

# Specifications



Photo is representative



## Eaton 276964

Eaton Moeller® series DILMP Contactor, 4 pole, 22 A, 208 V 60 Hz, AC operation

### General specifications

|                             |  |
|-----------------------------|--|
| <b>PRODUCT NAME</b>         | Eaton Moeller® series DILMP 4-pole contactor   |
| <b>CATALOG NUMBER</b>       | 276964   |
| <b>MODEL CODE</b>           | DILMP20(208V60HZ)  |
| <b>EAN</b>                  | 4015082769642  |
| <b>PRODUCT LENGTH/DEPTH</b> | 75 mm  |
| <b>PRODUCT HEIGHT</b>       | 68 mm  |
| <b>PRODUCT WIDTH</b>        | 45 mm  |
| <b>PRODUCT WEIGHT</b>       | 0.236 kg   |
| <b>CERTIFICATIONS</b>       | VDE 0660<br>CSA Class No.: 2411-03, 3211-04<br>IEC/EN 60947-4-1<br>UL<br>CSA-C22.2 No. 60947-4-1-14<br>UL 60947-4-1<br>UL Category Control No.: NLDX<br>CSA<br>IEC/EN 60947<br>CE<br>CSA File No.: 012528<br>UL File No.: E29096 |
| <b>CATALOG NOTES</b>        | Contacts according to EN 50012   |
| <b>GLOBAL CATALOG</b>       | 276964   |

## Product specifications

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| <b>NUMBER OF POLES</b>  | Four-pole  |
| <b>10.10 TEMPERATURE RISE</b>   | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| <b>10.11 SHORT-CIRCUIT RATING</b>   | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>  | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.13 MECHANICAL FUNCTION</b>  | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |
| <b>10.2.2 CORROSION RESISTANCE</b>  | Meets the product standard's requirements.   |
| <b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>                         | Meets the product standard's requirements.   |
| <b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>       | Meets the product standard's requirements.   |
| <b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b> | Meets the product standard's requirements.   |
| <b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>                                 | Meets the product standard's requirements.   |
| <b>10.2.5 LIFTING</b>   | Does not apply, since the entire switchgear needs to be evaluated.   |
| <b>10.2.6 MECHANICAL IMPACT</b>   | Does not apply, since the entire switchgear needs to be evaluated.   |
| <b>10.2.7 INSCRIPTIONS</b>  | Meets the product standard's requirements.   |
| <b>10.3 DEGREE OF PROTECTION OF</b>   | Does not apply, since the entire switchgear needs to   |

## Resources

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|-----------------------------------|--|
|                                   | <a href="#">Product Range Catalog</a><br><a href="#">Switching and protecting motors</a>   |
| <b>CATALOGS</b>                   | <a href="#">SmartWire-DT Catalog</a><br><a href="#">eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf</a>   |
| <b>DECLARATIONS OF CONFORMITY</b> | <a href="#">DA-DC-00004792.pdf</a><br><a href="#">DA-DC-00004810.pdf</a><br><a href="#">eaton-contactors-mounting-dilm-dimensions-002.eps</a><br><a href="#">eaton-contactors-mounting-dilm-dimensions.eps</a><br><a href="#">eaton-contactors-dilm-dimensions-013.eps</a><br><a href="#">eaton-contactors-dilmp-dimensions-006.eps</a><br><a href="#">eaton-contactors-characteristic-curve-2110dia-3.eps</a><br><a href="#">eaton-contactors-dilm-3d-drawing-007.eps</a> |
| <b>DRAWINGS</b>                   |  |
| <b>ECAD MODEL</b>                 | <a href="#">ETN.276964.edz</a>   |
| <b>INSTALLATION INSTRUCTIONS</b>  | <a href="#">eaton-contactors-dila-dilm7-15-dilmp20-il03407013z.pdf</a>   |
| <b>INSTALLATION VIDEOS</b>        | <a href="#">WIN-WIN with push-in technology</a><br><a href="#">DA-CS-dil_m7_15</a>   |
| <b>MCAD MODEL</b>                 | <a href="#">DA-CD-dil_m7_15</a>  |
| <b>WIRING DIAGRAMS</b>            | <a href="#">eaton-contactors-contact-dilem-wiring-diagram.eps</a>  |

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| <b>ASSEMBLIES</b>   | be evaluated.   |
| <b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>                   | Meets the product standard's requirements.  |
| <b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>                   | Does not apply, since the entire switchgear needs to be evaluated.  |
| <b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>   | Does not apply, since the entire switchgear needs to be evaluated.  |
| <b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>        | Is the panel builder's responsibility.  |
| <b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>                 | Is the panel builder's responsibility.  |
| <b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>                 | Is the panel builder's responsibility.  |
| <b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>                         | Is the panel builder's responsibility.  |
| <b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b> | Is the panel builder's responsibility.  |
| <b>OPERATING FREQUENCY</b>                                      | 5000 mechanical Operations/h (AC operated)<br>5000 mechanical Operations/h (DC operated)  |
| <b>POLLUTION DEGREE</b>   | 3   |
| <b>CLIMATIC PROOFING</b>  | Damp heat, constant, to IEC 60068-2-3<br>Damp heat, cyclic, to IEC 60068-2-30   |
| <b>CONNECTION TO SMARTWIRE-DT</b>                               | No  |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>                   | 8000 V AC   |
| <b>UTILIZATION CATEGORY</b>                                     | AC-3: Normal AC induction motors: starting, switch off during running<br>AC-1: Non-inductive or slightly inductive loads, resistance furnaces |
| <b>CONNECTION</b>   | Screw terminals   |
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b>                      | 60 °C   |
| <b>AMBIENT OPERATING TEMPERATURE - MIN</b>                      | -25 °C  |

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| <b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX</b>                   | 40 °C  |
| <b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN</b>                   | 25 °C  |
| <b>AMBIENT STORAGE TEMPERATURE - MAX</b>                                | 80 °C  |
| <b>AMBIENT STORAGE TEMPERATURE - MIN</b>                                | 40 °C  |
| <b>CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)</b>              | 54 A   |
| <b>CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)</b>              | 18 A   |
| <b>CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)</b>          | 20.5 A   |
| <b>CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)</b> | 60 A   |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID</b>               | 3 W  |
| <b>HEAT DISSIPATION CAPACITY PDISS</b>                                  | 0 W  |
| <b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>                | 1 W  |
| <b>APPLICATION</b>  | Contactors for 4 pole electric consumers   |
| <b>PRODUCT CATEGORY</b>   | Contactors   |
| <b>PROTECTION</b>   | Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274) |
| <b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>                       | Screw connection   |
| <b>SCREWDRIVER SIZE</b>   | 2, Terminal screw, Pozidriv screwdriver<br>0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver  |
| <b>VOLTAGE TYPE</b>   | AC   |
| <b>DEGREE OF PROTECTION</b>   | IP20   |

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| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b> | 0  |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>   | 0  |
| <b>NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT</b>    | 0  |
| <b>NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT)</b>         | 4  |
| <b>RATED BREAKING CAPACITY AT 220/230 V</b>                    | 120 A  |
| <b>RATED BREAKING CAPACITY AT 380/400 V</b>                    | 120 A  |
| <b>RATED BREAKING CAPACITY AT 500 V</b>                        | 100 A  |
| <b>RATED BREAKING CAPACITY AT 660/690 V</b>                    | 70 A   |
| <b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX</b>    | 0 V  |
| <b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN</b>    | 0 V  |
| <b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX</b>    | 208 V  |
| <b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN</b>    | 208 V  |
| <b>DROP-OUT VOLTAGE</b>  | AC operated: 0.6 - 0.4 x UC, AC operated                                   |
| <b>OVERVOLTAGE CATEGORY</b>                                    | III  |
| <b>DUTY FACTOR</b>   | 100 %  |
| <b>INTERFERENCE IMMUNITY</b>                                   | According to EN 60947-1  |
| <b>LIFESPAN, MECHANICAL</b>                                    | 10,000,000 Operations (AC operated)<br>10,000,000 Operations (DC operated) |
| <b>PICK-UP VOLTAGE</b>   | 0.8 - 1.1 V AC/DC x Us<br>0.8 - 1.1 V AC x Uc                              |
| <b>POWER CONSUMPTION, PICK-UP, 50 HZ</b>                       | 24 VA, Dual-frequency coil in a cold state and 1.0 x Us                    |
| <b>SAFE ISOLATION</b>  | 400 V AC, Between coil and contacts, According to                          |

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|  | EN 61140<br>400 V AC, Between the contacts, According to EN 61140   |
| <b>POWER CONSUMPTION, PICK-UP, 60 HZ</b>               | 24 VA, Dual-frequency coil in a cold state and 1.0 x Us<br><br>19 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz   |
| <b>RESIDUAL CURRENT</b>                                | 1 mA (with actuation of A1 - A2 by the electronics with "0" signal)   |
| <b>SCREW SIZE</b>                                      | M3.5, Terminal screw  |
| <b>POWER CONSUMPTION, SEALING, 50 HZ</b>               | 1.4 W, Dual-frequency coil in a cold state and 1.0 x Us   |
| <b>POWER CONSUMPTION, SEALING, 60 HZ</b>               | 4 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz<br>1.4 W, Dual-frequency coil in a cold state and 1.0 x Us   |
| <b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>       | 1 x (0.75 - 1.5) mm <sup>2</sup><br>2 x (0.75 - 1.5) mm <sup>2</sup>  |
| <b>SHOCK RESISTANCE</b>                                | 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<br>10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms |
| <b>TERMINAL CAPACITY (SOLID)</b>                       | 2 x (0.75 - 2.5) mm <sup>2</sup><br>1 x (0.75 - 4) mm <sup>2</sup><br>1 x (0.75 - 2.5) mm <sup>2</sup>  |
| <b>TERMINAL CAPACITY (SOLID/STRANDED AWG)</b>          | 18 - 14   |
| <b>SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)</b> | 20 A, Maximum motor rating (UL/CSA)   |
| <b>TIGHTENING TORQUE</b>                               | 1.2 Nm, Screw terminals   |
| <b>TERMINAL CAPACITY (FLEXIBLE)</b>                    | 1 x (0.75 - 2.5) mm <sup>2</sup><br>2 x (0.75 - 2.5) mm <sup>2</sup>  |
| <b>RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX</b>   | 0 V   |
| <b>RATED CONTROL SUPPLY</b>                            | 0 V   |

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| <b>VOLTAGE (US) AT DC - MIN</b>                                      |       |
| <b>RATED INSULATION VOLTAGE (UI)</b>                                 | 690 V |
| <b>RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947)</b>   | 144 A |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V</b>   | 22 A  |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V</b>   | 12 A  |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V</b>   | 12 A  |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V</b>                 | 12 A  |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V</b>                 | 10 A  |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V</b>          | 7 A   |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V</b>                 | 10 A  |
| <b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V</b>                 | 22 A  |
| <b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V</b>                 | 6 A   |
| <b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V</b>                  | 22 A  |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 22 A  |
| <b>RATED OPERATIONAL POWER AT AC-1, 220/230 V, 50 HZ</b>             | 8 kW  |
| <b>RATED OPERATIONAL POWER AT AC-1, 240 V, 50 HZ</b>                 | 9 kW  |
| <b>RATED OPERATIONAL POWER AT AC-1, 380/400 V, 50 HZ</b>             | 14 kW |

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| <b>RATED OPERATIONAL<br/>POWER AT AC-1, 415 V, 50<br/>HZ</b>                        | 15 kW  |
| <b>RATED OPERATIONAL<br/>POWER AT AC-1, 440 V, 50<br/>HZ</b>                        | 16 kW  |
| <b>RATED OPERATIONAL<br/>POWER AT AC-1, 500 V, 50<br/>HZ</b>                        | 18 kW  |
| <b>RATED OPERATIONAL<br/>POWER AT AC-1, 690 V, 50<br/>HZ</b>                        | 24 kW  |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 240 V, 50<br/>HZ</b>                        | 4 kW   |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 380/400<br/>V, 50 HZ</b>                    | 5.5 kW |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 415 V, 50<br/>HZ</b>                        | 7 kW   |
| <b>RATED OPERATIONAL<br/>POWER AT AC-4, 380/400<br/>V, 50 HZ</b>                    | 4.5 kW |
| <b>RATED OPERATIONAL<br/>POWER (NEMA)</b>   | 0 kW   |
| <b>RATED OPERATIONAL<br/>VOLTAGE (UE) AT AC -<br/>MAX</b>                           | 690 V  |
| <b>RESISTANCE PER POLE</b>  | 2.5 mΩ |
| <b>STATIC HEAT<br/>DISSIPATION, NON-<br/>CURRENT-DEPENDENT<br/>PVS</b>              | 1.4 W  |
| <b>STRIPPING LENGTH<br/>(CONTROL CIRCUIT<br/>CABLE)</b>                             | 10 mm  |
| <b>STRIPPING LENGTH<br/>(MAIN CABLE)</b>  | 10 mm  |
| <b>SWITCHING TIME (AC<br/>OPERATED, MAKE<br/>CONTACTS, CLOSING<br/>DELAY) - MAX</b> | 21 ms  |
| <b>SWITCHING TIME (AC<br/>OPERATED, MAKE<br/>CONTACTS, CLOSING<br/>DELAY) - MIN</b> | 15 ms  |
| <b>SWITCHING TIME (AC<br/>OPERATED, MAKE<br/>CONTACTS, OPENING</b>                  | 18 ms  |



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| <b>DELAY) - MAX</b>   |  |
| <b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN</b> | 9 ms   |
| <b>SHORT-CIRCUIT CURRENT RATING (BASIC RATING)</b>                      | 45 A, max. Fuse, SCCR (UL/CSA)<br>60 A, max. CB, SCCR (UL/CSA)<br>5 kA, SCCR (UL/CSA)  |
| <b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)</b>               | 25 A, Class RK5, max. Fuse, SCCR (UL/CSA)<br>30 kA, Fuse, SCCR (UL/CSA)  |
| <b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)</b>               | 25 A, Class RK5, max. Fuse, SCCR (UL/CSA)<br>30 kA, Fuse, SCCR (UL/CSA)  |
| <b>SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V</b>   | 35 A gG/gL   |
| <b>SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V</b>   | 25 A gG/gL   |
| <b>SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V</b>   | 20 A gG/gL   |
| <b>SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V</b>   | 20 A gG/gL   |
| <b>SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS</b>     | 20 A (600V 60Hz 3phase, 347V 60Hz 1phase)<br>20 A (480V 60Hz 3phase, 277V 60Hz 1phase)   |
| <b>SPECIAL PURPOSE RATING OF ELEVATOR CONTROL</b>                       | 6.1 A, 600 V 60 Hz 3-ph, (UL/CSA)<br>5 HP, 600 V 60 Hz 3-ph, (UL/CSA)  |
| <b>SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)</b>       | 10 A, FLA 480 V 60 Hz 3phase; (CSA)<br>60 A, LRA 480 V 60 Hz 3phase; (CSA)<br>60 A, LRA 600 V 60 Hz 3phase; (CSA)<br>10 A, FLA 600 V 60 Hz 3phase; (CSA) |
| <b>SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING</b>                 | 20 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)<br>20 A, 600 V 60 Hz 3phase,  |

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|  | 347 V 60 Hz 1phase,<br>(UL/CSA)  |
| <b>SPECIAL PURPOSE<br/>RATING OF TUNGSTEN<br/>INCANDESCENT LAMPS</b>   | 14 A, 480 V 60 Hz 3phase,<br>277 V 60 Hz 1phase,<br>(UL/CSA)<br>14 A, 600 V 60 Hz 3phase,<br>347 V 60 Hz 1phase,<br>(UL/CSA) |
| <b>CONVENTIONAL<br/>THERMAL CURRENT ITH<br/>AT 40°C (3-POLE, OPEN)</b> | 22 A   |
| <b>CONVENTIONAL<br/>THERMAL CURRENT ITH<br/>AT 50°C (3-POLE, OPEN)</b> | 21 A   |
| <b>CONVENTIONAL<br/>THERMAL CURRENT ITH<br/>AT 60°C (3-POLE, OPEN)</b> | 20 A   |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 440 V, 50<br/>HZ</b>           | 7.5 kW   |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 500 V, 50<br/>HZ</b>           | 7 kW   |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 690 V, 50<br/>HZ</b>           | 6.5 kW   |
| <b>ACTUATING VOLTAGE</b>   | 208 V 60 Hz  |
| <b>ALTITUDE</b>  | Max. 2000 m  |
| <b>OPERATING VOLTAGE AT<br/>AC, 50 HZ - MIN</b>                        | 24 V   |
| <b>OPERATING VOLTAGE AT<br/>AC, 50 HZ - MAX</b>                        | 690 V  |
| <b>OPERATING VOLTAGE AT<br/>AC, 60 HZ - MIN</b>                        | 24 V   |
| <b>OPERATING VOLTAGE AT<br/>AC, 60 HZ - MAX</b>                        | 690 V  |

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| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
| DATE:           |



**Eaton Corporation plc**  
Eaton House  
30 Pembroke Road  
Dublin 4, Ireland  
Eaton.com

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