

# Specifications



Photo is representative



## Eaton 104416

Eaton Moeller® series DILMF Contactors for Semiconductor Industries acc. to SEMI F47, 380 V 400 V: 7 A, 1 NC, RAC 120: 100 - 120 V 50/60 Hz, Screw terminals

### General specifications

#### PRODUCT NAME

Eaton Moeller® series  
DILMF contactor for  
semiconductor industries

#### CATALOG NUMBER

104416

#### MODEL CODE

DILMF8-01(RAC120)

#### EAN

4015081042333

#### PRODUCT LENGTH/DEPTH

97 mm

#### PRODUCT HEIGHT

85 mm

#### PRODUCT WIDTH

45 mm

#### PRODUCT WEIGHT

0.531 kg

#### CERTIFICATIONS

UL File No.: E29096  
UL  
CE  
UL 60947-4-1  
UL Category Control No.:  
NLDX  
CSA Class No.: 2411-03,  
3211-04  
IEC/EN 60947-4-1  
CSA  
CSA-C22.2 No. 60947-4-1-  
14  
CSA File No.: 012528

#### CATALOG NOTES

Also tested according to  
AC-3e.

#### GLOBAL CATALOG

104416

## Product specifications

### 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.

## Resources

### CATALOGS

[eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf](#)

[Product Range Catalog Switching and protecting motors](#)

[SmartWire-DT Catalog](#)

### CHARACTERISTIC CURVE

[eaton-contactors-short-time-loading-dilm-characteristic-curve.eps](#)

[eaton-contactors-component-dilm-characteristic-curve-003.eps](#)

### DECLARATIONS OF CONFORMITY

[DA-DC-00004816.pdf](#)

[DA-DC-00004783.pdf](#)

### DRAWINGS

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

[eaton-contactors-contact-dimensions-210x202.eps](#)

[eaton-contactors-mounting-dilm-dimensions.eps](#)

[eaton-general-ie-ready-dilm-contactor-standards.eps](#)

[eaton-contactors-dilm-3d-drawing-009.eps](#)

### ECAD MODEL

[ETN.104416.edz](#)

### INSTALLATION INSTRUCTIONS

[IL03407014Z2021\\_09.pdf](#)

### INSTALLATION VIDEOS

[WIN-WIN with push-in technology](#)

### MCAD MODEL

[DA-CD-dil\\_m17\\_38](#)

[DA-CS-dil\\_m17\\_38](#)

### SYSTEM OVERVIEW

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

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

### WIRING DIAGRAMS

[2100SWI-117](#)

<b>10.2.7 INSCRIPTIONS</b>	Meets the product standard's requirements.
<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>	Mirror contact Built-in suppressor circuit
<b>POLLUTION DEGREE</b>	3
<b>UTILIZATION CATEGORY</b>	AC-3: Normal AC induction motors: starting, switch off during running AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-4: Normal AC induction motors: starting, plugging, reversing, inching
<b>CONNECTION</b>	Screw terminals
<b>AMBIENT OPERATING TEMPERATURE - MAX</b>	60 °C
<b>AMBIENT OPERATING TEMPERATURE - MIN</b>	-25 °C
<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>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
<b>ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE</b>	10 HP
<b>ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE</b>	15 HP
<b>CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)</b>	45 A
<b>CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)</b>	18 A
<b>CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)</b>	50 A
<b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID</b>	0.3 W
<b>HEAT DISSIPATION CAPACITY PDISS</b>	0 W
<b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>	0.1 W
<b>APPLICATION</b>	Contactors for Semiconductor Industries acc. to SEMI F47
<b>PRODUCT CATEGORY</b>	Contactors
<b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>	Screw connection
<b>VOLTAGE TYPE</b>	AC
<b>NUMBER OF AUXILIARY</b>	1

<b>CONTACTS (NORMALLY CLOSED CONTACTS)</b>	
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>	0
<b>NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)</b>	1
<b>NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT</b>	0
<b>NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT)</b>	3
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX</b>	120 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN</b>	100 V
<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>OVERVOLTAGE CATEGORY</b>	III
<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>	0.8 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz 0.7 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
<b>SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)</b>	1 A, 250 V DC, (UL/CSA) 10 A, 600 V AC, (UL/CSA)
<b>SWITCHING CAPACITY (AUXILIARY CONTACTS,</b>	P300, DC operated (UL/CSA)

<b>PILOT DUTY)</b>	A600, AC 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 INSULATION VOLTAGE (UI)</b>	690 V
<b>RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V</b>	20 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V</b>	7 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V</b>	7 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V</b>	7 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V</b>	5 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V</b>	4 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V</b>	5 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V</b>	5 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V</b>	5 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V</b>	4.5 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V</b>	4 A
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	7 A
<b>RATED OPERATIONAL</b>	2.2 kW

<b>POWER AT AC-3, 240 V, 50 HZ</b>	
<b>RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ</b>	3 kW
<b>RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ</b>	4 kW
<b>RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ</b>	1 kW
<b>RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ</b>	1.5 kW
<b>RATED OPERATIONAL POWER AT AC-4, 380/400 V, 50 HZ</b>	2.2 kW
<b>RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ</b>	2.3 kW
<b>RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ</b>	2.4 kW
<b>RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ</b>	2.5 kW
<b>RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ</b>	2.9 kW
<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) 125 A, max. Fuse, SCCR (UL/CSA) 125 A, max. CB, SCCR (UL/CSA)
<b>SHORT-CIRCUIT CURRENT</b>	10/65 kA, CB, SCCR

<b>RATING (HIGH FAULT AT 480 V)</b>	(UL/CSA) 125/70 A, Class J, max. Fuse, SCCR (UL/CSA) 10/100 kA, Fuse, SCCR (UL/CSA) 50/32 A, max. CB, SCCR (UL/CSA)
<b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)</b>	10/100 kA, Fuse, SCCR (UL/CSA) 50/32 A, max. CB, SCCR (UL/CSA) 125/70 A, Class J, max. Fuse, SCCR (UL/CSA) 10/22 kA, CB, SCCR (UL/CSA)
<b>SUITABLE FOR</b>	Also motors with efficiency class IE3 SEMI F47, Magnet systems
<b>SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS</b>	40 A (480V 60Hz 3phase, 277V 60Hz 1phase) 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) 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>	3 HP, 240 V 60 Hz 3-ph, (UL/CSA) 9.6 A, 240 V 60 Hz 3-ph, (UL/CSA) 10 HP, 600 V 60 Hz 3-ph, (UL/CSA) 11 A, 480 V 60 Hz 3-ph, (UL/CSA) 11 A, 600 V 60 Hz 3-ph, (UL/CSA) 11 A, 200 V 60 Hz 3-ph, (UL/CSA) 7.5 HP, 480 V 60 Hz 3-ph, (UL/CSA) 3 HP, 200 V 60 Hz 3-ph, (UL/CSA)
<b>SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)</b>	40 A, FLA 480 V 60 Hz 3phase; (CSA) 240 A, LRA 480 V 60 Hz 3phase; (CSA) 30 A, FLA 600 V 60 Hz 3phase; (CSA) 180 A, LRA 600 V 60 Hz 3phase; (CSA)
<b>SPECIAL PURPOSE RATING OF RESISTANCE</b>	40 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase,



<b>AIR HEATING</b>	(UL/CSA) 40 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
<b>SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS</b>	40 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 40 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
<b>CONVENTIONAL THERMAL CURRENT ITH AT 40°C (3-POLE, OPEN)</b>	22 A
<b>CONVENTIONAL THERMAL CURRENT ITH AT 50°C (3-POLE, OPEN)</b>	21 A
<b>CONVENTIONAL THERMAL CURRENT ITH AT 60°C (3-POLE, OPEN)</b>	20 A
<b>RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ</b>	4.5 kW
<b>RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ</b>	3.5 kW
<b>RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ</b>	3.5 kW
<b>ACTUATING VOLTAGE</b>	RAC 120: 100 - 120 V 50/60 Hz
<b>ALTITUDE</b>	Max. 2000 m
<b>OPERATING VOLTAGE AT AC, 50 HZ - MIN</b>	230 V
<b>OPERATING VOLTAGE AT AC, 50 HZ - MAX</b>	690 V
<b>OPERATING VOLTAGE AT AC, 60 HZ - MIN</b>	230 V
<b>OPERATING VOLTAGE AT AC, 60 HZ - MAX</b>	690 V

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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