

# Specifications



Photo is representative



## Eaton 102683

Eaton Moeller series NZM - Molded Case Circuit Breaker. Molded Case Switch, 3p, 125A

### General specifications

|                     |                                             |
|---------------------|---------------------------------------------|
| <b>PRODUCT NAME</b> | Eaton Moeller series NZM molded case switch |
|---------------------|---------------------------------------------|

|                       |        |
|-----------------------|--------|
| <b>CATALOG NUMBER</b> | 102683 |
|-----------------------|--------|

|                   |            |
|-------------------|------------|
| <b>MODEL CODE</b> | NS1-125-NA |
|-------------------|------------|

|            |               |
|------------|---------------|
| <b>EAN</b> | 4015081025435 |
|------------|---------------|

|                             |       |
|-----------------------------|-------|
| <b>PRODUCT LENGTH/DEPTH</b> | 88 mm |
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| <b>PRODUCT HEIGHT</b> | 145 mm |
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|                      |       |
|----------------------|-------|
| <b>PRODUCT WIDTH</b> | 90 mm |
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|                       |          |
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| <b>PRODUCT WEIGHT</b> | 1.046 kg |
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|                    |              |
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| <b>COMPLIANCES</b> | RoHS conform |
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|                       |                                                                                                                                                                                                                                                                   |
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| <b>CERTIFICATIONS</b> | IEC 60947-2<br>UL/CSA<br>CE marking<br>CSA (Class No. 4652-06)<br>UL 489<br>UL listed<br>CSA-C22.2 No. 5-09<br>Specially designed for North America<br>IEC<br>UL (Category Control Number WJAZ)<br>CSA (File No. 22086)<br>UL (File No. E148671)<br>CSA certified |
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## Product specifications

|                                                                                         |                                                                                                                                  |
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| <b>AMPERAGE RATING</b>                                                                  | 125 A                                                                                                                            |
| <b>VOLTAGE RATING</b>                                                                   | 690 V - 690 V                                                                                                                    |
| <b>CIRCUIT BREAKER FRAME TYPE</b>                                                       | N1                                                                                                                               |
| <b>FEATURES</b>                                                                         | 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 be evaluated.                                                               |

## Resources

|                                   |                                                                                                                                                        |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BROCHURES</b>                  | <a href="#">eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf</a><br><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><br><a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve.eps</a>              |
| <b>CHARACTERISTIC CURVE</b>       | <a href="#">eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-002.eps</a>                                                        |
| <b>DECLARATIONS OF CONFORMITY</b> | <a href="#">eaton-molded-case-switch-declaration-of-conformity-eu250132en.pdf</a><br><a href="#">eaton-circuit-breaker-nzm-mccb-dimensions-017.eps</a> |
| <b>DRAWINGS</b>                   | <a href="#">eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps</a><br><a href="#">eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-006.eps</a>   |
| <b>ECAD MODEL</b>                 | <a href="#">ETN.NS1-125-NA</a>                                                                                                                         |
| <b>INSTALLATION INSTRUCTIONS</b>  | <a href="#">eaton-circuit-breaker-switch-disconnector-nzmb-il01203004z.pdf</a>                                                                         |
| <b>INSTALLATION VIDEOS</b>        | <a href="#">The new digital NZM Range</a><br><a href="#">Introduction of the new digital circuit breaker NZM</a>                                       |
| <b>MCAD MODEL</b>                 | <a href="#">DA-CD-nzm1_xsve</a><br><a href="#">DA-CS-nzm1_xsve</a>                                                                                     |
| <b>TECHNICAL DATA SHEETS</b>      | <a href="#">eaton-nzm-technical-information-sheet</a>                                                                                                  |

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| <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>                                          | DIN rail (top hat rail)<br>mounting optional<br>Built-in device fixed built-in technique<br>Fixed |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>            | 26.34 W                                                                                           |
| <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>RATED CURRENT (IU)</b>                                       | 125 A                                                                                             |
| <b>CURRENT RATING (IU) (UL 489 CSA 22.2 NO. 5.1)</b>            | 125 A                                                                                             |
| <b>NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)</b>      | 0                                                                                                 |

|                                                                |                                                                                                                                                                                  |
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| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b> | 0                                                                                                                                                                                |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>   | 0                                                                                                                                                                                |
| <b>SWITCH POSITIONS</b>                                        | I, +, 0                                                                                                                                                                          |
| <b>DEGREE OF PROTECTION</b>                                    | IP20<br>In the area of the HMI devices: IP20 (basic protection type)                                                                                                             |
| <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>DEGREE OF PROTECTION (IP), FRONT SIDE</b>                   | IP66 (with door coupling rotary handle)<br>IP40 (with insulating surround)                                                                                                       |
| <b>DEGREE OF PROTECTION (TERMINATIONS)</b>                     | IP10 (tunnel terminal)<br>IP00 (terminations, phase isolator and band terminal)                                                                                                  |
| <b>NUMBER OF POLES</b>                                         | Three-pole                                                                                                                                                                       |
| <b>TERMINAL CAPACITY (COPPER STRIP)</b>                        | Min. 2 segments of 9 mm x 0.8 mm at box terminal<br>Max. 9 segments of 9 mm x 0.8 mm at box terminal                                                                             |
| <b>LIFESPAN, ELECTRICAL</b>                                    | 10000 operations at 400 V AC-1<br>10000 operations at 415 V AC-1<br>7500 operations at 690 V AC-1                                                                                |
| <b>FUNCTIONS</b>                                               | Disconnectors/main switches                                                                                                                                                      |
| <b>TYPE</b>                                                    | Switch-disconnector                                                                                                                                                              |
| <b>SPECIAL FEATURES</b>                                        | <ul style="list-style-type: none"> <li>IEC/EN 60947-2: circuit breakers without overcurrent (CBI-X) with main switch characteristics and isolating characteristics to</li> </ul> |

IEC/EN 60204.

- Rated current = rated uninterrupted current: 125 A
- Terminal capacity hint: Up to 95 mm<sup>2</sup> can be connected depending on the cable manufacturer.

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|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>APPLICATION</b>                                                   | Branch circuits, feeder circuits                                                                                                                                                                                                                                                                                             |
| <b>POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT</b>               | Front side                                                                                                                                                                                                                                                                                                                   |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 125 A                                                                                                                                                                                                                                                                                                                        |
| <b>POWER LOSS</b>                                                    | 26.3 W                                                                                                                                                                                                                                                                                                                       |
| <b>SHORT-CIRCUIT TOTAL BREAKTIME</b>                                 | < 10 ms                                                                                                                                                                                                                                                                                                                      |
| <b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX</b>               | 1250 A                                                                                                                                                                                                                                                                                                                       |
| <b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN</b>               | 1250 A                                                                                                                                                                                                                                                                                                                       |
| <b>TERMINAL CAPACITY (COPPER BUSBAR)</b>                             | Min. 12 mm x 5 mm direct at switch rear-side connection<br>M6 at rear-side screw connection<br>NA: M6 at rear-side screw connection<br>NA: max. 16 mm x 5 mm direct at switch rear-side connection<br>NA: min. 12 mm x 5 mm direct at switch rear-side connection<br>Max. 16 mm x 5 mm direct at switch rear-side connection |
| <b>TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)</b>              | 10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) direct at switch rear-side connection<br>6 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) at box terminal<br>6 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) direct at switch rear-side connection                                                                                       |

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|                                                                  | 10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) at box terminal<br>NA: 12 - 6 AWG (1x) direct at switch rear-side connection<br>NA: 12 - 6 AWG (1x) at box terminal<br>NA: 9 - 6 AWG (2x) direct at switch rear-side connection<br>16 mm <sup>2</sup> (1x) at tunnel terminal<br>NA: 6 AWG (1x) at tunnel terminal                                                                                                                                                    |
| <b>TERMINAL CAPACITY<br/>(ALUMINUM SOLID CONDUCTOR/CABLE)</b>    | 10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) direct at switch rear-side connection<br>10 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) direct at switch rear-side connection<br>16 mm <sup>2</sup> (1x) at tunnel terminal                                                                                                                                                                                                                                             |
| <b>TERMINAL CAPACITY<br/>(COPPER STRANDED CONDUCTOR/CABLE)</b>   | 25 mm <sup>2</sup> (2x) direct at switch rear-side connection<br>NA: 4 - 2/0 AWG/kcmil (1x) at box terminal<br>25 mm <sup>2</sup> - 70 mm <sup>2</sup> (1x) direct at switch rear-side connection<br>6 mm <sup>2</sup> - 25 mm <sup>2</sup> (2x) at box terminal<br>25 mm <sup>2</sup> - 95 mm <sup>2</sup> (1x) at 1-hole tunnel terminal<br>10 mm <sup>2</sup> - 70 mm <sup>2</sup> (1x) at box terminal<br>NA: 4 - 3/0 AWG/kcmil (1x) at 1-hole tunnel terminal |
| <b>TERMINAL CAPACITY<br/>(ALUMINUM STRANDED CONDUCTOR/CABLE)</b> | 25 mm <sup>2</sup> - 35 mm <sup>2</sup> (2x) direct at switch rear-side connection<br>25 mm <sup>2</sup> - 95 mm <sup>2</sup> (1x) at 1-hole tunnel terminal<br>25 mm <sup>2</sup> - 35 mm <sup>2</sup> (1x) direct at switch rear-side connection                                                                                                                                                                                                                 |
| <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>                  | 1250 A                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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| <b>INSTANTANEOUS<br/>CURRENT SETTING (II) -<br/>MIN</b>                                            | 1250 A                                                 |
| <b>NUMBER OF<br/>OPERATIONS PER HOUR -<br/>MAX</b>                                                 | 120                                                    |
| <b>OVERLOAD CURRENT<br/>SETTING (IR) - MAX</b>                                                     | 0 A                                                    |
| <b>OVERLOAD CURRENT<br/>SETTING (IR) - MIN</b>                                                     | 0 A                                                    |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT 230 V,<br/>50/60 HZ</b>     | 85 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,<br/>50/60 HZ</b>     | 35 kA                                                  |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT 525 V,<br/>50/60 HZ</b>     | 10 kA                                                  |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT 690 V,<br/>50/60 HZ</b>     | 7.5 kA                                                 |
| <b>RATED SHORT-CIRCUIT<br/>MAKING CAPACITY ICM<br/>AT 400/415 V, 50/60 HZ</b>                      | 105 kA                                                 |
| <b>RATED SHORT-CIRCUIT<br/>MAKING CAPACITY ICM<br/>AT 440 V, 50/60 HZ</b>                          | 74 kA                                                  |
| <b>RATED SHORT-CIRCUIT<br/>MAKING CAPACITY ICM<br/>AT 525 V, 50/60 HZ</b>                          | 53 kA                                                  |
| <b>RATED SHORT-CIRCUIT<br/>MAKING CAPACITY ICM<br/>AT 690 V, 50/60 HZ</b>                          | 17 kA                                                  |
| <b>STANDARD TERMINALS</b>                                                                          | Box terminal                                           |
| <b>OPTIONAL TERMINALS</b>                                                                          | Connection on rear. Screw<br>terminal. Tunnel terminal |
| <b>RATED OPERATING<br/>VOLTAGE UE (UL) - MAX</b>                                                   | 480 Y / 277 V                                          |
| <b>RATED SHORT-CIRCUIT<br/>MAKING CAPACITY ICM<br/>AT 240 V, 50/60 HZ</b>                          | 187 kA                                                 |

|                                                                                 |          |
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| <b>RATED IMPULSE<br/>WITHSTAND VOLTAGE<br/>(UIMP) AT AUXILIARY<br/>CONTACTS</b> | 6000 V   |
| <b>RATED IMPULSE<br/>WITHSTAND VOLTAGE<br/>(UIMP) AT MAIN<br/>CONTACTS</b>      | 6000 V   |
| <b>RATED INSULATION<br/>VOLTAGE (UI)</b>                                        | 690 V AC |

|                        |
|------------------------|
| <b>PROJECT NAME:</b>   |
| <b>PROJECT NUMBER:</b> |
| <b>PREPARED BY:</b>    |
| <b>DATE:</b>           |



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