# DATASHEET - TM-2-8221/E

**Changeoverswitches, TM, 10 A, flush mounting, 2 contact unit(s), Contacts: 4, 60 °, maintained, Without 0 (Off) position, 1-2, Design number 8221**

**Part no.** **TM-2-8221/E**
**084369**

| | |
|---|---|
| Product name | Eaton Moeller® series TM Changeover switch |
| Part no. | TM-2-8221/E |
| EAN | 4015080843696 |
| Product Length/Depth | 74 millimetre |
| Product height | 30 millimetre |
| Product width | 40 millimetre |
| Product weight | 0.04 kilogram |
| Certifications | IEC/EN 60947-5-1<br>VDE 0660<br>UL File No.: E36332<br>UL Category Control No.: NLRV<br>IEC/EN 60947<br>UL<br>Certified by UL for use in Canada<br>CE<br>UL 508<br>CSA-C22.2 No. 94<br>CSA<br>UL report applies to both US and Canada<br>IEC/EN 60947-3<br>CSA-C22.2 No. 14-05 |
| Product Tradename | TM |
| Product Type | Changeover switch |
| Product Sub Type | None |
| | |
| Enclosure material | Plastic |
| Fitted with: | Black thumb grip and front plate |
| Inscription | 1-2 |
| Number of poles | 2 |
| | |
| Degree of protection | IP65 |
| Degree of protection (front side) | IP65<br>NEMA 12 |
| Lifespan, mechanical | 1,000,000 Operations |
| Model | Reverser |
| Mounting method | Flush mounting |
| Mounting position | As required |
| Number of contact units | 2 |
| Operating frequency | 1200 Operations/h |
| Overvoltage category | III |
| Pollution degree | 3 |
| Rated impulse withstand voltage (Uimp) | 4000 V AC |
| Suitable for | Front mounting |
| Switching angle | 60 ° |
| Type | Changeover switch |
| | |
| 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 |
| | |
| Terminal capacity (flexible with ferrule) | 1 x 1.0 $mm^2$, ferrules to DIN 46228<br>2 x 1.0 $mm^2$, ferrules to DIN 46228 |

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|---|---|
| Terminal capacity (flexible) | 1 x 1.5 $mm^2$<br>2 x 1.5 $mm^2$ |
| Terminal capacity (solid/flexible with ferrule AWG) | 14 |
| Terminal capacity (solid/stranded) | 1 x 1.5 $mm^2$<br>2 x 1,5 $mm^2$ |
| Screw size | M2.5, Terminal screw |
| Tightening torque | 0.4 Nm, Screw terminals<br>3.5 lb-in, Screw terminals |
| | |
| Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V | 0 A |
| Rated operational power at AC-3, 380/400 V, 50 Hz | 2.2 kW |
| Rated operational power at AC-23A, 400 V, 50 Hz | 3 kW |
| Rated operational voltage (Ue) at AC - max | 500 V |
| 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 auxiliary contacts (change-over contacts) | 0 |
| Number of auxiliary contacts (normally closed contacts) | 0 |
| Number of auxiliary contacts (normally open contacts) | 0 |
| Number of contacts | 4 |
| | |
| Actuator function | Without 0 (Off) position<br>Maintained |
| Actuator type | Short thumb-grip |
| | |
| 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. |

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| 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) / Off-load switch (EC001105)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Changeover switch (ecl@ss10.0.1-27-37-14-05 [AKF062013])

| | | | |
|---|---|---|---|
| Model | | | Reverser |
| Number of poles | | | 2 |
| With zero (off) position | | | No |
| With retraction in 0-position | | | No |
| Rated permanent current Iu | | A | 10 |
| Rated operation current Ie at AC-3, 400 V | | A | 0 |
| Rated operation power at AC-3, 400 V | | kW | 2.2 |
| Degree of protection (IP), front side | | | IP65 |
| Degree of protection (NEMA), front side | | | 12 |
| Number of auxiliary contacts as normally closed contact | | | 0 |
| Number of auxiliary contacts as normally open contact | | | 0 |
| Number of auxiliary contacts as change-over contact | | | 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 |
| Material housing | | | Plastic |
| Type of control element | | | Short thumb-grip |
| Type of electrical connection of main circuit | | | Screw connection |


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