

Eaton 109819

Catalog Number: 109819

Eaton Moeller® series DILMP Contactor, 4 pole, AC operation, AC-1: 45 A, 1 N/O, 110 V 50 Hz, 120 V 60 Hz, Screw terminals

General specifications



Photo is representative

Product Name	Catalog Number
Eaton Moeller® series DILMP 4-pole contactor	109819
	Model Code
	DILMP45-10(110V50HZ,120V60HZ)
EAN	Product Length/Depth
4015081093892	97 mm
Product Height	Product Width
85 mm	58 mm
Product Weight	Certifications
0.49 kg	UL 60947-4-1
	VDE 0660
	CSA Class No.: 2411-03, 3211-04
	UL File No.: E29096
	CSA-C22.2 No. 60947-4-1-14
	UL Category Control No.: NLDX
	UL
	IEC/EN 60947-4-1
	CE
	CSA File No.: 012528
	IEC/EN 60947
	CSA

Catalog Notes

Contacts according to EN 50012

Features & Functions

Number Of Poles

Four-pole

General

Application

Contactors for 4 pole electric consumers

Lifespan, mechanical

10,000,000 Operations (DC operated)

10,000,000 Operations (AC operated)

Operating frequency

5000 mechanical Operations/h (AC operated)

5000 mechanical Operations/h (DC 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

2.7 m Ω

Utilization category

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

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

Voltage type

AC

Ambient conditions, mechanical

Shock resistance

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, Half-sinusoidal shock 10 ms

Climatic environmental conditions

Ambient operating temperature - min

-25 °C

Ambient operating temperature - max

60 °C

5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms

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, cyclic, to IEC 60068-2-30

Damp heat, constant, to IEC 60068-2-3

Electro Magnetic Compatibility

Interference immunity

According to EN 60947-1

Terminal capacities

Terminal capacity (flexible with ferrule)

1 x (0.75 - 16) mm², Main cables

2 x (0.75 - 10) mm², Main cables

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

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

Terminal capacity (solid)

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

2 x (0.75 - 10) mm², Main cables

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

1 x (0.75 - 16) mm², Main cables

Terminal capacity (solid/stranded AWG)

18 - 14, Control circuit cables

18 - 6, Main cables

Terminal capacity (stranded)

1 x 16 mm², Main cables

Stripping length (main cable)

10 mm

Stripping length (control circuit cable)

10 mm

Screw size

M3.5, Terminal screw, Control circuit cables

M5, Terminal screw, Main cables

Screwdriver size

2, Terminal screw, Pozidriv screwdriver

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

Tightening torque

1.2 Nm, Screw terminals, Control circuit cables

3 Nm, Screw terminals, Main cables

Electrical Rating

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

144 A

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

45 A

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

25 A

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

25 A

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

25 A

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

25 A

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

15 A

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

15 A

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

45 A

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

45 A

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

45 A

Rated insulation voltage (U_i)

690 V

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

45 A

Rated operational power at AC-1, 240 V, 50 Hz

18 kW

Rated operational power at AC-1, 380/400 V, 50 Hz

28 kW

Rated operational power at AC-1, 415 V, 50 Hz

31 kW

Rated operational power at AC-1, 440 V, 50 Hz

33 kW

Rated operational power at AC-1, 500 V, 50 Hz

37 kW

Rated operational power at AC-1, 690 V, 50 Hz

49 kW

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 voltage (U_e) at AC - max

690 V

Conventional thermal current

Conventional thermal current *I*_{th} (1-pole, enclosed)

105 A

Conventional thermal current *I*_{th} (3-pole, enclosed)

36 A

Conventional thermal current *I*_{th} at 55°C (3-pole, open)

40 A

Conventional thermal current *I*_{th} of main contacts (1-pole, open)

117 A

Short-circuit rating

Short-circuit current rating (basic rating)

5 kA, SCCR (UL/CSA)

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

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

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

10/65 kA, CB, SCCR (UL/CSA)

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

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

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

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

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

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

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

125/100 A, Class J, max. Fuse, SCCR (UL/CSA)

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

100 A gG/gL

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

Switching capacity

Switching capacity (main contacts, general use)

40 A, Maximum motor rating (UL/CSA)

Switching capacity (auxiliary contacts, general use)

10 A, 600 V AC, (UL/CSA)

1 A, 250 V DC, (UL/CSA)

Switching capacity (auxiliary contacts, pilot duty)

A600, AC operated (UL/CSA)

P300, DC operated (UL/CSA)

Switching time

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

16 ms

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

22 ms

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

8 ms

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

14 ms

Magnet system

Drop-out voltage

AC operated: 0.6 - 0.4 x UC, AC operated

Duty factor

100 %

Pick-up voltage

0.85 - 1.1 V AC/DC x Us

0.8 - 1.1 V AC x Uc

Power consumption, pick-up, 50 Hz

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

Power consumption, pick-up, 60 Hz

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

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

Power consumption, sealing, 50 Hz

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

Power consumption, sealing, 60 Hz

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

8 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

110 V

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

110 V

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

120 V

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

120 V

Rated control supply voltage (Us) at DC - min

0 V

Rated control supply voltage (Us) at DC - max

0 V

Motor Rating

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

2 HP

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

7.5 HP

Communication

Connection to SmartWire-DT

No

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

5 HP

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

10 HP

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

15 HP

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

20 HP

Special purpose ratings

Special purpose rating of ballast electrical discharge lamps

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

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

Special purpose rating of definite purpose rating

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

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

Special purpose rating of elevator control

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

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

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

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

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

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

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

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

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)

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

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

Special purpose rating of resistance air heating

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

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

Contacts

Number of contacts (normally open contacts)

1

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

1

Safety

Safe isolation

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

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

Design verification

Equipment heat dissipation, current-dependent P_{vid}

13.2 W

Heat dissipation capacity P_{diss}

0 W

Rated operational current for specified heat dissipation (I_n)

45 A

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

Special purpose rating of tungsten incandescent lamps

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

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

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.

Resources

Catalogues

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

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

[Switching and protecting motors - catalog](#)

[SmartWire-DT Catalog](#)

Characteristic curve

[eaton-contactors-switching-dilmp-characteristic-curve.eps](#)

[2110DIA-3](#)

Declarations of conformity

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

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

Drawings

[eaton-contactors-dimensions-2110dim-11.eps](#)

[2110DIM-10](#)

[210N017](#)

[eaton-contactors-characteristic-curve-2110dia-3.eps](#)

[eaton-contactors-dimensions-2110dim-10.eps](#)

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

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

[2110DIM-11](#)

[210N018](#)

eCAD model

[DA-CE-ETN.DILMP45-10\(110V50HZ,120V60HZ\)](#)

[ETN.109819.edz](#)

Installation instructions

[IL03407049Z](#)

Installation videos

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

mCAD model

[eaton-cadenas-side_view-dil_mp32_45_side.pra](#)

[eaton-cadenas-front_view-dil_mp32_45_front.pra](#)

[DA-CS-dil_mp32_45](#)

[DA-CD-dil_mp32_45](#)

[eaton-cadenas-path-01-geo-dil_mp32_45.3db](#)

[eaton-cadenas-drill_view-dil_mp32_45_drill.pra](#)

Wiring diagrams

2110SWI-1

210S028

eaton-contactors-dilmp-wiring-diagram.eps



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