

Specifications



Eaton 139578

Eaton Moeller® series Z5 Overload relay, $I_r = 200 - 300$ 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
-----------------------	---

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	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

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

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 - MAX	60 °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
MOUNTING METHOD	Separate mounting Direct mounting Direct attachment
OVERLOAD RELEASE CURRENT SETTING - MAX	300 A
OVERLOAD RELEASE CURRENT SETTING - MIN	200 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

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 Information on Type "1" and Type "2" coordination applies to 100 kA and 690 V

Terminal capacities

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
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	8 mm
TERMINAL CAPACITY (BUSBAR)	25 mm width, Main connection
TERMINAL CAPACITY (FLEXIBLE WITH CABLE LUG)	185 mm ²
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.75 - 2.5) mm ² , Control circuit cables 1 x (0.75 - 2.5) mm ² , Control circuit cables
TERMINAL CAPACITY (SOLID)	1 x (0.75 - 4) mm ² , Control circuit cables 2 x (0.75 - 4) mm ² , 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 mm ²
TIGHTENING TORQUE	1.2 Nm, Screw terminals, Control circuit cables 18 Nm, Main cable connection screw/bolt
WIDTH ACROSS FLATS	16 mm (Hexagon head spanner SW)

Resources

CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CHARACTERISTIC CURVE	eaton-tripping-z5-overload-relay-characteristic-curve.eps eaton-tripping-devices-z5-overload-relay-characteristic-curve-002.eps
DECLARATIONS OF CONFORMITY	eaton-thermal-overload-relay-declaration-of-conformity-eu250785en.pdf eaton-thermal-overload-relay-declaration-of-conformity-uk251268en.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	IL026006ZU eaton-overload-relays-z5-zb150-il03407006z.pdf
MCAD MODEL	DA-CS-z5_ff250 eaton-thermal-overload-relays-mcad-drawings-z5-ff250.dwg
SYSTEM OVERVIEW	eaton-contactors-system55-dilm-explosion-drawing.eps eaton-general-release-zeb-overload-relay-wiring-diagram.eps
WIRING DIAGRAMS	eaton-tripping-devices-overload-relay-zeb-overload-relay-wiring-diagram.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



Eaton Corporation plc Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

© 2026 Eaton. All Rights Reserved.

Follow us on social media to get the latest product and support information.

