

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 tr at $6 \times Ir$ 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, $In = Iu$. 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: 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 mm² - 240 mm² (4x) at 4-hole tunnel terminal

Terminal capacity (copper stranded conductor/cable)

50 mm² - 185 mm² (4x) direct at switch rear-side connection

120 mm² - 185 mm² (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 (Uiimp) 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 mm² - 2.5 mm² (1x)

0.75 mm² - 1.5 mm² (2x)

Equipment heat dissipation, current-dependent

33.58 W

Instantaneous current setting (li) - 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 (li) - max

18 A

Overload current setting (Ir) - 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 (Ir) - max

550 A

Voltage rating

690 V - 690 V

Terminal capacity (copper solid conductor/cable)

95 mm² - 240 mm² (6x) at rear-side width extension
35 mm² - 185 mm² (4x) at rear-side 2-hole module plate
95 mm² - 185 mm² (2x) at rear-side 2-hole module plate
50 mm² - 240 mm² (4x) at 4-hole tunnel terminal
300 mm² (4x) at rear-side width extension
120 mm² - 300 mm² (1x) at rear-side 1-hole module plate
95 mm² - 300 mm² (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 (Uiimp) 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 Ics (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_{cm} 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_{cm} 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



Eaton Corporation plc

Eaton House

30 Pembroke Road

Dublin 4, Ireland

Eaton.com

© 2023 Eaton. All Rights Reserved.

Eaton is a registered trademark.

All other trademarks are property of their respective owners.



[Eaton.com/socialmedia](https://www.eaton.com/socialmedia)