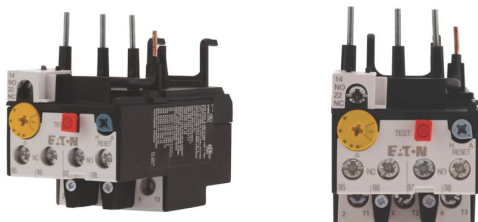


# Specifications



Photo is representative



## Eaton 278449

Eaton Moeller® series ZB Overload relay, ZB32, Ir= 2.4 - 4 A, 1 N/O, 1 N/C, Direct mounting, IP20

### General specifications

|                     |                                                 |
|---------------------|-------------------------------------------------|
| <b>PRODUCT NAME</b> | Eaton Moeller® series ZB Thermal overload relay |
|---------------------|-------------------------------------------------|

|                       |        |
|-----------------------|--------|
| <b>CATALOG NUMBER</b> | 278449 |
|-----------------------|--------|

|                   |        |
|-------------------|--------|
| <b>MODEL CODE</b> | ZB32-4 |
|-------------------|--------|

|            |               |
|------------|---------------|
| <b>EAN</b> | 4015082784492 |
|------------|---------------|

|                             |       |
|-----------------------------|-------|
| <b>PRODUCT LENGTH/DEPTH</b> | 96 mm |
|-----------------------------|-------|

|                       |       |
|-----------------------|-------|
| <b>PRODUCT HEIGHT</b> | 67 mm |
|-----------------------|-------|

|                      |       |
|----------------------|-------|
| <b>PRODUCT WIDTH</b> | 45 mm |
|----------------------|-------|

|                       |          |
|-----------------------|----------|
| <b>PRODUCT WEIGHT</b> | 0.145 kg |
|-----------------------|----------|

### CERTIFICATIONS

UL Category Control No.: NKCR  
CSA  
CSA-C22.2 No. 60947-4-1-14  
CSA Class No.: 3211-03  
UL  
UL 60947-4-1  
VDE 0660  
IEC/EN 60947  
IEC/EN 60947-4-1  
CSA File No.: 012528  
CE  
UL File No.: E29184



Powering Business Worldwide

## Contacts

**NUMBER OF AUXILIARY  
CONTACTS (CHANGE-  
OVER CONTACTS)** 0

**NUMBER OF AUXILIARY  
CONTACTS (NORMALLY  
CLOSED CONTACTS)** 1

**NUMBER OF AUXILIARY  
CONTACTS (NORMALLY  
OPEN CONTACTS)** 1

**NUMBER OF CONTACTS  
(NORMALLY CLOSED  
CONTACTS)** 1

**NUMBER OF CONTACTS  
(NORMALLY OPEN  
CONTACTS)** 1

## Design verification

### 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.

### 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 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. 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

Does not apply, since the

|                                                                      |                                                                    |
|----------------------------------------------------------------------|--------------------------------------------------------------------|
| <b>AGAINST ELECTRIC SHOCK</b>                                        | entire switchgear needs to be evaluated.                           |
| <b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>        | Does not apply, since the entire switchgear needs to be evaluated. |
| <b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>             | Is the panel builder's responsibility.                             |
| <b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>                      | Is the panel builder's responsibility.                             |
| <b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>                      | Is the panel builder's responsibility.                             |
| <b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>                              | Is the panel builder's responsibility.                             |
| <b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b>      | Is the panel builder's responsibility.                             |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID</b>            | 6 W                                                                |
| <b>HEAT DISSIPATION CAPACITY PDISS</b>                               | 0 W                                                                |
| <b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>             | 2 W                                                                |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 4 A                                                                |
| <b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS</b>            | 0 W                                                                |

## Electrical rating

**CONVENTIONAL  
THERMAL CURRENT ITH  
OF AUXILIARY CONTACTS  
(1-POLE, OPEN)** 6 A

**RATED OPERATIONAL  
CURRENT (IE) AT AC-15,  
120 V** 1.5 A

**RATED OPERATIONAL  
CURRENT (IE) AT AC-15,  
220 V, 230 V, 240 V** 1.5 A

**RATED OPERATIONAL  
CURRENT (IE) AT AC-15,  
380 V, 400 V, 415 V** 0.9 A

**RATED OPERATIONAL  
CURRENT (IE) AT DC-13,  
110 V** 0.4 A

**RATED OPERATIONAL  
CURRENT (IE) AT DC-13,  
220 V, 230 V** 0.2 A

**RATED OPERATIONAL  
CURRENT (IE) AT DC-13,  
24 V** 0.9 A

**RATED OPERATIONAL  
CURRENT (IE) AT DC-13,  
60 V** 0.75 A

**RATED OPERATIONAL  
VOLTAGE (UE) - MAX** 690 V

**SAFE ISOLATION** 240 V AC, Between  
auxiliary contacts,  
According to EN 61140  
440 V AC, Between main  
circuits, According to EN  
61140  
440 V, Between auxiliary  
contacts and main  
contacts, According to EN  
61140

**SWITCHING CAPACITY  
(AUXILIARY CONTACTS,  
PILOT DUTY)** B300 at opposite polarity,  
AC operated (UL/CSA)  
B600 at opposite polarity,  
AC operated (UL/CSA)  
R300, DC operated  
(UL/CSA)

**VOLTAGE RATING - MAX** 600 VAC

## Features & functions

### FEATURES

Phase-failure sensitivity  
(according to IEC/EN  
60947, VDE 0660 Part 102)  
Test/off button  
Reset pushbutton  
manual/auto  
Trip-free release

## General information

|                                                       |                                                                                                      |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b>            | 55 °C                                                                                                |
| <b>AMBIENT OPERATING TEMPERATURE - MIN</b>            | -25 °C                                                                                               |
| <b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX</b> | 40 °C                                                                                                |
| <b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN</b> | -25 °C                                                                                               |
| <b>CLASS</b>                                          | CLASS 10 A / IEC 60947-4-1, 8.2.1.5.1.1. c) 4 min                                                    |
| <b>CLIMATIC PROOFING</b>                              | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30                       |
| <b>DEGREE OF PROTECTION</b>                           | IP20<br>IP00                                                                                         |
| <b>FRAME SIZE</b>                                     | ZB32                                                                                                 |
| <b>MOUNTING METHOD</b>                                | Direct attachment<br>Direct mounting                                                                 |
| <b>OVERLOAD RELEASE CURRENT SETTING - MAX</b>         | 4 A                                                                                                  |
| <b>OVERLOAD RELEASE CURRENT SETTING - MIN</b>         | 2.4 A                                                                                                |
| <b>OVERVOLTAGE CATEGORY</b>                           | III                                                                                                  |
| <b>POLLUTION DEGREE</b>                               | 3                                                                                                    |
| <b>PRODUCT CATEGORY</b>                               | <ul style="list-style-type: none"> <li>Accessories</li> <li>Overload relay ZB up to 150 A</li> </ul> |
| <b>PROTECTION</b>                                     | Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274) |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>         | 4000 V (auxiliary and control circuits)<br>6000 V AC                                                 |
| <b>SHOCK RESISTANCE</b>                               | 10 g, Mechanical, Sinusoidal, Shock duration 10 ms                                                   |
| <b>SUITABLE FOR</b>                                   | Branch circuits, (UL/CSA)                                                                            |
| <b>TEMPERATURE COMPENSATION</b>                       | ≤ 0.25 %/K, residual error for T > 40°<br>Continuous                                                 |

## Short-circuit rating

|                                                           |                                                                                                                                                                                                                                              |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)</b> | 6 A, Class J/CC, max. Fuse, SCCR (UL/CSA)<br>100 kA, Fuse, SCCR (UL/CSA)                                                                                                                                                                     |
| <b>SHORT-CIRCUIT PROTECTION RATING</b>                    | 25 A gG/gL, Fuse, Type "1" coordination<br>Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits<br>16 A gG/gL, Fuse, Type "2" coordination<br>Information on Type "1" and Type "2" coordination applies to 100 kA and 690 V |

## Terminal capacities

|                                                          |                                                                                                                                                                                                                              |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SCREW SIZE</b>                                        | M3.5, Terminal screw,<br>Control circuit cables<br>M4, Terminal screw                                                                                                                                                        |
| <b>SCREWDRIVER SIZE</b>                                  | 1 x 6 mm, Terminal screw,<br>Standard screwdriver<br>2, Terminal screw, Pozidriv<br>screwdriver                                                                                                                              |
| <b>STRIPPING LENGTH<br/>(CONTROL CIRCUIT<br/>CABLE)</b>  | 8 mm                                                                                                                                                                                                                         |
| <b>STRIPPING LENGTH<br/>(MAIN CABLE)</b>                 | 10 mm                                                                                                                                                                                                                        |
| <b>TERMINAL CAPACITY<br/>(FLEXIBLE WITH<br/>FERRULE)</b> | 2 x (1 - 4) mm <sup>2</sup> , Main<br>cables<br>2 x (0.75 - 2.5) mm <sup>2</sup> ,<br>Control circuit cables<br>1 x (1 - 4) mm <sup>2</sup> , Main<br>cables<br>1 x (0.75 - 2.5) mm <sup>2</sup> ,<br>Control circuit cables |
| <b>TERMINAL CAPACITY<br/>(SOLID)</b>                     | 2 x (0.75 - 4) mm <sup>2</sup> , Control<br>circuit cables<br>2 x (1 - 6) mm <sup>2</sup> , Main<br>cables<br>1 x (0.75 - 4) mm <sup>2</sup> , Control<br>circuit cables<br>1 x (1 - 6) mm <sup>2</sup> , Main<br>cables     |
| <b>TERMINAL CAPACITY<br/>(SOLID/STRANDED AWG)</b>        | 18 - 8, Main cables<br>2 x (18 - 14), Control circuit<br>cables                                                                                                                                                              |
| <b>TIGHTENING TORQUE</b>                                 | 1.2 Nm, Screw terminals,<br>Control circuit cables<br>1.8 Nm, Screw terminals,<br>Main cables                                                                                                                                |

## Resources

|                            |                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CATALOGUES                 | <a href="#">eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf</a>                                                                                                                                                                                                                                                                            |
| CHARACTERISTIC CURVE       | <a href="#">eaton-tripping-devices-zb-overload-relay-characteristic-curve-007.eps</a><br><a href="#">eaton-tripping-zb-overload-relay-characteristic-curve-002.eps</a>                                                                                                                                                                                            |
| DECLARATIONS OF CONFORMITY | <a href="#">eaton-thermal-overload-relay-declaration-of-conformity-eu250786en.pdf</a><br><a href="#">eaton-thermal-overload-relay-declaration-of-conformity-uk251269en.pdf</a>                                                                                                                                                                                    |
| DRAWINGS                   | <a href="#">eaton-tripping-devices-zb-overload-relay-dimensions-002.eps</a><br><a href="#">eaton-tripping-devices-overload-relay-zb-overload-relay-dimensions-004.eps</a><br><a href="#">eaton-tripping-devices-overload-relay-zb-overload-relay-dimensions.eps</a><br><a href="#">eaton-tripping-devices-overload-relay-zb-overload-relay-3d-drawing-002.eps</a> |
| ECAD MODEL                 | <a href="#">ETN.ZB32-4</a>                                                                                                                                                                                                                                                                                                                                        |
| INSTALLATION INSTRUCTIONS  | <a href="#">eaton-overload-relays-zb12-zb32-il03407015z.pdf</a><br><a href="#">IL03407195Z</a><br><a href="#">DA-CS-zb32</a>                                                                                                                                                                                                                                      |
| MCAD MODEL                 | <a href="#">eaton-thermal-overload-relays-mcad-drawings-zb32.dwg</a>                                                                                                                                                                                                                                                                                              |
| PEP ECO-PASSPORT           | <a href="#">eaton-thermal-overload-relays-pep-eato-00458-v0101-en.pdf</a>                                                                                                                                                                                                                                                                                         |
| WIRING DIAGRAMS            | <a href="#">eaton-tripping-devices-overload-relay-zb-overload-relay-wiring-diagram-003.eps</a>                                                                                                                                                                                                                                                                    |

|                 |
|-----------------|
| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
| DATE:           |



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