

Specifications

Eaton 239548

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 55 kW, RAC 240: 190 - 240 V 50/60 Hz, AC operation, Screw terminals DILM115(RAC240)

General specifications

PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	239548
MODEL CODE	DILM115(RAC240)
EAN	4015082395483
PRODUCT LENGTH/DEPTH	160 mm
PRODUCT HEIGHT	170 mm
PRODUCT WIDTH	90 mm
PRODUCT WEIGHT	2.25 kg
CERTIFICATIONS	CSA Class No.: 2411-03, 3211-04 CSA CSA File No.: 012528 VDE 0660 UL IEC/EN 60947-4-1 UL 60947-4-1 CSA-C22.2 No. 60947-4-1-14 UL File No.: E29096 CE IEC/EN 60947 UL Category Control No.: NLDX
CATALOG NOTES	Contacts according to EN 50012
PRODUCT TYPE	Contactor



Powering Business Worldwide

Features Functions

FITTED WITH: Suppressor circuit in actuating electronics

NUMBER OF POLES Three-pole

General

APPLICATION Contactors for Motors

DEGREE OF PROTECTION IP00

FRAME SIZE FS4

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

CONNECTION Screw terminals

OPERATING FREQUENCY 3600 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 0.6 mΩ

SUITABLE FOR Also motors with efficiency class IE3

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

VOLTAGE TYPE AC

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

TERMINAL CAPACITY (COPPER BAND)	2 x (6 x 16 x 0.8) mm (Number of segments x width x thickness), Main cables
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (10 - 95) mm ² , Main cables 2 x (10 - 70) 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)	2 x (0.75 - 2.5) mm ² , Control circuit cables 1 x (0.75 - 4) mm ² , Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	18 - 14, Control circuit cables Single 8...3/0, double 8...2/0, Main cables
TERMINAL CAPACITY (STRANDED)	1 x (16 - 95) mm ² , Main cables 2 x (16 - 70) mm ² , Main cables

STRIPPING LENGTH (MAIN CABLE)	24 mm
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
SCREW SIZE	5 mm AF, Hexagon socket- head spanner, Terminal screw, Main cables M3.5, Terminal screw, Control circuit cables M10, Terminal screw, Main cables
SCREWDRIVER SIZE	0.8 x 5.5/1 x 6 mm, Terminal screw, Control circuit cables, Standard screwdriver 2, Terminal screw, Control circuit cables, Pozidriv screwdriver
TIGHTENING TORQUE	14 Nm, Screw terminals, Main cables 1.2 Nm, Screw terminals, Control circuit cables

Electrical rating

RATED BREAKING CAPACITY AT 220/230 V	1150 A
RATED BREAKING CAPACITY AT 380/400 V	1150 A
RATED BREAKING CAPACITY AT 500 V	1150 A
RATED BREAKING CAPACITY AT 660/690 V	1100 A
RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	160 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	115 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	115 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	115 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	115 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	93 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	55 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V	55 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V	55 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V	45 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V	160 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V	160 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V	90 A
RATED INSULATION VOLTAGE (UI)	690 V
RATED MAKING	1610 A

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	10 kA, 600 A max. fuse, SCCR (UL/CSA) 10 kA, 600 A max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	100 kA, 300 A CLASS J max. fuse, SCCR (UL/CSA) 30 kA, 600 A max. fuse, SCCR (UL/CSA) 65 kA, 250 A max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	100 kA, 300 A CLASS J max. fuse, SCCR (UL/CSA) 30 kA, 600 A max. fuse, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	250 A gG/gL

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

RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	40 kW
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RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	55 kW
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RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	70 kW
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RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	75 kW
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RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	85 kW
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RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	90 kW
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RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	17 kW
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RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	19 kW
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RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	33 kW
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RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	35 kW
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RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	40 kW
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RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	43 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)	285 A
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CONVENTIONAL THERMAL CURRENT I_{TH} (3-POLE, ENCLOSED)	115 A
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CONVENTIONAL THERMAL CURRENT I_{TH} AT 55°C (3-POLE, OPEN)	135 A
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CONVENTIONAL THERMAL CURRENT I_{TH} OF MAIN CONTACTS (1- POLE, OPEN)	325 A
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Switching capacity

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	180 A, Maximum motor rating (UL/CSA)
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Magnet system

ARCING TIME	15 ms
DROP-OUT VOLTAGE	AC operated: 0.6 - 0.25 x UC, AC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.8 - 1.15 V AC x Uc
POWER CONSUMPTION, PICK-UP, 50 HZ	180 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, PICK-UP, 60 HZ	170 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
POWER CONSUMPTION, SEALING, 50 HZ	2.3 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz 3.1 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, SEALING, 60 HZ	3.1 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz 2.3 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	190 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	240 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	190 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	240 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	28 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	33 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	35 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	41 ms

Motor rating

ASSIGNED MOTOR
POWER AT 115/120 V, 60 HZ, 1-PHASE 10 HP

ASSIGNED MOTOR
POWER AT 200/208 V, 60 HZ, 3-PHASE 40 HP

ASSIGNED MOTOR
POWER AT 230/240 V, 60 HZ, 1-PHASE 25 HP

ASSIGNED MOTOR
POWER AT 230/240 V, 60 HZ, 3-PHASE 50 HP

ASSIGNED MOTOR
POWER AT 460/480 V, 60 HZ, 3-PHASE 100 HP

ASSIGNED MOTOR
POWER AT 575/600 V, 60 HZ, 3-PHASE 100 HP

Communication

CONNECTION TO SMARTWIRE-DT	No
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Safety

SAFE ISOLATION

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

Contacts

NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
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NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0
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Special purpose ratings

SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS	160 A (480V 60Hz 3phase, 277V 60Hz 1phase) 160 A (600V 60Hz 3phase, 347V 60Hz 1phase)
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SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING	115 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 690 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
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SPECIAL PURPOSE RATING OF ELEVATOR CONTROL	30 HP, 200 V 60 Hz 3-ph, (UL/CSA) 40 HP, 240 V 60 Hz 3-ph, (UL/CSA) 100 HP, 600 V 60 Hz 3-ph, (UL/CSA) 92 A, 200 V 60 Hz 3-ph, (UL/CSA) 75 HP, 480 V 60 Hz 3-ph, (UL/CSA) 104 A, 240 V 60 Hz 3-ph, (UL/CSA) 96 A, 480 V 60 Hz 3-ph, (UL/CSA) 99 A, 600 V 60 Hz 3-ph, (UL/CSA)
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SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)	540 A, LRA 480 V 60 Hz 3phase; (CSA) 84 A, FLA 480 V 60 Hz 3phase; (CSA) 540 A, LRA 600 V 60 Hz 3phase; (CSA) 84 A, FLA 600 V 60 Hz 3phase; (CSA)
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SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING	160 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 160 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
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SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS	160 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 160 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase,
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Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	18.9 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	6.3 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	115 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	2.3 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

	Product Range Catalog Switching and protecting motors
CATALOGS	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf SmartWire-DT Catalog
CHARACTERISTIC CURVE	eaton-contactors-switch-dilm-characteristic-curve-002.eps eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-switch-dilm-characteristic-curve.eps eaton-contactors-short-time-loading-dilm-characteristic-curve-002.eps
DECLARATIONS OF CONFORMITY	eaton-contactor-declaration-of-conformity-eu250750en.pdf eaton-contactor-declaration-of-conformity-uk251233en.pdf
DRAWINGS	eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-dilm-dimensions-011.eps eaton-contactors-dilm-dimensions-003.eps eaton-general-ie-ready-dilm-contactor-standards.eps eaton-contactors-dilm-3d-drawing-013.eps eaton-contactors-dilm-3d-drawing.eps
ECAD MODEL	ETN.239548.edz

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.

INSTALLATION INSTRUCTIONS	eaton-dil-contactors-instruction-leaflet-il03407039z.pdf
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	eaton-iec-contactors-mcad-drawings-dil-m80-170.dwg DA-CS-dil_m80_170
PEP ECO-PASSPORT	eaton-iec-contactors-pep-eato-00022-v0101-en.pdf eaton-iec-contactors-pep-eato-00125-v0101-en.pdf
SYSTEM OVERVIEW	eaton-contactors-dilm-contactor-system-overview.eps
WIRING DIAGRAMS	eaton-contactors-contact-dilm-wiring-diagram-003.eps

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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