Product specifications

Eaton 102684

Catalog Number: 102684

Eaton Moeller series NZM - Molded Case Circuit Breaker. Molded Case Switch, 3p, 160A

Photo is representative

General specifications

Product Name
Eaton Moeller series NZM molded case switch

Catalog Number
102684

Model Code
NS2-160-NA

EAN
4015081025442

Product Length/Depth
142 mm

Product Height
185 mm

Product Width
105 mm

Product Weight
2.404 kg

Compliances
RoHS conform

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

Powering Business Worldwide

defaultTaxonomyAttributeLabel

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: 160 A

Application

Branch circuits, feeder circuits

Amperage Rating

160 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

N2

Features

Protection unit
Motor drive optional

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.

Resources

Brochures

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

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

Catalogs

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

Certification reports

DA-DC-03_NS2

Characteristic curve

eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-037.eps

eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-005.eps

Drawings

eaton-circuit-breaker-nzm-mccb-dimensions-019.eps

eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps

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

eCAD model

DA-CE-ETN.NS2-160-NA

Installation instructions

eaton-circuit-breakers-nzm2-basic-device-bg2-instruction-leaflet-il01206006z.pdf

Installation videos

Introduction of the new digital circuit breaker NZM

The new digital NZM Range

mCAD model

DA-CS-nzm2_3p

DA-CD-nzm2_3p

Technical data sheets

eaton-nzm-technical-information-sheet

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

DIN rail (top hat rail) mounting optional

Built-in device fixed built-in technique

Equipment heat dissipation, current-dependent

24.35 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)

250 A

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

250 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

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

20000 operations

Overvoltage category

III

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 band terminal)
IP10 (tunnel terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

Min. 2 segements of 16 mm x 0.8 mm at rear-side connection (punched)
Max. 10 segments of 16 mm x 0.8 mm at box terminal
Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched)
Max. 8 segments of 15.5 mm x 0.8 mm (2x) at terminal box
Min. 2 segments of 9 mm x 0.8 mm at box terminal
NA: max. 10 segments of 16 mm x 0.8 mm at rear-side connection (punched)
NA: min. 2 segments of 16 mm x 0.8 mm at rear-side connection (punched)

Lifespan, electrical

10000 operations at 415 V AC-1
7500 operations at 690 V AC-1
10000 operations at 400 V AC-1
6500 operations at 400 V AC-3
5000 operations at 690 V AC-3
6500 operations at 415 V AC-3

Functions

Disconnectors/main switches

Position of connection for main current circuit

Front side

Rated operational current for specified heat dissipation (In)

160 A

Power loss

24.3 W

Short-circuit total breaktime

< 10 ms

Short-circuit release non-delayed setting - max

2500 A

Short-circuit release non-delayed setting - min

2500 A

Terminal capacity (copper busbar)

NA: min. 16 mm x 5 mm direct at switch rear-side connection

Max. 24 mm x 8 mm direct at switch rear-side connection

M8 at rear-side screw connection

Min. 16 mm x 5 mm direct at switch rear-side connection

NA: M8 at rear-side screw connection

NA: max. 20 mm x 5 mm direct at switch rear-side connection

Terminal capacity (copper solid conductor/cable)

6 mm² - 16 mm² (2x) at box terminal

NA: 6 AWG (1x) at tunnel terminal

10 mm² - 16 mm² (1x) at box terminal

4 mm² - 16 mm² (2x) direct at switch rear-side connection

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

16 mm² (1x) at tunnel terminal

NA: 12 - 6 AWG (1x) at box terminal

NA: 12 - 6 AWG (1x) direct at switch rear-side connection

Terminal capacity (aluminum solid conductor/cable)

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

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

16 mm² (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

6 mm² - 25 mm² (2x) at box terminal

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

10 mm² - 70 mm² (1x) at box terminal

25 mm² - 185 mm² (1x) at 1-hole tunnel terminal

NA: 4 - 350 AWG/kcmil (1x) at box terminal

NA: 4 - 350 AWG/kcmil (1x) at 1-hole tunnel terminal

25 mm² - 70 mm² (2x) direct at switch rear-side connection

Terminal capacity (aluminum stranded conductor/cable)

25 mm² - 185 mm² (1x) at 1-hole tunnel terminal

25 mm² - 35 mm² (2x) direct at switch rear-side connection

25 mm² - 35 mm² (1x) 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

2500 A

Instantaneous current setting (Ii) - min

2500 A

Number of operations per hour - max

120

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

37.5 kA

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

5 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

105 kA

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

53 kA

Standard terminals

Screw terminal

Optional terminals

Box terminal. Connection on rear. Tunnel terminal

Rated operating voltage Ue (UL) - max

600 Y / 347 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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