



**Position switch, Roller lever, Complete unit, 1 N/O, 1 NC (late-break), Cage Clamp, Yellow, Insulated material, -25 - +70 °C, Short**

**EATON**  
Powering Business Worldwide™

**Part no.** LS-11D/LS  
**Catalog No.** 290174  
**Alternate Catalog No.** LS-11D-LS  
**EL-Nummer (Norway)** 4315232

## Delivery program

|   |    |  |
|---|----|--|
| Basic function  |    | Position switches<br>Safety position switches  |
| Part group reference  |    | LS(M)-...  |
| Product range   |    | Roller lever   |
| Degree of Protection  |    | IP66, IP67   |
| Features  |    | Complete unit  |
| Ambient temperature   | °C | -25 - +70  |
| Description   |    | Short  |
| <b>Contacts</b>   |    |  |
| N/O = Normally open   |    | 1 N/O  |
| N/C = Normally closed   |    | 1 NC   |
| Notes   |    | = safety function, by positive opening to IEC/EN 60947-5-1   |
| Contact sequence  |    | <br><p>0 3.3 6.9<br/>15-16 NC<br/>27-28 2.2<br/>Zw = 5.0 mm</p>  |
| Contact travel  = Contact closed  = Contact open  |    | yes  |
| Positive opening (ZW)   |    |  |
| <b>Colour</b>   |    |  |
| Enclosure covers  |    | Yellow   |
| Enclosure covers  |    |  |
| Housing   |    | Insulated material   |
| Connection type   |    | Cage Clamp   |
| <b>Notes</b>  |    | <p>Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Germany.</p> <p>Accessories for the Cage-Clamp terminals from Wago: power comb, gray, Wago Article No. 264-402</p> |
| <b>Notes</b> The operating head can be rotated at 90° intervals to adapt to the specified approach direction. |    |  |

## Technical data

|                      |    |  |
|----------------------|----|--|
| <b>General</b>       |    |  |
| Standards            |    | IEC/EN 60947   |
| Climatic proofing    |    | Damp heat, constant, to IEC 60068-2-78; damp heat, cyclical, to IEC 60068-2-30 |
| Ambient temperature  | °C | -25 - +70  |
| Mounting position    |    | As required  |
| Degree of Protection |    | IP66, IP67   |

|  |                  |                   |  |
|--|------------------|-------------------|--|
| Terminal capacities                      |                  | mm <sup>2</sup>   |  |
| Solid                                    |                  | mm <sup>2</sup>   | 1 x (0.5 - 2.5)  |
| Flexible with ferrule                    |                  | mm <sup>2</sup>   | 1 x (0.5 - 1.5)  |
| Repetition accuracy                      |                  | mm                | 0.15   |
| <b>Contacts/switching capacity</b>       |                  |                   |  |
| Rated impulse withstand voltage          | U <sub>imp</sub> | V AC              | 4000   |
| Rated insulation voltage                 | U <sub>i</sub>   | V                 | 400  |
| Overvoltage category/pollution degree    |                  |                   | III/3  |
| Rated operational current                | I <sub>e</sub>   | A                 |  |
| AC-15                                    |                  |                   |  |
| 24 V                                     | I <sub>e</sub>   | A                 | 6  |
| 220 V 230 V 240 V                        | I <sub>e</sub>   | A                 | 6  |
| 380 V 400 V 415 V                        | I <sub>e</sub>   | A                 | 4  |
| DC-13                                    |                  |                   |  |
| 24 V                                     | I <sub>e</sub>   | A                 | 3  |
| 110 V                                    | I <sub>e</sub>   | A                 | 0.6  |
| 220 V                                    | I <sub>e</sub>   | A                 | 0.3  |
| Control circuit reliability              |                  |                   |  |
| at 24 V DC/5 mA                          | H <sub>F</sub>   | Fault probability | < 10 <sup>-7</sup> , < 1 fault in 10 <sup>7</sup> operations           |
| at 5 V DC/1 mA                           | H <sub>F</sub>   | Fault probability | < 5 x 10 <sup>-6</sup> , < 1 failure at 5 x 10 <sup>6</sup> operations |
| Supply frequency                         |                  | Hz                | max. 400   |
| Short-circuit rating to IEC/EN 60947-5-1 |                  |                   |  |
| max. fuse                                |                  | A gG/gL           | 6  |
| Rated conditional short-circuit current  |                  | kA                | 1  |

|  |              |                   |        |
|--|--------------|-------------------|--------|
| Lifespan, mechanical                                       | Operations   | x 10 <sup>6</sup> | 8      |
| Mechanical shock resistance (half-sinusoidal shock, 20 ms) |              |                   |        |
| Standard-action contact                                    |              | g                 | 25     |
| Operating frequency  | Operations/h |                   | ≤ 6000 |

|  |  |     |                                    |
|--|--|-----|------------------------------------|
| Mechanical                                 |  |     |                                    |
| Actuating force at beginning/end of stroke |  | N   | 1.0/8.0                            |
| Actuating torque of rotary drives          |  | Nm  | 0.2                                |
| Max. operating speed with DIN cam          |  | m/s | 1                                  |
| Notes                                      |  |     | for angle of actuation α = 30°/45° |

## Design verification as per IEC/EN 61439

|  |                   |    |  |
|--|-------------------|----|--|
| Technical data for design verification   |                   |    |  |
| Rated operational current for specified heat dissipation   | I <sub>n</sub>    | A  | 6  |
| Heat dissipation per pole, current-dependent   | P <sub>vid</sub>  | W  | 0.17                                       |
| Equipment heat dissipation, current-dependent  | P <sub>vid</sub>  | W  | 0  |
| Static heat dissipation, non-current-dependent   | P <sub>vs</sub>   | W  | 0  |
| Heat dissipation capacity  | P <sub>diss</sub> | W  | 0  |
| Operating ambient temperature min.   |                   | °C | -25  |
| Operating ambient temperature max.   |                   | °C | 70   |
| IEC/EN 61439 design verification   |                   |    |  |
| 10.2 Strength of materials and parts   |                   |    |  |
| 10.2.2 Corrosion resistance  |                   |    | Meets the product standard's requirements. |
| 10.2.3.1 Verification of thermal stability of enclosures   |                   |    | Meets the product standard's requirements. |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat   |                   |    | Meets the product standard's requirements. |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |                   |    | Meets the product standard's requirements. |
| 10.2.4 Resistance to ultra-violet (UV) radiation   |                   |    | Meets the product standard's requirements. |

|  |  |
|--|--|
| 10.2.5 Lifting   | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.2.6 Mechanical impact                                 | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.2.7 Inscriptions                                      | Meets the product standard's requirements.   |
| 10.3 Degree of protection of ASSEMBLIES                  | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.4 Clearances and creepage distances                   | Meets the product standard's requirements.   |
| 10.5 Protection against electric shock                   | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.6 Incorporation of switching devices and components   | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.7 Internal electrical circuits and connections        | Is the panel builder's responsibility.   |
| 10.8 Connections for external conductors                 | Is the panel builder's responsibility.   |
| 10.9 Insulation properties                               |  |
| 10.9.2 Power-frequency electric strength                 | Is the panel builder's responsibility.   |
| 10.9.3 Impulse withstand voltage                         | Is the panel builder's responsibility.   |
| 10.9.4 Testing of enclosures made of insulating material | Is the panel builder's responsibility.   |
| 10.10 Temperature rise                                   | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating                               | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.12 Electromagnetic compatibility                      | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.13 Mechanical function                                | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |

## Technical data ETIM 7.0

Sensors (EG000026) / End switch (EC000030)

Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Position switch / Position switch (Type 1) (ecl@ss10.0.1-27-27-06-01 [AGZ382015])

|   |    |                    |
|---|----|--------------------|
| Width sensor                                  | mm | 31                 |
| Diameter sensor                               | mm | 0                  |
| Height of sensor                              | mm | 61                 |
| Length of sensor                              | mm | 33.5               |
| Rated operation current $I_e$ at AC-15, 24 V  | A  | 6                  |
| Rated operation current $I_e$ at AC-15, 125 V | A  | 6                  |
| Rated operation current $I_e$ at AC-15, 230 V | A  | 6                  |
| Rated operation current $I_e$ at DC-13, 24 V  | A  | 3                  |
| Rated operation current $I_e$ at DC-13, 125 V | A  | 0.8                |
| Rated operation current $I_e$ at DC-13, 230 V | A  | 0.3                |
| Switching function                            |    | Slow-action switch |
| Switching function latching                   |    | No                 |
| Output electronic                             |    | No                 |
| Forced opening                                |    | Yes                |
| Number of safety auxiliary contacts           |    | 1                  |
| Number of contacts as normally closed contact |    | 1                  |
| Number of contacts as normally open contact   |    | 1                  |
| Number of contacts as change-over contact     |    | 0                  |
| Type of interface                             |    | None               |
| Type of interface for safety communication    |    | None               |
| Construction type housing                     |    | Cuboid             |
| Material housing                              |    | Plastic            |
| Coating housing                               |    | Other              |
| Type of control element                       |    | Roller lever       |
| Alignment of the control element              |    | Other              |
| Type of electric connection                   |    | Other              |
| With status indication                        |    | No                 |
| Suitable for safety functions                 |    | Yes                |
| Explosion safety category for gas             |    | None               |
| Explosion safety category for dust            |    | None               |
| Ambient temperature during operating          | °C | 25 - 70            |

Degree of protection (IP)

IP67

Degree of protection (NEMA)

4X

## Approvals

Product Standards

IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14; CE marking

UL File No.

E29184

UL Category Control No.

NKCR

CSA File No.

12528

CSA Class No.

3211-03

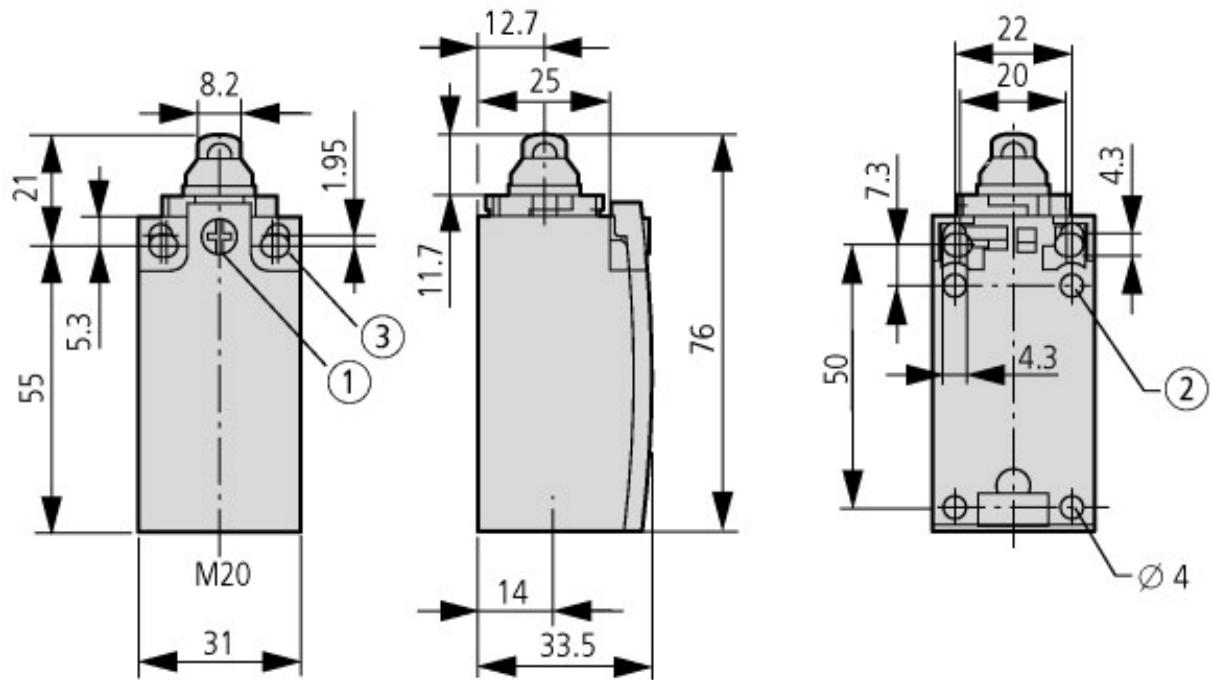
North America Certification

UL listed, CSA certified

Degree of Protection

IEC: IP66, 67, UL/CSA Type 3R, 4X (indoor use only), 12, 13

## Dimensions

① Tightening torque of cover screws: 0.8 Nm  $\pm 0.2$  Nm

② only with LS (insulated version)

③ Fixing screws 2 x M4  $\geq 30$ M<sub>A</sub> = 1.5 Nm