

**Contactors, 3 pole, 380 V 400 V 22 kW, 24 V 50 Hz, AC operation, Screw terminals**



**Part no. DILM50(24V50HZ)**

**277817**

**EL Number (Norway)**

**4130444**

General specifications		
Product name		Eaton Moeller® series DILM contactor
Part no.		DILM50(24V50HZ)
EAN		4015082778170
Product Length/Depth		132.1 millimetre
Product height		115 millimetre
Product width		55 millimetre
Product weight		0.872 kilogram
Compliances		CE Marked
Certifications		UL 508 CSA Std. C22.2 No. 14-05 IEC 60947-4-1 EN 60947-4-1 VDE UL UL 60947-4-1 UL Category Control No.: NLDX CSA Class No.: 2411-03, 3211-04 IEC/EN 60947-4-1 CSA-C22.2 No. 60947-4-1-14 CSA IEC/EN 60947 UL File No.: E29096 CSA File No.: 012528 CE VDE 0660
Product Tradename		DILM
Product Type		Contactors
Product Sub Type		None
Catalog Notes		Contacts according to EN 50012
General information		
Application		Contactors for Motors
Degree of protection		IP00
Frame size		FS3
Lifespan, mechanical		10,000,000 Operations (AC operated)
Operating frequency		5000 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		1.9 mΩ
Suitable for		Also motors with efficiency class IE3
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
Voltage type		AC
Ambient conditions, mechanical		
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
<b>Climatic environmental conditions</b>		
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
<b>Electro magnetic compatibility</b>		
Emitted interference		According to EN 60947-1
Interference immunity		According to EN 60947-1
<b>Terminal capacities</b>		
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 <sup>2</sup> , Control circuit cables 2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables 2 x (0.75 - 25) mm <sup>2</sup> , Main cables 1 x (0.75 - 35) mm <sup>2</sup> , Main cables
Terminal capacity (solid)		2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables 2 x (0.75 - 16) mm <sup>2</sup> , Main cables 1 x (0.75 - 16) mm <sup>2</sup> , Main cables 1 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables
Terminal capacity (solid/stranded AWG)		18 - 14, Control circuit cables Single 14 - 1, double 14 - 2, Main cables
Terminal capacity (stranded)		1 x (16 - 50) mm <sup>2</sup> , Main cables 2 x (16 - 35) mm <sup>2</sup> , Main cables
Stripping length (main cable)		14 mm
Stripping length (control circuit cable)		10 mm
Screw size		M3.5, Terminal screw, Control circuit cables M6, Terminal screw, Main 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
<b>Electrical rating</b>		
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 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, 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, 60 V		60 A
Rated operational current (Ie) at DC-1, 110 V		50 A
Rated operational current (Ie) at DC-1, 220 V		45 A
Rated insulation voltage (Ui)		690 V
Rated making capacity up to 690 V (cos phi to IEC/EN 60947)		700 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-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
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, 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 voltage (Ue) at AC - max		690 V
<b>Short-circuit rating</b>		
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
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
<b>Conventional thermal current Ith</b>		
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 at 60°C (3-pole, open)		65 A
Conventional thermal current Ith of main contacts (1-pole, open)		162 A
<b>Switching capacity</b>		
Switching capacity (main contacts, general use)		80 A, Maximum motor rating (UL/CSA)
<b>Magnet system</b>		
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		149 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
Power consumption, pick-up, 60 Hz		178 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
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
Rated control supply voltage (Us) at AC, 50 Hz - min		24 V
Rated control supply voltage (Us) at AC, 50 Hz - max		24 V
Rated control supply voltage (Us) at AC, 60 Hz - min		0 V
Rated control supply voltage (Us) at AC, 60 Hz - max		0 V
Rated control supply voltage (Us) at DC - min		0 V
Rated control supply voltage (Us) at DC - max		0 V
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
<b>Motor rating</b>		
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
<b>Communication</b>		
Connection		Screw terminals
Connection to SmartWire-DT		No
<b>Contacts</b>		
Number of auxiliary contacts (normally closed contacts)		0
Number of auxiliary contacts (normally open contacts)		0
<b>Safety</b>		
Safe isolation		440 V AC, Between the contacts, According to EN 61140 440 V AC, Between coil and contacts, According to EN 61140
<b>Special purpose ratings</b>		
Special purpose rating of ballast electrical discharge lamps		79 A (480V 60Hz 3phase, 277V 60Hz 1phase) 79 A (600V 60Hz 3phase, 347V 60Hz 1phase)
Special purpose rating of elevator control		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 resistance air heating		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)
<b>Design verification</b>		
Equipment heat dissipation, current-dependent P <sub>vid</sub>		9.9 W
Heat dissipation capacity P <sub>diss</sub>		0 W
Heat dissipation per pole, current-dependent P <sub>vid</sub>		3.3 W
Rated operational current for specified heat dissipation (I <sub>n</sub> )		50 A
Static heat dissipation, non-current-dependent P <sub>vs</sub>		4.1 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 9.0

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@ss13-27-37-10-03 [AAB718020])		
Rated control supply voltage AC 50 Hz	V	24 - 24
Rated control supply voltage AC 60 Hz	V	0 - 0
Rated control supply voltage DC	V	0 - 0
Voltage type for actuating		AC
Number of normally closed contacts as main contact		0
Number of normally open contacts as main contact		3
Type of electrical connection of main circuit		Screw connection
Operating voltage AC 50 Hz	V	230 - 690
Operating voltage AC 60 Hz	V	230 - 690
Rated operation current I <sub>e</sub> at AC-1, 400 V	A	80
Rated operation current I <sub>e</sub> at AC-3, 400 V	A	50
Rated operation power at AC-3, 400 V	kW	22
Rated operation current I <sub>e</sub> at AC-4, 400 V	A	21
Rated operation power at AC-4, 400 V	kW	10
Rated operation power NEMA	kW	29.8
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as normally closed contact		0
Modular version		No
Width	mm	55
Height	mm	115
Depth	mm	132.1