DATASHEET - DILM7-01(220VDC)

Contactor, 3 pole, 380 V 400 V 3 kW, 1 NC, 220 V DC, DC operation, Screw terminals

Part no. **DILM7-01(220VDC)**
276604

Powering Business Worldwide™

General specifications

Product name	Eaton Moeller® series DILM contactor
Part no.	DILM7-01(220VDC)
EAN	4015082766047
Product Length/Depth	75 millimetre
Product height	68 millimetre
Product width	45 millimetre
Product weight	0.296 kilogram
Certifications	CSA Class No.: 2411-03, 3211-04 UL Category Control No.: NLDX UL File No.: E29096 CE UL CSA File No.: 012528 IEC/EN 60947-4-1 IEC/EN 60947 CSA VDE 0660 CSA-C22.2 No. 60947-4-1-14 UL 508 VDE
Product Tradename	DILM
Product Type	Contactor
Product Sub Type	None
Catalog Notes	Contacts according to EN 50012

Features & Functions

Fitted with:	Mirror contact Varistor suppressor circuit

General information

Application	Contactors for Motors
Connection	Screw terminals
Degree of protection	IP20
Frame size	FS1
Lifespan, mechanical	10,000,000 Operations (DC operated)
Operating frequency	5000 mechanical Operations/h (DC operated) 9000 mechanical Operations/h (DC 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
Resistance per pole	4.6 mΩ
Suitable for	Also motors with efficiency class IE3
Utilization category	AC-3: Normal AC induction motors: starting, switch off during running AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-4: Normal AC induction motors: starting, plugging, reversing, inching
Voltage type	DC

Ambient conditions, mechanical

Shock resistance	5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 3.4 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms 3.4 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

	5.7 g, N/O main 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
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 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Electro magnetic compatibility	
Emitted interference	According to EN 60947-1
Interference immunity	According to EN 60947-1
Terminal capacities	
Terminal capacity (flexible with ferrule)	1 x (0.75 - 2.5) mm^2 2 x (0.75 - 2,5) mm^2
Terminal capacity (solid)	2 x (0.75 - 2.5) mm^2 1 x (0.75 - 4) mm^2
Terminal capacity (solid/stranded AWG)	Single 18 - 10, double 18 - 14
Stripping length (main cable)	10 mm
Stripping length (control circuit cable)	10 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	70 A
Rated breaking capacity at 380/400 V	70 A
Rated breaking capacity at 500 V	50 A
Rated breaking capacity at 660/690 V	40 A
Rated operational current (Ie) at AC-1, 380 V, 400 V, 415 V	22 A
Rated operational current (Ie) at AC-3, 220 V, 230 V, 240 V	7 A
Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V	7 A
Rated operational current (Ie) at AC-3, 440 V	7 A
Rated operational current (Ie) at AC-3, 500 V	5 A
Rated operational current (Ie) at AC-3, 660 V, 690 V	4 A
Rated operational current (Ie) at AC-4, 220 V, 230 V, 240 V	5 A
Rated operational current (Ie) at AC-4, 440 V	5 A
Rated operational current (Ie) at AC-4, 500 V	4.5 A
Rated operational current (Ie) at AC-4, 660 V, 690 V	4 A
Rated operational current (Ie) at DC-1, 60 V	20 A
Rated operational current (Ie) at DC-1, 110 V	20 A
Rated operational current (Ie) at DC-1, 220 V	15 A
Rated insulation voltage (Ui)	690 V
Rated making capacity up to 690 V (cos phi to IEC/EN 60947)	112 A
Rated operational power at AC-3, 240 V, 50 Hz	2.2 kW
Rated operational power at AC-3, 380/400 V, 50 Hz	3 kW
Rated operational power at AC-3, 415 V, 50 Hz	4 kW
Rated operational power at AC-3, 440 V, 50 Hz	4.5 kW
Rated operational power at AC-3, 500 V, 50 Hz	3.5 kW
Rated operational power at AC-3, 690 V, 50 Hz	3.5 kW
Rated operational power at AC-4, 220/230 V, 50 Hz	1 kW
Rated operational power at AC-4, 240 V, 50 Hz	1.5 kW
Rated operational power at AC-4, 415 V, 50 Hz	2.3 kW

Rated operational power at AC-4, 440 V, 50 Hz	2.4 kW
Rated operational power at AC-4, 500 V, 50 Hz	2.5 kW
Rated operational power at AC-4, 660/690 V, 50 Hz	2.9 kW
Rated operational voltage (Ue) at AC - max	690 V
Short-circuit rating	
Short-circuit current rating (basic rating)	5 kA, SCCR (UL/CSA) 45 A, max. Fuse, SCCR (UL/CSA) 60 A, max. CB, SCCR (UL/CSA)
Short-circuit current rating (high fault at 480 V)	30/100 kA, Fuse, SCCR (UL/CSA) 25 A, Class RK5/ 20 A Class J, max. Fuse, SCCR (UL/CSA) 16 A, max. CB, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA)
Short-circuit current rating (high fault at 600 V)	30/100 kA, Fuse, SCCR (UL/CSA) 25 A, Class RK5/20 A, Class J, max. Fuse, SCCR (UL/CSA)
Short-circuit protection rating (type 1 coordination) at 400 V	35 A gG/gL
Short-circuit protection rating (type 1 coordination) at 690 V	20 A gG/gL
Short-circuit protection rating (type 2 coordination) at 400 V	20 A gG/gL
Short-circuit protection rating (type 2 coordination) at 690 V	16 A gG/gL
Conventional thermal current Ith	
Conventional thermal current ith (1-pole, enclosed)	45 A
Conventional thermal current ith (3-pole, enclosed)	18 A
Conventional thermal current ith at 55°C (3-pole, open)	21 A
Conventional thermal current ith at 60°C (3-pole, open)	20 A
Conventional thermal current ith of main contacts (1-pole, open)	50 A
Switching capacity	
Switching capacity (main contacts, general use)	20 A, Maximum motor rating (UL/CSA)
Switching capacity (auxiliary contacts, general use)	10 A, 600 V AC, (UL/CSA) 1 A, 250 V DC, (UL/CSA)
Switching capacity (auxiliary contacts, pilot duty)	P300, DC operated (UL/CSA) A600, AC operated (UL/CSA)
Magnet system	
Arcing time	10 ms
Drop-out voltage	0.6 - 0.15 x UC, DC operated At least smoothed two-phase bridge rectifier or three-phase rectifier
Duty factor	100 %
Pick-up voltage	0.85 - 1.1 V DC x Uc (only with auxiliary contact module with 3 or more N/C contacts) 0.8 - 1.1 V DC x Uc
Power consumption (pick-up) at DC	3 W
Power consumption (sealing) at DC	3 W
Rated control supply voltage (Us) at AC, 50 Hz - min	0 V
Rated control supply voltage (Us) at AC, 50 Hz - max	0 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	220 V
Rated control supply voltage (Us) at DC - max	220 V
Switching time (DC operated, make contacts, closing delay) - max	31 ms
Switching time (DC operated, make contacts, opening delay) - max	12 ms
Motor rating	
Assigned motor power at 115/120 V, 60 Hz, 1-phase	0.25 HP
Assigned motor power at 200/208 V, 60 Hz, 3-phase	1.5 HP
Assigned motor power at 230/240 V, 60 Hz, 1-phase	1 HP
Assigned motor power at 230/240 V, 60 Hz, 3-phase	2 HP
Assigned motor power at 460/480 V, 60 Hz, 3-phase	3 HP
Assigned motor power at 575/600 V, 60 Hz, 3-phase	5 HP
Communication	
Connection to SmartWire-DT	No
Contacts	
Number of contacts (normally closed contacts)	1

Number of contacts (normally open contacts)			0
Number of auxiliary contacts (normally closed contacts)			1
Number of auxiliary contacts (normally open contacts)			0

Safety

Safe isolation			400 V AC, Between coil and contacts, According to EN 61140 400 V AC, Between the contacts, According to EN 61140

Special purpose ratings

Special purpose rating of ballast electrical discharge lamps			12 A (480V 60Hz 3phase, 277V 60Hz 1phase) 12 A (600V 60Hz 3phase, 347V 60Hz 1phase)
Special purpose rating of definite purpose rating			7 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 42 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
Special purpose rating of elevator control			3.7 A, 200 V 60 Hz 3-ph, (UL/CSA) 1.5 HP, 240 V 60 Hz 3-ph, (UL/CSA) 3.4 A, 480 V 60 Hz 3-ph, (UL/CSA) 3.9 A, 600 V 60 Hz 3-ph, (UL/CSA) 0.75 HP, 200 V 60 Hz 3-ph, (UL/CSA) 6 A, 240 V 60 Hz 3-ph, (UL/CSA) 3 HP, 600 V 60 Hz 3-ph, (UL/CSA) 2 HP, 480 V 60 Hz 3-ph, (UL/CSA)
Special purpose rating of refrigeration control (CSA only)			60 A, LRA 600 V 60 Hz 3phase; (CSA) 10 A, FLA 480 V 60 Hz 3phase; (CSA) 10 A, FLA 600 V 60 Hz 3phase; (CSA) 60 A, LRA 480 V 60 Hz 3phase; (CSA)
Special purpose rating of resistance air heating			12 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 12 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)
Special purpose rating of tungsten incandescent lamps			14 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 14 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)

Design verification

Equipment heat dissipation, current-dependent Pvid			0.3 W
Heat dissipation capacity Pdiss			0 W
Heat dissipation per pole, current-dependent Pvid			0.1 W
Rated operational current for specified heat dissipation (In)			7 A
Static heat dissipation, non-current-dependent Pvs			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	0 - 0

Rated control supply voltage AC 60 Hz		V	0 - 0
Rated control supply voltage DC		V	220 - 220
Voltage type for actuating			DC
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	7
Rated operation power at AC-3, 400 V		kW	3
Rated operation current Ie at AC-4, 400 V		A	5
Rated operation power at AC-4, 400 V		kW	2.2
Rated operation power NEMA		kW	2.2
Number of auxiliary contacts as normally open contact			0
Number of auxiliary contacts as normally closed contact			1
Modular version			No
Width		mm	45
Height		mm	68
Depth		mm	75