

# Eaton 189666

Catalog Number: 189666

NZMH4-4-PX630/VAR-AVE. NZM4 PXR25 circuit breaker - integrated energy measurement class 1, 630A, 4p, variable, Screw terminal, withdrawable unit

## General specifications



Product Name	Catalog Number
Eaton Moeller series NZM molded case circuit breaker electronic	189666
Model Code	NZMH4-4-PX630/VAR-AVE
EAN	Product Length/Depth
4015081876136	501 mm
Product Height	Product Width
280 mm	330 mm
Product Weight	Compliances
35.5 kg	RoHS conform
Certifications	
IEC/EN 60947	
IEC	

## Product specifications

Rated operational current for specified heat dissipation (In)

630 A

### 10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

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

37 kA

### 10.4 Clearances and creepage distances

Meets the product standard's requirements.

### 10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

#### Mounting Method

Built-in device slide-in technique (withdrawable)

Withdrawable

#### Amperage Rating

630 A

### 10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

#### Terminal capacity (copper strip)

Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal

Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched)

Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal

10 segments of 50 mm x 1 mm (2x) at 1-hole module plate

10 segments of 80 mm x 1 mm (2x) at rear-side width extension

Min. 5 segments of 25 mm x 1 mm at rear-side connection (punched)

#### Handle type

Rocker lever

### 10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

#### Ambient storage temperature - min

40 °C

#### Protection against direct contact

Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part

## 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-withdrawable-unit-nzm-mccb-dimensions.eps](#)

[eaton-circuit-breaker-nzm-mccb-dimensions-023.eps](#)

### Installation instructions

[IL012101ZU](#)

### Installation videos

[The new digital NZM Range](#)

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

### mCAD model

[DA-CD-nzm4\\_4p](#)

[DA-CS-nzm4\\_4p](#)

### Technical data sheets

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

#### Terminal capacity (copper busbar)

Max. 50 mm x 10 mm (2x) direct at switch rear-side connection  
50 mm x 10 mm (2x) at rear-side 2-hole module plate  
Min. 25 mm x 5 mm direct at switch rear-side connection  
Max. 80 mm x 10 mm (2x) at rear-side width extension  
Min. 25 mm x 5 mm at rear-side 1-hole module plate  
M10 at rear-side screw connection  
Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate  
Min. 60 mm x 10 mm at rear-side width extension

#### 10.8 Connections for external conductors

Is the panel builder's responsibility.

#### Special features

LSI overload protection and delayed and non-delayed short-circuit protective device Class 1 energy measurement, r.m.s. value measurement, and "thermal memory" USB interface for configuration and test function with Power Xpert Protection Manager software Interface module in equipment supplied. Optionally communication-capable with internal Modbus RTU module or CAM 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  $I_{cn}$ ) Rated current = rated uninterrupted current: 630 A

#### Ambient operating temperature - max

70 °C

#### Position of connection for main current circuit

Connection at separate chassis part

#### Current rating of neutral conductor

0 - 60% - 100% of phase conductor

#### Rated insulation voltage (Ui)

1000 V AC

#### Climatic proofing

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

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

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

120 mm<sup>2</sup> - 185 mm<sup>2</sup> (1x) direct at switch rear-side connection  
50 mm<sup>2</sup> - 185 mm<sup>2</sup> (4x) direct at switch rear-side connection

#### Features

Motor drive optional

Protection unit

#### Lifespan, electrical

2000 operations at 690 V AC-1

3000 operations at 400 V AC-1

3000 operations at 415 V AC-1

#### Electrical connection type of main circuit

Other

#### Short-circuit total breaktime

< 25 ms ( 415 V); < 35 ms (> 415 V)

#### Rated impulse withstand voltage (Uimp) at main contacts

8000 V

#### Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz

50 kA

#### 10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

#### Utilization category

B (IEC/EN 60947-2)

#### Number of poles

Four-pole

#### Ambient operating temperature - min

-25 °C

#### 10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

#### 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)

#### Equipment heat dissipation, current-dependent

49 W

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

1260 A

#### 10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

#### 10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz

63 kA

#### Application

Use in unearthing supply systems at 690 V

#### 10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

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

275 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz

50 kA

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

6300 A

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

IP66 (with door coupling rotary handle)

IP40 (with insulating surround)

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

100 kA

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

22680 A

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

252 A

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

2 A

#### Number of auxiliary contacts (normally closed contacts)

0

#### 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.

#### Lifespan, mechanical

10000 operations

Overload current setting (Ir) - max

630 A

Voltage rating

690 V - 690 V

Terminal capacity (copper solid conductor/cable)

95 mm<sup>2</sup> - 240 mm<sup>2</sup> (6x) at rear-side width extension

35 mm<sup>2</sup> - 185 mm<sup>2</sup> (4x) at rear-side 2-hole module plate

50 mm<sup>2</sup> - 240 mm<sup>2</sup> (4x) at 4-hole tunnel terminal

95 mm<sup>2</sup> - 185 mm<sup>2</sup> (2x) at rear-side 2-hole module plate

95 mm<sup>2</sup> - 300 mm<sup>2</sup> (2x) at rear-side 1-hole module plate

300 mm<sup>2</sup> (4x) at rear-side width extension

120 mm<sup>2</sup> - 300 mm<sup>2</sup> (1x) at rear-side 1-hole module plate

Degree of protection (terminations)

IP10 (tunnel terminal)

IP00 (terminations, phase isolator and strip terminal)

Short-circuit release delayed setting - min

504 A

Terminal capacity (aluminum stranded conductor/cable)

50 mm<sup>2</sup> - 240 mm<sup>2</sup> (4x) at 4-hole tunnel terminal

### 10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

Short-circuit release non-delayed setting - min

1260 A

Degree of protection

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

IP20

Overvoltage category

III

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

19.2 kA

Short delay current setting (Isd) - max

10 A

Rated impulse withstand voltage (Uiimp) at auxiliary contacts

6000 V

Number of auxiliary contacts (change-over contacts)

0

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

19.2 kA

Accessories required

NZM4-4-XAVS

Ambient storage temperature - max

70 °C

Release system

Electronic release

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

50 kA

Optional terminals

Connection on rear. Strip terminal. Tunnel terminal

Pollution degree

3

10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

Functions

Systems, cable, selectivity and generator protection

Short-circuit release non-delayed setting - max

11340 A

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

187 kA

Standard terminals

Screw terminal

Type

Circuit breaker

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.7 Inscriptions

Meets the product standard's requirements.

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

187 kA

Number of auxiliary contacts (normally open contacts)

0

**Isolation**

300 V AC (between the auxiliary contacts)

500 V AC (between auxiliary contacts and main contacts)

**Number of operations per hour - max**

60

**Circuit breaker frame type**

NZM4

**Direction of incoming supply**

As required

**Shock resistance**

15 g (half-sinusoidal shock 11 ms)



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