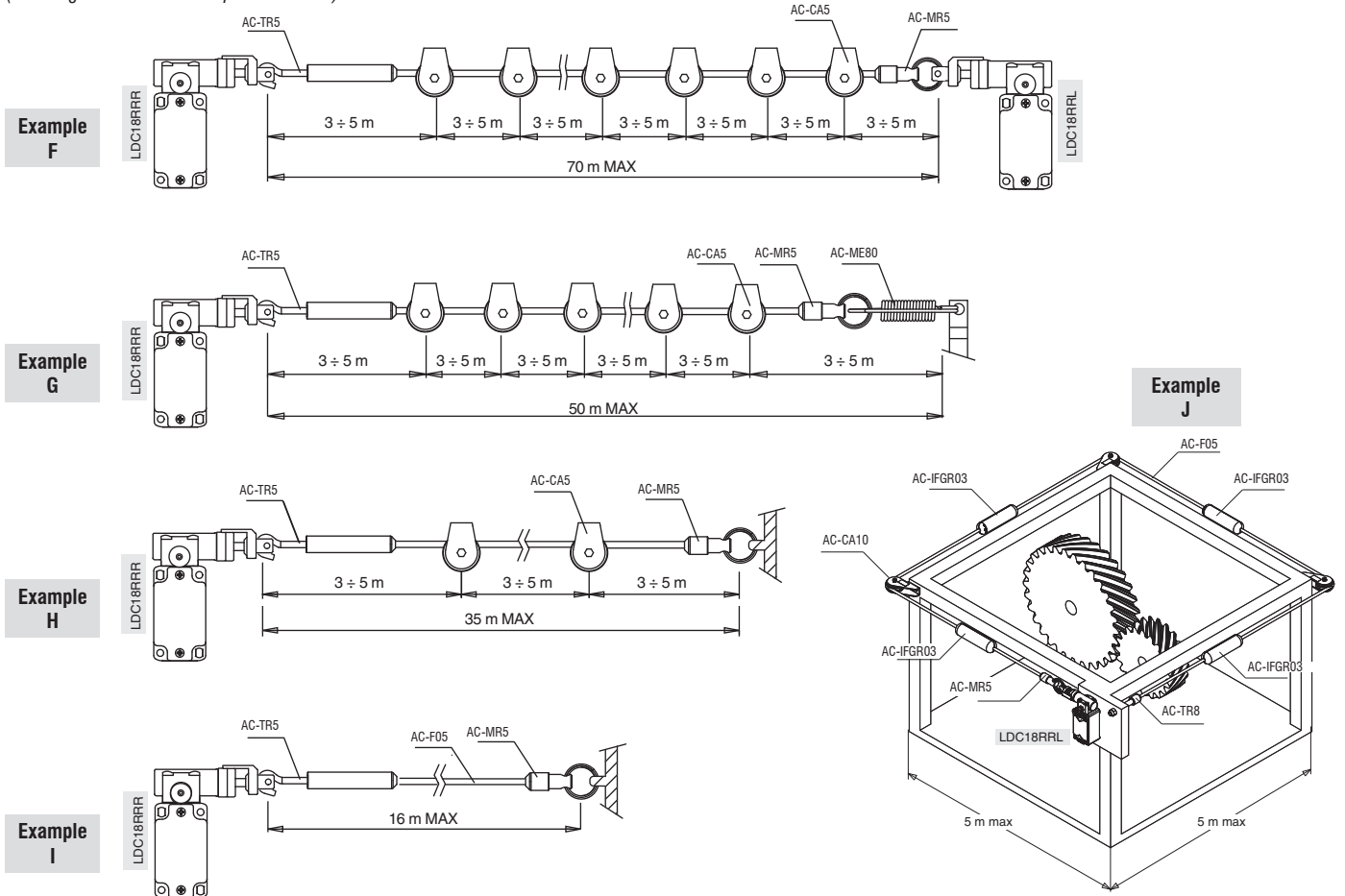
IMPORTANT:

In **safety applications**, actuate the switch **at least up to the positive opening travel** shown in the travel diagrams with symbol \rightarrow . Operate the switch **at least with the positive opening force**, indicated between brackets below each article, aside the minimum force value.

Application examples and max. rope length for switches with longitudinal head (showing IMO accessories part numbers)

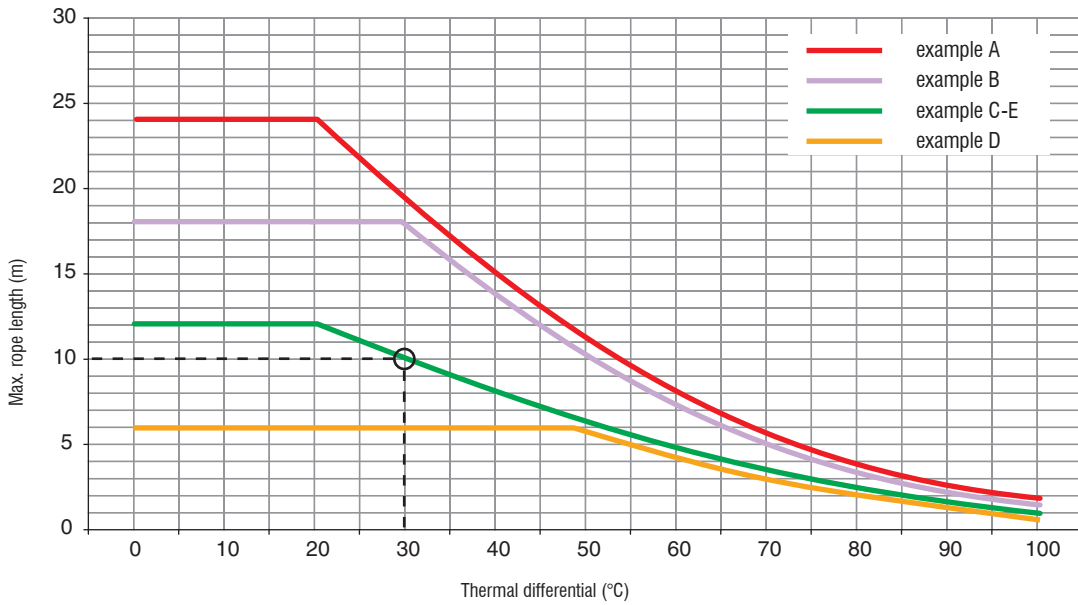


Application examples and max. rope length for switches with transversal head (showing IMO accessories part numbers)



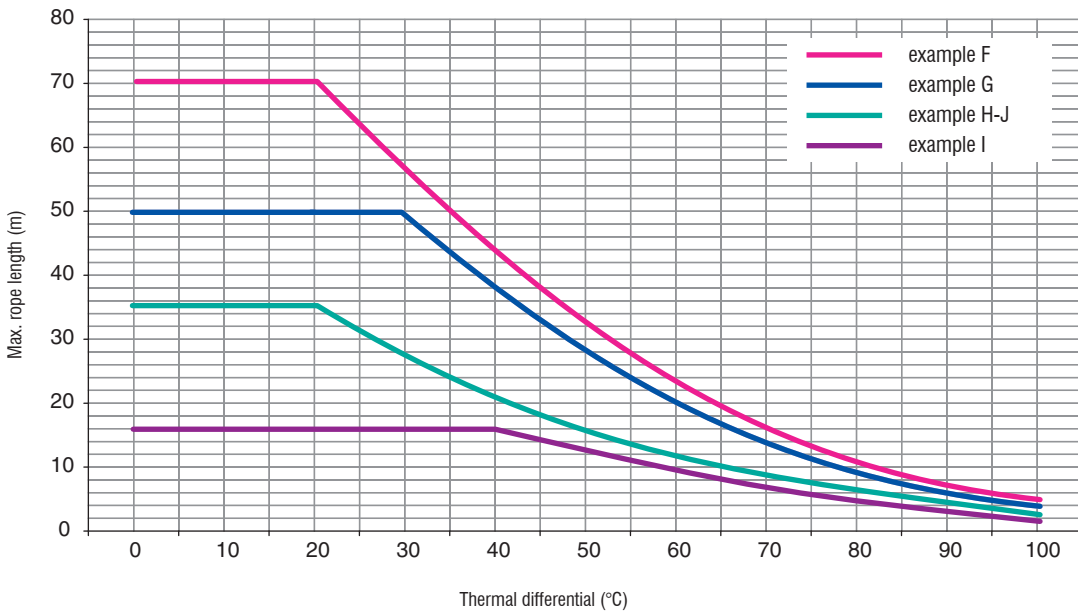
Max. rope length

Max. rope length for switches with longitudinal head



In the diagram, the suggested max. rope lengths with regard to changes of temperature (thermal differential) to which the switch is expected to be exposed in the working area are indicated. For instance, for an installation acc. to example C which expects a thermal differential of 30°C, a max. rope length of 10 meters is suggested.

Max. rope length for switches with transverse head



Important: The above data are guaranteed only using original rope and accessories.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [IMO manufacturer](#):

Other Similar products are found below :

[MB12-S-1024](#) [MB09-S-10230](#) [CS20A-A2](#) [SRKE-1AT-SL-24VDC](#) [SRF-1C-SL-12VDC](#) [MB09-S-1024](#) [HYE41PN120AC](#) [HYE41PN240AC](#)
[LDC18RRS](#) [LRC5A01](#) [IV07E-SECP](#) [SFSYE0111](#) [20.3304M/2-E](#) [21.95MHF/3-E](#) [MC24-S-00230](#) [MC18N-S-10230AC](#) [H69-0001](#) [CS20A-](#)
[U1](#) [CS20A-U4](#) [VFC02](#) [20.95MHF/3-E](#) [MC14N-S-10110AC](#) [E69-0003](#) [DPS-1-060-24](#) [BS3P3REDO](#) [DPS-1-030-24](#) [ISOCON-6](#) [20.1550M/2](#)
[FA4515-2DN](#) [U1216E4-MC](#) [MA05-S-0040110AC](#) [MA05-S-0040230AC](#) [20.950MF/5-E](#) [20.4101M/4-P](#) [BS3P34REDO](#) [21.95MH/12-E](#)
[20.920M/5-E](#) [FA4501-2DN](#) [MC10N-S-10230AC](#) [MC10N-S-10110AC](#) [DPS-1-120-24](#) [CS20A-A3](#) [20.95MH/3-E](#) [21.95MV/3](#) [MA05-S-](#)
[01230AC](#) [SRRHN-2CN-SL-5VDC](#) [LB69-4040](#) [20.3001M/6](#) [UFSRE0101](#) [MA05-R-S-10230AC](#)