

Specifications



Eaton 178134

Eaton Moeller® series LS Position switch, Rounded plunger, Basic device, expandable, 2 N/O, Cage Clamp, Yellow, Insulated material, -25 - +70 °C, with M12 connector, version A

General specifications

PRODUCT NAME	Eaton Moeller® series LS Position switch
CATALOG NUMBER	178134
MODEL CODE	LS-20A-M12A
EAN	4015081734573
PRODUCT LENGTH/DEPTH	33.5 mm
PRODUCT HEIGHT	91.5 mm
PRODUCT WIDTH	31 mm
PRODUCT WEIGHT	0.058 kg
CERTIFICATIONS	IEC/EN 60947

Features & Functions

ELECTRIC CONNECTION TYPE	Connector M12
ENCLOSURE COLOR	Yellow Cover
ENCLOSURE MATERIAL	Plastic Insulated material
FEATURES	Expandable Forced opening
SWITCH FUNCTION TYPE	Slow-action switch

Ambient conditions, mechanical

MOUNTING POSITION	As required
SHOCK RESISTANCE	25 g, Standard-action contact, Mechanical, Half- sinusoidal shock 20 ms
TEMPERATURE RESISTANCE	100 °C, Contact temperature of roller head

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

General

ACCESSORIES	M12 connector included.
CONNECTION TYPE	Cage Clamp
DEGREE OF PROTECTION	IP66 NEMA Other
OPERATING FREQUENCY	6000 Operations/h
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Rounded plunger
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	2500 V AC
REPETITION ACCURACY	0.15 mm (Contacts/switching capacity)
TYPE	Position switch

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

Electrical rating

RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)	1 kA
RATED INSULATION VOLTAGE (UI)	250 V
RATED OPERATIONAL CURRENT (IE) AT AC-15, 115 V	4 A
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,	4 A

380 V, 400 V, 415 V	
RATED OPERATIONAL CURRENT (IE) AT DC-13, 110 V	0.8 A
RATED OPERATIONAL CURRENT (IE) AT DC-13, 125 V	0.6 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. 4 A gG/gL, Fuse, Contacts
SUPPLY FREQUENCY	Max. 400 Hz, Contacts

Actuator

ACTUATING TORQUE OF ROTARY DRIVES	0.2 Nm
ACTUATOR TYPE	Plunger
OPERATING SPEED	For angle of actuation $\alpha = 0^\circ/30^\circ$ Max. 1/0.5 m/s (with DIN cam, mechanical actuation)

Contacts

CONTROL CIRCUIT RELIABILITY	1 failure per 10,000,000 switching operations (Statistically determined, at 24 V DC/5 mA) 1 failure per 5,000,000 switching operations (statistically determined, at 5 V DC/1 mA)
NUMBER OF CONTACTS (CHANGE-OVER CONTACTS)	0
NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)	2

Safety

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

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.
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.

Resources

CATALOGUES	eaton-pushbuttons-signal-towers-sensors-assortment-overview-catalog-ca047003en-en-us.pdf
	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CONTROL TRAVEL DIAGRAM	eaton-position-switches-diagram-ls-contact-travel-diagram-005.eps
DECLARATIONS OF CONFORMITY	eaton-position-switch-declaration-of-conformity-uk251032en.pdf
	DA-DC-00004160.pdf
	DA-DC-00004133.pdf
DRAWINGS	eaton-position-switch-declaration-of-conformity-eu250549en.pdf
	eaton-position-switches-ls-dimensions-004.eps
	eaton-operating-button-symbol-008.eps
ECAD MODEL	eaton-position-switches-ls-3d-drawing-002.eps
INSTALLATION INSTRUCTIONS	ETN.178134.edz
MCAD MODEL	IL053001ZU
SALES NOTES	DA-CD-ls_4a DA-CS-ls_4a
WIRING DIAGRAMS	eaton-safety-switches-rs-titan-flyer-fl053001en-en-us.pdf
	eaton-position-switches-contact-ls-wiring-diagram-002.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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