

Specifications



Photo is representative



Eaton 277812

Eaton Moeller® series DILM Contactor, 380 V 400 V 18.5 kW, 2 N/O, 2 NC, RDC 24: 24 - 27 V DC, DC operation, Screw terminals

General specifications

PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	277812
MODEL CODE	DILM40-22(RDC24)
EAN	4015082778125
PRODUCT LENGTH/DEPTH	147 mm
PRODUCT HEIGHT	115 mm
PRODUCT WIDTH	55 mm
PRODUCT WEIGHT	1.082 kg
COMPLIANCES	CE Marked
CERTIFICATIONS	EN 60947-4-1 IEC 60947-4-1 UL 508 CSA Std. C22.2 No. 14-05 VDE UL Category Control No.: NLDX CSA Class No.: 2411-03, 3211-04 UL VDE 0660 UL 60947-4-1 CSA File No.: 012528 IEC/EN 60947-4-1 CE CSA-C22.2 No. 60947-4-1-14 UL File No.: E29096 CSA IEC/EN 60947
CATALOG NOTES	Contacts according to EN 50012

Ambient conditions, mechanical

SHOCK RESISTANCE

7 g, N/O 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, Half-sinusoidal shock 10 ms
 5 g, N/C 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 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 - 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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78

Contacts

NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT) 3

NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS) 2

NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS) 2

NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS) 2

NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS) 2

NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT 0

Conventional thermal current I_{th}

CONVENTIONAL THERMAL CURRENT I_{TH} (1-POLE, ENCLOSED) 112 A

CONVENTIONAL THERMAL CURRENT I_{TH} (3-POLE, ENCLOSED) 45 A

CONVENTIONAL THERMAL CURRENT I_{TH} AT 55°C (3-POLE, OPEN) 55 A

CONVENTIONAL THERMAL CURRENT I_{TH} AT 60°C (3-POLE, OPEN) 50 A

CONVENTIONAL THERMAL CURRENT I_{TH} OF MAIN CONTACTS (1-POLE, OPEN) 125 A

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

RATED BREAKING CAPACITY AT 220/230 V	400 A
RATED BREAKING CAPACITY AT 380/400 V	400 A
RATED BREAKING CAPACITY AT 500 V	400 A
RATED BREAKING CAPACITY AT 660/690 V	250 A
RATED INSULATION VOLTAGE (UI)	690 V
RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947)	560 A
RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	60 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	40 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	40 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	40 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	40 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	25 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	18 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V	18 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V	18 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V	14 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V	50 A
RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V	45 A

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	6.6 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	2.2 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	40 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	1 W

RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V	50 A
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	13.5 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	18.5 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	24 kW
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	25 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	28 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	23 kW
RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	5 kW
RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	5.5 kW
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	9.5 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	10 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	11 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	12 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V

Electro magnetic compatibility

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

Features & functions

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

General information

APPLICATION	Contactors for Motors
CONNECTION	Screw terminals
DEGREE OF PROTECTION	IP00
LIFESPAN, MECHANICAL	10,000,000 Operations (DC operated) 7,000,000 Operations (Coil 50/60 Hz)
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	1.9 mΩ
SUITABLE FOR	Also motors with efficiency class IE3
UTILIZATION CATEGORY	AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Normal AC induction motors: starting, switch off during running AC-4: Normal AC induction motors: starting, plugging, reversing, inching
VOLTAGE TYPE	DC

Magnet system

ARCING TIME	10 ms
DROP-OUT VOLTAGE	0.6 - 0.15 x UC, DC operated At least smoothed two-phase bridge rectifier or three-phase rectifier
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	24 W
POWER CONSUMPTION (SEALING) AT DC	1 W
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	27 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	24 V
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	54 ms
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	24 ms

Motor rating

**ASSIGNED MOTOR
POWER AT 115/120 V, 60
HZ, 1-PHASE** 3 HP

**ASSIGNED MOTOR
POWER AT 200/208 V, 60
HZ, 3-PHASE** 10 HP

**ASSIGNED MOTOR
POWER AT 230/240 V, 60
HZ, 1-PHASE** 7.5 HP

**ASSIGNED MOTOR
POWER AT 230/240 V, 60
HZ, 3-PHASE** 15 HP

**ASSIGNED MOTOR
POWER AT 460/480 V, 60
HZ, 3-PHASE** 30 HP

**ASSIGNED MOTOR
POWER AT 575/600 V, 60
HZ, 3-PHASE** 40 HP

Short-circuit rating

**SHORT-CIRCUIT CURRENT
RATING (BASIC RATING)** 5 kA, 250 A max. fuse,
SCCR (UL/CSA)
5 kA, 250 A max. CB, SCCR
(UL/CSA)

**SHORT-CIRCUIT CURRENT
RATING (HIGH FAULT AT
480 V)** 100 kA, 150 A CLASS J max.
fuse, SCCR (UL/CSA)
65 kA, 100 A max. CB,
SCCR (UL/CSA)

**SHORT-CIRCUIT CURRENT
RATING (HIGH FAULT AT
600 V)** 100 kA, 150 A CLASS J max.
fuse, SCCR (UL/CSA)

**SHORT-CIRCUIT
PROTECTION RATING
(TYPE 1 COORDINATION)
AT 400 V** 125 A gG/gL

**SHORT-CIRCUIT
PROTECTION RATING
(TYPE 1 COORDINATION)
AT 690 V** 80 A gG/gL

**SHORT-CIRCUIT
PROTECTION RATING
(TYPE 2 COORDINATION)
AT 400 V** 63 A gG/gL

**SHORT-CIRCUIT
PROTECTION RATING
(TYPE 2 COORDINATION)
AT 690 V** 50 A gG/gL

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 ELEVATOR
CONTROL** 25 HP, 480 V 60 Hz 3-ph,
(UL/CSA)
30 HP, 600 V 60 Hz 3-ph,
(UL/CSA)
34 A, 480 V 60 Hz 3-ph,
(UL/CSA)
32 A, 600 V 60 Hz 3-ph,
(UL/CSA)
25.3 A, 200 V 60 Hz 3-ph,
(UL/CSA)
7.5 HP, 200 V 60 Hz 3-ph,
(UL/CSA)
10 HP, 240 V 60 Hz 3-ph,
(UL/CSA)
28 A, 240 V 60 Hz 3-ph,
(UL/CSA)

**SPECIAL PURPOSE
RATING OF RESISTANCE
AIR HEATING** 79 A, 480 V 60 Hz 3phase,
277 V 60 Hz 1phase,
(UL/CSA)
79 A, 600 V 60 Hz 3phase,
347 V 60 Hz 1phase,
(UL/CSA)

**SPECIAL PURPOSE
RATING OF TUNGSTEN
INCANDESCENT LAMPS** 74 A, 600 V 60 Hz 3phase,
347 V 60 Hz 1phase,
(UL/CSA)
74 A, 480 V 60 Hz 3phase,
277 V 60 Hz 1phase,
(UL/CSA)

**SPECIAL PURPOSE
RATING OF BALLAST
ELECTRICAL DISCHARGE
LAMPS** 79 A (480V 60Hz 3phase,
277V 60Hz 1phase)
79 A (600V 60Hz 3phase,
347V 60Hz 1phase)

Switching capacity

**SWITCHING CAPACITY
(AUXILIARY CONTACTS,
GENERAL USE)** 1 A, 250 V DC, (UL/CSA)
15 A, 600 V AC, (UL/CSA)

**SWITCHING CAPACITY
(AUXILIARY CONTACTS,
PILOT DUTY)** P300, DC operated
(UL/CSA)
A600, AC operated
(UL/CSA)

**SWITCHING CAPACITY
(MAIN CONTACTS,
GENERAL USE)** 63 A, Maximum motor
rating (UL/CSA)

Terminal capacities

SCREW SIZE M3.5, Terminal screw,
Control circuit cables
M6, Terminal screw, Main
cables

SCREWDRIVER SIZE 0.8 x 5.5/1 x 6 mm,
Terminal screw, Standard
screwdriver
2, Terminal screw, Pozidriv
screwdriver

**STRIPPING LENGTH
(CONTROL CIRCUIT
CABLE)** 10 mm

**STRIPPING LENGTH
(MAIN CABLE)** 14 mm

**TERMINAL CAPACITY
(COPPER BAND)** 2 x (6 x 9 x 0.8) mm
(Number of segments x
width x thickness), Main
cables

**TERMINAL CAPACITY
(SOLID)** 2 x (0.75 - 2.5) mm²,
Control circuit cables
1 x (0.75 - 16) mm², Main
cables
2 x (0.75 - 16) mm², Main
cables
1 x (0.75 - 2.5) mm²,
Control circuit cables

**TERMINAL CAPACITY
(STRANDED)** 1 x (16 - 50) mm², Main
cables
2 x (16 - 35) mm², Main
cables

TIGHTENING TORQUE 1.2 Nm, Screw terminals,
Control circuit cables
3.3 Nm, Screw terminals,
Main cables

**TERMINAL CAPACITY
(FLEXIBLE WITH
FERRULE)** 2 x (0.75 - 2.5) mm²,
Control circuit cables
2 x (0.75 - 25) mm², Main
cables
1 x (0.75 - 35) mm², Main
cables
1 x (0.75 - 2.5) mm²,
Control circuit cables

**TERMINAL CAPACITY
(SOLID/STRANDED AWG)** 18 - 14, Control circuit
cables
Single 14 - 1, double 14 - 2,
Main cables

Resources

CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CHARACTERISTIC CURVE	eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-switch-dilm-characteristic-curve-002.eps eaton-contactors-switch-dilm-characteristic-curve.eps eaton-contactors-short-time-loading-dilm-characteristic-curve.eps
DECLARATIONS OF CONFORMITY	eaton-contactor-declaration-of-conformity-eu250743en.pdf eaton-contactor-declaration-of-conformity-uk251226en.pdf
DRAWINGS	eaton-contactors-dilm-dimensions-012.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-dilm-dimensions-002.eps eaton-general-ie-ready-dilm-contactor-standards.eps eaton-contactors-mounting-dilm-3d-drawing.eps eaton-contactors-contact-dilm-3d-drawing-003.eps
ECAD MODEL	ETN.277812.edz
INSTALLATION INSTRUCTIONS	IL03407033Z
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	eaton-iec-contactors-mcad-drawings-dil-m40-65-22.dwg

	dil_m40_65_22.stp
WIRING DIAGRAMS	eaton-contactors-wiring-diagram-2100swi-125.eps

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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