

# Eaton 239588

Catalog Number: 239588

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 75 kW, RAC 240: 190 - 240 V 50/60 Hz, AC operation, Screw terminals DILM150(RAC240)



Fotografia este reprezentativa

## General specifications

### Product Name

Eaton Moeller® series DILM contactor

### Catalog Number

239588

### EAN

4015082395889

### Product Length/Depth

160 mm

### Product Height

170 mm

### Product Width

90 mm

### Product Weight

2.25 kg

### Certifications

VDE 0660

CSA

CE

CSA File No.: 012528

CSA Class No.: 2411-03, 3211-04

UL 60947-4-1

UL

IEC/EN 60947-4-1

IEC/EN 60947

UL Category Control No.: NLDX

UL File No.: E29096

CSA-C22.2 No. 60947-4-1-14

### Catalog Notes

Contacts according to EN 50012

### Model Code

DILM150(RAC240)

## Features Functions

### Fitted with:

Suppressor circuit in actuating electronics

### Number Of Poles

Three-pole

## General

### Application

Contactors for Motors

### Degree of protection

IP00

### Frame size

FS4

### Lifespan, mechanical

10,000,000 Operations (AC operated)

### Operating frequency

3600 mechanical Operations/h (AC 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

### Residual current

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

### Resistance per pole

0.6 m $\Omega$

### 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

AC

## Ambient conditions, mechanical

### 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

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 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

7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms

## Electro magnetic compatibility

### Emitted interference

According to EN 60947-1

### Interference immunity

According to EN 60947-1

## Climatic environmental conditions

### Altitude

Max. 2000 m

### Ambient operating temperature - min

-25 °C

### 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, constant, to IEC 60068-2-78

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

## Terminal capacities

### 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 (10 - 95) mm<sup>2</sup>, Main cables  
2 x (10 - 70) mm<sup>2</sup>, Main cables  
1 x (0.75 - 2.5) mm<sup>2</sup>, Control circuit cables

### Terminal capacity (solid)

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)

18 - 14, Control circuit cables  
Single 8...3/0, double 8...2/0, Main cables

### Terminal capacity (stranded)

1 x (16 - 95) mm<sup>2</sup>, Main cables  
2 x (16 - 70) mm<sup>2</sup>, Main cables

#### Stripping length (main cable)

24 mm

#### Stripping length (control circuit cable)

10 mm

#### Screw size

M10, Terminal screw, Main cables

M3.5, Terminal screw, Control circuit cables

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

#### 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

#### Tightening torque

14 Nm, Screw terminals, Main cables

1.2 Nm, Screw terminals, Control circuit cables

## Electrical rating

Rated breaking capacity at 220/230 V

1500 A

Rated breaking capacity at 380/400 V

1500 A

Rated breaking capacity at 500 V

1500 A

Rated breaking capacity at 660/690 V

1200 A

Rated operational current (I<sub>e</sub>) at AC-1, 380 V, 400 V, 415 V

190 A

Rated operational current (I<sub>e</sub>) at AC-3, 220 V, 230 V, 240 V

150 A

Rated operational current (I<sub>e</sub>) at AC-3, 380 V, 400 V, 415 V

150 A

Rated operational current (I<sub>e</sub>) at AC-3, 440 V

150 A

Rated operational current (I<sub>e</sub>) at AC-3, 500 V

150 A

Rated operational current (I<sub>e</sub>) at AC-3, 660 V, 690 V

100 A

Rated operational current (I<sub>e</sub>) at AC-4, 220 V, 230 V, 240 V

65 A

Rated operational current (I<sub>e</sub>) at AC-4, 440 V

65 A

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

65 A

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

50 A

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

160 A

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

160 A

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

90 A

Rated insulation voltage (U<sub>i</sub>)

690 V

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

2100 A

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

52 kW

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

75 kW

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

91 kW

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

95 kW

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

110 kW

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

96 kW

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

20 kW

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

22 kW

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

39 kW

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

41 kW

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

47 kW

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

48 kW

Rated operational voltage (Ue) at AC - max

690 V

## Switching capacity

Switching capacity (main contacts, general use)

225 A, Maximum motor rating (UL/CSA)

## Short-circuit rating

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)

65 kA, CB, SCCR (UL/CSA)

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

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

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

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

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

300/600 A, Class J, max. Fuse, SCCR (UL/CSA)

30 kA, CB, SCCR (UL/CSA)

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

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

250 A gG/gL

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

250 A gG/gL

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

250 A gG/gL

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

250 A gG/gL

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

Conventional thermal current I<sub>th</sub> (1-pole, enclosed)

360 A

Conventional thermal current I<sub>th</sub> (3-pole, enclosed)

144 A

Conventional thermal current I<sub>th</sub> at 55°C (3-pole, open)

170 A

Conventional thermal current I<sub>th</sub> of main contacts (1-pole, open)

400 A

## Magnet system

Arcing time

15 ms

### Drop-out voltage

AC operated: 0.6 - 0.25 x UC, AC operated

### Duty factor

100 %

### Pick-up voltage

0.8 - 1.15 V AC x Uc

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

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

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

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

### Power consumption, sealing, 50 Hz

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

### Power consumption, sealing, 60 Hz

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

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

190 V

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

240 V

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

190 V

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

240 V

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

0 V

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

0 V

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

28 ms

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

33 ms

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

35 ms

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

## Motor rating

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

10 HP

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

50 HP

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

30 HP

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

60 HP

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

125 HP

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

125 HP

## Communication

### Connection

Screw terminals

### Connection to SmartWire-DT

No

## Contacts

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

0

## Safety

### Safe isolation

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

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

## Special purpose ratings

Special purpose rating of ballast electrical discharge lamps

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

max  
41 ms

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

#### Special purpose rating of definite purpose rating

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

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

#### Special purpose rating of elevator control

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

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

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

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

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

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

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

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

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

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

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

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

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

#### Special purpose rating of resistance air heating

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

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

#### Special purpose rating of tungsten incandescent lamps

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

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

## Design verification

Equipment heat dissipation, current-dependent P<sub>vid</sub>

32.1 W

Heat dissipation capacity P<sub>diss</sub>

0 W

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

10.7 W

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

150 A

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

2.3 W

### 10.2.2 Corrosion resistance

Meets the product standard's requirements.

## Resurse

Characteristic curve

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

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

Desene

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

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

Instrucțiuni de instalare

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

Scheme electrice

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

#### 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.



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