Specifications

Photo is representative

Eaton 277828

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 22 kW, 190 V 50 Hz, 220 V 60 Hz, AC operation, Screw terminals

General specifications	
PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	277828
MODEL CODE	DILM50(190V50HZ,220V60HZ)
EAN	4015082778286
PRODUCT LENGTH/DEPTH	132.1 mm
PRODUCT HEIGHT	115 mm
PRODUCT WIDTH	55 mm
PRODUCT WEIGHT	0.872 kg
CERTIFICATIONS	CSA Certified UL Listed IEC 60947-4-1 EN 60947-4-1 IEC/EN 60947 UL File No.: E29096 CSA-C22.2 No. 60947-4-1-14 CSA CSA File No.: 012528 UL Category Control No.: NLDX VDE 0660 CE IEC/EN 60947-4-1 UL 60947-4-1 CSA Class No.: 2411-03, 3211-04 UL
CATALOG NOTES	Contacts according to EN 50012
GLOBAL CATALOG	277828

Powering Business Worldwide

Product specifications

USED WITH	Can be combined with auxiliary contacts: DILM150-XHI(V), DILM1000-XHI(V)
AMPERAGE RATING	170A
HP RATING - MAX	3, 10/ 15, 20, 40, 50 hp (1/3PH @120, 240/208, 240, 480, 600 V)
NUMBER OF POLES	Three-pole
TYPE	Full voltage non-reversing medium contactor
VOLTAGE RATING	400 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)	Meets the product standard's requirements.

Resources

CATALOGS	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	DA-DC-00004782.pdf DA-DC-00004817.pdf
DRAWINGS	eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-dilm-dimensions-012.eps eaton-contactors-dilm-dimensions-002.eps eaton-contactors-dilm-3d-drawing-011.eps eaton-contactors-mounting-dilm-3d-drawing.eps eaton-general-ie-ready-dilm-contactor-standards.eps
ECAD MODEL	ETN.277828.edz
INSTALLATION INSTRUCTIONS	IL03407033Z
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	dil_m40_65_22.dwg

RADIATION	
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.
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	50-60 Hz
OPERATING FREQUENCY	5000 mechanical Operations/h (AC 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,

	DA-CD-dil_m40_72 DA-CS-dil_m40 DA-CS-dil_m40_72 dil_m40_65_22.stp
SPECIFICATIONS AND DATASHEETS	Eaton Specification Sheet - 277828
SYSTEM OVERVIEW	eaton-contactors-dilm-contactor-system-overview.eps
WIRING DIAGRAMS	eaton-contactors-contact-dilm-wiring-diagram-003.eps

	reversing, inching AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Normal AC induction motors: starting, switch off during running
CONNECTION	Screw terminals
FRAME SIZE	FS3
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)
TERMINALS	Screw terminals
ARCING TIME	10 ms
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
SCREWDRIVER SIZE	2, Terminal screw, Pozidriv screwdriver 0.8 x 5.5/1 x 6 mm, Terminal screw, Standard 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	190 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	190 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	220 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	220 V
COIL VOLTAGE	190-220 Vac, 50/60 Hz
CONTINUOUS AMPERE RATING	50 A
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
OPERATION	Non-reversing
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)	2 x (0.75 - 25) 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 1 x (0.75 - 35) mm^2, Main cables
SHOCK RESISTANCE	5 g, N/C 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 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, 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 g, N/C auxiliary contact, Mechanical, according to

	IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 16) mm^2, Main cables 2 x (0.75 - 2.5) mm^2, Control circuit 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 (MAIN CONTACTS, GENERAL USE)	80 A, Maximum motor rating (UL/CSA)
POWER CONSUMPTION	22 kW
TIGHTENING TORQUE	3.3 Nm, Screw terminals, Main cables 1.2 Nm, Screw terminals, Control circuit 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	32 A

CURRENT (IE) AT AC-3, 660 V, 690 V	
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, 660 V, 690 V	17 A
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)	10 kA, SCCR (UL/CSA) 250 A, max. Fuse, 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) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA) 100 A, max. CB, SCCR

	(UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	30/100 kA, Fuse, SCCR (UL/CSA) 30 kA, CB, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA) 250/150 A, Class J, max. 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 (TYPE 1 COORDINATION) AT 690 V	80 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	80 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	63 A gG/gL
SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS	79 A (600V 60Hz 3phase, 347V 60Hz 1phase) 79 A (480V 60Hz 3phase, 277V 60Hz 1phase)
SPECIAL PURPOSE RATING OF ELEVATOR CONTROL	10 HP, 200 V 60 Hz 3-ph, (UL/CSA) 30 HP, 480 V 60 Hz 3-ph, (UL/CSA) 32.2 A, 200 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 A, 480 V 60 Hz 3-ph, (UL/CSA) 41 A, 600 V 60 Hz 3-ph, (UL/CSA) 40 HP, 600 V 60 Hz 3-ph, (UL/CSA)
SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING	79 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 79 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)
SPECIAL PURPOSE	74 A, 600 V 60 Hz 3phase,

RATING OF TUNGSTEN INCANDESCENT LAMPS	347 V 60 Hz 1phase, (UL/CSA) 74 A, 480 V 60 Hz 3phase, 277 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	190 V 50 Hz, 220 V 60 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:

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