Product specifications

Eaton 277166

Catalog Number: 277166

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 11 kW, 1 NC, 400 V 50 Hz, 440 V 60 Hz, AC operation, Screw terminals



General specifications

Product Name
Eaton Moeller® series DILM contactor

Catalog Number
277166

Model Code
DILM25-01(400V50HZ,440V60HZ)

EAN
4015082771669

Product Length/Depth
97 mm

Product Height
85 mm

Product Width
45 mm

Product Weight
0.428 kg

Compliances
CE Marked

Certifications
IEC 60947-4-1
UL 508
CSA Std. C22.2 No. 14-05
EN 60947-4-1
VDE
VDE 0660
UL
IEC/EN 60947
CSA

Catalog Notes
Contacts according to EN 50012

Powering Business Worldwide

Features & Functions

Fitted with:

Mirror contact

Number Of Poles

Three-pole

General

Application

Contactors for Motors

Frame size

FS2

Lifespan, mechanical

10,000,000 Operations (AC operated)

Operating frequency

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

Resistance per pole

2.7 m Ω

Suitable for

Also motors with efficiency class IE3

Utilization category

AC-3: Normal AC induction motors: starting, switch off during running
AC-4: Normal AC induction motors: starting, plugging, reversing, inching
AC-1: Non-inductive or slightly inductive loads, resistance furnaces

Voltage type

AC

Ambient conditions, mechanical

Shock resistance

6.9 g, N/O main contact, Mechanical, according to IEC/EN

Climatic environmental conditions

Ambient operating temperature - min

-25 °C

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

Ambient operating temperature - max

60 °C

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 60068-2-78
Damp heat, cyclic, to IEC 60068-2-30

Electro Magnetic Compatibility

Emitted interference

According to EN 60947-1

Interference immunity

According to EN 60947-1

Terminal capacities

Terminal capacity (flexible with ferrule)

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

Terminal capacity (solid)

1 x (0.75 - 16) mm², Main cables
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

Terminal capacity (solid/stranded AWG)

Single 18 - 6, double 18 - 8, 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

2, Terminal screw, Pozidriv screwdriver

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

Tightening torque

3.2 Nm, Screw terminals, Main cables

1.2 Nm, Screw terminals, Control circuit 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

150 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 AC-4, 220 V, 230 V, 240 V

13 A

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

13 A

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

13 A

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

10 A

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

40 A

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

40 A

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

40 A

Rated insulation voltage (Ui)

690 V

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

45 A

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

3.5 kW

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

4 kW

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

6.5 kW

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

7 kW

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

8 kW

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

8.5 kW

Rated operational voltage (Ue) at AC - max

690 V

Short-circuit rating

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

Conventional thermal current ith (1-pole, enclosed)

90 A

Conventional thermal current ith (3-pole, enclosed)

36 A

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

42 A

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

100 A

Switching time

Arcing time

10 ms

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 - 0.3 x UC, AC operated

Duty factor

100 %

Pick-up voltage

0.8 - 1.1 V AC x Uc

Power consumption, pick-up, 50 Hz

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

Power consumption, pick-up, 60 Hz

67 VA, 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, at 50 Hz

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

Power consumption, sealing, 60 Hz

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

8.7 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

400 V

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

400 V

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

440 V

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

440 V

Rated control supply voltage (Us) at DC - min

0 V

Rated control supply voltage (Us) at DC - max

0 V

Communication

Connection

Screw terminals

Connection to SmartWire-DT

No

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 coil and contacts, According to EN 61140

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

Design verification

Equipment heat dissipation, current-dependent Pvid

4.2 W

Heat dissipation capacity Pdiss

0 W

Rated operational current for specified heat dissipation (In)

25 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.

Resources

Catalogs

Switching and protecting motors - catalog

SmartWire-DT Catalog

Product Range Catalog Switching and protecting motors

Characteristic curve

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

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

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

Declarations of conformity

DA-DC-00004816.pdf

DA-DC-00004783.pdf

Drawings

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

eaton-contactors-dilm-dimensions.eps

eaton-contactors-mounting-dilm-dimensions.eps

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

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

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

eCAD model

DA-CE-ETN.DILM25-01(400V50HZ,440V60HZ)

Installation instructions

IL03407014Z

Installation videos

WIN-WIN with push-in technology

mCAD model

DA-CD-dil_m17_38

DA-CS-dil_m17_38

System overview

eaton-contactors-dilm-contactor-system-overview.eps

Wiring diagrams

2100SWI-117

eaton-contactors-contact-dilm-wiring-diagram-002.eps

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.

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