

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
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CATALOG NUMBER	102687
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MODEL CODE	NS3-400-NA
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EAN	4015081025473
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PRODUCT LENGTH/DEPTH	159 mm
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PRODUCT HEIGHT	275 mm
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PRODUCT WIDTH	140 mm
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PRODUCT WEIGHT	6.34 kg
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COMPLIANCES	CE Marked RoHS conform
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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)
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Powering Business Worldwide

Additional information

FUNCTIONS

Disconnectors/main
switches

Delivery programme

AMPERAGE RATING 400 A

APPLICATION Branch circuits, feeder
circuits

**CIRCUIT BREAKER FRAME
TYPE** N3

CONNECTION Front screw

FEATURES Motor drive optional
Protection unit

NUMBER OF POLES Three-pole

SPECIAL FEATURES

- 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.

TYPE Switch-disconnector

Design verification to IEC/EN 61439

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.
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	Does not apply, since the

Design verification to IEC/EN 61439 - technical data

AMBIENT OPERATING TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT STORAGE TEMPERATURE - MIN	40 °C
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	48 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	400 A

AGAINST ELECTRIC SHOCK	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.

Technical data - electrical

AMPERAGE RATING	400 A
CURRENT RATING (IU) (UL 489 CSA 22.2 NO. 5.1)	600 A
DIRECTION OF INCOMING SUPPLY	As required
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
HANDLE TYPE	Rocker lever
INSTANTANEOUS CURRENT SETTING (II) - MAX	6600 A
INSTANTANEOUS CURRENT SETTING (II) - MIN	6600 A
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
NUMBER OF OPERATIONS PER HOUR - MAX	60
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
RATED CURRENT (IU)	600 A
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
RATED OPERATING VOLTAGE UE (UL) - MAX	600 V
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ	150 kA
RATED SHORT-CIRCUIT	150 kA

Technical data - mechanical

DEGREE OF PROTECTION	In the area of the HMI devices: IP20 (basic protection type) IP20
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)
LIFESPAN, MECHANICAL	15000 operations
MOUNTING METHOD	Fixed Built-in device fixed built- in technique DIN rail (top hat rail) mounting optional
NUMBER OF AUXILIARY CONTACTS (CHANGE- OVER CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0
POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT	Front side
SPECIAL FEATURES	- 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.
SWITCH POSITIONS	I, +, 0

BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ	
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 (IEC/EN 60947) AT 690 V, 50/60 HZ	9 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ	330 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ	330 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ	286 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 525 V, 50/60 HZ	143 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ	74 kA
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX	6600 A
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN	6600 A
SHORT-CIRCUIT TOTAL BREAKTIME	< 10 ms
VOLTAGE RATING	690 V - 690 V

Technical data - mechanical - terminals

OPTIONAL TERMINALS	Box terminal. Connection on rear. Tunnel terminal
STANDARD TERMINALS	Screw terminal
TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)	10 mm ² - 16 mm ² (2x) direct at switch rear-side connection 16 mm ² (1x) direct at switch rear-side connection 16 mm ² (1x) at tunnel terminal
TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)	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
TERMINAL CAPACITY (COPPER BUSBAR)	Max. 10 mm x 50 mm (2x) at rear-side width extension Min. 20 mm x 5 mm direct at switch rear-side connection NA: max. 10 mm x 50 mm (2x) at rear-side width extension NA: max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection NA: M10 at rear-side screw connection NA: min. 20 mm x 5 mm direct at switch rear-side connection Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection M10 at rear-side screw connection
TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)	16 mm ² (2x) direct at switch rear-side connection 300 mm ² (2x) at rear-side width extension 16 mm ² (1x) direct at switch rear-side

Resources

BROCHURES	eaton-digital-nzm-brochure-br013003en-en-us.pdf eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf
CATALOGUES	eaton-digital-nzm-catalog-ca013003en-en-us.pdf
CHARACTERISTIC CURVE	eaton-circuit-breaker-nzm-mccb-characteristic-curve-028.eps eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve.eps
DECLARATIONS OF CONFORMITY	eaton-molded-case-switch-declaration-of-conformity-eu250134en.pdf
DRAWINGS	eaton-circuit-breaker-switch-nzm-mccb-dimensions-016.eps eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-002.eps
ECAD MODEL	ETN.NS3-400-NA
INSTALLATION INSTRUCTIONS	eaton-circuit-breaker-basic-device-nzmn-b-il01208009z.pdf
INSTALLATION VIDEOS	Introduction of the new digital circuit breaker NZM The new digital NZM Range
MCAD MODEL	eaton-cam-switches-mcad-drawings-nzm3-3p.dwg DA-CS-nzm3_3p
PEP ECO-PASSPORT	eaton-molded-case-switches-pep-eato-00247-v0101-en.pdf
TECHNICAL DATA SHEETS	eaton-nzm-technical-information-sheet

	connection 16 mm² (2x) at box terminal NA: 500 AWG/kcmil (2x) at rear-side width extension NA: 6 AWG (1x) at tunnel terminal
TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)	25 mm² - 185 mm² (1x) at 1-hole tunnel terminal 25 mm² - 240 mm² (2x) direct at switch rear-side connection NA: Max. 500 AWG/kcmil (2x) at 2-hole tunnel terminal 25 mm² - 120 mm² (2x) at box terminal 25 mm² - 240 mm² (1x) direct at switch rear-side connection 35 mm² - 240 mm² (1x) at box terminal NA: Max. 500 AWG/kcmil (1x) at 2-hole tunnel terminal NA: 2 - 500 AWG/kcmil (1x) at box terminal
TERMINAL CAPACITY (COPPER STRIP)	NA: max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) 10 segments of 50 mm x 1 mm (2x) at rear-side width extension Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched) NA: 10 segments of 50 mm x 1 mm (2x) at rear- side width extension Min. 6 segments of 16 mm x 0.8 mm at box terminal Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear- side connection (punched) Max. 8 segments of 24 mm x 1 mm (2x) at box terminal NA: min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched)

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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