

Specifications



Photo is representative



Eaton 210074

Eaton Moeller® series Z5 Overload relay, $I_r = 160 - 220$ A, 1 N/O, 1 N/C, For use with: DILM250, DILM300A

General specifications

PRODUCT NAME	Eaton Moeller® series Z5 Thermal overload relay
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CATALOG NUMBER	210074
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MODEL CODE	Z5-220/FF250
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EAN	4015082100742
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PRODUCT LENGTH/DEPTH	146 mm
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PRODUCT HEIGHT	167 mm
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PRODUCT WIDTH	128 mm
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PRODUCT WEIGHT	1.75 kg
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CERTIFICATIONS

UL File No.: E29184
CSA File No.: 012528
CSA-C22.2 No. 60947-4-1-14
UL Category Control No.: NKCR
CE
UL 60947-4-1
VDE 0660
UL
CSA
IEC/EN 60947
IEC/EN 60947-4-1
CSA Class No.: 3211-03

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	37.8 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	12.6 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	220 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 240 V AC, Between
auxiliary contacts,
According to EN 61140
440 V, Between auxiliary
contacts and main
contacts, According to EN
61140
500 V AC, Between main
circuits, According to EN
61140

**SWITCHING CAPACITY
(AUXILIARY CONTACTS,
PILOT DUTY)** B600 at opposite polarity,
AC operated (UL/CSA)
R300, DC operated
(UL/CSA)
B300 at opposite polarity,
AC operated (UL/CSA)

VOLTAGE RATING - MAX 600 VAC

Features & functions

FEATURES

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

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, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
DEGREE OF PROTECTION	IP00
MOUNTING METHOD	Direct mounting Separate mounting Direct attachment/single positioning
OVERLOAD RELEASE CURRENT SETTING - MAX	220 A
OVERLOAD RELEASE CURRENT SETTING - MIN	160 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)	8000 V AC 4000 V (auxiliary and control circuits)
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)	800 A, max. CB, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA) 800 A Class L, max. Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING	Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits 400 A gG/gL, Fuse, Type "1" coordination (DILM185A) 500 A gG/gL, Fuse, Type "1" coordination (DILM225A) 315 A gG/gL, Fuse, Type "2" coordination (DILM185A) 400 A gG/gL, Fuse, Type "2" coordination (DILM225A) 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 x 35, Terminal screw, Main connections
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)	2/0 - 500 MCM, Main cables 2 x (18 - 14), Control circuit cables
TERMINAL CAPACITY (STRANDED WITH CABLE LUG)	185 mm ²
TIGHTENING TORQUE	18 Nm, Main cable connection screw/bolt 1.2 Nm, Screw terminals, Control circuit cables
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-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.210074.edz
INSTALLATION INSTRUCTIONS	eaton-overload-relays-z5-zb150-il03407006z.pdf IL03407102Z2010_10 IL03407081Z
MANUALS AND USER GUIDES	DA-MN-h1476dgb
MCAD MODEL	eaton-thermal-overload-relays-mcad-drawings-z5-ff250.dwg DA-CS-z5_ff250
WIRING DIAGRAMS	eaton-tripping-devices-overload-relay-zeb-overload-relay-wiring-diagram.eps eaton-general-release-zeb-overload-relay-wiring-diagram.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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