

Contactors, 3 pole, 380 V 400 V 90 kW, RDC 24: 24 - 27 V DC, DC operation, Screw terminals



Part no. DILM170(RDC24)

107016

EL Number

4130452

(Norway)

General specifications	
Product name	Eaton Moeller® series DILM contactor
Part no.	DILM170(RDC24)
EAN	4015081067848
Product Length/Depth	160 millimetre
Product height	170 millimetre
Product width	90 millimetre
Product weight	2.25 kilogram
Certifications	UL File No.: E29096 CSA Class No.: 2411-03, 3211-04 CSA-C22.2 No. 60947-4-1-14 CSA UL Category Control No.: NLDX UL 60947-4-1 VDE 0660 IEC/EN 60947-4-1 IEC/EN 60947 UL CE CSA File No.: 012528
Product Tradename	DILM
Product Type	Contactors
Product Sub Type	None
Catalog Notes	Contacts according to EN 50012
Features & Functions	
Fitted with:	Suppressor circuit in actuating electronics
General information	
Application	Contactors for Motors
Degree of protection	IP00
Frame size	FS4
Lifespan, mechanical	10,000,000 Operations (DC operated)
Operating frequency	3000 mechanical Operations/h (DC 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
Residual current	1 mA (with actuation of A1 - A2 by the electronics with "0" signal)
Resistance per pole	0.6 mΩ
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
Ambient conditions, mechanical	
Shock resistance	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 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 7 g, N/O 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 (copper band)		2 x (6 x 16 x 0.8) mm (Number of segments x width x thickness), Main cables
Terminal capacity (flexible with ferrule)		1 x (10 - 95) mm ² , Main cables 2 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (10 - 70) mm ² , Main cables 1 x (0.75 - 2.5) mm ² , Control circuit cables
Terminal capacity (solid)		1 x (0.75 - 4) mm ² , Control circuit cables 2 x (0.75 - 2.5) mm ² , Control circuit cables
Terminal capacity (solid/stranded AWG)		Single 8...3/0, double 8...2/0, Main cables 18 - 14, Control circuit cables
Terminal capacity (stranded)		2 x (16 - 70) mm ² , Main cables 1 x (16 - 95) mm ² , Main cables
Stripping length (main cable)		24 mm
Stripping length (control circuit cable)		10 mm
Screw size		M3.5, Terminal screw, Control circuit cables 5 mm AF, Hexagon socket-head spanner, Terminal screw, Main cables M10, Terminal screw, Main cables
Screwdriver size		2, Terminal screw, Control circuit cables, Pozidriv screwdriver 0.8 x 5.5/1 x 6 mm, Terminal screw, Control circuit cables, Standard screwdriver
Tightening torque		14 Nm, Screw terminals, Main cables 1.2 Nm, Screw terminals, Control circuit cables
Electrical rating		
Rated breaking capacity at 220/230 V		1500 A
Rated breaking capacity at 380/400 V		1500 A
Rated breaking capacity at 500 V		1500 A
Rated breaking capacity at 660/690 V		1320 A
Rated operational current (Ie) at AC-1, 380 V, 400 V, 415 V		225 A
Rated operational current (Ie) at AC-3, 220 V, 230 V, 240 V		170 A
Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V		170 A
Rated operational current (Ie) at AC-3, 440 V		170 A
Rated operational current (Ie) at AC-3, 500 V		170 A
Rated operational current (Ie) at AC-3, 660 V, 690 V		100 A
Rated operational current (Ie) at AC-4, 220 V, 230 V, 240 V		65 A
Rated operational current (Ie) at AC-4, 440 V		65 A
Rated operational current (Ie) at AC-4, 500 V		65 A
Rated operational current (Ie) at AC-4, 660 V, 690 V		50 A
Rated operational current (Ie) at DC-1, 60 V		160 A
Rated operational current (Ie) at DC-1, 110 V		160 A
Rated operational current (Ie) at DC-1, 220 V		90 A
Rated insulation voltage (Ui)		690 V
Rated making capacity up to 690 V (cos phi to IEC/EN 60947)		2100 A
Rated operational power at AC-3, 240 V, 50 Hz		57 kW
Rated operational power at AC-3, 380/400 V, 50 Hz		90 kW
Rated operational power at AC-3, 415 V, 50 Hz		100 kW
Rated operational power at AC-3, 440 V, 50 Hz		105 kW
Rated operational power at AC-3, 500 V, 50 Hz		120 kW

Rated operational power at AC-3, 690 V, 50 Hz		96 kW
Rated operational power at AC-4, 220/230 V, 50 Hz		20 kW
Rated operational power at AC-4, 240 V, 50 Hz		22 kW
Rated operational power at AC-4, 415 V, 50 Hz		39 kW
Rated operational power at AC-4, 440 V, 50 Hz		41 kW
Rated operational power at AC-4, 500 V, 50 Hz		47 kW
Rated operational power at AC-4, 660/690 V, 50 Hz		48 kW
Rated operational voltage (Ue) at AC - max		690 V
Short-circuit rating		
Short-circuit current rating (basic rating)		600 A, max. CB, SCCR (UL/CSA) 600 A, max. Fuse, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA)
Short-circuit current rating (high fault at 480 V)		300/300 A, Class J, max. Fuse, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 250 A, max. CB, 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) 30 kA, CB, SCCR (UL/CSA) 300/600 A, Class J, max. Fuse, SCCR (UL/CSA) 350 A, max. 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		250 A gG/gL
Short-circuit protection rating (type 2 coordination) at 400 V		250 A gG/gL
Short-circuit protection rating (type 2 coordination) at 690 V		250 A gG/gL
Conventional thermal current I_{th}		
Conventional thermal current I _{th} (1-pole, enclosed)		415 A
Conventional thermal current I _{th} (3-pole, enclosed)		166 A
Conventional thermal current I _{th} at 55°C (3-pole, open)		190 A
Conventional thermal current I _{th} at 60°C (3-pole, open)		185 A
Conventional thermal current I _{th} of main contacts (1-pole, open)		460 A
Switching capacity		
Switching capacity (main contacts, general use)		225 A, Maximum motor rating (UL/CSA)
Magnet system		
Arcing time		15 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		24 - 27 V DC (RDC 24) 0.7 - 1.2 V DC x U _C
Power consumption (pick-up) at DC		149 W
Power consumption (sealing) at DC		1.9 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		27 V
Switching time (DC operated, make contacts, closing delay) - max		35 ms
Switching time (DC operated, make contacts, opening delay) - max		30 ms
Motor rating		
Assigned motor power at 115/120 V, 60 Hz, 1-phase		10 HP
Assigned motor power at 200/208 V, 60 Hz, 3-phase		50 HP
Assigned motor power at 230/240 V, 60 Hz, 1-phase		30 HP
Assigned motor power at 230/240 V, 60 Hz, 3-phase		60 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase		125 HP
Assigned motor power at 575/600 V, 60 Hz, 3-phase		125 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		690 V AC, Between coil and contacts, According to EN 61140 690 V AC, Between the contacts, According to EN 61140
Special purpose ratings		
Special purpose rating of ballast electrical discharge lamps		160 A (600V 60Hz 3phase, 347V 60Hz 1phase) 160 A (480V 60Hz 3phase, 277V 60Hz 1phase)
Special purpose rating of definite purpose rating		170 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 1020 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
Special purpose rating of elevator control		40 HP, 240 V 60 Hz 3-ph, (UL/CSA) 96 A, 480 V 60 Hz 3-ph, (UL/CSA) 104 A, 240 V 60 Hz 3-ph, (UL/CSA) 99 A, 600 V 60 Hz 3-ph, (UL/CSA) 30 HP, 200 V 60 Hz 3-ph, (UL/CSA) 92 A, 200 V 60 Hz 3-ph, (UL/CSA) 75 HP, 480 V 60 Hz 3-ph, (UL/CSA) 100 HP, 600 V 60 Hz 3-ph, (UL/CSA)
Special purpose rating of refrigeration control (CSA only)		90 A, FLA 480 V 60 Hz 3phase; (CSA) 90 A, FLA 600 V 60 Hz 3phase; (CSA) 540 A, LRA 600 V 60 Hz 3phase; (CSA) 540 A, LRA 480 V 60 Hz 3phase; (CSA)
Special purpose rating of resistance air heating		160 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 160 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
Special purpose rating of tungsten incandescent lamps		160 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 160 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
Design verification		
Equipment heat dissipation, current-dependent Pvid		41.1 W
Heat dissipation capacity P _{diss}		0 W
Heat dissipation per pole, current-dependent Pvid		13.7 W
Rated operational current for specified heat dissipation (I _n)		170 A
Static heat dissipation, non-current-dependent P _{vs}		1.9 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		0 - 0
Rated control supply voltage AC 60 Hz	V		0 - 0
Rated control supply voltage DC	V		24 - 27
Voltage type for actuating			DC
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 _e at AC-1, 400 V	A		225
Rated operation current I _e at AC-3, 400 V	A		170
Rated operation power at AC-3, 400 V	kW		90
Rated operation current I _e at AC-4, 400 V	A		65
Rated operation power at AC-4, 400 V	kW		33
Rated operation power NEMA	kW		93
Number of auxiliary contacts as normally open contact			0
Number of auxiliary contacts as normally closed contact			0
Modular version			No
Width	mm		90
Height	mm		170
Depth	mm		160