

Contactor, 4 pole, 160 A, RAC 240: 190 - 240 V 50/60 Hz, AC operation



Part no. DILMP160(RAC240)
109915
EL Number 4130409
(Norway)

General specifications	
Product name	Eaton Moeller® series DILMP 4-pole contactor
Part no.	DILMP160(RAC240)
EAN	4015081094813
Product Length/Depth	160 millimetre
Product height	170 millimetre
Product width	122 millimetre
Product weight	2.73 kilogram
Certifications	UL File No.: E29096 CE IEC/EN 60947 CSA UL 60947-4-1 VDE 0660 CSA-C22.2 No. 60947-4-1-14 IEC/EN 60947-4-1 UL Category Control No.: NLDX CSA File No.: 012528 UL CSA Class No.: 2411-03, 3211-04
Product Tradename	DILMP
Product Type	4-pole 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 4 pole electric consumers
Degree of protection	IP00
Lifespan, mechanical	10,000,000 Operations (DC operated) 10,000,000 Operations (AC operated)
Operating frequency	3600 mechanical Operations/h (DC operated) 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
Utilization category	AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Normal AC induction motors: starting, switch off during running
Voltage type	AC
Ambient conditions, mechanical	
Shock resistance	5 g, N/C 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, Half-sinusoidal shock 10 ms 10 g, N/O main 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 60068-2-3 Damp heat, cyclic, to IEC 60068-2-30
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 (0.75 - 1.5) mm ² 2 x (0.75 - 1.5) mm ²
Terminal capacity (flexible)		1 x (0.75 - 2.5) mm ² 2 x (0.75 - 2.5) mm ²
Terminal capacity (solid)		2 x (0.75 - 4) mm ² , Control circuit cables 1 x (0.75 - 4) mm ² , Control circuit cables 1 x (0.75 - 2.5) mm ²
Terminal capacity (solid/stranded AWG)		8 - 3/0, Main cables 18 - 14, Control circuit cables
Terminal capacity (stranded)		2 x (16 - 95) mm ² , Main cables 1 x (16 - 120) mm ² , Main cables
Stripping length (main cable)		15 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
Electrical rating		
Rated breaking capacity at 220/230 V		950 A
Rated breaking capacity at 380/400 V		950 A
Rated breaking capacity at 500 V		950 A
Rated breaking capacity at 660/690 V		750 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		95 A
Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V		95 A
Rated operational current (Ie) at AC-3, 440 V		95 A
Rated operational current (Ie) at AC-3, 500 V		95 A
Rated operational current (Ie) at AC-3, 660 V, 690 V		80 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		160 A
Rated insulation voltage (Ui)		690 V
Rated making capacity up to 690 V (cos phi to IEC/EN 60947)		1330 A
Rated operational power at AC-1, 220/230 V, 50 Hz		58 kW
Rated operational power at AC-1, 240 V, 50 Hz		63 kW
Rated operational power at AC-1, 380/400 V, 50 Hz		100 kW
Rated operational power at AC-1, 415 V, 50 Hz		109 kW
Rated operational power at AC-1, 440 V, 50 Hz		116 kW
Rated operational power at AC-1, 500 V, 50 Hz		132 kW
Rated operational power at AC-1, 690 V, 50 Hz		174 kW
Rated operational power at AC-3, 240 V, 50 Hz		33 kW
Rated operational power at AC-3, 380/400 V, 50 Hz		45 kW
Rated operational power at AC-3, 415 V, 50 Hz		57 kW
Rated operational power at AC-3, 440 V, 50 Hz		60 kW
Rated operational power at AC-3, 500 V, 50 Hz		70 kW
Rated operational power at AC-3, 690 V, 50 Hz		75 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)	30/100 kA, Fuse, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA) 300/300 A, Class J, max. Fuse, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA)
Short-circuit current rating (high fault at 600 V)	300/300 A, Class J, max. Fuse, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 30 kA, CB, 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	200 A gG/gL
Short-circuit protection rating (type 2 coordination) at 400 V	160 A gG/gL
Short-circuit protection rating (type 2 coordination) at 690 V	160 A gG/gL
Conventional thermal current I_{th}	
Conventional thermal current I _{th} (1-pole, enclosed)	373 A
Conventional thermal current I _{th} (3-pole, enclosed)	128 A
Conventional thermal current I _{th} at 55°C (3-pole, open)	143 A
Conventional thermal current I _{th} at 60°C (3-pole, open)	138 A
Conventional thermal current I _{th} of main contacts (1-pole, open)	415 A
Switching capacity	
Switching capacity (main contacts, general use)	125 A, Maximum motor rating (UL/CSA)
Magnet system	
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 U _c 0.8 - 1.15 V AC/DC x U _s
Power consumption, pick-up, 50 Hz	180 VA, Dual-frequency coil in a cold state and 1.0 x U _s
Power consumption, pick-up, 60 Hz	150 W, Dual-frequency coil in a cold state and 1.0 x U _s , at 60 Hz 180 VA, Dual-frequency coil in a cold state and 1.0 x U _s
Power consumption, sealing, 50 Hz	2.3 W, Dual-frequency coil in a cold state and 1.0 x U _s , at 50 Hz
Power consumption, sealing, 60 Hz	3.1 VA, Dual-frequency coil in a cold state and 1.0 x U _s , at 60 Hz 2.3 W, Dual-frequency coil in a cold state and 1.0 x U _s
Rated control supply voltage (U _s) at AC, 50 Hz - min	190 V
Rated control supply voltage (U _s) at AC, 50 Hz - max	240 V
Rated control supply voltage (U _s) at AC, 60 Hz - min	190 V
Rated control supply voltage (U _s) at AC, 60 Hz - max	240 V
Rated control supply voltage (U _s) at DC - min	0 V
Rated control supply voltage (U _s) 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
Motor rating	
Assigned motor power at 115/120 V, 60 Hz, 1-phase	7.5 HP
Assigned motor power at 200/208 V, 60 Hz, 3-phase	25 HP
Assigned motor power at 230/240 V, 60 Hz, 1-phase	15 HP
Assigned motor power at 230/240 V, 60 Hz, 3-phase	40 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase	75 HP
Assigned motor power at 575/600 V, 60 Hz, 3-phase	100 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	440 V AC, Between the contacts, According to EN 61140

		440 V AC, Between coil and contacts, According to EN 61140
Special purpose ratings		
Special purpose rating of ballast electrical discharge lamps		100 A (480V 60Hz 3phase, 277V 60Hz 1phase) 100 A (600V 60Hz 3phase, 347V 60Hz 1phase)
Special purpose rating of elevator control		77 A, 480 V 60 Hz 3-ph, (UL/CSA) 62.1 A, 200 V 60 Hz 3-ph, (UL/CSA) 60 HP, 480 V 60 Hz 3-ph, (UL/CSA) 20 HP, 200 V 60 Hz 3-ph, (UL/CSA) 30 HP, 240 V 60 Hz 3-ph, (UL/CSA) 80 A, 240 V 60 Hz 3-ph, (UL/CSA) 75 HP, 600 V 60 Hz 3-ph, (UL/CSA) 77 A, 600 V 60 Hz 3-ph, (UL/CSA)
Special purpose rating of refrigeration control (CSA only)		420 A, LRA 600 V 60 Hz 3phase; (CSA) 540 A, LRA 480 V 60 Hz 3phase; (CSA) 70 A, FLA 600 V 60 Hz 3phase; (CSA) 90 A, FLA 480 V 60 Hz 3phase; (CSA)
Special purpose rating of resistance air heating		110 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 100 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
Special purpose rating of tungsten incandescent lamps		100 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 100 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)

Design verification

Equipment heat dissipation, current-dependent Pvid		36.3 W
Heat dissipation capacity Pdis		0 W
Heat dissipation per pole, current-dependent Pvid		12.1 W
Rated operational current for specified heat dissipation (In)		160 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		4
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	160
Rated operation current I _e at AC-3, 400 V	A	95
Rated operation power at AC-3, 400 V	kW	45
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	55
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as normally closed contact		0
Modular version		No
Width	mm	122
Height	mm	170
Depth	mm	160