

Specifications



Photo is representative



Eaton 190349

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit breaker, overload/short-circuit protection, 4p, 100A, screw connection

General specifications

PRODUCT NAME	Eaton Moeller series NZM molded case circuit breaker thermo-magnetic
CATALOG NUMBER	190349
MODEL CODE	NZMN2-4-AF100-NA
EAN	4015081898688
PRODUCT LENGTH/DEPTH	184 mm
PRODUCT HEIGHT	149 mm
PRODUCT WIDTH	105 mm
PRODUCT WEIGHT	3.315 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	UL listed IEC UL (File No. E31593) UL 489 CE marking IEC/EN 60947 Specially designed for North America CSA-C22.2 No. 5-09 UL/CSA IEC 60947-2 UL (Category Control Number DIVQ)
GLOBAL CATALOG	190349

Product specifications

AMPERAGE RATING	100 A
VOLTAGE RATING	690 V - 690 V
CIRCUIT BREAKER FRAME TYPE	NZM2
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](#)

[eaton-circuit-breaker-current-nzm-mccb-characteristic-curve-004.eps](#)

CHARACTERISTIC CURVE

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-050.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-039.eps](#)

DECLARATIONS OF CONFORMITY

[eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250290en.pdf](#)

DRAWINGS

[eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps](#)

[eaton-circuit-breaker-nzm-mccb-dimensions-035.eps](#)

[eaton-circuit-breaker-cable-nzm-mccb-3d-drawing-002.eps](#)

ECAD MODEL

[DA-CE-ETN.NZMN2-4-AF100-NA](#)

INSTALLATION VIDEOS

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

[The new digital NZM Range](#)

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	DIN rail (top hat rail) mounting optional Fixed Built-in device fixed built-in technique
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	26 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	355 A gG/gL

- MAX	
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
CURRENT RATING OF NEUTRAL CONDUCTOR	200% of phase conductor
LIFESPAN, MECHANICAL	20000 operations
OVERVOLTAGE CATEGORY	III
RATED OPERATIONAL CURRENT	100 A (660-690 V AC-3, making and breaking capacity) 100 A (415 V AC-1, making and breaking capacity) 100 A (380/400 V AC-1, making and breaking capacity) 100 A (690 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)	IP10 (tunnel terminal) IP00 (terminations, phase isolator and strip terminal)
NUMBER OF POLES	Four-pole
TERMINAL CAPACITY (COPPER STRIP)	Min. 2 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 16 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
LIFESPAN, ELECTRICAL	10000 operations at 415 V AC-1 5000 operations at 690 V AC-3 6500 operations at 415 V AC-3 6500 operations at 400 V AC-3 10000 operations at 400 V AC-1 7500 operations at 690 V AC-1
FUNCTIONS	Current limiting circuit breaker System and cable protection
TYPE	Circuit breaker
SPECIAL FEATURES	<ul style="list-style-type: none"> 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: 100 A Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate.
APPLICATION	<ul style="list-style-type: none"> Branch circuits, feeder circuits Use in unearthing supply systems at 690 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)	100 A
RELEASE SYSTEM	Thermomagnetic release
SHORT-CIRCUIT TOTAL BREAKTIME	< 10 ms
RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)	1.9 kA
RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)	1.9 kA
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX	1000 A
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN	600 A
TERMINAL CAPACITY (CONTROL CABLE)	16 mm ² - 18 mm ² (2x) 14 mm ² - 18 mm ² (1x)
TERMINAL CAPACITY (COPPER BUSBAR)	M8 at rear-side screw connection Min. 16 mm x 5 mm direct at switch rear-side connection Max. 20 mm x 5 mm direct at switch rear-side connection
TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)	6 mm ² - 12 mm ² (1x) at box terminal 6 mm ² - 11 mm ² (1x) direct at switch rear-side connection 16 mm ² (1x) at tunnel terminal
TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)	16 mm ² (1x) at tunnel terminal
TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)	4 mm ² - 350 mm ² (1x) at box terminal 4 mm ² - 350 mm ² (1x) at tunnel terminal 4 mm ² - 3/0 mm ² (1x) 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	10 A

INSTANTANEOUS	
CURRENT SETTING (II) -	6 A
MIN	
NUMBER OF	
OPERATIONS PER HOUR -	120
MAX	
OVERLOAD CURRENT	
SETTING (IR) - MAX	100 A
OVERLOAD CURRENT	
SETTING (IR) - MIN	100 A
RATED SHORT-CIRCUIT	
BREAKING CAPACITY ICS	
(IEC/EN 60947) AT 230 V,	85 kA
50/60 Hz	
RATED SHORT-CIRCUIT	
BREAKING CAPACITY ICS	
(IEC/EN 60947) AT	50 kA
400/415 V, 50/60 Hz	
RATED SHORT-CIRCUIT	
BREAKING CAPACITY ICS	
(IEC/EN 60947) AT 440 V,	35 kA
50/60 Hz	
RATED SHORT-CIRCUIT	
BREAKING CAPACITY ICS	
(IEC/EN 60947) AT 525 V,	25 kA
50/60 Hz	
RATED SHORT-CIRCUIT	
BREAKING CAPACITY ICS	
(IEC/EN 60947) AT 690 V,	5 kA
50/60 Hz	
RATED SHORT-CIRCUIT	
MAKING CAPACITY ICM	105 kA
AT 400/415 V, 50/60 Hz	
RATED SHORT-CIRCUIT	
MAKING CAPACITY ICM	74 kA
AT 440 V, 50/60 Hz	
RATED SHORT-CIRCUIT	
MAKING CAPACITY ICM	53 kA
AT 525 V, 50/60 Hz	
RATED SHORT-CIRCUIT	
MAKING CAPACITY ICM	40 kA
AT 690 V, 50/60 Hz	
STANDARD TERMINALS	Screw terminal
RATED OPERATING	
VOLTAGE UE (UL) - MAX	480 V
RATED SHORT-CIRCUIT	
MAKING CAPACITY ICM	187 kA
AT 240 V, 50/60 Hz	
RATED IMPULSE	
WITHSTAND VOLTAGE	
(UIMP) AT AUXILIARY	6000 V
CONTACTS	
RATED IMPULSE	8000 V

WITHSTAND VOLTAGE**(UIMP) AT MAIN****CONTACTS****RATED INSULATION****VOLTAGE (UI)**

1000 V AC

PROJECT NAME:**PROJECT NUMBER:****PREPARED BY:****DATE:****Eaton Corporation plc**

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