

Specifications



Photo is representative



Eaton 276970

Eaton Moeller® series DILMP Contactor, 4 pole, AC operation, AC-1: 22 A, 230 V 50 Hz, 240 V 60 Hz, Screw terminals

General specifications

PRODUCT NAME	Eaton Moeller® series DILMP 4-pole contactor
CATALOG NUMBER	276970
MODEL CODE	DILMP20(230V50HZ,240V60HZ)
EAN	4015082769703
PRODUCT LENGTH/DEPTH	75 mm
PRODUCT HEIGHT	68 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.235 kg
CERTIFICATIONS	UL File No.: E29096 VDE 0660 UL Category Control No.: NLDX CSA CE IEC/EN 60947 UL CSA-C22.2 No. 60947-4-1-14 UL 60947-4-1 CSA File No.: 012528 IEC/EN 60947-4-1 CSA Class No.: 2411-03, 3211-04
CATALOG NOTES	Contacts according to EN 50012

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 60068-2-78

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
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RATED BREAKING CAPACITY AT 380/400 V	120 A
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RATED BREAKING CAPACITY AT 500 V	100 A
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RATED BREAKING CAPACITY AT 660/690 V	70 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)	144 A
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RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	22 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	12 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	12 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	12 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	10 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	7 A
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RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V	22 A
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RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V	6 A
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RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V	22 A
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RATED OPERATIONAL POWER AT AC-1, 220/230 V, 50 HZ	8 kW
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RATED OPERATIONAL POWER AT AC-1, 240 V, 50 HZ	9 kW
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RATED OPERATIONAL POWER AT AC-1, 380/400 V, 50 HZ	14 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	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

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	IP20
LIFESPAN, MECHANICAL	10,000,000 Operations (AC operated) 10,000,000 Operations (DC operated)
OPERATING FREQUENCY	5000 mechanical Operations/h (DC operated) 5000 mechanical Operations/h (AC 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-3: Normal AC induction motors: starting, switch off during running AC-1: Non-inductive or slightly inductive loads, resistance furnaces
VOLTAGE TYPE	AC

Magnet system

DROP-OUT VOLTAGE	AC operated: 0.6 - 0.4 x UC, AC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.8 - 1.1 V AC x U _c 0.8 - 1.1 V AC/DC x U _s
POWER CONSUMPTION, PICK-UP, 50 HZ	24 VA, Dual-frequency coil in a cold state and 1.0 x U _s
POWER CONSUMPTION, PICK-UP, 60 HZ	24 VA, Dual-frequency coil in a cold state and 1.0 x U _s 19 W, Dual-frequency coil in a cold state and 1.0 x U _s , at 60 Hz
POWER CONSUMPTION, SEALING, 50 HZ	1.4 W, Dual-frequency coil in a cold state and 1.0 x U _s
POWER CONSUMPTION, SEALING, 60 HZ	4 VA, Dual-frequency coil in a cold state and 1.0 x U _s , at 60 Hz 1.4 W, Dual-frequency coil in a cold state and 1.0 x U _s
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	230 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	230 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	240 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	240 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

Safety

SAFE ISOLATION	400 V AC, Between coil and contacts, According to EN 61140 400 V AC, Between the contacts, According to EN 61140
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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)
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SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	100 kA, 60 A CLASS J max. fuse, SCCR (UL/CSA) 30 kA, 25 A CLASS RK5 max. fuse, SCCR (UL/CSA)
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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)
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SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	35 A gG/gL
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SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	25 A gG/gL
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SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	20 A gG/gL
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SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	20 A gG/gL
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Switching capacity

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	20 A, Maximum motor rating (UL/CSA)
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Special purpose ratings

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

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

CATALOGUES	SmartWire-DT Catalog
	Product Range Catalog
	Switching and protecting motors
	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-mounting-dilm-dimensions.eps
	eaton-contactors-mounting-dilm-dimensions-002.eps
	eaton-contactors-dilm-dimensions-013.eps
	eaton-contactors-dilm-3d-drawing-007.eps
ECAD MODEL	ETN.276970.edz
INSTALLATION INSTRUCTIONS	eaton-contactors-dila-dilm7-15-dilmp20-il03407013z.pdf
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	DA-CS-dil m7 15
	eaton-iec-contactors-mcad-drawings-dil-m7-15.dwg
PEP ECO-PASSPORT	eaton-iec-contactors-pep-eato-00023-v0101-en.pdf
WIRING DIAGRAMS	eaton-contactors-contact-dilem-wiring-diagram.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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