

# Eaton 102682

Catalog Number: 102682

Eaton Moeller series NZM - Molded Case Circuit Breaker. Molded Case Switch, 3p, 100A



Photo is representative

## General specifications

| Product Name                                | Catalog Number       |
|---------------------------------------------|----------------------|
| Eaton Moeller series NZM molded case switch | 102682               |
|                                             | Model Code           |
|                                             | NS1-100-NA           |
| EAN                                         | Product Length/Depth |
| 4015081025428                               | 88 mm                |
| Product Height                              | Product Width        |
| 145 mm                                      | 90 mm                |
| Product Weight                              | Compliances          |
| 1.046 kg                                    | RoHS conform         |
| Certifications                              |                      |
| UL (Category Control Number WJAZ)           |                      |
| Specially designed for North America        |                      |
| IEC                                         |                      |
| IEC 60947-2                                 |                      |
| CSA-C22.2 No. 5-09                          |                      |
| CSA certified                               |                      |
| UL listed                                   |                      |
| CSA (File No. 22086)                        |                      |
| UL 489                                      |                      |
| UL/CSA                                      |                      |
| CE marking                                  |                      |
| CSA (Class No. 4652-06)                     |                      |
| UL (File No. E148671)                       |                      |

## 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: 100 A  
Terminal capacity hint: Up to 95 mm<sup>2</sup> can be connected depending on the cable manufacturer.

## Application

Branch circuits, feeder circuits

## Amperage Rating

100 A

## Voltage rating

690 V - 690 V

## Circuit breaker frame type

N1

## Features

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.

## 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\\_NS1](#)

## Characteristic curve

[eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-002.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve.eps](#)

## Drawings

[eaton-circuit-breaker-nzm-mccb-dimensions-017.eps](#)

[eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps](#)

[eaton-circuit-breaker-switch-nzm-mccb-3 d-drawing-006.eps](#)

## eCAD model

[ETN.NS1-100-NA](#)

## Installation instructions

[eaton-circuit-breaker-switch-disconnector-nzmb-il01203004z.pdf](#)

## Installation videos

[Introduction of the new digital circuit breaker NZM](#)

[The new digital NZM Range](#)

## mCAD model

[DA-CS-nzm1\\_xsve](#)

[DA-CD-nzm1\\_xsve](#)

## 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

DIN rail (top hat rail) mounting optional

Fixed

Built-in device fixed built-in technique

#### Equipment heat dissipation, current-dependent

16.86 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)

125 A

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

125 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

IP20

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

#### Direction of incoming supply

As required

#### Electrical connection type of main circuit

Frame clamp

#### Lifespan, mechanical

20000 operations

#### Overvoltage category

III

#### Degree of protection (IP), front side

IP40 (with insulating surround)

IP66 (with door coupling rotary handle)

#### 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 segments of 9 mm x 0.8 mm at box terminal

Max. 9 segments of 9 mm x 0.8 mm at box terminal

#### Lifespan, electrical

7500 operations at 690 V AC-1

10000 operations at 415 V AC-1

10000 operations at 400 V AC-1

#### Functions

Disconnectors/main switches

#### Position of connection for main current circuit

Front side

#### Rated operational current for specified heat dissipation (In)

100 A

#### Power loss

16.9 W

#### Short-circuit total breaktime

< 10 ms

#### Short-circuit release non-delayed setting - max

1250 A

#### Short-circuit release non-delayed setting - min

1250 A

#### Terminal capacity (copper busbar)

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

M6 at rear-side screw connection

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

NA: min. 12 mm x 5 mm direct at switch rear-side connection

NA: M6 at rear-side screw connection

Min. 12 mm x 5 mm direct at switch rear-side connection

#### Terminal capacity (copper solid conductor/cable)

10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x) at box terminal  
10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x) direct at switch rear-side connection  
6 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x) at box terminal  
6 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x) direct at switch rear-side connection  
NA: 12 - 6 AWG (1x) at box terminal  
NA: 12 - 6 AWG (1x) direct at switch rear-side connection  
NA: 9 - 6 AWG (2x) direct at switch rear-side connection  
NA: 6 AWG (1x) at tunnel terminal  
16 mm<sup>2</sup> (1x) at tunnel terminal

#### Terminal capacity (aluminum solid conductor/cable)

10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x) direct at switch rear-side connection  
16 mm<sup>2</sup> (1x) at tunnel terminal  
10 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x) direct at switch rear-side connection

#### Terminal capacity (copper stranded conductor/cable)

10 mm<sup>2</sup> - 70 mm<sup>2</sup> (1x) at box terminal  
NA: 4 - 3/0 AWG/kcmil (1x) at 1-hole tunnel terminal  
25 mm<sup>2</sup> (2x) direct at switch rear-side connection  
25 mm<sup>2</sup> - 70 mm<sup>2</sup> (1x) direct at switch rear-side connection  
NA: 4 - 2/0 AWG/kcmil (1x) at box terminal  
25 mm<sup>2</sup> - 95 mm<sup>2</sup> (1x) at 1-hole tunnel terminal  
6 mm<sup>2</sup> - 25 mm<sup>2</sup> (2x) at box terminal

#### Terminal capacity (aluminum stranded conductor/cable)

25 mm<sup>2</sup> - 95 mm<sup>2</sup> (1x) at 1-hole tunnel terminal  
25 mm<sup>2</sup> - 35 mm<sup>2</sup> (1x) direct at switch rear-side connection  
25 mm<sup>2</sup> - 35 mm<sup>2</sup> (2x) direct at switch rear-side connection

#### Handle type

Rocker lever

#### Short delay current setting (I<sub>sd</sub>) - max

0 A

#### Short delay current setting (I<sub>sd</sub>) - min

0 A

#### Instantaneous current setting (I<sub>i</sub>) - max

1250 A

#### Instantaneous current setting (I<sub>i</sub>) - min

1250 A

#### Number of operations per hour - max

120

#### Overload current setting (I<sub>r</sub>) - 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

85 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

35 kA

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

10 kA

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

7.5 kA

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

105 kA

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

74 kA

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

53 kA

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

17 kA

Standard terminals

Box terminal

Optional terminals

Connection on rear. Screw terminal. Tunnel terminal

Rated operating voltage Ue (UL) - max

480 Y / 277 V

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

187 kA

Rated impulse withstand voltage (Uimp) at auxiliary contacts

6000 V

Rated impulse withstand voltage (Uimp) at main contacts

6000 V

Rated insulation voltage (Ui)

690 V AC



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