

# Specifications



Photo is representative

## Eaton 168509

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 4p, 320A, 200A in 4th pole, plug-in module, N, 3, 20

### General specifications

|                                 |                                                                            |
|---------------------------------|----------------------------------------------------------------------------|
| <b>PRODUCT NAME</b>             | Eaton Moeller series NZM<br>molded case circuit<br>breaker thermo-magnetic |
| <b>CATALOG NUMBER</b>           | 168509                                                                     |
| <b>MODEL CODE</b>               | NZMN3-4-A320/200-SVE                                                       |
| <b>EAN</b>                      | 4015081649877                                                              |
| <b>PRODUCT<br/>LENGTH/DEPTH</b> | 335 mm                                                                     |
| <b>PRODUCT HEIGHT</b>           | 215.2 mm                                                                   |
| <b>PRODUCT WIDTH</b>            | 185 mm                                                                     |
| <b>PRODUCT WEIGHT</b>           | 8.81 kg                                                                    |
| <b>COMPLIANCES</b>              | RoHS conform                                                               |

## Delivery programme

|                             |                                                    |
|-----------------------------|----------------------------------------------------|
| <b>ACCESSORIES REQUIRED</b> | NZM3-XSVS                                          |
| <b>AMPERAGE RATING</b>      | 320 A                                              |
| <b>APPLICATION</b>          | Use in unearthed supply systems at 690 V           |
| <b>FEATURES</b>             | Protection unit<br>Motor drive optional            |
| <b>NUMBER OF POLES</b>      | Four-pole                                          |
| <b>SPECIAL FEATURES</b>     | Rated current = rated uninterrupted current: 320 A |

## Design verification to IEC/EN 61439

|                                                                                         |                                                                                                                                  |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <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.                                                                                       |
| <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</b>                                                                  | Does not apply, since the                                                                                                        |

## Design verification to IEC/EN 61439 - technical data

|                                     |       |
|-------------------------------------|-------|
| AMBIENT OPERATING TEMPERATURE - MAX | 70 °C |
|-------------------------------------|-------|

|                                   |       |
|-----------------------------------|-------|
| AMBIENT STORAGE TEMPERATURE - MAX | 70 °C |
|-----------------------------------|-------|

|                                     |        |
|-------------------------------------|--------|
| AMBIENT OPERATING TEMPERATURE - MIN | -25 °C |
|-------------------------------------|--------|

|                                   |       |
|-----------------------------------|-------|
| AMBIENT STORAGE TEMPERATURE - MIN | 40 °C |
|-----------------------------------|-------|

|                                               |      |
|-----------------------------------------------|------|
| EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT | 94 W |
|-----------------------------------------------|------|

|                                                          |                                                                    |
|----------------------------------------------------------|--------------------------------------------------------------------|
| AGAINST ELECTRIC SHOCK                                   | 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.                             |

## Technical data - electrical

|                 |       |
|-----------------|-------|
| AMPERAGE RATING | 320 A |
|-----------------|-------|

|                                     |                        |
|-------------------------------------|------------------------|
| CURRENT RATING OF NEUTRAL CONDUCTOR | 60% of phase conductor |
|-------------------------------------|------------------------|

|                                            |                  |
|--------------------------------------------|------------------|
| ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT | Screw connection |
|--------------------------------------------|------------------|

|             |              |
|-------------|--------------|
| HANDLE TYPE | Rocker lever |
|-------------|--------------|

|                                          |         |
|------------------------------------------|---------|
| INSTANTANEOUS CURRENT SETTING (II) - MAX | 19200 A |
|------------------------------------------|---------|

|                                          |        |
|------------------------------------------|--------|
| INSTANTANEOUS CURRENT SETTING (II) - MIN | 1920 A |
|------------------------------------------|--------|

|                               |               |
|-------------------------------|---------------|
| OVERLOAD CURRENT SETTING (IR) | 160 A - 200 A |
|-------------------------------|---------------|

|                                     |       |
|-------------------------------------|-------|
| OVERLOAD CURRENT SETTING (IR) - MAX | 320 A |
|-------------------------------------|-------|

|                                     |       |
|-------------------------------------|-------|
| OVERLOAD CURRENT SETTING (IR) - MIN | 250 A |
|-------------------------------------|-------|

|                                                                                 |       |
|---------------------------------------------------------------------------------|-------|
| 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 500 V DC | 30 kA |
|----------------------------------------------------------------------|-------|

|                                                                      |       |
|----------------------------------------------------------------------|-------|
| RATED SHORT-CIRCUIT BREAKING CAPACITY ICS (IEC/EN 60947) AT 750 V DC | 30 kA |
|----------------------------------------------------------------------|-------|

|                                                                   |               |
|-------------------------------------------------------------------|---------------|
| <b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 240 V, 50/60 HZ</b> | 330 kA        |
| <b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MAX</b>            | 3200 A        |
| <b>SHORT-CIRCUIT RELEASE NON-DELAYED SETTING - MIN</b>            | 1920 A        |
| <b>VOLTAGE RATING</b>                                             | 690 V - 690 V |

## Technical data - mechanical

|                                                                |                                                    |
|----------------------------------------------------------------|----------------------------------------------------|
| <b>DEGREE OF PROTECTION</b>                                    | IP20                                               |
| <b>MOUNTING METHOD</b>                                         | Built-in device plug-in technique                  |
| <b>NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)</b>     | 0                                                  |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b> | 0                                                  |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>   | 0                                                  |
| <b>POSITION OF CONNECTION FOR MAIN CURRENT CIRCUIT</b>         | Front side                                         |
| <b>SPECIAL FEATURES</b>                                        | Rated current = rated uninterrupted current: 320 A |

## Technical data - mechanical - terminals

|                                          |                                                                                                                                                                                                                                         |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>OPTIONAL TERMINALS</b>                | Box terminal. Connection on rear. Tunnel terminal                                                                                                                                                                                       |
| <b>TERMINAL CAPACITY (COPPER BUSBAR)</b> | Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection                                                                                                                                                                 |
| <b>TERMINAL CAPACITY (COPPER STRIP)</b>  | Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched)<br>10 segments of 50 mm x 1 mm (2x) at rear-side width extension<br>Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) |

## Resources

|                            |                                                                                            |
|----------------------------|--------------------------------------------------------------------------------------------|
| BROCHURES                  | <a href="#">eaton-digital-nzm-brochure-br013003en-en-us.pdf</a>                            |
|                            | <a href="#">eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf</a>              |
| CATALOGUES                 | <a href="#">eaton-digital-nzm-catalog-ca013003en-en-us.pdf</a>                             |
| DECLARATIONS OF CONFORMITY | <a href="#">eaton-molded-case-circuit-breaker-declaration-of-conformity-uk251454en.pdf</a> |
|                            | <a href="#">eaton-molded-case-circuit-breaker-declaration-of-conformity-eu250292en.pdf</a> |
| ECAD MODEL                 | <a href="#">DA-CE-ETN.NZMN3-4-A320_200-SVE</a>                                             |
| INSTALLATION INSTRUCTIONS  | <a href="#">eaton-circuit-breaker-plugin-adapter-nzm2-il01219023z.pdf</a>                  |
| INSTALLATION VIDEOS        | <a href="#">Introduction of the new digital circuit breaker NZM</a>                        |
|                            | <a href="#">The new digital NZM Range</a>                                                  |
| MCAD MODEL                 | <a href="#">eaton-molded-case-switches-mcad-3d-models-nzm3-4p-xsve.stp</a>                 |
|                            | <a href="#">eaton-molded-case-switches-mcad-drawings-nzm3-4p-xsve.dwg</a>                  |
| PEP ECO-PASSPORT           | <a href="#">eaton-molded-case-switches-pep-eato-00231-v0101-en.pdf</a>                     |
| TECHNICAL DATA SHEETS      | <a href="#">eaton-nzm-technical-information-sheet</a>                                      |

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



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