

Eaton 193340

Catalog Number: 193340

NZMH4-4-VX1600-AVE. NZM4 PXR20 circuit breaker, 1600A, 4p, withdrawable unit



General specifications

Product Name	Catalog Number
Eaton Moeller series NZM molded case circuit breaker electronic	193340
	Model Code
	NZMH4-4-VX1600-AVE
EAN	Product Length/Depth
9010238016859	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)

1600 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 fixed built-in technique

Withdrawable

Amperage Rating

1600 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

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

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

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

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-feerum-the-whole-grain-solution-success-story-en-us.pdf](#)

[eaton-digital-nzm-brochure-br013003en-en-us.pdf](#)

Catalogs

[eaton-digital-nzm-catalog-ca013003en-en-us.pdf](#)

Drawings

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

Installation instructions

[IL012101ZU](#)

Installation videos

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

[The new digital NZM Range](#)

mCAD model

[DA-CD-nzm4_4p](#)

[DA-CS-nzm4_4p](#)

Technical data sheets

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

Terminal capacity (copper busbar)

Max. 80 mm x 10 mm (2x) at rear-side width extension

Max. 50 mm x 10 mm (2x) direct at switch rear-side connection

Min. 25 mm x 5 mm direct at switch rear-side connection

M10 at rear-side screw connection

Min. 25 mm x 5 mm at rear-side 1-hole module plate

Min. 60 mm x 10 mm at rear-side width extension

Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate

50 mm x 10 mm (2x) at rear-side 2-hole module plate

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 R.m.s. value measurement and "thermal memory" USB interface for configuration and test function with Power Xpert Protection Manager software Optionally communication-capable with interface module and 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: 1600 A

Ambient operating temperature - max

70 °C

Position of connection for main current circuit

Front side

Current rating of neutral conductor

200% of phase conductor

Rated insulation voltage (U_i)

690 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 mm² - 185 mm² (1x) direct at switch rear-side connection

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

Features

Motor drive optional

Protection unit

Lifespan, electrical

1000 operations at 690 V AC-3

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

Electrical connection type of main circuit

Screw connection

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 (2000A: A, 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

284 W

Instantaneous current setting (Ii) - min

3200 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 I_{cs} (IEC/EN 60947) at 230 V, 50/60 Hz

63 kA

10.3 Degree of protection of assemblies

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

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

275 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 440 V, 50/60 Hz

50 kA

Short-circuit release delayed setting - max

16000 A

Degree of protection (IP), front side

IP66 (with door coupling rotary handle)

IP40 (with insulating surround)

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

143 kA

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

100 kA

Instantaneous current setting (I_i) - max

38400 A

Overload current setting (I_r) - min

640 A

Short delay current setting (I_{sd}) - 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 (I_r) - max

1600 A

Voltage rating

690 V - 690 V

Terminal capacity (copper solid conductor/cable)

35 mm² - 185 mm² (4x) at rear-side 2-hole module plate
120 mm² - 300 mm² (1x) at rear-side 1-hole module plate
95 mm² - 185 mm² (2x) at rear-side 2-hole module plate
300 mm² (4x) at rear-side width extension
95 mm² - 300 mm² (2x) at rear-side 1-hole module plate
50 mm² - 240 mm² (4x) at 4-hole tunnel terminal
95 mm² - 240 mm² (6x) at rear-side width extension

Degree of protection (terminations)

IP10 (tunnel terminal)
IP00 (terminations, phase isolator and strip terminal)

Short-circuit release delayed setting - min

1280 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

3200 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 (I_{sd}) - max

10 A

Rated impulse withstand voltage (U_{imp}) 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

Ambient storage temperature - max

70 °C

Release system

Electronic release

Rated short-circuit breaking capacity I_{cs} (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

19200 A

Rated short-circuit making capacity I_{cm} 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 I_{cm} at 440 V, 50/60 Hz

187 kA

Number of auxiliary contacts (normally open contacts)

0

Isolation

500 V AC (between auxiliary contacts and main contacts)

300 V AC (between the auxiliary 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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