

# Eaton 278441

Catalog Number: 278441

Eaton Moeller® series ZB Overload relay, ZB12, Ir= 9 - 12 A, 1 N/O, 1 N/C, Direct mounting, IP20

## General specifications



### Product Name

Eaton Moeller® series ZB Thermal overload relay

### Catalog Number

278441

### EAN

4015082784416

### UPC

782116358755

### Product Length/Depth

88 mm

### Product Height

67 mm

### Product Width

45 mm

### Product Weight

0.145 kg

### Certifications

IEC/EN 60947

CSA File No.: 012528

UL File No.: E29184

CE

CSA

CSA Class No.: 3211-03

CSA-C22.2 No. 60947-4-1-14

UL 60947-4-1

IEC/EN 60947-4-1

UL

UL Category Control No.: NKCR

VDE 0660

### Model Code

ZB12-12

## Features & Functions

### Features

Trip-free release

Phase-failure sensitivity (according to IEC/EN 60947, VDE 0660 Part 102)

Reset pushbutton manual/auto

Test/off button

## General

Ambient operating temperature - min

-25 °C

Ambient operating temperature - max

55 °C

Ambient operating temperature (enclosed) - min

25 °C

Ambient operating temperature (enclosed) - max

40 °C

Class

CLASS 10 A

Climatic proofing

Damp heat, cyclic, to IEC 60068-2-30

Damp heat, constant, to IEC 60068-2-78

Degree of protection

IP20

Frame size

ZB12

Mounting method

Direct mounting

Overload release current setting - min

9 A

Overload release current setting - max

12 A

Overvoltage category

III

Pollution degree

3

Product category

Overload relay ZB up to 150 A

Protection

Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)

Rated impulse withstand voltage (Uimp)

4000 V (auxiliary and control circuits)

6000 V AC

Shock resistance

10 g, Mechanical, Sinusoidal, Shock duration 10 ms

#### Suitable for

Branch circuits, (UL/CSA)

#### Temperature compensation

Continuous

$\leq 0.25\%/K$ , residual error for  $T > 40^\circ$

## Terminal capacities

#### Terminal capacity (flexible with ferrule)

1 x (0.75 - 2.5) mm<sup>2</sup>, Control circuit cables

2 x (1 - 4) mm<sup>2</sup>, Main cables

2 x (0.75 - 2.5) mm<sup>2</sup>, Control circuit cables

1 x (1 - 4) mm<sup>2</sup>, Main cables

#### Terminal capacity (solid)

1 x (0.75 - 4) mm<sup>2</sup>, Control circuit cables

2 x (1 - 6) mm<sup>2</sup>, Main cables

2 x (0.75 - 4) mm<sup>2</sup>, Control circuit cables

1 x (1 - 6) mm<sup>2</sup>, Main cables

#### Terminal capacity (solid/stranded AWG)

2 x (18 - 14), Control circuit cables

18 - 8, Main cables

#### Stripping length (main cable)

10 mm

#### Stripping length (control circuit cable)

8 mm

#### Screw size

M4, Terminal screw

M3.5, Terminal screw, Control circuit cables

#### Screwdriver size

1 x 6 mm, Terminal screw, Standard screwdriver

2, Terminal screw, Pozidriv screwdriver

#### Tightening torque

1.8 Nm, Screw terminals, Main cables

1.2 Nm, Screw terminals, Control circuit cables

## Electrical rating

Conventional thermal current  $I_{th}$  of auxiliary contacts (1-pole, open)

6 A

Rated operational current ( $I_e$ ) at AC-15, 120 V

1.5 A

Rated operational current ( $I_e$ ) at AC-15, 220 V, 230 V, 240 V

1.5 A

Rated operational current ( $I_e$ ) at AC-15, 380 V, 400 V, 415 V

0.9 A

## Short-circuit rating

Short-circuit current rating (high fault at 600 V)

15 A, Class J/CC, max. Fuse, SCCR (UL/CSA)

100 kA, Fuse, SCCR (UL/CSA)

Short-circuit protection rating

25 A gG/gL, Fuse, Type "2" coordination

Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits

50 A gG/gL, Fuse, Type "1" coordination

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

440 V, Between auxiliary contacts and main contacts, According to EN 61140

440 V AC, Between main circuits, According to EN 61140

240 V AC, Between auxiliary contacts, According to EN 61140

Switching capacity (auxiliary contacts, pilot duty)

B600 at opposite polarity, AC operated (UL/CSA)

R300, DC operated (UL/CSA)

B300 at opposite polarity, AC operated (UL/CSA)

Voltage rating - max

600 VAC

## 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

Equipment heat dissipation, current-dependent Pvid

6.9 W

Heat dissipation capacity Pdis

0 W

Heat dissipation per pole, current-dependent Pvid

2.3 W

Rated operational current for specified heat dissipation (In)

12 A

Static heat dissipation, non-current-dependent Pvs

0 W

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 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.

#### 10.9.2 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

## Resurse

#### Characteristic curve

[eaton-tripping-devices-zb-overload-relay-characteristic-curve-003.eps](#)

#### Instrucțiuni de instalare

[IL03407195Z](#)

[eaton-overload-relays-zb12-zb32-il03407015z.pdf](#)

#### Politica de vânzare & Termeni și condiții

[Hydraulic Warranty](#)

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.



Eaton Corporation plc  
Eaton House  
30 Pembroke Road  
Dublin 4, Ireland  
Eaton.com  
© 2024 Eaton Toate  
drepturile rezervate.

Eaton is a registered trademark.

All other trademarks are  
property of their respective  
owners.



[Eaton.com/socialmedia](https://www.eaton.com/socialmedia)