

Specifications

Photo is representative

Eaton 290058

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 7.5 kW, 1 N/O, 230 V 50 Hz, 240 V 60 Hz, AC operation, Screw terminals DILM15-10(230V50HZ,240V60HZ)

General specifications

PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	290058
MODEL CODE	DILM15-10(230V50HZ,240V60HZ)
EAN	4015082900588
PRODUCT LENGTH/DEPTH	75 mm
PRODUCT HEIGHT	68 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.24 kg
WARRANTY	1 year
COMPLIANCES	CE Marked RoHS Compliant
CERTIFICATIONS	UL Listed EN 60947 CSA Certified IEC 60947 UL File No.: E29096 CSA Class No.: 2411-03, 3211-04 CE UL IEC/EN 60947-4-1 CSA IEC/EN 60947 VDE 0660 CSA-C22.2 No. 60947-4-1-14 UL 60947-4-1 UL Category Control No.: NLDX CSA File No.: 012528
CATALOG NOTES	Contacts according to EN 50012
PRODUCT TYPE	Contactor



Powering Business Worldwide

Features Functions

NUMBER OF POLES	Three-pole
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General

APPLICATION	Contactors for Motors
DEGREE OF PROTECTION	IP20
FRAME SIZE	FS1
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	2.5 mΩ
TYPE	Full voltage non-reversing miniature contactor
UTILIZATION CATEGORY	AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-3: Normal AC induction motors: starting, switch off during running
VOLTAGE TYPE	AC

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
3.4 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms
5.7 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms
3.4 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 - 2.5) mm ² 1 x (0.75 - 2.5) mm ² 2 x (0.75 - 2.5) mm ²
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 2.5) mm ² 1 x (0.75 - 4) mm ²
TERMINAL CAPACITY (SOLID/STRANDED AWG)	Single 18 - 10, double 18 - 14
STRIPPING LENGTH (MAIN CABLE)	10 mm
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
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
TIGHTENING TORQUE	1.2 Nm, Screw terminals

Electrical rating

RATED BREAKING CAPACITY AT 220/230 V	124 A
RATED BREAKING CAPACITY AT 380/400 V	124 A
RATED BREAKING CAPACITY AT 500 V	100 A
RATED BREAKING CAPACITY AT 660/690 V	70 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	15.5 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	15.5 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	15.5 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	12.5 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	9 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	7 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V	7 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V	6 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V	5 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V	20 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V	20 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V	15 A
RATED INSULATION VOLTAGE (UI)	690 V
RATED MAKING	155 A

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 480 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 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	63 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	20 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	20 A gG/gL

**CAPACITY UP TO 690 V
(COS PHI TO IEC/EN
60947)**

RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	4.6 kW
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RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	7.5 kW
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RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	8 kW
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RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	8.4 kW
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RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	7.5 kW
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RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	7 kW
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RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	2 kW
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RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	2.2 kW
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RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	3.4 kW
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RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	3.6 kW
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RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	3.5 kW
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RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	4.4 kW
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RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V
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Conventional thermal current I_{th}

CONVENTIONAL THERMAL CURRENT I_{TH} (1-POLE, ENCLOSED)	45 A
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CONVENTIONAL THERMAL CURRENT I_{TH} (3-POLE, ENCLOSED)	18 A
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CONVENTIONAL THERMAL CURRENT I_{TH} AT 55°C (3-POLE, OPEN)	21 A
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CONVENTIONAL THERMAL CURRENT I_{TH} OF MAIN CONTACTS (1- POLE, OPEN)	50 A
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Switching capacity

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	20 A, Maximum motor rating (UL/CSA)
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SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)	1 A, 250 V DC, (UL/CSA) 10 A, 600 V AC, (UL/CSA)
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SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)
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Magnet system

ARCING TIME	10 ms
DROP-OUT VOLTAGE	AC operated: 0.6 - 0.3 x Uc, AC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.8 - 1.1 V AC x Uc
POWER CONSUMPTION	7.5 kW
POWER CONSUMPTION, PICK-UP, 50 HZ	24 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, PICK-UP, 60 HZ	30 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
POWER CONSUMPTION, SEALING, 50 HZ	1.4 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz 3.4 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, SEALING, 60 HZ	4.4 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz 1.4 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	230 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	230 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	240 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	240 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	15 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	21 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	9 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING	18 ms

Motor rating

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

ASSIGNED MOTOR
POWER AT 200/208 V, 60 HZ, 3-PHASE 5 HP

ASSIGNED MOTOR
POWER AT 230/240 V, 60 HZ, 1-PHASE 3 HP

ASSIGNED MOTOR
POWER AT 230/240 V, 60 HZ, 3-PHASE 5 HP

ASSIGNED MOTOR
POWER AT 460/480 V, 60 HZ, 3-PHASE 10 HP

ASSIGNED MOTOR
POWER AT 575/600 V, 60 HZ, 3-PHASE 10 HP

DELAY) - MAX

COIL VOLTAGE 230-240 Vac, 50/60 Hz

Communication

**CONNECTION TO
SMARTWIRE-DT** No

Safety

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

Contacts

NUMBER OF CONTACTS 1 NO

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

**NUMBER OF AUXILIARY
CONTACTS (NORMALLY
CLOSED CONTACTS)** 0

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

Special purpose ratings

**SPECIAL PURPOSE
RATING OF BALLAST
ELECTRICAL DISCHARGE
LAMPS** 20 A (480V 60Hz 3phase,
277V 60Hz 1phase)
20 A (600V 60Hz 3phase,
347V 60Hz 1phase)

**SPECIAL PURPOSE
RATING OF DEFINITE
PURPOSE RATING** 90 A, LRA 480 V 60 Hz 3-
ph, 100,000 cycles acc. to
UL 1995, (UL/CSA)
15 A, FLA 480 V 60 Hz 3-ph,
100,000 cycles acc. to UL
1995, (UL/CSA)

**SPECIAL PURPOSE
RATING OF ELEVATOR
CONTROL** 7.8 A, 200 V 60 Hz 3-ph,
(UL/CSA)
9 A, 600 V 60 Hz 3-ph,
(UL/CSA)
7.5 HP, 480 V 60 Hz 3-ph,
(UL/CSA)
7.5 HP, 600 V 60 Hz 3-ph,
(UL/CSA)
2 HP, 200 V 60 Hz 3-ph,
(UL/CSA)
3 HP, 240 V 60 Hz 3-ph,
(UL/CSA)
9.6 A, 240 V 60 Hz 3-ph,
(UL/CSA)
11 A, 480 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** 20 A, 600 V 60 Hz 3phase,
347 V 60 Hz 1phase,

AIR HEATING	(UL/CSA) 20 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
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)

Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0.5 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	15.5 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	1.4 W
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 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.

Resources

CATALOGS	SmartWire-DT Catalog
	Product Range Catalog Switching and protecting motors
	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-002.eps
	eaton-contactors-switch-dilm-characteristic-curve.eps
DECLARATIONS OF CONFORMITY	eaton-contactor-declaration-of-conformity-eu250726en.pdf
	eaton-contactor-declaration-of-conformity-uk251209en.pdf
DRAWINGS	eaton-contactors-module-dilm-dimensions.eps
	eaton-contactors-module-dilm-dimensions-002.eps
	eaton-contactors-mounting-dilm-dimensions-002.eps
	eaton-contactors-mounting-dilm-dimensions.eps
	eaton-contactors-frame-dilm-dimensions.eps
	eaton-contactors-dilm-3d-drawing-007.eps
ECAD MODEL	ETN.290058.edz
INSTALLATION INSTRUCTIONS	eaton-contactors-dila-dilm7-15-dilmp20-il03407013z.pdf
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	eaton-iec-contactors-mcad-drawings-dil-m7-15.dwg

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.

	DA-CS-dil_m7_15
PEP ECO-PASSPORT	eaton-iec-contactors-pep-eato-00023-v0101-en.pdf
SALES NOTES	eaton-dol-3phase-ac-motor-starter-ms-16a-flyer-fl034009en-en-us.pdf
SPECIFICATIONS AND DATASHEETS	Eaton Specification Sheet - 290058
SYSTEM OVERVIEW	eaton-contactors-dilm-contactor-system-overview.eps
WIRING DIAGRAMS	eaton-contactors-contact-dilm-wiring-diagram.eps

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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