

Specifications



Eaton 104401

Eaton Moeller® series DILL Lamp load contactor, 24 V 50 Hz, 220 V 230 V: 12 A, Contactors for lighting systems

General specifications

PRODUCT NAME	Eaton Moeller® series DILL lamp load contactor
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CATALOG NUMBER	104401
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MODEL CODE	DILL12(24V50HZ)
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EAN	4015081041787
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PRODUCT LENGTH/DEPTH	97 mm
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PRODUCT HEIGHT	85 mm
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PRODUCT WIDTH	45 mm
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PRODUCT WEIGHT	0.426 kg
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CERTIFICATIONS	CE CSA Class No.: 3211-04 UL File No.: E29096 CSA File No.: 012528 IEC/EN 60947 UL 60947-4-1 UL Category Control No.: NLDX UL VDE 0660 CSA-C22.2 No. 60947-4-1- 14 CSA IEC/EN 60947-4-1
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Powering Business Worldwide

Ambient conditions, mechanical

SHOCK RESISTANCE	6.9 g, N/O main contact, Mechanical, According to IEC/EN 60068-2-27, Half- sinusoidal shock 10 ms
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Climatic environmental conditions

ALTITUDE	Max. 2000 m
AMBIENT OPERATING TEMPERATURE - MAX	60 °C
AMBIENT STORAGE TEMPERATURE - MAX	80 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	-25 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
CLIMATIC PROOFING	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30

Contacts

NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT)	3
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NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
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NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0
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NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT	0
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Conventional thermal current I_{th}

CONVENTIONAL THERMAL CURRENT I_{TH} AT 60°C (3-POLE, OPEN)	24 A
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Design verification

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.
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	Does not apply, since the

Electrical rating

PERMISSIBLE COMPENSATION CAPACITY	470 μ F
RATED BREAKING CAPACITY AT 380/400 V	170 A
RATED INSULATION VOLTAGE (UI)	690 V
RATED MAKING CAPACITY (COS PHI TO IEC/EN 60947)	238 A
RATED OPERATIONAL CURRENT (IE)	12 A at AC-1, 220 V 230 V 12 A (High-pressure mercury vapor lamps) 12 A (Metal-halide lamps) 7.5 A (Low-pressure sodium lamps) 14 A (Filament bulbs) 12 A (Electronic upstream devices) 12 A (Mercury blended lamps) 14 A at AC-3, 220/230 V 12 A at AC-1, 380 V 400 V 12 A (High-pressure sodium lamps) 20 A (Conventional reactor starter circuit) 20 A (Fluorescent lamp load - duo circuit)
RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	12 A
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V

AGAINST ELECTRIC SHOCK	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.
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	1.2 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0.4 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	14 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	2.1 W

Electro magnetic compatibility

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

Features & functions

NUMBER OF POLES	Three-pole
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General information

APPLICATION	Contactors for lighting systems
CONNECTION	Screw terminals
DEGREE OF PROTECTION	IP00
LIFESPAN, ELECTRICAL	10,000 Operations
LIFESPAN, MECHANICAL	1,000,000 Operations (AC operated)
OPERATING FREQUENCY	60 mechanical Operations/h (AC operated) 60 electrical Operations/h
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	DILL Lighting contactors
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	8000 V AC
RESISTANCE PER POLE	2.65 mΩ
UTILIZATION CATEGORY	AC-1: Non-inductive or slightly inductive loads, resistance furnaces
VOLTAGE TYPE	AC

Magnet system

DROP-OUT VOLTAGE	AC operated: 0.6 - 0.3 x UC, AC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.7 - 1.15 V AC x Us 0.8 - 1.1 V AC x Uc 0.7 - 1.15 V DC x Us
POWER CONSUMPTION, PICK-UP, 50 HZ	52 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, PICK-UP, 60 HZ	67 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
POWER CONSUMPTION, SEALING, 50 HZ	2.1 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz 7.1 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, SEALING, 60 HZ	2.1 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz 8.7 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	24 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	24 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	22 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	16 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	14 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	8 ms

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	5 kA, SCCR (UL/CSA) 125 A, max. Fuse, SCCR (UL/CSA) 125 A, max. CB, SCCR (UL/CSA)
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SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	70 A, Class J, max. Fuse, SCCR (UL/CSA) 100 kA, Fuse, SCCR (UL/CSA) 22 kA, CB, SCCR (UL/CSA) 32 A, max. CB, SCCR (UL/CSA)
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SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	70 A, Class J, max. Fuse, SCCR (UL/CSA) 22 kA, CB, SCCR (UL/CSA) 100 kA, Fuse, SCCR (UL/CSA) 32 A, max. CB, SCCR (UL/CSA)
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SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	63 A gG/gL
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Switching capacity

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	24 A, Maximum motor rating (UL/CSA)
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Special purpose ratings

SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS	24 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 24 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)
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Resources

	Product Range Catalog Switching and protecting motors
CATALOGUES	SmartWire-DT Catalog eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
DECLARATIONS OF CONFORMITY	eaton-lamp-load-contactor-declaration-of-conformity-uk251241en.pdf eaton-lamp-load-contactor-declaration-of-conformity-eu250758en.pdf
	eaton-contactors-dimensions-210t014.eps eaton-contactors-mounting-dilm-dimensions.eps
DRAWINGS	eaton-contactors-dill-lamp-load-dimensions.eps eaton-contactors-dill-lamp-load-3d-drawing.eps

ECAD MODEL	ETN.104401.edz
INSTALLATION INSTRUCTIONS	IL03407047Z
INSTALLATION VIDEOS	WIN-WIN with push-in technology
	DA-CS-dil_m17_38
MCAD MODEL	eaton-iec-contactors-mcad-drawings-dil-m17-38.dwg
PEP ECO-PASSPORT	eaton-iec-contactors-pep-eato-00124-v0101-en.pdf eaton-iec-contactors-pep-eato-00025-v0101-en.pdf
SYSTEM OVERVIEW	eaton-contactors-mounting-dilmf-explosion-drawing.eps
WIRING DIAGRAMS	eaton-contactors-contact-dilm-wiring-diagram-003.eps

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



Eaton Corporation plc Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

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