

Contactor, 3 pole, 380 V 400 V 55 kW, RDC 24: 24 - 27 V DC, DC operation, Spring-loaded terminals



Part no. DILMC115(RDC24)

239741

EL Number

4110257

(Norway)

General specifications	
Product name	Eaton Moeller® series DILM contactor
Part no.	DILMC115(RDC24)
EAN	4015082397418
Product Length/Depth	160 millimetre
Product height	170 millimetre
Product width	90 millimetre
Product weight	2.27 kilogram
Certifications	UL File No.: E29096 VDE 0660 IEC/EN 60947 CSA Class No.: 2411-03, 3211-04 CSA File No.: 012528 UL CSA-C22.2 No. 60947-4-1-14 UL 60947-4-1 CE IEC/EN 60947-4-1 CSA UL Category Control No.: NLDX
Product Tradename	DILM
Product Type	Contactor
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	3600 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
Suitable for	Also motors with efficiency class IE3
Utilization category	AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-3: Normal AC induction motors: starting, switch off during running AC-1: Non-inductive or slightly inductive loads, resistance furnaces
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 5 g, N/C 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 when tabletop-mounted, Half-sinusoidal shock 10 ms 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
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, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Electro magnetic compatibility		
Emitted interference		According to EN 60947-1
Interference immunity		According to EN 60947-1
Terminal capacities		
Terminals		Spring-cage terminals on auxiliary and control circuit terminals
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 (0.75 - 1.5) mm ² 2 x (10 - 70) mm ² , Main cables 2 x (0.75 - 1.5) mm ² , Control circuit cables, Spring-loaded terminals 1 x (10 - 95) mm ² , Main cables
Terminal capacity (flexible)		2 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals 1 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals
Terminal capacity (solid)		2 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals 1 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals
Terminal capacity (solid/stranded AWG)		Single 8...3/0, double 8...2/0, Main cables 18 - 14, Control circuit cables, Spring-loaded terminals
Terminal capacity (stranded)		1 x (16 - 95) mm ² , Main cables 2 x (16 - 70) mm ² , Main cables
Stripping length (main cable)		24 mm
Stripping length (control circuit cable)		10 mm
Screw size		5 mm AF, Hexagon socket-head spanner, Terminal screw, Main cables M10, Terminal screw, Main cables
Screwdriver size		3.5 mm, Spring-loaded terminals, Control circuit cables
Tightening torque		14 Nm, Screw terminals, Main cables
Electrical rating		
Rated breaking capacity at 220/230 V		1150 A
Rated breaking capacity at 380/400 V		1150 A
Rated breaking capacity at 500 V		1150 A
Rated breaking capacity at 660/690 V		1100 A
Rated operational current (Ie) at AC-1, 380 V, 400 V, 415 V		160 A
Rated operational current (Ie) at AC-3, 220 V, 230 V, 240 V		115 A
Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V		115 A
Rated operational current (Ie) at AC-3, 440 V		115 A
Rated operational current (Ie) at AC-3, 500 V		115 A
Rated operational current (Ie) at AC-3, 660 V, 690 V		93 A
Rated operational current (Ie) at AC-4, 220 V, 230 V, 240 V		55 A
Rated operational current (Ie) at AC-4, 440 V		55 A
Rated operational current (Ie) at AC-4, 500 V		55 A
Rated operational current (Ie) at AC-4, 660 V, 690 V		45 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)		1610 A
Rated operational power at AC-3, 240 V, 50 Hz		40 kW
Rated operational power at AC-3, 380/400 V, 50 Hz		55 kW
Rated operational power at AC-3, 415 V, 50 Hz		70 kW

Rated operational power at AC-3, 440 V, 50 Hz		75 kW
Rated operational power at AC-3, 500 V, 50 Hz		85 kW
Rated operational power at AC-3, 690 V, 50 Hz		90 kW
Rated operational power at AC-4, 220/230 V, 50 Hz		17 kW
Rated operational power at AC-4, 240 V, 50 Hz		19 kW
Rated operational power at AC-4, 415 V, 50 Hz		33 kW
Rated operational power at AC-4, 440 V, 50 Hz		35 kW
Rated operational power at AC-4, 500 V, 50 Hz		40 kW
Rated operational power at AC-4, 660/690 V, 50 Hz		43 kW
Rated operational voltage (Ue) at AC - max		690 V
Short-circuit rating		
Short-circuit current rating (basic rating)		10 kA, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA) 600 A, max. Fuse, SCCR (UL/CSA)
Short-circuit current rating (high fault at 480 V)		300/300 A, Class J, max. Fuse, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA)
Short-circuit current rating (high fault at 600 V)		30 kA, CB, SCCR (UL/CSA) 300/300 A, Class J, max. Fuse, SCCR (UL/CSA) 350 A, max. CB, SCCR (UL/CSA) 30/100 kA, Fuse, 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 Ith		
Conventional thermal current Ith (1-pole, enclosed)		285 A
Conventional thermal current Ith (3-pole, enclosed)		115 A
Conventional thermal current Ith at 55°C (3-pole, open)		135 A
Conventional thermal current Ith at 60°C (3-pole, open)		130 A
Conventional thermal current Ith of main contacts (1-pole, open)		325 A
Switching capacity		
Switching capacity (main contacts, general use)		180 A, Maximum motor rating (UL/CSA)
Magnet system		
Arcing time		15 ms
Drop-out voltage		0.6 - 0.15 x UC, 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 Uc
Power consumption (pick-up) at DC		149 W
Power consumption (sealing) at DC		1.9 W
Rated control supply voltage (Us) at AC, 50 Hz - min		0 V
Rated control supply voltage (Us) at AC, 50 Hz - max		0 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		24 V
Rated control supply voltage (Us) 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		40 HP
Assigned motor power at 230/240 V, 60 Hz, 1-phase		25 HP
Assigned motor power at 230/240 V, 60 Hz, 3-phase		50 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase		100 HP
Assigned motor power at 575/600 V, 60 Hz, 3-phase		100 HP

Communication		
Connection		Spring-loaded 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 (480V 60Hz 3phase, 277V 60Hz 1phase) 160 A (600V 60Hz 3phase, 347V 60Hz 1phase)
Special purpose rating of definite purpose rating		690 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 115 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
Special purpose rating of elevator control		104 A, 240 V 60 Hz 3-ph, (UL/CSA) 75 HP, 480 V 60 Hz 3-ph, (UL/CSA) 40 HP, 240 V 60 Hz 3-ph, (UL/CSA) 92 A, 200 V 60 Hz 3-ph, (UL/CSA) 96 A, 480 V 60 Hz 3-ph, (UL/CSA) 100 HP, 600 V 60 Hz 3-ph, (UL/CSA) 30 HP, 200 V 60 Hz 3-ph, (UL/CSA) 99 A, 600 V 60 Hz 3-ph, (UL/CSA)
Special purpose rating of refrigeration control (CSA only)		540 A, LRA 480 V 60 Hz 3phase; (CSA) 84 A, FLA 480 V 60 Hz 3phase; (CSA) 540 A, LRA 600 V 60 Hz 3phase; (CSA) 84 A, FLA 600 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		18.9 W
Heat dissipation capacity P _{diss}		0 W
Heat dissipation per pole, current-dependent Pvid		6.3 W
Rated operational current for specified heat dissipation (I _n)		115 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		Spring clamp 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	160
Rated operation current I _e at AC-3, 400 V	A	115
Rated operation power at AC-3, 400 V	kW	55
Rated operation current I _e at AC-4, 400 V	A	55
Rated operation power at AC-4, 400 V	kW	28
Rated operation power NEMA	kW	74.6
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