

# Eaton 107851

Catalog Number: 107851

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 220A, box terminals



General specifications

Product Name

Eaton Moeller series NZM molded case  
circuit breaker electronic

Catalog Number

107851

EAN

4015081075010

Product Length/Depth

149 mm

Product Height

195 mm

Product Width

105 mm

Product Weight

2.345 kg

Compliances

RoHS conform

Certifications

- CE marking
- IEC
- UL (File No. E31593)
- IEC/EN 60947
- UL listed
- CSA certified
- Specially designed for North America
- CSA (Class No. 1432-01)
- UL 489
- UL/CSA
- UL (Category Control Number DKPU2)
- IEC 60947-2
- CSA-C22.2 No. 5-09
- CSA (File No. 22086)

## 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  $I_{cn}$ )  
Rated current = rated uninterrupted current: 220 A  
Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate.

### Application

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

### Amperage Rating

220 A

### Voltage rating

690 V - 690 V

### 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.

#### 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

## 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-let-through-current-nzm-mccb-characteristic-curve-004.eps](#)  
[eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-036.eps](#)  
[eaton-circuit-breaker-nzm-mccb-characteristic-curve-052.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](#)

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

Fixed

DIN rail (top hat rail) mounting optional

Built-in device fixed built-in technique

#### Climatic proofing

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

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

#### Equipment heat dissipation, current-dependent

39.93 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

#### 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

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

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

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

300 A (380/400 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)

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

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

Max. 10 segments 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

#### Lifespan, electrical

6500 operations at 400 V AC-3

7500 operations at 690 V AC-1

5000 operations at 690 V AC-3

10000 operations at 400 V AC-1

6500 operations at 415 V AC-3

#### Functions

Short-circuit 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<sub>n</sub>)

220 A

Power loss

39.93 W

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 non-delayed setting - max

3080 A

Short-circuit release non-delayed setting - min

440 A

Terminal capacity (control cable)

16 mm<sup>2</sup> - 18 mm<sup>2</sup> (2x)

14 mm<sup>2</sup> - 18 mm<sup>2</sup> (1x)

Terminal capacity (copper busbar)

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

M8 at rear-side screw connection

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

Terminal capacity (copper solid conductor/cable)

6 mm<sup>2</sup> - 12 mm<sup>2</sup> (1x) at box terminal

16 mm<sup>2</sup> (1x) at tunnel terminal

6 mm<sup>2</sup> - 11 mm<sup>2</sup> (1x) direct at switch rear-side connection

Terminal capacity (aluminum solid conductor/cable)

16 mm<sup>2</sup> (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

4 mm<sup>2</sup> - 350 mm<sup>2</sup> (1x) at tunnel terminal

4 mm<sup>2</sup> - 3/0 mm<sup>2</sup> (1x) direct at switch rear-side connection

4 mm<sup>2</sup> - 350 mm<sup>2</sup> (1x) at box terminal

## Handle type

Rocker lever

## Short delay current setting (I<sub>sd</sub>) - max

0 A

## Short delay current setting (I<sub>sd</sub>) - min

0 A

## Instantaneous current setting (I<sub>i</sub>) - max

3080 A

## Instantaneous current setting (I<sub>i</sub>) - min

440 A

## Number of operations per hour - max

120

## Overload current setting (I<sub>r</sub>) - max

0 A

## Overload current setting (I<sub>r</sub>) - min

0 A

## Rated short-circuit breaking capacity I<sub>cs</sub> (IEC/EN 60947) at 230 V, 50/60 Hz

85 kA

## Rated short-circuit breaking capacity I<sub>cs</sub> (IEC/EN 60947) at 400/415 V, 50/60 Hz

50 kA

## Rated short-circuit breaking capacity I<sub>cs</sub> (IEC/EN 60947) at 440 V, 50/60 Hz

35 kA

## Rated short-circuit breaking capacity I<sub>cs</sub> (IEC/EN 60947) at 525 V, 50/60 Hz

25 kA

## Rated short-circuit breaking capacity I<sub>cs</sub> (IEC/EN 60947) at 690 V, 50/60 Hz

5 kA

## Rated short-circuit making capacity I<sub>cm</sub> at 400/415 V, 50/60 Hz

105 kA

## Rated short-circuit making capacity I<sub>cm</sub> at 440 V, 50/60 Hz

74 kA

## Rated short-circuit making capacity I<sub>cm</sub> at 525 V, 50/60 Hz

53 kA

## Rated short-circuit making capacity I<sub>cm</sub> at 690 V, 50/60 Hz

40 kA

## Standard terminals

Box terminal

Rated operating voltage  $U_e$  (UL) - max

480 V

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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