DATASHEET - TM-2-8231/E

Step switches, TM, 10 A, flush mounting, 2 contact unit(s), Contacts: 4, 60 °, maintained, Without 0 (Off) position, 1-4, Design number 8231

Powering Business Worldwide

Part no. **TM-2-8231/E**
044029

Product name	Eaton Moeller® series TM Step switch
Part no.	TM-2-8231/E
EAN	4015080440291
Product Length/Depth	74 millimetre
Product height	30 millimetre
Product width	30 millimetre
Product weight	0.04 kilogram
Certifications	CSA-C22.2 No. 94 UL Category Control No.: NLRV UL 508 VDE 0660 UL report applies to both US and Canada Certified by UL for use in Canada CSA-C22.2 No. 14-05 UL IEC/EN 60947-5-1 UL File No.: E36332 IEC/EN 60947 IEC/EN 60947-3 CE CSA
Product Tradename	TM
Product Type	Step switch
Product Sub Type	None
Fitted with:	Black thumb grip and front plate
Inscription	1-4
Number of poles	Single-pole
Degree of protection	IP65
Degree of protection (front side)	IP65 NEMA 12
Lifespan, mechanical	1,000,000 Operations
Mounting method	Flush mounting
Mounting position	As required
Number of contact units	2
Operating frequency	1200 Operations/h
Overvoltage category	III
Pollution degree	3
Product category	Control switches
Rated impulse withstand voltage (Uimp)	4000 V AC
Suitable for	Front mounting
Switching angle	60 °
Type	Step switch
Ambient operating temperature - min	-25 °C
Ambient operating temperature - max	50 °C
Climatic proofing	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
Terminal capacity (flexible with ferrule)	2 x 1.0 mm^2, ferrules to DIN 46228 1 x 1.0 mm^2, ferrules to DIN 46228
Terminal capacity (flexible)	1 x 1.5 mm^2 2 x 1.5 mm^2

Terminal capacity (solid/flexible with ferrule AWG)	14
Terminal capacity (solid/stranded)	1 x 1.5 mm^2 2 x 1,5 mm^2
Screw size	M2.5, Terminal screw
Tightening torque	0.4 Nm, Screw terminals 3.5 lb-in, Screw terminals
Rated operating voltage (Ue) at AC - max	500 V
Rated operational current (Ie) at AC-21, 440 V	10 A
Rated operational power at AC-23A, 400 V, 50 Hz	3 kW
Rated uninterrupted current (Iu)	10 A
Uninterrupted current	Rated uninterrupted current Iu is specified for max. cross-section.
Short-circuit protection rating	10 A gG/gL, Fuse, Contacts
Switching capacity (main contacts, general use)	10 A, Rated uninterrupted current max. (UL/CSA)
Switching capacity (auxiliary contacts, general use)	10A, IU, (UL/CSA)
Switching capacity (auxiliary contacts, pilot duty)	A300 (UL/CSA)
Assigned motor power at 115/120 V, 60 Hz, 1-phase	0.33 HP
Assigned motor power at 115/120 V, 60 Hz, 3-phase	0.75 HP
Assigned motor power at 230/240 V, 60 Hz, 1-phase	0.75 HP
Assigned motor power at 230/240 V, 60 Hz, 3-phase	1 HP
Assigned motor power at 277 V, 60 Hz, 1-phase	0.75 HP
Control circuit reliability	1 failure per 100,000 switching operations statistically determined, at 24 V DC, 10 mA)
Number of contacts	4
Actuator function	Without 0 (Off) position Maintained
Actuator type	Toggle
Number of steps	4 (60°)
Number of switch positions	4
Equipment heat dissipation, current-dependent Pvid	0 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0.15 W
Rated operational current for specified heat dissipation (In)	10 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	UV resistance only in connection with protective shield.
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.

Technical data ETIM 8.0

Low-voltage industrial components (EG000017) / Control switch (EC002611)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Control switch (ecl@ss10.0.1-27-37-14-14 [ACN998011])

Type of switch			Level switch
Number of poles			1
Max. rated operation voltage Ue AC		V	500
Rated permanent current Iu		A	10
Number of switch positions			4
With zero (off) position			No
With retraction in 0-position			No
Device construction			Built-in device
Width in number of modular spacings			0
Suitable for floor mounting			No
Suitable for front mounting			Yes
Suitable for distribution board installation			No
Suitable for intermediate mounting			No
Complete device in housing			No
Type of control element			Toggle
Front shield size			30x30 mm
Degree of protection (IP), front side			IP65
Degree of protection (NEMA), front side			12

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