Product specifications

# Eaton 168909


Photo is representative

## Catalog Number: 168909

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 630A, withdrawable unit, H3-VE630-SVE

### General specifications

**Product Name**
Eaton Moeller series NZM molded case circuit breaker electronic

**Catalog Number**
168909

**Model Code**
NZMH3-VE630-SVE

**EAN**
4015081654048

**Product Length/Depth**
335 mm

**Product Height**
215.2 mm

**Product Width**
140 mm

**Product Weight**
7.72 kg

**Compliances**
RoHS conform

**Certifications**
IEC/EN 60947
IEC

Powering Business Worldwide

## 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 Icn)
R.m.s. value measurement and “thermal memory”
Adjustable time delay setting to overcome current peaks tr at 6 x Ir also infinity (without overload releases)
Adjustable delay time tsd
Rated current = rated uninterrupted current: 630 A
Terminal capacity hint: Up to 240 mm² can be connected depending on the cable manufacturer.

### Application

Use in unearthed supply systems at 690 V

### Amperage Rating

630 A

### Voltage rating

690 V - 690 V

### Circuit breaker frame type

NZM3

### Features

Motor drive optional
Protection unit

### 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

### Drawings

eaton-circuit-breaker-nzm-mccb-dimensions-020.eps

eaton-circuit-breaker-nzm-mccb-dimensions-016.eps

eaton-circuit-breaker-switch-nzm-mccb-dimensions-016.eps

### eCAD model

DA-CE-ETN.NZMH3-VE630-SVE

### Installation instructions

IL01219023Z

### Installation videos

The new digital NZM Range

Introduction of the new digital circuit breaker NZM

### mCAD model

nzmh3_me220_sve.stp

nzmh3_me220_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

119.07 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

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

Three-pole

Terminal capacity (copper strip)

Max. 8 segments of 24 mm x 1 mm (2x) at box terminal
Min. 6 segments of 16 mm x 0.8 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 box terminal
Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm
Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched)

Lifespan, electrical

2000 operations at 415 V AC-3
5000 operations at 415 V AC-1
3000 operations at 690 V AC-1
2000 operations at 690 V AC-3
5000 operations at 400 V AC-1
2000 operations at 400 V AC-3

### 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 mm² - 2.5 mm² (1x)
0.75 mm² - 1.5 mm² (2x)

### Terminal capacity (copper busbar)

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

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

16 mm² (2x) direct at switch rear-side connection
300 mm² (2x) at rear-side width extension
16 mm² (1x) direct at switch rear-side connection
16 mm² (1x) at tunnel terminal
16 mm² (2x) at box terminal

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

16 mm² (1x) at tunnel terminal

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

16 mm² - 185 mm² (1x) at 1-hole tunnel terminal
35 mm² - 240 mm² (1x) at box terminal
25 mm² - 120 mm² (2x) at box terminal
25 mm² - 240 mm² (1x) direct at switch rear-side connection
25 mm² - 240 mm² (2x) direct at switch rear-side connection

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

50 mm² - 240 mm² (1x) at 2-hole tunnel terminal

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

50 mm² - 240 mm² (2x) at 2-hole tunnel terminal

### Handle type

Rocker lever

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

2205 A

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

210 A

### Instantaneous current setting (Ii) - max

5040 A

### Instantaneous current setting (Ii) - 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

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

33 kA

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

9 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

143 kA

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

70 kA

Standard terminals

Screw terminal

Optional terminals

Box terminal. Connection on rear. Tunnel terminal

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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