



Overload relay, Direct mounting, Earth-fault protection: none,  $I_r = 4 - 20$  A, 1 N/O, 1 N/C

**EATON**  
Powering Business Worldwide™

Part no. **ZEB32-20**  
Catalog No. **136488**  
Alternate Catalog No. **XTOE020CCS**  
EL-Nummer (Norway) **0004137357**

## Delivery program

|                               |   |   |        |
|-------------------------------|---|---|--------|
| Product range                 | Electronic overload relays ZEB  |   |        |
| Phase-failure sensitivity     | IEC/EN 60947, VDE 0660 Part 102   |   |        |
| Description                   | Test/off button<br>Reset pushbutton<br>Manual/auto reset selectable<br>Protection with heavy starting duty (Class 10A-30) |   |        |
| Mounting type                 | Direct mounting   |   |        |
| <b>Earth-fault protection</b> | none  |   |        |
| <b>Setting range</b>          |   |   |        |
| Overload releases             | $I_r$   | A | 4 - 20 |
| Contact sequence              |   |   |        |
| <b>Auxiliary contacts</b>     |   |   |        |
| N/O = Normally open           | 1 N/O   |   |        |
| N/C = Normally closed         | 1 N/C   |   |        |
| For use with                  | DILM17, DILM25, DILM32, DILM38, DIULM17, DIULM25, DIULM32, SDAINLM30, SDAINLM45, SDAINLM55                                |   |        |

## Technical data

|   |  |   |       |  |  |
|---|--|---|-------|--|--|
| <b>General</b>  |  |   |       |  |  |
| Standards   | IEC/EN 60947, VDE 0660, UL, CSA  |   |       |  |  |
| Climatic proofing   | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |   |       |  |  |
| Ambient temperature   |  |   |       |  |  |
| Open  | $^{\circ}\text{C}$   | -25 - +65   |       |  |  |
| Ambient temperature open max.   | $^{\circ}\text{C}$   | 65  |       |  |  |
| Enclosed  | $^{\circ}\text{C}$   |   |       |  |  |
| Ambient temperature enclosed max.                                     | $^{\circ}\text{C}$   | 65  |       |  |  |
| Mechanical shock resistance   | g  | 15<br>Shock duration 10 ms<br>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  |   |       |  |  |
| <b>Main conducting paths</b>  |  |   |       |  |  |
| Rated impulse withstand voltage                                       | $U_{\text{imp}}$   | 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 <sup>2</sup> |              |
| Solid  |       | mm <sup>2</sup> | 1 x 1.5 - 16 |
| ein- oder mehrdrähtig                        |       | 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 <sup>2</sup> |   |
| Solid                                 |           | mm <sup>2</sup> | 2 x (0.75 - 4)  |
| Flexible with ferrule                 |           | mm <sup>2</sup> | 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 $\leq$ 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    | 60 Class J |

## 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 0.77   |
| Equipment heat dissipation, current-dependent  | P <sub>vid</sub>  | W 2.3  |
| 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                | 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

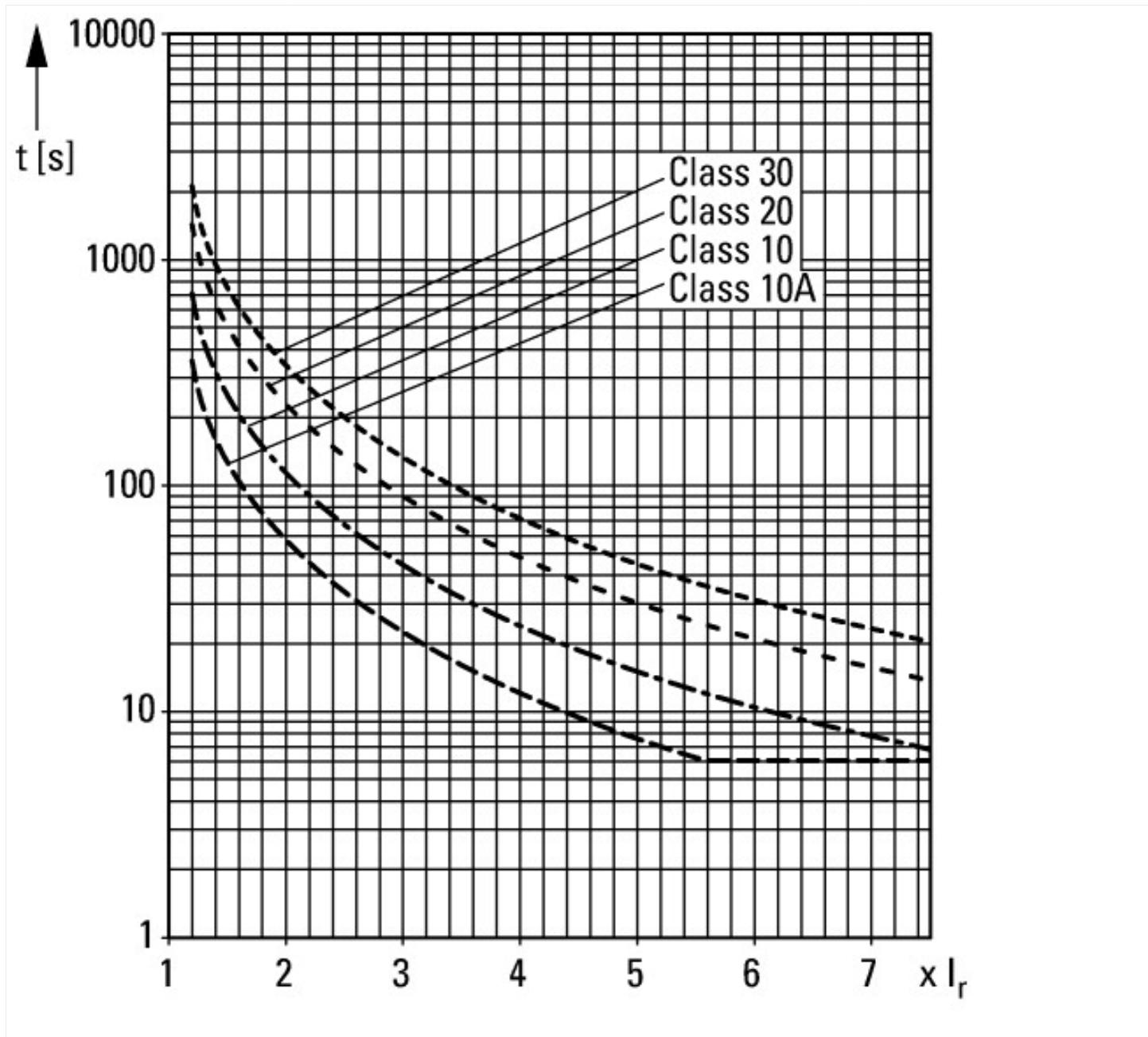
|   |   |                   |
|---|---|-------------------|
| Low-voltage industrial components (EG000017) / Electronic overload relay (EC001080)   |   |                   |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Overload protection device / Electronic overload relay (ecl@ss10.0.1-27-37-15-02 [AKF076014]) |   |                   |
| Adjustable current range  | A | 4 - 20            |
| 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          |

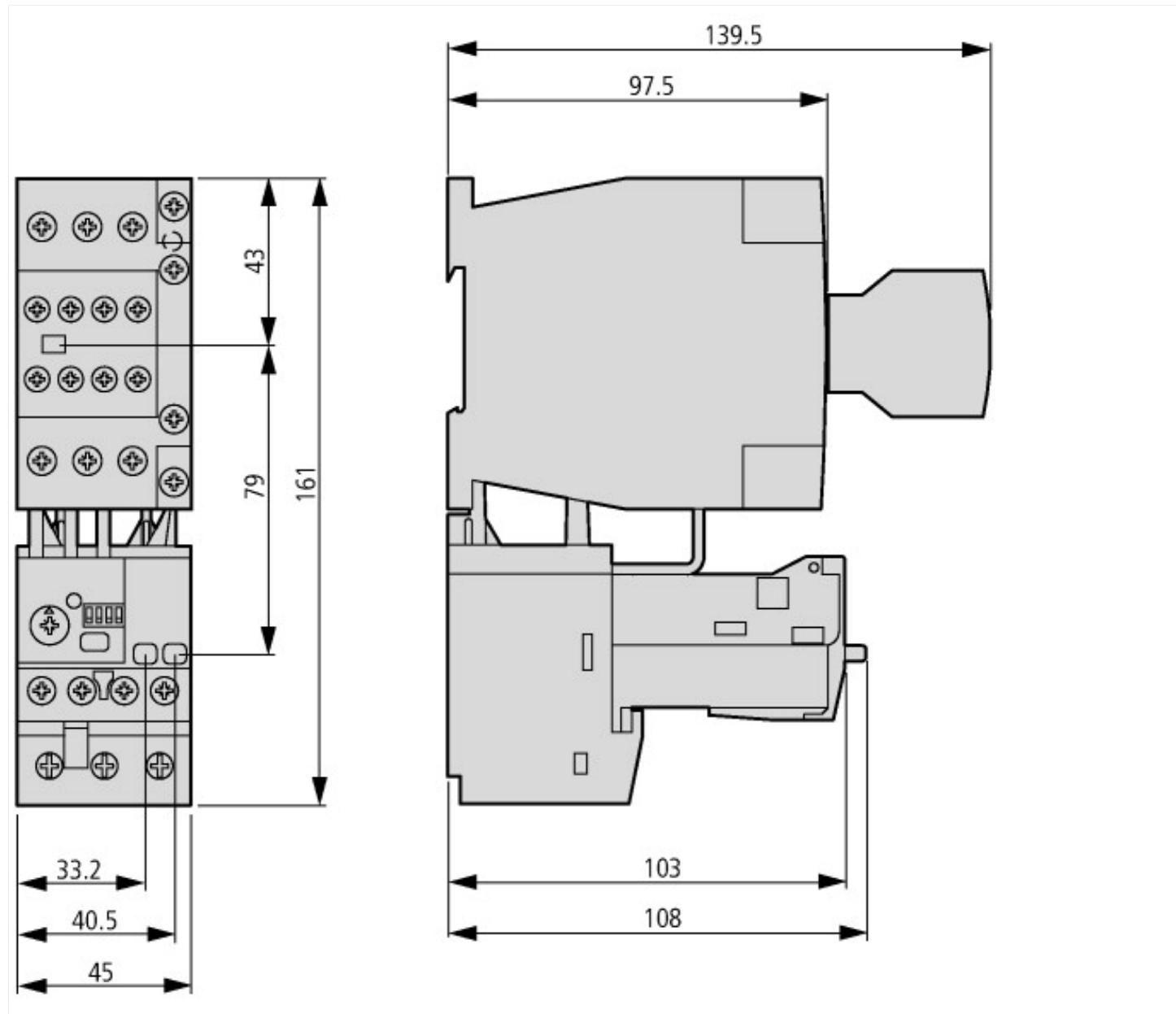
## Approvals

|                                      |  |
|--------------------------------------|--|
| 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)

### Instruction Leaflets

IL04210002E2018\_08