Specifications

Eaton 103021

Catalog Number: 103021

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 12A, B1-S12-CNA



General specifications

Product Name
Eaton Moeller series NZM - Molded case circuit breaker

Catalog Number
103021

EAN
4015081028603

Product Length/Depth
88 mm

Product Height
165.5 mm

Product Width
90 mm

Product Weight
1.046 kg

Compliances
RoHS conform

Certifications
CSA (File No. 22086)
UL 489
CSA-C22.2 No. 5-09
CSA (Class No. 1432-01)
CSA certified
Specially designed for North America
UL/CSA
UL (File No. E31593)
UL (Category Control Number DKPU2)
UL listed

Powering Business Worldwide

Product specifications

Type

Circuit breaker

Special features

Rated current = rated uninterrupted current: 12 A
This circuit-breaker is only allowed to be used for UL/CSA applications.
Motor protection in conjunction with contactor and overload relay
With short-circuit release
Without overload release Ir

Application

Branch circuits, feeder circuits

Amperage Rating

12 A

Voltage rating

440 V - 440 V

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.

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.

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-038.eps

eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-032.eps

eaton-circuit-breaker-nzm-mccb-characteristic-curve-058.eps

Drawings

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

eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps

eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-006.eps

eCAD model

ETN.103021.edz

Installation instructions

eaton-cirucit-breaker-switch-disconnector-nzmb-il01203004z.pdf

Installation videos

The new digital NZM Range

Introduction of the new digital circuit breaker NZM

mCAD model

DA-CS-nzm1_3p

DA-CD-nzm1_3p

Technical data sheets

eaton-nzm-technical-information-sheet

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, constant, to IEC 60068-2-78

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

Equipment heat dissipation, current-dependent

0.72 W

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

Protection against direct contact

Finger and back-of-hand proof to VDE 0106 part 100

Rated insulation voltage (Ui)

690 V

Rated operating power at AC-3, 230 V

3 kW

Rated operating power at AC-3, 400 V

5.5 kW

Switch off technique

Magnetic

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

Other

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

Three-pole

Terminal capacity (copper strip)

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

Max. 9 segments of 9 mm x 0.8 mm at box terminal

Lifespan, electrical

7500 operations at 415 V AC-3

Functions

Short-circuit protection

Shock resistance

20 g (half-sinusoidal shock 20 ms)

Rated operational current for specified heat dissipation (In)

12 A

Short-circuit release non-delayed setting - max

144 A

Short-circuit release non-delayed setting - min

84 A

Handle type

Rocker lever

Instantaneous current setting (Ii) - max

144 A

Instantaneous current setting (Ii) - min

84 A

Number of operations per hour - max

120

Overload current setting (Ir) - max

0 A

Overload current setting (Ir) - min

0 A

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

25 kA

Standard terminals

Box terminal

Rated operating voltage Ue (UL) - max

480 Y / 277 V

Release system

Thermomagnetic release

Short-circuit total breaktime

< 10 ms

Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal

Terminal capacity (control cable)

16 mm² - 18 mm² (2x)

14 mm² - 18 mm² (1x)

Terminal capacity (copper busbar)

Max. 16 mm x 5 mm direct at switch rear-side connection

M6 at rear-side screw connection

Min. 12 mm x 5 mm direct at switch rear-side connection

Terminal capacity (copper solid conductor/cable)

6 mm² - 12 mm² (1x) at box terminal

6 mm² - 12 mm² (1x) direct at switch rear-side connection

6 mm² - 9 mm² (2x) direct at switch rear-side connection

6 mm² (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

4 mm² - 2/0 mm² (1x) at box terminal

4 mm² - 2/0 mm² (1x) direct at switch rear-side connection

4 mm² - 3/0 mm² (1x) at tunnel terminal

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

25 kA

Rated impulse withstand voltage (Uimp) at auxiliary contacts

6000 V

Rated impulse withstand voltage (Uimp) at main contacts

6000 V

Power loss

0.7 W



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