

Eaton 111659

Catalog Number: 111659

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 400A, box terminals, N, frame 3, VE400-BT



Photo is representative

General specifications

Product Name	Catalog Number
Eaton Moeller series NZM molded case circuit breaker electronic	111659
	Model Code
	NZMN3-VE400-BT
EAN	Product Length/Depth
4015081112197	166 mm
Product Height	Product Width
275 mm	140 mm
Product Weight	Compliances
7.68 kg	RoHS conform
Certifications	
IEC	
IEC/EN 60947	

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 I_r at $6 \times I_r$ also infinity (without overload releases)

Adjustable delay time t_{sd}

i^2t constant function: switchable

Rated current = rated uninterrupted current: 400 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

400 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

NZM3

Features

Motor drive optional

Protection unit

10.10 Temperature rise

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

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](#)

Certification reports

[DA-DC-03_N3](#)

Characteristic curve

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-046.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-031.eps](#)

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

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-057.eps](#)

Drawings

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

[eaton-circuit-breaker-nzm-mccb-dimensions-020.eps](#)

[eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-002.eps](#)

Installation videos

[The new digital NZM Range](#)

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

mCAD model

[DA-CS-nzm3_3p](#)

[DA-CD-nzm3_3p](#)

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 fixed built-in technique

Fixed

Climatic proofing

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

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

Equipment heat dissipation, current-dependent

48 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

Frame clamp

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)

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

Number of poles

Three-pole

Terminal capacity (copper strip)

Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched)
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
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
Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm

Lifespan, electrical

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

400 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

Short-circuit release delayed setting - max

4000 A

Short-circuit release delayed setting - min

400 A

Short-circuit release non-delayed setting - max

4400 A

Short-circuit release non-delayed setting - min

800 A

Terminal capacity (control cable)

0.75 mm² - 1.5 mm² (2x)

0.75 mm² - 2.5 mm² (1x)

Terminal capacity (copper busbar)

Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection

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

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) at tunnel terminal

16 mm² (2x) at box terminal

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

Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

25 mm² - 240 mm² (1x) direct at switch rear-side connection

16 mm² - 185 mm² (1x) at 1-hole tunnel terminal

25 mm² - 240 mm² (2x) direct at switch rear-side connection

25 mm² - 120 mm² (2x) at box terminal

35 mm² - 240 mm² (1x) at box terminal

Terminal capacity (aluminum stranded conductor/cable)

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

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

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

Handle type

Rocker lever

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

4000 A

Short delay current setting (I_{sd}) - min

400 A

Instantaneous current setting (I_i) - max

4400 A

Instantaneous current setting (I_i) - min

800 A

Number of operations per hour - max

60

Overload current setting (I_r) - max

400 A

Overload current setting (I_r) - min

200 A

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 230 V, 50/60 Hz

85 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz

50 kA

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

35 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 525 V, 50/60 Hz

13 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 690 V, 50/60 Hz

5 kA

Rated short-circuit making capacity I_{cm} at 400/415 V, 50/60 Hz

105 kA

Rated short-circuit making capacity I_{cm} 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

Box terminal

Optional terminals

Connection on rear. Screw terminal. 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 (U_i)

1000 V AC



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