Specifications

Eaton 107594



Catalog Number: 107594

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 175A, box terminals, N2-VEF175-BT-NA

General specifications

Product Name
Eaton Moeller series NZM molded case circuit breaker electronic

Catalog Number
107594

EAN
4015081072743

Product Length/Depth
149 mm

Product Height
195 mm

Product Width
105 mm

Product Weight
2.345 kg

Compliances
RoHS conform

Certifications
CSA (File No. 22086)
IEC
CSA (Class No. 1432-01)
UL (Category Control Number DIVQ)
CSA certified
IEC/EN 60947
Specially designed for North America
UL listed
IEC 60947-2
CSA-C22.2 No. 5-09
UL/CSA
UL (File No. E31593)
UL 489
CE marking

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: 175 A
Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate.
Fixed overload releases Ir
R.m.s. value measurement and “thermal memory” adjustable time delay setting to overcome current peaks
tr: 2 – 20 s at 6 x Ir
Adjustable delay time tsd:
Steps: 0, 20, 60, 100, 200, 300, 500, 750, 1000 ms
i^2t constant function: fixed
OFF

Application

Branch circuits, feeder circuits
Use in unearthed supply systems at 690 V

Amperage Rating

175 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

NZM2

Features

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

Characteristic curve

eaton-circuit-breaker-current-nzm-mccb-characteristic-curve-006.eps

eaton-circuit-breaker-nzm-mccb-characteristic-curve-054.eps

eaton-circuit-breaker-nzm-mccb-characteristic-curve-043.eps

Declarations of conformity

DA-DC-03_N2

Drawings

eaton-circuit-breaker-nzm-mccb-dimensions-019.eps

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

Installation videos

The new digital NZM Range

Introduction of the new digital circuit breaker NZM

mCAD model

DA-CD-nzm2_3p

DA-CS-nzm2_3p

Technical data sheets

eaton-nzm-technical-information-sheet

Protection unit

Motor drive optional

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.

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 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

25.27 W

Utilization category

A (IEC/EN 60947-2)

Isolation

500 V AC (between auxiliary contacts and main contacts)
300 V AC (between the auxiliary 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

Low-voltage HBC fuse - max

355 A gG/gL

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

Frame clamp

Lifespan, mechanical

20000 operations

Overvoltage category

III

Rated operational current

175 A (690 V AC -1, making and breaking capacity)

300 A (380/400 V AC-1, making and breaking capacity)

175 A (660-690 V AC-3, making and breaking capacity)

300 A (415 V AC-1, making and breaking capacity)

Degree of protection (IP), front side

IP40 (with insulating surround)

IP66 (with door coupling rotary handle)

Degree of protection (terminations)

IP10 (tunnel terminal)

IP00 (terminations, phase isolator and strip terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

Max. 10 segments of 16 mm x 0.8 mm at rear-side connection

(punched)

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

(punched)

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

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 690 V AC-1

5000 operations at 690 V AC-3

6500 operations at 400 V AC-3

6500 operations at 415 V AC-3

Functions

Current limiting circuit breaker

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 (In)

175 A

Release system

Electronic release

Short-circuit total breaktime

< 10 ms

Rated short-time withstand current (t = 0.3 s)

1.9 kA

Rated short-time withstand current (t = 1 s)

1.9 kA

Short-circuit release delayed setting - max

1750 A

Short-circuit release delayed setting - min

350 A

Short-circuit release non-delayed setting - max

2100 A

Short-circuit release non-delayed setting - min

2100 A

Terminal capacity (control cable)

14 mm² - 18 mm² (1x)

16 mm² - 18 mm² (2x)

Terminal capacity (copper busbar)

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

M8 at rear-side screw connection

Max. 20 mm x 5 mm direct at switch rear-side connection

Terminal capacity (copper solid conductor/cable)

16 mm² (1x) at tunnel terminal

6 mm² - 11 mm² (1x) direct at switch rear-side connection

6 mm² - 12 mm² (1x) at box terminal

Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

4 mm² - 350 mm² (1x) at tunnel terminal

4 mm² - 3/0 mm² (1x) direct at switch rear-side connection

4 mm² - 350 mm² (1x) at box terminal

Handle type

Rocker lever

Short delay current setting (Isd) - max

1750 A

Short delay current setting (Isd) - min

350 A

Instantaneous current setting (Ii) - max

2100 A

Instantaneous current setting (Ii) - min

2100 A

Number of operations per hour - max

120

Overload current setting (Ir) - max

175 A

Overload current setting (Ir) - min

175 A

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

85 kA

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

50 kA

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

35 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525

V, 50/60 Hz

25 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz

5 kA

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

105 kA

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

74 kA

Rated short-circuit making capacity Icm at 525 V, 50/60 Hz

53 kA

Rated short-circuit making capacity Icm at 690 V, 50/60 Hz

40 kA

Standard terminals

Box terminal

Rated operating voltage Ue (UL) - max

600Y/347 V, 480 V

Rated short-circuit making capacity Icm at 240 V, 50/60 Hz

187 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)

1000 V AC

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