Product specifications

Eaton 189676

Catalog Number: 189676

NZMH4-4-PX630/VAR-TAZ-AVE. NZM4 PXR25 circuit breaker - integrated energy measurement class 1, 630A, 4p, variable, Screw terminal, earth-fault protection, ARMS and zone selectivity, withdrawable unit

General specifications

Product Name
Eaton Moeller series NZM molded case circuit breaker electronic

Catalog Number
189676

Model Code
NZMH4-4-PX630/VAR-TAZ-AVE

EAN
4015081876235

Product Length/Depth
501 mm

Product Height
280 mm

Product Width
330 mm

Product Weight
35.5 kg

Compliances
RoHS conform

Certifications
IEC
IEC/EN 60947

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)

10 segments of 80 mm x 1 mm (2x) at rear-side width extension
Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched)
Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal
Min. 5 segments of 25 mm x 1 mm 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

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

Earth-fault current setting (Ig) - max

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

630 x In

Protection against direct contact

Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110

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

LSIG overload protection and delayed and non-delayed short-circuit protective device, earth-fault protection 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 Zone selectivity ZSI Maintenance Mode ARMS 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 Icn) 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, cyclic, to IEC 60068-2-30
Damp heat, constant, to IEC 60068-2-78

Terminal capacity (copper stranded conductor/cable)

50 mm² - 185 mm² (4x) direct at switch rear-side connection
120 mm² - 185 mm² (1x) direct at switch rear-side connection

Features

Protection unit

Motor drive optional

Lifespan, electrical

3000 operations at 415 V AC-1

2000 operations at 690 V AC-1

3000 operations at 400 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 mm² - 1.5 mm² (2x)

0.75 mm² - 2.5 mm² (1x)

Equipment heat dissipation, current-dependent

49 W

Instantaneous current setting (Ii) - 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 unearthed 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

IP40 (with insulating surround)

IP66 (with door coupling rotary handle)

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 (Ii) - 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 mm² - 240 mm² (6x) at rear-side width extension

95 mm² - 300 mm² (2x) at rear-side 1-hole module plate

35 mm² - 185 mm² (4x) at rear-side 2-hole module plate

50 mm² - 240 mm² (4x) at 4-hole tunnel terminal

95 mm² - 185 mm² (2x) at rear-side 2-hole module plate

120 mm² - 300 mm² (1x) at rear-side 1-hole module plate

300 mm² (4x) at rear-side width extension

Degree of protection (terminations)

IP00 (terminations, phase isolator and strip terminal)

IP10 (tunnel terminal)

Short-circuit release delayed setting - min

504 A

Terminal capacity (aluminum stranded conductor/cable)

50 mm² - 240 mm² (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 (Uimp) at auxiliary contacts

6000 V

Earth-fault current setting (Ig) - min

126 x In

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

Integrated earth fault protection
Zone selectivity
ARMS maintenance mode
Earth-fault protection
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)