

# Specifications



Photo is representative

## Eaton 113587

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 4p, 630A, 400A in 4th pole, withdrawable unit, H3-4-AE630/400-T-AVE

### General specifications

<b>PRODUCT NAME</b>	Eaton Moeller series NZM molded case circuit breaker electronic
<b>CATALOG NUMBER</b>	113587
<b>MODEL CODE</b>	NZMH3-4-AE630/400-T- AVE
<b>EAN</b>	4015081131129
<b>PRODUCT LENGTH/DEPTH</b>	346 mm
<b>PRODUCT HEIGHT</b>	260 mm
<b>PRODUCT WIDTH</b>	230 mm
<b>PRODUCT WEIGHT</b>	14.025 kg
<b>COMPLIANCES</b>	RoHS conform
<b>CERTIFICATIONS</b>	IEC/EN 60947 IEC

## Product specifications

<b>AMPERAGE RATING</b>	630 A
<b>VOLTAGE RATING</b>	690 V - 690 V
<b>CIRCUIT BREAKER FRAME TYPE</b>	NZM3
<b>FEATURES</b>	Protection unit Motor drive optional
<b>ACCESSORIES REQUIRED</b>	NZM3-4-XAVS
<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</b>	Does not apply, since the

## Resources

<b>BROCHURES</b>	<a href="#">eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf</a> <a href="#">eaton-digital-nzm-brochure-br013003en-en-us.pdf</a>
<b>CATALOGUES</b>	<a href="#">eaton-digital-nzm-catalog-ca013003en-en-us.pdf</a> <a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve-045.eps</a> <a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve-033.eps</a> <a href="#">eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve.eps</a>
<b>DECLARATIONS OF CONFORMITY</b>	<a href="#">eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250293en.pdf</a>
<b>DRAWINGS</b>	<a href="#">eaton-circuit-breaker-withdrawable-unit-nzm-mccb-dimensions-002.eps</a> <a href="#">eaton-circuit-breaker-switch-nzm-mccb-dimensions-016.eps</a> <a href="#">eaton-circuit-breaker-nzm-mccb-dimensions-021.eps</a>
<b>INSTALLATION VIDEOS</b>	<a href="#">Introduction of the new digital circuit breaker NZM</a> <a href="#">The new digital NZM Range</a>
<b>MCAD MODEL</b>	<a href="#">DA-CS-nzm3 4 xave</a> <a href="#">DA-CD-nzm3 4 xave</a>
<b>PEP ECO-PASSPORT</b>	<a href="#">eaton-molded-case-switches-pep-eato-00244-v0101-en.pdf</a>
<b>TECHNICAL DATA SHEETS</b>	<a href="#">eaton-nzm-technical-information-sheet</a>

<b>IMPACT</b>	entire switchgear needs to be evaluated.
<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>	Built-in device slide-in technique (withdrawable) Withdrawable
<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>	178.61 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>NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)</b>	0
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b>	0
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>	0
<b>PROTECTION AGAINST DIRECT CONTACT</b>	Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110
<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>	Screw connection
<b>CURRENT RATING OF NEUTRAL CONDUCTOR</b>	400 A 60% of phase conductor
<b>LIFESPAN, MECHANICAL</b>	15000 operations
<b>OVERVOLTAGE CATEGORY</b>	III
<b>DEGREE OF PROTECTION (IP), FRONT SIDE</b>	IP40 (with insulating surround) IP66 (with door coupling rotary handle)
<b>DEGREE OF PROTECTION (TERMINATIONS)</b>	IP10 (tunnel terminal) IP00 (terminations, phase isolator and strip terminal)
<b>NUMBER OF POLES</b>	Four-pole
<b>TERMINAL CAPACITY (COPPER STRIP)</b>	10 segments of 50 mm x 1 mm (2x) at rear-side width extension Max. 8 segments of 24 mm x 1 mm (2x) at box terminal Min. 6 segments of 16 mm x 0.8 mm at box terminal Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 32

	<p>mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched)</p> <p>Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm</p>
<b>LIFESPAN, ELECTRICAL</b>	<p>2000 operations at 400 V AC-3</p> <p>5000 operations at 400 V AC-1</p> <p>2000 operations at 415 V AC-3</p> <p>2000 operations at 690 V AC-3</p> <p>5000 operations at 415 V AC-1</p> <p>3000 operations at 690 V AC-1</p>
<b>FUNCTIONS</b>	<p>System and cable protection</p> <p>Integrated earth fault protection</p>
<b>TYPE</b>	Circuit breaker
<b>SPECIAL FEATURES</b>	<ul style="list-style-type: none"> <li>• 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 <math>I_{cn}</math>)</li> <li>• Rated current = rated uninterrupted current: 630 A</li> <li>• Reduced neutral conductor protection</li> <li>• Set value in neutral conductor is synchronous with set value <math>I_r</math> of main pole.</li> <li>• R.m.s. value measurement and "thermal memory"</li> <li>• Earth-fault release: Not dependent on mains and control</li> </ul>

	voltages <ul style="list-style-type: none"> <li>• <math>I_g = 0.35 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1.0 \times I_n</math></li> <li>• <math>t_g = 0 - 20 - 60 - 100 - 200 - 300 - 500 - 750 - 1000 \text{ ms}</math></li> <li>• Terminal capacity hint: Up to 240 mm<sup>2</sup> can be connected depending on the cable manufacturer.</li> </ul>
<b>APPLICATION</b>	Use in unearthed supply systems at 690 V
<b>SHOCK RESISTANCE</b>	20 g (half-sinusoidal shock 20 ms)
<b>POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT</b>	Front side
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	630 A
<b>RELEASE SYSTEM</b>	Electronic release
<b>SHORT-CIRCUIT TOTAL BREAKTIME</b>	< 10 ms
<b>RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)</b>	3.3 kA
<b>RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)</b>	3.3 kA
<b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX</b>	5040 A
<b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN</b>	1260 A
<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>	M10 at rear-side screw connection Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection Min. 20 mm x 5 mm direct at switch rear-side connection

	Max. 10 mm x 50 mm (2x) at rear-side width extension
<b>TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)</b>	16 mm <sup>2</sup> (1x) at tunnel terminal 16 mm <sup>2</sup> (1x) direct at switch rear-side connection 16 mm <sup>2</sup> (2x) at box terminal 16 mm <sup>2</sup> (2x) direct at switch rear-side connection 300 mm <sup>2</sup> (2x) at rear-side width extension
<b>TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)</b>	16 mm <sup>2</sup> (1x) at tunnel terminal
<b>TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)</b>	25 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) direct at switch rear-side connection 16 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at 1-hole tunnel terminal 25 mm <sup>2</sup> - 240 mm <sup>2</sup> (2x) direct at switch rear-side connection 35 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) at box terminal 25 mm <sup>2</sup> - 120 mm <sup>2</sup> (2x) at box terminal
<b>TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)</b>	25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at tunnel terminal 50 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) at 2-hole tunnel terminal 50 mm <sup>2</sup> - 240 mm <sup>2</sup> (2x) at 2-hole tunnel terminal
<b>HANDLE TYPE</b>	Rocker lever
<b>SHORT DELAY CURRENT SETTING (ISD) - MAX</b>	0 A
<b>SHORT DELAY CURRENT SETTING (ISD) - MIN</b>	0 A
<b>INSTANTANEOUS CURRENT SETTING (II) - MAX</b>	5040 A
<b>INSTANTANEOUS CURRENT SETTING (II) - MIN</b>	1260 A
<b>NUMBER OF OPERATIONS PER HOUR - MAX</b>	60
<b>OVERLOAD CURRENT SETTING (IR) - MAX</b>	630 A

<b>OVERLOAD CURRENT SETTING (IR) - MIN</b>	315 A
<b>OVERLOAD CURRENT SETTING (IR)</b>	200 A - 400 A
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ</b>	150 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ</b>	150 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 HZ</b>	130 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ</b>	33 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 690 V, 50/60 HZ</b>	9 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ</b>	330 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ</b>	286 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 525 V, 50/60 HZ</b>	143 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ</b>	74 kA
<b>STANDARD TERMINALS</b>	Screw terminal
<b>OPTIONAL TERMINALS</b>	Box terminal. Connection on rear. Tunnel terminal
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ</b>	330 kA
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS</b>	6000 V
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS</b>	8000 V
<b>RATED INSULATION VOLTAGE (UI)</b>	1000 V AC



PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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