

# Eaton 191457

Catalog Number: 191457

NZMH4-MX550. NZM4 PXR20 circuit breaker, 550A, 3p, screw terminal



General specifications

Product Name	Catalog Number
Eaton Moeller series NZM molded case circuit breaker electronic	191457
	Model Code
	NZMH4-MX550
EAN	Product Length/Depth
4015081919697	375 mm
Product Height	Product Width
170 mm	210 mm
Product Weight	Compliances
19 kg	RoHS conform
Certifications	
IEC	
IEC/EN 60947	

## Product specifications

### Rated operational current for specified heat dissipation (In)

550 A

### 10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

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

37 kA

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

50 kA

### 10.4 Clearances and creepage distances

Meets the product standard's requirements.

### 10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

### Mounting Method

Built-in device fixed built-in technique

Fixed

### Amperage Rating

550 A

### 10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

### Terminal capacity (copper strip)

10 segments of 80 mm x 1 mm (2x) at rear-side width extension

Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal

Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched)

10 segments of 50 mm x 1 mm (2x) at 1-hole module plate

Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal

Min. 5 segments of 25 mm x 1 mm at rear-side connection (punched)

### Handle type

Rocker lever

### 10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

### Ambient storage temperature - min

## 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](#)

### Drawings

[eaton-circuit-breaker-nzm-mccb-dimensions-022.eps](#)

[eaton-general-ie-ready-dilm-contactor-standards.eps](#)

### Installation instructions

[IL012101ZU](#)

### Installation videos

[The new digital NZM Range](#)

[Introduction of the new digital circuit breaker NZM](#)

### mCAD model

[DA-CS-nzm4\\_3p](#)

[DA-CD-nzm4\\_3p](#)

### Technical data sheets

[eaton-nzm-technical-information-sheet](#)

40 °C

**Fitted with:**

Thermal protection

**Protection against direct contact**

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

**Terminal capacity (copper busbar)**

Max. 50 mm x 10 mm (2x) direct at switch rear-side connection

Min. 60 mm x 10 mm at rear-side width extension

Max. 80 mm x 10 mm (2x) at rear-side width extension

50 mm x 10 mm (2x) at rear-side 2-hole module plate

M10 at rear-side screw connection

Min. 25 mm x 5 mm at rear-side 1-hole module plate

Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate

Min. 25 mm x 5 mm direct at switch rear-side connection

**10.8 Connections for external conductors**

Is the panel builder's responsibility.

**Special features**

IEC/EN 60947-2 with characteristic conforming to IEC/EN 60947-4-1 with phase failure sensitivity The circuit-breaker fulfills all requirements for AC-3 switching category. R.m.s. value measurement and "thermal memory" Adjustable time delay setting to overcome current peaks  $t_r$  at  $6 \times I_r$  also infinity (without overload releases) All AC-3 rating data applies to direct switching by the circuit-breaker under normal operating conditions. If, for example, a contactor takes over AC-3 switching under normal operating conditions, the full rated uninterrupted current applies to the circuit-breaker,  $I_n = I_u$ . 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: 550 A

**Ambient operating temperature - max**

70 °C

**Climatic proofing**

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

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

**Terminal capacity (aluminum stranded conductor/cable)**

50 mm<sup>2</sup> - 240 mm<sup>2</sup> (4x) at 4-hole tunnel terminal

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

50 mm<sup>2</sup> - 185 mm<sup>2</sup> (4x) direct at switch rear-side connection

120 mm<sup>2</sup> - 185 mm<sup>2</sup> (1x) direct at switch rear-side connection

**Lifespan, electrical**

2000 operations at 400 V AC-3  
2000 operations at 415 V AC-3  
2000 operations at 690 V AC-1  
1000 operations at 690 V AC-3  
3000 operations at 400 V AC-1  
3000 operations at 415 V AC-1

#### Electrical connection type of main circuit

Screw connection

#### Short-circuit total breaktime

< 25 ms ( 415 V); < 35 ms (> 415 V)

#### Rated impulse withstand voltage (Uimp) at main contacts

8000 V

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

50 kA

#### 10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

#### Utilization category

B (IEC/EN 60947-2)

#### Number of poles

Three-pole

#### Ambient operating temperature - min

-25 °C

#### 10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

#### Terminal capacity (control cable)

0.75 mm<sup>2</sup> - 2.5 mm<sup>2</sup> (1x)

0.75 mm<sup>2</sup> - 1.5 mm<sup>2</sup> (2x)

#### Equipment heat dissipation, current-dependent

33.58 W

#### Instantaneous current setting (Ii) - min

2 A

#### 10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

#### 10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

#### Rated operational current

544 A (400 V AC-3)

#### Rated short-circuit breaking capacity $I_{cs}$ (IEC/EN 60947) at 230 V, 50/60 Hz

63 kA

#### 10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

#### Rated short-circuit making capacity $I_{cm}$ at 240 V, 50/60 Hz

275 kA

#### Rated short-circuit breaking capacity $I_{cs}$ (IEC/EN 60947) at 440 V, 50/60 Hz

50 kA

#### Degree of protection (IP), front side

IP40 (with insulating surround)

IP66 (with door coupling rotary handle)

#### Rated short-circuit making capacity $I_{cm}$ at 525 V, 50/60 Hz

143 kA

#### Rated short-circuit making capacity $I_{cm}$ at 690 V, 50/60 Hz

100 kA

#### Instantaneous current setting ( $I_i$ ) - max

18 A

#### Overload current setting ( $I_r$ ) - min

275 A

#### 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.

#### Lifespan, mechanical

10000 operations

#### Overload current setting ( $I_r$ ) - max

550 A

#### Voltage rating

690 V - 690 V

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

95 mm<sup>2</sup> - 240 mm<sup>2</sup> (6x) at rear-side width extension

35 mm<sup>2</sup> - 185 mm<sup>2</sup> (4x) at rear-side 2-hole module plate

95 mm<sup>2</sup> - 185 mm<sup>2</sup> (2x) at rear-side 2-hole module plate

50 mm<sup>2</sup> - 240 mm<sup>2</sup> (4x) at 4-hole tunnel terminal

300 mm<sup>2</sup> (4x) at rear-side width extension

120 mm<sup>2</sup> - 300 mm<sup>2</sup> (1x) at rear-side 1-hole module plate

95 mm<sup>2</sup> - 300 mm<sup>2</sup> (2x) at rear-side 1-hole module plate

#### Degree of protection (terminations)

IP00 (terminations, phase isolator and strip terminal)

IP10 (tunnel terminal)

#### 10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

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

1100 A

#### Degree of protection

IP20

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

#### Overvoltage category

III

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

19.2 kA

#### Rated impulse withstand voltage (U<sub>imp</sub>) at auxiliary contacts

6000 V

#### Switch off technique

Electronic

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

19.2 kA

#### Ambient storage temperature - max

70 °C

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

50 kA

#### Optional terminals

Connection on rear. Strip terminal. Tunnel terminal

#### Release system

Electronic release

## Pollution degree

3

## 10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

## Rated operating power at AC-3, 230 V

160 kW

## 10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

## Functions

Phase failure sensitive

Motor protection

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

9900 A

## Standard terminals

Screw terminal

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

187 kA

## Rated operating power at AC-3, 400 V

315 kW

## Type

Circuit breaker

## 10.2.2 Corrosion resistance

Meets the product standard's requirements.

## 10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

## 10.2.7 Inscriptions

Meets the product standard's requirements.

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

187 kA

## Isolation

300 V AC (between the auxiliary contacts)

500 V AC (between auxiliary contacts and main contacts)

## Number of operations per hour - max

60

## Circuit breaker frame type

NZM4

Direction of incoming supply

As required

Shock resistance

15 g (half-sinusoidal shock 11 ms)

Rated insulation voltage (Ui)

690 V



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