Product specifications

# Eaton 052302

## Catalog Number: 052302

Eaton Moeller® series DILEM Contactor, 230 V 50/60 Hz, 3 pole, 380 V 400 V, 4 kW, Contacts N/O = Normally open= 1 N/O, Screw terminals, AC operation


## General specifications

**Product Name**
Eaton Moeller® series DILEM Mini contactor

**Catalog Number**
052302

**Model Code**
DILEM-10(230V50/60HZ)

**EAN**
4015080523024

**Product Length/Depth**
51 mm

**Product Height**
58 mm

**Product Width**
45 mm

**Product Weight**
0.17 kg

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

**Catalog Notes**
Also tested according to AC-3e.

Powering Business Worldwide

## defaultTaxonomyAttributeLabel

### Number Of Poles

Three-pole

### Type

Full voltage non-reversing

### Voltage rating

400 V

### Features

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

### 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.

### 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

## Resources

### Catalogs

Product Range Catalog Switching and protecting motors

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

Switching and protecting motors - catalog

### Characteristic curve

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

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

eaton-contactors-short-time-loading-dilm-characteristic-curve.eps

### Declarations of conformity

DA-DC-00004788.pdf

DA-DC-00004812.pdf

### Drawings

eaton-contactors-dilem-dimensions.eps

eaton-contactors-diler-dimensions-004.eps

eaton-contactors-diler-dimensions-005.eps

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

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

### eCAD model

ETN.052302.edz

### Installation instructions

IL03407009Z

### mCAD model

DA-CS-dil_em

DA-CD-dil_em

### Specifications and datasheets

Eaton Specification Sheet - 052302

### System overview

eaton-contactors-accessory-dilem-system-overview.eps

### Wiring diagrams

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

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.

### Fitted with:

Auxiliary contact

### Operating frequency

9000 mechanical Operations/h

### Pollution degree

3

### Climatic proofing

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

### Rated impulse withstand voltage (Uimp)

6000 V AC

### Utilization category

AC-4: Normal AC induction motors: starting, plugging, reversing, inching

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

### Connection

Screw terminals

### Ambient operating temperature - max

50 °C

### Ambient operating temperature - min

-25 °C

### Ambient operating temperature (enclosed) - max

40 °C

### Ambient operating temperature (enclosed) - min

-25 °C

### Ambient storage temperature - max

80 °C

### Ambient storage temperature - min

-40 °C

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

0.5 HP

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

2 HP

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

1.5 HP

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

3 HP

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

5 HP

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

5 HP

### Conventional thermal current ith (1-pole, enclosed)

40 A

### Conventional thermal current ith (3-pole, enclosed)

16 A

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

19 A

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

10 A

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

50 A

### Equipment heat dissipation, current-dependent Pvid

1.2 W

### Heat dissipation capacity Pdiss

0 W

### Heat dissipation per pole, current-dependent Pvid

0.4 W

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

45 ms

### Application

Mini Contactors for Motors and Resistive Loads

### Product category

Contactors

### Protection

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

### Terminals

Screw terminals

### Arcing time

12 ms at 690 V AC

### Electrical connection type of main circuit

Screw connection

### Screwdriver size

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

### Voltage type

AC

### Degree of protection

IP20

### Mounting position

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

### Number of auxiliary contacts (normally closed contacts)

0

### Number of auxiliary contacts (normally open contacts)

1

Number of contacts (normally closed) as main contact

0

Number of main contacts (normally open contact)

3

Rated breaking capacity at 220/230 V

90 A

Rated breaking capacity at 380/400 V

90 A

Rated breaking capacity at 500 V

64 A

Rated breaking capacity at 660/690 V

42 A

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

230 V

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

230 V

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

230 V

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

230 V

Coil voltage

230 Vac, 50-60 Hz

Overvoltage category

III

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)

Duty factor

100 %

Changeover time

16 - 21 ms

Number of contacts

1 NO

Lifespan, mechanical

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

10,000,000 Operations

### Pick-up voltage

0.85 - 1.1 V AC x Uc (voltage tolerance - dual frequency coil 50/60 Hz)

### Power consumption, pick-up, 50 Hz

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

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

### Safe isolation

300 V AC, Between auxiliary contacts, According to EN 61140

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

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

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

### Power consumption, pick-up, 60 Hz

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

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

### Screw size

M3.5, Terminal screw

### Power consumption, sealing, 50 Hz

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

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

### Power consumption, sealing, 60 Hz

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

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

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

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

### Rated operational current (Ie)

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)

0.5 A at 220 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)

### Switching capacity (auxiliary contacts, general use)

0.5 A, 250 V DC, (UL/CSA)

10 A, 600 V AC, (UL/CSA)

### Switching capacity (auxiliary contacts, pilot duty)

P300, DC operated (UL/CSA)

A600, AC operated (UL/CSA)

### Terminal capacity (flexible with ferrule)

1 x (0.75 - 1.5) mm²

2 x (0.75 - 1.5) mm²

### 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

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

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

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

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

### Terminal capacity (solid)

2 x (0.75 - 2.5) mm²

1 x (0.75 - 2.5) mm²

### Terminal capacity (solid/stranded AWG)

18 - 14

### Switching capacity (main contacts, general use)

15 A, Maximum motor rating (UL/CSA)

### Tightening torque

1.2 Nm, Screw terminals

### Rated control supply voltage (Us) at DC - max

0 V

### Rated control supply voltage (Us) at DC - min

0 V

### Rated insulation voltage (Ui)

690 V

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

110 A

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

22 A

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

6 A

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

3 A

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

1.5 A

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

9 A

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

9 A

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

9 A

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

6.4 A

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

4.8 A

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

6.6 A

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

6.6 A

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

6.6 A

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

5 A

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

3.4 A

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

20 A

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

20 A

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

20 A

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

20 A

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

20 A

Rated operational current for specified heat dissipation (In)

9 A

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

2.5 kW

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

4 kW

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

4.3 kW

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

1.5 kW

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

1.8 kW

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

3 kW

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

3.1 kW

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

3.3 kW

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

3 kW

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

3 kW

Rated operational power (NEMA)

3.7 kW

Rated operational voltage (Ue) at AC - max

690 V

Resistance per pole

9.18 mΩ

Static heat dissipation, non-current-dependent Pvs

1.8 W

Stripping length (main cable)

8 mm

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

21 ms

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

14 ms

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

18 ms

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

8 ms

### Short-circuit current rating (basic rating)

5 kA, SCCR (UL/CSA)

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

### Short-circuit protection

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

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

### Suitable for

Also motors with efficiency class IE3

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

20 A gG/gL

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

10 A gG/gL

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

22 A

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

20 A

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

4.6 kW

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

4 kW

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

4 kW

### Actuating voltage

230 V 50/60 Hz

### Altitude

Max. 2000 m

### Operating voltage at AC, 50 Hz - min

24 V

### Operating voltage at AC, 50 Hz - max

690 V

### Operating voltage at AC, 60 Hz - min

24 V

Operating voltage at AC, 60 Hz - max

690 V

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