# DATASHEET - TM-1-8291/E/SVB

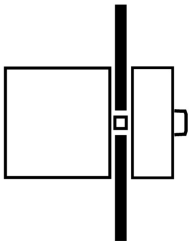
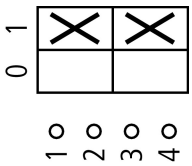
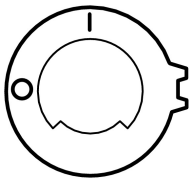


**Control circuit switches, Emergency-Stop function, Contacts: 2, 10 A, 90 °, flush mounting, up to 250 V AC per contact**

Powering Business Worldwide™

**Part no.** TM-1-8291/E/SVB
**Catalog No.** 045478

## Delivery program

| | | | |
|---|---|---|---|
| Product range | | | Control switches |
| Part group reference | | | TM |
| Basic function | | | Control circuit switches |
| Stop Function | | | Emergency switching off function |
| | | | With red rotary handle and yellow locking ring |
| Notes | | | up to 250 V AC per contact |
| Contacts | | | 2 |
| Locking facility | | | Lockable in the 0 (Off) position |
| Degree of Protection | | | Front IP65 |
| Design | | | flush mounting |
| | | |  |
| Contact sequence | | |  |
| Switching angle | | ° | 90 |
| Design number | | | 8291 |
| Front plate no. | | |  |

### Motor rating AC-23A, 50 - 60 Hz

| | | | |
|---|---|---|---|
| 400 V | P | kW | 3 |
| Rated uninterrupted current | $I_u$ | A | 10 |
| Note on rated uninterrupted current $I_u$ | | | Rated uninterrupted current $I_u$ is specified for max. cross-section. |
| Number of contact units | | contact unit(s) | 1 |

## Technical data

### General

| | | | |
|---|---|---|---|
| Standards | | | IEC/EN 60947, VDE 0660, CSA, UL<br>Control switch as per IEC/EN 60947-5-1<br>Auxiliary switch as per IEC/EN 60947-5-1 |
| Climatic proofing | | | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |
| Ambient temperature | | | |
| Open | | °C | -25 - +50 |
| Overvoltage category/pollution degree | | | III/3 |
| Rated impulse withstand voltage | $U_{imp}$ | V AC | 4000 |
| Mounting position | | | As required |

## Contacts

| | | | |
|---|---|---|---|
| Electrical characteristics | | | |
| Rated operational voltage | $U_e$ | V AC | 500 |
| Rated uninterrupted current | $I_u$ | A | 10 |
| Note on rated uninterrupted current $I_u$ | | | Rated uninterrupted current $I_u$ is specified for max. cross-section. |
| Short-circuit rating | | | |
| Fuse | | A gG/gL | 10 |

## Switching capacity

| | | | |
|---|---|---|---|
| Safe isolation to EN 61140 | | | |
| Current heat loss per contact at $I_e$ | | W | 0.15 |
| Current heat loss per auxiliary circuit at $I_e$ (AC-15/230 V) | | CO | 0.15 |
| Lifespan, mechanical | Operations | x $10^6$ | > 1 |
| Maximum operating frequency | Operations/h | | 1200 |
| AC | | | |
| AC-23A | | | |
| Motor rating AC-23A, 50 - 60 Hz | P | kW | |
| 400 V 415 V | P | kW | 3 |
| Control circuit reliability at 24 V DC, 10 mA | Fault probability | $H_F$ | < $10^{-5}$, < 1 fault in 100000 operations |

## Terminal capacities

| | | | |
|---|---|---|---|
| Solid or stranded | | $mm^2$ | 1 x 1,5<br>2 x 1,5 |
| Flexible with ferrules to DIN 46228 | | $mm^2$ | 1 x 1.0<br>2 x 1.0 |
| Flexible | | $mm^2$ | 1 x 1.5<br>2 x 1.5 |
| Terminal screw | | | M2.5 |
| Tightening torque for terminal screw | | Nm | 0.4 |

## Rating data for approved types

| | | | |
|---|---|---|---|
| Contacts | | | |
| Rated operational voltage | $U_e$ | V AC | 300 |
| Rated uninterrupted current max. | | | |
| Main conducting paths | | | |
| General use | | A | 10 |
| Auxiliary contacts | | | |
| General Use | $I_U$ | A | 10 |
| Pilot Duty | | | A 300 |
| Switching capacity | | | |
| Maximum motor rating | | | |
| Single-phase | | | |
| 120 V AC | | HP | 0.33 |
| 240 V AC | | HP | 0.75 |
| 277 V AC | | HP | 0.75 |
| Three-phase | | | |
| 120 V AC | | HP | 0.75 |
| 240 V AC | | HP | 1 |
| Terminal capacity | | | |
| Solid or flexible conductor with ferrule | | AWG | 14 |
| Terminal screw | | | M2.5 |
| Tightening torque | | lb-in | 3.5 |

# Design verification as per IEC/EN 61439

| | | | |
|---|---|---|---|
| Technical data for design verification | | | |
| Rated operational current for specified heat dissipation | $I_n$ | A | 10 |
| Heat dissipation per pole, current-dependent | $P_{vid}$ | W | 0.15 |
| Equipment heat dissipation, current-dependent | $P_{vid}$ | W | 0 |
| Static heat dissipation, non-current-dependent | $P_{vs}$ | W | 0 |

| | | | |
|---|---|---|---|
| Heat dissipation capacity | $P_{diss}$ | W | 0 |
| Operating ambient temperature min. | | °C | -25 |
| Operating ambient temperature max. | | °C | 50 |
| IEC/EN 61439 design verification | | | |
| 10.2 Strength of materials and parts | | | |
| 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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties | | | |
| 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 7.0

Low-voltage industrial components (EG000017) / Switch disconnector (EC000216)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss10.0.1-27-37-14-03 [AKF060013])

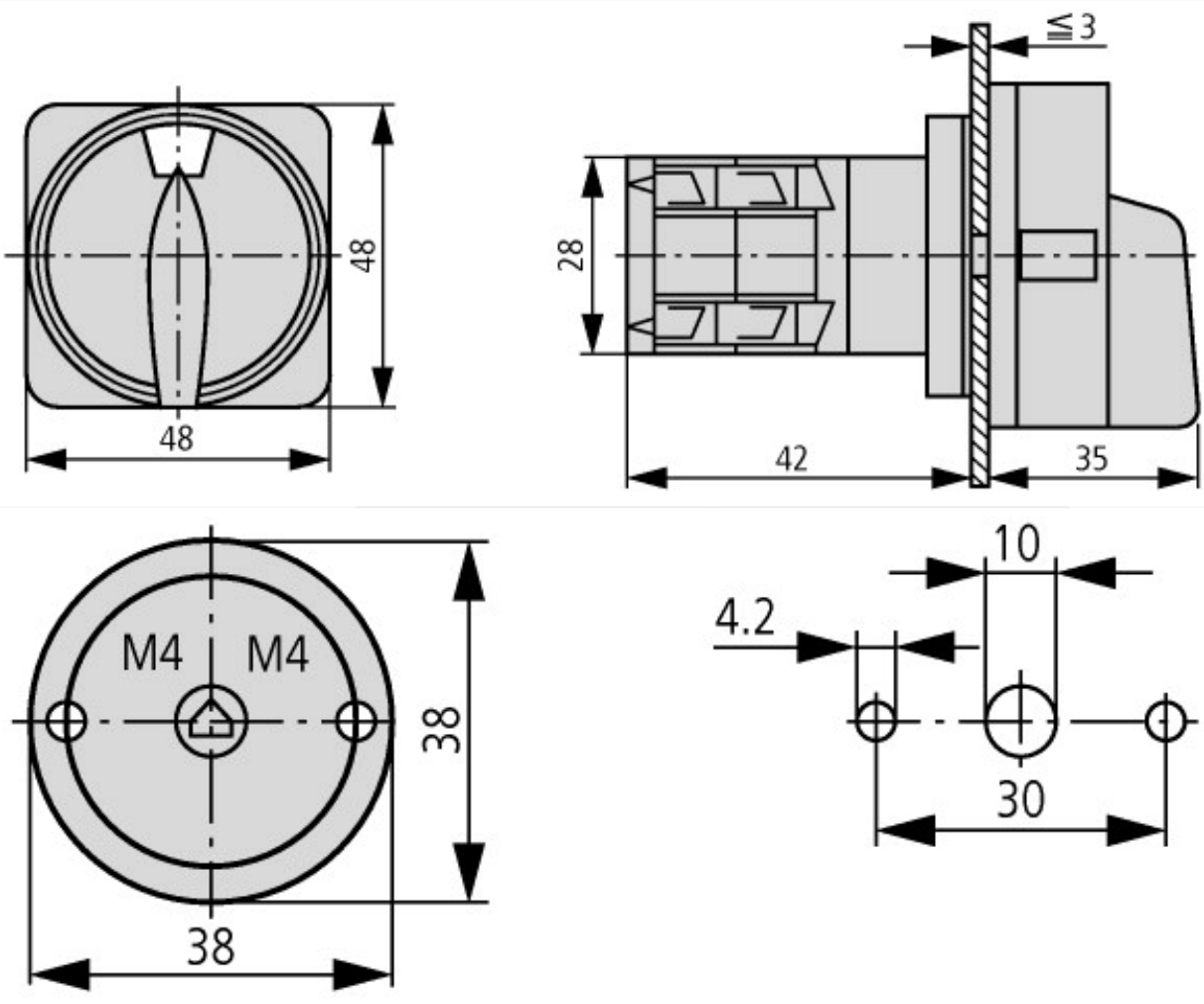
| | | | |
|---|---|---|---|
| Version as main switch | | | Yes |
| Version as maintenance-/service switch | | | Yes |
| Version as safety switch | | | No |
| Version as emergency stop installation | | | Yes |
| Version as reversing switch | | | No |
| Number of switches | | | 1 |
| Max. rated operation voltage Ue AC | | V | 500 |
| Rated operating voltage | | V | 500 - 500 |
| Rated permanent current Iu | | A | 10 |
| Rated permanent current at AC-23, 400 V | | A | |
| Rated permanent current at AC-21, 400 V | | A | 0 |
| Rated operation power at AC-3, 400 V | | kW | 0 |
| Rated short-time withstand current Icw | | kA | 0 |
| Rated operation power at AC-23, 400 V | | kW | 0 |
| Switching power at 400 V | | kW | 0 |
| Conditioned rated short-circuit current Iq | | kA | 0 |
| Number of poles | | | 2 |
| 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 |
| Motor drive optional | | | No |

| | |
|---|---|
| Motor drive integrated | No |
| Voltage release optional | No |
| Device construction | Built-in device fixed built-in technique |
| Suitable for ground mounting | No |
| Suitable for front mounting 4-hole | Yes |
| Suitable for front mounting centre | No |
| Suitable for distribution board installation | No |
| Suitable for intermediate mounting | No |
| Colour control element | Red |
| Type of control element | Door coupling rotary drive |
| Interlockable | Yes |
| Type of electrical connection of main circuit | Screw connection |
| Degree of protection (IP), front side | IP65 |
| Degree of protection (NEMA) | Other |

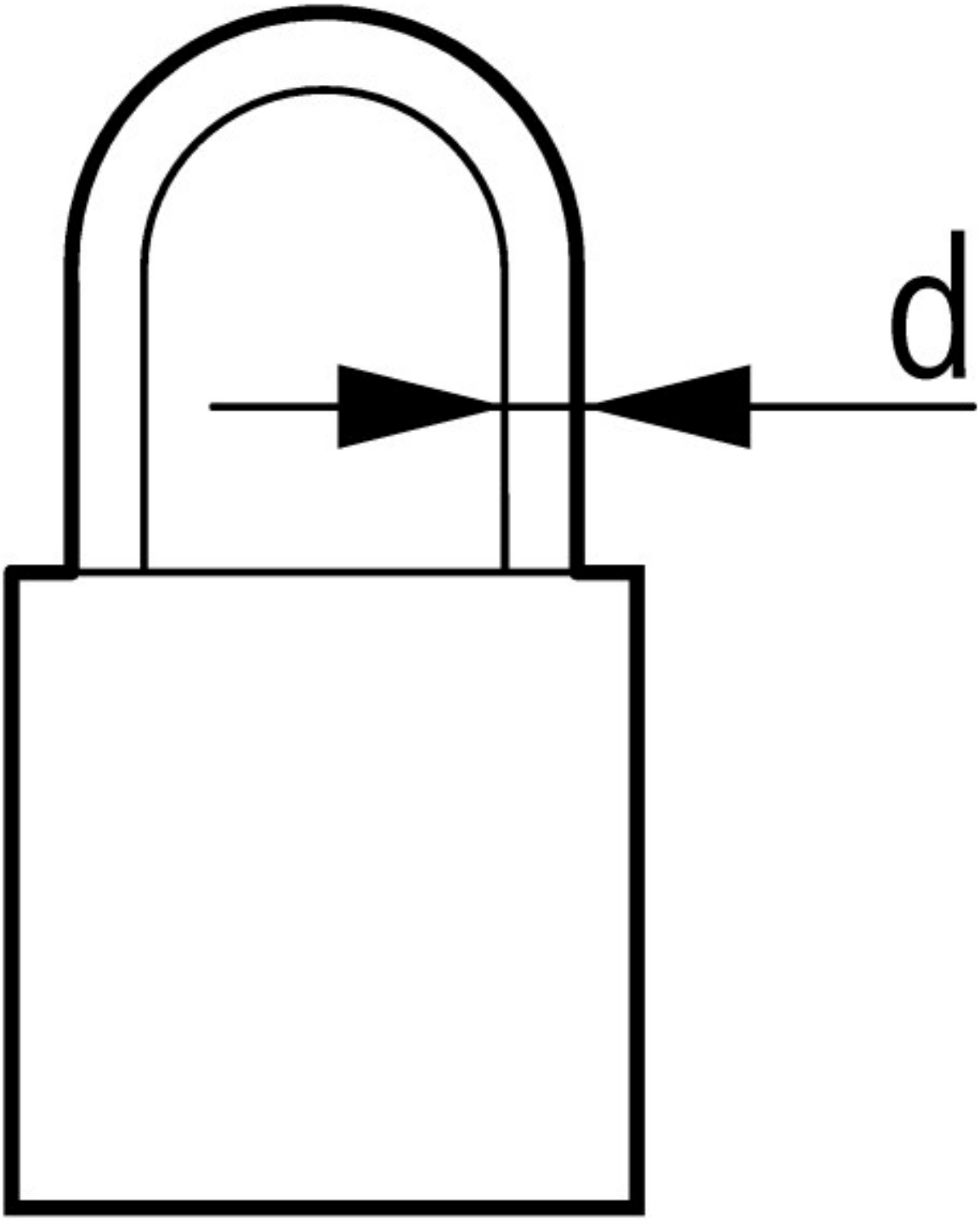
## Approvals

| | |
|---|---|
| Product Standards | UL 508; CSA-C22.2 No. 14-05; CSA-C22.2 No. 94; IEC/EN 60947-3; CE marking |
| UL File No. | E36332 |
| UL Category Control No. | NLRV |
| CSA File No. | UL report applies to both US and Canada |
| North America Certification | UL listed, certified by UL for use in Canada |
| Degree of Protection | IEC: IP65; UL/CSA Type: – |

## Dimensions




Door drilling dimensions




2 padlocks with a diameter of 4 mm or 1 padlock with a diameter of 6 mm

## Assets (links)

### Declaration of CE Conformity

00002932

### Instruction Leaflets

IL03801028Z2018_04

## Additional product information (links)

| **IL03801028Z Mini-Nockenschalter: main switch** | |
|---|---|
| IL03801028Z Mini-Nockenschalter: main switch | ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03801028Z2018_04.pdf |
| Display flip catalog page. | http://ecat.moeller.net/flip-cat/?edition=K115A&startpage=12 |
| Technical overview cam switch, switch-disconnector | http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.2 |
| System overview cam switch T | http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.4 |
| System overview switch-disconnector P | http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.6 |
| Key to part numbers Cam switch | http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.8 |
| Key to part numbers Switch-disconnector | http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.8 |

| | |
|---|---|
| Switches for ATEX | http://www.coopercrouse-hinds.eu/en/products/25-ex-safety-and-main-current-switches.html |
| Ordering form for SOND switches and SOND front plates(DE_EN) | ftp://ftp.moeller.net/DOCUMENTATION/PDF/MZ008005ZU_Orderform_Customized_Switch.pdf |
| Ordering form for SOND switches and SOND front plates(DE_EN) | ftp://ftp.moeller.net/DOCUMENTATION/PDF/MZ008006ZU_Orderform_Customized_Switch.pdf |


© 07/2019 by Eaton Industries GmbH