Specifications

Eaton 102687

Catalog Number: 102687

Eaton Moeller series NZM - Molded Case Circuit Breaker. Molded Case Switch, 3p, 400A



General specifications

Product Name
Eaton Moeller series NZM molded case switch

Catalog Number
102687

EAN
4015081025473

Product Length/Depth
159 mm

Product Height
275 mm

Product Width
140 mm

Product Weight
6.34 kg

Compliances
CE Marked
RoHS conform

Certifications
CSA Std. C22.2 No. 5
UL 489
IEC 60947-2
Specially designed for North America
CSA-C22.2 No. 5-09
UL (Category Control Number WJAZ)
UL (File No. E148671)
UL listed
CSA certified
CSA (File No. 22086)
IEC
CE marking
UL/CSA
CSA (Class No. 4652-06)

Powering Business Worldwide

Product specifications

Type

Switch-disconnector

Special features

IEC/EN 60947-2: circuit breakers without overcurrent (CBI-X) with main switch characteristics and isolating characteristics to IEC/EN 60204.
Rated current = rated uninterrupted current: 400 A
Terminal capacity hint: Up to 240 mm² can be connected depending on the cable manufacturer.

Application

Branch circuits, feeder circuits

Amperage Rating

400 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

N3

Features

Motor drive optional
Protection unit

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

Brochures

eaton-digital-nzm-brochure-br013003en-en-us.pdf

eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf

Catalogs

eaton-digital-nzm-catalog-ca013003en-en-us.pdf

Characteristic curve

eaton-circuit-breaker-nzm-mccb-characteristic-curve-028.eps

eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve.eps

Declarations of conformity

DA-DC-03_NS3

Drawings

eaton-circuit-breaker-switch-nzm-mccb-dimensions-016.eps

eaton-circuit-breaker-nzm-mccb-dimensions-020.eps

eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-002.eps

eCAD model

ETN.NS3-400-NA

Installation instructions

eaton-circuit-breaker-basic-device-nzmn-b-il01208009z.pdf

Installation videos

Introduction of the new digital circuit breaker NZM

The new digital NZM Range

mCAD model

DA-CS-nzm3_3p

DA-CD-nzm3_3p

Specifications and datasheets

Product Data Sheet - NS3-400-NA

Technical data sheets

eaton-nzm-technical-information-sheet

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.

Pollution degree

3

Mounting Method

Fixed

Built-in device fixed built-in technique

DIN rail (top hat rail) mounting optional

Equipment heat dissipation, current-dependent

48 W

Ambient operating temperature - max

70 °C

Ambient operating temperature - min

-25 °C

Ambient storage temperature - max

70 °C

Ambient storage temperature - min

40 °C

Rated current (Iu)

600 A

Current rating (Iu) (UL 489 csa 22.2 no. 5.1)

600 A

Number of auxiliary contacts (change-over contacts)

0

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

0

Switch positions

I, +, 0

Connection

Front screw

Degree of protection

In the area of the HMI devices: IP20 (basic protection type)

IP20

Direction of incoming supply

As required

Electrical connection type of main circuit

Screw connection

Lifespan, mechanical

15000 operations

Overvoltage category

III

Degree of protection (IP), front side

IP40 (with insulating surround)
IP66 (with door coupling rotary handle)

Degree of protection (terminations)

IP10 (tunnel terminal)
IP00 (terminations, phase isolator and band terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

NA: max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched)
10 segments of 50 mm x 1 mm (2x) at rear-side width extension
Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm
Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched)
NA: 10 segments of 50 mm x 1 mm (2x) at rear-side width extension
Min. 6 segments of 16 mm x 0.8 mm at box terminal
Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched)
Max. 8 segments of 24 mm x 1 mm (2x) at box terminal
NA: min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched)

Lifespan, electrical

5000 operations at 400 V AC-1
2000 operations at 690 V AC-3
2000 operations at 400 V AC-3
3000 operations at 415 V AC-1
2000 operations at 415 V AC-3
3000 operations at 690 V AC-1

Functions

Disconnectors/main switches

Position of connection for main current circuit

Front side

Rated operational current for specified heat dissipation (In)

400 A

Short-circuit total breaktime

< 10 ms

Short-circuit release non-delayed setting - max

6600 A

Short-circuit release non-delayed setting - min

6600 A

Terminal capacity (copper busbar)

Max. 10 mm x 50 mm (2x) at rear-side width extension
Min. 20 mm x 5 mm direct at switch rear-side connection
NA: max. 10 mm x 50 mm (2x) at rear-side width extension
NA: max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection
NA: M10 at rear-side screw connection
NA: min. 20 mm x 5 mm direct at switch rear-side connection
Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection
M10 at rear-side screw connection

Terminal capacity (copper solid conductor/cable)

16 mm² (2x) direct at switch rear-side connection
300 mm² (2x) at rear-side width extension
16 mm² (1x) direct at switch rear-side connection
16 mm² (2x) at box terminal
NA: 500 AWG/kcmil (2x) at rear-side width extension
NA: 6 AWG (1x) at tunnel terminal

Terminal capacity (aluminum solid conductor/cable)

10 mm² - 16 mm² (2x) direct at switch rear-side connection
16 mm² (1x) direct at switch rear-side connection
16 mm² (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

25 mm² - 185 mm² (1x) at 1-hole tunnel terminal
25 mm² - 240 mm² (2x) direct at switch rear-side connection
NA: Max. 500 AWG/kcmil (2x) at 2-hole tunnel terminal
25 mm² - 120 mm² (2x) at box terminal
25 mm² - 240 mm² (1x) direct at switch rear-side connection
35 mm² - 240 mm² (1x) at box terminal
NA: Max. 500 AWG/kcmil (1x) at 2-hole tunnel terminal
NA: 2 - 500 AWG/kcmil (1x) at box terminal

Terminal capacity (aluminum stranded conductor/cable)

25 mm² - 185 mm² (1x) at 1-hole tunnel terminal up to 240 mm² depending on the cable manufacturer.
50 mm² - 240 mm² (1x) at 2-hole tunnel terminal
25 mm² - 120 mm² (1x) direct at switch rear-side connection
50 mm² - 240 mm² (2x) at 2-hole tunnel terminal

25 mm² - 120 mm² (2x) direct at switch rear-side connection

Handle type

Rocker lever

Short delay current setting (Isd) - max

0 A

Short delay current setting (Isd) - min

0 A

Instantaneous current setting (Ii) - max

6600 A

Instantaneous current setting (Ii) - min

6600 A

Number of operations per hour - max

60

Overload current setting (Ir) - max

0 A

Overload current setting (Ir) - min

0 A

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz

150 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz

150 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz

130 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz

33 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz

9 kA

Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz

330 kA

Rated short-circuit making capacity Icm at 440 V, 50/60 Hz

286 kA

Rated short-circuit making capacity Icm at 525 V, 50/60 Hz

143 kA

Rated short-circuit making capacity Icm at 690 V, 50/60 Hz

74 kA

Standard terminals

Screw terminal

Optional terminals

Box terminal. Connection on rear. Tunnel terminal

Rated operating voltage Ue (UL) - max

600 V

Rated short-circuit making capacity Icm at 240 V, 50/60 Hz

330 kA

Rated impulse withstand voltage (Uimp) at auxiliary contacts

6000 V

Rated impulse withstand voltage (Uimp) at main contacts

8000 V

Rated insulation voltage (Ui)

1000 V AC

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