

Contactor, 3 pole, 380 V 400 V 18.5 kW, RDC 24: 24 - 27 V DC, DC operation,  
Spring-loaded terminals



Powering Business Worldwide™

Part no. **DILMC40(RDC24)**

**277979**

EL Number

**4110344**

(Norway)

| General specifications                 |  |
|--|--|
| Product name                           | Eaton Moeller® series DILM contactor   |
| Part no.                               | DILMC40(RDC24)   |
| EAN                                    | 4015082779795  |
| Product Length/Depth                   | 132.1 millimetre   |
| Product height                         | 115 millimetre   |
| Product width                          | 55 millimetre  |
| Product weight                         | 1.042 kilogram   |
| Certifications                         | IEC/EN 60947<br>UL<br>IEC/EN 60947-4-1<br>UL File No.: E29096<br>UL Category Control No.: NLDX<br>CSA File No.: 012528<br>CE<br>CSA-C22.2 No. 60947-4-1-14<br>CSA<br>UL 60947-4-1<br>VDE 0660<br>CSA Class No.: 2411-03, 3211-04   |
| 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<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   |
| Ambient conditions, mechanical         |  |
| Shock resistance                       | 5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms<br>10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, 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>7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, 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<br>5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms |

| <b>Climatic environmental conditions</b>                    |  |
|---|--|
| 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, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78   |
| <b>Electro magnetic compatibility</b>                       |  |
| Emitted interference  | According to EN 60947-1  |
| Interference immunity                                       | According to EN 60947-1  |
| <b>Terminal capacities</b>                                  |  |
| 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)                   | 2 x (0.75 - 25) mm <sup>2</sup> , Main cables<br>2 x (0.75 - 1.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals<br>1 x (0.75 - 35) mm <sup>2</sup> , Main cables<br>1 x (0.75 - 1.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals |
| Terminal capacity (flexible)                                | 1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals<br>2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals   |
| Terminal capacity (solid)                                   | 2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals<br>2 x (0.75 - 16) mm <sup>2</sup> , Main cables<br>1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals<br>1 x (0.75 - 16) mm <sup>2</sup> , Main cables |
| Terminal capacity (solid/stranded AWG)                      | Single 14 - 1, double 14 - 2, Main cables<br>18 - 14, Control circuit cables, Spring-loaded terminals  |
| Terminal capacity (stranded)                                | 1 x (16 - 50) mm <sup>2</sup> , Main cables<br>2 x (16 - 35) mm <sup>2</sup> , Main cables   |
| Stripping length (main cable)                               | 14 mm  |
| Stripping length (control circuit cable)                    | 10 mm  |
| Screw size  | M6, Terminal screw, Main cables  |
| Screwdriver size  | 2, Terminal screw, Main cables, Pozidriv screwdriver<br>3.5 mm, Spring-loaded terminals, Control circuit cables<br>0.8 x 5.5/1 x 6 mm, Terminal screw, Main cables, Standard screwdriver   |
| Tightening torque   | 3.3 Nm, Screw terminals, Main cables   |
| <b>Electrical rating</b>                                    |  |
| Rated breaking capacity at 220/230 V                        | 400 A  |
| Rated breaking capacity at 380/400 V                        | 400 A  |
| Rated breaking capacity at 500 V                            | 400 A  |
| Rated breaking capacity at 660/690 V                        | 250 A  |
| Rated operational current (Ie) at AC-1, 380 V, 400 V, 415 V | 60 A   |
| Rated operational current (Ie) at AC-3, 220 V, 230 V, 240 V | 40 A   |
| Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V | 40 A   |
| Rated operational current (Ie) at AC-3, 440 V               | 40 A   |
| Rated operational current (Ie) at AC-3, 500 V               | 40 A   |
| Rated operational current (Ie) at AC-3, 660 V, 690 V        | 25 A   |
| Rated operational current (Ie) at AC-4, 220 V, 230 V, 240 V | 18 A   |
| Rated operational current (Ie) at AC-4, 440 V               | 18 A   |
| Rated operational current (Ie) at AC-4, 500 V               | 18 A   |
| Rated operational current (Ie) at AC-4, 660 V, 690 V        | 14 A   |
| Rated operational current (Ie) at DC-1, 60 V                | 50 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) | 560 A  |
| Rated operational power at AC-3, 240 V, 50 Hz               | 13.5 kW  |
| Rated operational power at AC-3, 380/400 V, 50 Hz           | 18.5 kW  |
| Rated operational power at AC-3, 415 V, 50 Hz               | 24 kW  |

|  |  |   |
|--|--|---|
| Rated operational power at AC-3, 440 V, 50 Hz                    |  | 25 kW   |
| Rated operational power at AC-3, 500 V, 50 Hz                    |  | 28 kW   |
| Rated operational power at AC-3, 690 V, 50 Hz                    |  | 23 kW   |
| Rated operational power at AC-4, 220/230 V, 50 Hz                |  | 5 kW  |
| Rated operational power at AC-4, 240 V, 50 Hz                    |  | 5.5 kW  |
| Rated operational power at AC-4, 415 V, 50 Hz                    |  | 9.5 kW  |
| Rated operational power at AC-4, 440 V, 50 Hz                    |  | 10 kW   |
| Rated operational power at AC-4, 500 V, 50 Hz                    |  | 11 kW   |
| Rated operational power at AC-4, 660/690 V, 50 Hz                |  | 12 kW   |
| Rated operational voltage (Ue) at AC - max                       |  | 690 V   |
| <b>Short-circuit rating</b>                                      |  |   |
| Short-circuit current rating (basic rating)                      |  | 250 A, max. Fuse, SCCR (UL/CSA)<br>10 kA, SCCR (UL/CSA)<br>250 A, max. CB, SCCR (UL/CSA)  |
| Short-circuit current rating (high fault at 480 V)               |  | 100 A, max. CB, SCCR (UL/CSA)<br>65 kA, CB, SCCR (UL/CSA)<br>30/100 kA, Fuse, SCCR (UL/CSA)<br>250/150 A, Class J, max. Fuse, SCCR (UL/CSA) |
| Short-circuit current rating (high fault at 600 V)               |  | 30/100 kA, Fuse, SCCR (UL/CSA)<br>250/150 A, Class J, max. Fuse, SCCR (UL/CSA)<br>30 kA, CB, SCCR (UL/CSA)<br>250 A, max. CB, SCCR (UL/CSA) |
| Short-circuit protection rating (type 1 coordination) at 400 V   |  | 125 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   |  | 63 A gG/gL  |
| Short-circuit protection rating (type 2 coordination) at 690 V   |  | 50 A gG/gL  |
| <b>Conventional thermal current Ith</b>                          |  |   |
| Conventional thermal current Ith (1-pole, enclosed)              |  | 112 A   |
| Conventional thermal current Ith (3-pole, enclosed)              |  | 45 A  |
| Conventional thermal current Ith at 55°C (3-pole, open)          |  | 55 A  |
| Conventional thermal current Ith at 60°C (3-pole, open)          |  | 50 A  |
| Conventional thermal current Ith of main contacts (1-pole, open) |  | 125 A   |
| <b>Switching capacity</b>  |  |   |
| Switching capacity (main contacts, general use)                  |  | 63 A, Maximum motor rating (UL/CSA)   |
| <b>Magnet system</b>   |  |   |
| Arcing time  |  | 10 ms   |
| Drop-out voltage   |  | 0.6 - 0.15 x UC, DC operated<br>At least smoothed two-phase bridge rectifier or three-phase rectifier                                       |
| Duty factor  |  | 100 %   |
| Pick-up voltage  |  | 0.7 - 1.2 V DC x Uc<br>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   |
| <b>Motor rating</b>  |  |   |
| Assigned motor power at 115/120 V, 60 Hz, 1-phase                |  | 3 HP  |
| Assigned motor power at 200/208 V, 60 Hz, 3-phase                |  | 10 HP   |
| Assigned motor power at 230/240 V, 60 Hz, 1-phase                |  | 7.5 HP  |
| Assigned motor power at 230/240 V, 60 Hz, 3-phase                |  | 15 HP   |
| Assigned motor power at 460/480 V, 60 Hz, 3-phase                |  | 30 HP   |
| Assigned motor power at 575/600 V, 60 Hz, 3-phase                |  | 40 HP   |

|  |  |   |
|--|--|---|
| <b>Communication</b>   |  |   |
| Connection   |  | Spring-loaded terminals   |
| Connection to SmartWire-DT   |  | No  |
| <b>Contacts</b>  |  |   |
| Number of auxiliary contacts (normally closed contacts)                          |  | 0   |
| Number of auxiliary contacts (normally open contacts)                            |  | 0   |
| <b>Safety</b>  |  |   |
| Safe isolation   |  | 440 V AC, Between coil and contacts, According to EN 61140<br>440 V AC, Between the contacts, According to EN 61140   |
| <b>Special purpose ratings</b>   |  |   |
| Special purpose rating of ballast electrical discharge lamps                     |  | 79 A (600V 60Hz 3phase, 347V 60Hz 1phase)<br>79 A (480V 60Hz 3phase, 277V 60Hz 1phase)  |
| Special purpose rating of elevator control                                       |  | 25 HP, 480 V 60 Hz 3-ph, (UL/CSA)<br>32 A, 600 V 60 Hz 3-ph, (UL/CSA)<br>30 HP, 600 V 60 Hz 3-ph, (UL/CSA)<br>10 HP, 240 V 60 Hz 3-ph, (UL/CSA)<br>34 A, 480 V 60 Hz 3-ph, (UL/CSA)<br>7.5 HP, 200 V 60 Hz 3-ph, (UL/CSA)<br>28 A, 240 V 60 Hz 3-ph, (UL/CSA)<br>25.3 A, 200 V 60 Hz 3-ph, (UL/CSA) |
| Special purpose rating of resistance air heating                                 |  | 79 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)<br>79 A, 480 V 60 Hz 3phase, 277 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)<br>74 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)  |
| <b>Design verification</b>   |  |   |
| Equipment heat dissipation, current-dependent P <sub>vid</sub>                   |  | 6.6 W   |
| Heat dissipation capacity P <sub>diss</sub>                                      |  | 0 W   |
| Heat dissipation per pole, current-dependent P <sub>vid</sub>                    |  | 2.2 W   |
| Rated operational current for specified heat dissipation (I <sub>n</sub> )       |  | 40 A  |
| Static heat dissipation, non-current-dependent P <sub>vs</sub>                   |  | 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

|  |   |       |
|--|---|-------|
| 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 |

|   |    |                         |
|---|----|-------------------------|
| 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 <sub>e</sub> at AC-1, 400 V   | A  | 60                      |
| Rated operation current I <sub>e</sub> at AC-3, 400 V   | A  | 40                      |
| Rated operation power at AC-3, 400 V                    | kW | 18.5                    |
| Rated operation current I <sub>e</sub> at AC-4, 400 V   | A  | 18                      |
| Rated operation power at AC-4, 400 V                    | kW | 9                       |
| Rated operation power NEMA                              | kW | 22                      |
| 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                   |