

# Eaton 191612

Catalog Number: 191612

Eaton Moeller series NZM - Molded Case Circuit Breaker. NZM3 PXR10 circuit breaker, 400A, 4p, box terminal



General specifications

| Product Name                                                    | Catalog Number |
|-----------------------------------------------------------------|----------------|
| Eaton Moeller series NZM molded case circuit breaker electronic | 191612         |
|                                                                 | EAN            |
|                                                                 | 4015081921249  |
| Product Length/Depth                                            | Product Height |
| 166 mm                                                          | 275 mm         |
| Product Width                                                   | Product Weight |
| 185 mm                                                          | 9.49 kg        |
| Compliances                                                     | Certifications |
| RoHS conform                                                    | IEC            |
|                                                                 | IEC/EN 60947   |

## Product specifications

### Type

Circuit breaker

### Special features

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  $I_{cn}$ )

Overload and short-circuit protection LI

R.m.s. value measurement and "thermal memory"

USB interface for configuration and test function with Power Xpert

Protection Manager software

Rated current = rated uninterrupted current: 400 A

Terminal capacity hint: Up to 240 mm<sup>2</sup> can be connected depending on the cable manufacturer.

### Application

Use in unearthed supply systems at 690 V

### Amperage Rating

400 A

### Voltage rating

690 V - 690 V

### Circuit breaker frame type

NZM3

### 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.

## 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-015.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-011.eps](#)

### Declarations of conformity

[DA-DC-03\\_N3](#)

### Drawings

[eaton-circuit-breaker-switch-nzm-mccb-dimensions-016.eps](#)

[eaton-circuit-breaker-nzm-mccb-dimensions-021.eps](#)

### Installation instructions

[eaton-circuit-breaker-basic-unit-bg3-il012100zu.pdf](#)

### Installation videos

[The new digital NZM Range](#)

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

### mCAD model

[DA-CD-nzm3\\_4p](#)

[DA-CS-nzm3\\_4p](#)

### Technical data sheets

[eaton-nzm-technical-information-sheet](#)

#### 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

Built-in device fixed built-in technique

Fixed

#### Climatic proofing

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

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

#### Equipment heat dissipation, current-dependent

72 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

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

Direction of incoming supply

As required

Electrical connection type of main circuit

Frame clamp

Current rating of neutral conductor

200% of phase conductor

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 strip terminal)

Number of poles

Four-pole

Terminal capacity (copper strip)

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  
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  
Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched)  
Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm

Lifespan, electrical

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

## Functions

System and cable protection

## Shock resistance

20 g (half-sinusoidal shock 20 ms)

## Position of connection for main current circuit

Front side

## Rated operational current for specified heat dissipation ( $I_n$ )

400 A

## Release system

Electronic release

## Short-circuit total breaktime

< 10 ms

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

3.3 kA

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

3.3 kA

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

4400 A

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

800 A

## Terminal capacity (control cable)

0.75 mm<sup>2</sup> - 2.5 mm<sup>2</sup> (1x)

0.75 mm<sup>2</sup> - 1.5 mm<sup>2</sup> (2x)

## Terminal capacity (copper busbar)

Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection

Min. 20 mm x 5 mm direct at switch rear-side connection

M10 at rear-side screw connection

Max. 10 mm x 50 mm (2x) at rear-side width extension

## Terminal capacity (copper solid conductor/cable)

16 mm<sup>2</sup> (1x) at tunnel terminal

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

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

16 mm<sup>2</sup> (2x) at box terminal

300 mm<sup>2</sup> (2x) at rear-side width extension

## Terminal capacity (aluminum solid conductor/cable)

16 mm<sup>2</sup> (1x) at tunnel terminal

## Terminal capacity (copper stranded conductor/cable)

25 mm<sup>2</sup> - 120 mm<sup>2</sup> (2x) at box terminal

25 mm<sup>2</sup> - 240 mm<sup>2</sup> (1x) direct at switch rear-side connection

35 mm<sup>2</sup> - 240 mm<sup>2</sup> (1x) at box terminal

25 mm<sup>2</sup> - 240 mm<sup>2</sup> (2x) direct at switch rear-side connection

16 mm<sup>2</sup> - 185 mm<sup>2</sup> (1x) at 1-hole tunnel terminal

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

50 mm<sup>2</sup> - 240 mm<sup>2</sup> (1x) at 2-hole tunnel terminal

50 mm<sup>2</sup> - 240 mm<sup>2</sup> (2x) at 2-hole tunnel terminal

25 mm<sup>2</sup> - 185 mm<sup>2</sup> (1x) at tunnel terminal

#### 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

11 A

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

2 A

#### Number of operations per hour - max

60

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

400 A

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

160 A

#### Rated short-circuit breaking capacity I<sub>cs</sub> (IEC/EN 60947) at 230 V, 50/60 Hz

85 kA

#### Rated short-circuit breaking capacity I<sub>cs</sub> (IEC/EN 60947) at 400/415 V, 50/60 Hz

50 kA

#### Rated short-circuit breaking capacity I<sub>cs</sub> (IEC/EN 60947) at 440 V, 50/60 Hz

35 kA

#### Rated short-circuit breaking capacity I<sub>cs</sub> (IEC/EN 60947) at 525 V, 50/60 Hz

13 kA

#### Rated short-circuit breaking capacity I<sub>cs</sub> (IEC/EN 60947) at 690 V, 50/60 Hz

5 kA

#### Rated short-circuit making capacity I<sub>cm</sub> at 400/415 V, 50/60 Hz

110 kA

Rated short-circuit making capacity I<sub>cm</sub> at 440 V, 50/60 Hz

77 kA

Rated short-circuit making capacity I<sub>cm</sub> at 525 V, 50/60 Hz

55 kA

Rated short-circuit making capacity I<sub>cm</sub> at 690 V, 50/60 Hz

40 kA

Standard terminals

Box terminal

Optional terminals

Connection on rear. Screw terminal. Tunnel terminal

Rated short-circuit making capacity I<sub>cm</sub> at 240 V, 50/60 Hz

187 kA

Rated impulse withstand voltage (U<sub>imp</sub>) at auxiliary contacts

6000 V

Rated impulse withstand voltage (U<sub>imp</sub>) at main contacts

8000 V

Rated insulation voltage (U<sub>i</sub>)

690 V AC



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