

Eaton 104439

Eaton Moeller® series DILMF Contactors for Semiconductor Industries acc. to SEMI F47, 380 V 400 V: 18 A, 1 NC, RAC 48: 42 - 48 V 50/60 Hz, Screw terminals

PRODUCT NAME	Eaton Moeller® series DILMF contactor for semiconductor industries
CATALOG NUMBER	104439
PRODUCT LENGTH/DEPTH	97 mm
PRODUCT HEIGHT	85 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.531 kg
CERTIFICATIONS	UL Category Control No.: NLDX IEC/EN 60947-4-1 CSA-C22.2 No. 60947-4-1-14 CE UL 60947-4-1 UL File No.: E29096 UL CSA CSA File No.: 012528 CSA Class No.: 2411-03, 3211-04
CATALOG NOTES	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.

SYSTEM OVERVIEW

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

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

[IL03407014Z2021_09.pdf](#)

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

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.
FITTED WITH:	Mirror contact Built-in suppressor circuit
UTILIZATION CATEGORY	AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Normal AC induction motors: starting, switch off during running
CONNECTION	Screw terminals
AMBIENT OPERATING TEMPERATURE - MAX	60 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE	2 HP
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	5 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60	3 HP

HZ, 1-PHASE	
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	5 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	10 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	15 HP
CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)	80 A
CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)	32 A
CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1- POLE, OPEN)	88 A
EQUIPMENT HEAT DISSIPATION, CURRENT- DEPENDENT PVID	2.1 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT- DEPENDENT PVID	0.7 W
APPLICATION	Contactors for Semiconductor Industries acc. to SEMI F47
PRODUCT CATEGORY	Contactors
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
VOLTAGE TYPE	AC
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	1
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0
NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)	1
NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT	0
NUMBER OF MAIN	3

CONTACTS (NORMALLY OPEN CONTACT)	
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	48 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	42 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	48 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	42 V
DROP-OUT VOLTAGE	AC operated: 0.5 - 0.2 x U _C , AC operated
DUTY FACTOR	100 %
EMITTED INTERFERENCE	According to EN 60947-1
INTERFERENCE IMMUNITY	According to EN 60947-1
PICK-UP VOLTAGE	0.8 - 1.15 V AC x U _C
POWER CONSUMPTION, PICK-UP, 50 HZ	14 VA, Dual-frequency coil in a cold state and 1.0 x U _S , at 50 Hz
POWER CONSUMPTION, SEALING, 50 HZ	0.8 W, Dual-frequency coil in a cold state and 1.0 x U _S , at 50 Hz 0.7 VA, Dual-frequency coil in a cold state and 1.0 x U _S , at 50 Hz
SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)	10 A, 600 V AC, (UL/CSA) 1 A, 250 V DC, (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	P300, DC operated (UL/CSA) A600, AC operated (UL/CSA)
SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	40 A, Maximum motor rating (UL/CSA)
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	0 V
RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	35 A

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

V, 50 HZ	
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	5 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	5.5 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	6 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	6.5 kW
RATED OPERATIONAL POWER (NEMA)	7.4 kW
RESISTANCE PER POLE	2.65 mΩ
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0.8 W
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	40 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	45 ms
SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	5 kA, SCCR (UL/CSA) 125 A, max. CB, SCCR (UL/CSA) 125 A, max. Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	10/65 kA, CB, SCCR (UL/CSA) 10/100 kA, Fuse, SCCR (UL/CSA) 125/70 A, Class J, max. Fuse, SCCR (UL/CSA) 50/32 A, max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	125/70 A, Class J, max. Fuse, SCCR (UL/CSA) 10/22 kA, CB, SCCR (UL/CSA) 50/32 A, max. CB, SCCR (UL/CSA) 10/100 kA, Fuse, SCCR (UL/CSA)
SUITABLE FOR	SEMI F47, Magnet systems

	Also motors with efficiency class IE3
SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS	40 A (480V 60Hz 3phase, 277V 60Hz 1phase) 40 A (600V 60Hz 3phase, 347V 60Hz 1phase)
SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING	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)
SPECIAL PURPOSE RATING OF ELEVATOR CONTROL	9.6 A, 240 V 60 Hz 3-ph, (UL/CSA) 10 HP, 600 V 60 Hz 3-ph, (UL/CSA) 3 HP, 240 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) 11 A, 480 V 60 Hz 3-ph, (UL/CSA) 3 HP, 200 V 60 Hz 3-ph, (UL/CSA) 11 A, 600 V 60 Hz 3-ph, (UL/CSA)
SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)	40 A, FLA 480 V 60 Hz 3phase; (CSA) 240 A, LRA 480 V 60 Hz 3phase; (CSA) 180 A, LRA 600 V 60 Hz 3phase; (CSA) 30 A, FLA 600 V 60 Hz 3phase; (CSA)
SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING	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)
SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS	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)
CONVENTIONAL THERMAL CURRENT ITH AT 40°C (3-POLE, OPEN)	40 A
CONVENTIONAL THERMAL CURRENT ITH	38 A

AT 50°C (3-POLE, OPEN)	
CONVENTIONAL THERMAL CURRENT ITH	35 A
AT 60°C (3-POLE, OPEN)	
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	10.5 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	12 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	11 kW
ACTUATING VOLTAGE	RAC 48: 42 - 48 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

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
:



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