

Specifications



Eaton 276957

Eaton Moeller® series DILMP Contactor, 4 pole, 22 A, 24 V 50 Hz, AC operation

General specifications

PRODUCT NAME	Eaton Moeller® series DILMP 4-pole contactor
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CATALOG NUMBER	276957
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MODEL CODE	DILMP20(24V50HZ)
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EAN	4015082769574
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PRODUCT LENGTH/DEPTH	75 mm
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PRODUCT HEIGHT	68 mm
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PRODUCT WIDTH	45 mm
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PRODUCT WEIGHT	0.239 kg
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CERTIFICATIONS	CE UL UL 60947-4-1 CSA File No.: 012528 IEC/EN 60947-4-1 UL File No.: E29096 UL Category Control No.: NLDX CSA IEC/EN 60947 VDE 0660 CSA-C22.2 No. 60947-4-1-14 CSA Class No.: 2411-03, 3211-04
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CATALOG NOTES	Contacts according to EN 50012
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Ambient conditions, mechanical

SHOCK RESISTANCE

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
7 g, N/O 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) 0

NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT 0

Conventional thermal current I_{th}

**CONVENTIONAL
THERMAL CURRENT I_{TH}
(1-POLE, ENCLOSED)** 54 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
(3-POLE, ENCLOSED)** 18 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
AT 55°C (3-POLE, OPEN)** 20.5 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
AT 60°C (3-POLE, OPEN)** 20 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
OF MAIN CONTACTS (1-
POLE, OPEN)** 60 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	3 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	1 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	22 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	1.4 W

Electrical rating

**RATED BREAKING
CAPACITY AT 220/230 V** 120 A

**RATED BREAKING
CAPACITY AT 380/400 V** 120 A

**RATED BREAKING
CAPACITY AT 500 V** 100 A

**RATED BREAKING
CAPACITY AT 660/690 V** 70 A

**RATED INSULATION
VOLTAGE (UI)** 690 V

**RATED MAKING
CAPACITY UP TO 690 V
(COS PHI TO IEC/EN
60947)** 144 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-1,
380 V, 400 V, 415 V** 22 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
220 V, 230 V, 240 V** 12 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
380 V, 400 V, 415 V** 12 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
440 V** 12 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
500 V** 10 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
660 V, 690 V** 7 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-1,
110 V** 22 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-1,
220 V** 6 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-1, 60
V** 22 A

**RATED OPERATIONAL
POWER AT AC-1, 220/230
V, 50 HZ** 8 kW

**RATED OPERATIONAL
POWER AT AC-1, 240 V, 50
HZ** 9 kW

**RATED OPERATIONAL
POWER AT AC-1, 380/400
V, 50 HZ** 14 kW

Features & functions

NUMBER OF POLES Four-pole

RATED OPERATIONAL POWER AT AC-1, 415 V, 50 HZ	15 kW
RATED OPERATIONAL POWER AT AC-1, 440 V, 50 HZ	16 kW
RATED OPERATIONAL POWER AT AC-1, 500 V, 50 HZ	18 kW
RATED OPERATIONAL POWER AT AC-1, 690 V, 50 HZ	24 kW
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	4 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	5.5 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	7 kW
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	7.5 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	7 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	6.5 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	IP20
LIFESPAN, MECHANICAL	10,000,000 Operations (AC operated) 10,000,000 Operations (DC 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	2.5 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

Safety

SAFE ISOLATION	400 V AC, Between the contacts, According to EN 61140 400 V AC, Between coil and contacts, According to EN 61140
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Magnet system

DROP-OUT VOLTAGE	AC operated: 0.6 - 0.4 x UC, AC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.8 - 1.1 V AC/DC x Us 0.8 - 1.1 V AC x Uc
POWER CONSUMPTION, PICK-UP, 50 HZ	24 VA, Dual-frequency coil in a cold state and 1.0 x Us
POWER CONSUMPTION, PICK-UP, 60 HZ	19 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz 24 VA, Dual-frequency coil in a cold state and 1.0 x Us
POWER CONSUMPTION, SEALING, 50 HZ	1.4 W, Dual-frequency coil in a cold state and 1.0 x Us
POWER CONSUMPTION, SEALING, 60 HZ	1.4 W, Dual-frequency coil in a cold state and 1.0 x Us 4 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	24 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	24 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	21 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	15 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	18 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	9 ms

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	5 kA, 45 A max. fuse, SCCR (UL/CSA) 5 kA, 45 A max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT	100 kA, 60 A CLASS J max. fuse, SCCR (UL/CSA)

480 V)	30 kA, 25 A CLASS RK5 max. fuse, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	100 kA, 60 A CLASS J max. fuse, SCCR (UL/CSA) 30 kA, 25 A CLASS RK5 max. fuse, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	35 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	25 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	20 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	20 A gG/gL

Special purpose ratings

SPECIAL PURPOSE RATING OF ELEVATOR CONTROL	6.1 A, 600 V 60 Hz 3-ph, (UL/CSA) 5 HP, 600 V 60 Hz 3-ph, (UL/CSA)
SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)	60 A, LRA 600 V 60 Hz 3phase; (CSA) 60 A, LRA 480 V 60 Hz 3phase; (CSA) 10 A, FLA 480 V 60 Hz 3phase; (CSA) 10 A, FLA 600 V 60 Hz 3phase; (CSA)
SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING	20 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 20 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)
SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS	14 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 14 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS	20 A (600V 60Hz 3phase, 347V 60Hz 1phase) 20 A (480V 60Hz 3phase, 277V 60Hz 1phase)

Switching capacity

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	20 A, Maximum motor rating (UL/CSA)
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Terminal capacities

SCREW SIZE	M3.5, Terminal screw
SCREWDRIVER SIZE	0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver 2, Terminal screw, Pozidriv screwdriver
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
STRIPPING LENGTH (MAIN CABLE)	10 mm
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 2.5) mm ² 1 x (0.75 - 4) mm ²
TIGHTENING TORQUE	1.2 Nm, Screw terminals
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (0.75 - 1.5) mm ² 2 x (0.75 - 1.5) mm ² 1 x (0.75 - 2.5) mm ² 2 x (0.75 - 2.5) mm ²
TERMINAL CAPACITY (SOLID/STRANDED AWG)	18 - 14

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-eu250773en.pdf eaton-4-pole-contactor-declaration-of-conformity-uk251256en.pdf
DRAWINGS	eaton-contactors-dilmp-dimensions-006.eps eaton-contactors-dilm-dimensions-013.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-dilm-3d-drawing-007.eps
ECAD MODEL	ETN.276957.edz
INSTALLATION INSTRUCTIONS	eaton-contactors-dila-dilm7-15-dilmp20-il03407013z.pdf
INSTALLATION VIDEOS	WIN-WIN with push-in technology DA-CS-dil_m7_15
MCAD MODEL	eaton-iec-contactors-mcad-drawings-dil-m7-15.dwg
WIRING DIAGRAMS	eaton-contactors-contact-dilem-wiring-diagram.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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