Product specifications

Eaton 051596

Catalog Number: 051596

Eaton Moeller® series DILEEM Contactor, 24 V 50/60 Hz, 3 pole, 380 V 400 V, 3 kW, Contacts N/O = Normally open= 1 N/O, Screw terminals, AC operation

General specifications

Product Name
Eaton Moeller® series DILEEM Mini contactor

Catalog Number
051596

Model Code
DILEEM-10(24V50/60HZ)

EAN
4015080515968

Product Length/Depth
52 mm

Product Height
58 mm

Product Width
45 mm

Product Weight
.17 kg

Certifications
IEC/EN 60947-4-1 UL Category Control No.: NLDX CSA File No.: 012528 CSA Class No.: 3211-04 UL CSA-C22.2 No. 14-05 CSA UL File No.: E29096 IEC/EN 60947 CE VDE 0660 UL 508

Catalog Notes
Also tested according to AC-3e.

Product specifications

Terminal capacity (flexible with ferrule)

1 x (0.75 - 1.5) mm²

2 x (0.75 - 1.5) mm²

Rated operational current for specified heat dissipation (In)

6.6 A

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

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

3 kW

Conventional thermal current ith (3-pole, enclosed)

16 A

Rated operational power at AC-4, 380/400 V, 50 Hz

2.2 kW

Rated operational current (Ie) at AC-4, 440 V

5 A

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

24 V

10.4 Clearances and creepage distances

Meets the product standard's requirements.

Number of contacts (normally closed) as main contact

0

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

19 A

Rated operational power (NEMA)

2.2 kW

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

Ambient storage temperature - min

40 °C

Fitted with:

Auxiliary contact

Rated breaking capacity at 380/400 V

90 A

Short-circuit current rating (basic rating)

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

Resources

Catalogs

Product overview for machinery

Product Range Catalog Switching and protecting motors

Product Overview for machinery

Switching and protecting motors - catalog

Certification reports

0000SPC-571

DA-DC-00004068.pdf

DA-DC-00004231.pdf

Drawings

210X007

eaton-contactors-dilem-dimensions.eps

210X011

eaton-contactors-diler-dimensions-004.eps

eaton-contactors-diler-dimensions-005.eps

210X005

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

230K003

eaton-tripping-devices-mounting-diler-contactor-relay-symbol.eps

Installation instructions

IL03407009Z

Specifications and datasheets

Eaton Specification Sheet - 051596

Wiring diagrams

210S026

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

5 kA, SCCR (UL/CSA)

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

24 V

Rated breaking capacity at 660/690 V

42 A

Rated operational current (Ie) at DC-1, 24 V

20 A

Changeover time

16 - 21 ms

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

20 A

Ambient operating temperature - max

50 °C

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

.25 HP

Features

Positive operating contacts to EN 60947-5-1 appendix L, including auxiliary contact module

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

2.4 kW

Electrical connection type of main circuit

Screw connection

Number Of Poles

Three-pole

Ambient operating temperature - min

-25 °C

10.6 Incorporation of switching devices and components

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.

10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

Application

Mini Contactors for Motors and Resistive Loads

Rated operational current (Ie) at AC-15, 380 V, 400 V, 415 V

3 A

Operating frequency

9000 mechanical Operations/h

Voltage type

AC

Product category

Contactors

Rated operational current (Ie) at AC-4, 220 V, 230 V, 240 V

5 A

Rated operational power at AC-3, 690 V, 50 Hz

3 kW

Power consumption, pick-up, 50 Hz

30 VA, AC, Dual-frequency coil at 50 Hz

26 W, AC, Dual-frequency coil at 50 Hz

Heat dissipation capacity Pdiss

0 W

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

3 HP

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

8 ms

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

3.7 A

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

1.8 kW

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

10 A

Terminal capacity (solid/stranded AWG)

18 - 14

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

Degree of protection

IP20

Overvoltage category

III

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

18 ms

Ambient storage temperature - max

80 °C

Pollution degree

3

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

22 A

Power consumption, pick-up, 60 Hz

24 W, AC, Dual-frequency coil at 60 Hz

29 VA, AC, Dual-frequency coil at 60 Hz

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

21 ms

Rated impulse withstand voltage (Uimp)

6000 V AC

Connection

Screw terminals

Tightening torque

1.2 Nm, Screw terminals

Switching time (AC operated, N/O, with auxiliary contact module, closing delay)

45 ms

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

2.2 kW

Conventional thermal current ith (1-pole, enclosed)

40 A

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

3.5 A

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.7 Inscriptions

Meets the product standard's requirements.

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

6.6 A

Number of contacts (normally open contacts)

1

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

14 ms

Number of auxiliary contacts (normally open contacts)

1

Rated operational power at AC-3, 500 V, 50 Hz

3 kW

Shock resistance

10 g, N/O main contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
10 g, N/O main contact, Basic unit without auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
20 g, N/O auxiliary contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
20 g, N/C auxiliary contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
8 g, N/O auxiliary contact, Basic unit without auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms

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

20 A

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

2 HP

Rated operational current (Ie) at DC-1, 12 V

20 A

Power consumption, sealing, 60 Hz

3.9 VA, AC, Dual-frequency coil at 60 Hz
5.4 VA, Coil in a cold state and 1.0 x Us
1.8 W, AC, Dual-frequency coil at 60 Hz
1.8 W, Coil in a cold state and 1.0 x Us

Resistance per pole

9.18 m Ω

Ambient operating temperature (enclosed) - min

25 °C

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

Stripping length (main cable)

8 mm

Ambient operating temperature (enclosed) - max

40 °C

Rated control supply voltage (Us) at DC - min

0 V

10.8 Connections for external conductors

Is the panel builder's responsibility.

Number of main contacts (normally open contact)

3

Rated breaking capacity at 220/230 V

90 A

Screw size

M3.5, Terminal screw

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

5 A

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

3 HP

Protection

Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)

Power consumption, sealing, 50 Hz

5.4 VA, Coil in a cold state and 1.0 x Us

1.8 W, Coil in a cold state and 1.0 x Us

Rated operational power at AC-3, 440 V, 50 Hz

3.3 kW

Rated breaking capacity at 500 V

64 A

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

3.1 kW

Climatic proofing

Damp heat, constant, to IEC 60068-2-78

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

Static heat dissipation, non-current-dependent Pvs

1.8 W

Rated operational current (Ie) at AC-15, 500 V

1.5 A

Rated control supply voltage (Us) at DC - max

0 V

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

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

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

6.6 A

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

Safe isolation

300 V AC, Between the contacts, According to EN 61140
300 V AC, Between coil and contacts, According to EN 61140
300 V AC, Between auxiliary contacts, According to EN 61140
300 V AC, Between coil and auxiliary contacts, According to EN 61140

Short-circuit protection rating (type 2 coordination) at 500 V

10 A gG/gL

Mounting position

As required (except vertical with terminals A1/A2 at the bottom)

Rated operational current (Ie) at AC-15, 220 V, 230 V, 240 V

6 A

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Heat dissipation per pole, current-dependent Pvid

.2 W

Actuating voltage

24 V 50/60 Hz

Switching capacity (auxiliary contacts, general use)

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

Short-circuit protection

6 A gG/gL, Max. Fuse 500V, Auxiliary contacts, Short-circuit rating without welding

10 A fast, Max. Fuse 500V, Auxiliary contacts, Short-circuit rating without welding

PKZM0-4, Maximum overcurrent protective device, Short-circuit protection only, Auxiliary contacts, Short-circuit rating without welding

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

2.9 A

Equipment heat dissipation, current-dependent Pvid

.6 W

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

1.5 HP

Rated operational current (Ie)

0.5 A at 220 V, DC L/R ≤ 15 ms (with 3 contacts in series)

2.5 A at 24 V, DC L/R ≤ 15 ms (with 1 contact in series)

1.5 A at 100 V, DC L/R ≤ 15 ms (with 3 contacts in series)

2.5 A at 60 V, DC L/R ≤ 15 ms (with 2 contacts in series)

Pick-up voltage

0.8 - 1.1 V AC x Uc (voltage tolerance - dual frequency coil 50/60 Hz)

Suitable for

Also motors with efficiency class IE3

Conventional thermal current ith at 40°C (3-pole, open)

22 A

Terminal capacity (solid)

2 x (0.75 - 2.5) mm²

1 x (0.75 - 2.5) mm²

Number of auxiliary contacts (normally closed contacts)

0

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.

Lifespan, mechanical

150,000 Operations (at 240 V, DC, L/R = 50 ms: 2 contacts in series 0.5 A)
7,000,000 Operations (Coil 50/60 Hz)
10,000,000 Operations
200,000 Operations (at 240 V, AC-15)

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

1.3 kW

Rated making capacity up to 440 V (cos phi to IEC/EN 60947)

110 A

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

2.2 kW

Control circuit reliability

< 2 λ, < 1 failure at 100,000,000 Operations (at U_e = 24 V DC, Umin = 17 V, Imin = 5.4 mA)

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

20 A

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

1.1 kW

Rated operational voltage (Ue) at AC - max

690 V

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

24 V

10.7 Internal electrical circuits and connections

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.

Switching capacity (main contacts, general use)

15 A, Maximum motor rating (UL/CSA)

Conventional thermal current ith at 50°C (3-pole, open)

20 A

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

5 A

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

1 HP

Screwdriver size

2, Terminal screw, Pozidriv screwdriver

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

Short-circuit protection rating (type 1 coordination) at 500 V

20 A gG/gL

Duty factor

100 %

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

6.6 A

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

50 A

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

24 V

Arcing time

12 ms at 690 V AC

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

2.3 kW

Switching capacity (auxiliary contacts, pilot duty)

A600, AC operated (UL/CSA)

P300, DC operated (UL/CSA)

Rated insulation voltage (Ui)

690 V

Altitude

Max. 2000 m

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