

Specifications



Eaton 177186

Eaton Moeller® series LS Position switches, 2N/C, rounded plunger, +actuator ZB, Cold Climate -40°C LS-02-CC-ZB

General specifications

PRODUCT NAME	Eaton Moeller® series LS Position switch
CATALOG NUMBER	177186
MODEL CODE	LS-02-CC-ZB
EAN	4015081716302
PRODUCT LENGTH/DEPTH	96 mm
PRODUCT HEIGHT	34 mm
PRODUCT WIDTH	31 mm
PRODUCT WEIGHT	0.08 kg
CERTIFICATIONS	IEC/EN 60947

CATALOG NOTES

- Contacts with safety function, by positive opening to IEC/EN 60947-5-1
- Contains a silicone seal to increase resistance to ozone, detergents and disinfectants.



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Features & Functions

ELECTRIC CONNECTION TYPE	Cable entry metrical
ENCLOSURE MATERIAL	Insulated material Plastic
FEATURES	Forced opening
SWITCH FUNCTION TYPE	Slow-action switch

Ambient conditions, mechanical

MOUNTING POSITION	As required Vertical Horizontal
SHOCK RESISTANCE	25 g, Standard-action contact, Mechanical, Half- sinusoidal shock 20 ms

Terminal capacities

TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.5 - 1.5) mm ² 1 x (0.5 - 1.5) mm ²
TERMINAL CAPACITY (SOLID)	1 x (0.5 - 1.5) mm ² 2 x (0.5 - 1.5) mm ²
SCREW SIZE	PH1, Terminal screw

General

CONNECTION TYPE	Cage Clamp
DEGREE OF PROTECTION	IP65 NEMA Other
OPERATING FREQUENCY	1800 Operations/h
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Safety position switches
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	4000 V AC
REPETITION ACCURACY	0.15 mm (Contacts/switching capacity)
SUITABLE FOR	Safety functions
TYPE	<ul style="list-style-type: none">• Position switch• Safety position switch

Climatic environmental conditions

AMBIENT OPERATING TEMPERATURE - MIN	-40 °C
AMBIENT OPERATING TEMPERATURE - MAX	70 °C
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78

Electrical rating

RATED INSULATION VOLTAGE (UI)	400 V
RATED OPERATIONAL CURRENT (IE) AT AC-15, 220 V, 230 V, 240 V	6 A
RATED OPERATIONAL CURRENT (IE) AT AC-15, 24 V	6 A
RATED OPERATIONAL CURRENT (IE) AT AC-15, 380 V, 400 V, 415 V	4 A
RATED OPERATIONAL CURRENT (IE) AT DC-13,	0.6 A

110 V

RATED OPERATIONAL CURRENT (IE) AT DC-13, 125 V	0.8 A
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RATED OPERATIONAL CURRENT (IE) AT DC-13, 220 V, 230 V	0.3 A
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RATED OPERATIONAL CURRENT (IE) AT DC-13, 24 V	3 A
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SHORT-CIRCUIT PROTECTION RATING	Max. 6 A gG/gL, Fuse, Contacts
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SUPPLY FREQUENCY	Max. 400 Hz, Contacts
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Actuator

ACTUATOR TYPE	Plunger
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Safety

EXPLOSION SAFETY CATEGORY FOR GAS	None
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EXPLOSION SAFETY CATEGORY FOR DUST	None
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Contacts

NUMBER OF CONTACTS (CHANGE-OVER CONTACTS)	0
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NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)	2
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NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)	0
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Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0 W
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HEAT DISSIPATION CAPACITY PDISS	0 W
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HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0.17 W
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RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	6 A
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STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W
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10.2.2 CORROSION RESISTANCE	Meets the product standard's requirements.
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10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES	Meets the product standard's requirements.
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10.2.3.2 VERIFICATION OF	Meets the product
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RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT	standard's requirements.
10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. 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.
10.9.2 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	Is the panel builder's

RATING	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.

Resources

CATALOGUES

[eaton-pushbuttons-signal-towers-sensors-assortment-overview-catalog-ca047003en-en-us.pdf](#)

[eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf](#)

DECLARATIONS OF CONFORMITY

[eaton-safety-position-switch-declaration-of-conformity-uk251041en.pdf](#)

[DA-DC-00004359.pdf](#)

[DA-DC-00004362.pdf](#)

[eaton-safety-position-switch-declaration-of-conformity-eu250558en.pdf](#)

DRAWINGS

[eaton-safety-position-switches-ls-dimensions.eps](#)

[eaton-safety-position-switches-switch-ls-3d-drawing.eps](#)

ECAD MODEL

[ETN.177186.edz](#)

INSTALLATION INSTRUCTIONS

[eaton-position-switches-ls-zb-safety-position-switch-instruction-leaflet-il05208003z.pdf](#)

MCAD MODEL

[DA-CD-ls_zb_mit_betaetiger](#)

[DA-CS-ls_zb_mit_betaetiger](#)

SALES NOTES

[eaton-safety-switches-rs-titan-flyer-fl053001en-en-us.pdf](#)

WIRING DIAGRAMS

[eaton-safety-position-switches-contact-ls-wiring-diagram-002.eps](#)

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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