# Specifications


**Photo is representative**

## Eaton 191684

Eaton Moeller series NZM - Molded Case Circuit Breaker. NZM2 PXR20 circuit breaker, 100A, 4p, plug-in technology, H, 2

### General specifications

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| **PRODUCT NAME** | Eaton Moeller series NZM molded case circuit breaker electronic |
| **CATALOG NUMBER** | 191684 |
| **MODEL CODE** | NZMH2-4-VX100-SVE |
| **EAN** | 4015081921966 |
| **PRODUCT LENGTH/DEPTH** | 190 mm |
| **PRODUCT HEIGHT** | 160 mm |
| **PRODUCT WIDTH** | 145 mm |
| **PRODUCT WEIGHT** | 2.9 kg |
| **COMPLIANCES** | RoHS conform |
| **CERTIFICATIONS** | IEC<br>IEC/EN 60947 |
| **GLOBAL CATALOG** | 191684 |

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## Product specifications

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| **AMPERAGE RATING** | 100 A |
| **VOLTAGE RATING** | 690 V - 690 V |
| **CIRCUIT BREAKER FRAME TYPE** | NZM2 |
| **FEATURES** | Motor drive optional<br>Protection unit |
| **ACCESSORIES REQUIRED** | NZM2-4-XSVS |
| **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** | Does not apply, since the |

## Resources

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| **BROCHURES** | eaton-digital-nzm-brochure-br013003en-en-us.pdf<br>eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf |
| **CATALOGS** | eaton-digital-nzm-catalog-ca013003en-en-us.pdf |
| **CHARACTERISTIC CURVE** | eaton-circuit-breaker-nzm-mccb-characteristic-curve-010.eps<br>eaton-circuit-breaker-nzm-mccb-characteristic-curve-014.eps |
| **DECLARATIONS OF CONFORMITY** | eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250291en.pdf |
| **DRAWINGS** | eaton-circuit-breaker-nzm-mccb-dimensions-035.eps<br>eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps<br>eaton-circuit-breaker-adapter-nzm-mccb-dimensions-002.eps |
| **INSTALLATION INSTRUCTIONS** | eaton-circuit-breakers-nzmb-nzmn-basic-unit-bg2-instruction-leaflet-il012099zu.pdf<br>eaton-circuit-breaker-plug-in-adapter-nzm2-il01219023z.pdf |
| **INSTALLATION VIDEOS** | The new digital NZM Range<br>Introduction of the new digital circuit breaker NZM |
| **MCAD MODEL** | DA-CD-nzm2_xsve<br>DA-CS-nzm2_xsve |
| **PEP ECO-PASSPORT** | eaton-molded-case-switches-pep-eato-00185-v0101-en.pdf |
| **TECHNICAL DATA SHEETS** | eaton-nzm-technical-information-sheet |

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| **IMPACT** | entire switchgear needs to be evaluated. |
| **10.2.7 INSCRIPTIONS** | Meets the product standard's requirements. |
| **10.3 DEGREE OF PROTECTION OF ASSEMBLIES** | Does not apply, since the entire switchgear needs to be evaluated. |
| **10.4 CLEARANCES AND CREEPAGE DISTANCES** | Meets the product standard's requirements. |
| **10.5 PROTECTION AGAINST ELECTRIC SHOCK** | Does not apply, since the entire switchgear needs to be evaluated. |
| **10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS** | Does not apply, since the entire switchgear needs to be evaluated. |
| **10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS** | Is the panel builder's responsibility. |
| **10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS** | Is the panel builder's responsibility. |
| **10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH** | Is the panel builder's responsibility. |
| **10.9.3 IMPULSE WITHSTAND VOLTAGE** | Is the panel builder's responsibility. |
| **10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL** | Is the panel builder's responsibility. |
| **POLLUTION DEGREE** | 3 |
| **MOUNTING METHOD** | Built-in device plug-in technique<br>Plug-in unit |
| **CLIMATIC PROOFING** | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |
| **EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT** | 8.25 W |
| **UTILIZATION CATEGORY** | A (IEC/EN 60947-2) |
| **ISOLATION** | 500 V AC (between auxiliary contacts and main contacts)<br>300 V AC (between the auxiliary contacts) |
| **AMBIENT OPERATING TEMPERATURE - MAX** | 70 °C |
| **AMBIENT OPERATING TEMPERATURE - MIN** | -25 °C |

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| **AMBIENT STORAGE TEMPERATURE - MAX** | 70 °C |
| **AMBIENT STORAGE TEMPERATURE - MIN** | 40 °C |
| **NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)** | 0 |
| **NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)** | 0 |
| **NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)** | 0 |
| **PROTECTION AGAINST DIRECT CONTACT** | Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110 |
| **DEGREE OF PROTECTION** | IP20<br>IP20 (basic degree of protection, in the operating controls area) |
| **DIRECTION OF INCOMING SUPPLY** | As required |
| **ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT** | Other |
| **CURRENT RATING OF NEUTRAL CONDUCTOR** | 200% of phase conductor |
| **LIFESPAN, MECHANICAL** | 20000 operations |
| **OVERVOLTAGE CATEGORY** | III |
| **DEGREE OF PROTECTION (IP), FRONT SIDE** | IP40 (with insulating surround)<br>IP66 (with door coupling rotary handle) |
| **DEGREE OF PROTECTION (TERMINATIONS)** | IP00 (terminations, phase isolator and strip terminal)<br><br>IP10 (tunnel terminal) |
| **NUMBER OF POLES** | Four-pole |
| **TERMINAL CAPACITY (COPPER STRIP)** | Min. 2 segments of 9 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>Max. 8 segments of 24 mm x 1 mm (2x) at box terminal<br>Min. 2 segements of 16 mm x 0.8 mm at rear-side connection (punched) |

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| | Max. 10 segments of 16 mm x 0.8 mm at box terminal |
| **LIFESPAN, ELECTRICAL** | 7500 operations at 690 V AC-1<br>10000 operations at 400 V AC-1<br>10000 operations at 415 V AC-1 |
| **FUNCTIONS** | Systems, cable, selectivity and generator protection |
| **TYPE** | Circuit breaker |
| **SPECIAL FEATURES** | • LSI overload protection and delayed and non-delayed short-circuit protective device<br>• R.m.s. value measurement and “thermal memory”<br>• USB interface for configuration and test function with Power Xpert Protection Manager software<br>• Optionally communication-capable with interface module and internal Modbus RTU module or CAM<br>• 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 Icn)<br>• Rated current = rated uninterrupted current: 100 A |
| **APPLICATION** | Use in unearthed supply systems at 690 V |
| **SHOCK RESISTANCE** | 20 g (half-sinusoidal shock |

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| | 20 ms) |
| **POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT** | Front side |
| **RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)** | 100 A |
| **RELEASE SYSTEM** | Electronic release |
| **SHORT-CIRCUIT TOTAL BREAKTIME** | < 10 ms |
| **RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)** | 1.9 kA |
| **RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)** | 1.9 kA |
| **SHORT-CIRCUIT RELEASE DELAYED SETTING - MAX** | 1000 A |
| **SHORT-CIRCUIT RELEASE DELAYED SETTING - MIN** | 80 A |
| **SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX** | 1800 A |
| **SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN** | 200 A |
| **TERMINAL CAPACITY (CONTROL CABLE)** | 0.75 $mm^2$ - 2.5 $mm^2$ (1x)<br>0.75 $mm^2$ - 1.5 $mm^2$ (2x) |
| **TERMINAL CAPACITY (COPPER BUSBAR)** | Min. 16 mm x 5 mm direct at switch rear-side connection<br>Max. 24 mm x 8 mm direct at switch rear-side connection<br>M8 at rear-side screw connection |
| **TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)** | 6 $mm^2$ - 16 $mm^2$ (2x) at box terminal<br>10 $mm^2$ - 16 $mm^2$ (1x) at box terminal<br>16 $mm^2$ (1x) at tunnel terminal<br>6 $mm^2$ - 16 $mm^2$ (2x) direct at switch rear-side connection<br>10 $mm^2$ - 16 $mm^2$ (1x) direct at switch rear-side connection |
| **TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)** | 16 $mm^2$ (1x) at tunnel terminal |

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| **TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)** | 25 $mm^2$ - 185 $mm^2$ (1x) direct at switch rear-side connection<br>25 $mm^2$ - 70 $mm^2$ (2x) at box terminal<br>25 $mm^2$ - 185 $mm^2$ (1x) at box terminal<br>25 $mm^2$ - 70 $mm^2$ (2x) direct at switch rear-side connection<br>25 $mm^2$ - 185 $mm^2$ (1x) at 1-hole tunnel terminal |
| **TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)** | 25 $mm^2$ - 185 $mm^2$ (1x) at tunnel terminal |
| **HANDLE TYPE** | Rocker lever |
| **SHORT DELAY CURRENT SETTING (ISD) - MAX** | 10 A |
| **SHORT DELAY CURRENT SETTING (ISD) - MIN** | 2 A |
| **INSTANTANEOUS CURRENT SETTING (II) - MAX** | 18 A |
| **INSTANTANEOUS CURRENT SETTING (II) - MIN** | 2 A |
| **NUMBER OF OPERATIONS PER HOUR - MAX** | 120 |
| **OVERLOAD CURRENT SETTING (IR) - MAX** | 100 A |
| **OVERLOAD CURRENT SETTING (IR) - MIN** | 40 A |
| **RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ** | 150 kA |
| **RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ** | 150 kA |
| **RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 HZ** | 130 kA |
| **RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ** | 37.5 kA |
| **RATED SHORT-CIRCUIT BREAKING CAPACITY ICS** | 5 kA |

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| **(IEC/EN 60947) AT 690 V, 50/60 HZ** | |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ** | 330 kA |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ** | 286 kA |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 525 V, 50/60 HZ** | 110 kA |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ** | 40 kA |
| **STANDARD TERMINALS** | Screw terminal |
| **OPTIONAL TERMINALS** | Box terminal. Connection on rear. Tunnel terminal |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ** | 330 kA |
| **RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS** | 6000 V |
| **RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS** | 8000 V |
| **RATED INSULATION VOLTAGE (UI)** | 690 V AC |

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

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