Specifications

Eaton 113209

Catalog Number: 113209

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 4p, 160A, plug-in module, B2-4-A160-SVE



General specifications

Product Name
Eaton Moeller series NZM molded case circuit breaker thermo-magnetic

Catalog Number
113209

EAN
4015081127443

Product Length/Depth
180 mm

Product Height
245 mm

Product Width
140 mm

Product Weight
3.589 kg

Compliances
RoHS conform

Certifications
IEC
IEC/EN 60947

Powering Business Worldwide

Product specifications

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)
Rated current = rated uninterrupted current: 160 A
Set value in neutral conductor is synchronous with set value Ir of main pole.

Application

Use in unearthed supply systems at 440 V

Amperage Rating

160 A

Voltage rating

440 V - 440 V

Circuit breaker frame type

NZM2

Features

Motor drive optional
Protection unit

Accessories required

NZM2-4-XSVS

10.10 Temperature rise

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

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.

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

Characteristic curve

eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-030.eps

eaton-circuit-breaker-nzm-mccb-characteristic-curve-050.eps

eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-034.eps

Drawings

eaton-circuit-breaker-nzm-mccb-dimensions-035.eps

eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps

eaton-circuit-breaker-cable-nzm-mccb-3d-drawing-002.eps

eCAD model

ETN.113209.edz

Installation instructions

eaton-circuit-breaker-plug-in-adapter-nzm2-il01219023z.pdf

Installation videos

Introduction of the new digital circuit breaker NZM

The new digital NZM Range

mCAD model

DA-CS-nzm2_xsve

DA-CD-nzm2_xsve

Technical data sheets

eaton-nzm-technical-information-sheet

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

DIN rail (top hat rail) mounting optional

Built-in device plug-in technique

Plug-in unit

Climatic proofing

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

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

Equipment heat dissipation, current-dependent

38.4 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

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

Direction of incoming supply

As required

Electrical connection type of main circuit

Screw connection

Current rating of neutral conductor

200% of phase conductor

Lifespan, mechanical

20000 operations

Overvoltage category

III

Degree of protection (IP), front side

IP66 (with door coupling rotary handle)

IP40 (with insulating surround)

Degree of protection (terminations)

IP00 (terminations, phase isolator and strip terminal)

IP10 (tunnel terminal)

Number of poles

Four-pole

Terminal capacity (copper strip)

Max. 10 segments of 16 mm x 0.8 mm at box terminal

Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched)

Max. 8 segments of 24 mm x 1 mm (2x) at box terminal

Min. 2 segements of 16 mm x 0.8 mm at rear-side connection (punched)

Min. 2 segments of 9 mm x 0.8 mm at box terminal

Lifespan, electrical

10000 operations at 400 V AC-1

7500 operations at 415 V AC-1

Functions

System and cable 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)

160 A

Power loss

38.4 W

Release system

Thermomagnetic release

Short-circuit total breaktime

< 10 ms

Short-circuit release non-delayed setting - max

1600 A

Short-circuit release non-delayed setting - min

960 A

Terminal capacity (control cable)

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

Terminal capacity (copper busbar)

Max. 24 mm x 8 mm direct at switch rear-side connection
Min. 16 mm x 5 mm direct at switch rear-side connection
M8 at rear-side screw connection

Terminal capacity (copper solid conductor/cable)

10 mm² - 16 mm² (1x) direct at switch rear-side connection
16 mm² (1x) at tunnel terminal
6 mm² - 16 mm² (2x) at box terminal
10 mm² - 16 mm² (1x) at box terminal
6 mm² - 16 mm² (2x) 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 - 70 mm² (2x) direct at switch rear-side connection
25 mm² - 185 mm² (1x) direct at switch rear-side connection
25 mm² - 185 mm² (1x) at 1-hole tunnel terminal
25 mm² - 70 mm² (2x) at box terminal
25 mm² - 185 mm² (1x) at box terminal

Terminal capacity (aluminum stranded conductor/cable)

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

Handle type

Rocker lever

Short delay current setting (Isd) - max

0 A

Short delay current setting (Isd) - min

0 A

Instantaneous current setting (Ii) - max

10 A

Instantaneous current setting (Ii) - min

6 A

Number of operations per hour - max

120

Overload current setting (Ir) - max

160 A

Overload current setting (Ir) - min

125 A

Overload current setting (Ir)

125 A - 160 A

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

30 kA

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

25 kA

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

18.5 kA

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

53 kA

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

53 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

63 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)

690 V AC



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