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ZEB12-1,65 - Overload relay, Direct mounting, Earth-fault protection: none, Ir= 0.33 - 1.65 A, 1 N/O, 1 N/C



136480 ZEB12-1,65

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## 136480 ZEB12-1,65

Overload relay, Direct mounting, Earth-fault protection: none, Ir= 0.33 - 1.65 A, 1 N/O, 1 N/C

Alternate Catalog No.

XTOE1P6BCS

EL-Nummer (Norway)

4137412

Overload relay, 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 with heavy starting duty (Class 10A-30), Mounting type: Direct mounting, Auxiliary contacts N/O = Normally open: 1 N/O, Auxiliary contacts N/C = Normally closed: 1 N/C, For use with: DILM7, DILM9, DILM12, DILM15, DIULM7, DIULM9, DIULM12, SDAINLM12, SDAINLM16, SDAINLM22, Standards: IEC/EN 60947, VDE 0660, UL, CSA, Degree of Protection: IP20

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### 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 with heavy starting duty (Class 10A-30)

Mounting type

Direct mounting

Earth-fault protection

Earth-fault protection

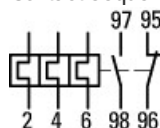
none

**Setting range**

Overload releases  [I<sub>r</sub>]

0.33 - 1.65 A

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  
 Conformity, Approval  
 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  
 Damp heat, cyclic, to IEC 60068-2-30  
 Ambient temperatureOpen  
 -25 - +65 °C  
 Ambient temperatureAmbient temperature open max.  
 65 °C  
 Ambient temperatureEnclosedAmbient temperature enclosed max.  
 65 °C  
 Mechanical shock resistance  
 15  
 Shock duration 10 ms  
 according to IEC 60068-2-27 g  
 Degree of Protection  
 IP20  
 Protection against direct contact when actuated from front (EN 50274)  
 Finger and back-of-hand proof  
 Altitude  
 Max. 2000 m  
 Main conducting paths  
 Rated impulse withstand voltage [ $U_{imp}$ ]  
 6000 V AC  
 Overvoltage category/pollution degree  
 III/3  
 Rated insulation voltage [ $U_i$ ]  
 690 V AC  
 Rated operational voltage [ $U_e$ ]  
 690 V AC  
 Rated frequency [f]  
 50/60 Hz  
 Safe isolation to EN 61140Between auxiliary contacts and main contacts  
 600 V AC  
 Safe isolation to EN 61140Between main circuits  
 600 V AC  
 Terminal capacitiesSolid  
 1 x 1.5 - 16 mm<sup>2</sup>  
 Terminal capacitiesSolid or stranded  
 1 x 14 - 4 AWG  
 Stripping length  
 13 mm  
 Auxiliary and control circuits  
 Rated impulse withstand voltage [ $U_{imp}$ ]  
 6000 V

Overvoltage category/pollution degree  
 III/3  
 Terminal capacitiesSolid  
 2 x (0.75 - 4) mm<sup>2</sup>  
 Terminal capacitiesFlexible with ferrule  
 2 x (0.75 - 2.5) mm<sup>2</sup>  
 Terminal capacitiesSolid or stranded  
 2 x (18 - 12) AWG  
 Terminal screw  
 M3.5  
 Tightening torque  
 0.8 - 1.2 Nm  
 Tightening torque  
 7 lb-in  
 Stripping length  
 8 mm  
 ToolsPozidriv screw driver  
 2 Size  
 ToolsStandard screw driver  
 1 x 6 mm  
 Rated insulation voltage [U<sub>i</sub>]  
 500 V AC  
 Rated operational voltage [U<sub>e</sub>]  
 500 V AC  
 Safe isolation to EN 61140between the auxiliary contacts  
 240 V AC  
 Conventional thermal current [I<sub>th</sub>]  
 5 A  
 Rated operational current [I<sub>e</sub>]AC-15Make contact120 V [I<sub>e</sub>]  
 1.5 A  
 Rated operational current [I<sub>e</sub>]AC-15Make contact220 V 230 V 240 V [I<sub>e</sub>]  
 1.5 A  
 Rated operational current [I<sub>e</sub>]AC-15Make contact380 V 400 V 415 V [I<sub>e</sub>]  
 0.5 A  
 Rated operational current [I<sub>e</sub>]AC-15Make contact500 V [I<sub>e</sub>]  
 0.5 A  
 Rated operational current [I<sub>e</sub>]AC-15Break contact120 V [I<sub>e</sub>]  
 1.5 A  
 Rated operational current [I<sub>e</sub>]AC-15Break contact220 V 230 V 240 V [I<sub>e</sub>]  
 1.5 A  
 Rated operational current [I<sub>e</sub>]AC-15Break contact380 V 400 V 415 V [I<sub>e</sub>]  
 0.9 A  
 Rated operational current [I<sub>e</sub>]AC-15Break contact500 V [I<sub>e</sub>]  
 0.8 A  
 Rated operational current [I<sub>e</sub>]DC L/R □ 15 ms  
 Switch-on and switch-off conditions based on DC-13, time constant as specified.  
 Rated operational current [I<sub>e</sub>]DC L/R □ 15 ms24 V [I<sub>e</sub>]  
 0.9 A  
 Rated operational current [I<sub>e</sub>]DC L/R □ 15 ms60 V [I<sub>e</sub>]  
 0.75 A  
 Rated operational current [I<sub>e</sub>]DC L/R □ 15 ms110 V [I<sub>e</sub>]  
 0.4 A  
 Rated operational current [I<sub>e</sub>]DC L/R □ 15 ms220 V [I<sub>e</sub>]  
 0.2 A  
 Short-circuit rating without weldingmax. fuse  
 6 A gG/gL  
 Rating data for approved types  
 Auxiliary contactsPilot DutyAC operated  
 B600  
 Auxiliary contactsPilot DutyDC operated  
 R300  
 Short Circuit Current RatingBasic RatingSCCR  
 1 kA  
 Short Circuit Current RatingBasic Ratingmax. Fuse  
 6, RK5 A

## Design verification as per IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat dissipation [ $I_n$ ]

1.65 A

Heat dissipation per pole, current-dependent [ $P_{id}$ ]

0.17 W

Equipment heat dissipation, current-dependent [ $P_{id}$ ]

0.51 W

Static heat dissipation, non-current-dependent [ $P_{vs}$ ]

0 W

Heat dissipation capacity [ $P_{diss}$ ]

0 W

Operating ambient temperature min.

-25 °C

Operating ambient temperature max.

+65 °C

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 Strength of materials and parts 10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

10.2 Strength of materials and parts 10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

10.2 Strength of materials and parts 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 Strength of materials and parts 10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2 Strength of materials and parts 10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts 10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts 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 Insulation properties 10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9 Insulation properties 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

0.33 - 1.65 A

Mounting method

Direct attachment

## Approvals

## Characteristics

[illegible]

## 5/7

- [3D Preview](#)  
(Web)

## DWG files

- [DA-CD-zeb12](#)  
File  
(Web, Language independent)
- [DA-CD-zeb12\\_10\\_9565](#)  
File  
(Web)

## edz files

- [DA-CE-ETN.ZEB12-1,65](#)  
File  
(Web)

## Step files

- [DA-CS-zeb12\\_10\\_9565](#)  
File  
(Web)

## 3D drawing

- ☐ [2327DRW-4](#)  
Line drawing

## Product photo



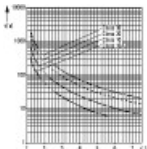
- [2327PIC-16](#)  
Photo

## Dimensions single product



- [2327DIM-1](#)  
Line drawing

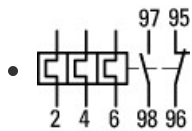
## Characteristic curve



- [2327DIA-5](#)  
Coordinate visualization

## Wiring diagram

- ☐ [000S015](#)  
Line drawing  
Overload release symbol



230S002

Line drawing

Overload relay circuit symbol

## Instruction Leaflet

- [Solid-state motor protection relay \(IL04210002E\)](#)  
 Asset  
 (PDF, multilingual)

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