

DATASHEET - DILM150-22(RAC240)



Contactor, 380 V 400 V 75 kW, 2 N/O, 2 NC, RAC 240: 190 - 240 V 50/60 Hz,  
AC operation, Screw terminals

Part no. DILM150-22(RAC240)  
239598  
EL Number 4110250  
(Norway)

General specifications		
Product name		Eaton Moeller® series DILM contactor
Part no.		DILM150-22(RAC240)
EAN		4015082395988
Product Length/Depth		175 millimetre
Product height		170 millimetre
Product width		90 millimetre
Product weight		2.31 kilogram
Certifications		UL Category Control No.: NLDX CE CSA IEC/EN 60947 UL 60947-4-1 CSA File No.: 012528 VDE 0660 UL File No.: E29096 UL IEC/EN 60947-4-1 CSA-C22.2 No. 60947-4-1-14 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:		Mirror contact Suppressor circuit in actuating electronics
General information		
Application		Contactors for Motors
Connection		Screw terminals
Degree of protection		IP00
Lifespan, mechanical		10,000,000 Operations (AC operated) 7,000,000 Operations (Coil 50/60 Hz)
Operating frequency		3600 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
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		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 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 10 g, N/O main 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 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
<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 16 x 0.8) mm (Number of segments x width x thickness), Main cables
Terminal capacity (flexible with ferrule)			1 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables 1 x (10 - 95) mm <sup>2</sup> , Main cables 2 x (10 - 70) mm <sup>2</sup> , Main cables 2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables
Terminal capacity (solid)			2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables 1 x (0.75 - 2.5) mm <sup>2</sup> , 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)			1 x (16 - 95) mm <sup>2</sup> , Main cables 2 x (16 - 70) mm <sup>2</sup> , Main cables
Stripping length (main cable)			24 mm
Stripping length (control circuit cable)			10 mm
Screw size			M10, Terminal screw, Main cables 5 mm AF, Hexagon socket-head spanner, Terminal screw, Main cables M3.5, Terminal screw, Control circuit 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			1.2 Nm, Screw terminals, Control circuit cables 14 Nm, Screw terminals, Main cables
<b>Electrical rating</b>			
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			1200 A
Rated operational current (Ie) at AC-1, 380 V, 400 V, 415 V			190 A
Rated operational current (Ie) at AC-3, 220 V, 230 V, 240 V			150 A
Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V			150 A
Rated operational current (Ie) at AC-3, 440 V			150 A
Rated operational current (Ie) at AC-3, 500 V			150 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			52 kW
Rated operational power at AC-3, 380/400 V, 50 Hz			75 kW
Rated operational power at AC-3, 415 V, 50 Hz			91 kW

Rated operational power at AC-3, 440 V, 50 Hz		95 kW
Rated operational power at AC-3, 500 V, 50 Hz		110 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
<b>Short-circuit rating</b>		
Short-circuit current rating (basic rating)		600 A, max. Fuse, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA)
Short-circuit current rating (high fault at 480 V)		65 kA, CB, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA) 300/300 A, Class J, max. Fuse, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA)
Short-circuit current rating (high fault at 600 V)		350 A, max. CB, SCCR (UL/CSA) 300/600 A, Class J, max. Fuse, SCCR (UL/CSA) 30 kA, 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
<b>Conventional thermal current Ith</b>		
Conventional thermal current Ith (1-pole, enclosed)		360 A
Conventional thermal current Ith (3-pole, enclosed)		144 A
Conventional thermal current Ith at 55°C (3-pole, open)		170 A
Conventional thermal current Ith at 60°C (3-pole, open)		160 A
Conventional thermal current Ith of main contacts (1-pole, open)		400 A
<b>Switching capacity</b>		
Switching capacity (main contacts, general use)		225 A, Maximum motor rating (UL/CSA)
Switching capacity (auxiliary contacts, general use)		15 A, 600 V AC, (UL/CSA) 1 A, 250 V DC, (UL/CSA)
Switching capacity (auxiliary contacts, pilot duty)		A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)
<b>Magnet system</b>		
Arcing time		15 ms
Drop-out voltage		AC operated: 0.6 - 0.25 x UC, AC operated
Duty factor		100 %
Pick-up voltage		0.8 - 1.15 V AC x Uc
Power consumption, pick-up, 50 Hz		180 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
Power consumption, pick-up, 60 Hz		170 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
Power consumption, sealing, 50 Hz		2.3 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz 3.1 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
Power consumption, sealing, 60 Hz		3.1 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz 2.3 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		190 V
Rated control supply voltage (Us) at AC, 50 Hz - max		240 V
Rated control supply voltage (Us) at AC, 60 Hz - min		190 V
Rated control supply voltage (Us) at AC, 60 Hz - max		240 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		28 ms
Switching time (AC operated, make contacts, closing delay) - max		33 ms
Switching time (AC operated, make contacts, opening delay) - min		35 ms
Switching time (AC operated, make contacts, opening delay) - max		41 ms

<b>Motor rating</b>		
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
<b>Contacts</b>		
Number of contacts (normally closed contacts)		2
Number of contacts (normally open contacts)		2
Number of auxiliary contacts (normally closed contacts)		2
Number of auxiliary contacts (normally open contacts)		2
Number of contacts (normally closed) as main contact		0
<b>Safety</b>		
Safe isolation		690 V AC, Between coil and contacts, According to EN 61140 690 V AC, Between the contacts, According to EN 61140
<b>Special purpose ratings</b>		
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		900 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 150 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
Special purpose rating of elevator control		96 A, 480 V 60 Hz 3-ph, (UL/CSA) 92 A, 200 V 60 Hz 3-ph, (UL/CSA) 99 A, 600 V 60 Hz 3-ph, (UL/CSA) 100 HP, 600 V 60 Hz 3-ph, (UL/CSA) 40 HP, 240 V 60 Hz 3-ph, (UL/CSA) 104 A, 240 V 60 Hz 3-ph, (UL/CSA) 75 HP, 480 V 60 Hz 3-ph, (UL/CSA) 30 HP, 200 V 60 Hz 3-ph, (UL/CSA)
Special purpose rating of refrigeration control (CSA only)		90 A, FLA 600 V 60 Hz 3phase; (CSA) 90 A, FLA 480 V 60 Hz 3phase; (CSA) 540 A, LRA 480 V 60 Hz 3phase; (CSA) 540 A, LRA 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)
<b>Design verification</b>		
Equipment heat dissipation, current-dependent Pvid		27 W
Heat dissipation capacity Pdis		0 W
Heat dissipation per pole, current-dependent Pvid		9 W
Rated operational current for specified heat dissipation (In)		150 A
Static heat dissipation, non-current-dependent Pvs		2.3 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	190 - 240
Rated control supply voltage AC 60 Hz		V	190 - 240
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 Ie at AC-1, 400 V		A	190
Rated operation current Ie at AC-3, 400 V		A	150
Rated operation power at AC-3, 400 V		kW	75
Rated operation current Ie 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			2
Number of auxiliary contacts as normally closed contact			2
Modular version			No
Width		mm	90
Height		mm	170
Depth		mm	175