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## Eaton 104440

Eaton Moeller® series DILMF Contactors for Semiconductor Industries acc. to SEMI F47, 380 V 400 V: 18 A, 1 NC, RAC 120: 100 - 120 V 50/60 Hz, Screw terminals

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| <b>PRODUCT NAME</b>         | Eaton Moeller® series DILMF contactor for semiconductor industries                                                                                                                                   |
| <b>CATALOG NUMBER</b>       | 104440                                                                                                                                                                                               |
| <b>PRODUCT LENGTH/DEPTH</b> | 97 mm                                                                                                                                                                                                |
| <b>PRODUCT HEIGHT</b>       | 85 mm                                                                                                                                                                                                |
| <b>PRODUCT WIDTH</b>        | 45 mm                                                                                                                                                                                                |
| <b>PRODUCT WEIGHT</b>       | 0.531 kg                                                                                                                                                                                             |
| <b>CERTIFICATIONS</b>       | CSA File No.: 012528<br>CSA-C22.2 No. 60947-4-1-14<br>CSA Class No.: 2411-03, 3211-04<br>UL<br>CE<br>UL File No.: E29096<br>UL 60947-4-1<br>UL Category Control No.: NLDX<br>IEC/EN 60947-4-1<br>CSA |
| <b>CATALOG NOTES</b>        | Also tested according to AC-3e.                                                                                                                                                                      |

**ELECTRICAL  
CONNECTION TYPE FOR  
AUXILIARY- AND  
CONTROL-CURRENT  
CIRCUIT**

Screw connection

**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.

**DECLARATIONS OF  
CONFORMITY**

[eaton-contactor-for-semiconductor-industries-declaration-of-conformity-uk251251en.pdf](#)

**SYSTEM OVERVIEW**

[eaton-contactors-mounting-dilmf-explosion-drawing.eps](#)

[eaton-contactors-circuit-breaker-dilmf-explosion-drawing.eps](#)

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[IL03407014Z2021\\_09.pdf](#)

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[eaton-contactors-dimensions-210t014.eps](#)

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| <b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>                  | Does not apply, since the entire switchgear needs to 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>FITTED WITH:</b>                                             | Built-in suppressor circuit<br>Mirror contact                                                                                                                                                                             |
| <b>UTILIZATION CATEGORY</b>                                     | AC-1: Non-inductive or slightly inductive loads, resistance furnaces<br>AC-4: Normal AC induction motors: starting, plugging, reversing, inching<br>AC-3: Normal AC induction motors: starting, switch off during running |
| <b>CONNECTION</b>                                               | Screw terminals                                                                                                                                                                                                           |
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b>                      | 60 °C                                                                                                                                                                                                                     |
| <b>AMBIENT OPERATING TEMPERATURE - MIN</b>                      | -25 °C                                                                                                                                                                                                                    |
| <b>ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE</b>        | 2 HP                                                                                                                                                                                                                      |
| <b>ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE</b>        | 5 HP                                                                                                                                                                                                                      |
| <b>ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE</b>        | 3 HP                                                                                                                                                                                                                      |
| <b>ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE</b>        | 5 HP                                                                                                                                                                                                                      |

|                                                                                      |                                                                |
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| <b>ASSIGNED MOTOR<br/>POWER AT 460/480 V, 60<br/>HZ, 3-PHASE</b>                     | 10 HP                                                          |
| <b>ASSIGNED MOTOR<br/>POWER AT 575/600 V, 60<br/>HZ, 3-PHASE</b>                     | 15 HP                                                          |
| <b>CONVENTIONAL<br/>THERMAL CURRENT ITH<br/>(1-POLE, ENCLOSED)</b>                   | 80 A                                                           |
| <b>CONVENTIONAL<br/>THERMAL CURRENT ITH<br/>(3-POLE, ENCLOSED)</b>                   | 32 A                                                           |
| <b>CONVENTIONAL<br/>THERMAL CURRENT ITH<br/>OF MAIN CONTACTS (1-<br/>POLE, OPEN)</b> | 88 A                                                           |
| <b>EQUIPMENT HEAT<br/>DISSIPATION, CURRENT-<br/>DEPENDENT PVID</b>                   | 2.1 W                                                          |
| <b>HEAT DISSIPATION<br/>CAPACITY PDISS</b>                                           | 0 W                                                            |
| <b>HEAT DISSIPATION PER<br/>POLE, CURRENT-<br/>DEPENDENT PVID</b>                    | 0.7 W                                                          |
| <b>APPLICATION</b>                                                                   | Contactors for<br>Semiconductor Industries<br>acc. to SEMI F47 |
| <b>PRODUCT CATEGORY</b>                                                              | Contactors                                                     |
| <b>ELECTRICAL<br/>CONNECTION TYPE OF<br/>MAIN CIRCUIT</b>                            | Screw connection                                               |
| <b>VOLTAGE TYPE</b>                                                                  | AC                                                             |
| <b>NUMBER OF AUXILIARY<br/>CONTACTS (NORMALLY<br/>CLOSED CONTACTS)</b>               | 1                                                              |
| <b>NUMBER OF AUXILIARY<br/>CONTACTS (NORMALLY<br/>OPEN CONTACTS)</b>                 | 0                                                              |
| <b>NUMBER OF CONTACTS<br/>(NORMALLY CLOSED<br/>CONTACTS)</b>                         | 1                                                              |
| <b>NUMBER OF CONTACTS<br/>(NORMALLY CLOSED) AS<br/>MAIN CONTACT</b>                  | 0                                                              |
| <b>NUMBER OF MAIN<br/>CONTACTS (NORMALLY<br/>OPEN CONTACT)</b>                       | 3                                                              |
| <b>RATED CONTROL SUPPLY<br/>VOLTAGE (US) AT AC, 50<br/>HZ - MAX</b>                  | 120 V                                                          |
| <b>RATED CONTROL SUPPLY<br/>VOLTAGE (US) AT AC, 50</b>                               | 100 V                                                          |

|                                                                    |                                                                                                                                         |
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| <b>HZ - MIN</b>                                                    |                                                                                                                                         |
| <b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX</b>        | 120 V                                                                                                                                   |
| <b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN</b>        | 100 V                                                                                                                                   |
| <b>DROP-OUT VOLTAGE</b>                                            | AC operated: 0.5 - 0.2 x Uc, AC operated                                                                                                |
| <b>DUTY FACTOR</b>                                                 | 100 %                                                                                                                                   |
| <b>EMITTED INTERFERENCE</b>                                        | According to EN 60947-1                                                                                                                 |
| <b>INTERFERENCE IMMUNITY</b>                                       | According to EN 60947-1                                                                                                                 |
| <b>PICK-UP VOLTAGE</b>                                             | 0.8 - 1.15 V AC x Uc                                                                                                                    |
| <b>POWER CONSUMPTION, PICK-UP, 50 HZ</b>                           | 14 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz                                                                       |
| <b>POWER CONSUMPTION, SEALING, 50 HZ</b>                           | 0.7 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz<br>0.8 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz |
| <b>SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)</b>        | 10 A, 600 V AC, (UL/CSA)<br>1 A, 250 V DC, (UL/CSA)                                                                                     |
| <b>SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)</b>         | A600, AC operated (UL/CSA)<br>P300, DC operated (UL/CSA)                                                                                |
| <b>SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)</b>             | 40 A, Maximum motor rating (UL/CSA)                                                                                                     |
| <b>RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX</b>               | 0 V                                                                                                                                     |
| <b>RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN</b>               | 0 V                                                                                                                                     |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V</b> | 35 A                                                                                                                                    |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V</b> | 18 A                                                                                                                                    |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V</b> | 18 A                                                                                                                                    |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V</b>               | 18 A                                                                                                                                    |
| <b>RATED OPERATIONAL</b>                                           | 18 A                                                                                                                                    |

|                                                                      |        |
|----------------------------------------------------------------------|--------|
| <b>CURRENT (IE) AT AC-3, 500 V</b>                                   |        |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V</b>          | 12 A   |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V</b>   | 10 A   |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V</b>                 | 10 A   |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V</b>                 | 10 A   |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V</b>                 | 10 A   |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V</b>          | 8 A    |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 18 A   |
| <b>RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ</b>                 | 5.5 kW |
| <b>RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ</b>             | 7.5 kW |
| <b>RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ</b>                 | 10 kW  |
| <b>RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ</b>             | 2.5 kW |
| <b>RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ</b>                 | 3 kW   |
| <b>RATED OPERATIONAL POWER AT AC-4, 380/400 V, 50 HZ</b>             | 4.5 kW |
| <b>RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ</b>                 | 5 kW   |
| <b>RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ</b>                 | 5.5 kW |
| <b>RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ</b>                 | 6 kW   |
| <b>RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ</b>             | 6.5 kW |

|                                                                         |                                                                                                                                                 |
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| <b>RATED OPERATIONAL POWER (NEMA)</b>                                   | 7.4 kW                                                                                                                                          |
| <b>RESISTANCE PER POLE</b>                                              | 2.65 mΩ                                                                                                                                         |
| <b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS</b>               | 0.8 W                                                                                                                                           |
| <b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX</b> | 40 ms                                                                                                                                           |
| <b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX</b> | 45 ms                                                                                                                                           |
| <b>SHORT-CIRCUIT CURRENT RATING (BASIC RATING)</b>                      | 5 kA, SCCR (UL/CSA)<br>125 A, max. Fuse, SCCR (UL/CSA)<br>125 A, max. CB, SCCR (UL/CSA)                                                         |
| <b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)</b>               | 10/65 kA, CB, SCCR (UL/CSA)<br>50/32 A, max. CB, SCCR (UL/CSA)<br>125/70 A, Class J, max. Fuse, SCCR (UL/CSA)<br>10/100 kA, Fuse, SCCR (UL/CSA) |
| <b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)</b>               | 10/22 kA, CB, SCCR (UL/CSA)<br>10/100 kA, Fuse, SCCR (UL/CSA)<br>125/70 A, Class J, max. Fuse, SCCR (UL/CSA)<br>50/32 A, max. CB, SCCR (UL/CSA) |
| <b>SUITABLE FOR</b>                                                     | SEMI F47, Magnet systems<br><br>Also motors with efficiency class IE3                                                                           |
| <b>SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS</b>     | 40 A (480V 60Hz 3phase, 277V 60Hz 1phase)<br>40 A (600V 60Hz 3phase, 347V 60Hz 1phase)                                                          |
| <b>SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING</b>                | 108 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)<br>18 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)   |
| <b>SPECIAL PURPOSE RATING OF ELEVATOR CONTROL</b>                       | 9.6 A, 240 V 60 Hz 3-ph, (UL/CSA)<br>3 HP, 240 V 60 Hz 3-ph, (UL/CSA)<br>7.5 HP, 480 V 60 Hz 3-ph,                                              |

|                                                                               |                                                                                                                                                                                                              |
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|                                                                               | (UL/CSA)<br>11 A, 600 V 60 Hz 3-ph,<br>(UL/CSA)<br>10 HP, 600 V 60 Hz 3-ph,<br>(UL/CSA)<br>11 A, 200 V 60 Hz 3-ph,<br>(UL/CSA)<br>11 A, 480 V 60 Hz 3-ph,<br>(UL/CSA)<br>3 HP, 200 V 60 Hz 3-ph,<br>(UL/CSA) |
| <b>SPECIAL PURPOSE<br/>RATING OF<br/>REFRIGERATION<br/>CONTROL (CSA ONLY)</b> | 180 A, LRA 600 V 60 Hz<br>3phase; (CSA)<br>30 A, FLA 600 V 60 Hz<br>3phase; (CSA)<br>40 A, FLA 480 V 60 Hz<br>3phase; (CSA)<br>240 A, LRA 480 V 60 Hz<br>3phase; (CSA)                                       |
| <b>SPECIAL PURPOSE<br/>RATING OF RESISTANCE<br/>AIR HEATING</b>               | 40 A, 480 V 60 Hz 3phase,<br>277 V 60 Hz 1phase,<br>(UL/CSA)<br>40 A, 600 V 60 Hz 3phase,<br>347 V 60 Hz 1phase,<br>(UL/CSA)                                                                                 |
| <b>SPECIAL PURPOSE<br/>RATING OF TUNGSTEN<br/>INCANDESCENT LAMPS</b>          | 40 A, 600 V 60 Hz 3phase,<br>347 V 60 Hz 1phase,<br>(UL/CSA)<br>40 A, 480 V 60 Hz 3phase,<br>277 V 60 Hz 1phase,<br>(UL/CSA)                                                                                 |
| <b>CONVENTIONAL<br/>THERMAL CURRENT ITH<br/>AT 40°C (3-POLE, OPEN)</b>        | 40 A                                                                                                                                                                                                         |
| <b>CONVENTIONAL<br/>THERMAL CURRENT ITH<br/>AT 50°C (3-POLE, OPEN)</b>        | 38 A                                                                                                                                                                                                         |
| <b>CONVENTIONAL<br/>THERMAL CURRENT ITH<br/>AT 60°C (3-POLE, OPEN)</b>        | 35 A                                                                                                                                                                                                         |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 440 V, 50<br/>HZ</b>                  | 10.5 kW                                                                                                                                                                                                      |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 500 V, 50<br/>HZ</b>                  | 12 kW                                                                                                                                                                                                        |
| <b>RATED OPERATIONAL<br/>POWER AT AC-3, 690 V, 50<br/>HZ</b>                  | 11 kW                                                                                                                                                                                                        |
| <b>ACTUATING VOLTAGE</b>                                                      | RAC 120: 100 - 120 V 50/60<br>Hz                                                                                                                                                                             |
| <b>ALTITUDE</b>                                                               | Max. 2000 m                                                                                                                                                                                                  |
| <b>OPERATING VOLTAGE AT<br/>AC, 50 HZ - MIN</b>                               | 230 V                                                                                                                                                                                                        |



|                                         |       |
|-----------------------------------------|-------|
| OPERATING VOLTAGE AT<br>AC, 50 HZ - MAX | 690 V |
| OPERATING VOLTAGE AT<br>AC, 60 HZ - MIN | 230 V |
| OPERATING VOLTAGE AT<br>AC, 60 HZ - MAX | 690 V |

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



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