

Specifications



Photo is representative

Eaton 271108

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 600A, busbar terminal for CU N, frame 4, AEF600-NA

General specifications

PRODUCT NAME	Eaton Moeller series NZM molded case circuit breaker electronic
CATALOG NUMBER	271108
MODEL CODE	NZMN4-AEF600-NA
EAN	4015082711085
PRODUCT LENGTH/DEPTH	401 mm
PRODUCT HEIGHT	207 mm
PRODUCT WIDTH	210 mm
PRODUCT WEIGHT	21 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	CE marking UL/CSA CSA certified UL 489 UL (Category Control Number DIVQ) CSA (Class No. 1432-01) IEC/EN 60947 Specially designed for North America CSA (File No. 22086) CSA-C22.2 No. 5-09 UL (File No. E31593) IEC 60947-2 UL listed IEC
GLOBAL CATALOG	271108



Powering Business Worldwide

Product specifications

AMPERAGE RATING	600 A
VOLTAGE RATING	690 V - 690 V
CIRCUIT BREAKER FRAME TYPE	NZM4
FEATURES	Protection unit Motor drive optional
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 eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf
CATALOGS	eaton-digital-nzm-catalog-ca013003en-en-us.pdf
CHARACTERISTIC CURVE	eaton-circuit-breaker-nzm-mccb-characteristic-curve-047.eps
DECLARATIONS OF CONFORMITY	eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250294en.pdf
DRAWINGS	eaton-circuit-breaker-nzm-mccb-dimensions-022.eps eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-003.eps
ECAD MODEL	ETN.271108.edz
INSTALLATION INSTRUCTIONS	eaton-circuit-breaker-basic-unit-nzmn4-il01210010z.pdf
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

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	Built-in device fixed built-in technique Fixed
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	39.96 W
UTILIZATION CATEGORY	A (IEC/EN 60947-2)
ISOLATION	300 V AC (between the auxiliary contacts) 500 V AC (between auxiliary contacts and main contacts)
AMBIENT OPERATING TEMPERATURE - MAX	70 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MIN	40 °C
LOW-VOLTAGE HBC FUSE - MAX	2 x 630 A gG/gL

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
DEGREE OF PROTECTION	IP20 IP20 (basic degree of protection, in the operating controls area)
DIRECTION OF INCOMING SUPPLY	As required
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
LIFESPAN, MECHANICAL	10000 operations
OVERVOLTAGE CATEGORY	III
RATED OPERATIONAL CURRENT	600 A (660-690 V AC-3, making and breaking capacity) 2000 A (380/400 V AC-1, making and breaking capacity) 600 A (690 V AC -1, making and breaking capacity) 1600 A (415 V AC-1, making and breaking capacity)
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 strip terminal) IP10 (tunnel terminal)
NUMBER OF POLES	Three-pole
TERMINAL CAPACITY (COPPER STRIP)	Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal 10 segments of 50 mm x 1 mm (2x) at 1-hole module plate Min. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched)

	Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched) 10 segments of 80 mm x 1 mm (2x) at rear-side width extension NA: same as for IEC
LIFESPAN, ELECTRICAL	3000 operations at 400 V AC-1 2000 operations at 690 V AC-1 2000 operations at 400 V AC-3 1000 operations at 690 V AC-3 2000 operations at 415 V AC-3
FUNCTIONS	System and cable protection
TYPE	Circuit breaker
SPECIAL FEATURES	• For AC-3 rated operational current with NZM4 the following applies: 400 V: max. 650 kW; 690 V: max. 600 kW (switching capacity, rated making and breaking capacity) • 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 I_{cn}) • Rated current = rated uninterrupted current: 600 A • Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate. • Fixed overload releases I_r • R.m.s. value measurement and "thermal memory"

APPLICATION	• Branch circuits, feeder circuits • Use in unearthed supply systems at 525 V
SHOCK RESISTANCE	20 g (half-sinusoidal shock 20 ms)
POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT	Front side
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	600 A
RELEASE SYSTEM	Electronic release
SHORT-CIRCUIT TOTAL BREAKTIME	< 25 ms ($\leq$ 415 V); < 35 ms (> 415 V)
RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)	19.2 kA
RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)	19.2 kA
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX	7200 A
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN	1200 A
TERMINAL CAPACITY (CONTROL CABLE)	14 mm ² - 18 mm ² (1x) 16 mm ² - 18 mm ² (2x)
TERMINAL CAPACITY (COPPER BUSBAR)	M10 at rear-side screw connection Min. 25 mm x 5 mm direct at switch rear-side connection Max. 50 mm x 10 mm (2x) direct at switch rear-side 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 50 mm x 10 mm (2x) at rear-side 2-hole module plate Min. 60 mm x 10 mm at rear-side width extension Max. 80 mm x 10 mm (2x) at rear-side width extension NA: same as for IEC

**TERMINAL CAPACITY
(COPPER STRANDED
CONDUCTOR/CABLE)**

50 mm² - 240 mm² (4x) at 4-hole tunnel terminal
120 mm² - 185 mm² (1x) direct at switch rear-side connection
50 mm² - 185 mm² (4x) direct at switch rear-side connection
Min. 120 mm² - 300 mm² (1x) at rear-side 1-hole module plate
Max. 95 mm² - 300 mm² (2x) at rear-side 1-hole module plate
Min. 95 mm² - 185 mm² (2x) at rear-side 2-hole module plate
Max. 35 mm² - 185 mm² (4x) at rear-side 2-hole module plate
300 mm² (4x) at rear-side width extension
95 mm² - 240 mm² (6x) at rear-side width extension
NA: AWG 0- kcmil 500 (4x) at 4-hole tunnel terminal
NA: kcmil 250 - kcmil 350 (1x) direct at switch rear-side connection
NA: AWG 0 - kcmil 350 (4x) direct at switch rear-side connection
NA: min. kcmil 250 - kcmil 600 (1x) at rear-side 1-hole module plate
NA: max. AWG 3/0 - kcmil 600 (2x) at rear-side 1-hole module plate
NA: min. AWG 3/0 - kcmil 350 (2x) at rear-side 2-hole module plate
NA: max. AWG 2 - kcmil 350 (4x) at rear-side 2-hole module plate
NA: kcmil 600 (4x) at rear-side width extension
NA: AWG 3/0 - kcmil 500 (6x) at rear-side width extension

**TERMINAL CAPACITY
(ALUMINUM STRANDED
CONDUCTOR/CABLE)**

Min. 185 mm² - 240 mm² (1x) at rear-side 1-hole module plate
Max. 70 mm² - 185 mm² (2x) at rear-side 1-hole module plate
50 mm² (4x) at rear-side 2-hole module plate
240 mm² (2x) at rear-side width extension
70 mm² - 240 mm² (6x) at

	rear-side width extension NA: aluminum conductor not applicable
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	7200 A
INSTANTANEOUS CURRENT SETTING (II) - MIN	1200 A
NUMBER OF OPERATIONS PER HOUR - MAX	60
OVERLOAD CURRENT SETTING (IR) - MAX	600 A
OVERLOAD CURRENT SETTING (IR) - MIN	600 A
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ	37 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ	37 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 HZ	26 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ	19 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 690 V, 50/60 HZ	15 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	40 kA

STANDARD TERMINALS	Screw connection,Optional:Tunnel terminal,Rear-side connection,Strip connection
RATED OPERATING VOLTAGE UE (UL) - MAX	600 V
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ	105 kA
RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS	6000 V
RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS	8000 V
RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 525 V, 50/60 HZ	25 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 400/415 V, 50/60 HZ	50 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 230 V, 50/60 HZ	50 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 690 V, 50/60 HZ	20 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 440 V, 50/60 HZ	35 kA
RATED INSULATION VOLTAGE (UI)	1000 V AC

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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