Product specifications

Eaton 208210

Catalog Number: 208210

Eaton Moeller® series DILM Contactor, 380 V 400 V 212 kW, 2 N/O, 2 NC, RAC 500: 250 - 500 V 40 - 60 Hz/250 - 700 V DC, AC and DC operation, Screw connection

General specifications

Product Name
Eaton Moeller® series DILM Contactor

Catalog Number
208210

Model Code
DILM400/22(RAC500)

EAN
4015082082109

Product Length/Depth
216 mm

Product Height
209 mm

Product Width
160 mm

Product Weight
8.597 kg

Certifications
IEC/EN 60947-4-1
VDE 0660
UL Category Control No.: NLDX
CSA Class No.: 3211-04
UL File No.: E29096
UL 60947-4-1
UL/CSA
CSA file No. 012528
North America (UL listed, CSA certified)
EN 45545: Fire protection on railway vehicles
IEC 61373: Vibration and shock, tested for category 1 class B
CE marking

Catalog Notes
Contacts according to EN 50012
Also tested according to AC-3e up to 500 V.
Also suitable for motors with efficiency class IE3.
EN 45545 - Fire protection on railway vehicles: Fire protection class of all plastics according to UL94: V-0 /

Powering Business Worldwide

defaultTaxonomyAttributeLabel

Accessories

Fitting options auxiliary contacts: on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA

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

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

Resources

Catalogs

Switching and protecting motors - catalog

Product Range Catalog Switching and protecting motors

Characteristic curve

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

eaton-contactors-short-time-loading-dilm-characteristic-curve-002.eps

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

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

Declarations of conformity

DA-DC-00004804.pdf

DA-DC-00004796.pdf

Drawings

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

eaton-contactors-mounting-dilm-dimensions.eps

eaton-contactors-dilm-dimensions-008.eps

eaton-contactors-dilm-3d-drawing-005.eps

eaton-contactors-mounting-dilm-3d-drawing-002.eps

eCAD model

DA-CE-ETN.DILM400_22(RAC500)

Installation instructions

IL03406002Z

mCAD model

DA-CD-dil_m300_400

DA-CS-dil_m300_400

Specifications and datasheets

Eaton Specification Sheet - 208210

Wiring diagrams

eaton-contactors-contact-dilm-wiring-diagram-004.eps

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:

Suppressor circuit in actuating electronics

Operating frequency

2000 mechanical Operations/h (DC operated)
2000 mechanical Operations/h (AC operated)
200 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)

8000 V AC

Utilization category

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

Connection

Screw terminals

Ambient operating temperature - max

60 °C

Ambient operating temperature - min

-40 °C

Ambient operating temperature (enclosed) - max

40 °C

Ambient operating temperature (enclosed) - min

-40 °C

Ambient storage temperature - max

80 °C

Ambient storage temperature - min

-40 °C

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

125 HP

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

150 HP

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

300 HP

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

400 HP

Conventional thermal current ith (1-pole, enclosed)

1125 A

Conventional thermal current ith (3-pole, enclosed)

450 A

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

522 A

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

1250 A

Equipment heat dissipation, current-dependent Pvid

0 W

Heat dissipation capacity Pdiss

0 W

Heat dissipation per pole, current-dependent Pvid

12.33 W

Application

Contactors for Motors

Product category

Contactors

Protection

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

Electrical connection type of main circuit

Rail connection

Screwdriver size

2, Terminal screw, Control circuit cables, Pozidriv screwdriver

Voltage type

AC/DC

Degree of protection

IP00

Number of auxiliary contacts (normally closed contacts)

2

Number of auxiliary contacts (normally open contacts)

2

Number of contacts (normally closed contacts)

2

Number of contacts (normally closed) as main contact

0

Number of contacts (normally open contacts)

2

Number of main contacts (normally open contact)

3

Rated breaking capacity at 1000 V

950 A

Rated breaking capacity at 220/230 V

5000 A

Rated breaking capacity at 380/400 V

5000 A

Rated breaking capacity at 500 V

5000 A

Rated breaking capacity at 660/690 V

5000 A

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

500 V

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

480 V

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

500 V

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

480 V

Drop-out voltage

AC operated: 0.2 x US max - 0.6 x US min, AC operated
0.2 x US max - 0.6 x US min, DC operated

Overvoltage category

III

Behavior in marginal and transitional conditions

Sealing - Voltage interruptions 0 - 0.2 x Uc min) > 10 ms: Drop-out of the contactor
Sealing - Voltage drops (0.2 - 0.6 x Uc min ≤12 ms: Time is bridged successfully
Sealing - Excess voltage (1.15 - 1.3 x Uc max): Contactor remains switched on
Sealing - Voltage interruptions (0 - 0.2 x Uc min ≤ 10 ms: Time is bridged successfully
Sealing - Voltage drops (0.2 - 0.6 x Uc min) > 12 ms: Drop-out of the contactor
Sealing - Pick-up phase (0.7 x Uc min - 1.15 x Uc max): Contactor switches on with certainty
Sealing - Pick-up phase (0 - 0.7 x Uc min: Contactor does not switch on
Sealing - Voltage drops (0.6 - 0.7 x Uc min: Contactor remains switched on

Duty factor

100 %

Electromagnetic compatibility

Designed for operation in industrial environments. Its use in residential environments may cause radio-frequency interference, requiring additional noise suppression.

Lifespan, mechanical

7,000,000 Operations (AC operated)
7,000,000 Operations (DC operated)

Pick-up voltage

0.7 - 1.15 V DC x Us
0.7 - 1.15 V AC x Us

Power consumption, pick-up, 50 Hz

450 VA, Pull-in power, Coil in a cold state and 1.0 x Us

350 W, Pull-in power, Coil in a cold state and 1.0 x Us

Safe isolation

1000 V AC, Between coil and contacts, According to EN 61140

Power consumption, pick-up, 60 Hz

350 W, Pull-in power, Coil in a cold state and 1.0 x Us

450 VA, Pull-in power, Coil in a cold state and 1.0 x Us

Screw size

M10, Terminal screw, Main connections

M3.5, Terminal screw, Control circuit cables

Power consumption, sealing, 50 Hz

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

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

Power consumption, sealing, 60 Hz

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

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

Resistance

500 m Ω (Admissible transitional contact resistance - of the external control circuit device when actuating A11)

Rated operational current (Ie)

177 A at 690 V (Individual compensation, three-phase capacitors, open)

307 A at up to 525 V (Individual compensation, three-phase capacitors, open)

Inrush current

Max. 30 x Ie (peak)

Switching capacity (auxiliary contacts, general use)

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

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

Switching capacity (auxiliary contacts, pilot duty)

P300, DC operated (UL/CSA)

A600, AC operated (UL/CSA)

Lifespan, electrical

100,000 Operations (at Condensor operation)

Terminal capacity (copper band)

Fixing with flat cable terminal or cable terminal blocks; See terminal capacity for cable terminal blocks

Terminal capacity (flexible with ferrule)

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

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

Shock resistance

10 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
8 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms

Terminal capacity (solid)

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

Terminal capacity (solid/stranded AWG)

18 - 14, Control circuit cables
2/0 - 500 MCM, Main cables

Signal level

5 V - 15 V, PLC signal level (A3 - A4) to IEC/EN 61131-2 (type 2), Magnet systems

Terminal capacity (busbar)

25 mm width, Main connection

Terminal capacity (flexible with cable lug)

50 - 240 mm²

Switching capacity (main contacts, general use)

450 A, Maximum motor rating (UL/CSA)

Terminal capacity (stranded with cable lug)

70 - 240 mm²

Power consumption

Control transformer with uk ≤ 6%

Tightening torque

24 Nm, Main cable connection screw/bolt
1.2 Nm, Screw terminals, Control circuit cables

Width across flats

16 mm

Rated control supply voltage (Us) at DC - max

700 V

Rated control supply voltage (Us) at DC - min

250 V

Rated insulation voltage (Ui)

1000 V

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

5500 A

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

612 A

Rated operational current (Ie) at AC-3, 1000 V

95 A

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

400 A

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

400 A

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

400 A

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

400 A

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

325 A

Rated operational current (Ie) at AC-4, 1000 V

95 A

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

296 A

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

296 A

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

296 A

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

296 A

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

260 A

Rated operational current for specified heat dissipation (In)

400 A

Rated operational power at AC-3, 1000 V, 50 Hz

132 kW

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

132 kW

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

200 kW

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

232 kW

Rated operational power at AC-4, 1000 V, 50 Hz

132 kW

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

92 kW

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

100 kW

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

160 kW

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

176 kW

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

186 kW

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

210 kW

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

240 kW

Rated operational power (NEMA)

223 kW

Rated operational voltage (Ue) at AC - max

1000 V

Resistance per pole

0.077 mΩ

Static heat dissipation, non-current-dependent Pvs

11.7 W

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

80 ms

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

110 ms

Short-circuit current rating (basic rating)

30 kA, SCCR (UL/CSA)

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

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

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

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

100 kA, CB, SCCR (UL/CSA)

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

800/600 A, Class J, max. Fuse, 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)

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

800/600 A, Class J, max. Fuse, SCCR (UL/CSA)

Short-circuit protection rating (type 1 coordination) at 1000 V

250 A gG/gL

Short-circuit protection rating (type 1 coordination) at 400 V

630 A gG/gL

Short-circuit protection rating (type 1 coordination) at 690 V

630 A gG/gL

Short-circuit protection rating (type 2 coordination) at 1000 V

200 A gG/gL

Short-circuit protection rating (type 2 coordination) at 400 V

500 A gG/gL

Short-circuit protection rating (type 2 coordination) at 690 V

500 A gG/gL

Special purpose rating of definite purpose rating

3300 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)

3120 A, LRA 600 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)

420 A, FLA 600 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)

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

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

612 A

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

548 A

Conventional thermal current ith at 60°C (3-pole, open)

500 A

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

250 kW

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

280 kW

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

300 kW

Actuating voltage

RAC 500: 250 - 500 V 40 - 60 Hz/250 - 700 V DC

Altitude

Max. 2000 m

Operating voltage at AC, 50 Hz - min

250 V

Operating voltage at AC, 50 Hz - max

500 V

Operating voltage at AC, 60 Hz - min

250 V

Operating voltage at AC, 60 Hz - max

500 V