Product specifications

Eaton 277012

Catalog Number: 277012

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 7.5 kW, 1 N/O, 230 V 50/60 Hz, AC operation, Screw terminals DILM17-10(230V50/60HZ)

General specifications

Product Name	**Catalog Number**
Eaton Moeller® series DILM contactor	277012
Model Code	**EAN**
DILM17-10(230V50/60HZ)	4015082770129
Product Length/Depth	**Product Height**
97 mm	85 mm
Product Width	**Product Weight**
45 mm	0.428 kg

Certifications

IEC/EN 60947-4-1
VDE 0660
UL
UL Category Control No.: NLDX
UL 60947-4-1
CE
CSA Class No.: 2411-03, 3211-04
CSA File No.: 012528
UL File No.: E29096
CSA
IEC/EN 60947
CSA-C22.2 No. 60947-4-1-14

Catalog Notes

Contacts according to EN 50012

Powering Business Worldwide

Product specifications

Terminal capacity (flexible with ferrule)

1 x (0.75 - 16) mm², Main cables
1 x (0.75 - 2.5) mm², Control circuit cables
2 x (0.75 - 2.5) mm², Control circuit cables
2 x (0.75 - 10) mm², Main cables

Rated operational current for specified heat dissipation (In)

18 A

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

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

7.5 kW

Conventional thermal current ith (3-pole, enclosed)

32 A

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

4.5 kW

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

10 A

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

230 V

Conventional thermal current ith at 60°C (3-pole, open)

35 A

10.4 Clearances and creepage distances

Meets the product standard's requirements.

Number of contacts (normally closed) as main contact

0

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

50/32 A, max. CB, SCCR (UL/CSA)
125/70 A, Class J, max. Fuse, SCCR (UL/CSA)
10/100 kA, Fuse, SCCR (UL/CSA)
10/65 kA, CB, SCCR (UL/CSA)

Conventional thermal current ith at 55°C (3-pole, open)

37 A

Rated operational power (NEMA)

7.4 kW

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

Resources

Catalogues

Switching and protecting motors - catalog

Product Range Catalog Switching and protecting motors

SmartWire-DT Catalog

Characteristic curve

eaton-contactors-switch-dilm-characteristic-curve-002.eps

eaton-contactors-component-dilm-characteristic-curve-003.eps

eaton-contactors-switch-dilm-characteristic-curve.eps

Drawings

eaton-contactors-dilm-dimensions.eps

eaton-contactors-contact-dilm-dimensions-002.eps

eaton-contactors-mounting-dilm-dimensions-002.eps

eaton-contactors-mounting-dilm-dimensions.eps

eaton-general-ie-ready-dilm-contactor-standards.eps

eaton-contactors-dilm-3d-drawing-009.eps

eCAD model

DA-CE-ETN.DILM17-10(230V50_60HZ)

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

Ambient storage temperature - min

40 °C

Rated breaking capacity at 380/400 V

170 A

Short-circuit current rating (basic rating)

125 A, max. CB, SCCR (UL/CSA)
5 kA, SCCR (UL/CSA)
125 A, max. Fuse, SCCR (UL/CSA)

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

230 V

Rated breaking capacity at 660/690 V

120 A

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

35 A

Special purpose rating of elevator control

9.6 A, 240 V 60 Hz 3-ph, (UL/CSA)
3 HP, 240 V 60 Hz 3-ph, (UL/CSA)
11 A, 480 V 60 Hz 3-ph, (UL/CSA)
11 A, 200 V 60 Hz 3-ph, (UL/CSA)
11 A, 600 V 60 Hz 3-ph, (UL/CSA)
3 HP, 200 V 60 Hz 3-ph, (UL/CSA)
7.5 HP, 480 V 60 Hz 3-ph, (UL/CSA)
10 HP, 600 V 60 Hz 3-ph, (UL/CSA)

Ambient operating temperature - max

60 °C

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

2 HP

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

5.5 kW

Electrical connection type of main circuit

Screw connection

Number Of Poles

Three-pole

Ambient operating temperature - min

-25 °C

10.6 Incorporation of switching devices and components

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.

10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

Application

Contactors for Motors

Operating frequency

5000 mechanical Operations/h (AC operated)

Voltage type

AC

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

63 A gG/gL

Product category

Contactors

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

10 A

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

11 kW

Power consumption, pick-up, 50 Hz

62 VA, Dual-frequency coil in a cold state and 1.0 x Us

58 VA, Dual-frequency coil in a cold state and 1.0 x Us

Heat dissipation capacity Pdiss

0 W

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

10 HP

Special purpose rating of tungsten incandescent lamps

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)

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

8 ms

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

10 A

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

5.5 kW

Operating voltage at AC, 60 Hz - max

690 V

Terminal capacity (solid/stranded AWG)

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

18 - 14, Control circuit cables

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

Degree of protection

IP00

Overvoltage category

III

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

14 ms

Ambient storage temperature - max

80 °C

Pollution degree

3

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

40 A

Power consumption, pick-up, 60 Hz

62 VA, Dual-frequency coil in a cold state and 1.0 x Us

58 VA, Dual-frequency coil in a cold state and 1.0 x Us

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

22 ms

Rated impulse withstand voltage (Uimp)

8000 V AC

Connection

Screw terminals

Operating voltage at AC, 60 Hz - min

24 V

Tightening torque

3.2 Nm, Screw terminals, Main cables

1.2 Nm, Screw terminals, Control circuit cables

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

6.5 kW

Frame size

FS2

Conventional thermal current ith (1-pole, enclosed)

80 A

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

12 A

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.7 Inscriptions

Meets the product standard's requirements.

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

18 A

Number of contacts (normally open contacts)

1

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

16 ms

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

35 A gG/gL

Special purpose rating of ballast electrical discharge lamps

40 A (480V 60Hz 3phase, 277V 60Hz 1phase)
40 A (600V 60Hz 3phase, 347V 60Hz 1phase)

Number of auxiliary contacts (normally open contacts)

1

Special purpose rating of definite purpose rating

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

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

12 kW

Shock resistance

10 g, N/O main 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
5 g, N/C auxiliary 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, 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

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

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

35 A

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

5 HP

Drop-out voltage

AC operated: 0.6 - 0.3 x UC, AC operated

Power consumption, sealing, 60 Hz

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

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

Resistance per pole

2.7 m Ω

Ambient operating temperature (enclosed) - min

25 °C

Stripping length (control circuit cable)

10 mm

Operating voltage at AC, 50 Hz - max

690 V

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

Special purpose rating of refrigeration control (CSA only)

40 A, FLA 480 V 60 Hz 3phase; (CSA)
180 A, LRA 600 V 60 Hz 3phase; (CSA)
240 A, LRA 480 V 60 Hz 3phase; (CSA)
30 A, FLA 600 V 60 Hz 3phase; (CSA)

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

Stripping length (main cable)

10 mm

Ambient operating temperature (enclosed) - max

40 °C

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)

Rated control supply voltage (Us) at DC - min

0 V

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

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

10/22 kA, CB, SCCR (UL/CSA)

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

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

10.8 Connections for external conductors

Is the panel builder's responsibility.

Number of main contacts (normally open contact)

3

Rated breaking capacity at 220/230 V

170 A

Screw size

M5, Terminal screw, Main cables

M3.5, Terminal screw, Control circuit cables

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

10 A

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

35 A gG/gL

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

15 HP

Protection

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

Power consumption, sealing, 50 Hz

2.1 W, Dual-frequency coil in a cold state and 1.0 x Us

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

10.5 kW

Terminal capacity (stranded)

1 x 16 mm², Main cables

Rated breaking capacity at 500 V

170 A

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

10 kW

Climatic proofing

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

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

Emitted interference

According to EN 60947-1

Connection to SmartWire-DT

No

Static heat dissipation, non-current-dependent Pvs

2.1 W

Rated control supply voltage (Us) at DC - max

0 V

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

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

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

18 A

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

Safe isolation

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

Operating voltage at AC, 50 Hz - min

24 V

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Heat dissipation per pole, current-dependent Pvid

0.7 W

Actuating voltage

230 V 50/60 Hz

Switching capacity (auxiliary contacts, general use)

1 A, 250 V DC, (UL/CSA)
10 A, 600 V AC, (UL/CSA)

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

8 A

Equipment heat dissipation, current-dependent Pvid

2.1 W

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

5 HP

Pick-up voltage

0.8 - 1.1 V AC x Uc

Suitable for

Also motors with efficiency class IE3

Conventional thermal current ith at 40°C (3-pole, open)

40 A

Terminal capacity (solid)

2 x (0.75 - 10) mm², Main cables

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

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

1 x (0.75 - 16) mm², Main cables

Number of auxiliary contacts (normally closed contacts)

0

Interference immunity

According to EN 60947-1

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.

Lifespan, mechanical

7,000,000 Operations (Coil 50/60 Hz)

10,000,000 Operations (AC operated)

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

50 A gG/gL

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

238 A

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

3 kW

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

6 kW

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

35 A

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

2.5 kW

Rated operational voltage (Ue) at AC - max

690 V

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

230 V

10.7 Internal electrical circuits and connections

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.

Switching capacity (main contacts, general use)

40 A, Maximum motor rating (UL/CSA)

Conventional thermal current ith at 50°C (3-pole, open)

38 A

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

18 A

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

3 HP

Screwdriver size

2, Terminal screw, Pozidriv screwdriver

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

Duty factor

100 %

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

18 A

Conventional thermal current ith of main contacts (1-pole, open)

88 A

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

230 V

Arcing time

10 ms

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

5 kW

Switching capacity (auxiliary contacts, pilot duty)

P300, DC operated (UL/CSA)

A600, AC operated (UL/CSA)

Rated insulation voltage (Ui)

690 V

Altitude

Max. 2000 m

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