

Step switches, TM, 10 A, flush mounting, 5 contact unit(s), Contacts: 9, 30 °, maintained, With 0 (Off) position, 0-9, Design number 8247



Powering Business Worldwide™

Part no. **TM-5-8247/E**  
**009741**

| General specifications                    |  |                                                                                                                                                                                                                                                                                |
|-------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name                              |  | Eaton Moeller® series TM Step switch                                                                                                                                                                                                                                           |
| Part no.                                  |  | TM-5-8247/E                                                                                                                                                                                                                                                                    |
| EAN                                       |  | 4015080097419                                                                                                                                                                                                                                                                  |
| Product Length/Depth                      |  | 110 millimetre                                                                                                                                                                                                                                                                 |
| Product height                            |  | 30 millimetre                                                                                                                                                                                                                                                                  |
| Product width                             |  | 30 millimetre                                                                                                                                                                                                                                                                  |
| Product weight                            |  | 0.075 kilogram                                                                                                                                                                                                                                                                 |
| Certifications                            |  | CSA<br>UL Category Control No.: NLRV<br>CSA-C22.2 No. 14-05<br>IEC/EN 60947-5-1<br>IEC/EN 60947<br>UL File No.: E36332<br>UL<br>CE<br>IEC/EN 60947-3<br>CSA-C22.2 No. 94<br>UL 508<br>UL report applies to both US and Canada<br>Certified by UL for use in Canada<br>VDE 0660 |
| Product Tradename                         |  | TM                                                                                                                                                                                                                                                                             |
| Product Type                              |  | Step switch                                                                                                                                                                                                                                                                    |
| Product Sub Type                          |  | None                                                                                                                                                                                                                                                                           |
| Features & Functions                      |  |                                                                                                                                                                                                                                                                                |
| Fitted with:                              |  | 0 (off) position<br>Black thumb grip and front plate                                                                                                                                                                                                                           |
| Inscription                               |  | 0-9                                                                                                                                                                                                                                                                            |
| Number of poles                           |  | Single-pole                                                                                                                                                                                                                                                                    |
| General information                       |  |                                                                                                                                                                                                                                                                                |
| Degree of protection                      |  | IP65                                                                                                                                                                                                                                                                           |
| Degree of protection (front side)         |  | IP65<br>NEMA 12                                                                                                                                                                                                                                                                |
| Lifespan, mechanical                      |  | 1,000,000 Operations                                                                                                                                                                                                                                                           |
| Mounting method                           |  | Flush mounting                                                                                                                                                                                                                                                                 |
| Mounting position                         |  | As required                                                                                                                                                                                                                                                                    |
| Number of contact units                   |  | 5                                                                                                                                                                                                                                                                              |
| 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                           |  | 30 °                                                                                                                                                                                                                                                                           |
| Type                                      |  | Step switch                                                                                                                                                                                                                                                                    |
| Climatic environmental conditions         |  |                                                                                                                                                                                                                                                                                |
| Ambient operating temperature - min       |  | -25 °C                                                                                                                                                                                                                                                                         |
| Ambient operating temperature - max       |  | 50 °C                                                                                                                                                                                                                                                                          |
| Climatic proofing                         |  | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30                                                                                                                                                                                                 |
| Terminal capacities                       |  |                                                                                                                                                                                                                                                                                |
| Terminal capacity (flexible with ferrule) |  | 2 x 1.0 mm <sup>2</sup> , ferrules to DIN 46228<br>1 x 1.0 mm <sup>2</sup> , ferrules to DIN 46228                                                                                                                                                                             |

|                                                                                  |  |                                                                                         |
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| Terminal capacity (flexible)                                                     |  | 1 x 1.5 mm <sup>2</sup><br>2 x 1.5 mm <sup>2</sup>                                      |
| Terminal capacity (solid/flexible with ferrule AWG)                              |  | 14                                                                                      |
| Terminal capacity (solid/stranded)                                               |  | 1 x 1.5 mm <sup>2</sup><br>2 x 1,5 mm <sup>2</sup>                                      |
| Screw size                                                                       |  | M2.5, Terminal screw                                                                    |
| Tightening torque                                                                |  | 0.4 Nm, Screw terminals<br>3.5 lb-in, Screw terminals                                   |
| <b>Electrical rating</b>                                                         |  |                                                                                         |
| 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.                     |
| <b>Short-circuit rating</b>                                                      |  |                                                                                         |
| Short-circuit protection rating                                                  |  | 10 A gG/gL, Fuse, Contacts                                                              |
| <b>Switching capacity</b>                                                        |  |                                                                                         |
| 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)                                                                           |
| <b>Motor rating</b>                                                              |  |                                                                                         |
| 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                                                                                 |
| <b>Contacts</b>                                                                  |  |                                                                                         |
| Control circuit reliability                                                      |  | 1 failure per 100,000 switching operations statistically determined, at 24 V DC, 10 mA) |
| Number of contacts                                                               |  | 9                                                                                       |
| <b>Actuator</b>                                                                  |  |                                                                                         |
| Actuator function                                                                |  | Maintained<br>With 0 (Off) position                                                     |
| Actuator type                                                                    |  | Toggle                                                                                  |
| Number of steps                                                                  |  | 9 (30°)                                                                                 |
| Number of switch positions                                                       |  | 10                                                                                      |
| <b>Design verification</b>                                                       |  |                                                                                         |
| Equipment heat dissipation, current-dependent Pvid                               |  | 0 W                                                                                     |
| Heat dissipation capacity P <sub>diss</sub>                                      |  | 0 W                                                                                     |
| Heat dissipation per pole, current-dependent Pvid                                |  | 0.15 W                                                                                  |
| Rated operational current for specified heat dissipation (I <sub>n</sub> )       |  | 10 A                                                                                    |
| Static heat dissipation, non-current-dependent P <sub>vs</sub>                   |  | 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.                                                  |

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|----------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------|
| 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 9.0

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------|
| 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@ss13-27-37-14-14 [ACN998016]) |   |                 |
| 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                                                                                                                                                                           |   | 10              |
| With zero (off) position                                                                                                                                                                             |   | Yes             |
| 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              |