

**Contactor, 3 pole, 380 V 400 V 22 kW, RDC 24: 24 - 27 V DC, DC operation,
Spring-loaded terminals**

Part no. DILMC50(RDC24)

278009

EL Number

4110346

(Norway)

| General specifications | |
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| Product name | Eaton Moeller® series DILM contactor |
| Part no. | DILMC50(RDC24) |
| EAN | 4015082780098 |
| Product Length/Depth | 132.1 millimetre |
| Product height | 115 millimetre |
| Product width | 55 millimetre |
| Product weight | 1.042 kilogram |
| Certifications | CSA-C22.2 No. 60947-4-1-14 CSA File No.: 012528 IEC/EN 60947 UL 60947-4-1 CSA UL UL Category Control No.: NLDX CE UL File No.: E29096 IEC/EN 60947-4-1 CSA Class No.: 2411-03, 3211-04 VDE 0660 |
| Product Tradename | DILM |
| Product Type | Contactor |
| Product Sub Type | None |
| Catalog Notes | Contacts according to EN 50012 |
| Features & Functions | |
| Fitted with: | Suppressor circuit in actuating electronics |
| General information | |
| Application | Contactors for Motors |
| Degree of protection | IP00 |
| Frame size | FS3 |
| Lifespan, mechanical | 10,000,000 Operations (DC operated) |
| Operating frequency | 5000 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 | 1.9 mΩ |
| Suitable for | Also motors with efficiency class IE3 |
| Utilization category | AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-3: Normal AC induction motors: starting, switch off during running AC-1: Non-inductive or slightly inductive loads, resistance furnaces |
| Voltage type | DC |
| Ambient conditions, mechanical | |
| Shock resistance | 7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, 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 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, 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 |

| Climatic environmental conditions | | |
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| 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 | | |
| Terminals | | Spring-cage terminals on auxiliary and control circuit terminals |
| 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) | | 1 x (0.75 - 35) mm ² , Main cables 1 x (0.75 - 1.5) mm ² , Control circuit cables, Spring-loaded terminals 2 x (0.75 - 1.5) mm ² , Control circuit cables, Spring-loaded terminals 2 x (0.75 - 25) mm ² , Main cables |
| Terminal capacity (flexible) | | 2 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals 1 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals |
| Terminal capacity (solid) | | 1 x (0.75 - 16) mm ² , Main cables 2 x (0.75 - 16) mm ² , Main cables 1 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals 2 x (0.75 - 2.5) mm ² , Control circuit cables, Spring-loaded terminals |
| Terminal capacity (solid/stranded AWG) | | 18 - 14, Control circuit cables, Spring-loaded terminals Single 14 - 1, double 14 - 2, Main cables |
| Terminal capacity (stranded) | | 2 x (16 - 35) mm ² , Main cables 1 x (16 - 50) mm ² , Main cables |
| Stripping length (main cable) | | 14 mm |
| Stripping length (control circuit cable) | | 10 mm |
| Screw size | | M6, Terminal screw, Main cables |
| Screwdriver size | | 0.8 x 5.5/1 x 6 mm, Terminal screw, Main cables, Standard screwdriver 2, Terminal screw, Main cables, Pozidriv screwdriver 3.5 mm, Spring-loaded terminals, Control circuit cables |
| Tightening torque | | 3.3 Nm, Screw terminals, Main cables |
| Electrical rating | | |
| 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 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, 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 current (Ie) at DC-1, 60 V | | 60 A |
| Rated operational current (Ie) at DC-1, 110 V | | 50 A |
| Rated operational current (Ie) at DC-1, 220 V | | 45 A |
| Rated insulation voltage (Ui) | | 690 V |
| Rated making capacity up to 690 V (cos phi to IEC/EN 60947) | | 700 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 |

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| Rated operational power at AC-3, 440 V, 50 Hz | | 32 kW |
| Rated operational power at AC-3, 500 V, 50 Hz | | 36 kW |
| Rated operational power at AC-3, 690 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, 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 voltage (Ue) at AC - max | | 690 V |
| Short-circuit rating | | |
| Short-circuit current rating (basic rating) | | 250 A, max. Fuse, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA) |
| Short-circuit current rating (high fault at 480 V) | | 30/100 kA, Fuse, SCCR (UL/CSA) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA) 100 A, max. 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 |
| Short-circuit protection rating (type 1 coordination) at 690 V | | 80 A gG/gL |
| 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 |
| Conventional thermal current Ith | | |
| 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 at 60°C (3-pole, open) | | 65 A |
| Conventional thermal current Ith of main contacts (1-pole, open) | | 162 A |
| Switching capacity | | |
| Switching capacity (main contacts, general use) | | 80 A, Maximum motor rating (UL/CSA) |
| Magnet system | | |
| Arcing time | | 10 ms |
| Drop-out voltage | | At least smoothed two-phase bridge rectifier or three-phase rectifier 0.6 - 0.15 x UC, DC operated |
| Duty factor | | 100 % |
| Pick-up voltage | | 0.7 - 1.2 V DC x Uc 24 - 27 V DC (RDC 24) |
| Power consumption (pick-up) at DC | | 24 W |
| Power consumption (sealing) at DC | | 1 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 | | 27 V |
| Switching time (DC operated, make contacts, closing delay) - max | | 54 ms |
| Switching time (DC operated, make contacts, opening delay) - max | | 24 ms |
| Motor rating | | |
| 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 |

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| Communication | | |
| Connection | | Spring-loaded terminals |
| Connection to SmartWire-DT | | No |
| Contacts | | |
| Number of auxiliary contacts (normally closed contacts) | | 0 |
| Number of auxiliary contacts (normally open contacts) | | 0 |
| Safety | | |
| Safe isolation | | 440 V AC, Between the contacts, According to EN 61140 440 V AC, Between coil and contacts, According to EN 61140 |
| Special purpose ratings | | |
| Special purpose rating of ballast electrical discharge lamps | | 79 A (480V 60Hz 3phase, 277V 60Hz 1phase) 79 A (600V 60Hz 3phase, 347V 60Hz 1phase) |
| Special purpose rating of elevator control | | 40 HP, 600 V 60 Hz 3-ph, (UL/CSA) 10 HP, 200 V 60 Hz 3-ph, (UL/CSA) 32.2 A, 200 V 60 Hz 3-ph, (UL/CSA) 40 A, 480 V 60 Hz 3-ph, (UL/CSA) 15 HP, 240 V 60 Hz 3-ph, (UL/CSA) 42 A, 240 V 60 Hz 3-ph, (UL/CSA) 30 HP, 480 V 60 Hz 3-ph, (UL/CSA) 41 A, 600 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, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 74 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) |
| Design verification | | |
| Equipment heat dissipation, current-dependent P _{vid} | | 9.9 W |
| Heat dissipation capacity P _{diss} | | 0 W |
| Heat dissipation per pole, current-dependent P _{vid} | | 3.3 W |
| Rated operational current for specified heat dissipation (I _n) | | 50 A |
| Static heat dissipation, non-current-dependent P _{vs} | | 1 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 [AAB71802]) | | |
| Rated control supply voltage AC 50 Hz | V | 0 - 0 |
| Rated control supply voltage AC 60 Hz | V | 0 - 0 |

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| Rated control supply voltage DC | V | 24 - 27 |
| 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 | | Spring clamp connection |
| Operating voltage AC 50 Hz | V | 230 - 690 |
| Operating voltage AC 60 Hz | V | 230 - 690 |
| Rated operation current I _e at AC-1, 400 V | A | 80 |
| Rated operation current I _e at AC-3, 400 V | A | 50 |
| Rated operation power at AC-3, 400 V | kW | 22 |
| Rated operation current I _e at AC-4, 400 V | A | 21 |
| Rated operation power at AC-4, 400 V | kW | 10 |
| Rated operation power NEMA | kW | 29.8 |
| Number of auxiliary contacts as normally open contact | | 0 |
| Number of auxiliary contacts as normally closed contact | | 0 |
| Modular version | | No |
| Width | mm | 55 |
| Height | mm | 115 |
| Depth | mm | 132.1 |