

Specifications

Eaton 277817

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 22 kW, 24 V 50 Hz, AC operation, Screw terminals

General specifications

PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	277817
MODEL CODE	DILM50(24V50HZ)
EAN	4015082778170
PRODUCT LENGTH/DEPTH	132.1 mm
PRODUCT HEIGHT	115 mm
PRODUCT WIDTH	55 mm
PRODUCT WEIGHT	0.872 kg
COMPLIANCES	CE Marked
CERTIFICATIONS	EN 60947-4-1 IEC 60947-4-1 CSA Std. C22.2 No. 14-05 UL 508 VDE IEC/EN 60947 UL UL 60947-4-1 UL Category Control No.: NLDX IEC/EN 60947-4-1 CSA-C22.2 No. 60947-4-1- 14 CE VDE 0660 CSA Class No.: 2411-03, 3211-04 CSA File No.: 012528 UL File No.: E29096 CSA
CATALOG NOTES	Contacts according to EN 50012
GLOBAL CATALOG	277817

Product specifications

AMPERAGE RATING	50A
NUMBER OF POLES	Three-pole
VOLTAGE RATING	24 V
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	SmartWire-DT Catalog eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
DECLARATIONS OF CONFORMITY	eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-switch-dilm-characteristic-curve-002.eps eaton-contactors-switch-dilm-characteristic-curve.eps
DRAWINGS	DA-DC-00004817.pdf DA-DC-00004782.pdf eaton-contactors-dilm-dimensions-002.eps eaton-contactors-dilm-dimensions-012.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-3d-drawing.eps eaton-contactors-dilm-3d-drawing-011.eps eaton-general-ie-ready-dilm-contactor-standards.eps
ECAD MODEL	ETN.277817.edz
INSTALLATION INSTRUCTIONS	IL03407033Z
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	DA-CD-dil_m40_72

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.
FREQUENCY RATING	50 Hz
OPERATING FREQUENCY	5000 mechanical Operations/h (AC operated)
POLLUTION DEGREE	3
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
CONNECTION TO SMARTWIRE-DT	No
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	8000 V AC
UTILIZATION CATEGORY	AC-3: Normal AC induction motors: starting, switch off during running AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-1: Non-inductive or slightly inductive loads, resistance furnaces
CONNECTION	Screw terminals
FRAME SIZE	FS3

SYSTEM OVERVIEW	dil_m40_65_22.dwg DA-CS-dil_m40 DA-CS-dil_m40_72 dil_m40_65_22.stp eaton-contactors-dilm-contactor-system-overview.eps
WIRING DIAGRAMS	eaton-contactors-contact-dilm-wiring-diagram-003.eps

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	3 HP
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	15 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	10 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	20 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	40 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	50 HP
CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)	145 A
CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)	58 A
CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)	68 A
CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)	162 A
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	9.9 W
HEAT DISSIPATION CAPACITY PDISS	0 W

HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	3.3 W
APPLICATION	Contactors for Motors
PRODUCT CATEGORY	Contactors
PROTECTION	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
ARCING TIME	10 ms
ELECTRICAL	
CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
SCREWDRIVER SIZE	0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver 2, Terminal screw, Pozidriv screwdriver
VOLTAGE TYPE	AC
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
OPERATING TEMPERATURE - MAX	60 °C
OPERATING TEMPERATURE - MIN	-25 °C
RATED BREAKING CAPACITY AT 220/230 V	500 A
RATED BREAKING CAPACITY AT 380/400 V	500 A
RATED BREAKING CAPACITY AT 500 V	500 A
RATED BREAKING CAPACITY AT 660/690 V	320 A
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	24 V

RATED CONTROL SUPPLY	
VOLTAGE (US) AT AC, 50	24 V
HZ - MIN	
RATED CONTROL SUPPLY	
VOLTAGE (US) AT AC, 60	0 V
HZ - MAX	
RATED CONTROL SUPPLY	
VOLTAGE (US) AT AC, 60	0 V
HZ - MIN	
DROP-OUT VOLTAGE	AC operated: 0.6 - 0.3 x UC, AC operated
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 (AC operated)
PICK-UP VOLTAGE	0.8 - 1.1 V AC x Uc
POWER CONSUMPTION, PICK-UP, 50 Hz	149 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
SAFE ISOLATION	440 V AC, Between the contacts, According to EN 61140 440 V AC, Between coil and contacts, According to EN 61140
POWER CONSUMPTION, PICK-UP, 60 Hz	178 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
SCREW SIZE	M3.5, Terminal screw, Control circuit cables M6, Terminal screw, Main cables
POWER CONSUMPTION, SEALING, 50 Hz	4.1 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz 16 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, SEALING, 60 Hz	19 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz 4.1 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
TERMINAL CAPACITY (STRANDED)	1 x (16 - 50) mm ² , Main cables

	2 x (16 - 35) mm ² , Main cables
TERMINAL CAPACITY (COPPER BAND)	2 x (6 x 9 x 0.8) mm (Number of segments x width x thickness), Main cables
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 2 x (0.75 - 25) mm ² , Main cables 1 x (0.75 - 35) mm ² , Main cables
SHOCK RESISTANCE	7 g, N/O auxiliary 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, 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 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 10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (0.75 - 16) mm ² , Main cables 1 x (0.75 - 16) mm ² , Main cables 1 x (0.75 - 4) mm ² , Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	18 - 14, Control circuit cables Single 14 - 1, double 14 - 2, Main cables
SWITCHING CAPACITY	80 A, Maximum motor

(MAIN CONTACTS, GENERAL USE)	rating (UL/CSA)
TIGHTENING TORQUE	1.2 Nm, Screw terminals, Control circuit cables 3.3 Nm, Screw terminals, Main cables
RATED CONTROL SUPPLY	
VOLTAGE (US) AT DC - MAX	0 V
RATED CONTROL SUPPLY	
VOLTAGE (US) AT DC - MIN	0 V
RATED INSULATION VOLTAGE (UI)	690 V
RATED MAKING	
CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947)	700 A
RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	80 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	50 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	50 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	50 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	50 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	32 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	21 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V	21 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V	21 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V	21 A
RATED OPERATIONAL CURRENT (IE) AT AC-4,	17 A

660 V, 690 V

RATED OPERATIONAL

CURRENT (IE) AT DC-1, 110 V

50 A

RATED OPERATIONAL

CURRENT (IE) AT DC-1, 220 V

45 A

RATED OPERATIONAL

CURRENT (IE) AT DC-1, 60 V

60 A

RATED OPERATIONAL

CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)

50 A

RATED OPERATIONAL

POWER AT AC-3, 240 V, 50 HZ

17 kW

RATED OPERATIONAL

POWER AT AC-3, 380/400 V, 50 HZ

22 kW

RATED OPERATIONAL

POWER AT AC-3, 415 V, 50 HZ

30 kW

RATED OPERATIONAL

POWER AT AC-4, 220/230 V, 50 HZ

6 kW

RATED OPERATIONAL

POWER AT AC-4, 240 V, 50 HZ

6.5 kW

RATED OPERATIONAL

POWER AT AC-4, 380/400 V, 50 HZ

10 kW

RATED OPERATIONAL

POWER AT AC-4, 415 V, 50 HZ

11 kW

RATED OPERATIONAL

POWER AT AC-4, 440 V, 50 HZ

12 kW

RATED OPERATIONAL

POWER AT AC-4, 500 V, 50 HZ

13 kW

RATED OPERATIONAL

POWER AT AC-4, 660/690 V, 50 HZ

14 kW

RATED OPERATIONAL

POWER (NEMA)

29.8 kW

RATED OPERATIONAL

VOLTAGE (UE) AT AC - MAX

690 V

RESISTANCE PER POLE

1.9 mΩ

STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	4.1 W
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
STRIPPING LENGTH (MAIN CABLE)	14 mm
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	18 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	12 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	13 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	8 ms
SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	250 A, max. Fuse, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	30/100 kA, Fuse, SCCR (UL/CSA) 100 A, max. CB, SCCR (UL/CSA) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	30 kA, CB, SCCR (UL/CSA) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	160 A gG/gL
SUITABLE FOR	Also motors with efficiency class IE3
SHORT-CIRCUIT PROTECTION RATING	80 A gG/gL

(TYPE 1 COORDINATION)**AT 690 V****SHORT-CIRCUIT****PROTECTION RATING****(TYPE 2 COORDINATION)**

80 A gG/gL

AT 400 V**SHORT-CIRCUIT****PROTECTION RATING****(TYPE 2 COORDINATION)**

63 A gG/gL

AT 690 V**SPECIAL PURPOSE****RATING OF BALLAST****ELECTRICAL DISCHARGE****LAMPS**

79 A (480V 60Hz 3phase,

277V 60Hz 1phase)

79 A (600V 60Hz 3phase,

347V 60Hz 1phase)

10 HP, 200 V 60 Hz 3-ph,
(UL/CSA)40 A, 480 V 60 Hz 3-ph,
(UL/CSA)32.2 A, 200 V 60 Hz 3-ph,
(UL/CSA)30 HP, 480 V 60 Hz 3-ph,
(UL/CSA)42 A, 240 V 60 Hz 3-ph,
(UL/CSA)15 HP, 240 V 60 Hz 3-ph,
(UL/CSA)40 HP, 600 V 60 Hz 3-ph,
(UL/CSA)41 A, 600 V 60 Hz 3-ph,
(UL/CSA)**SPECIAL PURPOSE****RATING OF ELEVATOR****CONTROL**

79 A, 600 V 60 Hz 3phase,

347 V 60 Hz 1phase,

(UL/CSA)

79 A, 480 V 60 Hz 3phase,

277 V 60 Hz 1phase,

(UL/CSA)

SPECIAL PURPOSE**RATING OF TUNGSTEN****INCANDESCENT LAMPS**

74 A, 480 V 60 Hz 3phase,

277 V 60 Hz 1phase,

(UL/CSA)

74 A, 600 V 60 Hz 3phase,

347 V 60 Hz 1phase,

(UL/CSA)

OPERATING**TEMPERATURE**

-25° to 60°C

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

80 A

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

71 A

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

65 A

RATED OPERATIONAL**POWER AT AC-3, 440 V, 50 HZ** 32 kW

RATED OPERATIONAL**POWER AT AC-3, 500 V, 50 HZ** 36 kW

RATED OPERATIONAL**POWER AT AC-3, 690 V, 50 HZ** 30 kW

ACTUATING VOLTAGE

24 V 50 Hz

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

PROJECT NAME:**PROJECT NUMBER:****PREPARED BY:****DATE:****Eaton Corporation plc**

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