Specifications

Eaton 178138

Eaton Moeller® series LS Position switch, Rotary lever, Complete device, 1 N/O, 1 NC, Cage Clamp, Yellow, Insulated material, -25 - +70 °C, with M12 connector, EN 50047 Form A

General specifications	
PRODUCT NAME	Eaton Moeller® series LS Position switch
CATALOG NUMBER	178138
MODEL CODE	LS-11/RL-M12A
EAN	4015081734610
PRODUCT LENGTH/DEPTH	33.5 mm
PRODUCT HEIGHT	125 mm
PRODUCT WIDTH	31 mm
PRODUCT WEIGHT	0.074 kg
CERTIFICATIONS	IEC/EN 60947

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Features & Functions

DESIGN	EN 50047 Form A
ENCLOSURE COLOR	Yellow Cover
ENCLOSURE MATERIAL	Insulated material
FEATURES	Positive opening

General

ACCESSORIES	M12 connector included.
CONNECTION TYPE	Cage Clamp
DEGREE OF PROTECTION	IP66
LIFESPAN, MECHANICAL	8,000,000 Operations
OPERATING FREQUENCY	6000 Operations/h
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Rotary lever
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	2500 V AC
REPETITION ACCURACY	0.15 mm (Contacts/switching capacity)
TYPE	• Position switch • Safety position switch

Ambient conditions, mechanical

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

Climatic environmental conditions

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

Terminal capacities

TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (0.5 - 1.5) mm^2
TERMINAL CAPACITY (SOLID)	1 x (0.5 - 2.5) mm^2

Electrical rating

RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)	1 kA
RATED INSULATION VOLTAGE (UI)	250 V
RATED OPERATIONAL CURRENT (IE)	3 A at 24 V 0.8 A at 110 V 0.3 A at 220 V 4 A at AC-15, 380 V 400 V 415 V 6 A at AC-15, 24 V 1 A at AC-15, 220 V 230 V 240 V

	4 A at AC-15, 115 V
SHORT-CIRCUIT PROTECTION RATING	Max. 4 A gG/gL, Fuse, Contacts
SUPPLY FREQUENCY	Max. 400 Hz, Contacts

Actuator

ACTUATING TORQUE OF ROTARY DRIVES	0.2 Nm
ACTUATOR TYPE	Rotary lever
OPERATING SPEED	Max. 1.5 m/s (with DIN cam, mechanical actuation)

Contacts

CONTROL CIRCUIT RELIABILITY	1 failure per 5,000,000 switching operations (statistically determined, at 5 V DC/1 mA) 1 failure per 10,000,000 switching operations (Statistically determined, at 24 V DC/5 mA)
NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)	1
NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)	1

Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0.17 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	6 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W
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 AGAINST ELECTRIC SHOCK	Does not apply, since the entire switchgear needs to be evaluated.

Resources

CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf eaton-pushbuttons-signal-towers-sensors-assortment-overview-catalog-ca047003en-en-us.pdf
CONTROL TRAVEL DIAGRAM	eaton-position-switches-diagram-ls-contact-travel-diagram-019.eps
DECLARATIONS OF CONFORMITY	eaton-position-switch-declaration-of-conformity-uk251032en.pdf DA-DC-00004160.pdf eaton-position-switch-declaration-of-conformity-eu250549en.pdf DA-DC-00004133.pdf
DRAWINGS	eaton-position-switches-rotary-handle-ls-dimensions.eps eaton-position-switches-ls-dimensions-004.eps eaton-operating-button-symbol-008.eps eaton-position-switches-ls-3d-drawing-005.eps
ECAD MODEL	ETN.178138.edz
INSTALLATION INSTRUCTIONS	IL053001ZU
MCAD MODEL	DA-CD-ls_rl_4a DA-CS-ls_rl_4a
SALES NOTES	eaton-safety-switches-rs-titan-flyer-fl053001en-en-us.pdf
WIRING DIAGRAMS	eaton-position-switches-contact-ls-wiring-diagram.eps

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 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.

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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