

# Specifications



Photo is representative

## Eaton 112770

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 63A, plug-in module, N1-S63-SVE

### General specifications

<b>PRODUCT NAME</b>	Eaton Moeller series NZM - Molded case circuit breaker
<b>CATALOG NUMBER</b>	112770
<b>MODEL CODE</b>	NZMN1-S63-SVE
<b>EAN</b>	4015081123100
<b>PRODUCT LENGTH/DEPTH</b>	90 mm
<b>PRODUCT HEIGHT</b>	201 mm
<b>PRODUCT WIDTH</b>	95 mm
<b>PRODUCT WEIGHT</b>	1.197 kg
<b>COMPLIANCES</b>	RoHS conform
<b>CERTIFICATIONS</b>	IEC/EN 60947 IEC
<b>GLOBAL CATALOG</b>	112770

## Product specifications

<b>AMPERAGE RATING</b>	63 A
<b>VOLTAGE RATING</b>	690 V - 690 V
<b>CIRCUIT BREAKER FRAME TYPE</b>	NZM1
<b>ACCESSORIES REQUIRED</b>	NZM1-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.

### 10.2.7 INSCRIPTIONS

Meets the product standard's requirements.

## Resources

### BROCHURES

[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.eps](#)

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

[eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-002.eps](#)

### DECLARATIONS OF CONFORMITY

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

### DRAWINGS

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

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

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

### INSTALLATION INSTRUCTIONS

[eaton-circuit-breaker-switch-disconnector-nzmb-il01203004z.pdf](#)

### INSTALLATION VIDEOS

[The new digital NZM Range](#)

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

### MCAD MODEL

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

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

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

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

### TECHNICAL DATA SHEETS

[eaton-nzm-technical-information-sheet](#)

<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>	Built-in device plug-in technique Plug-in unit
<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>	14.17 W
<b>UTILIZATION CATEGORY</b>	A (IEC/EN 60947-2)
<b>ISOLATION</b>	300 V AC (between the auxiliary contacts) 500 V AC (between auxiliary contacts and main 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>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>	18.5 kW
<b>RATED OPERATING POWER AT AC-3, 400 V</b>	30 kW
<b>SWITCH OFF TECHNIQUE</b>	Magnetic
<b>DEGREE OF PROTECTION</b>	IP20 (basic degree of protection, in the operating controls area) IP20
<b>DIRECTION OF INCOMING SUPPLY</b>	As required
<b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>	Other
<b>LIFESPAN, MECHANICAL</b>	20000 operations
<b>OVERTVOLTAGE CATEGORY</b>	III
<b>RATED OPERATIONAL CURRENT</b>	55 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-3 10000 operations at 400 V AC-1 10000 operations at 415 V AC-1 5000 operations at 690 V AC-3 7500 operations at 690 V AC-1 7500 operations at 415 V AC-3
<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 expected short-</li> </ul>

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: 63 A
- Terminal capacity hint: Up to 95 mm<sup>2</sup> can be connected depending on the cable manufacturer.

<b>APPLICATION</b>	Use in unearthing supply systems at 690 V
<b>SHOCK RESISTANCE</b>	20 g (half-sinusoidal shock 20 ms)
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	63 A
<b>SHORT-CIRCUIT RELEASE</b>	
<b>NON-DELAYED SETTING - MAX</b>	882 A
<b>SHORT-CIRCUIT RELEASE</b>	
<b>NON-DELAYED SETTING - MIN</b>	504 A
<b>HANDLE TYPE</b>	Rocker lever
<b>INSTANTANEOUS CURRENT SETTING (II) - MAX</b>	14 A
<b>INSTANTANEOUS CURRENT SETTING (II) - MIN</b>	8 A
<b>NUMBER OF OPERATIONS PER HOUR -</b>	120

<b>MAX</b>	
<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>	85 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 Hz</b>	35 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 Hz</b>	35 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 Hz</b>	10 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 690 V, 50/60 Hz</b>	7.5 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> (2x) direct at switch rear-side connection 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
<b>TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)</b>	25 mm <sup>2</sup> - 35 mm <sup>2</sup> (2x) direct at switch rear-side connection 25 mm <sup>2</sup> - 35 mm <sup>2</sup> (1x) 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> - 1.5 mm <sup>2</sup> (2x) 0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (1x)
<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) direct at switch rear-side connection</p> <p>6 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x) at box terminal</p> <p>10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x) direct at switch rear-side connection</p> <p>16 mm<sup>2</sup> (1x) at tunnel terminal</p>
<b>TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)</b>	<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) direct at switch rear-side connection</p> <p>6 mm<sup>2</sup> - 25 mm<sup>2</sup> (2x) at box terminal</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>
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 400/415 V, 50/60 Hz</b>	35 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 Hz</b>	105 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 Hz</b>	74 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 525 V, 50/60 Hz</b>	40 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 Hz</b>	17 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 Hz</b>	187 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>	6.7 W

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**PROJECT NAME:**

**PROJECT NUMBER:**

**PREPARED BY:**

**DATE:**

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**Eaton Corporation plc**

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

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