

## DATASHEET - ZEB32-5



Overload relay, Direct mounting, Earth-fault protection: none,  $I_r = 1 - 5 \text{ A}$ , 1 N/O, 1 N/C



Part no. ZEB32-5  
Catalog No. 136487  
Alternate Catalog No. XTOE005CCS  
EL-Nummer 0004137356  
(Norway)

### 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>                    |       |   |                                                                                                                           |
| Earth-fault protection                           |       |   | none                                                                                                                      |
| <b>Setting range</b>                             |       |   |                                                                                                                           |
| Overload releases                                | $I_r$ | A | 1 - 5                                                                                                                     |
| Contact sequence                                 |       |   |                                                                                                                           |
| <b>Auxiliary contacts</b>                        |       |   |                                                                                                                           |
| N/O = Normally open                              |       |   | 1 N/O                                                                                                                     |
| N/C = Normally closed                            |       |   | 1 N/C                                                                                                                     |
| For use with                                     |       |   | DILM17<br>DILM25<br>DILM32<br>DILM38<br>DIULM17<br>DIULM25<br>DIULM32<br>SDAINLM30<br>SDAINLM45<br>SDAINLM55              |
| <b>Conformity, Approval</b>                      |       |   |                                                                                                                           |
| Explosion protection (according to ATEX 94/9/EC) |       |   | II(2)GD [Ex d] [Ex e] [Ex tb]                                                                                             |
| EC-prototype test certification                  |       |   | SIRA 13 ATEX 9348X                                                                                                        |

### Technical data

#### General

|                                                                       |  |    |                                                                                |
|-----------------------------------------------------------------------|--|----|--------------------------------------------------------------------------------|
| 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                                                                  |  | °C | -25 - +65                                                                      |
| Ambient temperature open max.                                         |  | °C | 65                                                                             |
| Enclosed                                                              |  | °C |                                                                                |
| Ambient temperature enclosed max.                                     |  | °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                                                  |

|                                              |                  |                 |                                                                                 |
|----------------------------------------------|------------------|-----------------|---------------------------------------------------------------------------------|
| Altitude                                     |                  | m               | Max. 2000                                                                       |
| <b>Main conducting paths</b>                 |                  |                 |                                                                                 |
| Rated impulse withstand voltage              | U <sub>imp</sub> | V AC            | 6000                                                                            |
| Overvoltage category/pollution degree        |                  |                 | III/3                                                                           |
| Rated insulation voltage                     | U <sub>i</sub>   | V AC            | 690                                                                             |
| Rated operational voltage                    | U <sub>e</sub>   | 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                                                                    |
| Solid or stranded                            |                  | AWG             | 1 x 14 - 4                                                                      |
| Stripping length                             |                  | mm              | 13                                                                              |
| <b>Auxiliary and control circuits</b>        |                  |                 |                                                                                 |
| Rated impulse withstand voltage              | U <sub>imp</sub> | 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 <sub>i</sub>   | V AC            | 500                                                                             |
| Rated operational voltage                    | U <sub>e</sub>   | V AC            | 500                                                                             |
| Safe isolation to EN 61140                   |                  |                 |                                                                                 |
| between the auxiliary contacts               |                  | V AC            | 240                                                                             |
| Conventional thermal current                 | I <sub>th</sub>  | A               | 5                                                                               |
| Rated operational current                    | I <sub>e</sub>   | A               |                                                                                 |
| AC-15                                        |                  |                 |                                                                                 |
| Make contact                                 |                  |                 |                                                                                 |
| 120 V                                        | I <sub>e</sub>   | A               | 1.5                                                                             |
| 220 V 230 V 240 V                            | I <sub>e</sub>   | A               | 1.5                                                                             |
| 380 V 400 V 415 V                            | I <sub>e</sub>   | A               | 0.5                                                                             |
| 500 V                                        | I <sub>e</sub>   | A               | 0.5                                                                             |
| Break contact                                |                  |                 |                                                                                 |
| 120 V                                        | I <sub>e</sub>   | A               | 1.5                                                                             |
| 220 V 230 V 240 V                            | I <sub>e</sub>   | A               | 1.5                                                                             |
| 380 V 400 V 415 V                            | I <sub>e</sub>   | A               | 0.9                                                                             |
| 500 V                                        | I <sub>e</sub>   | 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 <sub>e</sub>   | A               | 0.9                                                                             |
| 60 V                                         | I <sub>e</sub>   | A               | 0.75                                                                            |
| 110 V                                        | I <sub>e</sub>   | A               | 0.4                                                                             |
| 220 V                                        | I <sub>e</sub>   | 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 <sub>n</sub>    | A  | 5                                                                                                                                |
| Heat dissipation per pole, current-dependent                                                                           | P <sub>vid</sub>  | W  | 0.17                                                                                                                             |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub>  | W  | 0.5                                                                                                                              |
| 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

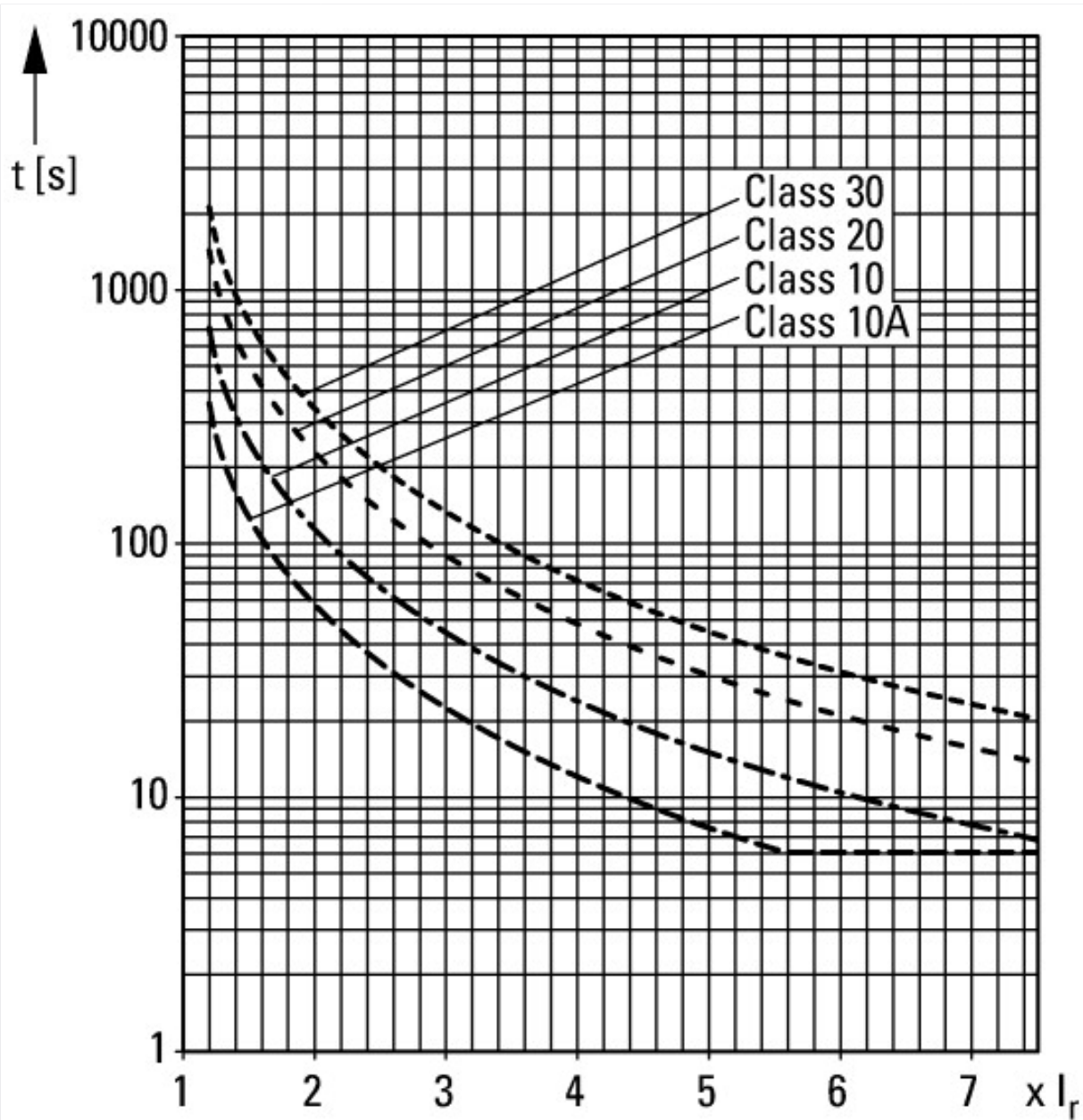
|                                                                                                                                                                                               |  |   |                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|-------------------|
| 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 | 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          |

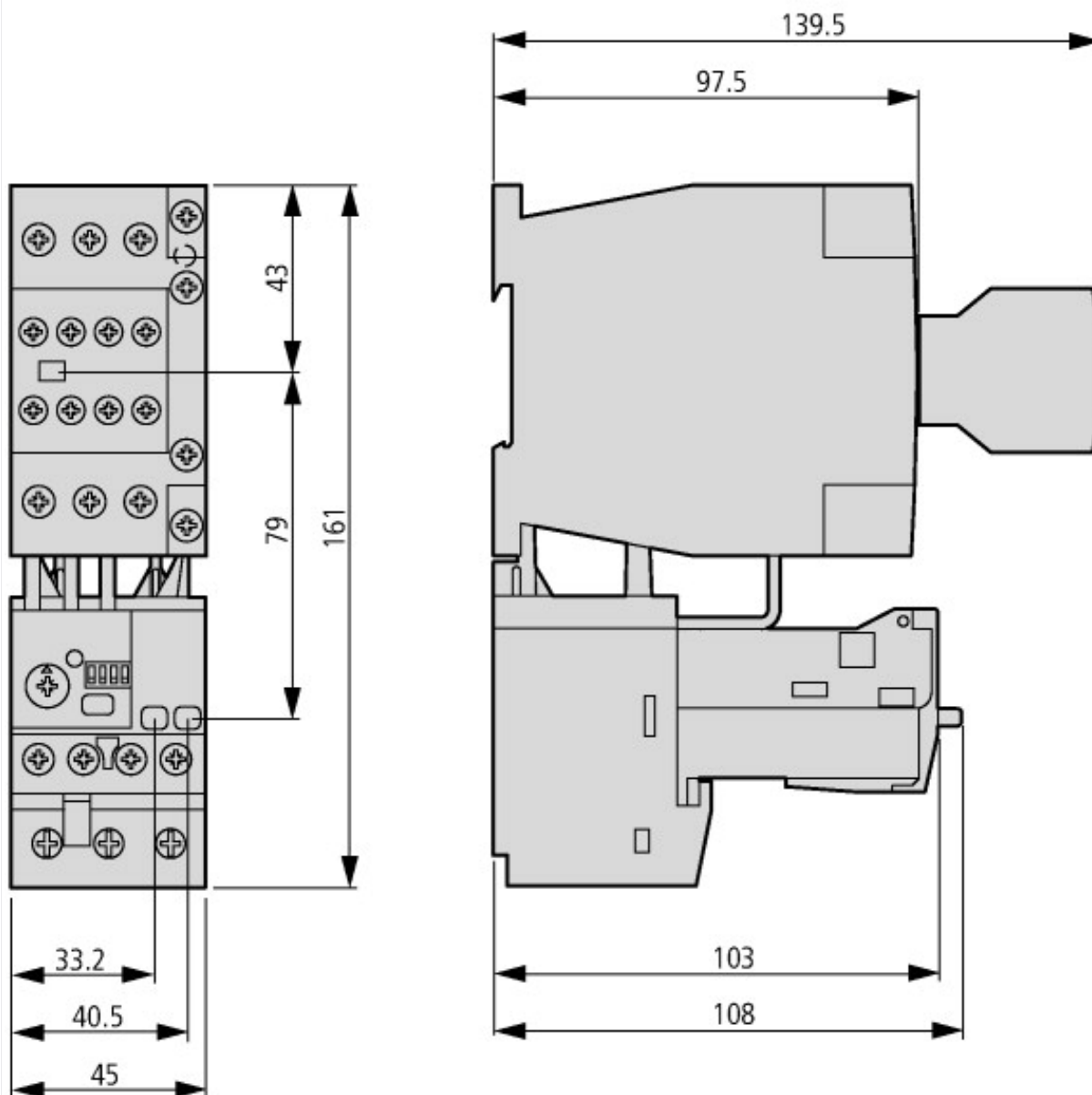
Approvals

|                                      |  |                                                        |
|--------------------------------------|--|--------------------------------------------------------|
| 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



## Additional product information (links)

**IL04210002E Solid-state motor protection relay**

IL04210002E Solid-state motor protection relay [https://es-assets.eaton.com/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL04210002E2018\\_08.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL04210002E2018_08.pdf)