

## Eaton 271136

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 600A, busbar terminal for CU N, frame 4, VEF600-NA

<b>PRODUCT NAME</b>	Eaton Moeller series NZM - Molded case circuit breaker
<b>CATALOG NUMBER</b>	271136
<b>PRODUCT LENGTH/DEPTH</b>	401 mm
<b>PRODUCT HEIGHT</b>	207 mm
<b>PRODUCT WIDTH</b>	210 mm
<b>PRODUCT WEIGHT</b>	21 kg
<b>COMPLIANCES</b>	RoHS conform
<b>CERTIFICATIONS</b>	UL (File No. E31593) CSA certified UL listed CSA (Class No. 1432-01) CSA-C22.2 No. 5-09 UL (Category Control Number DIVQ) Specially designed for North America UL 489 CE marking IEC 60947-2 IEC/EN 60947 CSA (File No. 22086) UL/CSA IEC

<b>AMPERAGE RATING</b>	600 A
<b>VOLTAGE RATING</b>	690 V - 690 V
<b>CIRCUIT BREAKER FRAME TYPE</b>	NZM4
<b>FEATURES</b>	Motor drive optional Protection unit
<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

<b>CHARACTERISTIC CURVE</b>	<a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve-049.eps</a> <a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve-048.eps</a>
<b>DECLARATIONS OF CONFORMITY</b>	<a href="#">DA-DC-03_N4</a> <a href="#">eaton-circuit-breaker-basic-unit-nzmn4-il01210010z.pdf</a> <a href="#">eaton-circuit-breaker-nzm-mccb-dimensions-022.eps</a> <a href="#">eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-003.eps</a>

	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>	Fixed Built-in device fixed built-in technique DIN rail (top hat rail) mounting optional
<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>	39.96 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>LOW-VOLTAGE HBC FUSE - MAX</b>	2 x 630 A gG/gL
<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 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>	Screw connection
<b>LIFESPAN, MECHANICAL</b>	10000 operations
<b>OVERVOLTAGE CATEGORY</b>	III
<b>RATED OPERATIONAL CURRENT</b>	2000 A (380/400 V AC-1, making and breaking capacity) 600 A (690 V AC -1, making and breaking capacity) 1600 A (415 V AC-1, making and breaking capacity) 600 A (660-690 V AC-3, making and breaking capacity)
<b>DEGREE OF PROTECTION (IP), FRONT SIDE</b>	IP66 (with door coupling rotary handle) IP40 (with insulating surround)
<b>DEGREE OF PROTECTION (TERMINATIONS)</b>	IP10 (tunnel terminal) IP00 (terminations, phase isolator and strip terminal)
<b>NUMBER OF POLES</b>	Three-pole

<b>TERMINAL CAPACITY (COPPER STRIP)</b>	Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal 10 segments of 50 mm x 1 mm (2x) at 1-hole module plate Min. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched) Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched) 10 segments of 80 mm x 1 mm (2x) at rear-side width extension NA: same as for IEC
<b>LIFESPAN, ELECTRICAL</b>	3000 operations at 400 V AC-1 1000 operations at 690 V AC-3 2000 operations at 690 V AC-1 2000 operations at 415 V AC-3 2000 operations at 400 V AC-3
<b>FUNCTIONS</b>	Systems, cable, selectivity and generator protection
<b>TYPE</b>	Circuit breaker
<b>SPECIAL FEATURES</b>	<ul style="list-style-type: none"> <li>For AC-3 rated operational current with NZM4 the following applies: 400 V: max. 650 kW; 690 V: max. 600 kW (switching capacity, rated making and breaking capacity)</li> <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 =</li> </ul>

	<p>rated uninterrupted current: 600 A</p> <ul style="list-style-type: none"> <li>• Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate.</li> <li>• Fixed overload releases <math>I_r</math></li> <li>• R.m.s. value measurement and "thermal memory"</li> <li>• adjustable time delay setting to overcome current peaks <math>t_r</math>: 2 – 20 s at <math>6 \times I_r</math></li> <li>• Adjustable delay time <math>t_{sd}</math>: Steps: 0, 20, 60, 100, 200, 300, 500, 750, 1000 ms</li> <li>• <math>i^2t</math> constant function: switchable</li> </ul>
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#### APPLICATION

- Branch circuits, feeder circuits
- Use in unearthed supply systems at 525 V

<b>SHOCK RESISTANCE</b>	15 g (half-sinusoidal shock 11 ms)
<b>POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT</b>	Front side
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	600 A
<b>RELEASE SYSTEM</b>	Electronic release
<b>SHORT-CIRCUIT TOTAL BREAKTIME</b>	< 25 ms ( ≤ 415 V); < 35 ms (> 415 V)
<b>RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)</b>	19.2 kA
<b>RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)</b>	19.2 kA
<b>SHORT-CIRCUIT RELEASE DELAYED SETTING - MAX</b>	6000 A

<b>SHORT-CIRCUIT RELEASE DELAYED SETTING - MIN</b>	1200 A
<b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX</b>	7200 A
<b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN</b>	1200 A
<b>TERMINAL CAPACITY (CONTROL CABLE)</b>	14 mm <sup>2</sup> - 18 mm <sup>2</sup> (1x) 16 mm <sup>2</sup> - 18 mm <sup>2</sup> (2x)
<b>TERMINAL CAPACITY (COPPER BUSBAR)</b>	M10 at rear-side screw connection Min. 25 mm x 5 mm direct at switch rear-side connection Max. 50 mm x 10 mm (2x) direct at switch rear-side connection Min. 25 mm x 5 mm at rear-side 1-hole module plate Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate 50 mm x 10 mm (2x) at rear-side 2-hole module plate Min. 60 mm x 10 mm at rear-side width extension Max. 80 mm x 10 mm (2x) at rear-side width extension NA: same as for IEC
<b>TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)</b>	50 mm <sup>2</sup> - 240 mm <sup>2</sup> (4x) at 4- hole tunnel terminal 120 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) direct at switch rear-side connection 50 mm <sup>2</sup> - 185 mm <sup>2</sup> (4x) direct at switch rear-side connection Min. 120 mm <sup>2</sup> - 300 mm <sup>2</sup> (1x) at rear-side 1-hole module plate Max. 95 mm <sup>2</sup> - 300 mm <sup>2</sup> (2x) at rear-side 1-hole module plate Min. 95 mm <sup>2</sup> - 185 mm <sup>2</sup> (2x) at rear-side 2-hole module plate Max. 35 mm <sup>2</sup> - 185 mm <sup>2</sup> (4x) at rear-side 2-hole module plate 300 mm <sup>2</sup> (4x) at rear-side width extension

	<p>95 mm<sup>2</sup> - 240 mm<sup>2</sup> (6x) at rear-side width extension  NA: AWG 0- kcmil 500 (4x) at 4-hole tunnel terminal  NA: kcmil 250 - kcmil 350 (1x) direct at switch rear-side connection  NA: AWG 0 - kcmil 350 (4x) direct at switch rear-side connection  NA: min. kcmil 250 - kcmil 600 (1x) at rear-side 1-hole module plate  NA: max. AWG 3/0 - kcmil 600 (2x) at rear-side 1-hole module plate  NA: min. AWG 3/0 - kcmil 350 (2x) at rear-side 2-hole module plate  NA: max. AWG 2 - kcmil 350 (4x) at rear-side 2-hole module plate  NA: kcmil 600 (4x) at rear-side width extension  NA: AWG 3/0 - kcmil 500 (6x) at rear-side width extension</p>
<b>TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)</b>	<p>Min. 185 mm<sup>2</sup> - 240 mm<sup>2</sup> (1x) at rear-side 1-hole module plate  Max. 70 mm<sup>2</sup> - 185 mm<sup>2</sup> (2x) at rear-side 1-hole module plate  50 mm<sup>2</sup> (4x) at rear-side 2-hole module plate  240 mm<sup>2</sup> (2x) at rear-side width extension  70 mm<sup>2</sup> - 240 mm<sup>2</sup> (6x) at rear-side width extension  NA: aluminum conductor not applicable</p>
<b>HANDLE TYPE</b>	Rocker lever
<b>SHORT DELAY CURRENT SETTING (ISD) - MAX</b>	6000 A
<b>SHORT DELAY CURRENT SETTING (ISD) - MIN</b>	1200 A
<b>INSTANTANEOUS CURRENT SETTING (II) - MAX</b>	6000 A
<b>INSTANTANEOUS CURRENT SETTING (II) - MIN</b>	1200 A
<b>NUMBER OF OPERATIONS PER HOUR</b>	60



<b>- MAX</b>	
<b>OVERLOAD CURRENT SETTING (IR) - MAX</b>	600 A
<b>OVERLOAD CURRENT SETTING (IR) - MIN</b>	600 A
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ</b>	37 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ</b>	37 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 HZ</b>	26 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ</b>	19 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 690 V, 50/60 HZ</b>	15 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>	53 kA
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ</b>	40 kA
<b>STANDARD TERMINALS</b>	Screw connection,Optional:Tunnel terminal,Rear-side connection,Strip connection
<b>RATED OPERATING VOLTAGE UE (UL) - MAX</b>	600 V
<b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ</b>	105 kA
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY</b>	6000 V

<b>CONTACTS</b>	
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS</b>	8000 V
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 525 V, 50/60 HZ</b>	25 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 400/415 V, 50/60 HZ</b>	50 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 230 V, 50/60 HZ</b>	50 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 690 V, 50/60 HZ</b>	20 kA
<b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 440 V, 50/60 HZ</b>	35 kA
<b>RATED INSULATION VOLTAGE (UI)</b>	1000 V AC

<b>PROJECT NAME:</b>
<b>PROJECT NUMBER:</b>
<b>PREPARED BY:</b>
:



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