Specifications

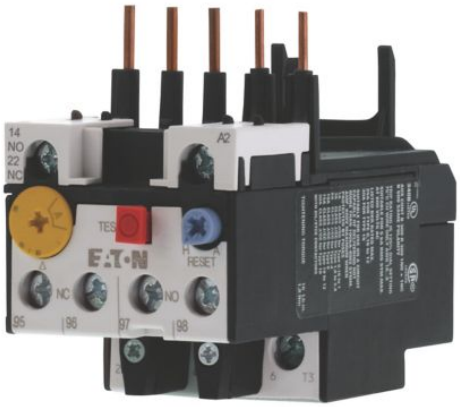
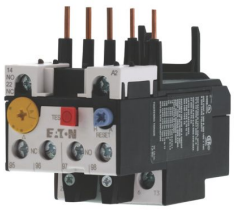
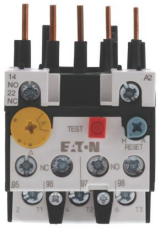


Photo is representative





Eaton 278438

Eaton Moeller® series ZB Overload relay, ZB12, Ir= 2.4 - 4 A, 1 N/O, 1 N/C, Direct mounting, IP20

General specifications	
PRODUCT NAME	Eaton Moeller® series ZB Thermal overload relay
CATALOG NUMBER	278438
MODEL CODE	ZB12-4
UPC	782116358687
EAN	4015082784386
PRODUCT LENGTH/DEPTH	88 mm
PRODUCT HEIGHT	67 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.142 kg
CERTIFICATIONS	UL File No.: E29184 CSA IEC/EN 60947 VDE 0660 IEC/EN 60947-4-1 UL 60947-4-1 CSA Class No.: 3211-03 UL CSA File No.: 012528 CE CSA-C22.2 No. 60947-4-1-14 UL Category Control No.: NKCR
GLOBAL CATALOG	278438
PRODUCT TYPE	Thermal overload relay

Product specifications

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

Resources

CATALOGS	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CHARACTERISTIC CURVE	eaton-tripping-zb-overload-relay-characteristic-curve-002.eps eaton-tripping-devices-zb-overload-relay-characteristic-curve-007.eps
DECLARATIONS OF CONFORMITY	eaton-thermal-overload-relay-declaration-of-conformity-eu250786en.pdf eaton-thermal-overload-relay-declaration-of-conformity-uk251269en.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.ZB12-4
INSTALLATION INSTRUCTIONS	eaton-overload-relays-zb12-zb32-il03407015z.pdf IL03407195Z
MCAD MODEL	DA-CS-zb12
PEP ECO-PASSPORT	eaton-thermal-overload-relays-pep-eato-00458-v0101-en.pdf
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

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.
POLLUTION DEGREE	3
CLASS	CLASS 10 A / IEC 60947-4-1, 8.2.1.5.1.1. c) 4 min
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	6000 V AC 4000 V (auxiliary and control circuits)
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 CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	4 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	8 mm
STRIPPING LENGTH (MAIN CABLE)	10 mm
VOLTAGE RATING - MAX	600 VAC
PRODUCT CATEGORY	• Accessories • Overload relay ZB up to 150 A

PROTECTION	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
FRAME SIZE	ZB12
ADJUSTABLE CURRENT RANGE - MAX	4 A
ADJUSTABLE CURRENT RANGE - MIN	2.4 A
AMBIENT OPERATING TEMPERATURE - MAX	55 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	-25 °C
CONVENTIONAL THERMAL CURRENT ITH OF AUXILIARY CONTACTS (1-POLE, OPEN)	6 A
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	6 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	2 W
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
OVERLOAD RELEASE CURRENT SETTING - MAX	4 A
OVERLOAD RELEASE CURRENT SETTING - MIN	2.4 A
RATED OPERATIONAL VOLTAGE (UE) - MAX	690 V
RATED OPERATIONAL CURRENT (IE) AT AC-15, 120 V	1.5 A
ELECTRICAL CONNECTION TYPE OF	Screw connection

MAIN CIRCUIT	
RESET FUNCTION	Automatic Push-button
SCREWDRIVER SIZE	1 x 6 mm, Terminal screw, Standard screwdriver 2, Terminal screw, Pozidriv screwdriver
MOUNTING METHOD	Direct attachment Direct mounting
DEGREE OF PROTECTION	IP00
OVERVOLTAGE CATEGORY	III
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
SCREW SIZE	M4, Terminal screw M3.5, Terminal screw, Control circuit cables
SHOCK RESISTANCE	10 g, Mechanical, Sinusoidal, Shock duration 10 ms
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	6 A, Class J/CC, max. Fuse, SCCR (UL/CSA) 100 kA, Fuse, SCCR (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	R300, DC operated (UL/CSA) B300 at opposite polarity, AC operated (UL/CSA) B600 at opposite polarity, AC operated (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING	25 A gG/gL, Fuse, Type “1” coordination Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits 16 A gG/gL, Fuse, Type “2” coordination Information on Type "1" and Type"2" coordination applies to 100 kA and 690 V
SUITABLE FOR	Branch circuits, (UL/CSA)
TEMPERATURE COMPENSATION	≤ 0.25 %/K, residual error for T > 40° Continuous
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (1 - 4) mm², Main cables 2 x (1 - 4) mm², Main cables 2 x (0.75 - 2.5) mm², Control circuit cables 1 x (0.75 - 2.5) mm², Control circuit cables
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 4) mm², Control circuit cables 1 x (0.75 - 4) mm², Control circuit cables 1 x (1 - 6) mm², Main cables 2 x (1 - 6) mm², Main cables
TERMINAL CAPACITY	18 - 8, Main cables

(SOLID/STRANDED AWG)	2 x (18 - 14), Control circuit cables
TIGHTENING TORQUE	1.8 Nm, Screw terminals, Main cables 1.2 Nm, Screw terminals, Control circuit cables

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:

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