

Specifications



Photo is representative

Eaton 147398

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 4p, 250A, box terminals, selectivity protection

General specifications

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| PRODUCT NAME | Eaton Moeller series NZM molded case circuit breaker electronic |
| CATALOG NUMBER | 147398 |
| MODEL CODE | NZMN2-4-VE250-BT |
| EAN | 4015081438983 |
| PRODUCT LENGTH/DEPTH | 149 mm |
| PRODUCT HEIGHT | 184 mm |
| PRODUCT WIDTH | 140 mm |
| PRODUCT WEIGHT | 3.846 kg |
| COMPLIANCES | RoHS conform |
| CERTIFICATIONS | IEC IEC/EN 60947 |
| GLOBAL CATALOG | 147398 |



Powering Business Worldwide

Product specifications

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| AMPERAGE RATING | 250 A |
| VOLTAGE RATING | 690 V - 690 V |
| CIRCUIT BREAKER FRAME TYPE | NZM2 |
| 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. |

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 |
| CATALOGS | eaton-digital-nzm-catalog-ca013003en-en-us.pdf eaton-circuit-breaker-nzm-mccb-characteristic-curve-054.eps eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-036.eps eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-004.eps |
| CHARACTERISTIC CURVE | eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250291en.pdf |
| DECLARATIONS OF CONFORMITY | eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps eaton-circuit-breaker-nzm-mccb-dimensions-035.eps |
| DRAWINGS | The new digital NZM Range Introduction of the new digital circuit breaker NZM DA-CD-nzm2_4p DA-CS-nzm2_4p |
| INSTALLATION VIDEOS | eaton-molded-case-switches-pep-eato-00195-v0101-en.pdf |
| MCAD MODEL | eaton-nzm-technical-information-sheet |
| PEP ECO-PASSPORT | |
| TECHNICAL DATA SHEETS | |

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| 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 | DIN rail (top hat rail) mounting optional Built-in device fixed built-in technique Fixed |
| CLIMATIC PROOFING | Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78 |
| EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT | 51.56 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 |
| AMBIENT STORAGE TEMPERATURE - MIN | 40 °C |
| NUMBER OF AUXILIARY | 0 |

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| CONTACTS (CHANGE-OVER CONTACTS) | |
| 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 IP20 (basic degree of protection, in the operating controls area) |
| DIRECTION OF INCOMING SUPPLY | As required |
| ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT | Frame clamp |
| 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) IP66 (with door coupling rotary handle) |
| DEGREE OF PROTECTION (TERMINATIONS) | IP00 (terminations, phase isolator and strip terminal) |
| | IP10 (tunnel terminal) |
| NUMBER OF POLES | Four-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. 8 segments of 24 mm x 1 mm (2x) at box terminal Min. 2 segments of 9 mm x 0.8 mm at box terminal Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched) |
| LIFESPAN, ELECTRICAL | 5000 operations at 690 V AC-3 10000 operations at 415 V AC-1 6500 operations at 415 V AC-3 |

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| | 10000 operations at 400 V AC-1 6500 operations at 400 V AC-3 7500 operations at 690 V AC-1 |
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| FUNCTIONS | Systems, cable, selectivity and generator protection |
| TYPE | Circuit breaker |

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| SPECIAL FEATURES | <ul style="list-style-type: none"> • 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}) • R.m.s. value measurement and "thermal memory" • Adjustable time delay setting to overcome current peaks t_r at $6 \times I_r$ also infinity (without overload releases) • Adjustable delay time t_{sd} • i^2t constant function: fixed OFF • Set value in neutral conductor is synchronous with set value I_r of main pole. • Rated current = rated uninterrupted current: 250 A |
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| APPLICATION | Use in unearthed supply systems at 690 V |
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| SHOCK RESISTANCE | 20 g (half-sinusoidal shock 20 ms) |
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| POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT | Front side |
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| RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN) | 250 A |
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| POWER LOSS | 51.56 W |
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| 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 | 2500 A |
| SHORT-CIRCUIT RELEASE DELAYED SETTING - MIN | 250 A |
| SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX | 3000 A |
| SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN | 3000 A |
| TERMINAL CAPACITY (CONTROL CABLE) | 0.75 mm ² - 2.5 mm ² (1x) 0.75 mm ² - 1.5 mm ² (2x) |
| TERMINAL CAPACITY (COPPER BUSBAR) | Max. 24 mm x 8 mm direct at switch rear-side connection M8 at rear-side screw connection Min. 16 mm x 5 mm direct at switch rear-side connection |
| TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE) | 6 mm ² - 16 mm ² (2x) at box terminal 10 mm ² - 16 mm ² (1x) direct at switch rear-side connection 6 mm ² - 16 mm ² (2x) direct at switch rear-side connection 10 mm ² - 16 mm ² (1x) at box terminal 16 mm ² (1x) at tunnel terminal |
| TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE) | 16 mm ² (1x) at tunnel terminal |
| TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE) | 25 mm ² - 185 mm ² (1x) direct at switch rear-side connection 25 mm ² - 185 mm ² (1x) at 1-hole tunnel terminal 25 mm ² - 185 mm ² (1x) at box terminal 25 mm ² - 70 mm ² (2x) at box terminal 25 mm ² - 70 mm ² (2x) direct at switch rear-side |

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| | connection |
| 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 | 2500 A |
| SHORT DELAY CURRENT SETTING (ISD) - MIN | 250 A |
| INSTANTANEOUS CURRENT SETTING (II) - MAX | 3000 A |
| INSTANTANEOUS CURRENT SETTING (II) - MIN | 3000 A |
| NUMBER OF OPERATIONS PER HOUR - MAX | 120 |
| OVERLOAD CURRENT SETTING (IR) - MAX | 250 A |
| OVERLOAD CURRENT SETTING (IR) - MIN | 125 A |
| OVERLOAD CURRENT SETTING (IR) | 80 A - 160 A |
| RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ | 85 kA |
| RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ | 50 kA |
| RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 440 V, 50/60 HZ | 35 kA |
| RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 525 V, 50/60 HZ | 25 kA |
| RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 690 V, 50/60 HZ | 5 kA |
| RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ | 105 kA |
| RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 440 V, 50/60 HZ | 74 kA |
| RATED SHORT-CIRCUIT MAKING CAPACITY ICM | 53 kA |

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| AT 525 V, 50/60 HZ | |
| RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ | 40 kA |
| STANDARD TERMINALS | Box terminal |
| OPTIONAL TERMINALS | Connection on rear. Screw terminal. Tunnel terminal |
| RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ | 187 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) | 1000 V AC |

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



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