# Specifications


**Photo is representative**

## Eaton 266011

Eaton Moeller series NZM - Molded Case Circuit Breaker. Switch-disconnector 4p, 160A, 2

| General specifications | |
|---|---|
| **PRODUCT NAME** | Eaton Moeller series NZM switch-disconnector |
| **CATALOG NUMBER** | 266011 |
| **MODEL CODE** | PN2-4-160 |
| **EAN** | 4015082660116 |
| **PRODUCT LENGTH/DEPTH** | 142 mm |
| **PRODUCT HEIGHT** | 185 mm |
| **PRODUCT WIDTH** | 140 mm |
| **PRODUCT WEIGHT** | 2.42 kg |
| **COMPLIANCES** | RoHS conform |
| **CERTIFICATIONS** | IEC<br>IEC/EN 60947 |
| **GLOBAL CATALOG** | 266011 |

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## Product specifications

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| **AMPERAGE RATING** | 160 A |
| **VOLTAGE RATING** | 690 V - 690 V |
| **CIRCUIT BREAKER FRAME TYPE** | PN2 |
| **FEATURES** | Version as main switch<br>Version as emergency stop installation<br>Version as maintenance-/service switch |
| **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 |

## Resources

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| BROCHURES | eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf<br>eaton-digital-nzm-brochure-br013003en-en-us.pdf |
| CATALOGS | eaton-digital-nzm-catalog-ca013003en-en-us.pdf |
| DECLARATIONS OF CONFORMITY | eaton-switch-disconnector-declaration-of-conformity-eu250122en.pdf |
| DRAWINGS | eaton-circuit-breaker-nzm-mccb-dimensions-035.eps<br>eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps |
| ECAD MODEL | DA-CE-ETN.PN2-4-160 |
| INSTALLATION INSTRUCTIONS | eaton-circuit-breakers-basic-device-nzm2-il01206006z.pdf |
| INSTALLATION VIDEOS | Introduction of the new digital circuit breaker NZM<br>The new digital NZM Range |
| MCAD MODEL | DA-CD-nzm2_4p<br>DA-CS-nzm2_4p |
| PEP ECO-PASSPORT | eaton-switch-disconnectors-pep-eato-00193-v0101-en.pdf |
| TECHNICAL DATA SHEETS | eaton-nzm-technical-information-sheet |

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| | 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** | Distribution board installation<br>Fixed<br>Intermediate mounting<br>Built-in device fixed built-in technique<br>Ground mounting |
| **CLIMATIC PROOFING** | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |
| **EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT** | 19.66 W |
| **ISOLATION** | 300 V AC (between the auxiliary contacts)<br>500 V AC (between auxiliary contacts and main contacts) |
| **RATED SHORT-TIME WITHSTAND CURRENT (ICW)** | 3.5 kA |
| **DEGREE OF PROTECTION** | IP20 (basic protection type, in the area of the HMI devices) |

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| | Other |
| **DIRECTION OF INCOMING SUPPLY** | As required |
| **ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT** | Screw connection |
| **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 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 |
| **RATED INSULATION VOLTAGE (UI)** | 690 V |
| **RATED OPERATING FREQUENCY** | 50 Hz |
| **RATED OPERATING POWER AT AC-23, 400 V** | 90 kW |
| **RATED OPERATING POWER AT AC-3, 400 V** | 0 kW |
| **SWITCH POSITIONS** | I, 0 |
| **LIFESPAN, MECHANICAL** | 20000 operations |
| **OVERVOLTAGE CATEGORY** | III |
| **RATED OPERATIONAL CURRENT** | 160 A (415 V AC-22/23A, making and breaking capacity)<br>160 A (690 V AC-22/23A, making and breaking capacity) |
| **DEGREE OF PROTECTION (IP), FRONT SIDE** | IP20<br>IP66 (with door coupling rotary handle)<br>IP40 (with insulating surround) |
| **DEGREE OF PROTECTION (TERMINATIONS)** | IP10 (tunnel terminal)<br>IP00 (terminations, phase |

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| | isolator and band terminal) |
| **NUMBER OF POLES** | Four-pole |
| **TERMINAL CAPACITY (COPPER STRIP)** | Max. 10 segments of 16 mm x 0.8 mm at box terminal<br>Max. 8 segments of 15.5 mm x 0.8 mm (2x) at box terminal<br>Min. 2 segements of 16 mm x 0.8 mm at rear-side connection (punched)<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 |
| **HANDLE COLOR** | Black |
| **LIFESPAN, ELECTRICAL** | 4000 operations at 690 V AC-3<br>7500 operations at 400 V AC-1<br>7500 operations at 415 V AC-1<br>5000 operations at 690 V AC-1<br>6000 operations at 415 V AC-3<br>6000 operations at 400 V AC-3 |
| **FUNCTIONS** | Interlockable Disconnectors/main switches |
| **TYPE** | Switch-disconnector |
| **SPECIAL FEATURES** | • Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113.<br>• Isolating characteristics to IEC/EN 60947-3 and VDE 0660.<br>• Busbar tag shroud to VDE 0160 Part 100.<br>• Rated current = rated uninterrupted current: 160 A<br>• The rated short-time withstand current for PN2/N2 in conjunction with |

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| | earth-fault release<br>NZM2-4-XFI...Icw = 1.5 kA |
| **APPLICATION** | Use in unearthed supply systems at 690 V |
| **SHOCK RESISTANCE** | 20 g (half-sinusoidal shock 20 ms) |
| **NUMBER OF SWITCHES** | 1 |
| **RATED CONDITIONAL SHORT-CIRCUIT CURRENT (IQ)** | 0 kA |
| **RATED CONDITIONAL SHORT-CIRCUIT CURRENT WITH BACK-UP FUSE** | 80 kA at 690 V<br>PN2(N2)-160...250: 250 AgGgL<br>100 kA at 400/415 V |
| **RATED CONDITIONAL SHORT-CIRCUIT CURRENT WITH DOWNSTREAM FUSE** | PN2(N2)-160...250: 250 AgGgL<br>100 kA at 400/415 V<br>80 kA at 690 V |
| **RATED OPERATING VOLTAGE (UE) AT AC - MAX** | 690 V |
| **RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)** | 160 A |
| **RATED PERMANENT CURRENT AT AC-21, 400 V** | 0 A |
| **RATED PERMANENT CURRENT AT AC-23, 400 V** | 0 A |
| **RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)** | 3.5 kA |
| **RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)** | 3.5 kA |
| **SWITCHING POWER AT 400 V** | 0 kW |
| **HANDLE TYPE** | Rocker lever |
| **NUMBER OF OPERATIONS PER HOUR - MAX** | 120 |
| **RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ** | 5.5 kA |
| **RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS** | 6000 V |
| **RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN** | 8000 V |

| CONTACTS | |
|---|---|
| **STANDARD TERMINALS** | Screw terminal |
| **OPTIONAL TERMINALS** | Box terminal. Connection on rear. Tunnel terminal |
| **SHORT-CIRCUIT PROTECTIVE DEVICE FUSES - MAX** | 250 A gL |
| **TERMINAL CAPACITY (COPPER BUSBAR)** | M8 at rear-side screw connection<br>Max. 24 mm x 8 mm direct at switch rear-side connection<br>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<br>16 $mm^2$ (1x) at tunnel terminal<br>10 $mm^2$ - 16 $mm^2$ (1x) at box terminal<br>10 $mm^2$ - 16 $mm^2$ (1x) direct at switch rear-side connection<br>6 $mm^2$ - 16 $mm^2$ (2x) direct at switch rear-side connection |
| **TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)** | 10 $mm^2$ - 16 $mm^2$ (1x) direct at switch rear-side connection<br>10 $mm^2$ - 16 $mm^2$ (2x) direct at switch rear-side connection<br>16 $mm^2$ (1x) at tunnel terminal |
| **TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)** | 25 $mm^2$ - 70 $mm^2$ (2x) at box terminal<br>25 $mm^2$ - 185 $mm^2$ (1x) at 1-hole tunnel terminal<br>25 $mm^2$ - 185 $mm^2$ (1x) direct at switch rear-side connection<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 |
| **TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)** | 25 $mm^2$ - 185 $mm^2$ (1x) at 1-hole tunnel terminal |

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

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