

Specifications

Eaton 139554

Eaton Moeller® series DILM Contactor, 380 V 400 V 160 kW, 2 N/O, 2 NC, RDC 48: 24 - 48 V DC, DC operation, Screw connection



General specifications

PRODUCT NAME Eaton Moeller® series DILM Contactor

CATALOG NUMBER 139554

MODEL CODE DILM300A/22(RDC48)

EAN 4015081363322

PRODUCT LENGTH/DEPTH 208 mm

PRODUCT HEIGHT 189 mm

PRODUCT WIDTH 140 mm

PRODUCT WEIGHT 7.1 kg

UL File No.: E29096
IEC/EN 60947-4-1
VDE 0660
UL 60947-4-1
UL Category Control No.: NLDX
CSA Class No.: 3211-04
UL/CSA

CERTIFICATIONS

CSA File No. 1017510
North America (UL listed, CSA certified)
EN 45545: Fire protection on railway vehicles
IEC 61373: Vibration and shock, tested for category 1 class B
CE marking

CATALOG NOTES

- Contacts according to EN 50012
- EN 45545 - Fire protection on railway vehicles: Fire protection class of all plastics according to UL94: V-0 / plastic weight



Powering Business Worldwide

- in total: 1.872 kg
- Conventional thermal current I_{th} of main contacts (1-pole, open) at 60°

Product specifications

ACCESSORIES	Fitting options auxiliary contacts: on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA
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.

Resources

CATALOGS	Product Range Catalog Switching and protecting motors
CHARACTERISTIC CURVE	eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-short-time-loading-dilm-characteristic-curve-002.eps eaton-contactors-component-dilm-characteristic-curve-002.eps eaton-contactors-component-dilm-characteristic-curve-002.eps
DECLARATIONS OF CONFORMITY	DA-DC-00004798.pdf DA-DC-00004803.pdf
DRAWINGS	eaton-contactors-dilm-dimensions-007.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-mounting-dilm-3d-drawing-002.eps
ECAD MODEL	DA-CE-ETN.DILM300A_22(RDC48)
INSTALLATION INSTRUCTIONS	IL03406002Z
MCAD MODEL	eaton-iec-contactors-3d-models-dilm250-300-s22.stp eaton-iec-contactors-drawings-dilm250-300-s22.dwg
WIRING DIAGRAMS	eaton-contactors-contact-dilm-wiring-diagram-004.eps

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	3000 mechanical Operations/h (DC operated) 200 Operations/h
POLLUTION DEGREE	3
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	8000 V AC
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
CONNECTION	Screw terminals
AMBIENT OPERATING TEMPERATURE - MAX	60 °C

AMBIENT OPERATING TEMPERATURE - MIN	-40 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	-40 °C
AMBIENT STORAGE TEMPERATURE - MAX	80 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	100 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	125 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	250 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	300 HP
CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)	788 A
CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)	315 A
CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)	418 A
CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)	1000 A
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	7 W
APPLICATION	Contactors for Motors
PRODUCT CATEGORY	Contactors
PROTECTION	Finger and back-of-hand proof with terminal

	shroud or terminal block, Protection against direct contact when actuated from front (EN 50274)
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Rail connection
SCREWDRIVER SIZE	2, Terminal screw, Control circuit cables, Pozidriv screwdriver
VOLTAGE TYPE	DC
DEGREE OF PROTECTION	IP00
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	2
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	2
NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)	2
NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT	0
NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)	2
NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT)	3
RATED BREAKING CAPACITY AT 1000 V	950 A
RATED BREAKING CAPACITY AT 220/230 V	3000 A
RATED BREAKING CAPACITY AT 380/400 V	3000 A
RATED BREAKING CAPACITY AT 500 V	3000 A
RATED BREAKING CAPACITY AT 660/690 V	3000 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	<p>AC operated: 0.25 x US max - 0.6 x US min, AC operated</p> <p>AC operated: 0.2 x US max - 0.4 x US min, AC operated</p> <p>DC operated: 0.2 x US max - 0.6 US min, DC operated</p> <p>DC operated: 0.15 x US min - 0.6 US max, DC operated</p>
OVERVOLTAGE CATEGORY	III
BEHAVIOR IN MARGINAL AND TRANSITIONAL CONDITIONS	<p>Sealing - Voltage drops (0.2 - 0.6 x U_c min ≤ 12 ms: Time is bridged successfully</p> <p>Sealing - Voltage drops (0.6 - 0.7 x U_c min: Contactor remains switched on</p> <p>Sealing - Voltage interruptions (0 - 0.2 x U_c min ≤ 10 ms: Time is bridged successfully</p> <p>Sealing - Voltage drops (0.2 - 0.6 x U_c min) > 12 ms: Drop-out of the contactor</p> <p>Sealing - Excess voltage (1.15 - 1.3 x U_c max): Contactor remains switched on</p> <p>Sealing - Voltage interruptions 0 - 0.2 x U_c min) > 10 ms: Drop-out of the contactor</p> <p>Sealing - Pick-up phase (0.7 x U_c min - 1.15 x U_c max): Contactor switches on with certainty</p> <p>Sealing - Pick-up phase (0 - 0.7 x U_c min: Contactor does not switch on</p>
DUTY FACTOR	100 %
ELECTROMAGNETIC COMPATIBILITY	<p>Designed for operation in industrial environments.</p> <p>Its use in residential environments may cause radio-frequency interference, requiring additional noise</p>

	suppression.
LIFESPAN, MECHANICAL	10,000,000 Operations (DC operated)
PICK-UP VOLTAGE	0.7 - 1.15 V DC x Us
POWER CONSUMPTION, PICK-UP, 50 HZ	250 W, Pull-in power, Coil in a cold state and 1.0 x Us 380 VA, Pull-in power, Coil in a cold state and 1.0 x Us
SAFE ISOLATION	1000 V AC, Between coil and contacts, According to EN 61140
POWER CONSUMPTION, PICK-UP, 60 HZ	380 VA, Pull-in power, Coil in a cold state and 1.0 x Us 250 W, Pull-in power, Coil in a cold state and 1.0 x Us
SCREW SIZE	M3.5, Terminal screw, Control circuit cables M10, Terminal screw, Main connections
POWER CONSUMPTION, SEALING, 50 HZ	4.6 W, Coil in a cold state and 1.0 x Us
POWER CONSUMPTION, SEALING, 60 HZ	4.6 W, Coil in a cold state and 1.0 x Us
RESISTANCE	500 mΩ (Admissible transitional contact resistance - of the external control circuit device when actuating A11)
RATED OPERATIONAL CURRENT (IE)	177 A at 690 V (Individual compensation, three-phase capacitors, open) 307 A at up to 525 V (Individual compensation, three-phase capacitors, open)
INRUSH CURRENT	Max. 30 x Ie (peak)
SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)	15 A, 600 V AC, (UL/CSA) 1 A, 250 V DC, (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)
LIFESPAN, ELECTRICAL	100,000 Operations (at Condensor operation)
TERMINAL CAPACITY (COPPER BAND)	Fixing with flat cable terminal or cable terminal blocks; See terminal

	capacity for cable terminal blocks
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (0.75 - 2.5) mm ² , Control circuit cables
SHOCK RESISTANCE	10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 8 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 10 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 1 x (0.75 - 2.5) mm ² , Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	18 - 14, Control circuit cables 2/0 - 500 MCM, Main cables
SIGNAL LEVEL	5 V - 15 V, PLC signal level (A3 - A4) to IEC/EN 61131-2 (type 2), Magnet systems
TERMINAL CAPACITY (BUSBAR)	25 mm width, Main connection
TERMINAL CAPACITY (FLEXIBLE WITH CABLE LUG)	50 - 240 mm ²
SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	350 A, Maximum motor rating (UL/CSA)
TERMINAL CAPACITY (STRANDED WITH CABLE LUG)	70 - 240 mm ²
POWER CONSUMPTION	Control transformer with $u_k \leq 6\%$
TIGHTENING TORQUE	24 Nm, Main cable connection screw/bolt 1.2 Nm, Screw terminals, Control circuit cables
WIDTH ACROSS FLATS	16 mm
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	48 V
RATED CONTROL SUPPLY	24 V

VOLTAGE (US) AT DC - MIN	
RATED INSULATION VOLTAGE (UI)	1000 V
RATED MAKING CAPACITY (COS PHI TO IEC/EN 60947)	3000 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 1000 V	95 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	300 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	300 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	300 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	300 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	185 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 1000 V	76 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	240 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V	240 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V	240 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V	240 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V	150 A
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	300 A
RATED OPERATIONAL POWER AT AC-3, 1000 V, 50 HZ	132 kW
RATED OPERATIONAL	100 kW

POWER AT AC-3, 240 V, 50 HZ	
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	160 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	175 kW
RATED OPERATIONAL POWER AT AC-4, 1000 V, 50 HZ	108 kW
RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	75 kW
RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	82 kW
RATED OPERATIONAL POWER AT AC-4, 380/400 V, 50 HZ	132 kW
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	142 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	150 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	170 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	137 kW
RATED OPERATIONAL POWER (NEMA)	186 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	1000 V
RESISTANCE PER POLE	0.077 mΩ
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	4.6 W
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	100 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	110 ms

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	600 A, max. CB, SCCR (UL/CSA) 700 A, max. Fuse, SCCR (UL/CSA) 18 kA, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	700 A, Class L, max. Fuse, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA) 18 kA, Fuse, SCCR (UL/CSA) 700 A, Class L/450 A, Class J, max. Fuse, SCCR (UL/CSA) 18/100 kA, Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	700 A, Class J, max. Fuse, SCCR (UL/CSA) 18 kA, Fuse, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA) 18 kA, CB, SCCR (UL/CSA) 700 A, Class L/450 A, Class J, max. Fuse, SCCR (UL/CSA) 18/100 kA, Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 1000 V	200 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	400 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	400 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 1000 V	160 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	400 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	315 A gG/gL

**SPECIAL PURPOSE
RATING OF DEFINITE
PURPOSE RATING**

300 A, FLA 600 V 60 Hz 3-
ph, 100,000 cycles acc. to
UL 1995, (UL/CSA)
2160 A, LRA 480 V 60 Hz 3-
ph, 100,000 cycles acc. to
UL 1995, (UL/CSA)
1800 A, LRA 600 V 60 Hz 3-
ph, 100,000 cycles acc. to
UL 1995, (UL/CSA)
360 A, FLA 480 V 60 Hz 3-
ph, 100,000 cycles acc. to
UL 1995, (UL/CSA)

**CONVENTIONAL
THERMAL CURRENT ITH
AT 40°C (3-POLE, OPEN)** 490 A

**CONVENTIONAL
THERMAL CURRENT ITH
AT 50°C (3-POLE, OPEN)** 438 A

**CONVENTIONAL
THERMAL CURRENT ITH
AT 60°C (3-POLE, OPEN)** 400 A

**RATED OPERATIONAL
POWER AT AC-3, 440 V, 50
HZ** 185 kW

**RATED OPERATIONAL
POWER AT AC-3, 500 V, 50
HZ** 210 kW

**RATED OPERATIONAL
POWER AT AC-3, 690 V, 50
HZ** 170 kW

ACTUATING VOLTAGE RDC 48: 24 - 48 V DC

ALTITUDE Max. 2000 m

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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