

## Specifications

# 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                         | Catalog Number |
|--------------------------------------|----------------|
| Eaton Moeller® series DILM contactor | 277167         |

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

| Product Length/Depth | Product Height |
|----------------------|----------------|
| 97 mm                | 85 mm          |

| Product Width | Product Weight |
|---------------|----------------|
| 45 mm         | 0.428 kg       |

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

## Product specifications

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.

## Resources

### Catalogs

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

[SmartWire-DT Catalog](#)

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

### Characteristic curve

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

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

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

### Declarations of conformity

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

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

### Drawings

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

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

[eaton-contactors-mounting-dilm-dimensions.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

[ETN.277167.edz](#)

### Installation instructions

[IL03407014Z2021\\_09.pdf](#)

### Installation videos

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

### mCAD model

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

[DA-CS-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 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

Equipment heat dissipation, current-dependent Pvid

4.2 W

Heat dissipation capacity Pdis

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:  $0.6 - 0.3 \times U_C$ , 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 (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, 110 V

40 A

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

40 A

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

40 A

Rated operational current for specified heat dissipation (In)

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 (Ue) at AC - max

690 V

Resistance per pole

2.7 m $\Omega$

Static heat dissipation, non-current-dependent P<sub>vs</sub>

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<sub>th</sub> at 40°C (3-pole, open)

45 A

Conventional thermal current I<sub>th</sub> at 50°C (3-pole, open)

43 A

Conventional thermal current I<sub>th</sub> 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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