### **DATASHEET - LS-S11/LS**



Position switch, Roller lever, Complete unit, 1 N/O, 1 NC, Screw terminal, Yellow, Insulated material, -25 - +70 °C, Short



| Part no.                     | LS-S11/LS |
|------------------------------|-----------|
| Catalog No.                  | 106787    |
| Alternate Catalog            | LS-S11-LS |
| No.<br>EL-Nummer<br>(Norway) | 4315205   |

### **Delivery program**

| Product range     Roller lever       Degree of Protection     P66, IP67       Features     Complete unit       Antient temperature     Complete unit       Description     Complete unit       Contacts     Intel Complete unit       NO = Normally open     Intel Complete unit       Notes     Intel Complete unit       Contact sequence     Intel Complete unit       Contact sequence     Intel Complete unit       Postive opening (ZW)     Intel Complete unit       Colour     Intel Complete unit       Enclosure covers     Intel Complete unit       Enclosure covers     Intel Complete unit  | bonnony program                                |    |   |
|---|--|----|---|
| Product range         Roller lever           Degree of Protection         IP68, IP57           Features         Complete unit           Ambient temperature         Complete unit           Description         Complete unit           Description         Complete unit           No = Normally open         N/O           Notes         N/O           Notes         N/O           Contact sequence         IN/O           Notes         Info           Contact travelle = Contact closed = Contact open         Image: Solution opening to IEC/EN 00947-5-1           Contact sequence         Image: Solution opening to IEC/EN 00947-5-1           Contact sequence         Image: Solution opening to IEC/EN 00947-5-1           Contact travelle = Contact closed = Contact open         Image: Solution opening to IEC/EN 00947-5-1           Contact travelle = Contact closed = Contact open         Image: Solution opening to IEC/EN 00947-5-1           Contact travelle = Contact closed = Contact open         Image: Solution opening to IEC/EN 00947-5-1           Contact travelle = Contact closed = Contact open         Image: Solution opening to IEC/EN 00947-5-1           Colour         Image: Solution opening to IEC/EN 00947-5-1           Enclosure covers         Yellow           Enclosure covers         Yellow   | Basic function                                 |    |   |
| Description         P66, P67           Features         Complete unit           Ambient temperature         25 - 70           Description         Shot           Contracts         Noto           N/O = Normally open         Noto           N/O = Normally closed         Noto           Notas         Noto           Contact sequence         INC Ownally closed           Outsit sequence         INC Ownally closed           Contact sequence         INC Ownally closed           Fectors         INC Ownally closed           Enclosure covers </td <td>Part group reference</td> <td></td> <td>LS(M)</td>   | Part group reference                           |    | LS(M)   |
| Features     Complete unit       Ambient temperature     25 - 70       Description     Short       Contacts     Short       Notes     INC **       Notes     INC **       Contact sequence     Image: Short       Contact traveller = Contact closed     E of safety function, by positive opening to IEC/EN 60947-5-1       Contact traveller = Contact closed     E of safety function, by positive opening to IEC/EN 60947-5-1       Contact traveller = Contact closed     E of safety function, by positive opening to IEC/EN 60947-5-1       Contact traveller = Contact closed     E of safety function, by positive opening to IEC/EN 60947-5-1       Contact traveller = Contact closed     E of safety function, by positive opening to IEC/EN 60947-5-1       Contact traveller = Contact closed     E of safety function, by positive opening to IEC/EN 60947-5-1       Contact traveller = Contact closed     E of safety function, by positive opening to IEC/EN 60947-5-1       Contact traveller = Contact closed     E of safety function, by positive opening to IEC/EN 60947-5-1       Colour     Image: Safety function, by positive opening to IEC/EN 60947-5-1       E of Safety function, by positive opening to IEC/EN 60947-5-1     Image: Safety function, by positive opening to IEC/EN 60947-5-1       Colour     Image: Safety function, by positive opening to IEC/EN 60947-5-1     Image: Safety function, by positive opening to IEC/EN 60947-5-1       E of Safety function, by posit  | Product range                                  |    | Roller lever  |
| Anbient temperature       25 - 70         Description       Short         Contacts       1N0         NO = Normally open       NN0         Notes       Note <sup>®</sup> = safety function, by positive opening to IEC/EN 60947-5-1         Contact sequence       Image: State Stat   | Degree of Protection                           |    | IP66, IP67  |
| Description       Fortacts         N/0 = Normally open       1 N/0         N/C = Normally closed       1 N/0         Notes       In C         Notes       In C         Contact sequence       In L         Contact travel = Contact closed = Contact open       In L         Positive opening (ZW)       ys         Colour       ys         Enclosure covers       Ys         Enclosure covers       Ys         Enclosure covers       Ys         Husing       Ys         Notage       In Log In Legend In  | Features                                       |    | Complete unit   |
| Contacts       Indem         N0 = hormally closed       1 N/0         Notes       Image: Contact closed = Contact clo  | Ambient temperature                            | °C | -25 - +70   |
| N/0 = Normally closed       N/0         Notes       INC Image: Imag   | Description                                    |    | Short   |
| N/C = Normally closed       INC (INC)         Notes       INC (INC)         Contact sequence       INC (INC)         Contact trave = contact closed = contact open       INC (INC)         Positive opening (ZW)       INC (INC)         Colour       INC (INC)         Enclosure covers       INC (INC)         Housing       Incluside material         Housing       Incluside material         Connection type       Incluside material   | Contacts                                       |    |   |
| Notes       INC C         Contact sequence       Image: Section (Section   | N/O = Normally open                            |    | 1 N/O   |
| Contact sequence       Image: Contact closed = Contact open       Image: Contact closed = Contact open         Contact travel = Contact closed = Contact open       Image: Contact closed = Contact open       Image: Contact closed = Contact open         Positive opening (ZW)       Image: Contact closed = Contact open       Image: Contact closed = Contact open       Image: Contact closed = Contact open         Positive opening (ZW)       Image: Contact closed = Contact open       Image: Contact closed = Contact open       Image: Contact closed = Contact open         Positive opening (ZW)       Image: Contact closed = Contact open       Image: Contact closed = Contact open       Image: Contact closed = Contact open         Positive opening (ZW)       Image: Contact closed = Contact open       Image: Contact closed = Contact open       Image: Contact closed = Contact open         Positive opening (ZW)       Image: Contact closed = Contact open       Image: Contact closed = Contact open       Image: Contact closed = Contact open         Positive opening (ZW)       Image: Contact closed = Contact open       Image: Contact open       Image: Contact closed = Contact open         Image: Contact closed = Contact closed = Contact open       Image: Contact closed = Contact open       Image: Contact open         Image: Contact closed =  | N/C = Normally closed                          |    | 1 NC 🕲  |
| Contact requence       Image: product closed = contact open       Image: product closed = contact open       Image: product closed = contact open         Contact travel = contact closed = contact open       Image: product closed = contact open       Image: product closed = contact open         Positive opening (ZV)       Positive opening (ZV)       Pos         Colour       Pos       Pos         Enclosure covers       Yellow       Yellow         Enclosure covers       Yellow       Image: product closed = contact open         Housing       Image: product closed = contact open       Image: product closed = contact open         Rusing       Image: product closed = contact closed =  | Notes  |    | $\Theta$ = safety function, by positive opening to IEC/EN 60947-5-1 |
| Positive opening (ZW)       yes         Colour       Yellow         Enclosure covers       Yellow         Enclosure covers       Yellow         Housing       Image: State of the state of th  | Contact sequence                               |    | ~ <del>\</del> 7  |
| Colour       Image: Colour covers       Image: Colour covers       Yellow         Enclosure covers       Image: Colour covers       Image: Colour covers       Image: Colour covers         Housing       Image: Colour covers       Image: Colour covers       Image: Colour covers         Connection type       Image: Colour covers       Image: Colour covers       Image: Colour covers   | Contact travel = Contact closed = Contact open |    | 13-14 NO<br>21-22 NC<br>3.3   |
| Enclosure covers       Yellow         Enclosure covers       Yellow         Housing       Image: Second secon  | Positive opening (ZW)                          |    | yes   |
| Enclosure covers   Housing   Connection type     Housing   Connection type     Housing   Connection type     Housing   Connection type     Housing     Housing </td <td>Colour</td> <td></td> <td></td>   | Colour   |    |   |
| HousingImage: Second secon | Enclosure covers                               |    | Yellow  |
| Connection type Screw terminal  | Enclosure covers                               |    |   |
|   | Housing  |    | Insulated material  |
| Notes The operating head can be rotated at 90° intervals to adapt to the specified approach direction.  | Connection type                                |    | Screw terminal  |
|   |  |    |   |

Technical data General

| delleral             |                 |  |
|----------------------|-----------------|--|
| 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   |
| Contacts/switching capacity                                |                  |                    |  |
| Rated impulse withstand voltage                            | U <sub>imp</sub> | V AC               | 4000   |
| Rated insulation voltage                                   | Ui               | V                  | 400  |
| Overvoltage category/pollution degree                      |                  |                    | 111/3  |
| Rated operational current                                  | Ι <sub>e</sub>   | Α                  |  |
| AC-15  |                  |                    |  |
| 24 V   | Ι <sub>e</sub>   | А                  | 6  |
| 220 V 230 V 240 V  | Ι <sub>e</sub>   | А                  | 6  |
| 380 V 400 V 415 V  | Ι <sub>e</sub>   | Α                  | 4  |
| DC-13  |                  |                    |  |
| 24 V   | Ie               | Α                  | 3  |
| 110 V  | Ι <sub>e</sub>   | Α                  | 0.6  |
| 220 V  | Ι <sub>e</sub>   | А                  | 0.3  |
| Control circuit reliability                                |                  |                    |  |
| at 24 V DC/5 mA  | H <sub>F</sub>   | Fault<br>probabili | < 10 <sup>-7</sup> , < 1 fault in 10 <sup>7</sup> operations<br>ty           |
| at 5 V DC/1 mA   | H <sub>F</sub>   | Fault<br>probabili | < 5 x 10 <sup>-6</sup> , < 1 failure at 5 x 10 <sup>6</sup> operations<br>ty |
| 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  |
| Mechanical variables                                       |                  |                    |  |
| 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   |
| Actuation  |                  |                    |  |
| Mechanical   |                  |                    |  |
| Actuating force at beginning/end of stroke                 |                  | Ν                  | 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 $\alpha = 30^{\circ}/45^{\circ}$                      |

# Design verification as per IEC/EN 61439

| Technical data for design verification   |                   |    |  |
|--|-------------------|----|--|
| Rated operational current for specified heat dissipation   | In                | Α  | 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.                         |

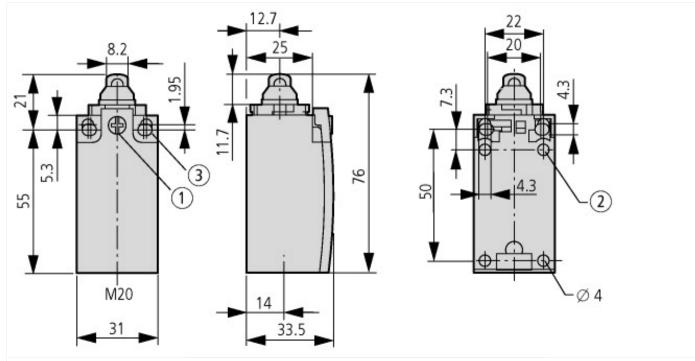
### **Technical data ETIM 7.0**

| Sensors (EG000026) / End switch (EC000030)  |    |                    |  |
|---|----|--------------------|--|
| Electric engineering, automation, process control engineering / Binary sensor technology, safety-related sensor technology / Position switch / Position switch (Type 1)<br>(ecl@ss10.0.1-27-27-06-01 [AGZ382015]) |    |                    |  |
| Width sensor  | mm | n 31               |  |
| Diameter sensor   | mm | n O                |  |
| Height of sensor  | mm | n 61               |  |
| Length of sensor  | mm | n 33.5             |  |
| Rated operation current le at AC-15, 24 V   | А  | 6                  |  |
| Rated operation current le at AC-15, 125 V  | А  | 6                  |  |
| Rated operation current le at AC-15, 230 V  | А  | 6                  |  |
| Rated operation current le at DC-13, 24 V   | А  | 3                  |  |
| Rated operation current le at DC-13, 125 V  | А  | 0.8                |  |
| Rated operation current le 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                 |  |

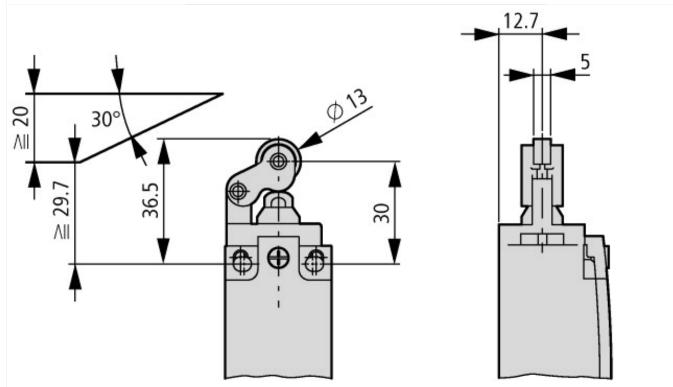
# Approvals

| 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



 $\begin{array}{l} (1) \mbox{ Tightening torque of cover screws: 0.8 Nm \pm 0.2 Nm } \\ (2) \mbox{ only with LS (insulated version)} \\ (3) \mbox{ Fixing screws 2 x M4 } \geq 30 \\ M_{\rm A} = 1.5 \mbox{ Nm} \end{array}$ 



## Assets (links)

Declaration of CE Conformity 00003068 Instruction Leaflets IL053001ZU2018\_06

### Additional product information (links)

#### IL053001ZU LS-Titan position switch: basic device

IL053001ZU LS-Titan position switch: basic device

ftp://ftp.moeller.net/DOCUMENTATION/AWA\_INSTRUCTIONS/IL053001ZU2018\_06.pdf