

Specifications



Photo is representative



Eaton 277167

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 11 kW, 1 NC, 415 V 50 Hz, 480 V 60 Hz, AC operation, Screw terminals

General specifications

PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	277167
MODEL CODE	DILM25- 01(415V50HZ,480V60HZ)
EAN	4015082771676
PRODUCT LENGTH/DEPTH	97 mm
PRODUCT HEIGHT	85 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.428 kg
CERTIFICATIONS	CSA Certified UL Listed IEC 60947-4-1 EN 60947-4-1 IEC/EN 60947 UL VDE 0660 CSA
CATALOG NOTES	Contacts according to EN 50012
PRODUCT TYPE	Contactor



Powering Business Worldwide

Features Functions

FITTED WITH: Mirror contact

NUMBER OF POLES Three-pole

General

APPLICATION Contactors for Motors

FRAME SIZE FS2

LIFESPAN, MECHANICAL 10,000,000 Operations (AC operated)

CONNECTION Screw terminals

OPERATING FREQUENCY 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

RESISTANCE PER POLE 2.7 mΩ

SUITABLE FOR Also motors with efficiency class IE3

TYPE Full voltage non-reversing small contactor

UTILIZATION CATEGORY AC-1: Non-inductive or slightly inductive loads, resistance furnaces
AC-3: Normal AC induction motors: starting, switch off during running
AC-4: Normal AC induction motors: starting, plugging, reversing, inching

VOLTAGE TYPE AC

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
3.5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms
10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
6.9 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms
5.3 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms

Climatic environmental conditions

ALTITUDE	Max. 2000 m
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE - MAX	60 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
AMBIENT STORAGE TEMPERATURE - MAX	80 °C
CLIMATIC PROOFING	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30

Electro magnetic compatibility

EMITTED INTERFERENCE According to EN 60947-1

INTERFERENCE IMMUNITY According to EN 60947-1

Terminal capacities

TERMINALS	Screw terminals
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.75 - 10) mm ² , Main cables 1 x (0.75 - 16) mm ² , Main cables 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 - 16) mm ² , Main cables 2 x (0.75 - 10) mm ² , Main cables 1 x (0.75 - 4) mm ² , Control circuit cables 2 x (0.75 - 2.5) mm ² , Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	Single 18 - 6, double 18 - 8, Main cables 18 - 14, Control circuit cables
TERMINAL CAPACITY (STRANDED)	1 x 16 mm ² , Main cables

STRIPPING LENGTH (MAIN CABLE)	10 mm
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
SCREW SIZE	M5, Terminal screw, Main cables M3.5, Terminal screw, Control circuit cables
SCREWDRIVER SIZE	0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver 2, Terminal screw, Pozidriv screwdriver
TIGHTENING TORQUE	1.2 Nm, Screw terminals, Control circuit cables 3.2 Nm, Screw terminals, Main cables

Electrical rating

**RATED BREAKING
CAPACITY AT 220/230 V** 250 A

**RATED BREAKING
CAPACITY AT 380/400 V** 250 A

**RATED BREAKING
CAPACITY AT 500 V** 250 A

**RATED BREAKING
CAPACITY AT 660/690 V** 150 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-1,
380 V, 400 V, 415 V** 45 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
220 V, 230 V, 240 V** 25 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
380 V, 400 V, 415 V** 25 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
440 V** 25 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
500 V** 25 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-3,
660 V, 690 V** 15 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-4,
220 V, 230 V, 240 V** 13 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-4,
440 V** 13 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-4,
500 V** 13 A

**RATED OPERATIONAL
CURRENT (IE) AT AC-4,
660 V, 690 V** 10 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-1, 60
V** 40 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-1,
110 V** 40 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-1,
220 V** 40 A

**RATED MAKING
CAPACITY UP TO 690 V
(COS PHI TO IEC/EN
60947)** 350 A

Short-circuit rating

**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

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 POWER AT AC-4, 220/230 V, 50 HZ	3.5 kW
RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	4 kW
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	6.5 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	7 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	8 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	8.5 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V
RATED INSULATION VOLTAGE (UI)	690 V

Conventional thermal current I_{th}

**CONVENTIONAL
THERMAL CURRENT I_{TH}
(1-POLE, ENCLOSED)** 90 A

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

**CONVENTIONAL
THERMAL CURRENT I_{TH}
AT 55°C (3-POLE, OPEN)** 42 A

**CONVENTIONAL
THERMAL CURRENT I_{TH}
OF MAIN CONTACTS (1-
POLE, OPEN)** 100 A

Magnet system

ARCING TIME 10 ms

DROP-OUT VOLTAGE AC operated: 0.6 - 0.3 x U_c, AC operated

DUTY FACTOR 100 %

PICK-UP VOLTAGE 0.8 - 1.1 V AC x U_c

POWER CONSUMPTION 11 kW

**POWER CONSUMPTION,
PICK-UP, 50 HZ** 52 VA, Dual-frequency coil
in a cold state and 1.0 x
U_s, at 50 Hz

**POWER CONSUMPTION,
PICK-UP, 60 HZ** 67 VA, Dual-frequency coil
in a cold state and 1.0 x
U_s, at 60 Hz

**POWER CONSUMPTION,
SEALING, 50 HZ** 2.1 W, Dual-frequency coil
in a cold state and 1.0 x
U_s, at 50 Hz
7.1 VA, Dual-frequency coil
in a cold state and 1.0 x
U_s, at 50 Hz

**POWER CONSUMPTION,
SEALING, 60 HZ** 8.7 VA, Dual-frequency coil
in a cold state and 1.0 x
U_s, at 60 Hz
2.1 W, Dual-frequency coil
in a cold state and 1.0 x
U_s, at 60 Hz

**RATED CONTROL SUPPLY
VOLTAGE (US) AT AC, 50
HZ - MIN** 415 V

**RATED CONTROL SUPPLY
VOLTAGE (US) AT AC, 50
HZ - MAX** 415 V

**RATED CONTROL SUPPLY
VOLTAGE (US) AT AC, 60
HZ - MIN** 480 V

**RATED CONTROL SUPPLY
VOLTAGE (US) AT AC, 60
HZ - MAX** 480 V

**SWITCHING TIME (AC
OPERATED, MAKE
CONTACTS, CLOSING
DELAY) - MIN** 16 ms

**SWITCHING TIME (AC
OPERATED, MAKE
CONTACTS, CLOSING
DELAY) - MAX** 22 ms

**SWITCHING TIME (AC
OPERATED, MAKE
CONTACTS, OPENING
DELAY) - MIN** 8 ms

**SWITCHING TIME (AC
OPERATED, MAKE
CONTACTS, OPENING** 14 ms

Communication

CONNECTION TO SMARTWIRE-DT	No
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Safety

SAFE ISOLATION	440 V AC, Between the contacts, According to EN 61140 440 V AC, Between coil and contacts, According to EN 61140
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DELAY) - MAX

COIL VOLTAGE	415-480 Vac, 50/60 Hz
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Contacts

NUMBER OF CONTACTS	1 NC
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NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)	1
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NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	1
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NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0
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Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	4.2 W
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HEAT DISSIPATION CAPACITY PDISS	0 W
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HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	1.4 W
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RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	25 A
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STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	2.1 W
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10.2.2 CORROSION RESISTANCE	Meets the product standard's requirements.
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10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES	Meets the product standard's requirements.
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10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT	Meets the product standard's requirements.
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10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS	Meets the product standard's requirements.
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10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION	Meets the product standard's requirements.
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10.2.5 LIFTING	Does not apply, since the entire switchgear needs to
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	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 AGAINST ELECTRIC SHOCK	Does not apply, since the 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.
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.

Resources

CATALOGS	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CHARACTERISTIC CURVE	eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-switch-dilm-characteristic-curve.eps eaton-contactors-switch-dilm-characteristic-curve-002.eps
DECLARATIONS OF CONFORMITY	eaton-contactor-declaration-of-conformity-uk251218en.pdf eaton-contactor-declaration-of-conformity-eu250735en.pdf
DRAWINGS	eaton-contactors-contact-dimensions-210x202.eps eaton-contactors-dimensions-210t014.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-general-ie-ready-dilm-contactor-standards.eps eaton-contactors-dilm-3d-drawing-009.eps
ECAD MODEL	ETN.277167.edz
INSTALLATION INSTRUCTIONS	IL03407014Z2021_09.pdf
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	eaton-iec-contactors-mcad-drawings-dil-m17-38.dwg DA-CS-dil_m17_38
PEP ECO-PASSPORT	eaton-iec-contactors-pep-eato-00124-v0101-en.pdf
SPECIFICATIONS AND DATASHEETS	Eaton Specification Sheet - 277167

SYSTEM OVERVIEW	eaton-contactors-dilm-contactor-system-overview.eps
WIRING DIAGRAMS	eaton-contactors-wiring-diagram-2100swi-117.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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