



Overload relay, Direct mounting, Earth-fault protection: with, $I_r = 1 - 5 \text{ A}$, 1 N/O, 1 N/C



Part no. ZEB12-5-GF
 Catalog No. 136484
 Alternate Catalog No. XTOE005BGS
 EL-Nummer (Norway) 0004137353

Delivery program

| | | | |
|-------------------------------|-------|---|---|
| Product range | | | Electronic overload relays ZEB |
| Phase-failure sensitivity | | | IEC/EN 60947, VDE 0660 Part 102 |
| Description | | | Test/off button Reset pushbutton Manual/auto reset selectable Protection in the case of starting under load (class 10 to class 20) |
| Mounting type | | | Direct mounting |
| Earth-fault protection | | | |
| Earth-fault protection | | | with |
| Trip at approx. | | | $> 0.5 \times I_r$ in 2 s $> 1.5 \times I_r$ in 1 s |
| Setting range | | | |
| Overload releases | I_r | A | 1 - 5 |
| | | | |
| Contact sequence | | | |
| Auxiliary contacts | | | |
| N/O = Normally open | | | 1 N/O |
| N/C = Normally closed | | | 1 N/C |
| For use with | | | DILM7 DILM9 DILM12 DILM15 DIULM7 DIULM9 DIULM12 SDAINLM12 SDAINLM16 SDAINLM22 |

Technical data

| | | | |
|---|--|----|--|
| General | | | |
| Standards | | | IEC/EN 60947, VDE 0660, UL, CSA |
| Climatic proofing | | | Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30 |
| Ambient temperature | | | |
| Open | | °C | -25 - +65 |
| Ambient temperature open max. | | °C | 65 |
| Enclosed | | °C | |
| Ambient temperature enclosed max. | | °C | 65 |
| Mechanical shock resistance | | g | 15 Shock duration 10 ms according to IEC 60068-2-27 |
| Degree of Protection | | | IP20 |
| Protection against direct contact when actuated from front (EN 50274) | | | Finger and back-of-hand proof |
| Altitude | | m | Max. 2000 |

Main conducting paths

| | | | |
|--|-----------|-----------------|--------------|
| Rated impulse withstand voltage | U_{imp} | V AC | 6000 |
| Overvoltage category/pollution degree | | | III/3 |
| Rated insulation voltage | U_i | V AC | 690 |
| Rated operational voltage | U_e | V AC | 690 |
| Rated frequency | f | Hz | 50/60 |
| Safe isolation to EN 61140 | | | |
| Between auxiliary contacts and main contacts | | V AC | 600 |
| Between main circuits | | V AC | 600 |
| Terminal capacities | | mm ² | |
| Solid | | mm ² | 1 x 1.5 - 16 |
| Solid or stranded | | AWG | 1 x 14 - 4 |
| Stripping length | | mm | 13 |

Auxiliary and control circuits

| | | | |
|---------------------------------------|-----------|-----------------|---|
| Rated impulse withstand voltage | U_{imp} | V | 6000 |
| Overvoltage category/pollution degree | | | III/3 |
| Terminal capacities | | mm ² | |
| Solid | | mm ² | 2 x (0.75 - 4) |
| Flexible with ferrule | | mm ² | 2 x (0.75 - 2.5) |
| Solid or stranded | | AWG | 2 x (18 - 12) |
| Terminal screw | | | M3.5 |
| Tightening torque | | Nm | 0.8 - 1.2 |
| Tightening torque | | lb-in | 7 |
| Stripping length | | mm | 8 |
| Tools | | | |
| Pozidriv screwdriver | | Size | 2 |
| Standard screwdriver | | mm | 1 x 6 |
| Rated insulation voltage | U_i | V AC | 500 |
| Rated operational voltage | U_e | V AC | 500 |
| Safe isolation to EN 61140 | | | |
| between the auxiliary contacts | | V AC | 240 |
| Conventional thermal current | I_{th} | A | 5 |
| Rated operational current | I_e | A | |
| AC-15 | | | |
| Make contact | | | |
| 120 V | I_e | A | 1.5 |
| 220 V 230 V 240 V | I_e | A | 1.5 |
| 380 V 400 V 415 V | I_e | A | 0.5 |
| 500 V | I_e | A | 0.5 |
| Break contact | | | |
| 120 V | I_e | A | 1.5 |
| 220 V 230 V 240 V | I_e | A | 1.5 |
| 380 V 400 V 415 V | I_e | A | 0.9 |
| 500 V | I_e | A | 0.8 |
| DC L/R ≤ 15 ms | | | |
| | | | Switch-on and switch-off conditions based on DC-13, time constant as specified. |
| 24 V | I_e | A | 0.9 |
| 60 V | I_e | A | 0.75 |
| 110 V | I_e | A | 0.4 |
| 220 V | I_e | A | 0.2 |
| Short-circuit rating without welding | | | |
| max. fuse | | A gG/gL | 6 |

Rating data for approved types

| | | | |
|------------------------------|--|------|------------|
| Auxiliary contacts | | | |
| Pilot Duty | | | |
| AC operated | | | B600 |
| DC operated | | | R300 |
| Short Circuit Current Rating | | SCCR | |
| 600 V High Fault | | | |
| SCCR (fuse) | | kA | 100 |
| max. Fuse | | A | 20 Class J |

Design verification as per IEC/EN 61439

| | | | |
|--|------------|----|--|
| Technical data for design verification | | | |
| Rated operational current for specified heat dissipation | I_n | A | 5 |
| Heat dissipation per pole, current-dependent | P_{vid} | W | 0.17 |
| Equipment heat dissipation, current-dependent | P_{vid} | W | 0.51 |
| 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 | 65 |
| 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 7.0

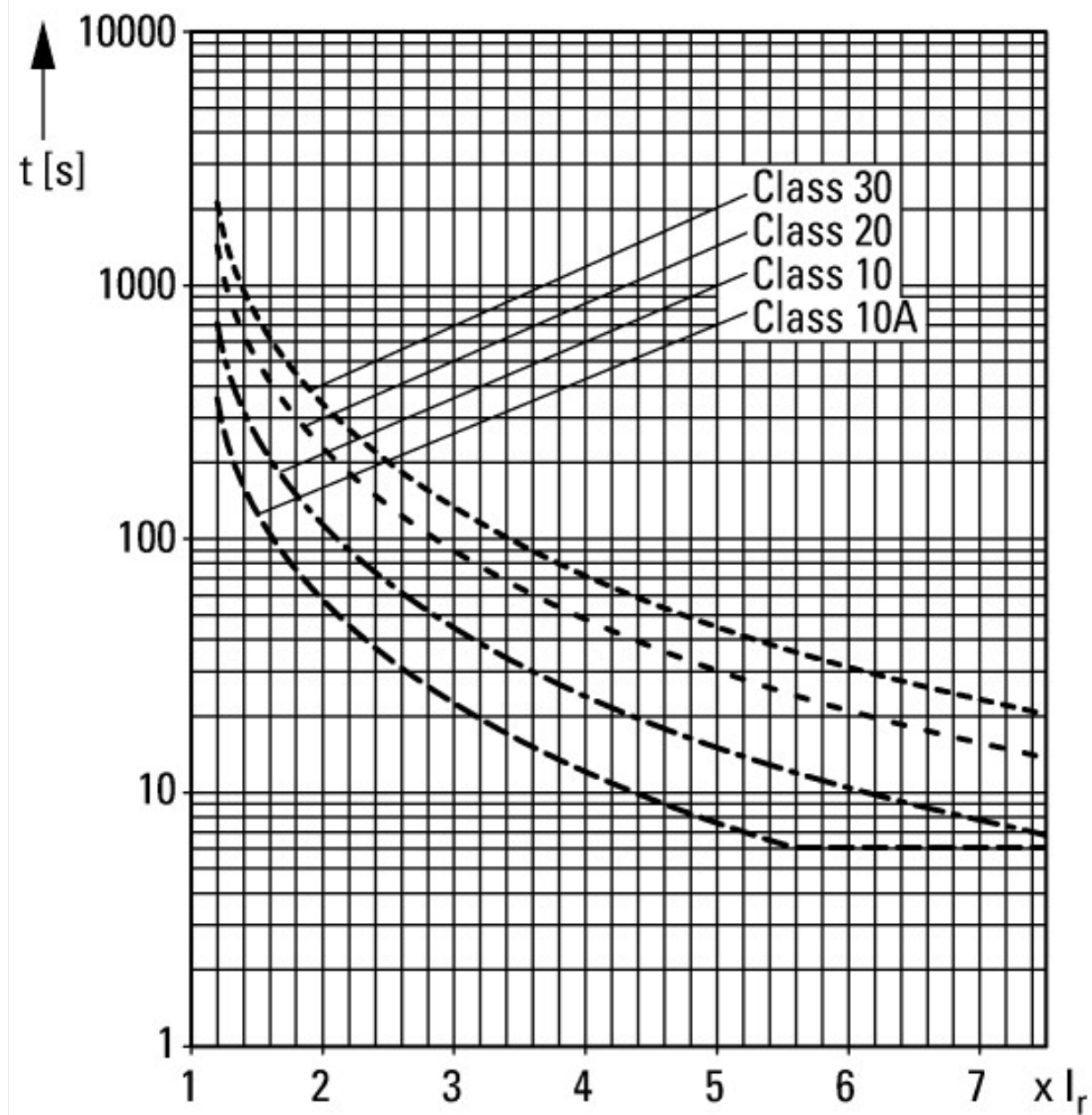
| | | | |
|---|--|---|-------------------|
| Low-voltage industrial components (EG000017) / Electronic overload relay (EC001080) | | | |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Overload protection device / Electronic overload relay (ecl@ss10.0.1-27-37-15-02 [AKF076014]) | | | |
| Adjustable current range | | A | 1 - 5 |
| Mounting method | | | Direct attachment |
| Type of electrical connection of main circuit | | | Screw connection |
| Number of auxiliary contacts as normally closed contact | | | 1 |
| Number of auxiliary contacts as normally open contact | | | 1 |

| | | |
|---|---|--------------|
| Number of auxiliary contacts as change-over contact | | 0 |
| Rated control supply voltage Us at AC 50HZ | V | 0 - 0 |
| Rated control supply voltage Us at AC 60HZ | V | 0 - 0 |
| Rated control supply voltage Us at DC | V | 0 - 0 |
| Release class | | Adjustable |
| Voltage type for actuating | | Self powered |
| Reset function automatic | | Yes |
| Reset function input | | No |
| Reset function push-button | | Yes |

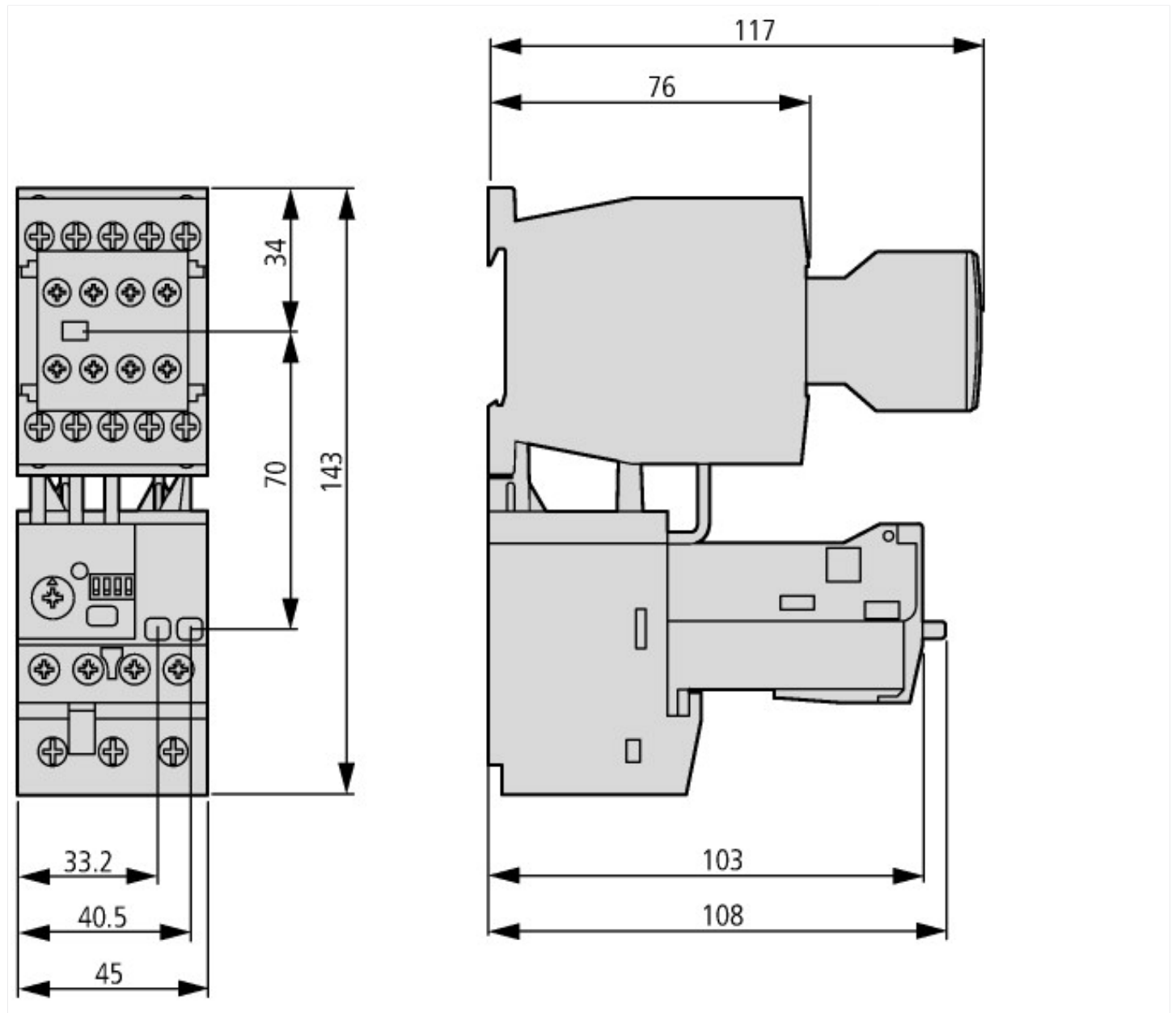
Approvals

| | | |
|--------------------------------------|--|--|
| Product Standards | | UL 508; CSA-C22.2 No. 14; IEC/EN 60947-4-1; CE marking |
| UL File No. | | E1230 |
| UL Category Control No. | | NKCR |
| CSA File No. | | 2290956 |
| CSA Class No. | | 3211-03 |
| North America Certification | | UL listed, CSA certified |
| Specially designed for North America | | No |
| Suitable for | | Branch circuits |
| Max. Voltage Rating | | 600 V AC |
| Degree of Protection | | IEC: IP20, UL/CSA Type: - |

Characteristics



Dimensions



Assets (links)

Declaration of CE Conformity

00003052

Instruction Leaflets

IL04210002E2018_08

Additional product information (links)

IL04210002E Solid-state motor protection relay

IL04210002E Solid-state motor protection relay ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04210002E2018_08.pdf