

# Specifications



Photo is representative

## Eaton 112728

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 100A, plug-in module, B1-S100-SVE

### General specifications

<b>PRODUCT NAME</b>	Eaton Moeller series NZM - Molded case circuit breaker
<b>CATALOG NUMBER</b>	112728
<b>MODEL CODE</b>	NZMB1-S100-SVE
<b>EAN</b>	4015081122684
<b>PRODUCT LENGTH/DEPTH</b>	90 mm
<b>PRODUCT HEIGHT</b>	201 mm
<b>PRODUCT WIDTH</b>	95 mm
<b>PRODUCT WEIGHT</b>	1.227 kg
<b>COMPLIANCES</b>	RoHS conform
<b>CERTIFICATIONS</b>	IEC IEC/EN 60947
<b>GLOBAL CATALOG</b>	112728

## Product specifications

<b>AMPERAGE RATING</b>	100 A
<b>VOLTAGE RATING</b>	440 V - 440 V
<b>CIRCUIT BREAKER FRAME TYPE</b>	NZM1
<b>ACCESSORIES REQUIRED</b>	NZM1-XSVS
<b>10.10 TEMPERATURE RISE</b>	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
<b>10.11 SHORT-CIRCUIT RATING</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.13 MECHANICAL FUNCTION</b>	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.
<b>10.2.2 CORROSION RESISTANCE</b>	Meets the product standard's requirements.
<b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>	Meets the product standard's requirements.
<b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>	Meets the product standard's requirements.
<b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b>	Meets the product standard's requirements.
<b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>	Meets the product standard's requirements.
<b>10.2.5 LIFTING</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.6 MECHANICAL IMPACT</b>	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](#)

### CATALOGS

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

[eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-032.eps](#)

### CHARACTERISTIC CURVE

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-058.eps](#)

[eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-038.eps](#)

### DECLARATIONS OF CONFORMITY

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

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

### DRAWINGS

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

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

### ECAD MODEL

[ETN.112728.edz](#)

### INSTALLATION INSTRUCTIONS

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

### INSTALLATION VIDEOS

[The new digital NZM Range](#)

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

### MCAD MODEL

[DA-CD-nzm1\\_xsve](#)

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

<b>10.2.7 INSCRIPTIONS</b>	Meets the product standard's requirements.
<b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>	Meets the product standard's requirements.
<b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>	Is the panel builder's responsibility.
<b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>	Is the panel builder's responsibility.
<b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>	Is the panel builder's responsibility.
<b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>	Is the panel builder's responsibility.
<b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b>	Is the panel builder's responsibility.
<b>POLLUTION DEGREE</b>	3
<b>MOUNTING METHOD</b>	Plug-in unit Built-in device plug-in technique
<b>CLIMATIC PROOFING</b>	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
<b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>	21.9 W
<b>UTILIZATION CATEGORY</b>	A (IEC/EN 60947-2)
<b>ISOLATION</b>	500 V AC (between auxiliary contacts and main contacts) 300 V AC (between the auxiliary contacts)
<b>AMBIENT OPERATING TEMPERATURE - MAX</b>	70 °C
<b>AMBIENT OPERATING TEMPERATURE - MIN</b>	-25 °C
<b>AMBIENT STORAGE TEMPERATURE - MAX</b>	70 °C

<b>TECHNICAL DATA SHEETS</b>	<a href="#">eaton-molded-case-switches-mcad-3d-models-nzm1-xsve.stp</a> <a href="#">DA-CS-nzm1_xsve</a> <a href="#">eaton-nzm-technical-information-sheet</a>
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<b>AMBIENT STORAGE TEMPERATURE - MIN</b>	40 °C
<b>PROTECTION AGAINST DIRECT CONTACT</b>	Finger and back-of-hand proof to VDE 0106 part 100
<b>RATED INSULATION VOLTAGE (UI)</b>	690 V
<b>RATED OPERATING POWER AT AC-3, 230 V</b>	30 kW
<b>RATED OPERATING POWER AT AC-3, 400 V</b>	45 kW
<b>SWITCH OFF TECHNIQUE</b>	Magnetic
<b>DEGREE OF PROTECTION</b>	IP20 IP20 (basic degree of protection, in the operating controls area)
<b>DIRECTION OF INCOMING SUPPLY</b>	As required
<b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>	Other
<b>LIFESPAN, MECHANICAL</b>	20000 operations
<b>OVERVOLTAGE CATEGORY</b>	III
<b>RATED OPERATIONAL CURRENT</b>	81 A (400 V AC-3)
<b>DEGREE OF PROTECTION (IP), FRONT SIDE</b>	IP66 (with door coupling rotary handle) IP40 (with insulating surround)
<b>DEGREE OF PROTECTION (TERMINATIONS)</b>	IP00 (terminations, phase isolator and strip terminal) IP10 (tunnel terminal)
<b>NUMBER OF POLES</b>	Three-pole
<b>TERMINAL CAPACITY (COPPER STRIP)</b>	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
<b>LIFESPAN, ELECTRICAL</b>	7500 operations at 400 V AC-1 7500 operations at 415 V AC-1
<b>FUNCTIONS</b>	Short-circuit protection
<b>TYPE</b>	Circuit breaker
<b>SPECIAL FEATURES</b>	<ul style="list-style-type: none"> <li>• Maximum back-up fuse, if the</li> </ul>

expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity  $I_{cn}$ )

- Motor protection in conjunction with overload relay
- With short-circuit release
- Without overload release  $I_r$
- IEC/EN 60947-4-1, IEC/EN 60947-2
- The circuit-breaker fulfills all requirements for AC-3 switching category.
- Rated current = rated uninterrupted current: 100 A
- Terminal capacity hint: Up to 95 mm<sup>2</sup> can be connected depending on the cable manufacturer.

<b>APPLICATION</b>	Use in unearthed supply systems at 440 V
<b>SHOCK RESISTANCE</b>	20 g (half-sinusoidal shock 20 ms)
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	100 A
<b>SHORT-CIRCUIT RELEASE</b>	
<b>NON-DELAYED SETTING - MAX</b>	1250 A
<b>SHORT-CIRCUIT RELEASE</b>	
<b>NON-DELAYED SETTING - MIN</b>	800 A
<b>HANDLE TYPE</b>	Rocker lever
<b>INSTANTANEOUS CURRENT SETTING (II) - MAX</b>	44328 A
<b>INSTANTANEOUS</b>	8 A

<b>CURRENT SETTING (II) - MIN</b>	
<b>NUMBER OF OPERATIONS PER HOUR - MAX</b>	120
<b>OVERLOAD CURRENT SETTING (IR) - MAX</b>	0 A
<b>OVERLOAD CURRENT SETTING (IR) - MIN</b>	0 A
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ</b>	30 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ</b>	18.5 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 HZ</b>	18.5 kA
<b>STANDARD TERMINALS</b>	Box terminal
<b>OPTIONAL TERMINALS</b>	Connection on rear. Screw terminal. Tunnel terminal
<b>RELEASE SYSTEM</b>	Thermomagnetic release
<b>SHORT-CIRCUIT TOTAL BREAKTIME</b>	< 10 ms
<b>TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)</b>	10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) direct at switch rear-side connection 16 mm <sup>2</sup> (1x) at tunnel terminal 10 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) direct at switch rear-side connection
<b>TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)</b>	25 mm <sup>2</sup> - 35 mm <sup>2</sup> (1x) direct at switch rear-side connection 25 mm <sup>2</sup> - 35 mm <sup>2</sup> (2x) direct at switch rear-side connection 25 mm <sup>2</sup> - 95 mm <sup>2</sup> (1x) at tunnel terminal
<b>TERMINAL CAPACITY (CONTROL CABLE)</b>	0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (1x) 0.75 mm <sup>2</sup> - 1.5 mm <sup>2</sup> (2x)
<b>TERMINAL CAPACITY (COPPER BUSBAR)</b>	Max. 16 mm x 5 mm direct at switch rear-side connection M6 at rear-side screw connection Min. 12 mm x 5 mm direct

	at switch rear-side connection
<b>TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)</b>	<p>10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x) at box terminal</p> <p>6 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x) at box terminal</p> <p>16 mm<sup>2</sup> (1x) at tunnel terminal</p> <p>6 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x) direct at switch rear-side connection</p> <p>10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x) direct at switch rear-side connection</p>
<b>TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)</b>	<p>6 mm<sup>2</sup> - 25 mm<sup>2</sup> (2x) at box terminal</p> <p>25 mm<sup>2</sup> (2x) direct at switch rear-side connection</p> <p>10 mm<sup>2</sup> - 70 mm<sup>2</sup> (1x) at box terminal</p> <p>25 mm<sup>2</sup> - 95 mm<sup>2</sup> (1x) at 1-hole tunnel terminal</p> <p>10 mm<sup>2</sup> - 70 mm<sup>2</sup> (1x) direct at switch rear-side connection</p>
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 400/415 V, 50/60 HZ</b>	18.5 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ</b>	53 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ</b>	53 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ</b>	63 kA
<b>RATED IMPULSE WITHSTAND VOLTAGE (UiMP) AT AUXILIARY CONTACTS</b>	6000 V
<b>RATED IMPULSE WITHSTAND VOLTAGE (UiMP) AT MAIN CONTACTS</b>	6000 V
<b>POWER LOSS</b>	16.9 W

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**PROJECT NAME:**

**PROJECT NUMBER:**

**PREPARED BY:**

**DATE:**

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