Specifications

Eaton 109913

Catalog Number: 109913

Eaton Moeller® series DILMP Contactor, 4 pole, 160 A, RAC 120: 100 - 120 V 50/60 Hz, AC operation

General specifications

Product Name
Eaton Moeller® series DILMP 4-pole contactor

Catalog Number
109913

Model Code
DILMP160(RAC120)

EAN
4015081094790

Product Length/Depth
160 mm

Product Height
170 mm

Product Width
122 mm

Product Weight
2.73 kg

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

Catalog Notes
Contacts according to EN 50012

Powering Business Worldwide

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 (DC operated)

10,000,000 Operations (AC operated)

Operating frequency

3600 mechanical Operations/h (AC operated)

3600 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

0.6 mΩ

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

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 (10 - 95) mm², Main cables
2 x (10 - 70) 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)

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

Terminal capacity (solid/stranded AWG)

18 - 14, Control circuit cables
8 - 3/0, Main cables

Terminal capacity (stranded)

1 x (16 - 120) mm², Main cables
2 x (16 - 95) mm², Main cables

Stripping length (main cable)

15 mm

Stripping length (control circuit cable)

10 mm

Screw size

M3.5, Terminal screw, Control circuit cables
5 mm AF, Hexagon socket-head spanner, Terminal screw, Main

Electrical Rating

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

750 A

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

160 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, 400 V

65 A

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

160 A

cables

M10, Terminal screw, Main cables

Screwdriver size

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

5 mm, hexagon socket-head, Terminal screw, Main cables

2, Auxiliary terminal screw, Pozidriv screwdriver

Tightening torque

14 Nm, Screw terminals, Main cables

1.2 Nm, Screw terminals, Control circuit cables

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

160 A

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

160 A

Rated insulation voltage (Ui)

690 V

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

160 A

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

63 kW

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

100 kW

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

109 kW

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

116 kW

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

132 kW

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

174 kW

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

33 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 voltage (Ue) at AC - max

690 V

Short-circuit rating

Short-circuit current rating (basic rating)

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

10 kA, 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)

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

Conventional thermal current

Conventional thermal current ith (1-pole, enclosed)

373 A

Conventional thermal current ith (3-pole, enclosed)

128 A

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

143 A

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

65 kA, CB, SCCR (UL/CSA)

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

30 kA, CB, SCCR (UL/CSA)

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

300/300 A, Class J, max. 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

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

415 A

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

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

150 W, 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

Power consumption, sealing, 60 Hz

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

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

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

Communication

Connection to SmartWire-DT

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

No

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

100 V

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

120 V

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

100 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

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

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

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

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

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

77 A, 480 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)

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

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

Special purpose rating of refrigeration control (CSA only)

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

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)

Special purpose rating of resistance air heating

110 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)

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)

Design verification

Equipment heat dissipation, current-dependent Pvid

36.3 W

Heat dissipation capacity Pdiss

0 W

Rated operational current for specified heat dissipation (In)

160 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.

Resources

Catalogues

eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf

Switching and protecting motors - catalog

Product Range Catalog Switching and protecting motors

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

210N017

eaton-contactors-dimensions-2110dim-15.eps

eaton-contactors-dilmp-dimensions-004.eps

eaton-contactors-dilmp-dimensions-003.eps

2110DIM-14

210N018

eaton-contactors-mounting-dilm-dimensions.eps

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

2110DIM-15

eaton-contactors-characteristic-curve-2110dia-3.eps

eaton-contactors-dimensions-2110dim-14.eps

eCAD model

DA-CE-ETN.DILMP160(RAC120)

ETN.109913.edz

Installation instructions

IL03407049Z

Installation videos

WIN-WIN with push-in technology

mCAD model

eaton-cadenas-drill_view-dil_mp125_200_drill.pra

eaton-cadenas-side_view-dil_mp125_200_side.pra

DA-CD-dil_mp125_200

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

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.

eaton-cadenas-front_view-dil_mp125_200_front.pra

DA-CS-dil_mp125_200

Wiring diagrams

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

210S028