Specifications

Photo is representative

Eaton 276827

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 5.5 kW, 1 N/O, 110 V 50 Hz, 120 V 60 Hz, AC operation, Screw terminals

General specifications	
PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	276827
MODEL CODE	DILM12-10(110V50HZ,120V60HZ)
EAN	4015082768270
PRODUCT LENGTH/DEPTH	75 mm
PRODUCT HEIGHT	68 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.24 kg
CERTIFICATIONS	CSA CE IEC/EN 60947-4-1 UL 60947-4-1 IEC/EN 60947 CSA Class No.: 2411-03, 3211-04 CSA File No.: 012528 VDE 0660 CSA-C22.2 No. 60947-4-1-14 UL File No.: E29096 UL Category Control No.: NLDX UL
CATALOG NOTES	Contacts according to EN 50012

Powering Business Worldwide

Features & Functions

NUMBER OF POLES	Three-pole
NUMBER OF POLES	Three-pole
NUMBER OF POLES	Three-pole

General information

APPLICATION	Contactors for Motors
CONNECTION	Screw terminals
FRAME SIZE	FS1
LIFESPAN, MECHANICAL	10,000,000 Operations (AC operated)
OPERATING FREQUENCY	9000 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
SUITABLE FOR	Also motors with efficiency class IE3
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
VOLTAGE TYPE	AC

Ambient conditions, mechanical

SHOCK RESISTANCE	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 10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, 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/C 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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78

Electro magnetic compatibility

EMITTED INTERFERENCE	According to EN 60947-1
INTERFERENCE IMMUNITY	According to EN 60947-1

Terminal capacities

TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.75 - 2.5) mm² 1 x (0.75 - 2.5) mm² 2 x (0.75 - 2,5) mm²
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 2.5) mm² 1 x (0.75 - 4) mm²
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	2, Terminal screw, Pozidriv screwdriver 0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver
TIGHTENING TORQUE	1.2 Nm, Screw terminals

Electrical rating

RATED BREAKING CAPACITY AT 220/230 V	120 A
RATED BREAKING CAPACITY AT 380/400 V	120 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	12 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	12 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	12 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	10 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	7 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 MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947)	144 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, 45 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, 45 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	35 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	25 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

RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	4 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	5.5 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	7 kW
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	7.5 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	7 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	6.5 kW
RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	2 kW
RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	2.2 kW
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	3.4 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	3.6 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	3.5 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	4.4 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V
RATED INSULATION VOLTAGE (UI)	690 V

Conventional thermal current Ith

CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)	45 A
CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)	18 A
CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)	21 A
CONVENTIONAL THERMAL CURRENT ITH AT 60°C (3-POLE, OPEN)	20 A
CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)	50 A

Switching capacity

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

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, 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	1.4 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz 4.4 VA, 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	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	120 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	120 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 DELAY) - MAX	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	3 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	2 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	3 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

Communication

CONNECTION TO SMARTWIRE-DT	No

Contacts

NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)	1
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	1
NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT	0

Safety

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

Special purpose ratings

SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS	20 A (600V 60Hz 3phase, 347V 60Hz 1phase) 20 A (480V 60Hz 3phase, 277V 60Hz 1phase)
SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING	72 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 12 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
SPECIAL PURPOSE RATING OF ELEVATOR CONTROL	7.5 HP, 480 V 60 Hz 3-ph, (UL/CSA) 2 HP, 200 V 60 Hz 3-ph, (UL/CSA) 11 A, 480 V 60 Hz 3-ph, (UL/CSA) 6.8 A, 240 V 60 Hz 3-ph, (UL/CSA) 9 A, 600 V 60 Hz 3-ph, (UL/CSA) 2 HP, 240 V 60 Hz 3-ph, (UL/CSA) 7.5 HP, 600 V 60 Hz 3-ph, (UL/CSA) 7.8 A, 200 V 60 Hz 3-ph, (UL/CSA)
SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)	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) 60 A, LRA 600 V 60 Hz 3phase; (CSA)
SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING	20 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 20 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase,

	(UL/CSA)
SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS	14 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 14 A, 480 V 60 Hz 3phase, 277 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	0.3 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	12 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

CATALOGUES	Product Range Catalog Switching and protecting motors eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf SmartWire-DT Catalog
CHARACTERISTIC CURVE	eaton-contactors-switch-dilm-characteristic-curve.eps eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-switch-dilm-characteristic-curve-002.eps
DECLARATIONS OF CONFORMITY	eaton-contactor-declaration-of-conformity-eu250726en.pdf eaton-contactor-declaration-of-conformity-uk251209en.pdf
DRAWINGS	eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-module-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-module-dilm-dimensions.eps eaton-contactors-frame-dilm-dimensions.eps eaton-contactors-dilm-3d-drawing-007.eps eaton-general-ie-ready-dilm-contactor-standards.eps
ECAD MODEL	ETN.276827.edz
INSTALLATION INSTRUCTIONS	eaton-contactors-dila-dilm7-15-dilmp20-il03407013z.pdf
INSTALLATION VIDEOS	WIN-WIN with push-in technology

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.

MCAD MODEL	DA-CS-dil_m7_15 DA-CD-dil_m7_15
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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