

Changeoverswitches, T0, 20 A, service distribution board mounting, 4 contact unit(s), Contacts: 8, 60 °, maintained, With 0 (Off) position, 1-0-2, design no. 8213



Part no. T0-4-8213/IVS
Catalog No. 081559

**EL-Nummer
(Norway)** 1417095

Similar to illustration

Delivery program

| | | | |
|--|---|----|-----|
| Product range | Control switches | | |
| Part group reference | T0 | | |
| Basic function | Changeoverswitches | | |
| | with black thumb grip and front plate | | |
| Contacts | 8 | | |
| Degree of Protection | Front IP30 | | |
| Design | service distribution board mounting | | |
| Switching angle | 60 ° | | |
| Switching performance | maintained With 0 (Off) position | | |
| Design number | 8213 | | |
| front plate | 1-0-2 | | |
| Motor rating AC-23A, 50 - 60 Hz | | | |
| 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) | | 4 |

Technical data

| | | | |
|---------------------------------------|--|-----------|------|
| General | | | |
| Standards | IEC/EN 60947, VDE 0660, IEC/EN 60204, CSA, UL Switch-disconnector according to IEC/EN 60947-3 | | |
| Climatic proofing | Damp heat, constant, to IEC 60068-2-78 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 ϕ rated making capacity as per IEC 60947-3 | | A | 130 |
| Rated breaking capacity cos ϕ 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_e | A | 13.3 |
| 400 V 415 V | I_e | A | 13.3 |
| 500 V | I_e | A | 13.3 |
| 690 V | I_e | A | 7.6 |
| DC | | | |
| DC-1, Load-break switches L/R = 1 ms | | | |
| Rated operational current | I_e | A | 10 |
| Voltage per contact pair in series | | V | 60 |
| DC-21A | I_e | A | |
| Rated operational current | I_e | A | 1 |
| Contacts | | Quantity | 1 |

| | | | |
|---|-------------------|----------------|--|
| DC-23A, motor load switch L/R = 15 ms | | | |
| 24 V | | | |
| Rated operational current | I _e | A | 10 |
| Contacts | | Quantity | 1 |
| 48 V | | | |
| Rated operational current | I _e | A | 10 |
| Contacts | | Quantity | 2 |
| 60 V | | | |
| Rated operational current | I _e | A | 10 |
| Contacts | | Quantity | 3 |
| 120 V | | | |
| Rated operational current | I _e | A | 5 |
| Contacts | | Quantity | 3 |
| 240 V | | | |
| Rated operational current | I _e | A | 5 |
| Contacts | | Quantity | 5 |
| DC-13, Control switches L/R = 50 ms | | | |
| Rated operational current | I _e | A | 10 |
| Voltage per contact pair in series | | V | 32 |
| Control circuit reliability at 24 V DC, 10 mA | Fault probability | H _F | < 10 ⁻⁵ , < 1 failure in 100,000 switching operations |

Terminal capacities

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

Technical safety parameters:

| | | |
|-------|--|---|
| Notes | | B10 _d values as per EN ISO 13849-1, table C1 |
|-------|--|---|

Rating data for approved types

| | | | |
|----------------------------------|----------------|------|----------------|
| Contacts | | | |
| Rated operational voltage | U _e | V AC | 600 |
| Rated uninterrupted current max. | | | |
| Main conducting paths | | | |
| General use | | A | 16 |
| Auxiliary contacts | | | |
| General Use | I _U | A | 10 |
| Pilot Duty | | | A 600 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

| | | |
|-------------------|----|-------------|
| 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 | | | Meets the product standard's requirements. |
| 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 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 | | 4 |
| With zero (off) position | | Yes |
| With retraction in 0-position | | No |
| Rated permanent current I_p | A | 20 |
| Rated operation current I_e at AC-3, 400 V | A | 11.5 |
| Rated operation power at AC-3, 400 V | kW | 4 |
| Degree of protection (IP), front side | | IP30 |
| Degree of protection (NEMA), front side | | 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 |
| Suitable for floor mounting | Yes |
| Suitable for front mounting | No |
| Suitable for distribution board installation | Yes |
| 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 |