

# Specifications



Photo is representative

## Eaton 113349

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 140A, plug-in module, H, 2

### General specifications

|                                 |                                                                       |
|---------------------------------|-----------------------------------------------------------------------|
| <b>PRODUCT NAME</b>             | Eaton Moeller series NZM<br>molded case circuit<br>breaker electronic |
| <b>CATALOG NUMBER</b>           | 113349                                                                |
| <b>MODEL CODE</b>               | NZMH2-ME140-SVE                                                       |
| <b>EAN</b>                      | 4015081128846                                                         |
| <b>PRODUCT<br/>LENGTH/DEPTH</b> | 180 mm                                                                |
| <b>PRODUCT HEIGHT</b>           | 245 mm                                                                |
| <b>PRODUCT WIDTH</b>            | 105 mm                                                                |
| <b>PRODUCT WEIGHT</b>           | 2.895 kg                                                              |
| <b>COMPLIANCES</b>              | RoHS conform                                                          |
| <b>CERTIFICATIONS</b>           | IEC/EN 60947<br>IEC                                                   |
| <b>GLOBAL CATALOG</b>           | 113349                                                                |



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## Product specifications

|                                                                                         |                                                                                                                                  |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>AMPERAGE RATING</b>                                                                  | 140 A                                                                                                                            |
| <b>VOLTAGE RATING</b>                                                                   | 690 V - 690 V                                                                                                                    |
| <b>CIRCUIT BREAKER FRAME TYPE</b>                                                       | NZM2                                                                                                                             |
| <b>ACCESSORIES REQUIRED</b>                                                             | NZM2-XSVS                                                                                                                        |
| <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

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|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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>CATALOGS</b>                   | <a href="#">eaton-digital-nzm-catalog-ca013003en-en-us.pdf</a><br><a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve-053.eps</a><br><a href="#">eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-005.eps</a><br><a href="#">eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-037.eps</a> |
| <b>CHARACTERISTIC CURVE</b>       | <a href="#">eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250291en.pdf</a><br><a href="#">eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps</a><br><a href="#">eaton-circuit-breaker-adapter-nzm-mccb-dimensions-002.eps</a>                                                                                                      |
| <b>DECLARATIONS OF CONFORMITY</b> | <a href="#">eaton-circuit-breaker-nzm-mccb-dimensions-019.eps</a><br><a href="#">eaton-general-ie-ready-dilm-contactor-standards.eps</a><br><a href="#">eaton-circuit-breaker-switch-nzm-mccb-3d-drawing.eps</a>                                                                                                                                         |
| <b>DRAWINGS</b>                   | <a href="#">eaton-circuit-breaker-plug-in-adapter-nzm2-il01219023z.pdf</a><br><a href="#">eaton-circuit-breakers-basic-device-nzm2-il01206006z.pdf</a>                                                                                                                                                                                                   |
| <b>INSTALLATION INSTRUCTIONS</b>  | <a href="#">Introduction of the new digital circuit breaker NZM</a><br><a href="#">The new digital NZM Range</a>                                                                                                                                                                                                                                         |
| <b>INSTALLATION VIDEOS</b>        |                                                                                                                                                                                                                                                                                                                                                          |

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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>FITTED WITH:</b>                                             | Thermal protection                                                                                   |
| <b>POLLUTION DEGREE</b>                                         | 3                                                                                                    |
| <b>MOUNTING METHOD</b>                                          | Built-in device plug-in technique<br>Plug-in unit                                                    |
| <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>            | 16.17 W                                                                                              |
| <b>UTILIZATION CATEGORY</b>                                     | A (IEC/EN 60947-2)                                                                                   |
| <b>ISOLATION</b>                                                | 500 V AC (between auxiliary contacts and main contacts)<br>300 V AC (between the auxiliary 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>PROTECTION AGAINST</b>                                       | Finger and back-of-hand                                                                              |

|                       |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| MCAD MODEL            | <a href="#">DA-CS-nzm2_xsve</a><br><a href="#">DA-CD-nzm2_xsve</a>     |
| PEP ECO-PASSPORT      | <a href="#">eaton-molded-case-switches-pep-eato-00208-v0101-en.pdf</a> |
| TECHNICAL DATA SHEETS | <a href="#">eaton-nzm-technical-information-sheet</a>                  |

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|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DIRECT CONTACT</b>                             | proof to VDE 0106 part 100                                                                                                                                                                                                                                                                                    |
| <b>RATED INSULATION VOLTAGE (UI)</b>              | 1000 V                                                                                                                                                                                                                                                                                                        |
| <b>RATED OPERATING POWER AT AC-3, 230 V</b>       | 45 kW                                                                                                                                                                                                                                                                                                         |
| <b>RATED OPERATING POWER AT AC-3, 400 V</b>       | 75 kW                                                                                                                                                                                                                                                                                                         |
| <b>SWITCH OFF TECHNIQUE</b>                       | Electronic                                                                                                                                                                                                                                                                                                    |
| <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> | Screw connection                                                                                                                                                                                                                                                                                              |
| <b>LIFESPAN, MECHANICAL</b>                       | 20000 operations                                                                                                                                                                                                                                                                                              |
| <b>OVERVOLTAGE CATEGORY</b>                       | III                                                                                                                                                                                                                                                                                                           |
| <b>RATED OPERATIONAL CURRENT</b>                  | 134 A (400 V AC-3)<br>134 A (690 V AC-3)                                                                                                                                                                                                                                                                      |
| <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>        | IP00 (terminations, phase isolator and strip terminal)<br><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 connection (punched)<br>Max. 10 segments of 16 mm x 0.8 mm at box terminal<br>Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched)<br>Min. 2 segments of 9 mm x 0.8 mm at box terminal<br>Max. 8 segments of 24 mm x 1 mm (2x) at box terminal |
| <b>LIFESPAN, ELECTRICAL</b>                       | 10000 operations at 415 V AC-1<br>5000 operations at 690 V AC-3<br>10000 operations at 400 V AC-1<br>6500 operations at 415 V AC-3                                                                                                                                                                            |

|                  |                                                                      |
|------------------|----------------------------------------------------------------------|
|                  | 6500 operations at 400 V<br>AC-3<br>7500 operations at 690 V<br>AC-1 |
| <b>FUNCTIONS</b> | Motor protection<br>Phase failure sensitive                          |
| <b>TYPE</b>      | Circuit breaker                                                      |

## SPECIAL FEATURES

- IEC/EN 60947-4-1,  
IEC/EN 60947-2
- The circuit-breaker fulfills all requirements for AC-3 switching category.
- R.m.s. value measurement and “thermal memory”
- Adjustable time delay setting to overcome current peaks  $I_r$  at  $6 \times I_r$  also infinity (without overload releases)
- All AC-3 rating data applies to direct switching by the circuit-breaker under normal operating conditions. If, for example, a contactor takes over AC-3 switching under normal operating conditions, the full rated uninterrupted current applies to the circuit-breaker,  $I_n = I_u$ .
- 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  $I_{cn}$ )
- Rated current = rated uninterrupted

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current: 140 A

|                                                                                        |                                          |
|----------------------------------------------------------------------------------------|------------------------------------------|
| <b>APPLICATION</b>                                                                     | Use in unearthed supply systems at 690 V |
| <b>SHOCK RESISTANCE</b>                                                                | 20 g (half-sinusoidal shock 20 ms)       |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>                   | 140 A                                    |
| <b>RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)</b>                                  | 1.9 kA                                   |
| <b>RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)</b>                                    | 1.9 kA                                   |
| <b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX</b>                                 | 1960 A                                   |
| <b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN</b>                                 | 280 A                                    |
| <b>HANDLE TYPE</b>                                                                     | Rocker lever                             |
| <b>INSTANTANEOUS CURRENT SETTING (II) - MAX</b>                                        | 1960 A                                   |
| <b>INSTANTANEOUS CURRENT SETTING (II) - MIN</b>                                        | 140 A                                    |
| <b>NUMBER OF OPERATIONS PER HOUR - MAX</b>                                             | 120                                      |
| <b>OVERLOAD CURRENT SETTING (IR) - MAX</b>                                             | 140 A                                    |
| <b>OVERLOAD CURRENT SETTING (IR) - MIN</b>                                             | 70 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> | 130 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>     | 37.5 kA                                  |
| <b>RATED SHORT-CIRCUIT</b>                                                             | 5 kA                                     |

|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <b>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT 690 V,<br/>50/60 HZ</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>STANDARD TERMINALS</b>                                                                          | Screw terminal                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>OPTIONAL TERMINALS</b>                                                                          | Box terminal. Connection<br>on rear. Tunnel terminal                                                                                                                                                                                                                                                                                                                                                       |
| <b>RELEASE SYSTEM</b>                                                                              | Electronic release                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>SHORT-CIRCUIT TOTAL<br/>BREAKTIME</b>                                                           | < 10 ms                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>TERMINAL CAPACITY<br/>(ALUMINUM SOLID<br/>CONDUCTOR/CABLE)</b>                                  | 16 mm <sup>2</sup> (1x) at tunnel<br>terminal                                                                                                                                                                                                                                                                                                                                                              |
| <b>TERMINAL CAPACITY<br/>(ALUMINUM STRANDED<br/>CONDUCTOR/CABLE)</b>                               | 25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at<br>tunnel terminal                                                                                                                                                                                                                                                                                                                                        |
| <b>TERMINAL CAPACITY<br/>(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<br/>(COPPER BUSBAR)</b>                                                       | Max. 24 mm x 8 mm direct<br>at switch rear-side<br>connection<br>Min. 16 mm x 5 mm direct<br>at switch rear-side<br>connection<br>M8 at rear-side screw<br>connection                                                                                                                                                                                                                                      |
| <b>TERMINAL CAPACITY<br/>(COPPER SOLID<br/>CONDUCTOR/CABLE)</b>                                    | 6 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) at<br>box terminal<br>6 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) direct<br>at switch rear-side<br>connection<br>10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) at<br>box terminal<br>16 mm <sup>2</sup> (1x) at tunnel<br>terminal<br>10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x)<br>direct at switch rear-side<br>connection                                  |
| <b>TERMINAL CAPACITY<br/>(COPPER STRANDED<br/>CONDUCTOR/CABLE)</b>                                 | 25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at<br>1-hole tunnel terminal<br>25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at<br>box terminal<br>25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x)<br>direct at switch rear-side<br>connection<br>25 mm <sup>2</sup> - 70 mm <sup>2</sup> (2x)<br>direct at switch rear-side<br>connection<br>25 mm <sup>2</sup> - 70 mm <sup>2</sup> (2x) at<br>box terminal |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICU<br/>(IEC/EN 60947) AT<br/>400/415 V, 50/60 HZ</b> | 130 kA                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>RATED SHORT-CIRCUIT<br/>MAKING CAPACITY ICM</b>                                                 | 330 kA                                                                                                                                                                                                                                                                                                                                                                                                     |

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|-----------------------------------------------------------------------|---------|
| AT 400/415 V, 50/60 HZ                                                |         |
| RATED SHORT-CIRCUIT<br>MAKING CAPACITY ICM<br>AT 440 V, 50/60 HZ      | 286 kA  |
| RATED SHORT-CIRCUIT<br>MAKING CAPACITY ICM<br>AT 525 V, 50/60 HZ      | 105 kA  |
| RATED SHORT-CIRCUIT<br>MAKING CAPACITY ICM<br>AT 690 V, 50/60 HZ      | 40 kA   |
| RATED SHORT-CIRCUIT<br>MAKING CAPACITY ICM<br>AT 240 V, 50/60 HZ      | 330 kA  |
| RATED IMPULSE<br>WITHSTAND VOLTAGE<br>(UIMP) AT AUXILIARY<br>CONTACTS | 6000 V  |
| RATED IMPULSE<br>WITHSTAND VOLTAGE<br>(UIMP) AT MAIN<br>CONTACTS      | 8000 V  |
| POWER LOSS                                                            | 16.17 W |

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|-----------------|
| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
| DATE:           |



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