

Specifications



Eaton 109819

Eaton Moeller® series DILMP Contactor, 4 pole, AC operation, AC-1: 45 A, 1 N/O, 110 V 50 Hz, 120 V 60 Hz, Screw terminals

General specifications

PRODUCT NAME	Eaton Moeller® series DILMP 4-pole contactor
CATALOG NUMBER	109819
MODEL CODE	DILMP45- 10(110V50HZ,120V60HZ)
EAN	4015081093892
PRODUCT LENGTH/DEPTH	97 mm
PRODUCT HEIGHT	85 mm
PRODUCT WIDTH	58 mm
PRODUCT WEIGHT	0.49 kg
CERTIFICATIONS	UL 60947-4-1 VDE 0660 CSA Class No.: 2411-03, 3211-04 UL File No.: E29096 CSA-C22.2 No. 60947-4-1- 14 UL Category Control No.: NLDX UL IEC/EN 60947-4-1 CE CSA File No.: 012528 IEC/EN 60947 CSA
CATALOG NOTES	Contacts according to EN 50012

Ambient conditions, mechanical

SHOCK RESISTANCE

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

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)** 1

**NUMBER OF CONTACTS
(NORMALLY OPEN
CONTACTS)** 1

**NUMBER OF CONTACTS
(NORMALLY CLOSED) AS
MAIN CONTACT** 0

Conventional thermal current I_{th}

**CONVENTIONAL
THERMAL CURRENT I_{TH}
(1-POLE, ENCLOSED)** 105 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
(3-POLE, ENCLOSED)** 36 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
AT 55°C (3-POLE, OPEN)** 40 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
AT 60°C (3-POLE, OPEN)** 39 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
OF MAIN CONTACTS (1-
POLE, OPEN)** 117 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	13.2 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	4.4 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	45 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	2.1 W

Electrical rating

RATED BREAKING CAPACITY AT 220/230 V	250 A
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RATED BREAKING CAPACITY AT 380/400 V	250 A
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RATED BREAKING CAPACITY AT 500 V	250 A
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RATED BREAKING CAPACITY AT 660/690 V	144 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)	350 A
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RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	45 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	25 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	25 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	25 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	25 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	15 A
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RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V	45 A
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RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V	45 A
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RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V	45 A
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RATED OPERATIONAL POWER AT AC-1, 220/230 V, 50 HZ	16 kW
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RATED OPERATIONAL POWER AT AC-1, 240 V, 50 HZ	18 kW
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RATED OPERATIONAL POWER AT AC-1, 380/400 V, 50 HZ	28 kW
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Electro magnetic compatibility

INTERFERENCE IMMUNITY	According to EN 60947-1
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RATED OPERATIONAL POWER AT AC-1, 415 V, 50 HZ	31 kW
RATED OPERATIONAL POWER AT AC-1, 440 V, 50 HZ	33 kW
RATED OPERATIONAL POWER AT AC-1, 500 V, 50 HZ	37 kW
RATED OPERATIONAL POWER AT AC-1, 690 V, 50 HZ	49 kW
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	8.5 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	11 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	14.5 kW
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	15.5 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	17.5 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	14 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V

Features & functions

NUMBER OF POLES	Four-pole
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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	5000 mechanical Operations/h (AC operated) 5000 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	2.7 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 - 0.4 x Uc, AC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.85 - 1.1 V AC/DC x Us 0.8 - 1.1 V AC x Uc
POWER CONSUMPTION, PICK-UP, 50 HZ	50 VA, Dual-frequency coil in a cold state and 1.0 x Us
POWER CONSUMPTION, PICK-UP, 60 HZ	50 VA, Dual-frequency coil in a cold state and 1.0 x Us 40 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
POWER CONSUMPTION, SEALING, 50 HZ	2.1 W, Dual-frequency coil in a cold state and 1.0 x Us
POWER CONSUMPTION, SEALING, 60 HZ	2.1 W, Dual-frequency coil in a cold state and 1.0 x Us 8 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	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	120 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	120 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	22 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	16 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	14 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	8 ms

Motor rating

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE	2 HP
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	7.5 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	5 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	10 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	15 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	20 HP

Safety

SAFE ISOLATION

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

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)

5 kA, SCCR (UL/CSA)
125 A, max. CB, SCCR
(UL/CSA)
125 A, max. Fuse, SCCR
(UL/CSA)

SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)

10/65 kA, CB, SCCR
(UL/CSA)
125/70 A, Class J, max.
Fuse, SCCR (UL/CSA)
50/32 A, max. CB, SCCR
(UL/CSA)
10/100 kA, Fuse, SCCR
(UL/CSA)

SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)

50/32 A, max. CB, SCCR
(UL/CSA)
10/100 kA, Fuse, SCCR
(UL/CSA)
10/22 kA, CB, SCCR
(UL/CSA)
125/100 A, Class J, max.
Fuse, SCCR (UL/CSA)

SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V

100 A gG/gL

SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V

50 A gG/gL

SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V

35 A gG/gL

SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V

35 A gG/gL

Special purpose ratings

SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING

150 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
25 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)

SPECIAL PURPOSE RATING OF ELEVATOR CONTROL

17 A, 600 V 60 Hz 3-ph, (UL/CSA)
10 HP, 480 V 60 Hz 3-ph, (UL/CSA)
14 A, 480 V 60 Hz 3-ph, (UL/CSA)
15.2 A, 240 V 60 Hz 3-ph, (UL/CSA)
5 HP, 240 V 60 Hz 3-ph, (UL/CSA)
15 HP, 600 V 60 Hz 3-ph, (UL/CSA)
3 HP, 200 V 60 Hz 3-ph, (UL/CSA)
11 A, 200 V 60 Hz 3-ph, (UL/CSA)

SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)

40 A, FLA 480 V 60 Hz 3phase; (CSA)
180 A, LRA 600 V 60 Hz 3phase; (CSA)
30 A, FLA 600 V 60 Hz 3phase; (CSA)
240 A, LRA 480 V 60 Hz 3phase; (CSA)

SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING

40 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
40 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)

SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS

40 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
40 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)

SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS

40 A (600V 60Hz 3phase, 347V 60Hz 1phase)
40 A (480V 60Hz 3phase, 277V 60Hz 1phase)

Switching capacity

SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)

10 A, 600 V AC, (UL/CSA)
1 A, 250 V DC, (UL/CSA)

SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)

A600, AC operated (UL/CSA)
P300, DC operated (UL/CSA)

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)

40 A, Maximum motor rating (UL/CSA)

Terminal capacities

SCREW SIZE	M3.5, Terminal screw, Control circuit cables M5, Terminal screw, Main cables
SCREWDRIVER SIZE	2, Terminal screw, Pozidriv screwdriver 0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
STRIPPING LENGTH (MAIN CABLE)	10 mm
TERMINAL CAPACITY (SOLID)	1 x (0.75 - 4) mm ² , Control circuit cables 2 x (0.75 - 10) mm ² , Main cables 2 x (0.75 - 2.5) mm ² , Control circuit cables 1 x (0.75 - 16) mm ² , Main cables
TERMINAL CAPACITY (STRANDED)	1 x 16 mm ² , Main cables
TIGHTENING TORQUE	1.2 Nm, Screw terminals, Control circuit cables 3 Nm, Screw terminals, Main cables
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (0.75 - 16) mm ² , Main cables 2 x (0.75 - 10) 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 18 - 6, Main cables

Resources

	Product Range Catalog Switching and protecting motors
CATALOGUES	SmartWire-DT Catalog 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-uk251255en.pdf eaton-4-pole-contactor-declaration-of-conformity-eu250772en.pdf
DRAWINGS	eaton-contactors-dimensions-2110dim-10.eps eaton-contactors-dimensions-2110dim-11.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-dimensions.eps
ECAD MODEL	ETN.109819.edz
INSTALLATION INSTRUCTIONS	IL03407049Z
INSTALLATION VIDEOS	WIN-WIN with push-in technology DA-CS-dil_mp32_45
MCAD MODEL	eaton-iec-contactors-mcad-drawings-dil-mp32-45.dwg
WIRING DIAGRAMS	eaton-contactors-dilmp-wiring-diagram.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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