

Specifications



Photo is representative



Eaton 102681

Eaton Moeller series NZM - Molded Case Circuit Breaker. Molded Case Switch, 3p, 63A

General specifications

PRODUCT NAME	Eaton Moeller series NZM molded case switch
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CATALOG NUMBER	102681
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MODEL CODE	NS1-63-NA
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EAN	4015081025411
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PRODUCT LENGTH/DEPTH	88 mm
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PRODUCT HEIGHT	145 mm
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PRODUCT WIDTH	90 mm
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PRODUCT WEIGHT	1.046 kg
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COMPLIANCES	RoHS conform
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CERTIFICATIONS	IEC CE marking UL listed UL/CSA UL (Category Control Number WJAZ) CSA (File No. 22086) UL (File No. E148671) IEC 60947-2 UL 489 CSA-C22.2 No. 5-09 CSA (Class No. 4652-06) CSA certified Specially designed for North America
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Additional information

FUNCTIONS

Disconnectors/main
switches

Delivery programme

AMPERAGE RATING 63 A

APPLICATION Branch circuits, feeder
circuits

**CIRCUIT BREAKER FRAME
TYPE** N1

FEATURES 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: 63 A
- Terminal capacity
hint: Up to 95 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	6.69 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	63 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	63 A
CURRENT RATING (IU) (UL 489 CSA 22.2 NO. 5.1)	125 A
DIRECTION OF INCOMING SUPPLY	As required
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Frame clamp
HANDLE TYPE	Rocker lever
INSTANTANEOUS CURRENT SETTING (II) - MAX	1250 A
INSTANTANEOUS CURRENT SETTING (II) - MIN	1250 A
LIFESPAN, ELECTRICAL	10000 operations at 415 V AC-1 7500 operations at 690 V AC-1 10000 operations at 400 V AC-1
NUMBER OF OPERATIONS PER HOUR - MAX	120
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
RATED CURRENT (IU)	125 A
RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS	6000 V
RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS	6000 V
RATED INSULATION VOLTAGE (UI)	690 V AC
RATED OPERATING VOLTAGE UE (UL) - MAX	480 Y / 277 V
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ	85 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ	50 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS	35 kA

Technical data - mechanical

DEGREE OF PROTECTION	IP20 In the area of the HMI devices: IP20 (basic protection type)
DEGREE OF PROTECTION (IP), FRONT SIDE	IP66 (with door coupling rotary handle) IP40 (with insulating surround)
DEGREE OF PROTECTION (TERMINATIONS)	IP00 (terminations, phase isolator and band terminal) IP10 (tunnel terminal)
LIFESPAN, MECHANICAL	20000 operations
MOUNTING METHOD	Fixed DIN rail (top hat rail) mounting optional Built-in device fixed built- in technique
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: 63 A - Terminal capacity hint: Up to 95 mm² can be connected depending on the cable manufacturer.
SWITCH POSITIONS	I, +, 0

(IEC/EN 60947) AT 440 V, 50/60 HZ	
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ	10 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 690 V, 50/60 HZ	7.5 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ	187 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ	105 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ	74 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 525 V, 50/60 HZ	53 kA
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ	17 kA
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX	1250 A
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN	1250 A
SHORT-CIRCUIT TOTAL BREAKTIME	< 10 ms
VOLTAGE RATING	690 V - 690 V

Technical data - mechanical - terminals

OPTIONAL TERMINALS	Connection on rear. Screw terminal. Tunnel terminal
STANDARD TERMINALS	Box terminal
TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)	10 mm² - 16 mm² (1x) direct at switch rear-side connection 16 mm² (1x) at tunnel terminal 10 mm² - 16 mm² (2x) direct at switch rear-side connection
TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)	25 mm² - 35 mm² (1x) direct at switch rear-side connection 25 mm² - 95 mm² (1x) at 1-hole tunnel terminal 25 mm² - 35 mm² (2x) direct at switch rear-side connection
TERMINAL CAPACITY (COPPER BUSBAR)	Min. 12 mm x 5 mm direct at switch rear-side connection NA: min. 12 mm x 5 mm direct at switch rear-side connection Max. 16 mm x 5 mm direct at switch rear-side connection M6 at rear-side screw connection NA: max. 16 mm x 5 mm direct at switch rear-side connection NA: M6 at rear-side screw connection
TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)	10 mm² - 16 mm² (1x) at box terminal 6 mm² - 16 mm² (2x) at box terminal NA: 9 - 6 AWG (2x) direct at switch rear-side connection 16 mm² (1x) at tunnel terminal NA: 12 - 6 AWG (1x) at box terminal NA: 6 AWG (1x) at tunnel terminal NA: 12 - 6 AWG (1x) direct at switch rear-side connection 10 mm² - 16 mm² (1x) direct at switch rear-side connection 6 mm² - 16 mm² (2x) direct at switch rear-side connection

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.eps eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-002.eps
DECLARATIONS OF CONFORMITY	eaton-molded-case-switch-declaration-of-conformity-eu250132en.pdf
DRAWINGS	eaton-circuit-breaker-nzm-mccb-dimensions-017.eps eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-006.eps
ECAD MODEL	DA-CE-ETN.NS1-63-NA
INSTALLATION INSTRUCTIONS	eaton-circuit-breaker-switch-disconnector-nzmb-il01203004z.pdf
INSTALLATION VIDEOS	Introduction of the new digital circuit breaker NZM The new digital NZM Range
MCAD MODEL	eaton-molded-case-switches-mcad-3d-models-nzm1-xsve.stp eaton-molded-case-switches-mcad-drawings-nzm1-xsve.dwg
TECHNICAL DATA SHEETS	eaton-nzm-technical-information-sheet

	connection
TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)	NA: 4 - 2/0 AWG/kcmil (1x) at box terminal 10 mm ² - 70 mm ² (1x) at box terminal
	NA: 4 - 3/0 AWG/kcmil (1x) at 1-hole tunnel terminal 6 mm ² - 25 mm ² (2x) at box terminal
	25 mm ² - 95 mm ² (1x) at 1- hole tunnel terminal 25 mm ² (2x) direct at switch rear-side connection
	25 mm ² - 70 mm ² (1x) direct at switch rear-side connection
TERMINAL CAPACITY (COPPER STRIP)	Min. 2 segments of 9 mm x 0.8 mm at box terminal Max. 9 segments of 9 mm x 0.8 mm at box terminal

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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