

# Eaton 277167

Catalog Number: 277167

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 11 kW, 1 NC, 415 V 50 Hz, 480 V 60 Hz, AC operation, Screw terminals



## General specifications

**Product Name** Eaton Moeller® series DILM contactor  
**Catalog Number** 277167

**Model Code** DILM25-01(415V50HZ,480V60HZ)  
**EAN** 4015082771676

**Product Length/Depth** 97 mm  
**Product Height** 85 mm

**Product Width** 45 mm  
**Product Weight** 0.428 kg

**Certifications** CSA Certified  
UL Listed  
IEC 60947-4-1  
EN 60947-4-1  
IEC/EN 60947  
UL  
VDE 0660  
CSA  
**Catalog Notes** Contacts according to EN 50012

Electrical connection type for auxiliary- and control-current circuit

Screw connection

Amperage Rating

170A

Number Of Poles

Three-pole

Type

Full voltage non-reversing small contactor

Voltage rating

400 V

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.

Catalogs

[eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf](#)

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

[SmartWire-DT Catalog](#)

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](#)

Declarations of conformity

[DA-DC-00004816.pdf](#)

[DA-DC-00004783.pdf](#)

Drawings

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

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

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

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

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

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

eCAD model

[ETN.277167.edz](#)

Installation instructions

[IL03407014Z2021\\_09.pdf](#)

Installation videos

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

mCAD model

[DA-CS-dil\\_m17\\_38](#)

[DA-CD-dil\\_m17\\_38](#)

Specifications and datasheets

[Eaton Specification Sheet - 277167](#)

System overview

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

Wiring diagrams

[2100SWI-117](#)

#### 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.

#### Fitted with:

Mirror contact

#### Frequency rating

50-60 Hz

#### Operating frequency

5000 mechanical Operations/h (AC operated)

#### Pollution degree

3

#### Climatic proofing

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

Damp heat, cyclic, to IEC 60068-2-30

#### Connection to SmartWire-DT

No

Rated impulse withstand voltage (Uimp)

8000 V AC

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

Connection

Screw terminals

Frame size

FS2

Ambient operating temperature - max

60 °C

Ambient operating temperature - min

-25 °C

Ambient operating temperature (enclosed) - max

40 °C

Ambient operating temperature (enclosed) - min

25 °C

Ambient storage temperature - max

80 °C

Ambient storage temperature - min

40 °C

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

Equipment heat dissipation, current-dependent  $P_{vid}$

4.2 W

Heat dissipation capacity  $P_{diss}$

0 W

Heat dissipation per pole, current-dependent P<sub>vid</sub>

1.4 W

Application

Contactors for Motors

Product category

Contactors

Protection

Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)

Terminals

Screw terminals

Arcing time

10 ms

Electrical connection type of main circuit

Screw connection

Screwdriver size

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

Voltage type

AC

Degree of protection

IP00

Number of auxiliary contacts (normally closed contacts)

1

Number of auxiliary contacts (normally open contacts)

0

Number of contacts (normally closed contacts)

1

Number of contacts (normally closed) as main contact

0

Number of main contacts (normally open contact)

3

Operating temperature - max

60 °C

Operating temperature - min

-25 °C

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 control supply voltage (Us) at AC, 50 Hz - max

415 V

Rated control supply voltage (Us) at AC, 50 Hz - min

415 V

Rated control supply voltage (Us) at AC, 60 Hz - max

480 V

Rated control supply voltage (Us) at AC, 60 Hz - min

480 V

Coil voltage

415-480 Vac, 50/60 Hz

Contact configuration

1 NC

Continuous ampere rating

25 A

Drop-out voltage

AC operated: 0.6 - 0.3 x UC, AC operated

Overvoltage category

III

Duty factor

100 %

Number of contacts

1 NC

Emitted interference

According to EN 60947-1

Operation

Reversing

Interference immunity

According to EN 60947-1

Lifespan, mechanical

10,000,000 Operations (AC operated)

#### Pick-up voltage

0.8 - 1.1 V AC x U<sub>c</sub>

#### Power consumption, pick-up, 50 Hz

52 VA, Dual-frequency coil in a cold state and 1.0 x U<sub>s</sub>, at 50 Hz

#### Safe isolation

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

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

#### Power consumption, pick-up, 60 Hz

67 VA, Dual-frequency coil in a cold state and 1.0 x U<sub>s</sub>, at 60 Hz

#### Screw size

M5, Terminal screw, Main cables

M3.5, Terminal screw, Control circuit cables

#### Power consumption, sealing, 50 Hz

2.1 W, Dual-frequency coil in a cold state and 1.0 x U<sub>s</sub>, at 50 Hz

7.1 VA, Dual-frequency coil in a cold state and 1.0 x U<sub>s</sub>, at 50 Hz

#### Power consumption, sealing, 60 Hz

8.7 VA, Dual-frequency coil in a cold state and 1.0 x U<sub>s</sub>, at 60 Hz

2.1 W, Dual-frequency coil in a cold state and 1.0 x U<sub>s</sub>, at 60 Hz

#### Terminal capacity (stranded)

1 x 16 mm<sup>2</sup>, Main cables

#### Terminal capacity (flexible with ferrule)

2 x (0.75 - 10) mm<sup>2</sup>, Main cables

1 x (0.75 - 16) mm<sup>2</sup>, Main cables

2 x (0.75 - 2.5) mm<sup>2</sup>, Control circuit cables

1 x (0.75 - 2.5) mm<sup>2</sup>, Control circuit cables

#### Shock resistance

7 g, N/O auxiliary 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

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

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

#### Terminal capacity (solid)

1 x (0.75 - 16) mm<sup>2</sup>, Main cables

2 x (0.75 - 10) mm<sup>2</sup>, Main cables

1 x (0.75 - 4) mm<sup>2</sup>, Control circuit cables

2 x (0.75 - 2.5) mm<sup>2</sup>, Control circuit cables

#### Terminal capacity (solid/stranded AWG)

Single 18 - 6, double 18 - 8, Main cables

18 - 14, Control circuit cables

#### Power consumption

11 kW

#### Tightening torque

1.2 Nm, Screw terminals, Control circuit cables

3.2 Nm, Screw terminals, Main cables

#### Rated control supply voltage (Us) at DC - max

0 V

#### Rated control supply voltage (Us) at DC - min

0 V

#### Rated insulation voltage (Ui)

690 V

#### Rated making capacity up to 690 V (cos phi to IEC/EN 60947)

350 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, 400 V

13 A

#### Rated operational current (Ie) at AC-4, 440 V



13 A

Rated operational current (I<sub>e</sub>) at AC-4, 500 V

13 A

Rated operational current (I<sub>e</sub>) at AC-4, 660 V, 690 V

10 A

Rated operational current (I<sub>e</sub>) at DC-1, 110 V

40 A

Rated operational current (I<sub>e</sub>) at DC-1, 220 V

40 A

Rated operational current (I<sub>e</sub>) at DC-1, 60 V

40 A

Rated operational current for specified heat dissipation (I<sub>n</sub>)

25 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, 380/400 V, 50 Hz

6 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 power (NEMA)

11 kW

Rated operational voltage (U<sub>e</sub>) at AC - max

690 V

Resistance per pole

2.7 m $\Omega$

Static heat dissipation, non-current-dependent Pvs

2.1 W

Stripping length (control circuit cable)

10 mm

Stripping length (main cable)

10 mm

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 protection rating (type 1 coordination) at 400 V

100 A gG/gL

Suitable for

Also motors with efficiency class IE3

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

Operating temperature

-25° to 60°C

Conventional thermal current  $i_{th}$  at 40°C (3-pole, open)

45 A

Conventional thermal current  $i_{th}$  at 50°C (3-pole, open)

43 A

Conventional thermal current  $i_{th}$  at 60°C (3-pole, open)

40 A

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

Actuating voltage

415 V 50 Hz, 480 V 60 Hz

Altitude

Max. 2000 m

Operating voltage at AC, 50 Hz - min

24 V

Operating voltage at AC, 50 Hz - max

690 V

Operating voltage at AC, 60 Hz - min

24 V

Operating voltage at AC, 60 Hz - max

690 V



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