



**Changeoverswitches, T0, 20 A, surface mounting, 4 contact unit(s), Contacts: 8, 60 °, maintained, With 0 (Off) position, Netz-0-Notstrom, design no. 8902**

**Part no. T0-4-8902/11**  
**Catalog No. 218985**

Similar to illustration

## Delivery program

|  |                |                 |   |
|--|----------------|-----------------|---|
| Product range                                      |                |                 | Control switches  |
| Part group reference                               |                |                 | T0  |
| Basic function                                     |                |                 | Changeoverswitches<br>with black thumb grip and front plate                     |
| Contacts   |                |                 | 8   |
| Degree of Protection                               |                |                 | IP65  |
|  |                |                 | <b>totally insulated</b>  |
| Design   |                |                 | surface mounting<br>  |
| Contact sequence                                   |                |                 |   |
| Switching angle                                    |                | °               | 60  |
| Switching performance                              |                |                 | maintained<br>With 0 (Off) position   |
| Design number                                      |                |                 | 8902  |
| Front plate no.                                    |                |                 | <br><b>FS 161629</b>  |
| front plate  |                |                 | Netz-0-Notstrom   |
| <b>Motor rating AC-23A, 50 - 60 Hz</b>             |                |                 |   |
| 400 V  | P              | kW              | 5.5   |
| Rated uninterrupted current                        | I <sub>u</sub> | A               | 20  |
| Note on rated uninterrupted current I <sub>u</sub> |                |                 | Rated uninterrupted current I <sub>u</sub> is specified for max. cross-section. |
| Number of contact units                            |                | contact unit(s) | 4   |

## Technical data

|                                       |  |    |   |
|---------------------------------------|--|----|---|
| <b>General</b>                        |  |    |   |
| Standards                             |  |    | IEC/EN 60947, VDE 0660, IEC/EN 60204<br>Switch-disconnector according to IEC/EN 60947-3 |
| Climatic proofing                     |  |    | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30          |
| Ambient temperature                   |  |    |   |
| Enclosed                              |  | °C | -25 - +40   |
| Overvoltage category/pollution degree |  |    | III/3   |

|                                 |           |      |             |
|---------------------------------|-----------|------|-------------|
| Rated impulse withstand voltage | $U_{imp}$ | V AC | 6000        |
| Mechanical shock resistance     |           | g    | 15          |
| Mounting position               |           |      | As required |

## Contacts

|   |          |              |  |
|---|----------|--------------|--|
| Electrical characteristics                          |          |              |  |
| Rated operational voltage                           | $U_e$    | V AC         | 690  |
| Rated uninterrupted current                         | $I_u$    | A            | 20   |
| Note on rated uninterrupted current $I_u$           |          |              | Rated uninterrupted current $I_u$ is specified for max. cross-section. |
| Load rating with intermittent operation, class 12   |          |              |  |
| AB 25 % DF  |          | $\times I_e$ | 2  |
| AB 40 % DF  |          | $\times I_e$ | 1.6  |
| AB 60 % DF  |          | $\times I_e$ | 1.3  |
| Short-circuit rating                                |          |              |  |
| Fuse  |          | A gG/gL      | 20   |
| Rated short-time withstand current (1 s current)    | $I_{cw}$ | $A_{rms}$    | 320  |
| Note on rated short-time withstand current $I_{cw}$ |          |              | Current for a time of 1 second   |
| Rated conditional short-circuit current             | $I_q$    | kA           | 6  |

## Switching capacity

|  |              |               |       |
|--|--------------|---------------|-------|
| cos $\varphi$ rated making capacity as per IEC 60947-3         |              | A             | 130   |
| Rated breaking capacity cos $\varphi$ to IEC 60947-3           |              | A             |       |
| 230 V  |              | A             | 100   |
| 400/415 V  |              | A             | 110   |
| 500 V  |              | A             | 80    |
| 690 V  |              | A             | 60    |
| Safe isolation to EN 61140                                     |              |               |       |
| between the contacts   |              | V AC          | 440   |
| Current heat loss per contact at $I_e$                         |              | W             | 0.6   |
| Current heat loss per auxiliary circuit at $I_e$ (AC-15/230 V) |              | CO            | 0.6   |
| Lifespan, mechanical   | Operations   | $\times 10^6$ | > 0.4 |
| Maximum operating frequency                                    | Operations/h |               | 1200  |
| AC   |              |               |       |
| AC-3   |              |               |       |
| Rating, motor load switch                                      | P            | kW            |       |
| 220 V 230 V  | P            | kW            | 3     |
| 230 V Star-delta   | P            | kW            | 5.5   |
| 400 V 415 V  | P            | kW            | 5.5   |
| 400 V Star-delta   | P            | kW            | 7.5   |
| 500 V  | P            | kW            | 5.5   |
| 500 V Star-delta   | P            | kW            | 7.5   |
| 690 V  | P            | kW            | 4     |
| 690 V Star-delta   | P            | kW            | 5.5   |
| Rated operational current motor load switch                    |              |               |       |
| 230 V  | $I_e$        | A             | 11.5  |
| 230 V star-delta   | $I_e$        | A             | 20    |
| 400V 415 V   | $I_e$        | A             | 11.5  |
| 400 V star-delta   | $I_e$        | A             | 20    |
| 500 V  | $I_e$        | A             | 9     |
| 500 V star-delta   | $I_e$        | A             | 15.6  |
| 690 V  | $I_e$        | A             | 4.9   |
| 690 V star-delta   | $I_e$        | A             | 8.5   |
| AC-23A   |              |               |       |
| Motor rating AC-23A, 50 - 60 Hz                                | P            | kW            |       |
| 230 V  | P            | kW            | 3     |
| 400 V 415 V  | P            | kW            | 5.5   |

|   |                   |                |  |
|---|-------------------|----------------|--|
| 500 V   | P                 | kW             | 7.5  |
| 690 V   | P                 | kW             | 5.5  |
| Rated operational current motor load switch   |                   |                |  |
| 230 V   | I <sub>e</sub>    | A              | 13.3   |
| 400 V 415 V                                   | I <sub>e</sub>    | A              | 13.3   |
| 500 V   | I <sub>e</sub>    | A              | 13.3   |
| 690 V   | I <sub>e</sub>    | A              | 7.6  |
| DC  |                   |                |  |
| DC-1, Load-break switches L/R = 1 ms          |                   |                |  |
| Rated operational current                     | I <sub>e</sub>    | A              | 10   |
| Voltage per contact pair in series            |                   | V              | 60   |
| DC-21A  |                   |                |  |
| Rated operational current                     | I <sub>e</sub>    | A              | 1  |
| Contacts                                      |                   | Quantity       | 1  |
| DC-23A, motor load switch L/R = 15 ms         |                   |                |  |
| 24 V  |                   |                |  |
| Rated operational current                     | I <sub>e</sub>    | A              | 10   |
| Contacts                                      |                   | Quantity       | 1  |
| 48 V  |                   |                |  |
| Rated operational current                     | I <sub>e</sub>    | A              | 10   |
| Contacts                                      |                   | Quantity       | 2  |
| 60 V  |                   |                |  |
| Rated operational current                     | I <sub>e</sub>    | A              | 10   |
| Contacts                                      |                   | Quantity       | 3  |
| 120 V   |                   |                |  |
| Rated operational current                     | I <sub>e</sub>    | A              | 5  |
| Contacts                                      |                   | Quantity       | 3  |
| 240 V   |                   |                |  |
| Rated operational current                     | I <sub>e</sub>    | A              | 5  |
| Contacts                                      |                   | Quantity       | 5  |
| DC-13, Control switches L/R = 50 ms           |                   |                |  |
| Rated operational current                     | I <sub>e</sub>    | A              | 10   |
| Voltage per contact pair in series            |                   | V              | 32   |
| Control circuit reliability at 24 V DC, 10 mA | Fault probability | H <sub>F</sub> | < 10 <sup>-5</sup> , < 1 failure in 100,000 switching operations |

### Terminal capacities

|                                      |  |                 |                                      |
|--------------------------------------|--|-----------------|--------------------------------------|
| Solid or stranded                    |  | mm <sup>2</sup> | 1 x (1 - 2,5)<br>2 x (1 - 2,5)       |
| Flexible with ferrules to DIN 46228  |  | mm <sup>2</sup> | 1 x (0.75 - 2.5)<br>2 x (0.75 - 2.5) |
| Terminal screw                       |  |                 | M3.5                                 |
| Tightening torque for terminal screw |  | Nm              | 1                                    |

### Technical safety parameters:

|       |  |  |   |
|-------|--|--|---|
| Notes |  |  | B10 <sub>d</sub> values as per EN ISO 13849-1, table C1 |
|-------|--|--|---|

### Rating data for approved types

|                   |  |  |      |
|-------------------|--|--|------|
| Terminal capacity |  |  |      |
| Terminal screw    |  |  | M3.5 |

### Design verification as per IEC/EN 61439

|  |                   |    |     |
|--|-------------------|----|-----|
| Technical data for design verification                   |                   |    |     |
| Rated operational current for specified heat dissipation | I <sub>n</sub>    | A  | 20  |
| Heat dissipation per pole, current-dependent             | P <sub>vid</sub>  | W  | 0.6 |
| Equipment heat dissipation, current-dependent            | P <sub>vid</sub>  | W  | 0   |
| Static heat dissipation, non-current-dependent           | P <sub>vs</sub>   | W  | 0   |
| Heat dissipation capacity                                | P <sub>diss</sub> | W  | 0   |
| Operating ambient temperature min.                       |                   | °C | -25 |

|  |  |    |  |
|--|--|----|--|
| Operating ambient temperature max.   |  | °C | 40   |
| 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.                         |

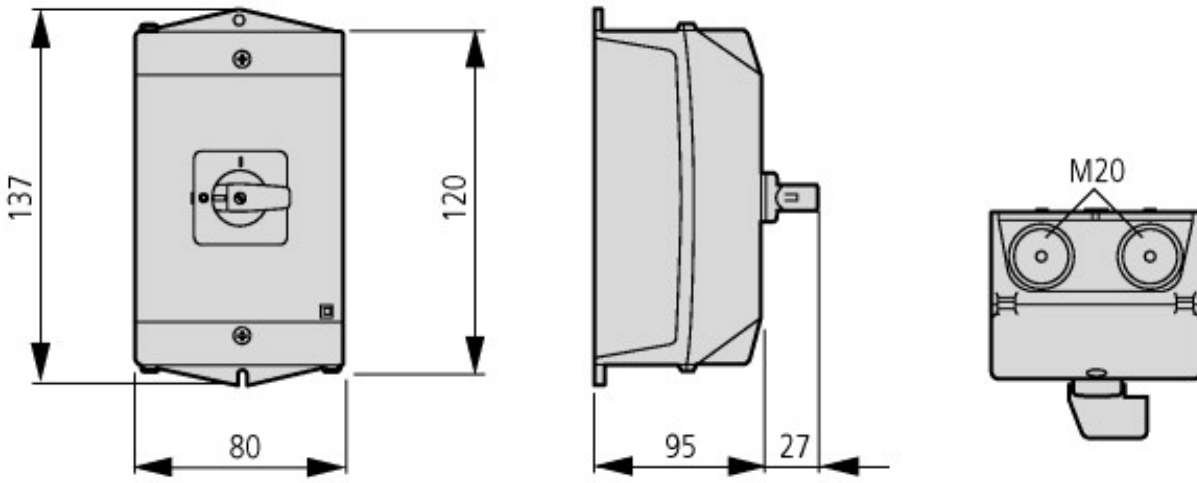
## Technical data ETIM 7.0

Low-voltage industrial components (EG000017) / Off-load switch (EC001105)

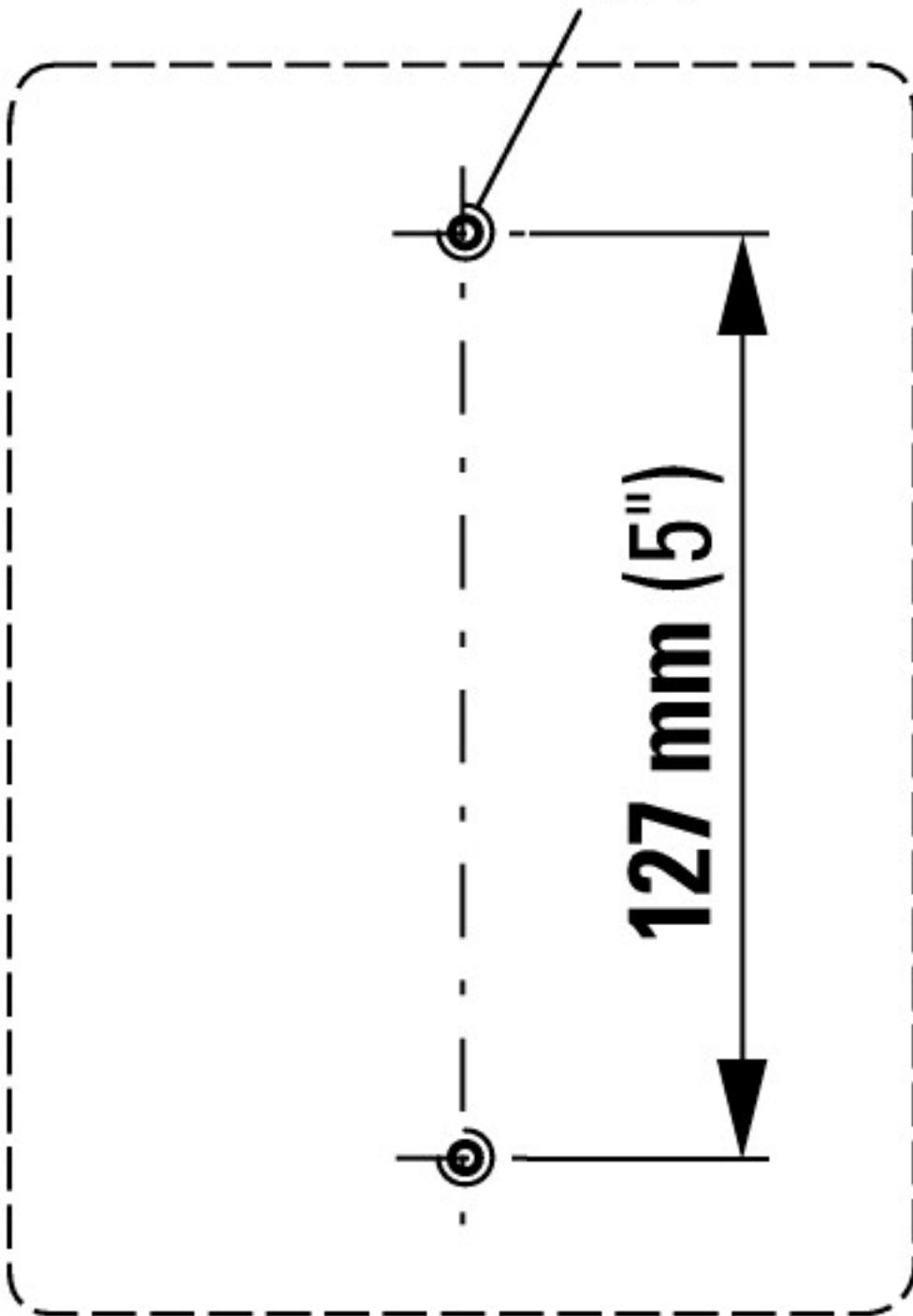
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Changeover switch (ecl@ss10.0.1-27-37-14-05 [AKF062013])

|   |    |  |                  |
|---|----|--|------------------|
| Model   |    |  | Reverser         |
| Number of poles   |    |  | 4                |
| With 0 (off) position                                   |    |  | Yes              |
| With retraction in 0-position                           |    |  | No               |
| Rated permanent current I <sub>u</sub>                  | A  |  | 20               |
| Rated operation current I <sub>e</sub> at AC-3, 400 V   | A  |  | 11.5             |
| Rated operation power at AC-3, 400 V                    | kW |  | 4                |
| Degree of protection (IP), front side                   |    |  | IP65             |
| Degree of protection (NEMA), front side                 |    |  | Other            |
| 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 ground mounting                            |    |  | Yes              |
| Suitable for front mounting 4-hole                      |    |  | No               |
| Suitable for distribution board installation            |    |  | No               |
| Suitable for intermediate mounting                      |    |  | No               |
| Complete device in housing                              |    |  | Yes              |
| Material housing  |    |  | Plastic          |
| Type of control element                                 |    |  | Toggle           |
| Type of electrical connection of main circuit           |    |  | Screw connection |

## Dimensions



M4



## Additional product information (links)

|  |   |
|--|---|
| Technical overview cam switch, switch-disconnector | <a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.2">http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.2</a>                                     |
| System overview cam switch T                       | <a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.4">http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.4</a>                                     |
| System overview switch-disconnector P              | <a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.6">http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.6</a>                                     |
| Key to part numbers Cam switch                     | <a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.8">http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.8</a>                                     |
| Key to part numbers Switch-disconnector            | <a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.8">http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.8</a>                                     |
| Switches for ATEX                                  | <a href="http://www.coopercrouse-hinds.eu/en/products/25-ex-safety-and-main-current-switches.html">http://www.coopercrouse-hinds.eu/en/products/25-ex-safety-and-main-current-switches.html</a> |