

< **DIL CONTACTORS**

277890



Overview



Specifications



Resources

How to

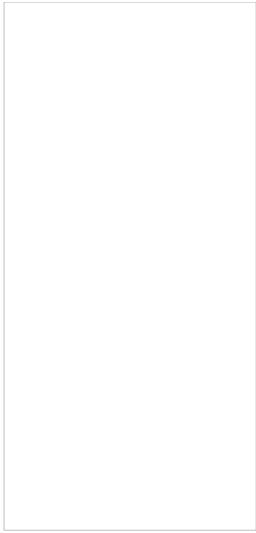
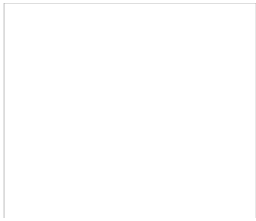
277890

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 50 Hz, 48 V 60 Hz, AC operation, Screw terminals

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277950

Eaton Moeller® series DILM Auxiliary contact module, 4 pole, Ith= 16 A, 2 N/O, 2 NC, Front fixing, Screw terminals, DILM40 - DILM170

278458

Eaton Moeller® series ZB Overload relay, ZB65, Ir= 24 - 40 A, 1 N/O, 1 N/C, Direct mounting, IP00

278459

Eaton Moeller® series ZB Overload relay, ZB65, Ir= 40 - 57 A, 1 N/O, 1 N/C, Direct mounting, IP00

277946

Eaton Moeller® series DILM Auxiliary contact module, 2 pole, Ith= 16 A, 1 N/O, 1 NC, Front fixing, Screw terminals, DILM40 - DILM170

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GENERAL SPECIFICATIONS

General specifications	>	PRODUCT NAME	Eaton Moeller® series DILM contactor
		CATALOG NUMBER	277890
Features & Functions	>	MODEL CODE	DILM65(42V50HZ,48V60HZ)
		EAN	4015082778903
General	>	PRODUCT LENGTH/DEPTH	132.1 mm
		PRODUCT HEIGHT	115 mm
Ambient conditions, mechanical	>	PRODUCT WIDTH	55 mm
		PRODUCT WEIGHT	0.872 kg
Climatic environmental conditions	>		CE CSA Class No.: 2411-03, 3211-04 CSA-C22.2 No. 60947-4-1-14 UL Category Control No.: NLDX VDE 0660
Electro Magnetic Compatibility	>		IEC/EN 60947 UL 60947-4-1
Terminal capacities	>	CERTIFICATIONS	UL CSA File No.: 012528 IEC/EN 60947-4-1 UL File No.: E29096 CSA
Electrical Rating	>		
Short-circuit rating	>	CATALOG NOTES	Contacts according to EN 50012

FEATURES & FUNCTIONS

Switching capacity	>	NUMBER OF POLES	Three-pole
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GENERAL

Magnet system	>	APPLICATION	Contactors for Motors
		FRAME SIZE	FS3
Motor Rating	>	LIFESPAN, MECHANICAL	10,000,000 Operations (AC operated)

Communication	>	OPERATING FREQUENCY	5000 mechanical Operations/h (AC operated)
		OVERVOLTAGE CATEGORY	III
Contacts	>	POLLUTION DEGREE	3
		PRODUCT CATEGORY	Contactors
Safety	>	PROTECTION	Finger and back-of-hand proof, Protection against di- actu-ated from front (EN 50274)
Special purpose ratings	>	RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	8000 V AC
		RESISTANCE PER POLE	1.9 mΩ
Design verification	>	SUITABLE FOR	Also motors with efficiency class IE3
		UTILIZATION CATEGORY	AC-1: Non-inductive or slightly inductive loads, res- AC-3: Normal AC induction motors: starting, swit- AC-4: Normal AC induction motors: starting, plug- inching
		VOLTAGE TYPE	AC

AMBIENT CONDITIONS, MECHANICAL

SHOCK RESISTANCE

7 g, N/O auxiliary contact, Mechanical, according to
when tabletop-mounted, Halfsinusoidal shock 10 ms
5 g, N/C auxiliary contact, Mechanical, according to
when tabletop-mounted, Halfsinusoidal shock 10 ms
10 g, N/O main contact, Mechanical, according to I
when tabletop-mounted, Halfsinusoidal shock 10 ms
10 g, N/O main contact, Mechanical, according to I
Halfsinusoidal shock 10 ms
7 g, N/O auxiliary contact, Mechanical, according to
27, Halfsinusoidal shock 10 ms
5 g, N/C auxiliary contact, Mechanical, according to
27, Halfsinusoidal shock 10 ms

CLIMATIC ENVIRONMENTAL CONDITIONS

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 (COPPER BAND) 2 x (6 x 9 x 0.8) mm (Number of segments x width of cables)

TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)
1 x (0.75 - 2.5) mm², Control circuit cables
2 x (0.75 - 2.5) mm², Control circuit cables
1 x (0.75 - 35) mm², Main cables
2 x (0.75 - 25) mm², Main cables

TERMINAL CAPACITY (SOLID)
1 x (0.75 - 16) mm², Main cables
2 x (0.75 - 2.5) mm², Control circuit cables
1 x (0.75 - 4) mm², Control circuit cables
2 x (0.75 - 16) mm², Main cables

TERMINAL CAPACITY (SOLID/STRANDED AWG) Single 14 - 1, double 14 - 2, Main cables
18 - 14, Control circuit cables

TERMINAL CAPACITY (STRANDED)
2 x (16 - 35) mm², Main cables
1 x (16 - 50) mm², Main cables

STRIPPING LENGTH (MAIN CABLE) 14 mm

STRIPPING LENGTH (CONTROL CIRCUIT CABLE) 10 mm

SCREW SIZE M6, Terminal screw, Main cables
M3.5, Terminal screw, Control circuit cables

SCREWDRIVER SIZE 0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver
2, Terminal screw, Pozidriv screwdriver

TIGHTENING TORQUE 1.2 Nm, Screw terminals, Control circuit cables
3.3 Nm, Screw terminals, Main cables

ELECTRICAL RATING

RATED BREAKING CAPACITY AT 220/230 V 650 A

RATED BREAKING CAPACITY AT 380/400 V 650 A

RATED BREAKING CAPACITY AT 500 V 650 A

RATED BREAKING CAPACITY AT 660/690 V 370 A

RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	98 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	37 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V	20 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V	72 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V	72 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V	65 A
RATED INSULATION VOLTAGE (UI)	690 V
RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	98 A
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	22 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	30 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	39 kW
RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	7 kW
RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	7.5 kW
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	13 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	14 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	16 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	17 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V

SHORT-CIRCUIT RATING

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	10 kA, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA) 250 A, max. Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	65 kA, CB, SCCR (UL/CSA) 100 A, max. CB, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	250 A, max. CB, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA) 30 kA, CB, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	100 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	125 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	80 A gG/gL

CONVENTIONAL THERMAL CURRENT

CONVENTIONAL THERMAL CURRENT I_{TH} (1-POLE, ENCLOSED)	180 A
CONVENTIONAL THERMAL CURRENT I_{TH} (3-POLE, ENCLOSED)	72 A
CONVENTIONAL THERMAL CURRENT I_{TH} AT 55°C (3-POLE, OPEN)	83 A
CONVENTIONAL THERMAL CURRENT I_{TH} OF MAIN CONTACTS (1-POLE, OPEN)	200 A

SWITCHING CAPACITY

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	88 A, Maximum motor rating (UL/CSA)
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SWITCHING TIME

ARCING TIME	10 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS,	...

CLOSING DELAY) - MIN	12 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	18 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	8 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	13 ms

MAGNET SYSTEM

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	149 VA, Dual-frequency coil in a cold state and 1.0 x
POWER CONSUMPTION, PICK-UP, 60 HZ	178 VA, Dual-frequency coil in a cold state and 1.0 x
POWER CONSUMPTION, SEALING, 50 HZ	4.1 W, Dual-frequency coil in a cold state and 1.0 x 16 VA, Dual-frequency coil in a cold state and 1.0 x
POWER CONSUMPTION, SEALING, 60 HZ	19 VA, Dual-frequency coil in a cold state and 1.0 x 4.1 W, Dual-frequency coil in a cold state and 1.0 x
RATED CONTROL SUPPLY VOLTAGE(US) AT AC, 50 HZ - MIN	42 V
RATED CONTROL SUPPLY VOLTAGE(US) AT AC, 50 HZ - MAX	42 V
RATED CONTROL SUPPLY VOLTAGE(US) AT AC, 60 HZ - MIN	48 V
RATED CONTROL SUPPLY VOLTAGE(US) AT AC, 60 HZ - MAX	48 V
RATED CONTROL SUPPLY VOLTAGE(US) AT DC - MIN	0 V
RATED CONTROL SUPPLY VOLTAGE(US) AT DC - MAX	0 V

MOTOR RATING

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE	5 HP
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	20 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	15 HP

PHASE

ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	25 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	50 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	60 HP

COMMUNICATION

CONNECTION	Screw terminals
CONNECTION TO SMARTWIRE-DT	No

CONTACTS

NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0

SAFETY

SAFE ISOLATION	440 V AC, Between coil and contacts, According to 440 V AC, Between the contacts, According to EN
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SPECIAL PURPOSE RATINGS

SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS	88 A (600V 60Hz 3phase, 347V 60Hz 1phase) 88 A (480V 60Hz 3phase, 277V 60Hz 1phase)
SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING	390 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. (UL/CSA) 65 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. (UL/CSA)
SPECIAL PURPOSE RATING OF ELEVATOR CONTROL	32.2 A, 200 V 60 Hz 3-ph, (UL/CSA) 42 A, 240 V 60 Hz 3-ph, (UL/CSA) 40 HP, 600 V 60 Hz 3-ph, (UL/CSA) 30 HP, 480 V 60 Hz 3-ph, (UL/CSA) 41 A, 600 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) 10 HP, 200 V 60 Hz 3-ph, (UL/CSA)

SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING	88 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (U) 88 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (U)
SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS	88 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (U) 88 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (U)
DESIGN VERIFICATION	
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	17.1 W
HEAT DISSIPATION CAPACITY PDISS	0 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	65 A
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
10.2.6 MECHANICAL IMPACT	Does not apply, since the entire switchgear needs to
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
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
10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS	Does not apply, since the entire switchgear needs to
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 Eaton will provide heat dissipation data for the devi

10.11 SHORT-CIRCUIT RATING	Is the panel builder's responsibility. The specifications must be observed.
10.12 ELECTROMAGNETIC COMPATIBILITY	Is the panel builder's responsibility. The specifications must be observed.
10.13 MECHANICAL FUNCTION	The device meets the requirements, provided the instruction leaflet (IL) is observed.

Catalogs

Certification reports

Characteristic curve

Declarations of conformity

Drawings

eCAD model

Installation instructions

Installation videos

mCAD model

System overview

Wiring diagrams

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