Specifications

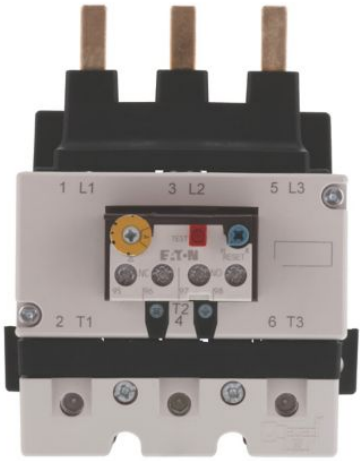
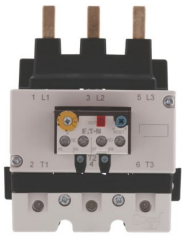


Photo is representative





Eaton 278463

Eaton Moeller® series ZB Overload relay, ZB150, Ir= 50 - 70 A, 1 N/O, 1 N/C, Direct mounting, IP00

General specifications

PRODUCT NAME	Eaton Moeller® series ZB Thermal overload relay
CATALOG NUMBER	278463
MODEL CODE	ZB150-70
EAN	4015082784638
PRODUCT LENGTH/DEPTH	134 mm
PRODUCT HEIGHT	135 mm
PRODUCT WIDTH	118 mm
PRODUCT WEIGHT	1.208 kg
CERTIFICATIONS	UL File No.: E29184 UL UL Category Control No.: NKCR CE CSA CSA-C22.2 No. 60947-4-1-14 IEC/EN 60947 CSA File No.: 012528 CSA Class No.: 3211-03 IEC/EN 60947-4-1 VDE 0660 UL 60947-4-1

Powering Business Worldwide

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

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	Does not apply, since the

AGAINST ELECTRIC SHOCK	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.
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	21.6 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	7.2 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	70 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W

Electrical rating

CONVENTIONAL THERMAL CURRENT ITH OF AUXILIARY CONTACTS (1-POLE, OPEN)	6 A
RATED OPERATIONAL CURRENT (IE) AT AC-15, 120 V	1.5 A
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 VOLTAGE (UE) - MAX	1000 V
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
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	B300 at opposite polarity, AC operated (UL/CSA) R300, DC operated (UL/CSA) B600 at opposite polarity, AC operated (UL/CSA)
VOLTAGE RATING - MAX	600 VAC

Features & functions

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

General information

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
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
DEGREE OF PROTECTION	IP00
FRAME SIZE	ZB150
MOUNTING METHOD	Direct attachment Direct mounting
OVERLOAD RELEASE CURRENT SETTING - MAX	70 A
OVERLOAD RELEASE CURRENT SETTING - MIN	50 A
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
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)
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	4000 V (auxiliary and control circuits) 8000 V AC
SHOCK RESISTANCE	10 g, Mechanical, Sinusoidal, Shock duration 10 ms
SUITABLE FOR	Branch circuits, (UL/CSA)
TEMPERATURE COMPENSATION	Continuous ≤ 0.25 %/K, residual error for T > 40°

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	250 A, max. Fuse, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING	250 A gG/gL, Fuse, Type “1” coordination Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits 160 A gG/gL, Fuse, Type “2” coordination Information on Type "1" and Type"2" coordination applies to 100 kA and 690 V

Terminal capacities

SCREW SIZE	M3.5, Terminal screw, Control circuit cables M10, Terminal screw, Main cables 5 mm AF, Hexagon socket-head spanner, Terminal screw, Main cables
SCREWDRIVER SIZE	1 x 6 mm, Terminal screw, Control circuit cables, Standard screwdriver 2, Terminal screw, Control circuit cables, Pozidriv screwdriver
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	8 mm
STRIPPING LENGTH (MAIN CABLE)	24 mm
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.75 - 2.5) mm², Control circuit cables 1 x (4 - 70) mm², Main cables 2 x (4 - 70) mm², Main cables 1 x (0.75 - 2.5) mm², Control circuit cables
TERMINAL CAPACITY (SOLID)	1 x (0.75 - 4) mm², Control circuit cables 2 x (4 - 16) mm², Main cables 1 x (4 - 16) mm², Main cables 2 x (0.75 - 4) mm², Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	3/0, Main cables 2 x (18 - 14), Control circuit cables
TERMINAL CAPACITY (STRANDED)	2 x (16 - 70) mm², Main cables 1 x (16 - 70) mm², Main cables
TIGHTENING TORQUE	10 Nm, Screw terminals, Main cables 1.2 Nm, Screw terminals, Control circuit cables

Resources

CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CHARACTERISTIC CURVE	eaton-tripping-devices-characteristic-zb-overload-relay-characteristic-curve-010.eps eaton-tripping-zb-overload-relay-characteristic-curve-003.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-006.eps eaton-tripping-devices-overload-relay-zb-overload-relay-3d-drawing-004.eps
ECAD MODEL	ETN.278463.edz
INSTALLATION INSTRUCTIONS	eaton-overload-relays-z5-zb150-il03407006z.pdf
MCAD MODEL	zb150.stp
PEP ECO-PASSPORT	eaton-thermal-overload-relays-pep-eato-00460-v0101-en.pdf
WIRING DIAGRAMS	eaton-tripping-devices-overload-relay-zb-overload-relay-wiring-diagram.eps

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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