

**Contactor, 12 V DC, 4 pole, 380 V 400 V, 4 kW, Screw terminals, DC operation**

**Part no. DILEM4-G(12VDC)  
079680**

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| <b>General specifications</b>                  |  |   |
| Product name                                   |  | Eaton Moeller® series DILEM Mini contactor  |
| Part no.                                       |  | DILEM4-G(12VDC)   |
| EAN  |  | 4015080796800   |
| Product Length/Depth                           |  | 54 millimetre   |
| Product height                                 |  | 58 millimetre   |
| Product width                                  |  | 45 millimetre   |
| Product weight                                 |  | 0.206 kilogram  |
| Certifications                                 |  | IEC/EN 60947-4-1<br>CSA Class No.: 3211-04<br>VDE 0660<br>CE<br>IEC/EN 60947<br>UL<br>CSA File No.: 012528<br>CSA<br>UL File No.: E29096<br>UL Category Control No.: NLDX<br>UL 508<br>CSA-C22.2 No. 14-05  |
| Product Tradename                              |  | DILEM   |
| Product Type                                   |  | Mini contactor  |
| Product Sub Type                               |  | None  |
| Catalog Notes                                  |  | Also tested according to AC-3e.   |
| <b>Features &amp; Functions</b>                |  |   |
| Features                                       |  | Positive operating contacts to EN 60947-5-1 appendix L, including auxiliary contact module  |
| <b>General information</b>                     |  |   |
| Application                                    |  | Mini Contactors for Motors and Resistive Loads  |
| Degree of protection                           |  | IP20  |
| Lifespan, mechanical                           |  | 20,000,000 Operations<br>200,000 Operations (at 240 V, AC-15)<br>150,000 Operations (at 240 V, DC, L/R = 50 ms: 2 contacts in series 0.5 A)   |
| 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 without auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms<br>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<br>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<br>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 |
| Utilization category                           |  | AC-4: Normal AC induction motors: starting, plugging, reversing, inching<br>AC-1: Non-inductive or slightly inductive loads, resistance furnaces<br>AC-3: Normal AC induction motors: starting, switch off during running   |
| Voltage type                                   |  | DC  |
| <b>Climatic environmental conditions</b>       |  |   |
| Ambient operating temperature - min            |  | -25 °C  |
| Ambient operating temperature - max            |  | 50 °C   |
| Ambient operating temperature (enclosed) - min |  | 25 °C   |

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| Ambient operating temperature (enclosed) - max               |  | 40 °C  |
| Ambient storage temperature - min                            |  | 40 °C  |
| Ambient storage temperature - max                            |  | 80 °C  |
| Climatic proofing  |  | Damp heat, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78   |
| <b>Terminal capacities</b>                                   |  |  |
| Terminal capacity (flexible with ferrule)                    |  | 1 x (0.75 - 1.5) mm <sup>2</sup><br>2 x (0.75 - 1.5) mm <sup>2</sup>   |
| Terminal capacity (solid)                                    |  | 1 x (0.75 - 2.5) mm <sup>2</sup><br>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<br>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 24 V, DC L/R ≤ 15 ms (with 1 contact in series)<br>2.5 A at 60 V, DC L/R ≤ 15 ms (with 2 contacts in series)<br>0.5 A at 220 V, DC L/R ≤ 15 ms (with 3 contacts in series)<br>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 coil and contacts, According to EN 61140<br>300 V AC, Between coil and auxiliary contacts, According to EN 61140<br>300 V AC, Between the contacts, According to EN 61140<br>300 V AC, Between auxiliary contacts, According to EN 61140 |

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| <b>Short-circuit rating</b>   |  |   |
| Short-circuit current rating (basic rating)                                     |  | 5 kA, SCCR (UL/CSA)<br>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<br>10 A fast, Max. Fuse 500V, Auxiliary contacts, Short-circuit rating without welding<br>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)                             |  | 50 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)                |  | 60 A  |
| <b>Switching capacity</b>   |  |   |
| Switching capacity (main contacts, general use)                                 |  | 15 A, Maximum motor rating (UL/CSA)   |
| <b>Magnet system</b>  |  |   |
| Arcing time   |  | 12 ms at 690 V AC   |
| Changeover time   |  | 40 - 50 ms  |
| Duty factor   |  | 100 %   |
| Pick-up voltage   |  | 0.85 - 1.1 V DC x U <sub>c</sub>  |
| Power consumption   |  | 2.3 VA/W at DC (Pick-up/Sealing power)<br>Smoothed DC voltage or three-phase bridge rectifier   |
| 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                                   |  | 12 V  |
| Rated control supply voltage (Us) at DC - max                                   |  | 12 V  |
| Switching time (AC operated, N/O, with auxiliary contact module, closing delay) |  | 70 ms   |
| Switching time (DC operated, make contacts, closing delay) - min                |  | 26 ms   |
| Switching time (DC operated, make contacts, closing delay) - max                |  | 35 ms   |
| Switching time (DC operated, make contacts, opening delay) - min                |  | 15 ms   |
| Switching time (DC operated, make contacts, opening delay) - max                |  | 25 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, U <sub>min</sub> = 17 V, I <sub>min</sub> = 5.4 mA)  |
| Number of auxiliary contacts (normally closed contacts)                         |  | 0   |
| Number of auxiliary contacts (normally open contacts)                           |  | 0   |
| <b>Design verification</b>  |  |   |
| Equipment heat dissipation, current-dependent P <sub>vid</sub>                  |  | 7.17 W  |
| Heat dissipation capacity P <sub>diss</sub>                                     |  | 0 W   |
| Heat dissipation per pole, current-dependent P <sub>vid</sub>                   |  | 1.79 W  |
| Rated operational current for specified heat dissipation (I <sub>n</sub> )      |  | 22 A  |
| Static heat dissipation, non-current-dependent P <sub>vs</sub>                  |  | 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.  |

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| 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

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| 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  | 12 - 12          |  |
| 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  | 24 - 690         |  |
| Operating voltage AC 60 Hz  | V  | 24 - 690         |  |
| Rated operation current I <sub>e</sub> at AC-1, 400 V   | A  | 22               |  |
| Rated operation current I <sub>e</sub> at AC-3, 400 V   | A  | 9                |  |
| Rated operation power at AC-3, 400 V  | kW | 4                |  |
| Rated operation current I <sub>e</sub> 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   |    | 0                |  |
| Number of auxiliary contacts as normally closed contact   |    | 0                |  |
| Modular version   |    | No               |  |
| Width   | mm | 45               |  |
| Height  | mm | 58               |  |
| Depth   | mm | 54               |  |