Specifications

# Eaton 274230

## Catalog Number: 274230

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 45A, N, frame 1, AF45-NA




## General specifications

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

**Catalog Number**
274230

**EAN**
4015082742300

**Product Length/Depth**
88 mm

**Product Height**
165.5 mm

**Product Width**
90 mm

**Product Weight**
1.046 kg

**Compliances**
RoHS conform

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

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: 45 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

### Application

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

### Amperage Rating

45 A

### Voltage rating

690 V - 690 V

### Circuit breaker frame type

NZM1

### Features

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.

## 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-051.eps

eaton-circuit-breaker-current-nzm-mccb-characteristic-curve-002.eps

eaton-circuit-breaker-nzm-mccb-characteristic-curve-037.eps

### Declarations of conformity

DA-DC-03_N1

### 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.274230.edz

### Installation instructions

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

### Installation videos

Introduction of the new digital circuit breaker NZM

The new digital NZM Range

### mCAD model

DA-CD-nzm1_3p

DA-CS-nzm1_3p

### Technical data sheets

eaton-nzm-technical-information-sheet

### 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

Fixed

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

10.69 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

200 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

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

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

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

160 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

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

Lifespan, electrical

7500 operations at 690 V AC-1

10000 operations at 400 V AC-1

Functions

Current limiting circuit breaker

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)

45 A

### Power loss

10.7 W

### Release system

Thermomagnetic release

### Short-circuit total breaktime

< 10 ms

### Short-circuit release non-delayed setting - max

450 A

### Short-circuit release non-delayed setting - min

270 A

### Terminal capacity (control cable)

14 mm² - 18 mm² (1x)
16 mm² - 18 mm² (2x)

### Terminal capacity (copper busbar)

M8 at rear-side screw connection
Min. 12 mm x 5 mm direct at switch rear-side connection
Max. 16 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 - 9 mm² (2x) direct at switch rear-side connection
6 mm² - 12 mm² (1x) direct at switch rear-side connection
16 mm² - 95 mm² (1x) at tunnel terminal

### Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal

### Terminal capacity (copper stranded conductor/cable)

4 mm² - 2/0 mm² (1x) direct at switch rear-side connection
4 mm² - 3/0 mm² (1x) at tunnel terminal
25 mm² - 70 mm² (1x) at box terminal
25 mm² (2x) at box 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

45 A

Overload current setting (Ir) - min

45 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

10 kA

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

7.5 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

40 kA

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

17 kA

Standard terminals

Box terminal

Rated operating voltage Ue (UL) - max

480 Y / 277 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

6000 V

Rated insulation voltage (Ui)

690 V AC

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