Specifications

Eaton 104469

Eaton Moeller® series DILMF Contactors for Semiconductor Industries acc. to SEMI F47, 380 V 400 V: 65 A, RAC 240: 190 - 240 V 50/60 Hz, Screw terminals

General specifications

PRODUCT NAME	Eaton Moeller® series DILMF contactor for semiconductor industries
CATALOG NUMBER	104469
EAN	4015081042869
PRODUCT LENGTH/DEPTH	132.1 mm
PRODUCT HEIGHT	115 mm
PRODUCT WIDTH	55 mm
PRODUCT WEIGHT	1.04 kg
CERTIFICATIONS	UL File No.: E29096 IEC/EN 60947-4-1 UL 60947-4-1 CSA-C22.2 No. 60947-4-1-14 UL Category Control No.: NLDX CSA File No.: 012528 CSA CE CSA Class No.: 2411-03, 3211-04 UL
CATALOG NOTES	Also tested according to AC-3e.
MODEL CODE	DILMF65(RAC240)

Powering Business Worldwide

Features & Functions

FITTED WITH:	Built-in suppressor circuit
NUMBER OF POLES	Three-pole
OPERATING MODE	Operating mechanism adjustable from 50 Hz to 400 Hz.

General

APPLICATION	Contactors for Semiconductor Industries acc. to SEMI F47
CONNECTION	Screw terminals
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Contactors
RESISTANCE PER POLE	1.86 mΩ
SUITABLE FOR	SEMI F47, Magnet systems Also motors with efficiency class IE3
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
VOLTAGE TYPE	AC

Climatic environmental conditions

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

Electro Magnetic Compatibility

EMITTED INTERFERENCE	According to EN 60947-1
INTERFERENCE IMMUNITY	According to EN 60947-1

Electrical Rating

RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	85 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	37 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V	20 A
RATED INSULATION VOLTAGE (UI)	690 V
RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	85 A
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	22 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	30 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	39 kW
RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	7 kW
RATED OPERATIONAL	7.5 kW

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	250 A, max. Fuse, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	65 kA, CB, SCCR (UL/CSA) 100 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 CURRENT RATING (HIGH FAULT AT 600 V)	30/100 kA, Fuse, SCCR (UL/CSA) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA) 30 kA, CB, SCCR (UL/CSA)

POWER AT AC-4, 240 V, 50 HZ	
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	13 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	14 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	16 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	17 kW

Conventional thermal current

CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)	180 A
CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)	72 A
CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)	200 A

Switching capacity

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	88 A, Maximum motor rating (UL/CSA)

Switching time

SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	50 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	45 ms

Magnet system

DROP-OUT VOLTAGE	AC operated: 0.5 - 0.2 x UC, AC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.8 - 1.15 V AC x Uc
POWER CONSUMPTION, PICK-UP, 50 HZ	45 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, SEALING, 50 HZ	1.3 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz 1.5 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	190 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	240 V

RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	190 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	240 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	0 V

Motor Rating

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE	5 HP
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	20 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	15 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	25 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	50 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	60 HP

Contacts

NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0

Special purpose ratings

SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS	88 A (600V 60Hz 3phase, 347V 60Hz 1phase) 88 A (480V 60Hz 3phase, 277V 60Hz 1phase)
SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING	390 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 65 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
SPECIAL PURPOSE RATING OF ELEVATOR CONTROL	32.2 A, 200 V 60 Hz 3-ph, (UL/CSA) 15 HP, 240 V 60 Hz 3-ph, (UL/CSA) 30 HP, 480 V 60 Hz 3-ph, (UL/CSA) 40 HP, 600 V 60 Hz 3-ph, (UL/CSA) 10 HP, 200 V 60 Hz 3-ph, (UL/CSA) 41 A, 600 V 60 Hz 3-ph, (UL/CSA) 42 A, 240 V 60 Hz 3-ph, (UL/CSA) 40 A, 480 V 60 Hz 3-ph, (UL/CSA)
SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING	88 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 88 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)
SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS	88 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 88 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)

Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	17.1 W
HEAT DISSIPATION CAPACITY PDISS	0 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	65 A
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	Is the panel builder's

EXTERNAL CONDUCTORS	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.

Resources

CATALOGUES	SmartWire-DT Catalog eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf Product Range Catalog Switching and protecting motors
CHARACTERISTIC CURVE	eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-short-time-loading-dilm-characteristic-curve.eps
DECLARATIONS OF CONFORMITY	DA-DC-00004782.pdf DA-DC-00004817.pdf
DRAWINGS	eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-dilm-dimensions-002.eps eaton-contactors-dilm-dimensions-012.eps eaton-general-ie-ready-dilm-contactor-standards.eps eaton-contactors-dilm-3d-drawing-011.eps
ECAD MODEL	ETN.104469.edz
INSTALLATION INSTRUCTIONS	IL03407033Z
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	DA-CS-dil_m40_72 DA-CD-dil_m40_72
PEP ECO-PASSPORT	eaton-contactor-for-semiconductor-industries-declaration-of-conformity-eu250769en.pdf
SYSTEM OVERVIEW	eaton-contactors-circuit-breaker-dilmf-explosion-drawing.eps

	eaton-contactors-mounting-dilmf-explosion-drawing.eps
WIRING DIAGRAMS	eaton-contactors-contact-dilm-wiring-diagram-003.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:

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