

Specifications



Eaton 109913

Eaton Moeller® series DILMP Contactor, 4 pole, 160 A, RAC 120: 100 - 120 V 50/60 Hz, AC operation

General specifications

PRODUCT NAME	Eaton Moeller® series DILMP 4-pole contactor
CATALOG NUMBER	109913
MODEL CODE	DILMP160(RAC120)
EAN	4015081094790
PRODUCT LENGTH/DEPTH	160 mm
PRODUCT HEIGHT	170 mm
PRODUCT WIDTH	122 mm
PRODUCT WEIGHT	2.73 kg
CERTIFICATIONS	IEC/EN 60947 IEC/EN 60947-4-1 VDE 0660 CSA File No.: 012528 UL 60947-4-1 CSA-C22.2 No. 60947-4-1-14 CSA Class No.: 2411-03, 3211-04 CSA CE UL File No.: E29096 UL Category Control No.: NLDX UL
CATALOG NOTES	Contacts according to EN 50012



Powering Business Worldwide

Ambient conditions, mechanical

SHOCK RESISTANCE

7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms

Communication

CONNECTION TO SMARTWIRE-DT

No

Climatic environmental conditions

ALTITUDE Max. 2000 m

AMBIENT OPERATING TEMPERATURE - MAX 60 °C

AMBIENT STORAGE TEMPERATURE - MAX 80 °C

AMBIENT OPERATING TEMPERATURE - MIN -25 °C

AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX 40 °C

AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN -25 °C

AMBIENT STORAGE TEMPERATURE - MIN -40 °C

CLIMATIC PROOFING Damp heat, cyclic, to IEC 60068-2-30
Damp heat, constant, to IEC 60068-2-3

Contacts

NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT) 4

NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS) 0

NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS) 0

NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT 0

Conventional thermal current I_{th}

**CONVENTIONAL
THERMAL CURRENT I_{TH}
(1-POLE, ENCLOSED)** 373 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
(3-POLE, ENCLOSED)** 128 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
AT 55°C (3-POLE, OPEN)** 143 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
AT 60°C (3-POLE, OPEN)** 138 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
OF MAIN CONTACTS (1-
POLE, OPEN)** 415 A

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	36.3 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	12.1 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	160 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	2.3 W

Electrical rating

RATED BREAKING CAPACITY AT 220/230 V	950 A
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RATED BREAKING CAPACITY AT 380/400 V	950 A
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RATED BREAKING CAPACITY AT 500 V	950 A
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RATED BREAKING CAPACITY AT 660/690 V	750 A
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RATED INSULATION VOLTAGE (UI)	690 V
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RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947)	1330 A
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RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	160 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	95 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	95 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	95 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	95 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	80 A
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RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V	160 A
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RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V	160 A
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RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V	160 A
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RATED OPERATIONAL POWER AT AC-1, 220/230 V, 50 HZ	58 kW
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RATED OPERATIONAL POWER AT AC-1, 240 V, 50 HZ	63 kW
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RATED OPERATIONAL POWER AT AC-1, 380/400 V, 50 HZ	100 kW
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Features & functions

FITTED WITH:	Suppressor circuit in actuating electronics
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NUMBER OF POLES	Four-pole
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RATED OPERATIONAL POWER AT AC-1, 415 V, 50 HZ	109 kW
RATED OPERATIONAL POWER AT AC-1, 440 V, 50 HZ	116 kW
RATED OPERATIONAL POWER AT AC-1, 500 V, 50 HZ	132 kW
RATED OPERATIONAL POWER AT AC-1, 690 V, 50 HZ	174 kW
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	33 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	45 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	57 kW
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	60 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	70 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	75 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V

General information

APPLICATION	Contactors for 4 pole electric consumers
CONNECTION	Screw terminals
DEGREE OF PROTECTION	IP00
LIFESPAN, MECHANICAL	10,000,000 Operations (DC operated) 10,000,000 Operations (AC operated)
OPERATING FREQUENCY	3600 mechanical Operations/h (AC operated) 3600 mechanical Operations/h (DC operated)
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Contactors
PROTECTION	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	8000 V AC
RESIDUAL CURRENT	1 mA (with actuation of A1 - A2 by the electronics with "0" signal)
RESISTANCE PER POLE	0.6 mΩ
UTILIZATION CATEGORY	AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Normal AC induction motors: starting, switch off during running
VOLTAGE TYPE	AC

Magnet system

DROP-OUT VOLTAGE	AC operated: 0.6 - 0.25 x UC, AC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.8 - 1.15 V AC x UC 0.8 - 1.15 V AC/DC x Us
POWER CONSUMPTION, PICK-UP, 50 HZ	180 VA, Dual-frequency coil in a cold state and 1.0 x Us
POWER CONSUMPTION, PICK-UP, 60 HZ	180 VA, Dual-frequency coil in a cold state and 1.0 x Us 150 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
POWER CONSUMPTION, SEALING, 50 HZ	2.3 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, SEALING, 60 HZ	2.3 W, Dual-frequency coil in a cold state and 1.0 x Us 3.1 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	120 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	100 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	120 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	100 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	33 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	28 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	41 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	35 ms

Motor rating

**ASSIGNED MOTOR
POWER AT 115/120 V, 60
HZ, 1-PHASE** 7.5 HP

**ASSIGNED MOTOR
POWER AT 200/208 V, 60
HZ, 3-PHASE** 25 HP

**ASSIGNED MOTOR
POWER AT 230/240 V, 60
HZ, 1-PHASE** 15 HP

**ASSIGNED MOTOR
POWER AT 230/240 V, 60
HZ, 3-PHASE** 40 HP

**ASSIGNED MOTOR
POWER AT 460/480 V, 60
HZ, 3-PHASE** 75 HP

**ASSIGNED MOTOR
POWER AT 575/600 V, 60
HZ, 3-PHASE** 100 HP

Short-circuit rating

**SHORT-CIRCUIT CURRENT
RATING (BASIC RATING)** 10 kA, 600 A max. fuse,
SCCR (UL/CSA)
10 kA, 600 A max. CB,
SCCR (UL/CSA)

**SHORT-CIRCUIT CURRENT
RATING (HIGH FAULT AT
480 V)** 100 kA, 300 A CLASS J max.
fuse, SCCR (UL/CSA)
30 kA, 600 A max. fuse,
SCCR (UL/CSA)
65 kA, 250 A max. CB,
SCCR (UL/CSA)

**SHORT-CIRCUIT CURRENT
RATING (HIGH FAULT AT
600 V)** 100 kA, 300 A CLASS J max.
fuse, SCCR (UL/CSA)
30 kA, 600 A max. fuse,
SCCR (UL/CSA)

**SHORT-CIRCUIT
PROTECTION RATING
(TYPE 1 COORDINATION)
AT 400 V** 250 A gG/gL

**SHORT-CIRCUIT
PROTECTION RATING
(TYPE 1 COORDINATION)
AT 690 V** 200 A gG/gL

**SHORT-CIRCUIT
PROTECTION RATING
(TYPE 2 COORDINATION)
AT 400 V** 160 A gG/gL

**SHORT-CIRCUIT
PROTECTION RATING
(TYPE 2 COORDINATION)
AT 690 V** 160 A gG/gL

Safety

SAFE ISOLATION 440 V AC, Between coil
and contacts, According to
EN 61140
440 V AC, Between the
contacts, According to EN
61140

Special purpose ratings

**SPECIAL PURPOSE
RATING OF ELEVATOR
CONTROL** 62.1 A, 200 V 60 Hz 3-ph,
(UL/CSA)
30 HP, 240 V 60 Hz 3-ph,
(UL/CSA)
75 HP, 600 V 60 Hz 3-ph,
(UL/CSA)
77 A, 480 V 60 Hz 3-ph,
(UL/CSA)
77 A, 600 V 60 Hz 3-ph,
(UL/CSA)
80 A, 240 V 60 Hz 3-ph,
(UL/CSA)
60 HP, 480 V 60 Hz 3-ph,
(UL/CSA)
20 HP, 200 V 60 Hz 3-ph,
(UL/CSA)

**SPECIAL PURPOSE
RATING OF
REFRIGERATION
CONTROL (CSA ONLY)** 90 A, FLA 480 V 60 Hz
3phase; (CSA)
420 A, LRA 600 V 60 Hz
3phase; (CSA)
540 A, LRA 480 V 60 Hz
3phase; (CSA)
70 A, FLA 600 V 60 Hz
3phase; (CSA)

**SPECIAL PURPOSE
RATING OF RESISTANCE
AIR HEATING** 110 A, 600 V 60 Hz 3phase,
347 V 60 Hz 1phase,
(UL/CSA)
100 A, 480 V 60 Hz 3phase,
277 V 60 Hz 1phase,
(UL/CSA)

**SPECIAL PURPOSE
RATING OF TUNGSTEN** 100 A, 600 V 60 Hz 3phase,
347 V 60 Hz 1phase,

INCANDESCENT LAMPS	(UL/CSA) 100 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS	100 A (480V 60Hz 3phase, 277V 60Hz 1phase) 100 A (600V 60Hz 3phase, 347V 60Hz 1phase)

Switching capacity

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	125 A, Maximum motor rating (UL/CSA)
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Terminal capacities

SCREW SIZE	M3.5, Terminal screw, Control circuit cables 5 mm AF, Hexagon socket- head spanner, Terminal screw, Main cables M10, Terminal screw, Main cables
SCREWDRIVER SIZE	0.8 x 5.5/1 x 6 mm, Terminal screw, Control circuit cables, Standard screwdriver 5 mm, hexagon socket- head, Terminal screw, Main cables 2, Auxiliary terminal screw, Pozidriv screwdriver
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
STRIPPING LENGTH (MAIN CABLE)	15 mm
TERMINAL CAPACITY (COPPER BAND)	2 x (6 x 16 x 0.8) mm (Number of segments x width x thickness), Main cables
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 4) mm ² , Control circuit cables 1 x (0.75 - 4) mm ² , Control circuit cables 1 x (0.75 - 2.5) mm ² 2 x (0.75 - 2.5) mm ² , Control circuit cables
TERMINAL CAPACITY (STRANDED)	1 x (16 - 120) mm ² , Main cables 2 x (16 - 95) mm ² , Main cables
TIGHTENING TORQUE	14 Nm, Screw terminals, Main cables 1.2 Nm, Screw terminals, Control circuit cables
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (10 - 95) mm ² , Main cables 2 x (10 - 70) mm ² , Main cables

	1 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (0.75 - 2.5) mm ² , Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	18 - 14, Control circuit cables 8 - 3/0, Main cables

Resources

CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CHARACTERISTIC CURVE	eaton-contactors-characteristic-curve-2110dia-3.eps
DECLARATIONS OF CONFORMITY	eaton-4-pole-contactor-declaration-of-conformity-uk251253en.pdf eaton-4-pole-contactor-declaration-of-conformity-eu250770en.pdf
DRAWINGS	eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-dilmp-dimensions-004.eps eaton-contactors-dilmp-dimensions-003.eps
ECAD MODEL	ETN.109913.edz
INSTALLATION INSTRUCTIONS	IL03407049Z
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	DA-CS-dil_mp125_200 eaton-iec-contactors-mcad-drawings-dil-mp125-200.dwg
WIRING DIAGRAMS	eaton-contactors-contact-dilem-wiring-diagram.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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