

Specifications



Photo is representative



Eaton 277838

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 22 kW, 230 V 50/60 Hz, AC operation, Screw terminals

General specifications

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| PRODUCT NAME | Eaton Moeller® series DILM contactor |
| CATALOG NUMBER | 277838 |
| MODEL CODE | DILM50(230V50/60HZ) |
| EAN | 4015082778385 |
| PRODUCT LENGTH/DEPTH | 132.1 mm |
| PRODUCT HEIGHT | 115 mm |
| PRODUCT WIDTH | 55 mm |
| PRODUCT WEIGHT | 0.872 kg |
| CERTIFICATIONS | CSA-C22.2 No. 60947-4-1-14 CSA UL 60947-4-1 CSA File No.: 012528 IEC/EN 60947 IEC/EN 60947-4-1 UL File No.: E29096 CSA Class No.: 2411-03, 3211-04 CE VDE 0660 UL Category Control No.: NLDX UL |
| CATALOG NOTES | Contacts according to EN 50012 |
| GLOBAL CATALOG | 277838 |

Product specifications

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| NUMBER OF POLES | Three-pole |
| 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. |
| 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 | Does not apply, since the entire switchgear needs to |

Resources

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| | eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf |
| CATALOGS | SmartWire-DT Catalog Product Range Catalog Switching and protecting motors |
| CHARACTERISTIC CURVE | eaton-contactors-switch-dilm-characteristic-curve.eps eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-switch-dilm-characteristic-curve-002.eps |
| DECLARATIONS OF CONFORMITY | DA-DC-00004817.pdf DA-DC-00004782.pdf |
| DRAWINGS | eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-dilm-dimensions-012.eps eaton-contactors-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-3d-drawing.eps eaton-general-ie-ready-dilm-contactor-standards.eps eaton-contactors-dilm-3d-drawing-011.eps |
| ECAD MODEL | ETN.277838.edz |
| INSTALLATION INSTRUCTIONS | IL03407033Z |
| INSTALLATION VIDEOS | WIN-WIN with push-in technology |
| MCAD MODEL | dil m40 65 22.dwg |

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| ASSEMBLIES | 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. |
| OPERATING FREQUENCY | 5000 mechanical Operations/h (AC operated) |
| POLLUTION DEGREE | 3 |
| CLIMATIC PROOFING | Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30 |
| CONNECTION TO SMARTWIRE-DT | No |
| RATED IMPULSE WITHSTAND VOLTAGE (UIMP) | 8000 V AC |
| UTILIZATION CATEGORY | AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-3: Normal AC induction motors: starting, switch off during running |
| CONNECTION | Screw terminals |
| FRAME SIZE | FS3 |
| AMBIENT OPERATING TEMPERATURE - MAX | 60 °C |
| AMBIENT OPERATING | -25 °C |

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| | DA-CD-dil_m40_72 dil_m40_65_22.stp DA-CS-dil_m40_72 DA-CS-dil_m40 |
| SYSTEM OVERVIEW | eaton-contactors-dilm-contactor-system-overview.eps |
| WIRING DIAGRAMS | eaton-contactors-contact-dilm-wiring-diagram-003.eps |

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| TEMPERATURE - MIN | |
| AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX | 40 °C |
| AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN | 25 °C |
| AMBIENT STORAGE TEMPERATURE - MAX | 80 °C |
| AMBIENT STORAGE TEMPERATURE - MIN | 40 °C |
| ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE | 3 HP |
| ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE | 15 HP |
| ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE | 10 HP |
| ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE | 20 HP |
| ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE | 40 HP |
| ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE | 50 HP |
| CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED) | 145 A |
| CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED) | 58 A |
| CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN) | 68 A |
| CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN) | 162 A |
| EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID | 9.9 W |
| HEAT DISSIPATION CAPACITY PDISS | 0 W |
| HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID | 3.3 W |

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| APPLICATION | Contactors for Motors |
| PRODUCT CATEGORY | Contactors |
| PROTECTION | Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274) |
| ARCING TIME | 10 ms |
| ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT | Screw connection |
| SCREWDRIVER SIZE | 2, Terminal screw, Pozidriv screwdriver 0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver |
| VOLTAGE TYPE | AC |
| DEGREE OF PROTECTION | IP00 |
| 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 |
| NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT) | 3 |
| RATED BREAKING CAPACITY AT 220/230 V | 500 A |
| RATED BREAKING CAPACITY AT 380/400 V | 500 A |
| RATED BREAKING CAPACITY AT 500 V | 500 A |
| RATED BREAKING CAPACITY AT 660/690 V | 320 A |
| RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX | 230 V |
| RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN | 230 V |
| RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX | 230 V |
| RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 | 230 V |

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| HZ - MIN | |
| DROP-OUT VOLTAGE | AC operated: 0.6 - 0.3 x UC, AC operated |
| OVERVOLTAGE CATEGORY | III |
| DUTY FACTOR | 100 % |
| EMITTED INTERFERENCE | According to EN 60947-1 |
| INTERFERENCE IMMUNITY | According to EN 60947-1 |
| LIFESPAN, MECHANICAL | 7,000,000 Operations (Coil 50/60 Hz) 10,000,000 Operations (AC operated) |
| PICK-UP VOLTAGE | 0.8 - 1.1 V AC x Uc |
| POWER CONSUMPTION, PICK-UP, 50 HZ | 168 VA, Dual-frequency coil in a cold state and 1.0 x Us 154 VA, Dual-frequency coil in a cold state and 1.0 x Us |
| SAFE ISOLATION | 440 V AC, Between the contacts, According to EN 61140 440 V AC, Between coil and contacts, According to EN 61140 |
| POWER CONSUMPTION, PICK-UP, 60 HZ | 168 VA, Dual-frequency coil in a cold state and 1.0 x Us 154 VA, Dual-frequency coil in a cold state and 1.0 x Us |
| SCREW SIZE | M6, Terminal screw, Main cables M3.5, Terminal screw, Control circuit cables |
| POWER CONSUMPTION, SEALING, 50 HZ | 4.1 W, Dual-frequency coil in a cold state and 1.0 x Us |
| POWER CONSUMPTION, SEALING, 60 HZ | 14 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz 4.1 W, Dual-frequency coil in a cold state and 1.0 x Us 22 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz |
| TERMINAL CAPACITY (STRANDED) | 1 x (16 - 50) mm ² , Main cables 2 x (16 - 35) mm ² , Main cables |

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| TERMINAL CAPACITY (COPPER BAND) | 2 x (6 x 9 x 0.8) mm (Number of segments x width x thickness), Main cables |
| TERMINAL CAPACITY (FLEXIBLE WITH FERRULE) | 2 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (0.75 - 25) mm ² , Main cables 1 x (0.75 - 2.5) mm ² , Control circuit cables 1 x (0.75 - 35) mm ² , Main cables |
| SHOCK RESISTANCE | 5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half- sinusoidal shock 10 ms 7 g, N/O auxiliary 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 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 g, N/C auxiliary 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 |
| TERMINAL CAPACITY (SOLID) | 2 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (0.75 - 16) mm ² , Main cables 1 x (0.75 - 16) mm ² , Main cables 1 x (0.75 - 4) mm ² , Control circuit cables |
| TERMINAL CAPACITY (SOLID/STRANDED AWG) | Single 14 - 1, double 14 - 2, Main cables 18 - 14, Control circuit cables |
| SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE) | 80 A, Maximum motor rating (UL/CSA) |

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| TIGHTENING TORQUE | 3.3 Nm, Screw terminals, Main cables 1.2 Nm, Screw terminals, Control circuit cables |
| RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX | 0 V |
| RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN | 0 V |
| RATED INSULATION VOLTAGE (UI) | 690 V |
| RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947) | 700 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V | 80 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V | 50 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V | 50 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V | 50 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V | 50 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V | 32 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V | 21 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V | 21 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V | 21 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V | 21 A |
| RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V | 17 A |
| RATED OPERATIONAL | 50 A |

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| CURRENT (IE) AT DC-1, 110 V | |
| RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V | 45 A |
| RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V | 60 A |
| RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN) | 50 A |
| RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ | 17 kW |
| RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ | 22 kW |
| RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ | 30 kW |
| RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ | 6 kW |
| RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ | 6.5 kW |
| RATED OPERATIONAL POWER AT AC-4, 380/400 V, 50 HZ | 10 kW |
| RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ | 11 kW |
| RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ | 12 kW |
| RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ | 13 kW |
| RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ | 14 kW |
| RATED OPERATIONAL POWER (NEMA) | 29.8 kW |
| RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX | 690 V |
| RESISTANCE PER POLE | 1.9 mΩ |
| STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT | 4.1 W |

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| PVS | |
| STRIPPING LENGTH (CONTROL CIRCUIT CABLE) | 10 mm |
| STRIPPING LENGTH (MAIN CABLE) | 14 mm |
| SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX | 18 ms |
| SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN | 12 ms |
| SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX | 13 ms |
| SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN | 8 ms |
| SHORT-CIRCUIT CURRENT RATING (BASIC RATING) | 250 A, max. CB, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA) 250 A, max. Fuse, SCCR (UL/CSA) |
| SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V) | 250/150 A, Class J, max. Fuse, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 100 A, max. CB, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA) |
| SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V) | 30 kA, CB, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA) |
| SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V | 160 A gG/gL |
| SUITABLE FOR | Also motors with efficiency class IE3 |
| SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V | 80 A gG/gL |

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| SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V | 80 A gG/gL |
| SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V | 63 A gG/gL |
| SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS | 79 A (600V 60Hz 3phase, 347V 60Hz 1phase) 79 A (480V 60Hz 3phase, 277V 60Hz 1phase) |
| SPECIAL PURPOSE RATING OF ELEVATOR CONTROL | 40 HP, 600 V 60 Hz 3-ph, (UL/CSA) 42 A, 240 V 60 Hz 3-ph, (UL/CSA) 40 A, 480 V 60 Hz 3-ph, (UL/CSA) 32.2 A, 200 V 60 Hz 3-ph, (UL/CSA) 41 A, 600 V 60 Hz 3-ph, (UL/CSA) 10 HP, 200 V 60 Hz 3-ph, (UL/CSA) 15 HP, 240 V 60 Hz 3-ph, (UL/CSA) 30 HP, 480 V 60 Hz 3-ph, (UL/CSA) |
| SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING | 79 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 79 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) |
| SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS | 74 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 74 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) |
| CONVENTIONAL THERMAL CURRENT ITH AT 40°C (3-POLE, OPEN) | 80 A |
| CONVENTIONAL THERMAL CURRENT ITH AT 50°C (3-POLE, OPEN) | 71 A |
| CONVENTIONAL THERMAL CURRENT ITH AT 60°C (3-POLE, OPEN) | 65 A |
| RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ | 32 kW |
| RATED OPERATIONAL | 36 kW |

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| POWER AT AC-3, 500 V, 50 HZ | |
| RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ | 30 kW |
| ACTUATING VOLTAGE | 230 V 50/60 Hz |
| ALTITUDE | Max. 2000 m |
| OPERATING VOLTAGE AT AC, 50 HZ - MIN | 230 V |
| OPERATING VOLTAGE AT AC, 50 HZ - MAX | 690 V |
| OPERATING VOLTAGE AT AC, 60 HZ - MIN | 230 V |
| OPERATING VOLTAGE AT AC, 60 HZ - MAX | 690 V |

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



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