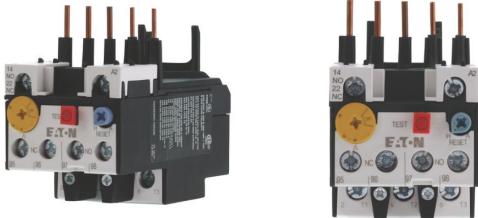


# Specifications



Photo is representative



## Eaton 278437

Eaton Moeller® series ZB Overload relay, ZB12, Ir= 1.6 - 2.4 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>	278437
<b>MODEL CODE</b>	ZB12-2,4
<b>EAN</b>	4015082784379
<b>PRODUCT LENGTH/DEPTH</b>	88 mm
<b>PRODUCT HEIGHT</b>	67 mm
<b>PRODUCT WIDTH</b>	45 mm
<b>PRODUCT WEIGHT</b>	0.142 kg
<b>CERTIFICATIONS</b>	CSA-C22.2 No. 60947-4-1-14 IEC/EN 60947-4-1 UL CSA CSA File No.: 012528 IEC/EN 60947 CE CSA Class No.: 3211-03 UL 60947-4-1 VDE 0660 UL File No.: E29184 UL Category Control No.: NKCR
<b>GLOBAL CATALOG</b>	278437

## Product specifications

<b>FEATURES</b>	Reset pushbutton manual/auto Test/off button Phase-failure sensitivity (according to IEC/EN 60947, VDE 0660 Part 102) Trip-free release
<b>10.10 TEMPERATURE RISE</b>	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
<b>10.11 SHORT-CIRCUIT RATING</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.13 MECHANICAL FUNCTION</b>	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.
<b>10.2.2 CORROSION RESISTANCE</b>	Meets the product standard's requirements.
<b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>	Meets the product standard's requirements.
<b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b>	Meets the product standard's requirements.
<b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>	Meets the product standard's requirements.
<b>10.2.5 LIFTING</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.6 MECHANICAL IMPACT</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.7 INSCRIPTIONS</b>	Meets the product standard's requirements.
<b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>	Does not apply, since the entire switchgear needs to be evaluated.

## Resources

### CATALOGS

[eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf](#)

[Product Range Catalog](#)  
[Switching and protecting motors](#)

### CHARACTERISTIC CURVE

[eaton-tripping-devices-overload-relay-zb-overload-relay-characteristic-curve-005.eps](#)

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

### DECLARATIONS OF CONFORMITY

[eaton-thermal-overload-relay-declaration-of-conformity-uk251269en.pdf](#)

[eaton-thermal-overload-relay-declaration-of-conformity-eu250786en.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.ZB12-2,4](#)

### INSTALLATION INSTRUCTIONS

[IL03407195Z](#)

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

### MCAD MODEL

[DA-CD-zb12 DA-CS-zb12](#)

### SALES NOTES

[eaton-dol-3phase-ac-motor-starter-ms-16a-flyer-fl034009en-en-us.pdf](#)

### WIRING DIAGRAMS

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

<b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>	Meets the product standard's requirements.
<b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>	Does not apply, since the 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>POLLUTION DEGREE</b>	3
<b>CLASS</b>	CLASS 10 A
<b>CLIMATIC PROOFING</b>	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>	4000 V (auxiliary and control circuits) 6000 V AC
<b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 220 V, 230 V, 240 V</b>	1.5 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 380 V, 400 V, 415 V</b>	0.9 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-13, 110 V</b>	0.4 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-13, 220 V, 230 V</b>	0.2 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-13, 24 V</b>	0.9 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-13, 60 V</b>	0.75 A
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	2.4 A
<b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS</b>	0 W

<b>STRIPPING LENGTH (CONTROL CIRCUIT CABLE)</b>	8 mm
<b>STRIPPING LENGTH (MAIN CABLE)</b>	10 mm
<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>FRAME SIZE</b>	ZB12
<b>ADJUSTABLE CURRENT RANGE - MAX</b>	2.4 A
<b>ADJUSTABLE CURRENT RANGE - MIN</b>	1.6 A
<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>CONVENTIONAL THERMAL CURRENT ITH OF AUXILIARY CONTACTS (1-POLE, OPEN)</b>	6 A
<b>EQUIPMENT HEAT DISSIPATION, CURRENT- DEPENDENT PVID</b>	5.7 W
<b>HEAT DISSIPATION CAPACITY PDISS</b>	0 W
<b>HEAT DISSIPATION PER POLE, CURRENT- DEPENDENT PVID</b>	1.9 W
<b>NUMBER OF AUXILIARY CONTACTS (CHANGE- OVER CONTACTS)</b>	0
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b>	1
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>	1
<b>NUMBER OF CONTACTS (NORMALLY CLOSED)</b>	1

**CONTACTS)**

<b>NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)</b>	1
<b>OVERLOAD RELEASE CURRENT SETTING - MAX</b>	2.4 A
<b>OVERLOAD RELEASE CURRENT SETTING - MIN</b>	1.6 A
<b>RATED OPERATIONAL VOLTAGE (UE) - MAX</b>	690 V
<b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 120 V</b>	1.5 A
<b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>	Screw connection
<b>RESET FUNCTION</b>	Automatic Push-button
<b>SCREWDRIVER SIZE</b>	2, Terminal screw, Pozidriv screwdriver 1 x 6 mm, Terminal screw, Standard screwdriver
<b>MOUNTING METHOD</b>	Direct mounting Direct attachment
<b>DEGREE OF PROTECTION</b>	IP20
<b>OVERVOLTAGE CATEGORY</b>	III
<b>SAFE ISOLATION</b>	440 V AC, Between main circuits, According to EN 61140 440 V AC, Between auxiliary contacts and main contacts, According to EN 61140 240 V AC, Between auxiliary contacts, According to EN 61140
<b>SCREW SIZE</b>	M3.5, Terminal screw, Control circuit cables M4, Terminal screw
<b>SHOCK RESISTANCE</b>	10 g, Mechanical, Sinusoidal, Shock duration 10 ms
<b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)</b>	100 kA, Fuse, SCCR (UL/CSA) 3 A, Class J/CC, max. Fuse, SCCR (UL/CSA)
<b>SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)</b>	B600 at opposite polarity, AC operated (UL/CSA) R300, DC operated (UL/CSA) B300 at opposite polarity, AC operated (UL/CSA)

<b>SHORT-CIRCUIT PROTECTION RATING</b>	Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits 10 A gG/gL, Fuse, Type "2" coordination 25 A gG/gL, Fuse, Type "1" coordination
<b>SUITABLE FOR</b>	Branch circuits, (UL/CSA)
<b>TEMPERATURE COMPENSATION</b>	$\leq 0.25 \text{ \%}/\text{K}$ , residual error for $T > 40^\circ$ Continuous
<b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>	1 x (1 - 4) mm <sup>2</sup> , Main cables 1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables 2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables 2 x (1 - 4) mm <sup>2</sup> , Main cables
<b>TERMINAL CAPACITY (SOLID)</b>	2 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables 2 x (1 - 6) mm <sup>2</sup> , Main cables 1 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables 1 x (1 - 6) mm <sup>2</sup> , Main cables
<b>TERMINAL CAPACITY (SOLID/STRANDED AWG)</b>	18 - 8, Main cables 2 x (18 - 14), Control circuit cables

**PROJECT NAME:**

**PROJECT NUMBER:**

**PREPARED BY:**

**DATE:**



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