

# Specifications



Photo is representative



## Eaton 290379

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 1600A 1000V, VE1600-S1

### General specifications

|                             |                                                                 |
|-----------------------------|-----------------------------------------------------------------|
| <b>PRODUCT NAME</b>         | Eaton Moeller series NZM molded case circuit breaker electronic |
| <b>CATALOG NUMBER</b>       | 290379                                                          |
| <b>MODEL CODE</b>           | NZMH4-VE1600-S1                                                 |
| <b>EAN</b>                  | 4015082903794                                                   |
| <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>       | IEC                                                             |
| <b>GLOBAL CATALOG</b>       | 290379                                                          |

## Product specifications

|                                                                                         |                                                                                                                                  |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>AMPERAGE RATING</b>                                                                  | 1600 A                                                                                                                           |
| <b>VOLTAGE RATING</b>                                                                   | 1000 V - 1000 V                                                                                                                  |
| <b>CIRCUIT BREAKER FRAME TYPE</b>                                                       | NZM4                                                                                                                             |
| <b>FEATURES</b>                                                                         | Protection unit<br>Motor drive optional                                                                                          |
| <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.                                                               |
| <b>10.2.7 INSCRIPTIONS</b>                                                              | Meets the product standard's requirements.                                                                                       |

## Resources

|                                   |                                                                                                                                                            |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BROCHURES</b>                  | <a href="#">eaton-digital-nzm-brochure-br013003en-en-us.pdf</a><br><a href="#">eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf</a>           |
| <b>CATALOGS</b>                   | <a href="#">eaton-digital-nzm-catalog-ca013003en-en-us.pdf</a>                                                                                             |
| <b>CHARACTERISTIC CURVE</b>       | <a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve-048.eps</a><br><a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve-049.eps</a> |
| <b>DECLARATIONS OF CONFORMITY</b> | <a href="#">eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250294en.pdf</a>                                                                 |
| <b>DRAWINGS</b>                   | <a href="#">eaton-circuit-breaker-nzm-mccb-dimensions-022.eps</a><br><a href="#">eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-003.eps</a>              |
| <b>INSTALLATION INSTRUCTIONS</b>  | <a href="#">eaton-circuit-breaker-basic-unit-nzmn4-il01210010z.pdf</a>                                                                                     |
| <b>INSTALLATION VIDEOS</b>        | <a href="#">Introduction of the new digital circuit breaker NZM</a><br><a href="#">The new digital NZM Range</a>                                           |
| <b>MCAD MODEL</b>                 | <a href="#">DA-CD-nzm4_3p</a><br><a href="#">DA-CS-nzm4_3p</a>                                                                                             |
| <b>PEP ECO-PASSPORT</b>           | <a href="#">eaton-molded-case-switches-pep-eato-00221-v0101-en.pdf</a>                                                                                     |
| <b>TECHNICAL DATA SHEETS</b>      | <a href="#">eaton-nzm-technical-information-sheet</a>                                                                                                      |

|                                                                 |                                                                    |
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| <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                  |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>            | 284 W                                                              |
| <b>UTILIZATION CATEGORY</b>                                     | B                                                                  |
| <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>DEGREE OF PROTECTION</b>                                     | IP20                                                               |
| <b>ELECTRICAL</b>                                               | Screw connection                                                   |

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CONNECTION TYPE OF MAIN CIRCUIT</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>LIFESPAN, MECHANICAL</b>             | 10000 operations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>OVERVOLTAGE CATEGORY</b>             | III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>NUMBER OF POLES</b>                  | Three-pole                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>TERMINAL CAPACITY (COPPER STRIP)</b> | <p>Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched)</p> <p>Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal</p> <p>10 segments of 80 mm x 1 mm (2x) at rear-side width extension</p> <p>Min. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched)</p> <p>10 segments of 50 mm x 1 mm (2x) at 1-hole module plate</p> <p>Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal</p>                                                                                          |
| <b>LIFESPAN, ELECTRICAL</b>             | 500 operations at 1000 V AC-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <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>• Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release</li> <li>• R.m.s. value measurement and "thermal memory"</li> <li>• adjustable time delay setting to overcome current peaks tr: 2 – 20 s at 6 x I<sub>r</sub> also infinity (without overload releases)</li> <li>• Adjustable delay time tsd: Steps: 0, 20, 60, 100, 200, 300, 500, 750, 1000 ms</li> <li>• i<sup>2</sup>t constant function: switchable</li> <li>• NZM...S1 terminal type: NZM...XKSA</li> </ul> |

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|                                                                      | <div>cover required</div> <ul style="list-style-type: none"> <li>Rated current = rated uninterrupted current: 1600 A</li> </ul>                                                                                                                                                                                                                                                                                                                                                                              |
| <b>POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT</b>               | Front side                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 1600 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>RELEASE SYSTEM</b>                                                | Electronic release                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <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>                   | 16000 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>SHORT-CIRCUIT RELEASE DELAYED SETTING - MIN</b>                   | 1600 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX</b>               | 19200 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN</b>               | 3200 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>TERMINAL CAPACITY (CONTROL CABLE)</b>                             | 0.75 mm <sup>2</sup> - 1.5 mm <sup>2</sup> (2x)<br>0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (1x)                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>TERMINAL CAPACITY (COPPER BUSBAR)</b>                             | Max. 80 mm x 10 mm (2x) at rear-side width extension<br>Max. 80 mm x 10 mm (2x) direct at switch rear-side connection<br>Min. 25 mm x 5 mm direct at switch rear-side connection<br>Max. 50 mm x 10 mm (2x) direct at switch rear-side connection<br>M10 at rear-side screw connection<br>Min. 25 mm x 5 mm at rear-side 1-hole module plate<br>Min. 60 mm x 10 mm at rear-side width extension<br>Max. 50 mm x 10 mm (2x) at rear-side 1-hole module plate<br>50 mm x 10 mm (2x) at rear-side 2-hole module |

|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                    | plate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>TERMINAL CAPACITY<br/>(COPPER SOLID<br/>CONDUCTOR/CABLE)</b>                                    | 70 mm <sup>2</sup> - 240 mm <sup>2</sup> (6x) at rear-side width extension<br>35 mm <sup>2</sup> - 185 mm <sup>2</sup> (4x) at rear-side 2-hole module plate<br>70 mm <sup>2</sup> - 185 mm <sup>2</sup> (2x) at rear-side 1-hole module plate<br>240 mm <sup>2</sup> (2x) at rear-side width extension<br>185 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) at rear-side 1-hole module plate<br>50 mm <sup>2</sup> - 240 mm <sup>2</sup> (4x) at 4-hole tunnel terminal<br>50 mm <sup>2</sup> (4x) at rear-side 2-hole module plate |
| <b>TERMINAL CAPACITY<br/>(ALUMINUM STRANDED<br/>CONDUCTOR/CABLE)</b>                               | 50 mm <sup>2</sup> - 240 mm <sup>2</sup> (4x) at 4-hole tunnel terminal                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>HANDLE TYPE</b>                                                                                 | Rocker lever                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>SHORT DELAY CURRENT<br/>SETTING (ISD) - MAX</b>                                                 | 16000 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>SHORT DELAY CURRENT<br/>SETTING (ISD) - MIN</b>                                                 | 1600 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>INSTANTANEOUS<br/>CURRENT SETTING (II) -<br/>MAX</b>                                            | 19200 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>INSTANTANEOUS<br/>CURRENT SETTING (II) -<br/>MIN</b>                                            | 3200 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>NUMBER OF<br/>OPERATIONS PER HOUR -<br/>MAX</b>                                                 | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>OVERLOAD CURRENT<br/>SETTING (IR) - MAX</b>                                                     | 1600 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>OVERLOAD CURRENT<br/>SETTING (IR) - MIN</b>                                                     | 800 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT 1000 V,<br/>50/60 HZ</b>    | 15 kA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT 230 V,<br/>50/60 HZ</b>     | 63 kA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT<br/>400/415 V, 50/60 HZ</b> | 50 kA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT 440 V,</b>                  | 50 kA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                                                                                    |                |
|------------------------------------------------------------------------------------|----------------|
| <b>50/60 HZ</b>                                                                    |                |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ</b> | 50 kA          |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 690 V, 50/60 HZ</b> | 37 kA          |
| <b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 1000 V, 50/60 HZ</b>                 | 40 kA          |
| <b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ</b>              | 187 kA         |
| <b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ</b>                  | 187 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>                  | 100 kA         |
| <b>STANDARD TERMINALS</b>                                                          | Screw terminal |
| <b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ</b>                  | 275 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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