

# Eaton 168507

Catalog Number: 168507

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 4p, 630A, plug-in module

## General specifications



Photo is representative

Product Name	Catalog Number
Eaton Moeller series NZM molded case circuit breaker electronic	168507
Model Code	NZMN3-4-VE630-SVE
EAN	Product Length/Depth
4015081649853	335 mm
Product Height	Product Width
215.2 mm	185 mm
Product Weight	Compliances
10.04 kg	RoHS conform
Certifications	
IEC/EN 60947	
IEC	

## defaultTaxonomyAttributeLabel

### 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  $I_{cn}$ )  
R.m.s. value measurement and "thermal memory"  
Adjustable time delay setting to overcome current peaks  $t_{tr}$  at  $6 \times I_r$  also infinity (without overload releases)  
Adjustable delay time  $t_{sd}$   
Rated current = rated uninterrupted current: 630 A  
Terminal capacity hint: Up to 240 mm<sup>2</sup> can be connected depending on the cable manufacturer.

### Application

Use in unearthing supply systems at 690 V

### Amperage Rating

630 A

### Voltage rating

690 V - 690 V

### Circuit breaker frame type

NZM3

### Features

Protection unit

Motor drive optional

### Accessories required

NZM3-XSVS

### 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](#)

### Certification reports

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

### Characteristic curve

[eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-006.eps](#)

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

### Drawings

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

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

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

### eCAD model

[DA-CE-ETN.NZMN3-4-VE630-SVE](#)

### Installation instructions

[IL01219023Z](#)

### Installation videos

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

[The new digital NZM Range](#)

### mCAD model

[nzmn3\\_4\\_a320\\_sve.stp](#)

[nzmn3\\_4\\_a320\\_sve.dwg](#)

### 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 plug-in technique

Plug-in unit

#### Climatic proofing

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

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

#### Equipment heat dissipation, current-dependent

178.61 W

#### Utilization category

A (IEC/EN 60947-2)

#### Isolation

300 V AC (between the auxiliary contacts)

500 V AC (between auxiliary contacts and main 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**

Screw connection

**Current rating of neutral conductor**

200% of phase conductor

**Lifespan, mechanical**

15000 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 strip terminal)  
IP10 (tunnel terminal)

**Number of poles**

Four-pole

**Terminal capacity (copper strip)**

Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1  
mm

Max. 8 segments of 24 mm x 1 mm (2x) at box terminal

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)

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 rear-side connection  
(punched)

**Lifespan, electrical**

3000 operations at 690 V AC-1

2000 operations at 415 V AC-3

2000 operations at 400 V AC-3

2000 operations at 690 V AC-3

5000 operations at 400 V AC-1

5000 operations at 415 V AC-1

#### Functions

Systems, cable, selectivity and generator 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 (In)

630 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

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

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)

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

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) at box terminal

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

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

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

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

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

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

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

**Handle type**

Rocker lever

**Short delay current setting (Isd) - max**

4410 A

**Short delay current setting (Isd) - min**

100 A

**Instantaneous current setting (li) - max**

5040 A

**Instantaneous current setting (li) - min**

1260 A

**Number of operations per hour - max**

60

**Overload current setting (Ir) - max**

630 A

**Overload current setting (Ir) - min**

315 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**

13 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**

105 kA

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

74 kA

Rated short-circuit making capacity  $I_{cm}$  at 525 V, 50/60 Hz

53 kA

Rated short-circuit making capacity  $I_{cm}$  at 690 V, 50/60 Hz

40 kA

#### Standard terminals

Screw terminal

#### Optional terminals

Box terminal. Connection on rear. Tunnel terminal

Rated short-circuit making capacity  $I_{cm}$  at 240 V, 50/60 Hz

187 kA

Rated impulse withstand voltage ( $U_{imp}$ ) at auxiliary contacts

6000 V

Rated impulse withstand voltage ( $U_{imp}$ ) at main contacts

8000 V

Rated insulation voltage ( $Ui$ )

1000 V AC



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