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Eaton 277178

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 11 kW, 1 NC, RDC 24: 24 - 27 V DC, DC operation, Screw terminals DILM25-01(RDC24)

General specifications

PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	277178
EAN	4015082771782
PRODUCT LENGTH/DEPTH	97 mm
PRODUCT HEIGHT	85 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.534 kg
CERTIFICATIONS	IEC/EN 60947-4-1 CSA-C22.2 No. 60947-4-1-14 UL Category Control No.: NLDX CSA Class No.: 2411-03, 3211-04 CE UL 60947-4-1 VDE 0660 UL File No.: E29096 CSA CSA File No.: 012528 UL IEC/EN 60947
CATALOG NOTES	Contacts according to EN 50012
MODEL CODE	DILM25-01(RDC24)

Powering Business Worldwide

Features Functions

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

General

APPLICATION	Contactors for Motors
DEGREE OF PROTECTION	IP00
FRAME SIZE	FS2
LIFESPAN, MECHANICAL	10,000,000 Operations (DC operated)
CONNECTION	Screw terminals
OPERATING FREQUENCY	5000 mechanical Operations/h (DC 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
RESISTANCE PER POLE	2.7 mΩ
SUITABLE FOR	Also motors with efficiency class IE3
UTILIZATION CATEGORY	AC-3: Normal AC induction motors: starting, switch off during running AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-1: Non-inductive or slightly inductive loads, resistance furnaces
VOLTAGE TYPE	DC

Ambient conditions, mechanical

SHOCK RESISTANCE	5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 6.9 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms 5.3 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms 3.5 g, N/C 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 7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, 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 (FLEXIBLE WITH FERRULE)	2 x (0.75 - 10) mm^2, Main cables 1 x (0.75 - 16) mm^2, Main cables 2 x (0.75 - 2.5) mm^2, Control circuit cables 1 x (0.75 - 2.5) mm^2, Control circuit cables
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 2.5) mm^2, Control circuit cables 1 x (0.75 - 16) mm^2, Main cables 1 x (0.75 - 4) mm^2, Control circuit cables 2 x (0.75 - 10) mm^2, Main cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	Single 18 - 6, double 18 - 8, Main cables 18 - 14, Control circuit cables

TERMINAL CAPACITY (STRANDED)	1 x 16 mm^2, Main cables
STRIPPING LENGTH (MAIN CABLE)	10 mm
STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
SCREW SIZE	M5, Terminal screw, Main cables M3.5, Terminal screw, Control circuit cables
SCREWDRIVER SIZE	0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver 2, Terminal screw, Pozidriv screwdriver
TIGHTENING TORQUE	3.2 Nm, Screw terminals, Main cables 1.2 Nm, Screw terminals, Control circuit cables

Electrical rating

RATED BREAKING CAPACITY AT 220/230 V	250 A
RATED BREAKING CAPACITY AT 380/400 V	250 A
RATED BREAKING CAPACITY AT 500 V	250 A
RATED BREAKING CAPACITY AT 660/690 V	150 A
RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	45 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	15 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	13 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V	13 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V	13 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V	10 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V	40 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V	40 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V	40 A
RATED INSULATION	690 V

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	125 A, max. CB, SCCR (UL/CSA) 125 A, max. Fuse, SCCR (UL/CSA) 5 kA, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	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) 10/65 kA, CB, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	10/100 kA, Fuse, SCCR (UL/CSA) 10/22 kA, CB, SCCR (UL/CSA) 125/100 A, Class J, max. Fuse, SCCR (UL/CSA) 50/32 A, max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	100 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	50 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	35 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	35 A gG/gL

VOLTAGE (UI)	
RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947)	350 A
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	8.5 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	11 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	14.5 kW
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	15.5 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	17.5 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	14 kW
RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	3.5 kW
RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	4 kW
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	6.5 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	7 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	8 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	8.5 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V

Conventional thermal current Ith

CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)	90 A
CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)	36 A
CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)	42 A
CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)	100 A

Switching capacity

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	40 A, Maximum motor rating (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)	1 A, 250 V DC, (UL/CSA) 10 A, 600 V AC, (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)

Magnet system

ARCING TIME	10 ms
DROP-OUT VOLTAGE	At least smoothed two-phase bridge rectifier or three-phase rectifier 0.6 - 0.15 x UC, DC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.7 - 1.2 V DC x Uc 24 - 27 V DC (RDC 24)
POWER CONSUMPTION (PICK-UP) AT DC	12 W
POWER CONSUMPTION (SEALING) AT DC	0.9 W
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	24 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	27 V
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	47 ms
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	30 ms

Motor rating

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE	2 HP
ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	7.5 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE	5 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	10 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	15 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	20 HP

Communication

CONNECTION TO SMARTWIRE-DT	In conjunction with DIL-SWD SmartWire DT contactor module Yes

Contacts

NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)	1
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	1

NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0

Safety

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

Special purpose ratings

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	150 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 25 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
SPECIAL PURPOSE RATING OF ELEVATOR CONTROL	10 HP, 480 V 60 Hz 3-ph, (UL/CSA) 14 A, 480 V 60 Hz 3-ph, (UL/CSA) 17 A, 600 V 60 Hz 3-ph, (UL/CSA) 3 HP, 200 V 60 Hz 3-ph, (UL/CSA) 15 HP, 600 V 60 Hz 3-ph, (UL/CSA) 11 A, 200 V 60 Hz 3-ph, (UL/CSA) 15.2 A, 240 V 60 Hz 3-ph, (UL/CSA) 5 HP, 240 V 60 Hz 3-ph, (UL/CSA)
SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)	180 A, LRA 600 V 60 Hz 3phase; (CSA) 240 A, LRA 480 V 60 Hz 3phase; (CSA) 40 A, FLA 480 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, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 40 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)

Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	4.2 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	1.4 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	25 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0.9 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.

Abiinfo

CHARACTERISTIC CURVE	eaton-contactors-switch-dilm-characteristic-curve-002.eps eaton-contactors-switch-dilm-characteristic-curve.eps
ECAD MODEL	ETN.277178.edz
ELEKTRISKEEMID	2100SWI-117
JOONISED	eaton-contactors-dimensions-210t014.eps
MCAD MODEL	DA-CS-dil_m17_38 DA-CD-dil_m17_38
MÜÜGIPOLIITIKA JA TINGIMUSED	Hydraulic Warranty
PAIGALDUSJUHISED	IL03407014Z2021_09.pdf
PEP ECO-PASSPORT	eaton-iec-contactors-pep-eato-00134-v0101-en.pdf
VASTAVUSAVALDUSED	eaton-contactor-declaration-of-conformity-eu250736en.pdf

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.
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.

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
KUUPÄEV:	

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