



□□□□□

## Eaton 112628

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 200A, +residual current circuit-breaker, 30mA, AC/DC sensitive

□□□□

|                                 |                                                                            |
|---------------------------------|----------------------------------------------------------------------------|
| <b>PRODUCT NAME</b>             | Eaton Moeller series NZM<br>molded case circuit<br>breaker thermo-magnetic |
| <b>CATALOG NUMBER</b>           | 112628                                                                     |
| <b>PRODUCT<br/>LENGTH/DEPTH</b> | 293 mm                                                                     |
| <b>PRODUCT HEIGHT</b>           | 145 mm                                                                     |
| <b>PRODUCT WIDTH</b>            | 140 mm                                                                     |
| <b>PRODUCT WEIGHT</b>           | 4.76 kg                                                                    |
| <b>COMPLIANCES</b>              | RoHS conform                                                               |
| <b>CERTIFICATIONS</b>           | IEC/EN 60947<br>VDE 0660<br>EN 62423: Type B<br>IEC                        |

## □□□□

|                                                                                         |                                                                                                                                  |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>AMPERAGE RATING</b>                                                                  | 200 A                                                                                                                            |
| <b>VOLTAGE RATING</b>                                                                   | 400 V - 400 V                                                                                                                    |
| <b>CIRCUIT BREAKER FRAME TYPE</b>                                                       | NZM2                                                                                                                             |
| <b>FEATURES</b>                                                                         | Protection unit<br>Motor drive optional                                                                                          |
| <b>10.10 TEMPERATURE RISE</b>                                                           | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| <b>10.11 SHORT-CIRCUIT RATING</b>                                                       | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>                                              | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.13 MECHANICAL FUNCTION</b>                                                        | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |
| <b>10.2.2 CORROSION RESISTANCE</b>                                                      | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>                         | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>       | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b> | Meets the product standard's requirements.                                                                                       |
| <b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>                                 | Meets the product standard's requirements.                                                                                       |
| <b>10.2.5 LIFTING</b>                                                                   | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| <b>10.2.6 MECHANICAL IMPACT</b>                                                         | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| <b>10.2.7 INSCRIPTIONS</b>                                                              | Meets the product standard's requirements.                                                                                       |

## □□

|                      |                                                                                                      |
|----------------------|------------------------------------------------------------------------------------------------------|
|                      | <a href="#">eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-005.eps</a>      |
|                      | <a href="#">eaton-circuit-breaker-characteristic-power-defense-mccb-characteristic-curve-037.eps</a> |
| CHARACTERISTIC CURVE | <a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve-003.eps</a>                          |
|                      | <a href="#">eaton-circuit-breaker-nzm-mccb-characteristic-curve-050.eps</a>                          |
| □□□□□                | <a href="#">eaton-residual-current-device-3-pole-nzm2-il01219040z.pdf</a>                            |
|                      | <a href="#">eaton-circuit-breaker-current-nzm-mccb-dimensions.eps</a>                                |
|                      | <a href="#">eaton-circuit-breaker-nzm-mccb-dimensions-019.eps</a>                                    |
| □□                   | <a href="#">eaton-circuit-breaker-symbol-nzm-earth-fault-release-symbol.eps</a>                      |
|                      | <a href="#">eaton-general-nzm-mccb-symbol.eps</a>                                                    |
|                      | <a href="#">eaton-circuit-breaker-nzm-mccb-3d-drawing-003.eps</a>                                    |

|                                                                 |                                                                                                      |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <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>MOUNTING METHOD</b>                                          | Fixed<br>DIN rail (top hat rail)<br>mounting optional<br>Built-in device fixed built-in technique    |
| <b>CLIMATIC PROOFING</b>                                        | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30                       |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>            | 48 W                                                                                                 |
| <b>UTILIZATION CATEGORY</b>                                     | A (IEC/EN 60947-2)                                                                                   |
| <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                                                                                                    |

|                                                                |                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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>                            | Bottom                                                                                                                                                                                                                                                                                                        |
| <b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>              | Screw connection                                                                                                                                                                                                                                                                                              |
| <b>LIFESPAN, MECHANICAL</b>                                    | 20000 operations                                                                                                                                                                                                                                                                                              |
| <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>                                         | Three-pole                                                                                                                                                                                                                                                                                                    |
| <b>TERMINAL CAPACITY (COPPER STRIP)</b>                        | Max. 8 segments of 24 mm x 1 mm (2x) at box terminal<br>Min. 2 segments of 9 mm x 0.8 mm at box terminal<br>Max. 10 segments of 16 mm x 0.8 mm at box terminal<br>Min. 2 segments 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) |
| <b>LIFESPAN, ELECTRICAL</b>                                    | 10000 operations at 400 V AC-1<br>6500 operations at 400 V AC-3<br>6500 operations at 415 V AC-3<br>10000 operations at 415 V AC-1                                                                                                                                                                            |
| <b>FUNCTIONS</b>                                               | System and cable                                                                                                                                                                                                                                                                                              |

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | protection, fire protection, personnel protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>TYPE</b>             | Circuit breaker                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>SPECIAL FEATURES</b> | <ul style="list-style-type: none"> <li>• For equipment with power electronics, such as inverters and variable frequency drives</li> <li>• Ready-to-connect combination consisting of type B circuit-breaker and residual current circuit-breaker and type A passive section</li> <li>• Suitability for the application in three-phase systems without neutral conductor</li> <li>• Personnel protection and preventive fire protection for 0 - 100 kHz fault current frequency</li> <li>• Operational voltage range Type B 50 - 400 V AC (+ 10 %)</li> <li>• Type A functionality even without operational voltage for rated frequency of 50 Hz</li> <li>• Not UL/CSA approved</li> <li>• Adjusting buttons can be sealed.</li> <li>• Rated operating voltage 400 V AC (+/- 10 %)</li> <li>• Rated frequency 50 Hz</li> <li>• Rated fault current <math>I_{\Delta n} = 0.03 \text{ A}</math></li> <li>• Depending on the cable manufacturer up to 240 mm<sup>2</sup> can be connected</li> <li>• Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit</li> </ul> |

|                                                                      |                                                                                                                                                                         |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                      | breaker (Rated short-circuit breaking capacity I <sub>cn</sub> ) <ul style="list-style-type: none"> <li>Rated current = rated uninterrupted current: 200 A</li> </ul>   |
| <b>APPLICATION</b>                                                   | Use in unearthed supply systems at 400 V                                                                                                                                |
| <b>SHOCK RESISTANCE</b>                                              | 20 g (half-sinusoidal shock 20 ms)                                                                                                                                      |
| <b>POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT</b>               | Front side                                                                                                                                                              |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 200 A                                                                                                                                                                   |
| <b>POWER LOSS</b>                                                    | 48 W                                                                                                                                                                    |
| <b>RELEASE SYSTEM</b>                                                | Thermomagnetic release, AC/DC sensitive earth-fault release                                                                                                             |
| <b>SHORT-CIRCUIT TOTAL BREAKTIME</b>                                 | < 10 ms                                                                                                                                                                 |
| <b>RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)</b>                | 1.9 kA                                                                                                                                                                  |
| <b>RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)</b>                  | 1.9 kA                                                                                                                                                                  |
| <b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX</b>               | 2000 A                                                                                                                                                                  |
| <b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN</b>               | 1200 A                                                                                                                                                                  |
| <b>TERMINAL CAPACITY (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 (COPPER BUSBAR)</b>                             | 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                  |
| <b>TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)</b>              | 10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) direct at switch rear-side connection<br>6 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) direct at switch rear-side connection |

|                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                        | 6 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) at box terminal<br>16 mm <sup>2</sup> (1x) at tunnel terminal<br>10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) at box terminal                                                                                                                                                                                                             |
| <b>TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)</b>                              | 16 mm <sup>2</sup> (1x) at tunnel terminal                                                                                                                                                                                                                                                                                                                                            |
| <b>TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)</b>                             | 25 mm <sup>2</sup> - 70 mm <sup>2</sup> (2x) at box terminal<br>25 mm <sup>2</sup> - 70 mm <sup>2</sup> (2x) direct at switch rear-side connection<br>25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at box terminal<br>25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) direct at switch rear-side connection<br>25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at 1-hole tunnel terminal |
| <b>TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)</b>                           | 25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at tunnel terminal                                                                                                                                                                                                                                                                                                                      |
| <b>HANDLE TYPE</b>                                                                     | Rocker lever                                                                                                                                                                                                                                                                                                                                                                          |
| <b>SHORT DELAY CURRENT SETTING (ISD) - MAX</b>                                         | 0 A                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>SHORT DELAY CURRENT SETTING (ISD) - MIN</b>                                         | 0 A                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>INSTANTANEOUS CURRENT SETTING (II) - MAX</b>                                        | 2000 A                                                                                                                                                                                                                                                                                                                                                                                |
| <b>INSTANTANEOUS CURRENT SETTING (II) - MIN</b>                                        | 1200 A                                                                                                                                                                                                                                                                                                                                                                                |
| <b>NUMBER OF OPERATIONS PER HOUR - MAX</b>                                             | 120                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>OVERLOAD CURRENT SETTING (IR) - MAX</b>                                             | 200 A                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>OVERLOAD CURRENT SETTING (IR) - MIN</b>                                             | 160 A                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 230 V, 50/60 HZ</b>     | 150 kA                                                                                                                                                                                                                                                                                                                                                                                |
| <b>RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 400/415 V, 50/60 HZ</b> | 150 kA                                                                                                                                                                                                                                                                                                                                                                                |
| <b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 400/415 V, 50/60 HZ</b>                  | 330 kA                                                                                                                                                                                                                                                                                                                                                                                |
| <b>STANDARD TERMINALS</b>                                                              | 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)                                | 1000 V AC                                         |

|                 |
|-----------------|
| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
|                 |

