DATASHEET - DILEM-10(230V50HZ,240V60HZ)



Contactor, 230 V 50 Hz, 240 V 60 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(230V50HZ,240V60HZ)**
	051786
EL Number (Norway)	**4130378**

General specifications

Product name	Eaton Moeller® series DILEM Mini contactor
Part no.	DILEM-10(230V50HZ,240V60HZ)
EAN	4015080517863
Product Length/Depth	52 millimetre
Product height	58 millimetre
Product width	45 millimetre
Product weight	0.17 kilogram
Certifications	CSA File No.: 012528 IEC/EN 60947 VDE 0660 CSA-C22.2 No. 14-05 UL 508 UL File No.: E29096 CSA Class No.: 3211-04 CSA CE UL IEC/EN 60947-4-1 UL Category Control No.: NLDX
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) 10,000,000 Operations 7,000,000 Operations (Coil 50/60 Hz) 200,000 Operations (at 240 V, AC-15)
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	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 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 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 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 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
Suitable for	Also motors with efficiency class IE3
Utilization category	AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Normal AC induction motors: starting, switch off during running
Voltage type	AC

Climatic environmental conditions

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

Terminal capacities

Terminal capacity (flexible with ferrule)	2 x (0.75 - 1.5) mm^2 1 x (0.75 - 1.5) mm^2
Terminal capacity (solid)	1 x (0.75 - 2.5) mm^2 2 x (0.75 - 2.5) mm^2
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

Electrical rating

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) 1.5 A at 100 V, DC L/R ≤ 15 ms (with 3 contacts in series) 0.5 A at 220 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 coil and auxiliary contacts, According to EN 61140 300 V AC, Between coil and contacts, According to EN 61140 300 V AC, Between the contacts, According to EN 61140
Short-circuit rating	
Short-circuit current rating (basic rating)	45 A, max. Fuse, SCCR (UL/CSA) 5 kA, SCCR (UL/CSA)
Short-circuit protection	PKZM0-4, Maximum overcurrent protective device, Short-circuit protection only, Auxiliary contacts, Short-circuit rating without welding 6 A gG/gL, Max. Fuse 500V, Auxiliary contacts, Short-circuit rating without welding 10 A fast, 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
Conventional thermal current Ith	
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
Switching capacity	
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)	P300, DC operated (UL/CSA) A600, AC operated (UL/CSA)
Magnet system	
Arcing time	12 ms at 690 V AC
Changeover time	16 - 21 ms
Duty factor	100 %
Pick-up voltage	1.1 V AC x Uc (voltage tolerance - dual frequency coil 50/60 Hz) 0.8 - 1.1 V AC x Uc (voltage tolerance - single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 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	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, sealing, 50 Hz	1.8 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz 4.6 VA, 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	230 V
Rated control supply voltage (Us) at AC, 50 Hz - max	230 V
Rated control supply voltage (Us) at AC, 60 Hz - min	240 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	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
Motor rating	
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
Contacts	

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

Design verification

Equipment heat dissipation, current-dependent Pvid			1.2 W
Heat dissipation capacity Pdiss			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	230 - 230
Rated control supply voltage AC 60 Hz	V	240 - 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	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

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