

Circuit-breaker, 3p, 32A



**Part no.**                    **NZMH2-M32**  
**281301**

| <b>General specifications</b>   |  |   |
|---|--|---|
| Product name  |  | Eaton Moeller series NZM molded case circuit breaker thermo-magnetic  |
| Part no.  |  | NZMH2-M32   |
| EAN   |  | 4015082813017   |
| Product Length/Depth  |  | 149 millimetre  |
| Product height  |  | 184 millimetre  |
| Product width   |  | 105 millimetre  |
| Product weight  |  | 2.345 kilogram  |
| Compliances   |  | RoHS conform  |
| Certifications  |  | IEC/EN 60947<br>IEC   |
| Product Tradename   |  | NZM   |
| Product Type  |  | Molded case circuit breaker   |
| Product Sub Type  |  | Thermo-magnetic   |
| <b>Delivery program</b>   |  |   |
| Application   |  | Use in unearthed supply systems at 690 V  |
| Type  |  | Circuit breaker   |
| Circuit breaker frame type  |  | NZM2  |
| Number of poles   |  | Three-pole  |
| Amperage Rating   |  | 32 A  |
| Release system  |  | Thermomagnetic release  |
| 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: 32 A<br>Tripping class 10 A<br>IEC/EN 60947-4-1, IEC/EN 60947-2<br>The circuit-breaker fulfills all requirements for AC-3 switching category. |
| Fitted with:  |  | Thermal protection  |
| <b>Technical Data - Electrical</b>  |  |   |
| Voltage rating  |  | 690 V - 690 V   |
| Rated insulation voltage (U <sub>i</sub> )  |  | 1000 V  |
| Rated impulse withstand voltage (U <sub>imp</sub> ) at auxiliary contacts                   |  | 6000 V  |
| Rated impulse withstand voltage (U <sub>imp</sub> ) at main contacts                        |  | 8000 V  |
| Rated operational current   |  | 29.3 A (400 V AC-3)   |
| Rated short-time withstand current (t = 0.3 s)  |  | 1.9 kA  |
| Rated short-time withstand current (t = 1 s)  |  | 1.9 kA  |
| Instantaneous current setting (I <sub>i</sub> ) - min                                       |  | 320 A   |
| Instantaneous current setting (I <sub>i</sub> ) - max                                       |  | 448 A   |
| Overload current setting (I <sub>r</sub> ) - min  |  | 25 A  |
| Overload current setting (I <sub>r</sub> ) - max  |  | 32 A  |
| Short-circuit release non-delayed setting - min   |  | 350 A   |
| Short-circuit release non-delayed setting - max   |  | 350 A   |
| Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 230 V, 50/60 Hz     |  | 150 kA  |
| Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 400/415 V, 50/60 Hz |  | 130 kA  |
| Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 440 V, 50/60 Hz     |  | 130 kA  |
| Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 525 V, 50/60 Hz     |  | 37.5 kA   |
| Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 690 V, 50/60 Hz     |  | 5 kA  |
| Rated short-circuit making capacity I <sub>cm</sub> at 240 V, 50/60 Hz                      |  | 330 kA  |
| Rated short-circuit making capacity I <sub>cm</sub> at 400/415 V, 50/60 Hz                  |  | 330 kA  |
| Rated short-circuit making capacity I <sub>cm</sub> at 440 V, 50/60 Hz                      |  | 286 kA  |

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| Rated short-circuit making capacity Icm at 525 V, 50/60 Hz |  | 105 kA   |
| Rated short-circuit making capacity Icm at 690 V, 50/60 Hz |  | 40 kA  |
| Rated operating power at AC-3, 230 V                       |  | 7.5 kW   |
| Rated operating power at AC-3, 400 V                       |  | 15 kW  |
| Short-circuit total breaktime                              |  | < 10 ms  |
| Electrical connection type of main circuit                 |  | Screw connection   |
| Isolation  |  | 300 V AC (between the auxiliary contacts)<br>500 V AC (between auxiliary contacts and main 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                                       |  | 6500 operations at 400 V AC-3<br>6500 operations at 415 V AC-3<br>10000 operations at 415 V AC-1<br>5000 operations at 690 V AC-3<br>7500 operations at 690 V AC-1<br>10000 operations at 400 V AC-1   |
| Direction of incoming supply                               |  | As required  |
| <b>Technical Data - Mechanical</b>                         |  |  |
| Mounting Method  |  | Fixed<br>Built-in device fixed built-in technique  |
| Degree of protection                                       |  | IP20 (basic degree of protection, in the operating controls area)<br>IP20  |
| Degree of protection (IP), front side                      |  | IP40 (with insulating surround)<br>IP66 (with door coupling rotary handle)   |
| Degree of protection (terminations)                        |  | IP10 (tunnel terminal)<br>IP00 (terminations, phase isolator and strip terminal)   |
| Protection against direct contact                          |  | Finger and back-of-hand proof to VDE 0106 part 100   |
| Shock resistance   |  | 20 g (half-sinusoidal shock 20 ms)   |
| Switch off technique                                       |  | Thermomagnetic   |
| 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 Icn)<br>Rated current = rated uninterrupted current: 32 A<br>Tripping class 10 A<br>IEC/EN 60947-4-1, IEC/EN 60947-2<br>The circuit-breaker fulfills all requirements for AC-3 switching category. |
| Lifespan, mechanical                                       |  | 20000 operations   |
| <b>Technical Data - Mechanical - Terminals</b>             |  |  |
| Standard terminals   |  | Screw terminal   |
| Optional terminals   |  | Box terminal. Connection on rear. Tunnel terminal  |
| Terminal capacity (control cable)                          |  | 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)   |
| Terminal capacity (aluminum solid conductor/cable)         |  | 16 mm <sup>2</sup> (1x) at tunnel terminal<br>10 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) direct at switch rear-side connection<br>10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) direct at switch rear-side connection   |
| Terminal capacity (aluminum stranded conductor/cable)      |  | 25 mm <sup>2</sup> - 50 mm <sup>2</sup> (1x) direct at switch rear-side connection<br>25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at tunnel terminal<br>25 mm <sup>2</sup> - 50 mm <sup>2</sup> (2x) direct at switch rear-side connection   |
| Terminal capacity (copper busbar)                          |  | 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<br>M8 at rear-side screw connection   |
| Terminal capacity (copper solid conductor/cable)           |  | 10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) at box terminal<br>6 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) direct at switch rear-side connection<br>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) direct at switch rear-side connection                                     |
| Terminal capacity (copper stranded conductor/cable)        |  | 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) direct at switch rear-side connection<br>25 mm <sup>2</sup> - 70 mm <sup>2</sup> (2x) at box terminal<br>25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at 1-hole tunnel terminal<br>25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at box terminal    |
| Terminal capacity (copper strip)                           |  | Min. 2 segments of 24 mm x 0.8 mm at rear-side connection (punched)<br>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 24 mm x 0.8 mm at rear-side connection (punched)  |

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|  |  | Max. 10 segments of 16 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 (In)                    |  | 32 A   |
| Equipment heat dissipation, current-dependent                                    |  | 9.65 W   |
| 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  |  | Motor protection   |

## Technical data ETIM 9.0

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|---|----|--|
| Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)  |    |  |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss13-27-37-04-01 [AGZ529021]) |    |  |
| Overload release current setting  | A  | 25 - 32                                  |
| Adjustment range undelayed short-circuit release  | A  | 320 - 448                                |
| With thermal overload protection  |    | Yes                                      |
| Phase failure sensitive   |    | No                                       |
| Switch off technique  |    | Thermomagnetic                           |
| Rated operating voltage   | V  | 690 - 690                                |
| Rated permanent current Iu  | A  | 32                                       |
| Rated operation power at AC-3, 230 V  | kW | 7.5                                      |
| Rated operation power at AC-3, 400 V  | kW | 15                                       |
| Power loss  | W  |  |
| Type of electrical connection of main circuit   |    | Screw connection                         |
| Type of control element   |    | Rocker lever                             |
| Device construction   |    | Built-in device fixed built-in technique |
| With integrated auxiliary switch  |    | No                                       |
| With integrated under voltage release   |    | No                                       |
| Number of poles   |    | 3  |

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| Rated short-circuit breaking capacity I <sub>cu</sub> at 400 V, AC | kA | 130  |
| Degree of protection (IP)  |    | IP20 |
| Height   | mm | 184  |
| Width  | mm | 105  |
| Depth  | mm | 149  |