

Specifications



Photo is representative

Eaton 113354

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 20A, plug-in module

General specifications

PRODUCT NAME	Eaton Moeller series NZM molded case circuit breaker thermo-magnetic
CATALOG NUMBER	113354
MODEL CODE	NZMH2-M20-SVE
EAN	4015081128891
PRODUCT LENGTH/DEPTH	180 mm
PRODUCT HEIGHT	245 mm
PRODUCT WIDTH	105 mm
PRODUCT WEIGHT	2.785 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	IEC/EN 60947 IEC

Product specifications

AMPERAGE RATING	20 A
VOLTAGE RATING	690 V - 690 V
CIRCUIT BREAKER FRAME TYPE	NZM2
ACCESSORIES REQUIRED	NZM2-XSVS
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-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](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-052.eps](#)

CHARACTERISTIC CURVE

[eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-037.eps](#)

[eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-005.eps](#)

DECLARATIONS OF CONFORMITY

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

[eaton-circuit-breaker-nzm-mccb-dimensions-019.eps](#)

[eaton-circuit-breaker-adapter-nzm-mccb-dimensions-002.eps](#)

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

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

[eaton-general-ie-ready-dilm-contactor-standards.eps](#)

DRAWINGS

[eaton-circuit-breaker-plug-in-adapter-nzm2-il01219023z.pdf](#)

[eaton-circuit-breakers-basic-device-nzm2-il01206006z.pdf](#)

INSTALLATION INSTRUCTIONS

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

INSTALLATION VIDEOS

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.
FITTED WITH:	Thermal protection
POLLUTION DEGREE	3
MOUNTING METHOD	Built-in device plug-in technique Plug-in unit
CLIMATIC PROOFING	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	5.1 W
UTILIZATION CATEGORY	A (IEC/EN 60947-2)
ISOLATION	500 V AC (between auxiliary contacts and main contacts) 300 V AC (between the auxiliary contacts)
AMBIENT OPERATING TEMPERATURE - MAX	70 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT STORAGE	70 °C

MCAD MODEL	The new digital NZM Range DA-CS-nzm2_xsve DA-CD-nzm2_xsve
PEP ECO-PASSPORT	eaton-molded-case-switches-pep-eato-00218-v0101-en.pdf
TECHNICAL DATA SHEETS	eaton-nzm-technical-information-sheet

TEMPERATURE - MAX	
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
PROTECTION AGAINST DIRECT CONTACT	Finger and back-of-hand proof to VDE 0106 part 100
RATED INSULATION VOLTAGE (UI)	1000 V
RATED OPERATING POWER AT AC-3, 230 V	5.5 kW
RATED OPERATING POWER AT AC-3, 400 V	7.5 kW
SWITCH OFF TECHNIQUE	Thermomagnetic
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	20000 operations
OVERVOLTAGE CATEGORY	III
RATED OPERATIONAL CURRENT	16 A (400 V AC-3)
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 strip terminal)
NUMBER OF POLES	Three-pole
TERMINAL CAPACITY (COPPER STRIP)	Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched) Max. 8 segments of 24 mm x 1 mm (2x) at box terminal 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 Min. 2 segments of 16 mm x 0.8 mm at rear-side connection (punched)
LIFESPAN, ELECTRICAL	6500 operations at 415 V

AC-3
10000 operations at 400 V
AC-1
10000 operations at 415 V
AC-1
6500 operations at 400 V
AC-3
5000 operations at 690 V
AC-3
7500 operations at 690 V
AC-1

FUNCTIONS	Motor protection
TYPE	Circuit breaker

- IEC/EN 60947-4-1,
IEC/EN 60947-2
- The circuit-breaker fulfills all requirements for AC-3 switching category.
- R.m.s. value measurement and "thermal memory"
- Adjustable time delay setting to overcome current peaks tr at $6 \times Ir$ also infinity (without overload releases)
- All AC-3 rating data applies to direct switching by the circuit-breaker under normal operating conditions. If, for example, a contactor takes over AC-3 switching under normal operating conditions, the full rated uninterrupted current applies to the circuit-breaker, $In = Iu$.
- Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the

SPECIAL FEATURES

switching capacity
of the circuit
breaker (Rated
short-circuit
breaking capacity
Icn)
• Rated current =
rated
uninterrupted
current: 20 A

APPLICATION	Use in unearthing supply systems at 690 V
SHOCK RESISTANCE	20 g (half-sinusoidal shock 20 ms)
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	20 A
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	350 A
SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN	350 A
HANDLE TYPE	Rocker lever
INSTANTANEOUS CURRENT SETTING (II) - MAX	350 A
INSTANTANEOUS CURRENT SETTING (II) - MIN	350 A
NUMBER OF OPERATIONS PER HOUR - MAX	120
OVERLOAD CURRENT SETTING (IR) - MAX	20 A
OVERLOAD CURRENT SETTING (IR) - MIN	16 A
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 Hz	150 kA
RATED SHORT-CIRCUIT BREAKING CAPACITY ICS	130 kA

**(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**

37.5 kA

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

5 kA

STANDARD TERMINALS

Screw terminal

OPTIONAL TERMINALS

Box terminal. Connection
on rear. Tunnel terminal

RELEASE SYSTEM

Thermomagnetic release

**SHORT-CIRCUIT TOTAL
BREAKTIME**

< 10 ms

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

16 mm² (1x) at tunnel
terminal

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

25 mm² - 185 mm² (1x) at
tunnel terminal

**TERMINAL CAPACITY
(CONTROL CABLE)**

0.75 mm² - 1.5 mm² (2x)
0.75 mm² - 2.5 mm² (1x)

**TERMINAL CAPACITY
(COPPER BUSBAR)**

Max. 24 mm x 8 mm direct
at switch rear-side
connection
Min. 16 mm x 5 mm direct
at switch rear-side
connection
M8 at rear-side screw
connection

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

10 mm² - 16 mm² (1x) at
box terminal
10 mm² - 16 mm² (1x)
direct at switch rear-side
connection
6 mm² - 16 mm² (2x) direct
at switch rear-side
connection
16 mm² (1x) at tunnel
terminal
6 mm² - 16 mm² (2x) at
box terminal

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

25 mm² - 70 mm² (2x)
direct at switch rear-side
connection

25 mm² - 70 mm² (2x) at
box terminal
25 mm² - 185 mm² (1x)
direct at switch rear-side
connection
25 mm² - 185 mm² (1x) at
1-hole tunnel terminal
25 mm² - 185 mm² (1x) at
box terminal

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

130 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**

105 kA

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

40 kA

**RATED SHORT-CIRCUIT
MAKING CAPACITY ICM
AT 240 V, 50/60 HZ**

330 kA

**RATED IMPULSE
WITHSTAND VOLTAGE
(UIMP) AT AUXILIARY
CONTACTS**

6000 V

**RATED IMPULSE
WITHSTAND VOLTAGE
(UIMP) AT MAIN
CONTACTS**

8000 V

POWER LOSS 5.1 W

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



Eaton Corporation plc

Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

Follow us on social media to get the
latest product and support
information.

