

Step switches, TM, 10 A, flush mounting, 2 contact unit(s), Contacts: 3, 45 °, maintained, With 0 (Off) position, 0-3, Design number 8241



Powering Business Worldwide™

Part no. **TM-2-8241/E**  
**065386**

| <b>General specifications</b>             |  |  |
|---|--|--|
| Product name                              |  | Eaton Moeller® series TM Step switch   |
| Part no.                                  |  | TM-2-8241/E  |
| EAN                                       |  | 4015080653868  |
| Product Length/Depth                      |  | 74 millimetre  |
| Product height                            |  | 30 millimetre  |
| Product width                             |  | 30 millimetre  |
| Product weight                            |  | 0.038 kilogram   |
| Certifications                            |  | CSA-C22.2 No. 14-05<br>IEC/EN 60947-3<br>UL Category Control No.: NLRV<br>UL<br>UL report applies to both US and Canada<br>Certified by UL for use in Canada<br>CSA<br>CE<br>IEC/EN 60947-5-1<br>IEC/EN 60947<br>CSA-C22.2 No. 94<br>UL File No.: E36332<br>VDE 0660<br>UL 508 |
| Product Tradename                         |  | TM   |
| Product Type                              |  | Step switch  |
| Product Sub Type                          |  | None   |
| <b>Features &amp; Functions</b>           |  |  |
| Fitted with:                              |  | 0 (off) position<br>Black thumb grip and front plate   |
| Inscription                               |  | 0-3  |
| Number of poles                           |  | Single-pole  |
| <b>General information</b>                |  |  |
| 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                   |  | 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                           |  | 45 °   |
| Type                                      |  | Step switch  |
| <b>Climatic environmental conditions</b>  |  |  |
| Ambient operating temperature - min       |  | -25 °C   |
| Ambient operating temperature - max       |  | 50 °C  |
| Climatic proofing                         |  | Damp heat, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78   |
| <b>Terminal capacities</b>                |  |  |
| Terminal capacity (flexible with ferrule) |  | 1 x 1.0 mm <sup>2</sup> , ferrules to DIN 46228<br>2 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)   |  | 2 x 1,5 mm <sup>2</sup><br>1 x 1.5 mm <sup>2</sup>                                      |
| Screw size   |  | M2.5, Terminal screw  |
| Tightening torque  |  | 3.5 lb-in, Screw terminals<br>0.4 Nm, 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   |  | 3   |
| <b>Actuator</b>  |  |   |
| Actuator function  |  | Maintained<br>With 0 (Off) position   |
| Actuator type  |  | Toggle  |
| Number of steps  |  | 3 (45°)   |
| Number of switch positions   |  | 4   |
| <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   |   | 4               |
| 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              |