

Specifications



Eaton 102687

Eaton Moeller series NZM - Molded Case Circuit Breaker. Molded Case Switch, 3p, 400A

General specifications

PRODUCT NAME	Eaton Moeller series NZM molded case switch
CATALOG NUMBER	102687
MODEL CODE	NS3-400-NA
EAN	4015081025473
PRODUCT LENGTH/DEPTH	159 mm
PRODUCT HEIGHT	275 mm
PRODUCT WIDTH	140 mm
PRODUCT WEIGHT	6.34 kg
WARRANTY	Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.
COMPLIANCES	CE Marked RoHS conform
CERTIFICATIONS	CSA Std. C22.2 No. 5 UL 489 IEC 60947-2 Specially designed for North America CSA-C22.2 No. 5-09 UL (Category Control Number WJAZ) UL (File No. E148671) UL listed CSA certified CSA (File No. 22086) IEC CE marking UL/CSA CSA (Class No. 4652-06)
GLOBAL CATALOG	102687



Powering Business Worldwide

Product specifications

AMPERAGE RATING	400 A
VOLTAGE RATING	690 V - 690 V
CIRCUIT BREAKER FRAME TYPE	N3
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 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.

Resources

BROCHURES

[eaton-digital-nzm-brochure-br013003en-en-us.pdf](#)

CATALOGS

[eaton-digital-nzm-catalog-ca013003en-en-us.pdf](#)

CHARACTERISTIC CURVE

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-028.eps](#)

DECLARATIONS OF CONFORMITY

[eaton-molded-case-switch-declaration-of-conformity-eu250134en.pdf](#)

DRAWINGS

[eaton-circuit-breaker-nzm-mccb-dimensions-020.eps](#)

ECAD MODEL

[ETN.NS3-400-NA](#)

INSTALLATION INSTRUCTIONS

[eaton-circuit-breaker-basic-device-nzmn-b-i01208009z.pdf](#)

INSTALLATION VIDEOS

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

[The new digital NZM Range](#)

MCAD MODEL

[DA-CD-nzm3_3p](#)

[DA-CS-nzm3_3p](#)

TECHNICAL DATA SHEETS

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

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 Built-in device fixed built-in technique DIN rail (top hat rail) mounting optional
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	48 W
AMBIENT OPERATING TEMPERATURE - MAX	70 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MIN	40 °C
RATED CURRENT (IU)	600 A
CURRENT RATING (IU) (UL 489 CSA 22.2 NO. 5.1)	600 A
NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF AUXILIARY	0

CONTACTS (NORMALLY OPEN CONTACTS)

SWITCH POSITIONS	I, +, 0
CONNECTION	Front screw
DEGREE OF PROTECTION	In the area of the HMI devices: IP20 (basic protection type) IP20
DIRECTION OF INCOMING SUPPLY	As required
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
LIFESPAN, MECHANICAL	15000 operations
OVERVOLTAGE CATEGORY	III
DEGREE OF PROTECTION (IP), FRONT SIDE	IP40 (with insulating surround) IP66 (with door coupling rotary handle)
DEGREE OF PROTECTION (TERMINATIONS)	IP10 (tunnel terminal) IP00 (terminations, phase isolator and band terminal)
NUMBER OF POLES	Three-pole
TERMINAL CAPACITY (COPPER STRIP)	<p>NA: max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched)</p> <p>10 segments of 50 mm x 1 mm (2x) at rear-side width extension</p> <p>Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm</p> <p>Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched)</p> <p>NA: 10 segments of 50 mm x 1 mm (2x) at rear-side width extension</p> <p>Min. 6 segments of 16 mm x 0.8 mm at box terminal</p> <p>Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched)</p> <p>Max. 8 segments of 24 mm x 1 mm (2x) at box terminal</p> <p>NA: min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched)</p>

LIFESPAN, ELECTRICAL	5000 operations at 400 V AC-1 2000 operations at 690 V AC-3 2000 operations at 400 V AC-3 3000 operations at 415 V AC-1 2000 operations at 415 V AC-3 3000 operations at 690 V AC-1
FUNCTIONS	Disconnectors/main switches
TYPE	Switch-disconnector
SPECIAL FEATURES	<ul style="list-style-type: none"> • IEC/EN 60947-2: circuit breakers without overcurrent (CBI-X) with main switch characteristics and isolating characteristics to IEC/EN 60204. • Rated current = rated uninterrupted current: 400 A • Terminal capacity hint: Up to 240 mm² can be connected depending on the cable manufacturer.
APPLICATION	Branch circuits, feeder circuits
POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT	Front side
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	400 A
SHORT-CIRCUIT TOTAL BREAKTIME	< 10 ms
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX	6600 A
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN	6600 A
TERMINAL CAPACITY (COPPER BUSBAR)	Max. 10 mm x 50 mm (2x) at rear-side width extension

	<p>Min. 20 mm x 5 mm direct at switch rear-side connection</p> <p>NA: max. 10 mm x 50 mm (2x) at rear-side width extension</p> <p>NA: max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection</p> <p>NA: M10 at rear-side screw connection</p> <p>NA: min. 20 mm x 5 mm direct at switch rear-side connection</p> <p>Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection</p> <p>M10 at rear-side screw connection</p>
TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)	<p>16 mm² (2x) direct at switch rear-side connection</p> <p>300 mm² (2x) at rear-side width extension</p> <p>16 mm² (1x) direct at switch rear-side connection</p> <p>16 mm² (2x) at box terminal</p> <p>NA: 500 AWG/kcmil (2x) at rear-side width extension</p> <p>NA: 6 AWG (1x) at tunnel terminal</p>
TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)	<p>10 mm² - 16 mm² (2x) direct at switch rear-side connection</p> <p>16 mm² (1x) direct at switch rear-side connection</p> <p>16 mm² (1x) at tunnel terminal</p>
TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)	<p>25 mm² - 185 mm² (1x) at 1-hole tunnel terminal</p> <p>25 mm² - 240 mm² (2x) direct at switch rear-side connection</p> <p>NA: Max. 500 AWG/kcmil (2x) at 2-hole tunnel terminal</p> <p>25 mm² - 120 mm² (2x) at box terminal</p> <p>25 mm² - 240 mm² (1x) direct at switch rear-side connection</p> <p>35 mm² - 240 mm² (1x) at box terminal</p> <p>NA: Max. 500 AWG/kcmil</p>

TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)	(1x) at 2-hole tunnel terminal NA: 2 - 500 AWG/kcmil (1x) at box terminal
	25 mm ² - 185 mm ² (1x) at 1-hole tunnel terminal up to 240 mm ² depending on the cable manufacturer. 50 mm ² - 240 mm ² (1x) at 2-hole tunnel terminal 25 mm ² - 120 mm ² (1x) direct at switch rear-side connection 50 mm ² - 240 mm ² (2x) at 2-hole tunnel terminal 25 mm ² - 120 mm ² (2x) direct at switch rear-side connection
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	6600 A
INSTANTANEOUS CURRENT SETTING (II) - MIN	6600 A
NUMBER OF OPERATIONS PER HOUR - MAX	60
OVERLOAD CURRENT SETTING (IR) - MAX	0 A
OVERLOAD CURRENT SETTING (IR) - MIN	0 A
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 Hz	150 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 Hz	150 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 Hz	130 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 Hz	33 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS	9 kA

**(IEC/EN 60947) AT 690 V,
50/60 Hz**

RATED SHORT-CIRCUIT

MAKING CAPACITY ICM 330 kA
AT 400/415 V, 50/60 Hz

RATED SHORT-CIRCUIT

MAKING CAPACITY ICM 286 kA
AT 440 V, 50/60 Hz

RATED SHORT-CIRCUIT

MAKING CAPACITY ICM 143 kA
AT 525 V, 50/60 Hz

RATED SHORT-CIRCUIT

MAKING CAPACITY ICM 74 kA
AT 690 V, 50/60 Hz

STANDARD TERMINALS

Screw terminal

OPTIONAL TERMINALS

Box terminal. Connection
on rear. Tunnel terminal

RATED OPERATING

VOLTAGE UE (UL) - MAX 600 V

RATED SHORT-CIRCUIT

MAKING CAPACITY ICM 330 kA
AT 240 V, 50/60 Hz

RATED IMPULSE

**WITHSTAND VOLTAGE
(UIMP) AT AUXILIARY
CONTACTS** 6000 V

RATED IMPULSE

**WITHSTAND VOLTAGE
(UIMP) AT MAIN
CONTACTS** 8000 V

RATED INSULATION

VOLTAGE (UI) 1000 V AC

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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