



Contactor, 380 V 400 V 160 kW, 2 N/O, 2 NC, RAC 500: 250 - 500 V 40 - 60 Hz/250 - 700 V DC, AC and DC operation, Screw connection

Part no. DILM300A/22(RAC500)

139557

**EL Number
(Norway) 4134297**

General specifications		
Product name		Eaton Moeller® series DILM Contactor
Part no.		DILM300A/22(RAC500)
EAN		4015081363353
Product Length/Depth		208 millimetre
Product height		189 millimetre
Product width		140 millimetre
Product weight		7.1 kilogram
Certifications		IEC/EN 60947-4-1 VDE 0660 UL 60947-4-1 CSA Class No.: 3211-04 UL Category Control No.: NLDX UL File No.: E29096 EN 45545: Fire protection on railway vehicles North America (UL listed, CSA certified) CSA File No. 1017510 CE marking UL/CSA IEC 61373: Vibration and shock, tested for category 1 class B
Product Tradename		DILM
Product Type		Contactor
Product Sub Type		None
Catalog Notes		Contacts according to EN 50012 EN 45545 - Fire protection on railway vehicles: Fire protection class of all plastics according to UL94: V-0 / plastic weight in total: 1.872 kg
General information		
Accessories		Fitting options auxiliary contacts: on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA
Application		Contactors for Motors
Connection		Screw terminals
Degree of protection		IP00
Electromagnetic compatibility		Designed for operation in industrial environments. Its use in residential environments may cause radio-frequency interference, requiring additional noise suppression.
Fitted with:		Suppressor circuit in actuating electronics
Lifespan, electrical		100,000 Operations (at Condensor operation)
Lifespan, mechanical		10,000,000 Operations (AC operated) 10,000,000 Operations (DC operated)
Operating frequency		3000 mechanical Operations/h (AC operated) 200 Operations/h 3000 mechanical Operations/h (DC operated)
Overvoltage category		III
Pollution degree		3
Product category		Contactors
Protection		Finger and back-of-hand proof with terminal shroud or terminal block, Protection against direct contact when actuated from front (EN 50274)
Rated impulse withstand voltage (Uimp)		8000 V AC
Resistance		500 mΩ (Admissible transitional contact resistance - of the external control circuit device when actuating A11)
Shock resistance		10 g, N/O 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 8 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
Signal level		5 V - 15 V, PLC signal level (A3 - A4) to IEC/EN 61131-2 (type 2), Magnet systems
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/DC
Climatic environmental conditions			
Altitude			Max. 2000 m
Ambient operating temperature - min			-40 °C
Ambient operating temperature - max			60 °C
Ambient operating temperature (enclosed) - min			-40 °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
Terminal capacities			
Terminal capacity (busbar)			25 mm width, Main connection
Terminal capacity (copper band)			Fixing with flat cable terminal or cable terminal blocks; See terminal capacity for cable terminal blocks
Terminal capacity (flexible with cable lug)			50 - 240 mm ²
Terminal capacity (flexible with ferrule)			1 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (0.75 - 2.5) mm ² , Control circuit cables
Terminal capacity (solid)			1 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (0.75 - 2.5) mm ² , Control circuit cables
Terminal capacity (solid/stranded AWG)			18 - 14, Control circuit cables 2/0 - 500 MCM, Main cables
Terminal capacity (stranded with cable lug)			70 - 240 mm ²
Width across flats			16 mm
Screw size			M3.5, Terminal screw, Control circuit cables M10, Terminal screw, Main connections
Screwdriver size			2, Terminal screw, Control circuit cables, Pozidriv screwdriver
Tightening torque			1.2 Nm, Screw terminals, Control circuit cables 24 Nm, Main cable connection screw/bolt
Electrical rating			
Inrush current			Max. 30 x I _e (peak)
Rated breaking capacity at 220/230 V			3000 A
Rated breaking capacity at 380/400 V			3000 A
Rated breaking capacity at 500 V			3000 A
Rated breaking capacity at 660/690 V			3000 A
Rated breaking capacity at 1000 V			950 A
Rated insulation voltage (U _i)			1000 V
Rated making capacity (cos phi to IEC/EN 60947)			3000 A
Rated operational current (I _e)			307 A at up to 525 V (Individual compensation, three-phase capacitors, open) 177 A at 690 V (Individual compensation, three-phase capacitors, open)
Rated operational current (I _e) at AC-1, 380 V, 400 V, 415 V			490 A
Rated operational current (I _e) at AC-3, 220 V, 230 V, 240 V			300 A
Rated operational current (I _e) at AC-3, 380 V, 400 V, 415 V			300 A
Rated operational current (I _e) at AC-3, 440 V			300 A
Rated operational current (I _e) at AC-3, 500 V			300 A
Rated operational current (I _e) at AC-3, 660 V, 690 V			185 A
Rated operational current (I _e) at AC-3, 1000 V			95 A
Rated operational current (I _e) at AC-4, 220 V, 230 V, 240 V			240 A
Rated operational current (I _e) at AC-4, 440 V			240 A
Rated operational current (I _e) at AC-4, 500 V			240 A
Rated operational current (I _e) at AC-4, 660 V, 690 V			150 A
Rated operational current (I _e) at AC-4, 1000 V			76 A
Rated operational power at AC-3, 240 V, 50 Hz			100 kW
Rated operational power at AC-3, 380/400 V, 50 Hz			160 kW
Rated operational power at AC-3, 415 V, 50 Hz			175 kW
Rated operational power at AC-3, 440 V, 50 Hz			185 kW
Rated operational power at AC-3, 500 V, 50 Hz			210 kW

Rated operational power at AC-3, 690 V, 50 Hz			170 kW
Rated operational power at AC-3, 1000 V, 50 Hz			132 kW
Rated operational power at AC-4, 220/230 V, 50 Hz			75 kW
Rated operational power at AC-4, 240 V, 50 Hz			82 kW
Rated operational power at AC-4, 415 V, 50 Hz			142 kW
Rated operational power at AC-4, 440 V, 50 Hz			150 kW
Rated operational power at AC-4, 500 V, 50 Hz			170 kW
Rated operational power at AC-4, 660/690 V, 50 Hz			137 kW
Rated operational voltage (Ue) at AC - max			1000 V
Rated operational power at AC-4, 1000 V, 50 Hz			108 kW
Safe isolation			1000 V AC, Between coil and contacts, According to EN 61140
Special purpose rating of definite purpose rating			2160 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 300 A, FLA 600 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 1800 A, LRA 600 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 360 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
Short-circuit rating			
Short-circuit current rating (basic rating)			700 A, max. Fuse, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA) 18 kA, SCCR (UL/CSA)
Short-circuit current rating (high fault at 480 V)			700 A, Class L, max. Fuse, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA) 18 kA, Fuse, SCCR (UL/CSA) 700 A, Class L/450 A, Class J, max. Fuse, SCCR (UL/CSA) 18/100 kA, Fuse, SCCR (UL/CSA)
Short-circuit current rating (high fault at 600 V)			18 kA, Fuse, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA) 700 A, Class J, max. Fuse, SCCR (UL/CSA) 18 kA, CB, SCCR (UL/CSA) 700 A, Class L/450 A, Class J, max. Fuse, SCCR (UL/CSA) 18/100 kA, Fuse, SCCR (UL/CSA)
Short-circuit protection rating (type 1 coordination) at 1000 V			200 A gG/gL
Short-circuit protection rating (type 1 coordination) at 400 V			500 A gG/gL
Short-circuit protection rating (type 1 coordination) at 690 V			400 A gG/gL
Short-circuit protection rating (type 2 coordination) at 1000 V			160 A gG/gL
Short-circuit protection rating (type 2 coordination) at 400 V			400 A gG/gL
Short-circuit protection rating (type 2 coordination) at 690 V			315 A gG/gL
Conventional thermal current Ith			
Conventional thermal current Ith (1-pole, enclosed)			788 A
Conventional thermal current Ith (3-pole, enclosed)			315 A
Conventional thermal current Ith at 55°C (3-pole, open)			418 A
Conventional thermal current Ith of main contacts (1-pole, open)			1000 A
Switching capacity			
Switching capacity (main contacts, general use)			350 A, Maximum motor rating (UL/CSA)
Switching capacity (auxiliary contacts, general use)			1 A, 250 V DC, (UL/CSA) 15 A, 600 V AC, (UL/CSA)
Switching capacity (auxiliary contacts, pilot duty)			P300, DC operated (UL/CSA) A600, AC operated (UL/CSA)
Magnet system			
Behavior in marginal and transitional conditions			Sealing - Voltage drops (0.6 - 0.7 x Uc min: Contactor remains switched on Sealing - Voltage drops (0.2 - 0.6 x Uc min) > 12 ms: Drop-out of the contactor Sealing - Voltage drops (0.2 - 0.6 x Uc min ≤12 ms: Time is bridged successfully Sealing - Excess voltage (1.15 - 1.3 x Uc max): Contactor remains switched on Sealing - Pick-up phase (0.7 x Uc min - 1.15 x Uc max): Contactor switches on with certainty Sealing - Voltage interruptions (0 - 0.2 x Uc min ≤ 10 ms: Time is bridged successfully Sealing - Voltage interruptions 0 - 0.2 x Uc min) > 10 ms: Drop-out of the contactor Sealing - Pick-up phase (0 - 0.7 x Uc min: Contactor does not switch on
Drop-out voltage			0.2 x US max - 0.6 x US min, DC operated AC operated: 0.2 x US max - 0.6 x US min, AC operated
Duty factor			100 %
Pick-up voltage			0.7 - 1.15 V AC x Us 0.7 - 1.15 V DC x Us
Power consumption			Control transformer with uk ≤ 6%
Power consumption, pick-up, 50 Hz			250 W, Pull-in power, Coil in a cold state and 1.0 x Us 380 VA, Pull-in power, Coil in a cold state and 1.0 x Us

Power consumption, pick-up, 60 Hz		250 W, Pull-in power, Coil in a cold state and 1.0 x Us 380 VA, Pull-in power, Coil in a cold state and 1.0 x Us
Power consumption, sealing, 50 Hz		10.8 W, Coil in a cold state and 1.0 x Us 17.7 VA, Coil in a cold state and 1.0 x Us
Power consumption, sealing, 60 Hz		10.8 W, Coil in a cold state and 1.0 x Us 17.7 VA, Coil in a cold state and 1.0 x Us
Rated control supply voltage (Us) at AC, 50 Hz - min		250 V
Rated control supply voltage (Us) at AC, 50 Hz - max		500 V
Rated control supply voltage (Us) at AC, 60 Hz - min		250 V
Rated control supply voltage (Us) at AC, 60 Hz - max		500 V
Rated control supply voltage (Us) at DC - min		250 V
Rated control supply voltage (Us) at DC - max		700 V
Switching time (AC operated, make contacts, closing delay) - max		100 ms
Switching time (AC operated, make contacts, opening delay) - max		110 ms
Motor rating		
Assigned motor power at 200/208 V, 60 Hz, 3-phase		100 HP
Assigned motor power at 230/240 V, 60 Hz, 3-phase		125 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase		250 HP
Assigned motor power at 575/600 V, 60 Hz, 3-phase		300 HP
Contacts		
Number of auxiliary contacts (normally closed contacts)		2
Number of auxiliary contacts (normally open contacts)		2
Number of contacts (normally closed contacts)		2
Number of contacts (normally open contacts)		2
Design verification		
Equipment heat dissipation, current-dependent Pvid		0 W
Heat dissipation capacity Pdis		0 W
Heat dissipation per pole, current-dependent Pvid		7 W
Rated operational current for specified heat dissipation (In)		300 A
Static heat dissipation, non-current-dependent Pvs		10.8 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	250 - 500	
Rated control supply voltage AC 60 Hz	V	250 - 500	
Rated control supply voltage DC	V	250 - 700	
Voltage type for actuating		AC/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		Rail connection	
Operating voltage AC 50 Hz	V	250 - 500	
Operating voltage AC 60 Hz	V	250 - 500	
Rated operation current Ie at AC-1, 400 V	A	490	
Rated operation current Ie at AC-3, 400 V	A	300	
Rated operation power at AC-3, 400 V	kW	160	
Rated operation current Ie at AC-4, 400 V	A	240	
Rated operation power at AC-4, 400 V	kW	132	
Rated operation power NEMA	kW	186	
Number of auxiliary contacts as normally open contact		2	
Number of auxiliary contacts as normally closed contact		2	
Modular version		No	
Width	mm	140	
Height	mm	189	
Depth	mm	208	