Specifications

Eaton 139578

Eaton Moeller® series Z5 Overload relay, Ir= 200 - 300 A, 1 N/O, 1 N/C, For use with: DILM300A

General specifications	
PRODUCT NAME	Eaton Moeller® series Z5 Thermal overload relay
CATALOG NUMBER	139578
MODEL CODE	Z5-300/FF250
EAN	4015081363568
PRODUCT LENGTH/DEPTH	146 mm
PRODUCT HEIGHT	167 mm
PRODUCT WIDTH	128 mm
PRODUCT WEIGHT	1.755 kg
CERTIFICATIONS	UL UL Category Control No.: NKCR VDE 0660 IEC/EN 60947 CSA Class No.: 3211-03 UL File No.: E29184 CSA File No.: 012528 UL 60947-4-1 CE CSA CSA-C22.2 No. 60947-4-1-14 IEC/EN 60947-4-1

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Features & Functions

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

General information

AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE - MAX	60 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	25 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
CLASS	CLASS 10 A
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
DEGREE OF PROTECTION	IP00
MOUNTING METHOD	Separate mounting Direct mounting Direct attachment
OVERLOAD RELEASE CURRENT SETTING - MIN	200 A
OVERLOAD RELEASE CURRENT SETTING - MAX	300 A
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Overload relay Z5
PROTECTION	With terminal cover, 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	≤ 0.25 %/K, residual error for T > 40° Continuous

Terminal capacities

TERMINAL CAPACITY (BUSBAR)	25 mm width, Main connection
TERMINAL CAPACITY (FLEXIBLE WITH CABLE LUG)	185 mm²
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.75 - 2.5) mm², Control circuit 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 (0.75 - 4) mm², Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	2 x (18 - 14), Control circuit cables 2/0 - 500 MCM, Main cables
TERMINAL CAPACITY (STRANDED WITH CABLE LUG)	185 mm²
WIDTH ACROSS FLATS	16 mm (Hexagon head spanner SW)
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	8 mm
SCREW SIZE	M10 x 35, Terminal screw, Main connections M3.5, Terminal screw, Control circuit cables
SCREWDRIVER SIZE	1 x 6 mm, Terminal screw, Control circuit cables, Standard screwdriver 2, Terminal screw, Control circuit cables, Pozidriv screwdriver
TIGHTENING TORQUE	1.2 Nm, Screw terminals, Control circuit cables 18 Nm, Main cable connection screw/bolt

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, Between auxiliary contacts and main contacts, According to EN 61140 240 V AC, Between auxiliary contacts, According to EN 61140 500 V AC, Between main circuits, According to EN 61140
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)
VOLTAGE RATING - MAX	600 VAC

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	1200 A Class L, max. Fuse, SCCR (UL/CSA) 18 kA, SCCR (UL/CSA) 1200 A, max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING	630 A gG/gL, Fuse, Type “2” coordination 630 A gG/gL, Fuse, Type “1” coordination Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits

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

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	65.7 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	21.9 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	300 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W
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

CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf Product Range Catalog Switching and protecting motors
CHARACTERISTIC CURVE	eaton-tripping-devices-z5-overload-relay-characteristic-curve-002.eps eaton-tripping-z5-overload-relay-characteristic-curve.eps
DECLARATIONS OF CONFORMITY	eaton-thermal-overload-relay-declaration-of-conformity-uk251268en.pdf eaton-thermal-overload-relay-declaration-of-conformity-eu250785en.pdf
DRAWINGS	eaton-tripping-devices-overload-relay-z5-overload-relay-dimensions-002.eps eaton-tripping-devices-overload-relay-z5-overload-relay-3d-drawing.eps
ECAD MODEL	ETN.139578.edz
INSTALLATION INSTRUCTIONS	eaton-overload-relays-z5-zb150-il03407006z.pdf IL026006ZU
MCAD MODEL	DA-CD-z5_ff250 DA-CS-z5_ff250
SYSTEM OVERVIEW	eaton-contactors-system55-dilm-explosion-drawing.eps
WIRING DIAGRAMS	eaton-general-release-zeb-overload-relay-wiring-diagram.eps eaton-tripping-devices-overload-relay-zeb-overload-relay-wiring-diagram.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.
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.

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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