

Specifications



Photo is representative



Eaton 191681

Eaton Moeller series NZM - Molded Case Circuit Breaker. NZM2 PXR20 circuit breaker, 90A, 3p, screw terminal, H, 2

General specifications

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| PRODUCT NAME | Eaton Moeller series NZM molded case circuit breaker electronic |
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| CATALOG NUMBER | 191681 |
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| MODEL CODE | NZMH2-MX90 |
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| EAN | 4015081921935 |
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| PRODUCT LENGTH/DEPTH | 190 mm |
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| PRODUCT HEIGHT | 160 mm |
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| PRODUCT WIDTH | 115 mm |
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| PRODUCT WEIGHT | 2.3 kg |
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| COMPLIANCES | RoHS conform |
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| CERTIFICATIONS | IEC/EN 60947 IEC |
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Product specifications

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| AMPERAGE RATING | 90 A |
| VOLTAGE RATING | 690 V - 690 V |
| CIRCUIT BREAKER FRAME TYPE | NZM2 |
| 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 |

Resources

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| BROCHURES | eaton-digital-nzm-brochure-br013003en-en-us.pdf eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf |
| CATALOGUES | eaton-digital-nzm-catalog-ca013003en-en-us.pdf eaton-circuit-breaker-nzm-mccb-characteristic-curve-059.eps eaton-circuit-breaker-nzm-mccb-characteristic-curve-010.eps eaton-circuit-breaker-nzm-mccb-characteristic-curve-060.eps eaton-circuit-breaker-nzm-mccb-characteristic-curve-014.eps |
| DECLARATIONS OF CONFORMITY | eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250291en.pdf eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps |
| DRAWINGS | eaton-circuit-breaker-nzm-mccb-dimensions-019.eps eaton-general-ie-ready-dilm-contactor-standards.eps |
| INSTALLATION INSTRUCTIONS | eaton-circuit-breakers-nzmb-nzmn-basic-unit-bg2-instruction-leaflet-il012099zu.pdf |
| INSTALLATION VIDEOS | Introduction of the new digital circuit breaker NZM The new digital NZM Range |
| MCAD MODEL | DA-CS-nzm2_3p DA-CD-nzm2_3p |
| TECHNICAL DATA SHEETS | eaton-nzm-technical-information-sheet |

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| | 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. |
| FITTED WITH: | Thermal protection |
| POLLUTION DEGREE | 3 |
| MOUNTING METHOD | Fixed Built-in device fixed built-in technique |
| CLIMATIC PROOFING | Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78 |
| EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT | 6.68 W |
| UTILIZATION CATEGORY | A (IEC/EN 60947-2) |
| ISOLATION | 300 V AC (between the auxiliary contacts) 500 V AC (between auxiliary contacts and main contacts) |
| AMBIENT OPERATING TEMPERATURE - MAX | 70 °C |
| AMBIENT OPERATING TEMPERATURE - MIN | -25 °C |
| AMBIENT STORAGE TEMPERATURE - MAX | 70 °C |

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| AMBIENT STORAGE TEMPERATURE - MIN | 40 °C |
| PROTECTION AGAINST DIRECT CONTACT | Finger and back-of-hand proof to VDE 0106 part 100 |
| RATED INSULATION VOLTAGE (UI) | 690 V |
| RATED OPERATING POWER AT AC-3, 230 V | 22 kW |
| RATED OPERATING POWER AT AC-3, 400 V | 45 kW |
| SWITCH OFF TECHNIQUE | Electronic |
| DEGREE OF PROTECTION | IP20 IP20 (basic degree of protection, in the operating controls area) |
| DIRECTION OF INCOMING SUPPLY | As required |
| ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT | Screw connection |
| LIFESPAN, MECHANICAL | 20000 operations |
| OVERVOLTAGE CATEGORY | III |
| RATED OPERATIONAL CURRENT | 81 A (400 V AC-3) |
| DEGREE OF PROTECTION (IP), FRONT SIDE | IP66 (with door coupling rotary handle) IP40 (with insulating surround) |
| DEGREE OF PROTECTION (TERMINATIONS) | IP00 (terminations, phase isolator and strip terminal) IP10 (tunnel terminal) |
| NUMBER OF POLES | Three-pole |
| TERMINAL CAPACITY (COPPER STRIP) | Min. 2 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 16 mm x 0.8 mm at box terminal Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched) Min. 2 segments of 9 mm x 0.8 mm at box terminal Max. 8 segments of 24 mm x 1 mm (2x) at box terminal |
| LIFESPAN, ELECTRICAL | 10000 operations at 415 V |

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| | AC-1 10000 operations at 400 V AC-1 5000 operations at 690 V AC-3 6500 operations at 415 V AC-3 6500 operations at 400 V AC-3 7500 operations at 690 V AC-1 |
| FUNCTIONS | Phase failure sensitive Motor protection |
| TYPE | Circuit breaker |
| SPECIAL FEATURES | <ul style="list-style-type: none"> • IEC/EN 60947-2 with characteristic conforming to IEC/EN 60947-4-1 with phase failure sensitivity • 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 |

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| | <p>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})</p> <ul style="list-style-type: none"> Rated current = rated uninterrupted current: 90 A |
| APPLICATION | Use in unearthed supply systems at 690 V |
| SHOCK RESISTANCE | 20 g (half-sinusoidal shock 20 ms) |
| RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN) | 90 A |
| 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 NON-DELAYED SETTING - MAX | 1620 A |
| SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN | 180 A |
| HANDLE TYPE | Rocker lever |
| 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 | 90 A |
| OVERLOAD CURRENT SETTING (IR) - MIN | 36 A |
| RATED SHORT-CIRCUIT BREAKING CAPACITY ICS | 150 kA |

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| (IEC/EN 60947) AT 230 V, 50/60 HZ | |
| RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ | 130 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 (IEC/EN 60947) AT 690 V, 50/60 HZ | 5 kA |
| STANDARD TERMINALS | Screw terminal |
| OPTIONAL TERMINALS | Box terminal. Connection on rear. Tunnel terminal |
| RELEASE SYSTEM | Electronic release |
| SHORT-CIRCUIT TOTAL BREAKTIME | < 10 ms |
| TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE) | 16 mm ² (1x) at tunnel terminal |
| TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE) | 25 mm ² - 185 mm ² (1x) at tunnel terminal |
| TERMINAL CAPACITY (CONTROL CABLE) | 0.75 mm ² - 1.5 mm ² (2x) 0.75 mm ² - 2.5 mm ² (1x) |
| TERMINAL CAPACITY (COPPER BUSBAR) | Min. 16 mm x 5 mm direct at switch rear-side connection Max. 24 mm x 8 mm direct at switch rear-side connection M8 at rear-side screw connection |
| TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE) | 10 mm ² - 16 mm ² (1x) at box terminal 6 mm ² - 16 mm ² (2x) direct at switch rear-side connection 10 mm ² - 16 mm ² (1x) direct at switch rear-side connection 6 mm ² - 16 mm ² (2x) at box terminal 16 mm ² (1x) at tunnel |

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| | terminal |
| TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE) | 25 mm ² - 185 mm ² (1x) at box terminal 25 mm ² - 185 mm ² (1x) direct at switch rear-side connection 25 mm ² - 70 mm ² (2x) at box terminal 25 mm ² - 185 mm ² (1x) at 1-hole tunnel terminal 25 mm ² - 70 mm ² (2x) direct at switch rear-side connection |
| RATED SHORT-CIRCUIT BREAKING CAPACITY ICU (IEC/EN 60947) AT 400/415 V, 50/60 HZ | 130 kA |
| 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 | 105 kA |
| RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ | 40 kA |
| 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 |

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



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