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## Eaton 189651

NZMN4-4-PX630/VAR-TAZ. NZM3 PXR25  
circuit breaker - integrated energy  
measurement class 1, 630A, 4p, variable,  
Screw terminal, earth-fault protection, ARMS  
and zone selectivity

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| <b>PRODUCT NAME</b>             | Eaton Moeller series NZM<br>molded case circuit<br>breaker electronic |
| <b>CATALOG NUMBER</b>           | 189651                                                                |
| <b>PRODUCT<br/>LENGTH/DEPTH</b> | 375 mm                                                                |
| <b>PRODUCT HEIGHT</b>           | 170 mm                                                                |
| <b>PRODUCT WIDTH</b>            | 280 mm                                                                |
| <b>PRODUCT WEIGHT</b>           | 25.5 kg                                                               |
| <b>COMPLIANCES</b>              | RoHS conform                                                          |
| <b>CERTIFICATIONS</b>           | IEC/EN 60947<br>IEC                                                   |

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**AMPERAGE RATING** 630 A

**VOLTAGE RATING** 690 V - 690 V

**CIRCUIT BREAKER FRAME TYPE** NZM4

**FEATURES** Motor drive optional  
Protection unit

**10.10 TEMPERATURE RISE** The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

**10.11 SHORT-CIRCUIT RATING** Is the panel builder's responsibility. The specifications for the switchgear must be observed.

**10.12 ELECTROMAGNETIC COMPATIBILITY** Is the panel builder's responsibility. The specifications for the switchgear must be observed.

**10.13 MECHANICAL FUNCTION** The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

**10.2.2 CORROSION RESISTANCE** Meets the product standard's requirements.

**10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES** Meets the product standard's requirements.

**10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT** Meets the product standard's requirements.

**10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS** Meets the product standard's requirements.

**10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION** Meets the product standard's requirements.

**10.2.5 LIFTING** Does not apply, since the entire switchgear needs to be evaluated.

**10.2.6 MECHANICAL IMPACT** Does not apply, since the entire switchgear needs to be evaluated.

**10.2.7 INSCRIPTIONS** Meets the product standard's requirements.

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□□ [eaton-circuit-breaker-nzm-mccb-dimensions-023.eps](https://www.eaton.com/content/dam/eaton/circuit-breakers/nzm-mccb-dimensions-023.eps)

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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>LIFESPAN, MECHANICAL</b>                                     | 10000 operations                                                                                     |
| <b>UTILIZATION CATEGORY</b>                                     | B (IEC/EN 60947-2)                                                                                   |
| <b>MOUNTING METHOD</b>                                          | Built-in device fixed built-in technique<br>Fixed                                                    |
| <b>CLIMATIC PROOFING</b>                                        | Damp heat, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78                       |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>            | 65 W                                                                                                 |
| <b>ISOLATION</b>                                                | 300 V AC (between the auxiliary contacts)<br>500 V AC (between auxiliary contacts and main contacts) |
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b>                      | 70 °C                                                                                                |
| <b>AMBIENT OPERATING 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</b>                                      | 0                                                                                                    |

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| <b>CONTACTS (CHANGE-OVER CONTACTS)</b>                         |                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b> | 0                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>   | 0                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>PROTECTION AGAINST DIRECT CONTACT</b>                       | Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110                                                                                                                                                                                                                                                                                                                                                  |
| <b>DEGREE OF PROTECTION</b>                                    | IP20<br>IP20 (basic degree of protection, in the operating controls area)                                                                                                                                                                                                                                                                                                                                        |
| <b>DIRECTION OF INCOMING SUPPLY</b>                            | As required                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>              | Screw connection                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>CURRENT RATING OF NEUTRAL CONDUCTOR</b>                     | 0 - 60% - 100% of phase conductor                                                                                                                                                                                                                                                                                                                                                                                |
| <b>OVERVOLTAGE CATEGORY</b>                                    | III                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>DEGREE OF PROTECTION (IP), FRONT SIDE</b>                   | IP40 (with insulating surround)<br>IP66 (with door coupling rotary handle)                                                                                                                                                                                                                                                                                                                                       |
| <b>DEGREE OF PROTECTION (TERMINATIONS)</b>                     | IP10 (tunnel terminal)<br>IP00 (terminations, phase isolator and strip terminal)                                                                                                                                                                                                                                                                                                                                 |
| <b>NUMBER OF POLES</b>                                         | Four-pole                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>TERMINAL CAPACITY (COPPER STRIP)</b>                        | Min. 6 segments of 16 mm x 0.8 mm at flat conductor terminal<br>10 segments of 80 mm x 1 mm (2x) at rear-side width extension<br>10 segments of 50 mm x 1 mm (2x) at 1-hole module plate<br>Max. 10 segments of 50 mm x 1 mm (2x) at rear-side connection (punched)<br><br>Max. 10 segments of 32 mm x 1 mm (2x) at flat conductor terminal<br>Min. 5 segments of 25 mm x 1 mm at rear-side connection (punched) |
| <b>LIFESPAN, ELECTRICAL</b>                                    | 3000 operations at 400 V AC-1<br>3000 operations at 415 V                                                                                                                                                                                                                                                                                                                                                        |

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|                                               | AC-1<br>2000 operations at 690 V<br>AC-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>FUNCTIONS</b>                              | Integrated earth fault protection<br>Systems, cable, selectivity and generator protection<br>Earth-fault protection<br>ARMS maintenance mode<br>Zone selectivity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>EARTH-FAULT CURRENT SETTING (IG) - MAX</b> | 630 x I <sub>n</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>TYPE</b>                                   | Circuit breaker                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>SPECIAL FEATURES</b>                       | <ul style="list-style-type: none"> <li>• LSIG overload protection and delayed and non-delayed short-circuit protective device, earth-fault protection</li> <li>• Class 1 energy measurement, r.m.s. value measurement, and "thermal memory"</li> <li>• USB interface for configuration and test function with Power Xpert Protection Manager software</li> <li>• Zone selectivity ZSI</li> <li>• Maintenance Mode ARMS</li> <li>• Interface module in equipment supplied.</li> <li>• Optionally communication-capable with internal Modbus RTU module or CAM</li> <li>• Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I<sub>cn</sub>)</li> <li>• Rated current = rated</li> </ul> |

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|                                                                                         | uninterrupted<br>current: 630 A                                                                                                                                                                                                                                                                                                                                                     |
| <b>APPLICATION</b>                                                                      | Use in unearthed supply<br>systems at 525 V                                                                                                                                                                                                                                                                                                                                         |
| <b>SHOCK RESISTANCE</b>                                                                 | 15 g (half-sinusoidal shock<br>11 ms)                                                                                                                                                                                                                                                                                                                                               |
| <b>EARTH-FAULT CURRENT<br/>SETTING (IG) - MIN</b>                                       | 126 x I <sub>n</sub>                                                                                                                                                                                                                                                                                                                                                                |
| <b>POSITION OF<br/>CONNECTION FOR MAIN<br/>CURRENT CIRCUIT</b>                          | Front side                                                                                                                                                                                                                                                                                                                                                                          |
| <b>RATED OPERATIONAL<br/>CURRENT FOR SPECIFIED<br/>HEAT DISSIPATION (I<sub>N</sub>)</b> | 630 A                                                                                                                                                                                                                                                                                                                                                                               |
| <b>RELEASE SYSTEM</b>                                                                   | Electronic release                                                                                                                                                                                                                                                                                                                                                                  |
| <b>SHORT-CIRCUIT TOTAL<br/>BREAKTIME</b>                                                | < 25 ms (≤ 415 V); < 35 ms<br>(> 415 V)                                                                                                                                                                                                                                                                                                                                             |
| <b>RATED SHORT-TIME<br/>WITHSTAND CURRENT (T<br/>= 0.3 S)</b>                           | 12 kA                                                                                                                                                                                                                                                                                                                                                                               |
| <b>RATED SHORT-TIME<br/>WITHSTAND CURRENT (T<br/>= 1 S)</b>                             | 12 kA                                                                                                                                                                                                                                                                                                                                                                               |
| <b>SHORT-CIRCUIT RELEASE<br/>DELAYED SETTING - MAX</b>                                  | 6300 A                                                                                                                                                                                                                                                                                                                                                                              |
| <b>SHORT-CIRCUIT RELEASE<br/>DELAYED SETTING - MIN</b>                                  | 504 A                                                                                                                                                                                                                                                                                                                                                                               |
| <b>SHORT-CIRCUIT RELEASE<br/>NON-DELAYED SETTING -<br/>MAX</b>                          | 11340 A                                                                                                                                                                                                                                                                                                                                                                             |
| <b>SHORT-CIRCUIT RELEASE<br/>NON-DELAYED SETTING -<br/>MIN</b>                          | 1260 A                                                                                                                                                                                                                                                                                                                                                                              |
| <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>                                            | Min. 60 mm x 10 mm at<br>rear-side width extension<br>Max. 50 mm x 10 mm (2x)<br>at rear-side 1-hole module<br>plate<br>Max. 80 mm x 10 mm (2x)<br>at rear-side width<br>extension<br>50 mm x 10 mm (2x) at<br>rear-side 2-hole module<br>plate<br>Min. 25 mm x 5 mm direct<br>at switch rear-side<br>connection<br>M10 at rear-side screw<br>connection<br>Max. 50 mm x 10 mm (2x) |

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|                                                                                    | <p>direct at switch rear-side connection</p> <p>Min. 25 mm x 5 mm at rear-side 1-hole module plate</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)</b>                            | <p>95 mm<sup>2</sup> - 240 mm<sup>2</sup> (6x) at rear-side width extension</p> <p>300 mm<sup>2</sup> (4x) at rear-side width extension</p> <p>95 mm<sup>2</sup> - 185 mm<sup>2</sup> (2x) at rear-side 2-hole module plate</p> <p>120 mm<sup>2</sup> - 300 mm<sup>2</sup> (1x) at rear-side 1-hole module plate</p> <p>35 mm<sup>2</sup> - 185 mm<sup>2</sup> (4x) at rear-side 2-hole module plate</p> <p>50 mm<sup>2</sup> - 240 mm<sup>2</sup> (4x) at 4-hole tunnel terminal</p> <p>95 mm<sup>2</sup> - 300 mm<sup>2</sup> (2x) at rear-side 1-hole module plate</p> |
| <b>TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)</b>                         | <p>120 mm<sup>2</sup> - 185 mm<sup>2</sup> (1x) direct at switch rear-side connection</p> <p>50 mm<sup>2</sup> - 185 mm<sup>2</sup> (4x) direct at switch rear-side connection</p>                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>TERMINAL CAPACITY (ALUMINUM STRANDED 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 SETTING (ISD) - MAX</b>                                     | 10 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>SHORT DELAY CURRENT SETTING (ISD) - MIN</b>                                     | 2 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>INSTANTANEOUS CURRENT SETTING (II) - MAX</b>                                    | 22680 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>INSTANTANEOUS CURRENT SETTING (II) - MIN</b>                                    | 1260 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>NUMBER OF OPERATIONS PER HOUR - MAX</b>                                         | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>OVERLOAD CURRENT SETTING (IR) - MAX</b>                                         | 630 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>OVERLOAD CURRENT SETTING (IR) - MIN</b>                                         | 252 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ</b> | 37 kA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT<br/>400/415 V, 50/60 HZ</b> | 37 kA                                                  |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT 440 V,<br/>50/60 HZ</b>     | 26 kA                                                  |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT 525 V,<br/>50/60 HZ</b>     | 19 kA                                                  |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICS<br/>(IEC/EN 60947) AT 690 V,<br/>50/60 HZ</b>     | 15 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>                          | 40 kA                                                  |
| <b>STANDARD TERMINALS</b>                                                                          | Screw terminal                                         |
| <b>OPTIONAL TERMINALS</b>                                                                          | Connection on rear. Strip<br>terminal. Tunnel terminal |
| <b>RATED SHORT-CIRCUIT<br/>MAKING CAPACITY ICM<br/>AT 240 V, 50/60 HZ</b>                          | 105 kA                                                 |
| <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>                         | 8000 V                                                 |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICU<br/>(IEC/EN 60947) AT 525 V,<br/>50/60 HZ</b>     | 25 kA                                                  |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICU<br/>(IEC/EN 60947) AT<br/>400/415 V, 50/60 HZ</b> | 50 kA                                                  |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICU<br/>(IEC/EN 60947) AT 230 V,<br/>50/60 HZ</b>     | 50 kA                                                  |

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| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICU<br/>(IEC/EN 60947) AT 690 V,<br/>50/60 HZ</b> | 20 kA     |
| <b>RATED SHORT-CIRCUIT<br/>BREAKING CAPACITY ICU<br/>(IEC/EN 60947) AT 440 V,<br/>50/60 HZ</b> | 35 kA     |
| <b>RATED INSULATION<br/>VOLTAGE (UI)</b>                                                       | 1000 V AC |

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