

# Eaton 239477

Catalog Number: 239477

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 45 kW, 110 V 50 Hz, 120 V 60 Hz, AC operation, Screw terminals



## General specifications

<b>Product Name</b>	<b>Catalog Number</b>
Eaton Moeller® series DILM contactor	239477
<b>EAN</b>	<b>Product Length/Depth</b>
4015082394776	160 mm
<b>Product Height</b>	<b>Product Width</b>
170 mm	90 mm
<b>Product Weight</b>	<b>Certifications</b>
2.18 kg	IEC/EN 60947-4-1
	IEC/EN 60947
	UL 60947-4-1
	VDE 0660
	UL
	CSA
	CSA-C22.2 No. 60947-4-1-14
	CE
	CSA Class No.: 2411-03, 3211-04
	CSA File No.: 012528
	UL File No.: E29096
	UL Category Control No.: NLDX

## Catalog Notes

Contacts according to EN 50012

## Number Of Poles

Three-pole

### 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.

## Characteristic curve

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

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

## Declarations of conformity

[DA-DC-00004781.pdf](#)

[DA-DC-00004818.pdf](#)

## Diagramas de cableado

[eaton-contactors-contact-dilm-wiring-diagram-003.eps](#)

## Dibujos

[eaton-contactors-dilm-dimensions-003.eps](#)

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

## eCAD model

[ETN.239477.edz](#)

## Instrucciones de instalación

[eaton-dil-contactors-instruction-leaflet-il03407039z.pdf](#)

## mCAD model

[DA-CD-dil\\_m80\\_170](#)

[DA-CS-dil\\_m80\\_170](#)

#### 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.

#### Operating frequency

3600 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 (U<sub>imp</sub>)

8000 V AC

#### Utilization category

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

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

AC-3: Normal AC induction motors: starting, switch off during running

#### Connection

Screw terminals

#### Frame size

FS4

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

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

7.5 HP

Assigned motor power at 200/208 V, 60 Hz, 3-phase

30 HP

Assigned motor power at 230/240 V, 60 Hz, 1-phase

15 HP

Assigned motor power at 230/240 V, 60 Hz, 3-phase

40 HP

Assigned motor power at 460/480 V, 60 Hz, 3-phase

75 HP

Assigned motor power at 575/600 V, 60 Hz, 3-phase

100 HP

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

250 A

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

100 A

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

115 A

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

275 A

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

12.6 W

Heat dissipation capacity  $P_{diss}$

0 W

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

4.2 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)

#### Arcing time

15 ms

#### Electrical connection type of main circuit

Screw connection

#### Screwdriver size

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

#### Voltage type

AC

#### Degree of protection

IP00

#### Number of auxiliary contacts (normally closed contacts)

0

#### Number of auxiliary contacts (normally open contacts)

0

#### Number of contacts (normally closed) as main contact

0

#### Number of main contacts (normally open contact)

3

#### Rated breaking capacity at 220/230 V

950 A

#### Rated breaking capacity at 380/400 V

950 A

#### Rated breaking capacity at 500 V

950 A

#### Rated breaking capacity at 660/690 V

800 A

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

110 V

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

110 V

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

120 V

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

120 V

Drop-out voltage

AC operated: 0.6 - 0.3 x UC, AC operated

Overvoltage category

III

Duty factor

100 %

Emitted interference

According to EN 60947-1

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 Uc

Power consumption, pick-up, 50 Hz

310 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz

Safe isolation

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

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

Power consumption, pick-up, 60 Hz

345 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz

Residual current

1 mA (with actuation of A1 - A2 by the electronics with "0" signal)

Screw size

5 mm AF, Hexagon socket-head spanner, Terminal screw, Main cables

M3.5, Terminal screw, Control circuit cables

M10, Terminal screw, Main cables

#### Power consumption, sealing, 50 Hz

26 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz

5.8 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz

#### Power consumption, sealing, 60 Hz

5.8 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz

30 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz

#### Terminal capacity (stranded)

2 x (16 - 50) mm<sup>2</sup>, Main cables

1 x (16 - 70) mm<sup>2</sup>, Main cables

#### Terminal capacity (copper band)

2 x (6 x 16 x 0.8) mm (Number of segments x width x thickness),  
Main cables

#### Terminal capacity (flexible with ferrule)

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

2 x (10 - 50) mm<sup>2</sup>, Main cables

1 x (10 - 70) mm<sup>2</sup>, Main cables

#### Shock resistance

5 g, N/C auxiliary 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 when tabletop-mounted, 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

5 g, N/C 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

#### Terminal capacity (solid)

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

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

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

18 - 14, Control circuit cables

Single 8...3/0, double 8...2/0, Main cables

#### Switching capacity (main contacts, general use)

125 A, Maximum motor rating (UL/CSA)

#### Tightening torque

14 Nm, Screw terminals, Main cables

1.2 Nm, Screw terminals, Control circuit 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)

1330 A

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

130 A

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

95 A

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

95 A

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

95 A

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

95 A

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

80 A

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

50 A

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

50 A

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

50 A

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

50 A

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

37 A

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

110 A

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

70 A

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

110 A



Rated operational current for specified heat dissipation (In)

95 A

Rated operational power at AC-3, 240 V, 50 Hz

32 kW

Rated operational power at AC-3, 380/400 V, 50 Hz

45 kW

Rated operational power at AC-3, 415 V, 50 Hz

57 kW

Rated operational power at AC-4, 220/230 V, 50 Hz

16 kW

Rated operational power at AC-4, 240 V, 50 Hz

17 kW

Rated operational power at AC-4, 380/400 V, 50 Hz

26 kW

Rated operational power at AC-4, 415 V, 50 Hz

30 kW

Rated operational power at AC-4, 440 V, 50 Hz

32 kW

Rated operational power at AC-4, 500 V, 50 Hz

36 kW

Rated operational power at AC-4, 660/690 V, 50 Hz

35 kW

Rated operational power (NEMA)

55 kW

Rated operational voltage (Ue) at AC - max

690 V

Resistance per pole

0.6 m $\Omega$

Static heat dissipation, non-current-dependent Pvs

5.8 W

Stripping length (control circuit cable)

10 mm

Stripping length (main cable)

24 mm

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

20 ms

Switching time (AC operated, make contacts, closing delay) - min

14 ms

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

14 ms

Switching time (AC operated, make contacts, opening delay) - min

9 ms

Short-circuit current rating (basic rating)

10 kA, SCCR (UL/CSA)

600 A, max. CB, SCCR (UL/CSA)

600 A, max. Fuse, SCCR (UL/CSA)

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

250 A, max. CB, SCCR (UL/CSA)

300/300 A, Class J, max. Fuse, SCCR (UL/CSA)

65 kA, CB, SCCR (UL/CSA)

30/100 kA, Fuse, SCCR (UL/CSA)

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

300/300 A, Class J, max. Fuse, SCCR (UL/CSA)

30 kA, CB, SCCR (UL/CSA)

30/100 kA, Fuse, SCCR (UL/CSA)

350 A, max. CB, SCCR (UL/CSA)

Short-circuit protection rating (type 1 coordination) at 400 V

250 A gG/gL

Suitable for

Also motors with efficiency class IE3

Short-circuit protection rating (type 1 coordination) at 690 V

200 A gG/gL

Short-circuit protection rating (type 2 coordination) at 400 V

160 A gG/gL

Short-circuit protection rating (type 2 coordination) at 690 V

160 A gG/gL

Special purpose rating of ballast electrical discharge lamps

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

100 A (480V 60Hz 3phase, 277V 60Hz 1phase)

Special purpose rating of definite purpose rating

570 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995,  
(UL/CSA)

95 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995,  
(UL/CSA)

Special purpose rating of elevator control

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

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

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

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

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

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

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

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

#### Special purpose rating of refrigeration control (CSA only)

420 A, LRA 600 V 60 Hz 3phase; (CSA)

540 A, LRA 480 V 60 Hz 3phase; (CSA)

70 A, FLA 600 V 60 Hz 3phase; (CSA)

90 A, FLA 480 V 60 Hz 3phase; (CSA)

#### Special purpose rating of resistance air heating

100 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)

100 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)

#### Special purpose rating of tungsten incandescent lamps

100 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)

100 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)

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

130 A

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

125 A

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

110 A

#### Rated operational power at AC-3, 440 V, 50 Hz

60 kW

#### Rated operational power at AC-3, 500 V, 50 Hz

70 kW

#### Rated operational power at AC-3, 690 V, 50 Hz

75 kW

#### Actuating voltage

110 V 50 Hz, 120 V 60 Hz

#### Altitude

Max. 2000 m

#### Operating voltage at AC, 50 Hz - min

230 V

#### Operating voltage at AC, 50 Hz - max

690 V

#### Operating voltage at AC, 60 Hz - min

230 V

Operating voltage at AC, 60 Hz - max

690 V



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