

Specifications



Eaton 106778

Eaton Moeller® series LS Position switch, 2 N/C, basic, spring force

General specifications

PRODUCT NAME	Eaton Moeller® series LS Position switch
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CATALOG NUMBER	106778
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MODEL CODE	LS-S02-120AFT-ZBZ/X
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EAN	4015081065486
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PRODUCT LENGTH/DEPTH	55 mm
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PRODUCT HEIGHT	170 mm
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PRODUCT WIDTH	37 mm
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PRODUCT WEIGHT	0.417 kg
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CERTIFICATIONS	UL Category Control No.: NKCR CSA Class No.: 3211-03 CSA-C22.2 No. 14 CSA File No.: 012528 IEC/EN 60947-5 CSA UL 508 UL CE IEC/EN 60947 UL File No.: E29184
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Powering Business Worldwide

Actuator

ACTUATING FORCE AT BEGINNING/END OF STROKE	25 N/15 N (plug-in/pull-out)
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ACTUATOR TYPE	None
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MECHANICAL HOLDING FORCE	1600 N (according to GS-ET-19 (04/2004), XWA, XFG, XF) 1700 N (according to GS-ET-19 (04/2004), XG, XW, XNG) 1200 N (according to GS-ET-19 (04/2004), XNW)
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Climatic environmental conditions

AMBIENT OPERATING TEMPERATURE - MAX	70 °C
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AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
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CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
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Ambient conditions, mechanical

MOUNTING POSITION	As required
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SHOCK RESISTANCE	10 g, Standard-action contact, Mechanical, Half-Sinusoidal shock 20 ms
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Contacts

FORCE FOR POSITIVE OPENING - MIN	50 N
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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

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.
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 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	Does not apply, since the

Electrical rating

POWER CONSUMPTION	8 VA at 120 V AC (electromechanical actuation) 8 W at 24 V DC (electromechanical actuation) 11 VA at 230 V AC (electromechanical actuation)
RATED CONTROL SUPPLY VOLTAGE	120 V 50/60 Hz (Us, for magnet drive)
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, 110 V	0.8 A
RATED OPERATIONAL CURRENT (IE) AT DC-13, 125 V	0.8 A
RATED OPERATIONAL CURRENT (IE) AT DC-13, 220 V, 230 V	0.3 A
RATED OPERATIONAL CURRENT (IE) AT DC-13, 24 V	3 A
SHORT-CIRCUIT PROTECTION RATING	Max. 6 A gG/gL, Fuse, Contacts
SUPPLY FREQUENCY	Max. 400 Hz, Contacts
VOLTAGE TOLERANCE	1.1 x Us, Pick-up and drop-out values 0.85 x Us, Pick-up and drop-out values
RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)	1 kA

AGAINST ELECTRIC SHOCK	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.
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0.13 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	6 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W

Features & functions	
ELECTRIC CONNECTION TYPE	Cable entry metrical
ENCLOSURE MATERIAL	Plastic Insulated material
FEATURES	Expandable Forced opening
FITTED WITH:	Auxiliary release mechanism Interlock monitoring
SWITCH FUNCTION TYPE	Slow-action switch

General information	
CONNECTION TYPE	Screw terminal
DEGREE OF PROTECTION	IP65 NEMA Other
DUTY FACTOR	100 % (Magnet)
LIFESPAN	1,000,000 mechanical Operations
OPERATING FREQUENCY	800 Operations/h
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Basic units with spring-powered interlock (closed-circuit principle)
RATED IMPULSE WITHSTAND VOLTAGE	4000 V AC

(UIMP)	
REPETITION ACCURACY	0.02 mm (Contacts/switching capacity)
SUITABLE FOR	Safety functions
TYPE	• Position switch • Safety position switch

Safety

**EXPLOSION SAFETY
CATEGORY FOR DUST** None

**EXPLOSION SAFETY
CATEGORY FOR GAS** None

Terminal capacities

SCREW SIZE PH1, Terminal screw

**TERMINAL CAPACITY
(FLEXIBLE WITH
FERRULE)** 1 x (0.5 - 1.5) mm²
2 x (0.5 - 1.5) mm²

**TERMINAL CAPACITY
(SOLID)** 1 x (0.75 - 2.5) mm²
2 x (0.75 - 1.5) mm²

TIGHTENING TORQUE 0.9 Nm, Screw terminals

Resources

	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CATALOGUES	eaton-pushbuttons-signal-towers-sensors-assortment-overview-catalog-ca047003en-en-us.pdf
DECLARATIONS OF CONFORMITY	eaton-position-switch-declaration-of-conformity-eu251549en.pdf eaton-position-switch-declaration-of-conformity-uk251040en.pdf
DRAWINGS	eaton-position-switches-dimensions-035.eps
ECAD MODEL	ETN.106778.edz
INSTALLATION INSTRUCTIONS	eaton-ls-s-zbz-safety-position-switch-instruction-leaflet-il05208005z.pdf
MCAD MODEL	DA-CS-zbz eaton-mechanical-limit-switches-mcad-drawings-zbz.dwg
SALES NOTES	eaton-safety-switches-rs-titan-flyer-fl053001en-en-us.pdf
WIRING DIAGRAMS	eaton-position-switches-contact-ls-wiring-diagram-006.eps

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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