

Eaton 278440

Catalog Number: 278440

Eaton Moeller® series ZB Overload relay, ZB12, Ir= 6 - 10 A, 1 N/O, 1 N/C, Direct mounting, IP20

General specifications

Product Name	Catalog Number
Eaton Moeller® series ZB Thermal overload relay	278440
	Model Code
	ZB12-10
EAN	Product Length/Depth
4015082784409	88 mm
Product Height	Product Width
67 mm	45 mm
Product Weight	Certifications
0.145 kg	CSA
	CSA-C22.2 No. 60947-4-1-14
	IEC/EN 60947
	UL
	UL Category Control No.: NKCR
	CSA File No.: 012528
	UL 60947-4-1
	CE
	CSA Class No.: 3211-03
	UL File No.: E29184
	IEC/EN 60947-4-1
	VDE 0660

Product specifications

Rated operational current for specified heat dissipation (In)

10 A

Terminal capacity (flexible with ferrule)

2 x (1 - 4) mm², Main cables

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

1 x (1 - 4) mm², Main cables

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

15 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-009.eps](#)

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

Declarations of conformity

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

[DA-DC-00004842.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.ZB12-10](#)

Installation instructions

[IL03407015Z](#)

[IL03407195Z](#)

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

M3.5, Terminal screw, Control circuit cables

M4, Terminal screw

Adjustable current range - min

6 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, constant, to IEC 60068-2-78

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

Features

Reset pushbutton manual/auto

Test/off button

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

Trip-free release

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

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

440 V AC, Between main circuits, 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}

2 W

Product category

Overload relay ZB up to 150 A

Overload release current setting - min

6 A

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

0.75 A

Equipment heat dissipation, current-dependent P_{vid}

6 W

Heat dissipation capacity P_{diss}

0 W

Suitable for

Branch circuits, (UL/CSA)

Temperature compensation

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

Continuous

Terminal capacity (solid)

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

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

1 x (1 - 6) mm², Main cables

2 x (1 - 6) mm², Main 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

10 A

Terminal capacity (solid/stranded AWG)

2 x (18 - 14), Control circuit cables

18 - 8, Main 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

1.8 Nm, Screw terminals, Main cables

1.2 Nm, Screw terminals, Control circuit cables

Adjustable current range - max

10 A

Frame size

ZB12

Screwdriver size

2, Terminal screw, Pozidriv screwdriver

1 x 6 mm, Terminal screw, Standard 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

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

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