

Specifications



Photo is representative

Eaton 271410

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 4p, 50A, C, frame 1, 4-A50

General specifications

PRODUCT NAME	Eaton Moeller series NZM molded case circuit breaker thermo-magnetic
CATALOG NUMBER	271410
MODEL CODE	NZMC1-4-A50
EAN	4015082714109
PRODUCT LENGTH/DEPTH	84.5 mm
PRODUCT HEIGHT	145 mm
PRODUCT WIDTH	120 mm
PRODUCT WEIGHT	1.325 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	IEC/EN 60947 IEC

Product specifications

AMPERAGE RATING	50 A
VOLTAGE RATING	690 V - 690 V
CIRCUIT BREAKER FRAME TYPE	NZM1
FEATURES	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.

Resources

BROCHURES

[eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf](#)

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

CATALOGUES

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

[eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-033.eps](#)

CHARACTERISTIC CURVE

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-051.eps](#)

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

DECLARATIONS OF CONFORMITY

[eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250289en.pdf](#)

DRAWINGS

[eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps](#)

[eaton-circuit-breaker-nzm-mccb-dimensions-018.eps](#)

ECAD MODEL

[ETN.271410.edz](#)

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

INSTALLATION VIDEOS

[The new digital NZM Range](#)

MCAD MODEL

[eaton-molded-case-switches-mcad-drawings-nzm1-4p.dwg](#)

[DA-CD-nzm1_4p](#)

[DA-CS-nzm1_4p](#)

[eaton-molded-case-switches-mcad-3d-models-nzm1-4p.stp](#)

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 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 DIN rail (top hat rail) mounting optional 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	13.2 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

PEP ECO-PASSPORT	eaton-molded-case-switches-pep-eato-00225-v0101-en.pdf
TECHNICAL DATA SHEETS	eaton-nzm-technical-information-sheet

AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MIN	40 °C
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 (basic degree of protection, in the operating controls area) IP20
DIRECTION OF INCOMING SUPPLY	As required
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Frame clamp
CURRENT RATING OF NEUTRAL CONDUCTOR	200% of phase conductor
LIFESPAN, MECHANICAL	20000 operations
OVERVOLTAGE CATEGORY	III
DEGREE OF PROTECTION (IP), FRONT SIDE	IP40 (with insulating surround) IP66 (with door coupling rotary handle)
DEGREE OF PROTECTION (TERMINATIONS)	IP00 (terminations, phase isolator and strip terminal) IP10 (tunnel terminal)
NUMBER OF POLES	Four-pole
TERMINAL CAPACITY (COPPER STRIP)	Max. 9 segments of 9 mm x 0.8 mm at box terminal Min. 2 segments of 9 mm x 0.8 mm at box terminal
LIFESPAN, ELECTRICAL	10000 operations at 400 V AC-1 5000 operations at 690 V AC-1 7500 operations at 415 V AC-1
FUNCTIONS	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: 50 A • Set value in neutral conductor is synchronous with set value I_r of main pole. • Terminal capacity hint: Up to 95 mm² can be connected depending on the cable manufacturer.
APPLICATION	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)	50 A
POWER LOSS	13.2 W
RELEASE SYSTEM	Thermomagnetic release
SHORT-CIRCUIT TOTAL BREAKTIME	< 10 ms
SHORT-CIRCUIT RELEASE	
NON-DELAYED SETTING - MAX	500 A
SHORT-CIRCUIT RELEASE	
NON-DELAYED SETTING - MIN	300 A
TERMINAL CAPACITY	0.75 mm ² - 1.5 mm ² (2x)

(CONTROL CABLE)	0.75 mm ² - 2.5 mm ² (1x)
TERMINAL CAPACITY (COPPER BUSBAR)	<p>Max. 16 mm x 5 mm direct at switch rear-side connection</p> <p>M6 at rear-side screw connection</p> <p>Min. 12 mm x 5 mm direct at switch rear-side connection</p>
TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)	<p>10 mm² - 16 mm² (1x) direct at switch rear-side connection</p> <p>10 mm² - 16 mm² (1x) at box terminal</p> <p>6 mm² - 16 mm² (2x) direct at switch rear-side connection</p> <p>6 mm² - 16 mm² (2x) at box terminal</p> <p>16 mm² (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) at tunnel terminal</p> <p>10 mm² - 16 mm² (1x) direct at switch rear-side connection</p>
TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)	<p>25 mm² - 95 mm² (1x) at 1-hole tunnel terminal</p> <p>25 mm² (2x) direct at switch rear-side connection</p> <p>6 mm² - 25 mm² (2x) at box terminal</p> <p>10 mm² - 70 mm² (1x) at box terminal</p> <p>10 mm² - 70 mm² (1x) direct at switch rear-side connection</p>
TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)	<p>25 mm² - 95 mm² (1x) at tunnel terminal</p> <p>25 mm² - 35 mm² (2x) direct at switch rear-side connection</p> <p>25 mm² - 35 mm² (1x) direct at switch rear-side connection</p>
HANDLE TYPE	Rocker lever
SHORT DELAY CURRENT SETTING (ISD) - MAX	0 A
SHORT DELAY CURRENT	0 A

SETTING (ISD) - MIN**INSTANTANEOUS****CURRENT SETTING (II) -** 10 A**MAX****INSTANTANEOUS****CURRENT SETTING (II) -** 6 A**MIN****NUMBER OF****OPERATIONS PER HOUR -** 120**MAX****OVERLOAD CURRENT****SETTING (IR) - MAX** 50 A**OVERLOAD CURRENT****SETTING (IR) - MIN** 40 A**OVERLOAD CURRENT****SETTING (IR)** 40 A - 50 A**RATED SHORT-CIRCUIT****BREAKING CAPACITY ICS
(IEC/EN 60947) AT 230 V,
50/60 HZ**

55 kA

RATED SHORT-CIRCUIT**BREAKING CAPACITY ICS
(IEC/EN 60947) AT
400/415 V, 50/60 HZ**

36 kA

RATED SHORT-CIRCUIT**BREAKING CAPACITY ICS
(IEC/EN 60947) AT 440 V,
50/60 HZ**

22.5 kA

RATED SHORT-CIRCUIT**BREAKING CAPACITY ICS
(IEC/EN 60947) AT 525 V,
50/60 HZ**

6 kA

RATED SHORT-CIRCUIT**BREAKING CAPACITY ICS
(IEC/EN 60947) AT 690 V,
50/60 HZ**

4 kA

RATED SHORT-CIRCUIT**MAKING CAPACITY ICM
AT 400/415 V, 50/60 HZ**

76 kA

RATED SHORT-CIRCUIT**MAKING CAPACITY ICM
AT 440 V, 50/60 HZ**

63 kA

RATED SHORT-CIRCUIT**MAKING CAPACITY ICM
AT 525 V, 50/60 HZ**

24 kA

RATED SHORT-CIRCUIT**MAKING CAPACITY ICM
AT 690 V, 50/60 HZ**

14 kA

STANDARD TERMINALS

Box terminal

OPTIONAL TERMINALS

Connection on rear. Screw

terminal. Tunnel terminal

RATED SHORT-CIRCUIT

MAKING CAPACITY ICM

121 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

6000 V

RATED INSULATION

VOLTAGE (UI)

690 V AC

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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