Specifications

Eaton 110311

Catalog Number: 110311

Eaton Moeller series NZM - Molded Case Circuit Breaker. Switch-disconnector 3p 160A terminals



General specifications

Product Name
Eaton Moeller series NZM switch-disconnector

Catalog Number
110311

EAN
4015081098590

Product Length/Depth
149 mm

Product Height
184 mm

Product Width
105 mm

Product Weight
2.095 kg

Compliances
RoHS conform

Certifications
IEC/EN 60947
IEC

Powering Business Worldwide

Product specifications

Type

Switch-disconnector

Special features

Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113.
Isolating characteristics to IEC/EN 60947-3 and VDE 0660.
Busbar tag shroud to VDE 0160 Part 100.
Rated current = rated uninterrupted current: 160 A
The rated short-time withstand current for PN2/N2 in conjunction with earth-fault release NZM2-4-XFI...Icw = 1.5 kA

Application

Use in unearthed supply systems at 690 V

Amperage Rating

160 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

N2

Features

Version as main switch
Version as maintenance-/service switch
Motor drive optional
Version as emergency stop installation

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-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

Declarations of conformity

DA-DC-03_N2

Drawings

eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps

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

eCAD model

DA-CE-ETN.N2-160-BT

Installation videos

The new digital NZM Range

Introduction of the new digital circuit breaker NZM

mCAD model

DA-CS-nzm2_3p

DA-CD-nzm2_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

Fixed

Ground mounting

Built-in device fixed built-in technique

Distribution board installation

Intermediate mounting

Climatic proofing

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

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

Equipment heat dissipation, current-dependent

19.66 W

Isolation

300 V AC (between the auxiliary contacts)

500 V AC (between auxiliary contacts and main contacts)

Rated short-time withstand current (Icw)

3.5 kA

Degree of protection

IP20 (basic protection type, in the area of the HMI devices)

Other

Direction of incoming supply

As required

Electrical connection type of main circuit

Frame clamp

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

Rated insulation voltage (Ui)

690 V

Rated operating frequency

50 Hz

Rated operating power at AC-23, 400 V

90 kW

Rated operating power at AC-3, 400 V

0 kW

Switch positions

I, +, 0

Lifespan, mechanical

20000 operations

Overvoltage category

III

Rated operational current

160 A (415 V AC-22/23A, making and breaking capacity)

160 A (690 V AC-22/23A, making and breaking capacity)

Degree of protection (IP), front side

IP66 (with door coupling rotary handle)

IP20

IP40 (with insulating surround)

Degree of protection (terminations)

IP10 (tunnel terminal)

IP00 (terminations, phase isolator and band terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

Max. 8 segments of 15.5 mm x 0.8 mm (2x) at box terminal
Min. 2 segements of 16 mm x 0.8 mm at rear-side connection (punched)
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. 10 segments of 16 mm x 0.8 mm at box terminal

Handle color

Black

Lifespan, electrical

7500 operations at 400 V AC-3
10000 operations at 400 V AC-1
5000 operations at 690 V AC-3
7500 operations at 415 V AC-3
10000 operations at 415 V AC-1
7500 operations at 690 V AC-1

Functions

Disconnectors/main switches
Voltage release optional
Interlockable

Shock resistance

20 g (half-sinusoidal shock 20 ms)

Number of switches

1

Rated conditional short-circuit current (Iq)

0 kA

Rated conditional short-circuit current with back-up fuse

80 kA at 690 V
PN2(N2)-160…250: 250 AgGgL
100 kA at 400/415 V

Rated conditional short-circuit current with downstream fuse

PN2(N2)-160…250: 250 AgGgL
80 kA at 690 V
100 kA at 400/415 V

Rated operating voltage (Ue) at AC - max

690 V

Rated operational current for specified heat dissipation (In)

160 A

Rated permanent current at AC-21, 400 V

0 A

Rated permanent current at AC-23, 400 V

0 A

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

3.5 kA

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

3.5 kA

Switching power at 400 V

0 kW

Handle type

Rocker lever

Number of operations per hour - max

120

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

5.5 kA

Rated impulse withstand voltage (Uimp) at auxiliary contacts

6000 V

Rated impulse withstand voltage (Uimp) at main contacts

8000 V

Standard terminals

Box terminal

Optional terminals

Connection on rear. Screw terminal. Tunnel terminal

Short-circuit protective device fuses - max

250 A gL

Terminal capacity (copper busbar)

Max. 24 mm x 8 mm direct at switch rear-side connection
Min. 16 mm x 5 mm direct at switch rear-side connection
M8 at rear-side screw connection

Terminal capacity (copper solid conductor/cable)

6 mm² - 16 mm² (2x) at box terminal
6 mm² - 16 mm² (2x) direct at switch rear-side connection
16 mm² (1x) at tunnel terminal
10 mm² - 16 mm² (1x) at box terminal
10 mm² - 16 mm² (1x) direct at switch rear-side connection

Terminal capacity (aluminum solid conductor/cable)

10 mm² - 16 mm² (2x) direct at switch rear-side connection
16 mm² (1x) at tunnel terminal
10 mm² - 16 mm² (1x) direct at switch rear-side connection

Terminal capacity (copper stranded conductor/cable)

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

25 mm² - 70 mm² (2x) at box terminal

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

25 mm² - 185 mm² (1x) at box terminal

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

Terminal capacity (aluminum stranded conductor/cable)

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

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