

Contactor, 3 pole, 380 V 400 V 18.5 kW, RDC 24: 24 - 27 V DC, DC operation, Spring-loaded terminals



Part no. DILMC40(RDC24)

277979

EL Number

4110344

(Norway)

General specifications	
Product name	Eaton Moeller® series DILM contactor
Part no.	DILMC40(RDC24)
EAN	4015082779795
Product Length/Depth	132.1 millimetre
Product height	115 millimetre
Product width	55 millimetre
Product weight	1.042 kilogram
Certifications	IEC/EN 60947 UL IEC/EN 60947-4-1 UL File No.: E29096 UL Category Control No.: NLDX CSA File No.: 012528 CE CSA-C22.2 No. 60947-4-1-14 CSA UL 60947-4-1 VDE 0660 CSA Class No.: 2411-03, 3211-04
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	FS3
Lifespan, mechanical	10,000,000 Operations (DC operated)
Operating frequency	5000 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
Resistance per pole	1.9 mΩ
Suitable for	Also motors with efficiency class IE3
Utilization category	AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Normal AC induction motors: starting, switch off during running
Voltage type	DC
Ambient conditions, mechanical	
Shock resistance	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, 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 5 g, N/C 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, 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		
Terminals		Spring-cage terminals on auxiliary and control circuit terminals
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)		2 x (0.75 - 25) mm ² , Main cables 2 x (0.75 - 1.5) mm ² , Control circuit cables, Spring-loaded terminals 1 x (0.75 - 35) mm ² , Main cables 1 x (0.75 - 1.5) mm ² , Control circuit cables, Spring-loaded terminals
Terminal capacity (flexible)		1 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals 2 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 2 x (0.75 - 16) mm ² , Main cables 1 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals 1 x (0.75 - 16) mm ² , Main cables
Terminal capacity (solid/stranded AWG)		Single 14 - 1, double 14 - 2, Main cables 18 - 14, Control circuit cables, Spring-loaded terminals
Terminal capacity (stranded)		1 x (16 - 50) mm ² , Main cables 2 x (16 - 35) mm ² , Main cables
Stripping length (main cable)		14 mm
Stripping length (control circuit cable)		10 mm
Screw size		M6, Terminal screw, Main cables
Screwdriver size		2, Terminal screw, Main cables, Pozidriv screwdriver 3.5 mm, Spring-loaded terminals, Control circuit cables 0.8 x 5.5/1 x 6 mm, Terminal screw, Main cables, Standard screwdriver
Tightening torque		3.3 Nm, Screw terminals, Main cables
Electrical rating		
Rated breaking capacity at 220/230 V		400 A
Rated breaking capacity at 380/400 V		400 A
Rated breaking capacity at 500 V		400 A
Rated breaking capacity at 660/690 V		250 A
Rated operational current (Ie) at AC-1, 380 V, 400 V, 415 V		60 A
Rated operational current (Ie) at AC-3, 220 V, 230 V, 240 V		40 A
Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V		40 A
Rated operational current (Ie) at AC-3, 440 V		40 A
Rated operational current (Ie) at AC-3, 500 V		40 A
Rated operational current (Ie) at AC-3, 660 V, 690 V		25 A
Rated operational current (Ie) at AC-4, 220 V, 230 V, 240 V		18 A
Rated operational current (Ie) at AC-4, 440 V		18 A
Rated operational current (Ie) at AC-4, 500 V		18 A
Rated operational current (Ie) at AC-4, 660 V, 690 V		14 A
Rated operational current (Ie) at DC-1, 60 V		50 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)		560 A
Rated operational power at AC-3, 240 V, 50 Hz		13.5 kW
Rated operational power at AC-3, 380/400 V, 50 Hz		18.5 kW
Rated operational power at AC-3, 415 V, 50 Hz		24 kW

Rated operational power at AC-3, 440 V, 50 Hz		25 kW
Rated operational power at AC-3, 500 V, 50 Hz		28 kW
Rated operational power at AC-3, 690 V, 50 Hz		23 kW
Rated operational power at AC-4, 220/230 V, 50 Hz		5 kW
Rated operational power at AC-4, 240 V, 50 Hz		5.5 kW
Rated operational power at AC-4, 415 V, 50 Hz		9.5 kW
Rated operational power at AC-4, 440 V, 50 Hz		10 kW
Rated operational power at AC-4, 500 V, 50 Hz		11 kW
Rated operational power at AC-4, 660/690 V, 50 Hz		12 kW
Rated operational voltage (Ue) at AC - max		690 V
Short-circuit rating		
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)		100 A, max. CB, SCCR (UL/CSA) 65 kA, 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)		30/100 kA, Fuse, SCCR (UL/CSA) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA) 30 kA, CB, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA)
Short-circuit protection rating (type 1 coordination) at 400 V		125 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		63 A gG/gL
Short-circuit protection rating (type 2 coordination) at 690 V		50 A gG/gL
Conventional thermal current Ith		
Conventional thermal current Ith (1-pole, enclosed)		112 A
Conventional thermal current Ith (3-pole, enclosed)		45 A
Conventional thermal current Ith at 55°C (3-pole, open)		55 A
Conventional thermal current Ith at 60°C (3-pole, open)		50 A
Conventional thermal current Ith of main contacts (1-pole, open)		125 A
Switching capacity		
Switching capacity (main contacts, general use)		63 A, Maximum motor rating (UL/CSA)
Magnet system		
Arcing time		10 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		0.7 - 1.2 V DC x Uc 24 - 27 V DC (RDC 24)
Power consumption (pick-up) at DC		24 W
Power consumption (sealing) at DC		1 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		54 ms
Switching time (DC operated, make contacts, opening delay) - max		24 ms
Motor rating		
Assigned motor power at 115/120 V, 60 Hz, 1-phase		3 HP
Assigned motor power at 200/208 V, 60 Hz, 3-phase		10 HP
Assigned motor power at 230/240 V, 60 Hz, 1-phase		7.5 HP
Assigned motor power at 230/240 V, 60 Hz, 3-phase		15 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase		30 HP
Assigned motor power at 575/600 V, 60 Hz, 3-phase		40 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		440 V AC, Between coil and contacts, According to EN 61140 440 V AC, Between the contacts, According to EN 61140
Special purpose ratings		
Special purpose rating of ballast electrical discharge lamps		79 A (600V 60Hz 3phase, 347V 60Hz 1phase) 79 A (480V 60Hz 3phase, 277V 60Hz 1phase)
Special purpose rating of elevator control		25 HP, 480 V 60 Hz 3-ph, (UL/CSA) 32 A, 600 V 60 Hz 3-ph, (UL/CSA) 30 HP, 600 V 60 Hz 3-ph, (UL/CSA) 10 HP, 240 V 60 Hz 3-ph, (UL/CSA) 34 A, 480 V 60 Hz 3-ph, (UL/CSA) 7.5 HP, 200 V 60 Hz 3-ph, (UL/CSA) 28 A, 240 V 60 Hz 3-ph, (UL/CSA) 25.3 A, 200 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)
Design verification		
Equipment heat dissipation, current-dependent P _{vid}		6.6 W
Heat dissipation capacity P _{diss}		0 W
Heat dissipation per pole, current-dependent P _{vid}		2.2 W
Rated operational current for specified heat dissipation (I _n)		40 A
Static heat dissipation, non-current-dependent P _{vs}		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 [AAB71802])		
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	60
Rated operation current I _e at AC-3, 400 V	A	40
Rated operation power at AC-3, 400 V	kW	18.5
Rated operation current I _e at AC-4, 400 V	A	18
Rated operation power at AC-4, 400 V	kW	9
Rated operation power NEMA	kW	22
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