Specifications

Eaton 271146

Catalog Number: 271146

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 1000A, H4-VEF1000-NA



General specifications

Product Name
Eaton Moeller series NZM - Molded case circuit breaker

Catalog Number
271146

EAN
4015082711467

Product Length/Depth
401 mm

Product Height
207 mm

Product Width
210 mm

Product Weight
21 kg

Compliances
RoHS conform

Certifications
Specially designed for North America
CSA (File No. 22086)
UL listed
IEC
IEC/EN 60947
CE marking
UL (File No. E31593)
UL 489
UL/CSA
CSA (Class No. 1432-01)
CSA-C22.2 No. 5-09
UL (Category Control Number DIVQ)
IEC 60947-2
CSA certified

Powering Business Worldwide

Product specifications

Type

Circuit breaker

Special features

For AC-3 rated operational current with NZM4 the following applies: 400 V: max. 650 kW; 690 V: max. 600 kW (switching capacity, rated making and breaking capacity)
Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity Icn)
Rated current = rated uninterrupted current: 1000 A
Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate.
Fixed overload releases Ir R.m.s. value measurement and “thermal memory” adjustable time delay setting to overcome current peaks
tr: 2 – 20 s at 6 x Ir
Adjustable delay time tsd: Steps: 0, 20, 60, 100, 200, 300, 500, 750, 1000 ms
i^2t constant function: switchable

Application

Branch circuits, feeder circuits
Use in unearthed supply systems at 690 V

Amperage Rating

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-048.eps

eaton-circuit-breaker-nzm-mccb-characteristic-curve-049.eps

Drawings

eaton-circuit-breaker-nzm-mccb-dimensions-022.eps

eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-003.eps

eCAD model

ETN.271146.edz

Installation instructions

eaton-circuit-breaker-basic-unit-nzmn4-il01210010z.pdf

Installation videos

Introduction of the new digital circuit breaker NZM

The new digital NZM Range

mCAD model

DA-CS-nzm4_3p

DA-CD-nzm4_3p

Technical data sheets

eaton-nzm-technical-information-sheet

1000 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

NZM4

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.

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

Climatic proofing

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

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

Equipment heat dissipation, current-dependent

123 W

Utilization category

A (IEC/EN 60947-2)

Isolation

500 V AC (between auxiliary contacts and main contacts)

300 V AC (between the auxiliary contacts)

Ambient operating temperature - max

70 °C

Ambient operating temperature - min

-25 °C

Ambient storage temperature - max

70 °C

Ambient storage temperature - min

40 °C

Low-voltage HBC fuse - max

2 x 630 A gG/gL

Number of auxiliary contacts (change-over contacts)

0

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

0

Protection against direct contact

Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110

Degree of protection

IP20

IP20 (basic degree of protection, in the operating controls area)

Direction of incoming supply

As required

Electrical connection type of main circuit

Screw connection

Lifespan, mechanical

10000 operations

Overvoltage category

III

Rated operational current

1600 A (415 V AC-1, making and breaking capacity)

2000 A (380/400 V AC-1, making and breaking capacity)

1000 A (690 V AC -1, making and breaking capacity)

1000 A (660-690 V AC-3, making and breaking capacity)

Degree of protection (IP), front side

IP66 (with door coupling rotary handle)

IP40 (with insulating surround)

Degree of protection (terminations)

IP00 (terminations, phase isolator and strip terminal)

IP10 (tunnel terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal
Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal
10 segments of 50 mm x 1 mm (2x) at 1-hole module plate
Min. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched)
Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched)
10 segments of 80 mm x 1 mm (2x) at rear-side width extension
NA: same as for IEC

Lifespan, electrical

3000 operations at 400 V AC-1
2000 operations at 400 V AC-3
2000 operations at 415 V AC-3
2000 operations at 690 V AC-1
1000 operations at 690 V AC-3

Functions

Systems, cable, selectivity and generator protection

Shock resistance

15 g (half-sinusoidal shock 11 ms)

Position of connection for main current circuit

Front side

Rated operational current for specified heat dissipation (In)

1000 A

Release system

Electronic release

Short-circuit total breaktime

< 25 ms (415 V); < 35 ms (> 415 V)

Rated short-time withstand current (t = 0.3 s)

19.2 kA

Rated short-time withstand current (t = 1 s)

19.2 kA

Short-circuit release delayed setting - max

10000 A

Short-circuit release delayed setting - min

2000 A

Short-circuit release non-delayed setting - max

12000 A

Short-circuit release non-delayed setting - min

2000 A

Terminal capacity (control cable)

16 mm² - 18 mm² (2x)

14 mm² - 18 mm² (1x)

Terminal capacity (copper busbar)

M10 at rear-side screw connection

Min. 25 mm x 5 mm direct at switch rear-side connection

Max. 50 mm x 10 mm (2x) direct at switch rear-side connection

Min. 25 mm x 5 mm at rear-side 1-hole module plate

Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate

50 mm x 10 mm (2x) at rear-side 2-hole module plate

Min. 60 mm x 10 mm at rear-side width extension

Max. 80 mm x 10 mm (2x) at rear-side width extension

NA: same as for IEC

Terminal capacity (copper stranded conductor/cable)

50 mm² - 240 mm² (4x) at 4-hole tunnel terminal

120 mm² - 185 mm² (1x) direct at switch rear-side connection

50 mm² - 185 mm² (4x) direct at switch rear-side connection

Min. 120 mm² - 300 mm² (1x) at rear-side 1-hole module plate

Max. 95 mm² - 300 mm² (2x) at rear-side 1-hole module plate

Min. 95 mm² - 185 mm² (2x) at rear-side 2-hole module plate

Max. 35 mm² - 185 mm² (4x) at rear-side 2-hole module plate

300 mm² (4x) at rear-side width extension

95 mm² - 240 mm² (6x) at rear-side width extension

NA: AWG 0- kcmil 500 (4x) at 4-hole tunnel terminal

NA: kcmil 250 - kcmil 350 (1x) direct at switch rear-side connection

NA: AWG 0 - kcmil 350 (4x) direct at switch rear-side connection

NA: min. kcmil 250 - kcmil 600 (1x) at rear-side 1-hole module plate

NA: max. AWG 3/0 - kcmil 600 (2x) at rear-side 1-hole module plate

NA: min. AWG 3/0 - kcmil 350 (2x) at rear-side 2-hole module plate

NA: max. AWG 2 - kcmil 350 (4x) at rear-side 2-hole module plate

NA: kcmil 600 (4x) at rear-side width extension

NA: AWG 3/0 - kcmil 500 (6x) at rear-side width extension

Terminal capacity (aluminum stranded conductor/cable)

Min. 185 mm² - 240 mm² (1x) at rear-side 1-hole module plate

Max. 70 mm² - 185 mm² (2x) at rear-side 1-hole module plate

50 mm² (4x) at rear-side 2-hole module plate

240 mm² (2x) at rear-side width extension

70 mm² - 240 mm² (6x) at rear-side width extension

NA: aluminum conductor not applicable

Handle type

Rocker lever

Short delay current setting (Isd) - max

10000 A

Short delay current setting (Isd) - min

2000 A

Instantaneous current setting (Ii) - max

12000 A

Instantaneous current setting (Ii) - min

2000 A

Number of operations per hour - max

60

Overload current setting (Ir) - max

1000 A

Overload current setting (Ir) - min

1000 A

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

63 kA

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

50 kA

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

50 kA

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

50 kA

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

37 kA

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

187 kA

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

187 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

100 kA

Standard terminals

Screw connection,Optional:Tunnel terminal,Rear-side connection,Strip connection

Rated operating voltage Ue (UL) - max

600 V

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

275 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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