

Circuit-breaker, 4p, 50A



**Part no.** NZMB1-4-A50  
**265801**  
**EL Number** 4358816  
**(Norway)**

| General specifications  |  |
|---|--|
| Product name  | Eaton Moeller series NZM molded case circuit breaker thermo-magnetic   |
| Part no.  | NZMB1-4-A50  |
| EAN   | 4015082658014  |
| Product Length/Depth  | 84.5 millimetre  |
| Product height  | 145 millimetre   |
| Product width   | 120 millimetre   |
| Product weight  | 1.316 kilogram   |
| Compliances   | RoHS conform   |
| Certifications  | IEC/EN 60947<br>IEC  |
| Product Tradename   | NZM  |
| Product Type  | Molded case circuit breaker  |
| Product Sub Type  | Thermo-magnetic  |
| Delivery program  |  |
| Application   | Use in unearthed supply systems at 440 V   |
| Type  | Circuit breaker  |
| Circuit breaker frame type  | NZM1   |
| Number of poles   | Four-pole  |
| Amperage Rating   | 50 A   |
| Release system  | Thermomagnetic release   |
| Features  | Protection unit  |
| Special features  | 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 Icn)<br>Rated current = rated uninterrupted current: 50 A<br>Set value in neutral conductor is synchronous with set value Ir of main pole.<br>Terminal capacity hint: Up to 95 mm <sup>2</sup> can be connected depending on the cable manufacturer. |
| Technical Data - Electrical   |  |
| Voltage rating  | 440 V - 440 V  |
| Rated insulation voltage (Ui)   | 690 V AC   |
| Rated impulse withstand voltage (Uimp) at auxiliary contacts                    | 6000 V   |
| Rated impulse withstand voltage (Uimp) at main contacts                         | 6000 V   |
| Current rating of neutral conductor   | 200% of phase conductor  |
| Instantaneous current setting (Ii) - min  | 6 A  |
| Instantaneous current setting (Ii) - max  | 10 A   |
| Overload current setting (Ir)   | 40 A - 50 A  |
| Overload current setting (Ir) - min   | 40 A   |
| Overload current setting (Ir) - max   | 50 A   |
| Short delay current setting (Isd) - min   | 0 A  |
| Short delay current setting (Isd) - max   | 0 A  |
| Short-circuit release non-delayed setting - min                                 | 300 A  |
| Short-circuit release non-delayed setting - max                                 | 500 A  |
| Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz     | 30 kA  |
| Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz | 25 kA  |
| Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz     | 18.5 kA  |
| Rated short-circuit making capacity Icm at 240 V, 50/60 Hz                      | 63 kA  |
| Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz                  | 53 kA  |
| Rated short-circuit making capacity Icm at 440 V, 50/60 Hz                      | 53 kA  |

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| Short-circuit total breaktime  |  | < 10 ms   |
| Electrical connection type of main circuit                                 |  | Frame clamp   |
| Isolation  |  | 500 V AC (between auxiliary contacts and main contacts)<br>300 V AC (between the auxiliary contacts)  |
| Number of operations per hour - max  |  | 120   |
| Handle type  |  | Rocker lever  |
| Utilization category   |  | A (IEC/EN 60947-2)  |
| Overvoltage category   |  | III   |
| Pollution degree   |  | 3   |
| Lifespan, electrical   |  | 7500 operations at 400 V AC-1<br>7500 operations at 415 V AC-1  |
| Direction of incoming supply   |  | As required   |
| <b>Technical Data - Mechanical</b>   |  |   |
| Mounting Method  |  | DIN rail (top hat rail) mounting optional<br>Fixed<br>Built-in device fixed built-in technique  |
| Degree of protection   |  | IP20<br>IP20 (basic degree of protection, in the operating controls area)   |
| Degree of protection (IP), front side                                      |  | IP40 (with insulating surround)<br>IP66 (with door coupling rotary handle)  |
| Degree of protection (terminations)  |  | IP00 (terminations, phase isolator and strip terminal)<br>IP10 (tunnel terminal)  |
| Protection against direct contact  |  | Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110   |
| Shock resistance   |  | 20 g (half-sinusoidal shock 20 ms)  |
| Number of auxiliary contacts (change-over contacts)                        |  | 0   |
| Number of auxiliary contacts (normally closed contacts)                    |  | 0   |
| Number of auxiliary contacts (normally open contacts)                      |  | 0   |
| Position of connection for main current circuit                            |  | Front side  |
| Climatic proofing  |  | Damp heat, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78  |
| Special features   |  | 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 <sub>cn</sub> )<br>Rated current = rated uninterrupted current: 50 A<br>Set value in neutral conductor is synchronous with set value I <sub>r</sub> of main pole.<br>Terminal capacity hint: Up to 95 mm <sup>2</sup> can be connected depending on the cable manufacturer. |
| Lifespan, mechanical   |  | 20000 operations  |
| <b>Technical Data - Mechanical - Terminals</b>                             |  |   |
| Standard terminals   |  | Box terminal  |
| Optional terminals   |  | Connection on rear. Screw terminal. Tunnel terminal   |
| Terminal capacity (control cable)  |  | 0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (1x)<br>0.75 mm <sup>2</sup> - 1.5 mm <sup>2</sup> (2x)  |
| Terminal capacity (aluminum solid conductor/cable)                         |  | 10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) direct at switch rear-side connection<br>10 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) direct at switch rear-side connection<br>16 mm <sup>2</sup> (1x) at tunnel terminal  |
| Terminal capacity (aluminum stranded conductor/cable)                      |  | 25 mm <sup>2</sup> - 35 mm <sup>2</sup> (2x) direct at switch rear-side connection<br>25 mm <sup>2</sup> - 95 mm <sup>2</sup> (1x) at tunnel terminal<br>25 mm <sup>2</sup> - 35 mm <sup>2</sup> (1x) direct at switch rear-side connection   |
| Terminal capacity (copper busbar)  |  | M6 at rear-side screw connection<br>Min. 12 mm x 5 mm direct at switch rear-side connection<br>Max. 16 mm x 5 mm direct at switch rear-side connection  |
| Terminal capacity (copper solid conductor/cable)                           |  | 6 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) direct at switch rear-side connection<br>16 mm <sup>2</sup> (1x) at tunnel terminal<br>6 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) at box terminal<br>10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) direct at switch rear-side connection<br>10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) at box terminal  |
| Terminal capacity (copper stranded conductor/cable)                        |  | 25 mm <sup>2</sup> (2x) direct at switch rear-side connection<br>25 mm <sup>2</sup> - 95 mm <sup>2</sup> (1x) at 1-hole tunnel terminal<br>6 mm <sup>2</sup> - 25 mm <sup>2</sup> (2x) at box terminal<br>10 mm <sup>2</sup> - 70 mm <sup>2</sup> (1x) direct at switch rear-side connection<br>10 mm <sup>2</sup> - 70 mm <sup>2</sup> (1x) at box terminal  |
| Terminal capacity (copper strip)   |  | Min. 2 segments of 9 mm x 0.8 mm at box terminal<br>Max. 9 segments of 9 mm x 0.8 mm at box terminal  |
| <b>Design verification as per IEC/EN 61439 - technical data</b>            |  |   |
| Rated operational current for specified heat dissipation (I <sub>n</sub> ) |  | 50 A  |
| Equipment heat dissipation, current-dependent                              |  | 13.2 W  |

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| Ambient operating temperature - min  |  | -25 °C   |
| Ambient operating temperature - max  |  | 70 °C  |
| Ambient storage temperature - min  |  | 40 °C  |
| Ambient storage temperature - max  |  | 70 °C  |
| <b>Design verification as per IEC/EN 61439</b>                                   |  |  |
| 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.   |
| 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.   |
| 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.                         |
| <b>Additional information</b>  |  |  |
| Functions  |  | System and cable protection  |

## Technical data ETIM 9.0

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|---|----|--|
| Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)   |    |  |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecf@ss13-27-37-04-09 [AJZ716018]) |    |  |
| Rated permanent current I <sub>u</sub>  | A  | 50                                       |
| Rated voltage   | V  | 440 - 440                                |
| Rated short-circuit breaking capacity I <sub>cu</sub> at 400 V, 50 Hz   | kA | 25                                       |
| Overload release current setting  | A  | 40 - 50                                  |
| Adjustment range short-term delayed short-circuit release   | A  | 0 - 0                                    |
| Adjustment range undelayed short-circuit release  | A  | 6 - 10                                   |
| Power loss  | W  | 13.2                                     |
| Device construction   |    | Built-in device fixed built-in technique |
| Integrated earth fault protection   |    | No                                       |
| Type of electrical connection of main circuit   |    | Frame clamp                              |
| Suitable for DIN rail (top hat rail) mounting   |    | No                                       |
| DIN rail (top hat rail) mounting optional   |    | Yes                                      |
| Number of auxiliary contacts as normally closed contact   |    | 0  |
| Number of auxiliary contacts as normally open contact   |    | 0  |
| Number of auxiliary contacts as change-over contact   |    | 0  |
| With switched-off indicator   |    | No                                       |
| With integrated under voltage release   |    | No                                       |
| Number of poles   |    | 4  |
| Position of connection for main current circuit   |    | Front side                               |
| Type of control element   |    | Rocker lever                             |

|                                      |  |  |      |
|--------------------------------------|--|--|------|
| Complete device with protection unit |  |  | Yes  |
| Motor drive integrated               |  |  | No   |
| Motor drive optional                 |  |  | No   |
| Degree of protection (IP)            |  |  | IP20 |