

Eaton 109904

Catalog Number: 109904

Eaton Moeller® series DILMP Contactor, 4 pole, 125 A, RAC 24:
24 V 50/60 Hz, AC operation



General specifications

Product Name

Eaton Moeller® series DILMP 4-pole
contactor

Catalog Number

109904

Model Code

DILMP125(RAC24)

EAN

4015081094707

Product Length/Depth

160 mm

Product Height

170 mm

Product Width

122 mm

Product Weight

2.73 kg

Certifications

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

UL

UL File No.: E29096

CSA File No.: 012528

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

UL Category Control No.: NLDX

CE

IEC/EN 60947

UL 60947-4-1

CSA

IEC/EN 60947-4-1

VDE 0660

Catalog Notes

Contacts according to EN 50012

Features & Functions

Fitted with:

Suppressor circuit in actuating electronics

Number Of Poles

Four-pole

General

Application

Contactors for 4 pole electric consumers

Lifespan, mechanical

10,000,000 Operations (AC operated)

10,000,000 Operations (DC operated)

Operating frequency

3600 mechanical Operations/h (DC operated)

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 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

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

Climatic environmental conditions

Ambient operating temperature - min

-25 °C

Ambient operating temperature - max

60 °C

10 g, N/O main 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 (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)

1 x (0.75 - 1.5) mm²

2 x (0.75 - 1.5) mm²

Terminal capacity (flexible)

1 x (0.75 - 2.5) mm²

2 x (0.75 - 2.5) mm²

Terminal capacity (solid)

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

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

1 x (0.75 - 2.5) mm²

Terminal capacity (solid/stranded AWG)

8 - 3/0, Main cables

18 - 14, Control circuit cables

Terminal capacity (stranded)

2 x (16 - 95) mm², Main cables

1 x (16 - 120) mm², Main cables

Stripping length (main cable)

15 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

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

2, Terminal screw, Control circuit cables, Pozidriv screwdriver

Tightening torque

1.2 Nm, Screw terminals, Control circuit cables

14 Nm, Screw terminals, Main cables

Electrical Rating

Rated breaking capacity at 220/230 V

800 A

Rated breaking capacity at 380/400 V

800 A

Rated breaking capacity at 500 V

800 A

Rated breaking capacity at 660/690 V

650 A

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

125 A

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

80 A

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

80 A

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

80 A

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

80 A

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

65 A

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

115 A

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

125 A

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

125 A

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

125 A

Rated insulation voltage (U_i)

690 V

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

125 A

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

49 kW

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

78 kW

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

85 kW

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

90 kW

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

103 kW

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

136 kW

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

27.5 kW

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

37 kW

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

48 kW

Rated operational voltage (Ue) at AC - max

690 V

Conventional thermal current

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

292 A

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

100 A

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

110 A

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

325 A

Short-circuit rating

Short-circuit current rating (basic rating)

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

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

10 kA, SCCR (UL/CSA)

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

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

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

65 kA, CB, SCCR (UL/CSA)

300/300 A, Class J, max. 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

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

Switching capacity

Switching capacity (main contacts, general use)

125 A, Maximum motor rating (UL/CSA)

Switching time

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) -

max
41 ms

Magnet system

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

0.8 - 1.15 V AC/DC x Us

Power consumption, pick-up, 50 Hz

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

Power consumption, pick-up, 60 Hz

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

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

Power consumption, sealing, 50 Hz

2.3 W, 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

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

24 V

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

24 V

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

24 V

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

24 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

7.5 HP

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

25 HP

Communication

Connection to SmartWire-DT

No

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

15 HP

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

30 HP

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

60 HP

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

75 HP

Special purpose ratings

Special purpose rating of ballast electrical discharge lamps

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

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

Special purpose rating of elevator control

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

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

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

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

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

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

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

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

Special purpose rating of refrigeration control (CSA only)

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

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

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

420 A, LRA 600 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)

110 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)

Contacts

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

0

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}

22.2 W

Heat dissipation capacity P_{diss}

0 W

Rated operational current for specified heat dissipation (I_n)

125 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

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

Product Range Catalog Switching and protecting motors

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

Switching and protecting motors - catalog

SmartWire-DT Catalog

Characteristic curve

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

2110DIA-3

Declarations of conformity

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

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

Drawings

[eaton-contactors-dimensions-2110dim-15.eps](#)

[eaton-contactors-dimensions-2110dim-14.eps](#)

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

[eaton-contactors-dilmp-dimensions-004.eps](#)

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

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

2110DIM-15

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

210N017

2110DIM-14

210N018

eCAD model

[ETN.109904.edz](#)

[DA-CE-ETN.DILMP125\(RAC24\)](#)

Installation instructions

[IL03407049Z](#)

Installation videos

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

mCAD model

[eaton-cadenas-front_view-dil_mp125_200_front.pra](#)

[DA-CD-dil_mp125_200](#)

[eaton-cadenas-drill_view-dil_mp125_200_drill.pra](#)

[eaton-cadenas-side_view-dil_mp125_200_side.pra](#)

DA-CS-dil_mp125_200

eaton-cadenas-path-01-geo-dil_mp125_200.3db

Wiring diagrams

eaton-contactors-contact-dilem-wiring-diagram.eps

210S028



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