

Eaton 277146

Catalog Number: 277146

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 11 kW, 1 N/O, RDC 24: 24 - 27 V DC, DC operation, Screw terminals DILM25-10(RDC24)



General specifications

Product Name	Catalog Number
Eaton Moeller® series DILM contactor	277146
Model Code	EAN
DILM25-10(RDC24)	4015082771461
Product Length/Depth	Product Height
97 mm	85 mm
Product Width	Product Weight
45 mm	0.534 kg
Certifications	Catalog Notes
CSA File No.: 012528	Contacts according to EN 50012
CE	
IEC/EN 60947-4-1	
CSA	
UL Category Control No.: NLDX	
CSA-C22.2 No. 60947-4-1-14	
UL File No.: E29096	
IEC/EN 60947	
VDE 0660	
UL 60947-4-1	
CSA Class No.: 2411-03, 3211-04	
UL	

Features & Functions

Fitted with:

Suppressor circuit in actuating electronics

Number Of Poles

Three-pole

General

Application

Contactors for Motors

Frame size

FS2

Lifespan, mechanical

10,000,000 Operations (DC operated)

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-1: Non-inductive or slightly inductive loads, resistance furnaces

AC-4: Normal AC induction motors: starting, plugging, reversing, inching

Voltage type

DC

Ambient conditions, mechanical

Shock resistance

3.5 g, N/C auxiliary contact, Mechanical, according to IEC/EN

Climatic environmental conditions

Ambient operating temperature - min

-25 °C

60068-2-27 when tabletop-mounted, 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

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

5.3 g, N/O auxiliary contact, Mechanical, according to IEC/EN

60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms

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, cyclic, to IEC 60068-2-30

Damp heat, constant, to IEC 60068-2-78

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 - 2.5) mm², Control circuit cables

1 x (0.75 - 16) mm², Main cables

2 x (0.75 - 10) mm², Main cables

1 x (0.75 - 2.5) mm², Control circuit cables

Terminal capacity (solid)

1 x (0.75 - 16) mm², Main cables

2 x (0.75 - 2.5) mm², Control circuit cables

1 x (0.75 - 4) mm², Control circuit cables

2 x (0.75 - 10) mm², 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 mm², 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 (I_e) at AC-1, 380 V, 400 V, 415 V

45 A

Rated operational current (I_e) at AC-3, 220 V, 230 V, 240 V

25 A

Rated operational current (I_e) at AC-3, 380 V, 400 V, 415 V

25 A

Rated operational current (I_e) at AC-3, 440 V

25 A

Rated operational current (I_e) at AC-3, 500 V

25 A

Rated operational current (I_e) at AC-3, 660 V, 690 V

15 A

Rated operational current (I_e) at AC-4, 220 V, 230 V, 240 V

13 A

Rated operational current (I_e) at AC-4, 400 V

13 A

Rated operational current (I_e) at AC-4, 500 V

13 A

Rated operational current (I_e) at AC-4, 660 V, 690 V

10 A

Rated operational current (I_e) at DC-1, 60 V

40 A

Rated operational current (I_e) at DC-1, 110 V

40 A

Rated operational current (I_e) at DC-1, 220 V

40 A

Rated insulation voltage (U_i)

690 V

Rated operational current (I_e) at AC-1, 380 V, 400 V, 415 V

45 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-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 (U_e) at AC - max

690 V

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)

Short-circuit current rating (high fault at 480 V)

10/100 kA, Fuse, SCCR (UL/CSA)

10/65 kA, CB, SCCR (UL/CSA)

125/70 A, Class J, max. Fuse, SCCR (UL/CSA)

50/32 A, max. CB, SCCR (UL/CSA)

Short-circuit current rating (high fault at 600 V)

10/100 kA, Fuse, SCCR (UL/CSA)

125/100 A, Class J, max. Fuse, SCCR (UL/CSA)

50/32 A, max. CB, SCCR (UL/CSA)

10/22 kA, 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

Conventional thermal current

Conventional thermal current I_{th} (1-pole, enclosed)

90 A

Conventional thermal current I_{th} (3-pole, enclosed)

36 A

Conventional thermal current I_{th} at 55°C (3-pole, open)

42 A

Conventional thermal current I_{th} of main contacts (1-pole, open)

100 A

Switching capacity

Switching capacity (main contacts, general use)

40 A, Maximum motor rating (UL/CSA)

Switching time

Arcing time

10 ms

Switching capacity (auxiliary contacts, general use)

10 A, 600 V AC, (UL/CSA)

1 A, 250 V DC, (UL/CSA)

Switching capacity (auxiliary contacts, pilot duty)

P300, DC operated (UL/CSA)

A600, AC operated (UL/CSA)

Switching time (DC operated, make contacts, closing delay) - max

47 ms

Switching time (DC operated, make contacts, opening delay) - max

30 ms

Magnet system

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

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

Motor Rating

Assigned motor power at 115/120 V, 60 Hz, 1-phase

2 HP

Communication

Connection

Screw terminals

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

Safety

Safe isolation

440 V AC, Between the contacts, According to EN 61140

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

Connection to SmartWire-DT

In conjunction with DIL-SWD SmartWire DT contactor module

Yes

Contacts

Number of contacts (normally open contacts)

1

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

1

Special purpose ratings

Special purpose rating of ballast electrical discharge lamps

40 A (600V 60Hz 3phase, 347V 60Hz 1phase)

40 A (480V 60Hz 3phase, 277V 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

15.2 A, 240 V 60 Hz 3-ph, (UL/CSA)

10 HP, 480 V 60 Hz 3-ph, (UL/CSA)

17 A, 600 V 60 Hz 3-ph, (UL/CSA)

5 HP, 240 V 60 Hz 3-ph, (UL/CSA)

11 A, 200 V 60 Hz 3-ph, (UL/CSA)

15 HP, 600 V 60 Hz 3-ph, (UL/CSA)

3 HP, 200 V 60 Hz 3-ph, (UL/CSA)

14 A, 480 V 60 Hz 3-ph, (UL/CSA)

Special purpose rating of refrigeration control (CSA only)

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)

180 A, LRA 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)

Design verification

Equipment heat dissipation, current-dependent P_{vid}

4.2 W

Heat dissipation capacity P_{diss}

0 W

Rated operational current for specified heat dissipation (I_n)

25 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 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.

Resources

Catalogues

[Switching and protecting motors - catalog](#)

[SmartWire-DT Catalog](#)

[Product Range Catalog Switching and protecting motors](#)

Characteristic curve

[eaton-contactors-component-dilm-characteristic-curve-003.eps](#)

[eaton-contactors-switch-dilm-characteristic-curve.eps](#)

[eaton-contactors-switch-dilm-characteristic-curve-002.eps](#)

[eaton-contactors-short-time-loading-dilm-characteristic-curve.eps](#)

Drawings

[eaton-contactors-mounting-dilm-dimensions.eps](#)

[eaton-contactors-dilm-dimensions.eps](#)

[eaton-contactors-mounting-dilm-dimensions-002.eps](#)

[eaton-contactors-contact-dilm-dimensions-002.eps](#)

[eaton-general-ie-ready-dilm-contactor-standards.eps](#)

[eaton-contactors-dilm-3d-drawing-009.eps](#)

eCAD model

[DA-CE-ETN.DILM25-10\(RDC24\)](#)

Installation instructions

[IL03407014Z](#)

Installation videos

[WIN-WIN with push-in technology](#)

mCAD model

[DA-CS-dil_m17_38](#)

[DA-CD-dil_m17_38](#)

System overview

[eaton-contactors-dilm-contactor-system-overview.eps](#)

Wiring diagrams

[eaton-contactors-contact-dilm-wiring-diagram.eps](#)



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