



Contactor, 4 pole, DC operation, AC-1: 22 A, 24 V DC, Screw terminals

Part no. DILMP20(24VDC)  
276985  
EL Number 4130328  
(Norway)

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| General specifications                 |  |   |
| Product name                           |  | Eaton Moeller® series DILMP 4-pole contactor  |
| Part no.                               |  | DILMP20(24VDC)  |
| EAN                                    |  | 4015082769857   |
| Product Length/Depth                   |  | 75 millimetre   |
| Product height                         |  | 68 millimetre   |
| Product width                          |  | 45 millimetre   |
| Product weight                         |  | 0.294 kilogram  |
| Certifications                         |  | UL<br>UL 60947-4-1<br>IEC/EN 60947-4-1<br>CSA<br>VDE 0660<br>CSA Class No.: 2411-03, 3211-04<br>IEC/EN 60947<br>UL File No.: E29096<br>CE<br>CSA-C22.2 No. 60947-4-1-14<br>CSA File No.: 012528<br>UL Category Control No.: NLDX  |
| Product Tradename                      |  | DILMP   |
| Product Type                           |  | 4-pole contactor  |
| Product Sub Type                       |  | None  |
| Catalog Notes                          |  | Contacts according to EN 50012  |
| Features & Functions                   |  |   |
| Fitted with:                           |  | Varistor suppressor circuit   |
| General information                    |  |   |
| Application                            |  | Contactors for 4 pole electric consumers  |
| Connection                             |  | Screw terminals   |
| Degree of protection                   |  | IP20  |
| Lifespan, mechanical                   |  | 10,000,000 Operations (AC operated)<br>10,000,000 Operations (DC operated)  |
| Operating frequency                    |  | 5000 mechanical Operations/h (DC operated)<br>5000 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                    |  | 2.5 mΩ  |
| Utilization category                   |  | AC-3: Normal AC induction motors: starting, switch off during running<br>AC-1: Non-inductive or slightly inductive loads, resistance furnaces   |
| Voltage type                           |  | DC  |
| Ambient conditions, mechanical         |  |   |
| Shock resistance                       |  | 10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms<br>7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms<br>5 g, N/C auxiliary 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  |

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| 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, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78                         |
| <b>Electro magnetic compatibility</b>                       |  |  |
| Interference immunity                                       |  | According to EN 60947-1  |
| <b>Terminal capacities</b>                                  |  |  |
| Terminal capacity (flexible with ferrule)                   |  | 2 x (0.75 - 1.5) mm <sup>2</sup><br>1 x (0.75 - 1.5) mm <sup>2</sup>                                   |
| Terminal capacity (flexible)                                |  | 2 x (0.75 - 2.5) mm <sup>2</sup><br>1 x (0.75 - 2.5) mm <sup>2</sup>                                   |
| Terminal capacity (solid)                                   |  | 1 x (0.75 - 2.5) mm <sup>2</sup><br>1 x (0.75 - 4) 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)                               |  | 10 mm  |
| Stripping length (control circuit cable)                    |  | 10 mm  |
| Screw size  |  | M3.5, Terminal screw   |
| Screwdriver size  |  | 0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver<br>2, Terminal screw, Pozidriv screwdriver    |
| Tightening torque   |  | 1.2 Nm, Screw terminals  |
| <b>Electrical rating</b>                                    |  |  |
| Rated breaking capacity at 220/230 V                        |  | 120 A  |
| Rated breaking capacity at 380/400 V                        |  | 120 A  |
| Rated breaking capacity at 500 V                            |  | 100 A  |
| Rated breaking capacity at 660/690 V                        |  | 70 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 |  | 12 A   |
| Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V |  | 12 A   |
| Rated operational current (Ie) at AC-3, 440 V               |  | 12 A   |
| Rated operational current (Ie) at AC-3, 500 V               |  | 10 A   |
| Rated operational current (Ie) at AC-3, 660 V, 690 V        |  | 7 A  |
| Rated operational current (Ie) at DC-1, 60 V                |  | 22 A   |
| Rated operational current (Ie) at DC-1, 110 V               |  | 22 A   |
| Rated operational current (Ie) at DC-1, 220 V               |  | 6 A  |
| Rated insulation voltage (Ui)                               |  | 690 V  |
| Rated making capacity up to 690 V (cos phi to IEC/EN 60947) |  | 144 A  |
| Rated operational power at AC-1, 220/230 V, 50 Hz           |  | 8 kW   |
| Rated operational power at AC-1, 240 V, 50 Hz               |  | 9 kW   |
| Rated operational power at AC-1, 380/400 V, 50 Hz           |  | 14 kW  |
| Rated operational power at AC-1, 415 V, 50 Hz               |  | 15 kW  |
| Rated operational power at AC-1, 440 V, 50 Hz               |  | 16 kW  |
| Rated operational power at AC-1, 500 V, 50 Hz               |  | 18 kW  |
| Rated operational power at AC-1, 690 V, 50 Hz               |  | 24 kW  |
| Rated operational power at AC-3, 240 V, 50 Hz               |  | 4 kW   |
| Rated operational power at AC-3, 380/400 V, 50 Hz           |  | 5.5 kW   |
| Rated operational power at AC-3, 415 V, 50 Hz               |  | 7 kW   |
| Rated operational power at AC-3, 440 V, 50 Hz               |  | 7.5 kW   |
| Rated operational power at AC-3, 500 V, 50 Hz               |  | 7 kW   |
| Rated operational power at AC-3, 690 V, 50 Hz               |  | 6.5 kW   |
| Rated operational voltage (Ue) at AC - max                  |  | 690 V  |
| <b>Short-circuit rating</b>                                 |  |  |
| Short-circuit current rating (basic rating)                 |  | 45 A, max. Fuse, SCCR (UL/CSA)<br>5 kA, SCCR (UL/CSA)<br>60 A, max. CB, SCCR (UL/CSA)                  |

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| Short-circuit current rating (high fault at 480 V)               |  | 30 kA, Fuse, SCCR (UL/CSA)<br>25 A, Class RK5, max. Fuse, SCCR (UL/CSA)  |
| Short-circuit current rating (high fault at 600 V)               |  | 25 A, Class RK5, max. Fuse, SCCR (UL/CSA)<br>30 kA, 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   |  | 25 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   |  | 20 A gG/gL   |
| <b>Conventional thermal current Ith</b>                          |  |  |
| Conventional thermal current Ith (1-pole, enclosed)              |  | 54 A   |
| Conventional thermal current Ith (3-pole, enclosed)              |  | 18 A   |
| Conventional thermal current Ith at 55°C (3-pole, open)          |  | 20.5 A   |
| Conventional thermal current Ith at 60°C (3-pole, open)          |  | 20 A   |
| Conventional thermal current Ith of main contacts (1-pole, open) |  | 60 A   |
| <b>Switching capacity</b>  |  |  |
| Switching capacity (main contacts, general use)                  |  | 20 A, Maximum motor rating (UL/CSA)  |
| <b>Magnet system</b>   |  |  |
| Arcing time  |  | 10 ms  |
| Drop-out voltage   |  | 0.2 - 0.6 x UC, DC operated  |
| Duty factor  |  | 100 %  |
| Pick-up voltage  |  | 0.8 - 1.1 V AC/DC x Us<br>0.8 - 1.1 V DC x Uc  |
| Power consumption (pick-up) at DC                                |  | 4.5 W  |
| Power consumption (sealing) at DC                                |  | 4.5 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                    |  | 24 V   |
| Rated control supply voltage (Us) at DC - max                    |  | 24 V   |
| Switching time (DC operated, make contacts, closing delay) - max |  | 31 ms  |
| Switching time (DC operated, make contacts, opening delay) - max |  | 12 ms  |
| <b>Communication</b>   |  |  |
| Connection to SmartWire-DT                                       |  | In conjunction with DIL-SWD SmartWire DT contactor module<br>Yes   |
| <b>Contacts</b>  |  |  |
| Number of auxiliary contacts (normally closed contacts)          |  | 0  |
| Number of auxiliary contacts (normally open contacts)            |  | 0  |
| Number of contacts (normally closed) as main contact             |  | 0  |
| <b>Safety</b>  |  |  |
| Safe isolation   |  | 400 V AC, Between coil and contacts, According to EN 61140<br>400 V AC, Between the contacts, According to EN 61140                                      |
| <b>Special purpose ratings</b>                                   |  |  |
| Special purpose rating of ballast electrical discharge lamps     |  | 20 A (480V 60Hz 3phase, 277V 60Hz 1phase)<br>20 A (600V 60Hz 3phase, 347V 60Hz 1phase)   |
| Special purpose rating of elevator control                       |  | 5 HP, 600 V 60 Hz 3-ph, (UL/CSA)<br>6.1 A, 600 V 60 Hz 3-ph, (UL/CSA)  |
| Special purpose rating of refrigeration control (CSA only)       |  | 10 A, FLA 480 V 60 Hz 3phase; (CSA)<br>10 A, FLA 600 V 60 Hz 3phase; (CSA)<br>60 A, LRA 600 V 60 Hz 3phase; (CSA)<br>60 A, LRA 480 V 60 Hz 3phase; (CSA) |
| Special purpose rating of resistance air heating                 |  | 20 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)<br>20 A, 480 V 60 Hz 3phase, 277 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)<br>14 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)   |
| <b>Design verification</b>                                       |  |  |
| Equipment heat dissipation, current-dependent Pvid               |  | 5.1 W  |
| Heat dissipation capacity Pdis                                   |  | 0 W  |
| Heat dissipation per pole, current-dependent Pvid                |  | 1.7 W  |

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| Rated operational current for specified heat dissipation (In)                    |  | 22 A   |
| Static heat dissipation, non-current-dependent Pvs                               |  | 4.5 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

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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  | 24 - 24          |  |
| 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 Ie at AC-1, 400 V   | A  | 22               |  |
| Rated operation current Ie at AC-3, 400 V   | A  | 12               |  |
| Rated operation power at AC-3, 400 V  | kW | 5.5              |  |
| Rated operation current Ie at AC-4, 400 V   | A  | 10               |  |
| Rated operation power at AC-4, 400 V  | kW | 4.5              |  |
| Rated operation power NEMA  | kW | 0                |  |
| 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 | 68               |  |
| Depth   | mm | 75               |  |