

Contactor, 24 V 50 Hz, 3 pole, 380 V 400 V, 4 kW, Contacts N/O = Normally open= 1 N/O, Screw terminals, AC operation



Part no. **DILEM-10(24V50HZ)**

**010005**

EL Number

**4130377**

(Norway)

General specifications	
Product name	Eaton Moeller® series DILEM Mini contactor
Part no.	DILEM-10(24V50HZ)
EAN	4015080100058
Product Length/Depth	52 millimetre
Product height	58 millimetre
Product width	45 millimetre
Product weight	0.17 kilogram
Certifications	UL 508 CSA VDE 0660 IEC/EN 60947-4-1 UL Category Control No.: NLDX CE CSA-C22.2 No. 14-05 CSA File No.: 012528 CSA Class No.: 3211-04 UL File No.: E29096 UL IEC/EN 60947
Product Tradename	DILEM
Product Type	Mini contactor
Product Sub Type	None
Catalog Notes	Also tested according to AC-3e.
Features & Functions	
Features	Positive operating contacts to EN 60947-5-1 appendix L, including auxiliary contact module
Fitted with:	Auxiliary contact
General information	
Application	Mini Contactors for Motors and Resistive Loads
Degree of protection	IP20
Lifespan, mechanical	150,000 Operations (at 240 V, DC, L/R = 50 ms: 2 contacts in series 0.5 A) 7,000,000 Operations (Coil 50/60 Hz) 200,000 Operations (at 240 V, AC-15) 10,000,000 Operations
Mounting position	As required (except vertical with terminals A1/A2 at the bottom)
Operating frequency	9000 mechanical Operations/h
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)	6000 V AC
Shock resistance	10 g, N/O main contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 8 g, N/O auxiliary contact, Basic unit without auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 20 g, N/C auxiliary contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 20 g, N/O auxiliary contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 10 g, N/O main contact, Basic unit without auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
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

<b>Climatic environmental conditions</b>		
Ambient operating temperature - min		-25 °C
Ambient operating temperature - max		50 °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 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
<b>Terminal capacities</b>		
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 (solid)		1 x (0.75 - 2.5) mm <sup>2</sup> 2 x (0.75 - 2.5) mm <sup>2</sup>
Terminal capacity (solid/stranded AWG)		18 - 14
Stripping length (main cable)		8 mm
Screw size		M3.5, Terminal screw
Screwdriver size		2, Terminal screw, Pozidriv screwdriver 0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver
Tightening torque		1.2 Nm, Screw terminals
<b>Electrical rating</b>		
Rated breaking capacity at 220/230 V		90 A
Rated breaking capacity at 380/400 V		90 A
Rated breaking capacity at 500 V		64 A
Rated operational power at AC-3, 240 V, 50 Hz		2.5 kW
Rated operational power at AC-3, 380/400 V, 50 Hz		4 kW
Rated operational power at AC-3, 415 V, 50 Hz		4.3 kW
Rated breaking capacity at 660/690 V		42 A
Rated making capacity up to 440 V (cos phi to IEC/EN 60947)		110 A
Rated operational power at AC-4, 220/230 V, 50 Hz		1.5 kW
Rated operational power at AC-4, 240 V, 50 Hz		1.8 kW
Rated operational power at AC-4, 415 V, 50 Hz		3.1 kW
Rated operational power at AC-4, 440 V, 50 Hz		3.3 kW
Rated operational power at AC-4, 500 V, 50 Hz		3 kW
Rated operational power at AC-4, 660/690 V, 50 Hz		3 kW
Rated operational voltage (Ue) at AC - max		690 V
Rated insulation voltage (Ui)		690 V
Rated operational current (Ie)		2.5 A at 60 V, DC L/R ≤ 15 ms (with 2 contacts in series) 2.5 A at 24 V, DC L/R ≤ 15 ms (with 1 contact in series) 0.5 A at 220 V, DC L/R ≤ 15 ms (with 3 contacts in series) 1.5 A at 100 V, DC L/R ≤ 15 ms (with 3 contacts in series)
Rated operational current (Ie) at AC-1, 380 V, 400 V, 415 V		22 A
Rated operational current (Ie) at AC-15, 220 V, 230 V, 240 V		6 A
Rated operational current (Ie) at AC-15, 380 V, 400 V, 415 V		3 A
Rated operational current (Ie) at AC-15, 500 V		1.5 A
Rated operational current (Ie) at AC-3, 220 V, 230 V, 240 V		9 A
Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V		9 A
Rated operational current (Ie) at AC-3, 440 V		9 A
Rated operational current (Ie) at AC-3, 500 V		6.4 A
Rated operational current (Ie) at AC-3, 660 V, 690 V		4.8 A
Rated operational current (Ie) at AC-4, 220 V, 230 V, 240 V		6.6 A
Rated operational current (Ie) at AC-4, 440 V		6.6 A
Rated operational current (Ie) at AC-4, 500 V		5 A
Rated operational current (Ie) at AC-4, 660 V, 690 V		3.4 A
Rated operational current (Ie) at DC-1, 110 V		20 A
Rated operational current (Ie) at DC-1, 12 V		20 A
Rated operational current (Ie) at DC-1, 220 V		20 A
Rated operational current (Ie) at DC-1, 24 V		20 A

Rated operational current (Ie) at DC-1, 60 V		20 A
Safe isolation		300 V AC, Between auxiliary contacts, According to EN 61140 300 V AC, Between the contacts, According to EN 61140 300 V AC, Between coil and auxiliary contacts, According to EN 61140 300 V AC, Between coil and contacts, According to EN 61140
<b>Short-circuit rating</b>		
Short-circuit current rating (basic rating)		5 kA, SCCR (UL/CSA) 45 A, max. Fuse, SCCR (UL/CSA)
Short-circuit protection		PKZM0-4, Maximum overcurrent protective device, Short-circuit protection only, Auxiliary contacts, Short-circuit rating without welding 10 A fast, Max. Fuse 500V, Auxiliary contacts, Short-circuit rating without welding 6 A gG/gL, Max. Fuse 500V, Auxiliary contacts, Short-circuit rating without welding
Short-circuit protection rating (type 1 coordination) at 500 V		20 A gG/gL
Short-circuit protection rating (type 2 coordination) at 500 V		10 A gG/gL
<b>Conventional thermal current Ith</b>		
Conventional thermal current Ith (1-pole, enclosed)		40 A
Conventional thermal current Ith (3-pole, enclosed)		16 A
Conventional thermal current Ith at 55°C (3-pole, open)		19 A
Conventional thermal current Ith of auxiliary contacts (1-pole, open)		10 A
Conventional thermal current Ith of main contacts (1-pole, open)		50 A
<b>Switching capacity</b>		
Switching capacity (main contacts, general use)		15 A, Maximum motor rating (UL/CSA)
Switching capacity (auxiliary contacts, general use)		0.5 A, 250 V DC, (UL/CSA) 10 A, 600 V AC, (UL/CSA)
Switching capacity (auxiliary contacts, pilot duty)		A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)
<b>Magnet system</b>		
Arcing time		12 ms at 690 V AC
Changeover time		16 - 21 ms
Duty factor		100 %
Pick-up voltage		0.8 - 1.1 V AC x Uc (voltage tolerance - single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz) 1.1 V AC x Uc (voltage tolerance - dual frequency coil 50/60 Hz)
Power consumption, pick-up, 50 Hz		25 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz 22 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
Power consumption, pick-up, 60 Hz		22 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz 25 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
Power consumption, sealing, 50 Hz		4.6 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz 1.8 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
Power consumption, sealing, 60 Hz		1.8 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
Rated control supply voltage (Us) at AC, 50 Hz - min		24 V
Rated control supply voltage (Us) at AC, 50 Hz - max		24 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		0 V
Rated control supply voltage (Us) at DC - max		0 V
Switching time (AC operated, make contacts, closing delay) - min		14 ms
Switching time (AC operated, make contacts, closing delay) - max		21 ms
Switching time (AC operated, make contacts, opening delay) - min		8 ms
Switching time (AC operated, make contacts, opening delay) - max		18 ms
Switching time (AC operated, N/O, with auxiliary contact module, closing delay)		45 ms
<b>Motor rating</b>		
Assigned motor power at 115/120 V, 60 Hz, 1-phase		0.5 HP
Assigned motor power at 200/208 V, 60 Hz, 3-phase		2 HP
Assigned motor power at 230/240 V, 60 Hz, 1-phase		1.5 HP
Assigned motor power at 230/240 V, 60 Hz, 3-phase		3 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase		5 HP
Assigned motor power at 575/600 V, 60 Hz, 3-phase		5 HP
<b>Contacts</b>		

Control circuit reliability		< 2 λ, < 1 failure at 100,000,000 Operations (at U# = 24 V DC, Umin = 17 V, Imin = 5.4 mA)
Number of auxiliary contacts (normally closed contacts)		0
Number of auxiliary contacts (normally open contacts)		1
Number of contacts (normally open contacts)		1
<b>Design verification</b>		
Equipment heat dissipation, current-dependent Pvid		1.2 W
Heat dissipation capacity Pdis		0 W
Heat dissipation per pole, current-dependent Pvid		0.4 W
Rated operational current for specified heat dissipation (In)		9 A
Static heat dissipation, non-current-dependent Pvs		1.8 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	24 - 24
Rated control supply voltage AC 60 Hz	V	0 - 0
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	24 - 690
Operating voltage AC 60 Hz	V	24 - 690
Rated operation current Ie at AC-1, 400 V	A	22
Rated operation current Ie at AC-3, 400 V	A	9
Rated operation power at AC-3, 400 V	kW	4
Rated operation current Ie at AC-4, 400 V	A	6.6
Rated operation power at AC-4, 400 V	kW	3
Rated operation power NEMA	kW	3.7
Number of auxiliary contacts as normally open contact		1
Number of auxiliary contacts as normally closed contact		0

Modular version		No
Width	mm	45
Height	mm	58
Depth	mm	52