



Step switches, T0, 20 A, flush mounting, 3 contact unit(s), Contacts: 5, 45 °, maintained, Without 0 (Off) position, 1-5, design no. 15005

Part no. T0-3-15005/E  
 Catalog No. 012406



Similar to illustration

## Delivery program

|   |       |                 |  |
|---|-------|-----------------|--|
| Product range                             |       |                 | Control switches   |
| Part group reference                      |       |                 | T0   |
| Basic function                            |       |                 | Step switches<br>with black thumb grip and front plate                 |
| Contacts                                  |       |                 | 5  |
| Contact behavior                          |       |                 | Uninterruptible  |
| Degree of Protection                      |       |                 | Front IP65   |
| Design                                    |       |                 | flush mounting   |
|   |       |                 |  |
| Contact sequence                          |       |                 |  |
| Switching angle                           |       | °               | 45   |
| Switching performance                     |       |                 | maintained<br>Without 0 (Off) position                                 |
| Design number                             |       |                 | 15005  |
| Front plate no.                           |       |                 | <br><b>FS 408</b>  |
| front plate                               |       |                 | 1-5  |
| <b>Motor rating AC-23A, 50 - 60 Hz</b>    |       |                 |  |
| 400 V                                     | P     | kW              | 5.5  |
| 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. |
| Number of contact units                   |       | contact unit(s) | 3  |

## Technical data

|                     |  |    |  |
|---------------------|--|----|--|
| <b>General</b>      |  |    |  |
| Standards           |  |    | IEC/EN 60947, VDE 0660, IEC/EN 60204, CSA, UL<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 |  |    |  |
| Open                |  | °C | -25 - +50  |

|                                       |           |      |             |
|---------------------------------------|-----------|------|-------------|
| 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  |          | x $I_e$   | 2  |
| AB 40 % DF  |          | x $I_e$   | 1.6  |
| AB 60 % DF  |          | x $I_e$   | 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   | x $10^6$ | > 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:

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

### Rating data for approved types

|                                  |                |      |                |
|----------------------------------|----------------|------|----------------|
| Contacts                         |                |      |                |
| Rated operational voltage        | U <sub>e</sub> | V AC | 600            |
| Rated uninterrupted current max. |                |      |                |
| Main conducting paths            |                |      |                |
| General use                      |                | A    | 16             |
| Auxiliary contacts               |                |      |                |
| General Use                      | I <sub>U</sub> | A    | 10             |
| Pilot Duty                       |                |      | A 600<br>P 300 |

|  |       |             |  |
|--|-------|-------------|--|
| Switching capacity                       |       |             |  |
| Maximum motor rating                     |       |             |  |
| Single-phase                             |       |             |  |
| 120 V AC                                 | HP    | 0.5         |  |
| 200 V AC                                 | HP    | 1           |  |
| 240 V AC                                 | HP    | 1.5         |  |
| Three-phase                              |       |             |  |
| 200 V AC                                 | HP    | 3           |  |
| 240 V AC                                 | HP    | 3           |  |
| 480 V AC                                 | HP    | 7.5         |  |
| 600 V AC                                 | HP    | 7.5         |  |
| Short Circuit Current Rating             |       |             |  |
| SCCR                                     |       |             |  |
| Basic Rating                             | kA    | 5           |  |
| max. Fuse                                | A     | 50          |  |
| High fault rating                        | kA    | 10          |  |
| max. Fuse                                | A     | 20, Class J |  |
| Terminal capacity                        |       |             |  |
| Solid or flexible conductor with ferrule | AWG   | 18 - 14     |  |
| Terminal screw                           |       | M3.5        |  |
| Tightening torque                        | lb-in | 8.8         |  |

## Design verification as per IEC/EN 61439

|  |            |    |  |
|--|------------|----|--|
| Technical data for design verification   |            |    |  |
| Rated operational current for specified heat dissipation   | $I_n$      | A  | 20   |
| Heat dissipation per pole, current-dependent   | $P_{vid}$  | W  | 0.6  |
| 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) / Control switch (EC002611)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Control switch (ecl@ss10.0.1-27-37-14-14 [ACN998011])

|  |   |                 |
|--|---|-----------------|
| Type of switch                               |   | Level switch    |
| Number of poles                              |   | 1               |
| Max. rated operation voltage Ue AC           | V | 690             |
| Rated permanent current Iu                   | A | 20              |
| Number of switch positions                   |   | 5               |
| With 0 (off) position                        |   | No              |
| With retraction in 0-position                |   | No              |
| Device construction                          |   | Built-in device |
| Width in number of modular spacings          |   | 0               |
| Suitable for ground mounting                 |   | No              |
| Suitable for front mounting 4-hole           |   | 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                            |   | 48x48 mm        |
| Degree of protection (IP), front side        |   | IP65            |
| Degree of protection (NEMA), front side      |   | 12              |

## Approvals

|                             |  |  |
|-----------------------------|--|--|
| Product Standards           |  | UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CSA-C22.2 No. 94; IEC/EN 60947-3; CE marking |
| UL File No.                 |  | E36332   |
| UL Category Control No.     |  | NLRV   |
| CSA File No.                |  | 12528  |
| CSA Class No.               |  | 3211-05  |
| North America Certification |  | UL listed, CSA certified   |
| Suitable for                |  | Branch circuits, suitable as motor disconnect  |
| Degree of Protection        |  | IEC: IP65; UL/CSA Type 1, 12   |

## Dimensions

