Specifications

# Eaton 184963



## Catalog Number: 184963

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 250A + RCD 30mA, type B, AC/DC sensitive

### General specifications

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

**Catalog Number**
184963

**EAN**
4015081803712

**Product Length/Depth**
293 mm

**Product Height**
145 mm

**Product Width**
140 mm

**Product Weight**
4.776 kg

**Warranty**

**Compliances**
RoHS conform

**Certifications**
VDE 0660
EN 62423: Type B
IEC/EN 60947
IEC

Powering Business Worldwide

## Product specifications

### Type

Circuit breaker

### Special features

Derating coefficient: 1 (20 °C), 1 (30 °C), 0.96 (40 °C), 0.89 (50 °C), 0.86 (55 °C), 0.83 (60 °C), 0.79 (70 °C)
For equipment with power electronics e.g. inverters and variable frequency drives
Ready-to-connect combination of type B circuit-breaker, residual current circuit-breaker and type A passive section
Suitability for application in three-phase systems without neutral conductor
Personnel protection and preventive fire protection for 0-100 kHz fault current frequency
Operational voltage range Type B 50-500 V AC (+ 10 %)
Type A functionality even without operational voltage for rated frequency of 50/60 Hz
Not UL/CSA approved
Sealable adjusting buttons
Rated frequency 50/60 Hz
Rated fault current IΔn = 0.03 A
Depending on the cable manufacturer up to 240 mm² can be connected
Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the rated short-circuit breaking capacity Icn

## 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-nzm-mccb-characteristic-curve-050.eps

eaton-circuit-breaker-nzm-mccb-characteristic-curve-003.eps

eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-005.eps

eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-037.eps

### Drawings

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

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

eaton-circuit-breaker-nzm-mccb-3d-drawing-003.eps

### eCAD model

ETN.NZMH2-A250-FIA30-500AC

### Installation instructions

eaton-residual-current-device-3-pole-nzm2-il01219040z.pdf

### Installation videos

The new digital NZM Range

Introduction of the new digital circuit breaker NZM

### mCAD model

nzmh2_fia30.dwg

nzmh2_fia30.stp

### Technical data sheets

eaton-nzm-technical-information-sheet

Rated current = rated
uninterrupted current: 250 A

### Application

Use in unearthed supply systems at 500 V

### Amperage Rating

250 A

### Voltage rating

50 V - 500 V

### Circuit breaker frame type

NZM2

### Features

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.

### Frame

NZM2

### Pollution degree

3

### Class

Distribution circuit protection

### Mounting Method

Fixed

Built-in device plug-in technique

### Climatic proofing

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

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

### Equipment heat dissipation, current-dependent

51.56 W

### Utilization category

A (IEC/EN 60947-2)

### Interrupt rating

85-150 kAIC

### 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

### Connection

Front frame clamp

### Degree of protection

IP20

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

### Direction of incoming supply

Bottom

### Electrical connection type of main circuit

Screw connection

### 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)

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

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

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

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

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

### Lifespan, electrical

10000 operations at 400 V AC-1

6500 operations at 400 V AC-3

6500 operations at 415 V AC-3

10000 operations at 415 V AC-1

### Functions

System and cable protection, fire protection, personnel 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)

250 A

### Power loss

58.1 W

### Release system

Thermomagnetic release, AC/DC sensitive earth-fault 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 non-delayed setting - max

2500 A

Short-circuit release non-delayed setting - min

1500 A

Terminal capacity (control cable)

0.75 mm² - 1.5 mm² (2x)

0.75 mm² - 2.5 mm² (1x)

Terminal capacity (copper busbar)

M8 at rear-side screw connection

Max. 24 mm x 8 mm direct at switch rear-side connection

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

Terminal capacity (copper solid conductor/cable)

10 mm² - 16 mm² (1x) at box terminal

6 mm² - 16 mm² (2x) at box terminal

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

6 mm² - 16 mm² (2x) direct at switch rear-side connection

16 mm² (1x) at tunnel terminal

Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

25 mm² - 185 mm² (1x) at box terminal

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

25 mm² - 70 mm² (2x) direct at switch rear-side connection

25 mm² - 70 mm² (2x) at box terminal

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

0 A

Instantaneous current setting (Ii) - min

0 A

Number of operations per hour - max

120

Overload current setting (Ir) - max

250 A

Overload current setting (Ir) - min

200 A

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

150 kA

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

150 kA

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

130 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz

37.5 kA

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

330 kA

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

286 kA

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

105 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

330 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




Eaton Corporation plc
Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

© 2024 Eaton. All Rights Reserved.

Eaton is a registered trademark.

All other trademarks are property of their respective owners.



Eaton.com/socialmedia