

# Specifications



Photo is representative

## Eaton 107624

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 110A, box terminals, B2-AF110-BT-NA

### General specifications

|                             |  |
|-----------------------------|--|
| <b>PRODUCT NAME</b>         | Eaton Moeller series NZM molded case circuit breaker thermo-magnetic   |
| <b>CATALOG NUMBER</b>       | 107624   |
| <b>MODEL CODE</b>           | NZMB2-AF110-BT-NA  |
| <b>EAN</b>                  | 4015081072903  |
| <b>PRODUCT LENGTH/DEPTH</b> | 149 mm   |
| <b>PRODUCT HEIGHT</b>       | 195 mm   |
| <b>PRODUCT WIDTH</b>        | 105 mm   |
| <b>PRODUCT WEIGHT</b>       | 2.345 kg   |
| <b>COMPLIANCES</b>          | RoHS conform   |
| <b>CERTIFICATIONS</b>       | IEC<br>IEC 60947-2<br>CE marking<br>CSA (Class No. 1432-01)<br>IEC/EN 60947<br>Specially designed for<br>North America<br>UL/CSA<br>UL listed<br>CSA (File No. 22086)<br>UL (Category Control<br>Number DIVQ)<br>CSA-C22.2 No. 5-09<br>UL (File No. E31593)<br>CSA certified<br>UL 489 |
| <b>GLOBAL CATALOG</b>       | 107624   |

## Product specifications

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|---|--|
| <b>AMPERAGE RATING</b>  | 110 A  |
| <b>VOLTAGE RATING</b>   | 440 V - 440 V  |
| <b>CIRCUIT BREAKER FRAME TYPE</b>   | NZM2   |
| <b>FEATURES</b>   | Motor drive optional<br>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   |

## 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-current-nzm-mccb-characteristic-curve-003.eps](#)

### CHARACTERISTIC CURVE

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

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-050.eps](#)

### DECLARATIONS OF CONFORMITY

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

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

### DRAWINGS

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

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

### ECAD MODEL

[ETN.107624.edz](#)

### INSTALLATION INSTRUCTIONS

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

### INSTALLATION VIDEOS

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

[The new digital NZM Range](#)

### MCAD MODEL

[DA-CS-nzm2\\_3p](#)

[DA-CD-nzm2\\_3p](#)

### TECHNICAL DATA SHEETS

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

|   |  |
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|   | 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<br>Built-in device fixed built-in technique<br>DIN rail (top hat rail)<br>mounting optional    |
| <b>CLIMATIC PROOFING</b>  | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30                       |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>            | 21.38 W  |
| <b>UTILIZATION CATEGORY</b>                                     | A (IEC/EN 60947-2)   |
| <b>ISOLATION</b>  | 300 V AC (between the auxiliary contacts)<br>500 V AC (between auxiliary contacts and main contacts) |
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b>                      | 70 °C  |
| <b>AMBIENT OPERATING</b>  | -25 °C   |

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| <b>TEMPERATURE - MIN</b>                                       |  |
| <b>AMBIENT STORAGE TEMPERATURE - MAX</b>                       | 70 °C  |
| <b>AMBIENT STORAGE TEMPERATURE - MIN</b>                       | -40 °C   |
| <b>LOW-VOLTAGE HBC FUSE - MAX</b>                              | 355 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 (basic degree of protection, in the operating controls area)<br>IP20  |
| <b>DIRECTION OF INCOMING SUPPLY</b>                            | As required  |
| <b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>              | Frame clamp  |
| <b>LIFESPAN, MECHANICAL</b>                                    | 20000 operations   |
| <b>OVERVOLTAGE CATEGORY</b>                                    | III  |
| <b>RATED OPERATIONAL CURRENT</b>                               | 300 A (380/400 V AC-1, making and breaking capacity)<br>110 A (660-690 V AC-3, making and breaking capacity)<br>300 A (415 V AC-1, making and breaking capacity) |
| <b>DEGREE OF PROTECTION (IP), FRONT SIDE</b>                   | IP40 (with insulating surround)<br>IP66 (with door coupling rotary handle)   |
| <b>DEGREE OF PROTECTION (TERMINATIONS)</b>                     | IP00 (terminations, phase isolator and strip terminal)<br>IP10 (tunnel terminal)   |
| <b>NUMBER OF POLES</b>   | Three-pole   |
| <b>TERMINAL CAPACITY (COPPER STRIP)</b>                        | Min. 2 segments of 16 mm x 0.8 mm at rear-side   |

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|-----------------------------|--|
|                             | <p>connection (punched)<br/>Max. 10 segments of 16 mm x 0.8 mm at box terminal</p> <p>Min. 2 segments of 9 mm x 0.8 mm at box terminal</p> <p>Max. 10 segments of 16 mm x 0.8 mm at rear-side connection (punched)</p>   |
| <b>LIFESPAN, ELECTRICAL</b> | <p>6500 operations at 415 V</p> <p>AC-3</p> <p>7500 operations at 400 V</p> <p>AC-1</p>  |
| <b>FUNCTIONS</b>            | <p>System and cable protection</p> <p>Current limiting circuit breaker</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: 110 A</li> <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> </ul> |
| <b>APPLICATION</b>          | <ul style="list-style-type: none"> <li>• Branch circuits, feeder circuits</li> <li>• Use in unearthing supply systems at 440 V</li> </ul>  |
| <b>SHOCK RESISTANCE</b>     | 20 g (half-sinusoidal shock)   |

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|--|---|
| 20 ms)   |   |
| <b>POSITION OF<br/>CONNECTION FOR MAIN<br/>CURRENT CIRCUIT</b>               | Front side  |
| <b>RATED OPERATIONAL<br/>CURRENT FOR SPECIFIED<br/>HEAT DISSIPATION (IN)</b> | 110 A   |
| <b>RELEASE SYSTEM</b>  | Thermomagnetic release  |
| <b>SHORT-CIRCUIT TOTAL<br/>BREAKTIME</b>                                     | < 10 ms   |
| <b>SHORT-CIRCUIT RELEASE<br/>NON-DELAYED SETTING -<br/>MAX</b>               | 1100 A  |
| <b>SHORT-CIRCUIT RELEASE<br/>NON-DELAYED SETTING -<br/>MIN</b>               | 660 A   |
| <b>TERMINAL CAPACITY<br/>(CONTROL CABLE)</b>                                 | 14 mm <sup>2</sup> - 18 mm <sup>2</sup> (1x)<br>16 mm <sup>2</sup> - 18 mm <sup>2</sup> (2x)  |
| <b>TERMINAL CAPACITY<br/>(COPPER BUSBAR)</b>                                 | M8 at rear-side screw<br>connection<br>Max. 20 mm x 5 mm direct<br>at switch rear-side<br>connection<br>Min. 16 mm x 5 mm direct<br>at switch rear-side<br>connection   |
| <b>TERMINAL CAPACITY<br/>(COPPER SOLID<br/>CONDUCTOR/CABLE)</b>              | 6 mm <sup>2</sup> - 12 mm <sup>2</sup> (1x) at<br>box terminal<br>6 mm <sup>2</sup> - 11 mm <sup>2</sup> (1x) direct<br>at switch rear-side<br>connection<br>16 mm <sup>2</sup> (1x) at tunnel<br>terminal                        |
| <b>TERMINAL CAPACITY<br/>(ALUMINUM SOLID<br/>CONDUCTOR/CABLE)</b>            | 16 mm <sup>2</sup> (1x) at tunnel<br>terminal   |
| <b>TERMINAL CAPACITY<br/>(COPPER STRANDED<br/>CONDUCTOR/CABLE)</b>           | 4 mm <sup>2</sup> - 3/0 mm <sup>2</sup> (1x)<br>direct at switch rear-side<br>connection<br>4 mm <sup>2</sup> - 350 mm <sup>2</sup> (1x) at<br>tunnel terminal<br>4 mm <sup>2</sup> - 350 mm <sup>2</sup> (1x) at<br>box terminal |
| <b>HANDLE TYPE</b>   | Rocker lever  |
| <b>SHORT DELAY CURRENT<br/>SETTING (ISD) - MAX</b>                           | 0 A   |
| <b>SHORT DELAY CURRENT<br/>SETTING (ISD) - MIN</b>                           | 0 A   |
| <b>INSTANTANEOUS<br/>CURRENT SETTING (II) -</b>                              | 1250 A  |

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**MAX**

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| <b>INSTANTANEOUS</b>          |       |
| <b>CURRENT SETTING (II) -</b> | 750 A |
| <b>MIN</b>                    |       |

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|------------------------------|-----|
| <b>NUMBER OF</b>             |     |
| <b>OPERATIONS PER HOUR -</b> | 120 |
| <b>MAX</b>                   |     |

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|---------------------------|-------|
| <b>OVERLOAD CURRENT</b>   | 110 A |
| <b>SETTING (IR) - MAX</b> |       |

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|---------------------------|-------|
| <b>OVERLOAD CURRENT</b>   | 110 A |
| <b>SETTING (IR) - MIN</b> |       |

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| <b>RATED SHORT-CIRCUIT</b>      |       |
| <b>BREAKING CAPACITY ICS</b>    |       |
| <b>(IEC/EN 60947) AT 230 V,</b> | 30 kA |
| <b>50/60 HZ</b>                 |       |

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|------------------------------|-------|
| <b>RATED SHORT-CIRCUIT</b>   |       |
| <b>BREAKING CAPACITY ICS</b> |       |
| <b>(IEC/EN 60947) AT</b>     | 25 kA |
| <b>400/415 V, 50/60 HZ</b>   |       |

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|---------------------------------|---------|
| <b>RATED SHORT-CIRCUIT</b>      |         |
| <b>BREAKING CAPACITY ICS</b>    |         |
| <b>(IEC/EN 60947) AT 440 V,</b> | 18.5 kA |
| <b>50/60 HZ</b>                 |         |

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| <b>RATED SHORT-CIRCUIT</b>    |       |
| <b>MAKING CAPACITY ICM</b>    | 53 kA |
| <b>AT 400/415 V, 50/60 HZ</b> |       |

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|----------------------------|-------|
| <b>RATED SHORT-CIRCUIT</b> |       |
| <b>MAKING CAPACITY ICM</b> | 53 kA |
| <b>AT 440 V, 50/60 HZ</b>  |       |

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|---------------------------|--------------|
| <b>STANDARD TERMINALS</b> | Box terminal |
|---------------------------|--------------|

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|------------------------------|-------------------|
| <b>RATED OPERATING</b>       |                   |
| <b>VOLTAGE UE (UL) - MAX</b> | 600Y/347 V, 480 V |

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|----------------------------|-------|
| <b>RATED SHORT-CIRCUIT</b> |       |
| <b>MAKING CAPACITY ICM</b> | 63 kA |
| <b>AT 240 V, 50/60 HZ</b>  |       |

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| <b>RATED IMPULSE</b>       |        |
| <b>WITHSTAND VOLTAGE</b>   |        |
| <b>(UIMP) AT AUXILIARY</b> | 6000 V |
| <b>CONTACTS</b>            |        |

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|                          |        |
|--------------------------|--------|
| <b>RATED IMPULSE</b>     |        |
| <b>WITHSTAND VOLTAGE</b> |        |
| <b>(UIMP) AT MAIN</b>    | 8000 V |
| <b>CONTACTS</b>          |        |

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|-------------------------|----------|
| <b>RATED INSULATION</b> |          |
| <b>VOLTAGE (UI)</b>     | 690 V AC |

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**PROJECT NAME:**

**PROJECT NUMBER:**

**PREPARED BY:**

**DATE:**

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