

Eaton 278439

Catalog Number: 278439

Eaton Moeller® series ZB Overload relay, ZB12, Ir= 4 - 6 A, 1 N/O, 1 N/C, Direct mounting, IP20

General specifications



Product Name

Eaton Moeller® series ZB Thermal
overload relay

Catalog Number

278439

Model Code

ZB12-6

EAN

4015082784393

Product Length/Depth

88 mm

Product Height

67 mm

Product Width

45 mm

Product Weight

0.142 kg

Certifications

CSA

CSA File No.: 012528

IEC/EN 60947

UL

CSA Class No.: 3211-03

CE

IEC/EN 60947-4-1

UL 60947-4-1

UL Category Control No.: NKCR

UL File No.: E29184

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

VDE 0660

Product specifications

Rated operational current for specified heat dissipation (In)

6 A

Terminal capacity (flexible with ferrule)

2 x (1 - 4) mm², Main cables

1 x (0.75 - 2.5) mm², Control circuit cables

2 x (0.75 - 2.5) mm², Control circuit cables

1 x (1 - 4) mm², Main cables

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

Stripping length (control circuit cable)

8 mm

Ambient operating temperature (enclosed) - min

25 °C

10.4 Clearances and creepage distances

Meets the product standard's requirements.

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

Mounting method

Direct mounting

10.2.5 Lifting

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

Stripping length (main cable)

10 mm

Ambient operating temperature (enclosed) - max

40 °C

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

Reset function

Automatic

Push-button

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

100 kA, Fuse, SCCR (UL/CSA)

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

10.8 Connections for external conductors

Resources

Catalogs

Product Range Catalog Switching and protecting motors

Characteristic curve

[eaton-tripping-devices-zb-overload-relay-characteristic-curve-008.eps](#)

[eaton-tripping-zb-overload-relay-characteristic-curve-002.eps](#)

Declarations of conformity

[DA-DC-00004842.pdf](#)

[DA-DC-00004852.pdf](#)

Drawings

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

[eaton-tripping-devices-overload-relay-zb-overload-relay-3d-drawing.eps](#)

eCAD model

[ETN.ZB12-6](#)

Installation instructions

[IL03407195Z](#)

[IL03407015Z](#)

Manuals and user guides

[eaton-motor-protective-relay-zb12-zb32-overload-monitoring-exe-manual-mn03407004z-de-de-en-us.pdf](#)

mCAD model

[DA-CS-zb12](#)

[DA-CD-zb12](#)

Wiring diagrams

[eaton-tripping-devices-overload-relay-zb-overload-relay-wiring-diagram-002.eps](#)

Is the panel builder's responsibility.

Screw size

M4, Terminal screw

M3.5, Terminal screw, Control circuit cables

Adjustable current range - min

4 A

Protection

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

Ambient operating temperature - max

55 °C

Climatic proofing

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

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

Features

Reset pushbutton manual/auto

Test/off button

Trip-free release

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

Static heat dissipation, non-current-dependent Pvs

0 W

Electrical connection type of main circuit

Screw connection

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

Voltage rating - max

600 VAC

Ambient operating temperature - min

-25 °C

10.6 Incorporation of switching devices and components

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

10.5 Protection against electric shock

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

Safe isolation

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

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

440 V, Between auxiliary contacts and main contacts, According

to EN 61140

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

1.5 A

Class

CLASS 10 A

10.13 Mechanical function

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

10.2.6 Mechanical impact

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

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Number of contacts (normally closed contacts)

1

10.3 Degree of protection of assemblies

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

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

0.9 A

Heat dissipation per pole, current-dependent P_{vid}

1.7 W

Product category

Overload relay ZB up to 150 A

Overload release current setting - min

4 A

Rated operational current (I_e) at DC-13, 60 V

0.75 A

Equipment heat dissipation, current-dependent P_{vid}

5.1 W

Heat dissipation capacity P_{diss}

0 W

Suitable for

Branch circuits, (UL/CSA)

Temperature compensation

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

Continuous

Terminal capacity (solid)

2 x (1 - 6) mm², Main cables

1 x (0.75 - 4) mm², Control circuit cables

1 x (1 - 6) mm², Main cables

2 x (0.75 - 4) mm², Control circuit cables

Number of auxiliary contacts (normally closed contacts)

1

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.

Rated operational current (I_e) at DC-13, 220 V, 230 V

0.2 A

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

6 A

Overload release current setting - max

6 A

Terminal capacity (solid/stranded AWG)

18 - 8, Main cables

2 x (18 - 14), Control circuit cables

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

Degree of protection

IP20

Overvoltage category

III

Number of auxiliary contacts (change-over contacts)

0

Pollution degree

3

10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

Rated impulse withstand voltage (U_{imp})

6000 V AC

4000 V (auxiliary and control circuits)

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the

devices.

Tightening torque

1.2 Nm, Screw terminals, Control circuit cables

1.8 Nm, Screw terminals, Main cables

Adjustable current range - max

6 A

Frame size

ZB12

Screwdriver size

1 x 6 mm, Terminal screw, Standard screwdriver

2, Terminal screw, Pozidriv screwdriver

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

1.5 A

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.7 Inscriptions

Meets the product standard's requirements.

Number of contacts (normally open contacts)

1

Short-circuit protection rating

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

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

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

Number of auxiliary contacts (normally open contacts)

1

Rated operational current (I_e) at DC-13, 110 V

0.4 A

Rated operational voltage (U_e) - max

690 V

Shock resistance

10 g, Mechanical, Sinusoidal, Shock duration 10 ms

Rated operational current (I_e) at DC-13, 24 V

0.9 A

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)



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