Specifications

Photo is representative

Eaton 239587

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 75 kW, RAC 120: 100 - 120 V 50/60 Hz, AC operation, Screw terminals

General specifications	
PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	239587
MODEL CODE	DILM150(RAC120)
UPC	782116351787
EAN	4015082395872
PRODUCT LENGTH/DEPTH	160 mm
PRODUCT HEIGHT	170 mm
PRODUCT WIDTH	90 mm
PRODUCT WEIGHT	2.25 kg
CERTIFICATIONS	CSA File No.: 012528 IEC/EN 60947-4-1 VDE 0660 CSA IEC/EN 60947 UL 60947-4-1 UL Category Control No.: NLDX CSA Class No.: 2411-03, 3211-04 UL UL File No.: E29096 CE CSA-C22.2 No. 60947-4-1-14
CATALOG NOTES	Contacts according to EN 50012
PRODUCT TYPE	Contactor

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Features Functions

FITTED WITH:	Suppressor circuit in actuating electronics
NUMBER OF POLES	Three-pole

General

APPLICATION	Contactors for Motors
DEGREE OF PROTECTION	IP00
FRAME SIZE	FS4
LIFESPAN, MECHANICAL	10,000,000 Operations (AC operated)
CONNECTION	Screw terminals
OPERATING FREQUENCY	3600 mechanical Operations/h (AC operated)
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Contactors
PROTECTION	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	8000 V AC
RESIDUAL CURRENT	1 mA (with actuation of A1 - A2 by the electronics with "0" signal)
RESISTANCE PER POLE	0.6 mΩ
SUITABLE FOR	Also motors with efficiency class IE3
UTILIZATION CATEGORY	AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-3: Normal AC induction motors: starting, switch off during running AC-1: Non-inductive or slightly inductive loads, resistance furnaces
VOLTAGE TYPE	AC

Ambient conditions, mechanical

SHOCK RESISTANCE	7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms 10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms 5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms

Climatic environmental conditions

ALTITUDE	Max. 2000 m
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
CLIMATIC PROOFING	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30

Electro magnetic compatibility

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

Terminal capacities

TERMINAL CAPACITY (COPPER BAND)	2 x (6 x 16 x 0.8) mm (Number of segments x width x thickness), Main cables
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.75 - 2.5) mm², Control circuit cables 1 x (0.75 - 2.5) mm², Control circuit cables 2 x (10 - 70) mm², Main cables 1 x (10 - 95) mm², Main cables
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 2.5) mm², Control circuit cables 1 x (0.75 - 4) mm², Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	Single 8...3/0, double 8...2/0, Main cables 18 - 14, Control circuit cables
TERMINAL CAPACITY (STRANDED)	2 x (16 - 70) mm², Main cables 1 x (16 - 95) mm², Main cables

STRIPPING LENGTH (MAIN CABLE)	24 mm
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
SCREW SIZE	5 mm AF, Hexagon socket-head spanner, Terminal screw, Main cables M3.5, Terminal screw, Control circuit cables M10, Terminal screw, Main cables
SCREWDRIVER SIZE	0.8 x 5.5/1 x 6 mm, Terminal screw, Control circuit cables, Standard screwdriver 2, Terminal screw, Control circuit cables, Pozidriv screwdriver
TIGHTENING TORQUE	1.2 Nm, Screw terminals, Control circuit cables 14 Nm, Screw terminals, Main cables

Electrical rating

RATED BREAKING CAPACITY AT 220/230 V	1500 A
RATED BREAKING CAPACITY AT 380/400 V	1500 A
RATED BREAKING CAPACITY AT 500 V	1500 A
RATED BREAKING CAPACITY AT 660/690 V	1200 A
RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	190 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	150 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	150 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	150 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	150 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	100 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V	65 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V	50 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V	160 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V	160 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V	90 A
RATED INSULATION VOLTAGE (UI)	690 V
RATED MAKING	2100 A

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	10 kA, 600 A max. fuse, SCCR (UL/CSA) 10 kA, 600 A max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	100 kA, 600 A CLASS J max. fuse, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	100 kA, 600 A CLASS J max. fuse, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	250 A gG/gL

CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947)	
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	52 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	75 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	91 kW
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	95 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	110 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	96 kW
RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	20 kW
RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	22 kW
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	39 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	41 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	47 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	48 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V

Conventional thermal current Ith

CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)	360 A
CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)	144 A
CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)	170 A
CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)	400 A

Switching capacity

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	225 A, Maximum motor rating (UL/CSA)

Magnet system

ARCING TIME	15 ms
DROP-OUT VOLTAGE	AC operated: 0.6 - 0.25 x UC, AC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.8 - 1.15 V AC x Uc
POWER CONSUMPTION, PICK-UP, 50 HZ	180 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, PICK-UP, 60 HZ	170 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
POWER CONSUMPTION, SEALING, 50 HZ	2.3 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz 3.1 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
POWER CONSUMPTION, SEALING, 60 HZ	2.3 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz 3.1 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 - MIN	100 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	120 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	100 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	120 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	28 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	33 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	35 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	41 ms

Motor rating

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE	10 HP
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	50 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	30 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	60 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	125 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	125 HP

Communication

CONNECTION TO SMARTWIRE-DT	No

Safety

SAFE ISOLATION	690 V AC, Between the contacts, According to EN 61140 440 V AC, Between coil and contacts, According to EN 61140

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	160 A (600V 60Hz 3phase, 347V 60Hz 1phase) 160 A (480V 60Hz 3phase, 277V 60Hz 1phase)
SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING	900 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 150 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
SPECIAL PURPOSE RATING OF ELEVATOR CONTROL	40 HP, 240 V 60 Hz 3-ph, (UL/CSA) 100 HP, 600 V 60 Hz 3-ph, (UL/CSA) 30 HP, 200 V 60 Hz 3-ph, (UL/CSA) 92 A, 200 V 60 Hz 3-ph, (UL/CSA) 104 A, 240 V 60 Hz 3-ph, (UL/CSA) 96 A, 480 V 60 Hz 3-ph, (UL/CSA) 75 HP, 480 V 60 Hz 3-ph, (UL/CSA) 99 A, 600 V 60 Hz 3-ph, (UL/CSA)
SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)	90 A, FLA 480 V 60 Hz 3phase; (CSA) 540 A, LRA 480 V 60 Hz 3phase; (CSA) 540 A, LRA 600 V 60 Hz 3phase; (CSA) 90 A, FLA 600 V 60 Hz 3phase; (CSA)
SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING	160 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 160 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)
SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS	160 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 160 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase,

(UL/CSA)

Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	32.1 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	10.7 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	150 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	2.3 W
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.

Resources

CATALOGS	SmartWire-DT Catalog eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf Product Range Catalog Switching and protecting motors
CHARACTERISTIC CURVE	eaton-contactors-switch-dilm-characteristic-curve.eps eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-short-time-loading-dilm-characteristic-curve-002.eps eaton-contactors-switch-dilm-characteristic-curve-002.eps
DECLARATIONS OF CONFORMITY	eaton-contactor-declaration-of-conformity-eu250750en.pdf eaton-contactor-declaration-of-conformity-uk251233en.pdf
DRAWINGS	eaton-contactors-dilm-dimensions-003.eps eaton-contactors-dilm-dimensions-011.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-dilm-3d-drawing.eps eaton-contactors-dilm-3d-drawing-013.eps eaton-general-ie-ready-dilm-contactor-standards.eps
ECAD MODEL	ETN.239587.edz

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.
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.

INSTALLATION INSTRUCTIONS	eaton-dil-contactors-instruction-leaflet-il03407039z.pdf
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	DA-CS-dil_m80_170 DA-CD-dil_m80_170
PEP ECO-PASSPORT	eaton-iec-contactors-pep-eato-00125-v0101-en.pdf
SYSTEM OVERVIEW	eaton-contactors-dilm-contactor-system-overview.eps
WIRING DIAGRAMS	eaton-contactors-contact-dilm-wiring-diagram-003.eps

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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