

Contactor, 4 pole, 160 A, RDC 24: 24 - 27 V DC, DC operation

**Part no.** DILMP160(RDC24)  
**109920**

**EL Number**  
**(Norway)** 4130416

General specifications	
Product name	Eaton Moeller® series DILMP 4-pole contactor
Part no.	DILMP160(RDC24)
EAN	4015081094868
Product Length/Depth	177 millimetre
Product height	183 millimetre
Product width	134 millimetre
Product weight	2.826 kilogram
Certifications	CSA File No.: 012528 CSA-C22.2 No. 60947-4-1-14 UL Category Control No.: NLDX UL 60947-4-1 UL CSA Class No.: 2411-03, 3211-04 CE CSA IEC/EN 60947-4-1 VDE 0660 UL File No.: E29096 IEC/EN 60947
Product Tradename	DILMP
Product Type	4-pole contactor
Product Sub Type	None
Catalog Notes	Also tested according to AC-3e.
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-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	7 g, N/O 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, 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
<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 - 1.5) mm <sup>2</sup> 2 x (0.75 - 1.5) mm <sup>2</sup>
Terminal capacity (flexible)	1 x (0.75 - 2.5) mm <sup>2</sup> 2 x (0.75 - 2.5) mm <sup>2</sup>
Terminal capacity (solid)	1 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables 2 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables 1 x (0.75 - 2.5) mm <sup>2</sup>
Terminal capacity (solid/stranded AWG)	8 - 3/0, Main cables 18 - 14, Control circuit cables
Terminal capacity (stranded)	1 x (16 - 120) mm <sup>2</sup> , Main cables 2 x (16 - 95) mm <sup>2</sup> , Main cables
Stripping length (main cable)	15 mm
Stripping length (control circuit cable)	10 mm
Screw size	M10, Terminal screw, Main cables M3.5, Terminal screw, Control circuit cables 5 mm AF, Hexagon socket-head spanner, Terminal screw, Main 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	14 Nm, Screw terminals, Main cables 1.2 Nm, Screw terminals, Control circuit cables
<b>Electrical rating</b>	
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
<b>Short-circuit rating</b>	

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)	250 A, max. CB, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 300/300 A, Class J, max. Fuse, 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	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
<b>Conventional thermal current I<sub>th</sub></b>	
Conventional thermal current I <sub>th</sub> (1-pole, enclosed)	373 A
Conventional thermal current I <sub>th</sub> (3-pole, enclosed)	128 A
Conventional thermal current I <sub>th</sub> at 55°C (3-pole, open)	143 A
Conventional thermal current I <sub>th</sub> at 60°C (3-pole, open)	138 A
Conventional thermal current I <sub>th</sub> of main contacts (1-pole, open)	415 A
<b>Switching capacity</b>	
Switching capacity (main contacts, general use)	125 A, Maximum motor rating (UL/CSA)
<b>Magnet system</b>	
Arcing time	15 ms
Drop-out voltage	0.2 - 0.6 x U <sub>C</sub> , DC operated
Duty factor	100 %
Pick-up voltage	0.7 - 1.2 V DC x U <sub>C</sub> 0.8 - 1.1 V AC/DC x U <sub>S</sub>
Power consumption (pick-up) at DC	149 W
Power consumption (sealing) at DC	1.9 W
Rated control supply voltage (U <sub>s</sub> ) at AC, 50 Hz - min	0 V
Rated control supply voltage (U <sub>s</sub> ) at AC, 50 Hz - max	0 V
Rated control supply voltage (U <sub>s</sub> ) at AC, 60 Hz - min	0 V
Rated control supply voltage (U <sub>s</sub> ) at AC, 60 Hz - max	0 V
Rated control supply voltage (U <sub>s</sub> ) at DC - min	24 V
Rated control supply voltage (U <sub>s</sub> ) 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
<b>Motor rating</b>	
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
<b>Communication</b>	
Connection	Screw terminals
Connection to SmartWire-DT	No
<b>Contacts</b>	
Number of auxiliary contacts (normally closed contacts)	0
Number of auxiliary contacts (normally open contacts)	0
<b>Safety</b>	
Safe isolation	440 V AC, Between coil and contacts, According to EN 61140 440 V AC, Between the contacts, According to EN 61140
<b>Special purpose ratings</b>	
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	20 HP, 200 V 60 Hz 3-ph, (UL/CSA)

		62.1 A, 200 V 60 Hz 3-ph, (UL/CSA) 75 HP, 600 V 60 Hz 3-ph, (UL/CSA) 77 A, 480 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) 77 A, 600 V 60 Hz 3-ph, (UL/CSA) 60 HP, 480 V 60 Hz 3-ph, (UL/CSA)
Special purpose rating of refrigeration control (CSA only)		70 A, FLA 600 V 60 Hz 3phase; (CSA) 420 A, LRA 600 V 60 Hz 3phase; (CSA) 540 A, LRA 480 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, 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)
<b>Design verification</b>		
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		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			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 Ie at AC-1, 400 V	A		160
Rated operation current Ie at AC-3, 400 V	A		95

Rated operation power at AC-3, 400 V	kW	45
Rated operation current I <sub>e</sub> 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	134
Height	mm	183
Depth	mm	177