Specifications

Eaton 199987



Catalog Number: 199987

DILMP45-01(RDC12)

General specifications

Product Name
Eaton Moeller® series DILMP 4-pole contactor

Catalog Number
199987

EAN
4015081997688

Product Length/Depth
97 mm

Product Height
85 mm

Product Width
58 mm

Product Weight
0.596 kg

Certifications

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

Powering Business Worldwide

Features Functions

Fitted with:

Suppressor circuit in actuating electronics

Mirror contact

Number Of Poles

Four-pole

General

Application

Contactors for 4 pole electric consumers

Degree of protection

IP00

Lifespan, mechanical

10,000,000 Operations (AC operated)

10,000,000 Operations (DC operated)

Connection

Screw terminals

Operating frequency

5000 mechanical Operations/h (DC operated)

5000 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

2.7 mΩ

Voltage type

DC

Ambient conditions, mechanical

Shock resistance

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

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, constant, to IEC 60068-2-3
Damp heat, cyclic, to IEC 60068-2-30

Terminal capacities

Terminal capacity (flexible with ferrule)

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

Terminal capacity (solid)

2 x (0.75 - 10) mm², Main cables
1 x (0.75 - 16) mm², Main cables
2 x (0.75 - 2.5) mm², Control circuit cables
1 x (0.75 - 4) mm², Control circuit cables

Terminal capacity (solid/stranded AWG)

18 - 6, Main cables
18 - 14, Control circuit 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

M5, Terminal screw, Main cables
M3.5, Terminal screw, Control circuit cables

Screwdriver size

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

Tightening torque

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

45 A

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

25 A

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

25 A

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

25 A

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

25 A

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

15 A

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

45 A

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

45 A

1.2 Nm, Screw terminals, Control circuit cables

3 Nm, Screw terminals, Main cables

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

45 A

Rated insulation voltage (Ui)

690 V

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

350 A

Rated operational power at AC-1, 220/230 V, 50 Hz

16 kW

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 (Ue) at AC - max

690 V

Short-circuit rating

Short-circuit current rating (basic rating)

5 kA, SCCR (UL/CSA)

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

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

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

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

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

Conventional thermal current Ith

Conventional thermal current ith (1-pole, enclosed)

105 A

Conventional thermal current ith (3-pole, enclosed)

36 A

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

40 A

50/32 A, max. CB, SCCR (UL/CSA)
10/100 kA, Fuse, SCCR (UL/CSA)

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

10/100 kA, Fuse, SCCR (UL/CSA)
125/100 A, Class J, max. Fuse, SCCR (UL/CSA)
10/22 kA, CB, SCCR (UL/CSA)
50/32 A, max. CB, 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

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

117 A

Switching capacity

Switching capacity (main contacts, general use)

40 A, Maximum motor rating (UL/CSA)

Switching capacity (auxiliary contacts, general use)

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

Switching capacity (auxiliary contacts, pilot duty)

A600, AC operated (UL/CSA)
P300, DC operated (UL/CSA)

Magnet system

Arcing time

10 ms

Drop-out voltage

0.2 - 0.6 x UC, DC operated

Duty factor

100 %

Pick-up voltage

0.7 - 1.2 V DC x Uc
0.85 - 1.1 V AC/DC x Us

Power consumption (pick-up) at DC

12 W

Power consumption (sealing) at DC

0.9 W

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

0 V

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

0 V

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

0 V

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

0 V

Rated control supply voltage (Us) at DC - min

12 V

Rated control supply voltage (Us) at DC - max

14 V

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

47 ms

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

30 ms

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

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

Communication

Connection to SmartWire-DT

In conjunction with DIL-SWD SmartWire DT contactor module

Yes

Contacts

Number of contacts (normally closed contacts)

1

Number of auxiliary contacts (normally closed contacts)

1

Number of auxiliary contacts (normally open contacts)

0

Safety

Safe isolation

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

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

Special purpose ratings

Special purpose rating of ballast electrical discharge lamps

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

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

Special purpose rating of definite purpose rating

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

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

Special purpose rating of elevator control

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

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

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

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

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

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

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

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

Special purpose rating of refrigeration control (CSA only)

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

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

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

180 A, LRA 600 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)

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)

Design verification

Equipment heat dissipation, current-dependent Pvid

13.2 W

Heat dissipation capacity Pdiss

0 W

Heat dissipation per pole, current-dependent Pvid

4.4 W

Rated operational current for specified heat dissipation (In)

45 A

Static heat dissipation, non-current-dependent Pvs

0.9 W

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

Catalogs

SmartWire-DT Catalog

Product Range Catalog Switching and protecting motors

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

Characteristic curve

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

eaton-contactors-switching-dilmp-characteristic-curve.eps

Declarations of conformity

DA-DC-00004783.pdf

DA-DC-00004816.pdf

Drawings

eaton-contactors-dilmp-dimensions-008.eps

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

eaton-contactors-mounting-dilm-dimensions.eps

eaton-contactors-dilmp-dimensions-007.eps

eCAD model

ETN.199987.edz

Installation instructions

IL03407049Z

Installation videos

WIN-WIN with push-in technology

mCAD model

DA-CS-dil_mp32_45

DA-CD-dil_mp32_45

Wiring diagrams

2100SWI-121



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