

# Specifications



## Eaton 106877

Eaton Moeller® series LS Safety position switch, 1N/O+1N/C, insulated material, +actuator ZB, screw connection LS-S11S-ZB

### General specifications

|                             |                                                                                                                                                                                                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PRODUCT NAME</b>         | Eaton Moeller® series LS Safety position switch                                                                                                                                                                                                 |
| <b>CATALOG NUMBER</b>       | 106877                                                                                                                                                                                                                                          |
| <b>MODEL CODE</b>           | LS-S11S-ZB                                                                                                                                                                                                                                      |
| <b>EAN</b>                  | 4015081066407                                                                                                                                                                                                                                   |
| <b>PRODUCT LENGTH/DEPTH</b> | 95 mm                                                                                                                                                                                                                                           |
| <b>PRODUCT HEIGHT</b>       | 30 mm                                                                                                                                                                                                                                           |
| <b>PRODUCT WIDTH</b>        | 30 mm                                                                                                                                                                                                                                           |
| <b>PRODUCT WEIGHT</b>       | 0.08 kg                                                                                                                                                                                                                                         |
| <b>COMPLIANCES</b>          | CE Marked                                                                                                                                                                                                                                       |
| <b>CERTIFICATIONS</b>       | CSA Std. C22.2 No. 14<br>UL 508<br>EN 60947-5<br>IEC 60947-5<br>UL Category Control No.: NKCR<br>CSA Class No.: 3211-03<br>UL<br>CSA<br>CE<br>CSA File No.: 012528<br>IEC/EN 60947<br>CSA-C22.2 No. 14<br>IEC/EN 60947-5<br>UL File No.: E29184 |

### CATALOG NOTES

Using the product in areas exposed to ozone and UV radiation or in sub-zero temperatures in unprotected outdoor environments (e.g. altitudes above 1,000 m, unprotected sunlight) may reduce the degree of protection. The customer / user must validate the overall application accordingly. If applicable, the use of the LS-...-CC

## Actuator

|                                                   |                             |
|---------------------------------------------------|-----------------------------|
| <b>ACTUATING FORCE AT BEGINNING/END OF STROKE</b> | 10 N/5 N (plug-in/pull-out) |
|---------------------------------------------------|-----------------------------|

|                      |       |
|----------------------|-------|
| <b>ACTUATOR TYPE</b> | Other |
|----------------------|-------|

## Climatic environmental conditions

|                                            |       |
|--------------------------------------------|-------|
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b> | 70 °C |
|--------------------------------------------|-------|

|                                            |        |
|--------------------------------------------|--------|
| <b>AMBIENT OPERATING TEMPERATURE - MIN</b> | -25 °C |
|--------------------------------------------|--------|

|                          |                                                                                |
|--------------------------|--------------------------------------------------------------------------------|
| <b>CLIMATIC PROOFING</b> | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |
|--------------------------|--------------------------------------------------------------------------------|

(Cold Climate) variants should be considered.

## Ambient conditions, mechanical

|                          |                                       |
|--------------------------|---------------------------------------|
| <b>MOUNTING POSITION</b> | As required<br>Horizontal<br>Vertical |
|--------------------------|---------------------------------------|

|                         |                                                                        |
|-------------------------|------------------------------------------------------------------------|
| <b>SHOCK RESISTANCE</b> | 25 g, Standard-action contact, Mechanical, Half-sinusoidal shock 20 ms |
|-------------------------|------------------------------------------------------------------------|

## Contacts

|                                                  |   |
|--------------------------------------------------|---|
| <b>NUMBER OF CONTACTS (CHANGE-OVER CONTACTS)</b> | 0 |
|--------------------------------------------------|---|

|                                                      |   |
|------------------------------------------------------|---|
| <b>NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)</b> | 1 |
|------------------------------------------------------|---|

|                                                    |   |
|----------------------------------------------------|---|
| <b>NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)</b> | 1 |
|----------------------------------------------------|---|

## Design verification

|                                                                                         |                                                                                                                                  |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>10.10 TEMPERATURE RISE</b>                                                           | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| <b>10.11 SHORT-CIRCUIT RATING</b>                                                       | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>                                              | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.13 MECHANICAL FUNCTION</b>                                                        | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |
| <b>10.2.2 CORROSION RESISTANCE</b>                                                      | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>                         | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>       | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b> | Meets the product standard's requirements.                                                                                       |
| <b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>                                 | Meets the product standard's requirements.                                                                                       |
| <b>10.2.5 LIFTING</b>                                                                   | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| <b>10.2.6 MECHANICAL IMPACT</b>                                                         | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| <b>10.2.7 INSCRIPTIONS</b>                                                              | Meets the product standard's requirements.                                                                                       |
| <b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>                                          | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| <b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>                                           | Meets the product standard's requirements.                                                                                       |
| <b>10.5 PROTECTION</b>                                                                  | Does not apply, since the                                                                                                        |

## Electrical rating

|                                                                     |                                |
|---------------------------------------------------------------------|--------------------------------|
| <b>RATED INSULATION VOLTAGE (UI)</b>                                | 400 V                          |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 220 V, 230 V, 240 V</b> | 6 A                            |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 24 V</b>                | 10 A                           |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 380 V, 400 V, 415 V</b> | 4 A                            |
| <b>RATED OPERATIONAL CURRENT (IE) AT DC-13, 110 V</b>               | 0.6 A                          |
| <b>RATED OPERATIONAL CURRENT (IE) AT DC-13, 125 V</b>               | 0.8 A                          |
| <b>RATED OPERATIONAL CURRENT (IE) AT DC-13, 220 V, 230 V</b>        | 0.3 A                          |
| <b>RATED OPERATIONAL CURRENT (IE) AT DC-13, 24 V</b>                | 3 A                            |
| <b>SHORT-CIRCUIT PROTECTION RATING</b>                              | Max. 6 A gG/gL, Fuse, Contacts |
| <b>SUPPLY FREQUENCY</b>                                             | Max. 400 Hz, Contacts          |
| <b>RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)</b>                 | 1 kA                           |

|                                                                      |                                                                    |
|----------------------------------------------------------------------|--------------------------------------------------------------------|
| <b>AGAINST ELECTRIC SHOCK</b>                                        | entire switchgear needs to be evaluated.                           |
| <b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>        | Does not apply, since the entire switchgear needs to be evaluated. |
| <b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>             | Is the panel builder's responsibility.                             |
| <b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>                      | Is the panel builder's responsibility.                             |
| <b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>                      | Is the panel builder's responsibility.                             |
| <b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>                              | Is the panel builder's responsibility.                             |
| <b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b>      | Is the panel builder's responsibility.                             |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID</b>            | 0 W                                                                |
| <b>HEAT DISSIPATION CAPACITY PDISS</b>                               | 0 W                                                                |
| <b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>             | 0.17 W                                                             |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 6 A                                                                |
| <b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS</b>            | 0 W                                                                |

## Features & functions

|                                 |                                       |
|---------------------------------|---------------------------------------|
| <b>ELECTRIC CONNECTION TYPE</b> | Cable entry metrical                  |
| <b>ENCLOSURE MATERIAL</b>       | Plastic<br>Insulated material         |
| <b>FEATURES</b>                 | Snap-action contact<br>Forced opening |
| <b>MATERIAL</b>                 | Plastic housing                       |
| <b>SWITCH FUNCTION TYPE</b>     | Quick-break switch                    |

## General information

|                                               |                                    |
|-----------------------------------------------|------------------------------------|
| <b>CONNECTION TYPE</b>                        | Screw terminal                     |
| <b>DEGREE OF PROTECTION</b>                   | IP66<br>NEMA Other                 |
| <b>LIFESPAN</b>                               | 1,500,000 mechanical<br>Operations |
| <b>OPERATING FREQUENCY</b>                    | 1800 Operations/h                  |
| <b>OVERVOLTAGE CATEGORY</b>                   | III                                |
| <b>POLLUTION DEGREE</b>                       | 3                                  |
| <b>PRODUCT CATEGORY</b>                       | Safety position switches           |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b> | 4000 V AC                          |
| <b>REPETITION ACCURACY</b>                    | 0.15 mm<br>(Contacts/switching)    |

|                     |                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------|
|                     | capacity)                                                                                             |
| <b>SUITABLE FOR</b> | Safety functions                                                                                      |
| <b>TYPE</b>         | <ul style="list-style-type: none"> <li>• Position switch</li> <li>• Safety position switch</li> </ul> |

| Safety                                    |      |
|-------------------------------------------|------|
| <b>EXPLOSION SAFETY CATEGORY FOR DUST</b> | None |
| <b>EXPLOSION SAFETY CATEGORY FOR GAS</b>  | None |

| Terminal capacities                              |                                                                    |
|--------------------------------------------------|--------------------------------------------------------------------|
| <b>SCREW SIZE</b>                                | PH1, Terminal screw                                                |
| <b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b> | 2 x (0.5 - 1.5) mm <sup>2</sup><br>1 x (0.5 - 1.5) mm <sup>2</sup> |
| <b>TERMINAL CAPACITY (SOLID)</b>                 | 2 x (0.5 - 1.5) mm <sup>2</sup><br>1 x (0.5 - 1.5) mm <sup>2</sup> |
| <b>TIGHTENING TORQUE</b>                         | 0.4 Nm, Screw terminals                                            |

## Resources

|                            |                                                                                                                                                                                                    |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CATALOGUES                 | <a href="#">eaton-pushbuttons-signal-towers-sensors-assortment-overview-catalog-ca047003en-en-us.pdf</a><br><a href="#">eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf</a> |
| DECLARATIONS OF CONFORMITY | <a href="#">eaton-safety-position-switch-declaration-of-conformity-eu251547en.pdf</a><br><a href="#">eaton-safety-position-switch-declaration-of-conformity-uk260008en.pdf</a>                     |
| DRAWINGS                   | <a href="#">eaton-safety-position-switches-ls-dimensions.eps</a><br><a href="#">eaton-safety-position-switches-switch-ls-3d-drawing.eps</a>                                                        |
| ECAD MODEL                 | <a href="#">ETN.106877.edz</a>                                                                                                                                                                     |
| INSTALLATION INSTRUCTIONS  | <a href="#">eaton-position-switches-ls-zb-safety-position-switch-instruction-leaflet-il05208003z.pdf</a>                                                                                           |
| MCAD MODEL                 | <a href="#">eaton-limit-switches-mcad-drawings-ls-zb-mit-betaetiger.dwg</a><br><a href="#">DA-CS-ls zb mit betaetiger</a>                                                                          |
| SALES NOTES                | <a href="#">eaton-safety-switches-rs-titan-flyer-fl053001en-en-us.pdf</a>                                                                                                                          |
| WIRING DIAGRAMS            | <a href="#">eaton-safety-position-switches-contact-ls-wiring-diagram.eps</a>                                                                                                                       |

|                 |
|-----------------|
| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
| DATE:           |



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