

Contactor, 3 pole, 380 V 400 V 4 kW, 1 N/O, 24 V DC, DC operation, Screw terminals



Part no. **DILM9-10(24VDC)**
276705
EL Number (Norway) **4130288**

Product name	Eaton Moeller® series DILM contactor
Part no.	DILM9-10(24VDC)
EAN	4015082767051
Product Length/Depth	75 millimetre
Product height	68 millimetre
Product width	45 millimetre
Product weight	0.296 kilogram
Certifications	UL 60947-4-1 UL File No.: E29096 CSA Class No.: 2411-03, 3211-04 IEC/EN 60947-4-1 IEC/EN 60947 UL CSA-C22.2 No. 60947-4-1-14 CSA File No.: 012528 VDE 0660 UL Category Control No.: NLDX CE CSA
Product Tradename	DILM
Product Type	Contactor
Product Sub Type	None
Catalog Notes	Contacts according to EN 50012
Fitted with:	Varistor suppressor circuit
Application	Contactors for Motors
Degree of protection	IP20
Frame size	FS1
Lifespan, mechanical	10,000,000 Operations (DC operated)
Operating frequency	9000 mechanical Operations/h (DC operated)
Overtoltage 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	4.6 mΩ
Suitable for	Also motors with efficiency class IE3
Utilization category	AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Normal AC induction motors: starting, switch off during running AC-4: Normal AC induction motors: starting, plugging, reversing, inching
Voltage type	DC
Shock resistance	10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 5.7 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 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

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
Emitted interference	According to EN 60947-1
Interference immunity	According to EN 60947-1
Terminal capacity (flexible with ferrule)	1 x (0.75 - 2.5) mm ² 2 x (0.75 - 2.5) mm ²
Terminal capacity (solid)	2 x (0.75 - 2.5) mm ² 1 x (0.75 - 4) mm ²
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
Rated breaking capacity at 220/230 V	90 A
Rated breaking capacity at 380/400 V	90 A
Rated breaking capacity at 500 V	70 A
Rated breaking capacity at 660/690 V	50 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	9 A
Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V	9 A
Rated operational current (Ie) at AC-3, 440 V	9 A
Rated operational current (Ie) at AC-3, 500 V	7 A
Rated operational current (Ie) at AC-3, 660 V, 690 V	5 A
Rated operational current (Ie) at AC-4, 220 V, 230 V, 240 V	6 A
Rated operational current (Ie) at AC-4, 440 V	6 A
Rated operational current (Ie) at AC-4, 500 V	5 A
Rated operational current (Ie) at AC-4, 660 V, 690 V	4.5 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 insulation voltage (Ui)	690 V
Rated making capacity up to 690 V (cos phi to IEC/EN 60947)	126 A
Rated operational power at AC-3, 240 V, 50 Hz	3 kW
Rated operational power at AC-3, 380/400 V, 50 Hz	4 kW
Rated operational power at AC-3, 415 V, 50 Hz	5.5 kW
Rated operational power at AC-3, 440 V, 50 Hz	5.5 kW
Rated operational power at AC-3, 500 V, 50 Hz	4.5 kW
Rated operational power at AC-3, 690 V, 50 Hz	4.5 kW
Rated operational power at AC-4, 220/230 V, 50 Hz	1.5 kW
Rated operational power at AC-4, 240 V, 50 Hz	1.6 kW
Rated operational power at AC-4, 415 V, 50 Hz	2.8 kW
Rated operational power at AC-4, 440 V, 50 Hz	3 kW
Rated operational power at AC-4, 500 V, 50 Hz	2.8 kW
Rated operational power at AC-4, 660/690 V, 50 Hz	3.6 kW
Rated operational voltage (Ue) at AC - max	690 V

Short-circuit current rating (basic rating)	60 A, max. CB, SCCR (UL/CSA) 5 kA, SCCR (UL/CSA) 45 A, max. Fuse, SCCR (UL/CSA)
Short-circuit current rating (high fault at 480 V)	16 A, max. CB, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 25 A, Class RK5/20 A Class J, max. Fuse, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA)
Short-circuit current rating (high fault at 600 V)	30/100 kA, Fuse, SCCR (UL/CSA) 25 A, Class RK5/20 A, Class J, 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	20 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	16 A gG/gL
Conventional thermal current i_{th} (1-pole, enclosed)	45 A
Conventional thermal current i_{th} (3-pole, enclosed)	18 A
Conventional thermal current i_{th} at 55°C (3-pole, open)	21 A
Conventional thermal current i_{th} at 60°C (3-pole, open)	20 A
Conventional thermal current i_{th} of main contacts (1-pole, open)	50 A
Switching capacity (main contacts, general use)	20 A, Maximum motor rating (UL/CSA)
Switching capacity (auxiliary contacts, general use)	1 A, 250 V DC, (UL/CSA) 10 A, 600 V AC, (UL/CSA)
Switching capacity (auxiliary contacts, pilot duty)	A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)
Arcing time	10 ms
Drop-out voltage	0.6 - 0.15 x U_C , DC operated At least smoothed two-phase bridge rectifier or three-phase rectifier
Duty factor	100 %
Pick-up voltage	0.85 - 1.1 V DC x U_C (only with auxiliary contact module with 3 or more N/C contacts) 0.7 - 1.3 V DC x U_C (without auxiliary contact module and at ambient air temperature + 40 °C) 0.8 - 1.1 V DC x U_C
Power consumption (pick-up) at DC	4.5 W
Power consumption (sealing) at DC	4.5 W
Rated control supply voltage (U_s) at AC, 50 Hz - min	0 V
Rated control supply voltage (U_s) at AC, 50 Hz - max	0 V
Rated control supply voltage (U_s) at AC, 60 Hz - min	0 V
Rated control supply voltage (U_s) at AC, 60 Hz - max	0 V
Rated control supply voltage (U_s) at DC - min	24 V
Rated control supply voltage (U_s) at DC - max	24 V
Switching time (DC operated, make contacts, closing delay) - max	31 ms
Switching time (DC operated, make contacts, opening delay) - max	12 ms
Assigned motor power at 115/120 V, 60 Hz, 1-phase	0.5 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	1.5 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	5 HP
Assigned motor power at 575/600 V, 60 Hz, 3-phase	7.5 HP
Connection	Screw terminals
Connection to SmartWire-DT	Yes In conjunction with DIL-SWD SmartWire DT contactor module
Number of contacts (normally open contacts)	1
Number of auxiliary contacts (normally closed contacts)	0
Number of auxiliary contacts (normally open contacts)	1

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 rating of ballast electrical discharge lamps	18 A (600V 60Hz 3phase, 347V 60Hz 1phase) 18 A (480V 60Hz 3phase, 277V 60Hz 1phase)
Special purpose rating of definite purpose rating	9 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 54 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
Special purpose rating of elevator control	3 HP, 480 V 60 Hz 3-ph, (UL/CSA) 2 HP, 200 V 60 Hz 3-ph, (UL/CSA) 2 HP, 240 V 60 Hz 3-ph, (UL/CSA) 6.1 A, 600 V 60 Hz 3-ph, (UL/CSA) 5 HP, 600 V 60 Hz 3-ph, (UL/CSA) 7.8 A, 200 V 60 Hz 3-ph, (UL/CSA) 4.8 A, 480 V 60 Hz 3-ph, (UL/CSA) 6.8 A, 240 V 60 Hz 3-ph, (UL/CSA)
Special purpose rating of refrigeration control (CSA only)	10 A, FLA 480 V 60 Hz 3phase; (CSA) 60 A, LRA 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	18 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 18 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)
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)	9 A
Static heat dissipation, non-current-dependent Pvs	4.5 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.
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.

Technical data ETIM 8.0

Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])

Rated control supply voltage Us at AC 50Hz	V	0 - 0
Rated control supply voltage Us at AC 60Hz	V	0 - 0
Rated control supply voltage Us at DC	V	24 - 24
Voltage type for actuating		DC

Rated operation current Ie at AC-1, 400 V	A	22
Rated operation current Ie at AC-3, 400 V	A	9
Rated operation power at AC-3, 400 V	kW	4
Rated operation current Ie at AC-4, 400 V	A	6
Rated operation power at AC-4, 400 V	kW	2.5
Rated operation power NEMA	kW	3.7
Modular version	No	
Number of auxiliary contacts as normally open contact		1
Number of auxiliary contacts as normally closed contact		0
Type of electrical connection of main circuit		Screw connection
Number of normally closed contacts as main contact		0
Number of normally open contacts as main contact		3