

Eaton 239741

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 55 kW, RDC 24: 24 - 27 V DC, DC operation, Spring-loaded terminals DILMC115(RDC24)

PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	239741
PRODUCT LENGTH/DEPTH	160 mm
PRODUCT HEIGHT	170 mm
PRODUCT WIDTH	90 mm
PRODUCT WEIGHT	2.27 kg
CERTIFICATIONS	UL Category Control No.: NLDX IEC/EN 60947 IEC/EN 60947-4-1 CSA CSA Class No.: 2411-03, 3211-04 VDE 0660 CSA-C22.2 No. 60947-4-1-14 UL 60947-4-1 CSA File No.: 012528 UL CE UL File No.: E29096
CATALOG NOTES	Contacts according to EN 50012

**ELECTRICAL
CONNECTION TYPE FOR
AUXILIARY- AND
CONTROL-CURRENT
CIRCUIT**

Spring clamp connection

NUMBER OF POLES

Three-pole

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.

CHARACTERISTIC CURVE

[eaton-contactors-switch-dilm-characteristic-curve-002.eps](#)

[eaton-contactors-switch-dilm-characteristic-curve.eps](#)

[eaton-dil-contactors-instruction-leaflet-il03407039z.pdf](#)

[eaton-contactors-contact-dilm-wiring-diagram-003.eps](#)

[eaton-contactors-dilm-dimensions-003.eps](#)

[eaton-contactors-dilm-3d-drawing.eps](#)

[eaton-contactors-frame-dilm-3d-drawing.eps](#)

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.
FITTED WITH:	Suppressor circuit in actuating electronics
OPERATING FREQUENCY	3600 mechanical Operations/h (DC operated)
POLLUTION DEGREE	3
CLIMATIC PROOFING	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
CONNECTION TO SMARTWIRE-DT	No
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	8000 V AC
UTILIZATION CATEGORY	AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-3: Normal AC induction motors: starting, switch off during running AC-1: Non-inductive or slightly inductive loads, resistance furnaces

CONNECTION	Spring-loaded terminals Screw terminals
FRAME SIZE	FS4
AMBIENT OPERATING TEMPERATURE - MAX	60 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	-25 °C
AMBIENT STORAGE TEMPERATURE - MAX	80 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
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
CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)	285 A
CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)	115 A
CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)	135 A
CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)	325 A
EQUIPMENT HEAT	18.9 W

DISSIPATION, CURRENT-DEPENDENT PVID	
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	6.3 W
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	35 ms
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	30 ms
APPLICATION	Contactors for Motors
PRODUCT CATEGORY	Contactors
PROTECTION	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
TERMINALS	Spring-cage terminals on auxiliary and control circuit terminals
ARCING TIME	15 ms
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
SCREWDRIVER SIZE	3.5 mm, Spring-loaded terminals, Control circuit cables
VOLTAGE TYPE	DC
DEGREE OF PROTECTION	IP00
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
NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT)	3
POWER CONSUMPTION (PICK-UP) AT DC	149 W
POWER CONSUMPTION	1.9 W

(SEALING) AT DC	
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 CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	0 V
DROP-OUT VOLTAGE	0.6 - 0.15 x UC, DC operated At least smoothed two-phase bridge rectifier or three-phase rectifier
OVERVOLTAGE CATEGORY	III
DUTY FACTOR	100 %
EMITTED INTERFERENCE	According to EN 60947-1
INTERFERENCE IMMUNITY	According to EN 60947-1
LIFESPAN, MECHANICAL	10,000,000 Operations (DC operated)
PICK-UP VOLTAGE	24 - 27 V DC (RDC 24) 0.7 - 1.2 V DC x Uc
SAFE ISOLATION	690 V AC, Between coil and contacts, According to EN 61140 690 V AC, Between the contacts, According to EN 61140
RESIDUAL CURRENT	1 mA (with actuation of A1 - A2 by the electronics with "0" signal)
SCREW SIZE	5 mm AF, Hexagon socket-head spanner, Terminal screw, Main cables M10, Terminal screw, Main

	cables
TERMINAL CAPACITY (STRANDED)	1 x (16 - 95) mm ² , Main cables 2 x (16 - 70) mm ² , Main cables
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 (0.75 - 1.5) mm ² 2 x (10 - 70) mm ² , Main cables 2 x (0.75 - 1.5) mm ² , Control circuit cables, Spring-loaded terminals 1 x (10 - 95) mm ² , Main cables
SHOCK RESISTANCE	5 g, N/C 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 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 7 g, N/O 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 7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals 1 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals
TERMINAL CAPACITY (SOLID/STRANDED AWG)	Single 8...3/0, double 8...2/0, Main cables 18 - 14, Control circuit cables, Spring-loaded

	terminals
SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	180 A, Maximum motor rating (UL/CSA)
TIGHTENING TORQUE	14 Nm, Screw terminals, Main cables
TERMINAL CAPACITY (FLEXIBLE)	2 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals 1 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	27 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	24 V
RATED INSULATION VOLTAGE (UI)	690 V
RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947)	1610 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, 400 V	55 A
RATED OPERATIONAL CURRENT (IE) AT AC-4,	55 A

440 V	
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, 110 V	160 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V	90 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V	160 A
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	115 A
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	40 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	55 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	70 kW
RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	17 kW
RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	19 kW
RATED OPERATIONAL POWER AT AC-4, 380/400 V, 50 HZ	28 kW
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	33 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	35 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	40 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	43 kW
RATED OPERATIONAL	74.6 kW

POWER (NEMA)	
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V
RESISTANCE PER POLE	0.6 mΩ
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	1.9 W
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
STRIPPING LENGTH (MAIN CABLE)	24 mm
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
SUITABLE FOR	Also motors with efficiency class IE3
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
SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS	160 A (480V 60Hz 3phase, 277V 60Hz 1phase) 160 A (600V 60Hz 3phase, 347V 60Hz 1phase)

SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING	690 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 115 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
SPECIAL PURPOSE RATING OF ELEVATOR CONTROL	104 A, 240 V 60 Hz 3-ph, (UL/CSA) 75 HP, 480 V 60 Hz 3-ph, (UL/CSA) 40 HP, 240 V 60 Hz 3-ph, (UL/CSA) 92 A, 200 V 60 Hz 3-ph, (UL/CSA) 96 A, 480 V 60 Hz 3-ph, (UL/CSA) 100 HP, 600 V 60 Hz 3-ph, (UL/CSA) 30 HP, 200 V 60 Hz 3-ph, (UL/CSA) 99 A, 600 V 60 Hz 3-ph, (UL/CSA)
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)
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)
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, (UL/CSA)
CONVENTIONAL THERMAL CURRENT ITH AT 40°C (3-POLE, OPEN)	160 A
CONVENTIONAL THERMAL CURRENT ITH AT 50°C (3-POLE, OPEN)	142 A
CONVENTIONAL THERMAL CURRENT ITH AT 60°C (3-POLE, OPEN)	130 A
RATED OPERATIONAL POWER AT AC-3, 440 V, 50	75 kW

HZ	
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	
	85 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	
	90 kW
ACTUATING VOLTAGE	RDC 24: 24 - 27 V DC
ALTITUDE	Max. 2000 m
OPERATING VOLTAGE AT AC, 50 HZ - MIN	230 V
OPERATING VOLTAGE AT AC, 50 HZ - MAX	690 V
OPERATING VOLTAGE AT AC, 60 HZ - MIN	230 V
OPERATING VOLTAGE AT AC, 60 HZ - MAX	690 V
OPERATING VOLTAGE AT DC - MIN	24 V
OPERATING VOLTAGE AT DC - MAX	27 V

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
:



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