

## Switch-disconnector 3p, 250A

**Part no.**                    **PN2-250**  
**266007**

| <b>General specifications</b>                                |   |
|--|---|
| Product name   | Eaton Moeller series NZM switch-disconnector  |
| Part no.   | PN2-250   |
| EAN  | 4015082660079   |
| Product Length/Depth   | 142 millimetre  |
| Product height   | 185 millimetre  |
| Product width  | 105 millimetre  |
| Product weight   | 1.891 kilogram  |
| Compliances  | RoHS conform  |
| Certifications   | IEC<br>IEC/EN 60947   |
| Product Tradename  | NZM   |
| Product Type   | Switch-disconnector   |
| Product Sub Type   | None  |
| <b>Delivery program</b>                                      |   |
| Application  | Use in unearthed supply systems at 690 V  |
| Type   | Switch-disconnector   |
| Circuit breaker frame type                                   | PN2   |
| Connection   | Screw   |
| Number of poles  | Three-pole  |
| Amperage Rating  | 250 A   |
| Features   | Version as maintenance-/service switch<br>Version as main switch<br>Version as emergency stop installation  |
| 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: 250 A<br>The rated short-time withstand current for PN2/N2 in conjunction with earth-fault release NZM2-4-XFI...Icw = 1.5 kA |
| <b>Technical Data - Electrical</b>                           |   |
| Voltage rating   | 690 V - 690 V   |
| Rated operating voltage (Ue) at AC - max                     | 690 V   |
| Rated insulation voltage (Ui)                                | 690 V   |
| Rated impulse withstand voltage (Uimp) at auxiliary contacts | 6000 V  |
| Rated impulse withstand voltage (Uimp) at main contacts      | 8000 V  |
| Rated conditional short-circuit current (Iq)                 | 0 kA  |
| Rated operational current                                    | 250 A (415 V AC-22/23A, making and breaking capacity)<br>250 A (690 V AC-22/23A, making and breaking capacity)  |
| Rated permanent current at AC-21, 400 V                      | 0 A   |
| Rated permanent current at AC-23, 400 V                      | 0 A   |
| Rated conditional short-circuit current with back-up fuse    | 100 kA at 400/415 V<br>PN2(N2)-160...250: 250 AgGgL<br>80 kA at 690 V   |
| Rated conditional short-circuit current with downstream fuse | PN2(N2)-160...250: 250 AgGgL<br>80 kA at 690 V<br>100 kA at 400/415 V   |
| Rated short-time withstand current (Icw)                     | 3.5 kA  |
| Rated short-time withstand current (t = 0.3 s)               | 3.5 kA  |
| Rated short-time withstand current (t = 1 s)                 | 3.5 kA  |
| Rated operating frequency                                    | 50 Hz   |
| Rated short-circuit making capacity Icm at 690 V, 50/60 Hz   | 5.5 kA  |
| Rated operating power at AC-3, 400 V                         | 0 kW  |
| Rated operating power at AC-23, 400 V                        | 132 kW  |

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| Switching power at 400 V                                |  | 0 kW  |
| Short-circuit protective device fuses - max             |  | 250 A gL  |
| Electrical connection type of main circuit              |  | Screw connection  |
| 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  |
| Overvoltage category                                    |  | III   |
| Pollution degree  |  | 3   |
| Lifespan, electrical                                    |  | 10000 operations at 415 V AC-1<br>5000 operations at 690 V AC-3<br>7500 operations at 690 V AC-1<br>7500 operations at 415 V AC-3<br>10000 operations at 400 V AC-1<br>7500 operations at 400 V AC-3  |
| Direction of incoming supply                            |  | As required   |
| <b>Technical Data - Mechanical</b>                      |  |   |
| Mounting Method   |  | Distribution board installation<br>Ground mounting<br>Intermediate mounting<br>Fixed<br>Built-in device fixed built-in technique  |
| Degree of protection                                    |  | IP20 (basic protection type, in the area of the HMI devices)<br>Other   |
| Degree of protection (IP), front side                   |  | IP66 (with door coupling rotary handle)<br>IP40 (with insulating surround)<br>IP20  |
| Degree of protection (terminations)                     |  | IP00 (terminations, phase isolator and band 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   |
| Number of switches                                      |  | 1   |
| Handle color  |  | Black   |
| Switch positions  |  | I, 0  |
| Climatic proofing                                       |  | Damp heat, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78  |
| 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: 250 A<br>The rated short-time withstand current for PN2/N2 in conjunction with earth-fault release NZM2-4-XFI...l <sub>cw</sub> = 1.5 kA   |
| 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 (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> - 185 mm <sup>2</sup> (1x) at 1-hole tunnel terminal   |
| Terminal capacity (copper busbar)                       |  | Max. 24 mm x 8 mm direct at switch rear-side connection<br>M8 at rear-side screw connection<br>Min. 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>10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) at box terminal<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                                  |
| Terminal capacity (copper stranded conductor/cable)     |  | 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 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 1-hole tunnel terminal<br>25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) direct at switch rear-side connection |
| Terminal capacity (copper strip)                        |  | Max. 8 segments of 15.5 mm x 0.8 mm (2x) at box terminal<br>Max. 10 segments of 16 mm x 0.8 mm at box terminal<br>Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched)<br>Min. 2 segments of 16 mm x 0.8 mm at rear-side connection (punched)   |

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|  |  | Min. 2 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 (In)                    |  | 250 A  |
| Equipment heat dissipation, current-dependent                                    |  | 48 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  |  | Disconnectors/main switches<br>Interlockable   |

## Technical data ETIM 9.0

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|---|----|--|-----------|
| Low-voltage industrial components (EG000017) / Switch disconnecter (low voltage) (EC000216)   |    |  |           |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnecter (ecl@ss13-27-37-14-03 [AKF060018]) |    |  |           |
| Version as main switch  |    |  | Yes       |
| Version as maintenance-/service switch  |    |  | Yes       |
| Version as safety switch  |    |  | No        |
| Version as emergency stop installation  |    |  | Yes       |
| Version as reversing switch   |    |  | No        |
| Number of switches  |    |  | 1         |
| Max. rated operation voltage Ue AC  | V  |  | 690       |
| Rated operating voltage   | V  |  | 690 - 690 |
| Rated permanent current Iu  | A  |  | 250       |
| Rated permanent current at AC-23, 400 V   | A  |  | 0         |
| Rated permanent current at AC-21, 400 V   | A  |  | 0         |
| Rated operation power at AC-3, 400 V  | kW |  | 0         |
| Rated short-time withstand current Icw  | kA |  | 3.5       |
| Rated operation power at AC-23, 400 V   | kW |  | 132       |
| Switching power at 400 V  | kW |  | 0         |

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| Conditioned rated short-circuit current I <sub>q</sub>  |  | kA | 0  |
| Number of poles   |  |    | 3  |
| 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  |
| Motor drive optional                                    |  |    | No                                       |
| Motor drive integrated                                  |  |    | No                                       |
| Voltage release optional                                |  |    | No                                       |
| Device construction                                     |  |    | Built-in device fixed built-in technique |
| Suitable for floor mounting                             |  |    | Yes                                      |
| Suitable for front mounting 4-hole                      |  |    | No                                       |
| Suitable for front mounting centre                      |  |    | No                                       |
| Suitable for distribution board installation            |  |    | Yes                                      |
| Suitable for intermediate mounting                      |  |    | Yes                                      |
| Colour control element                                  |  |    | Black                                    |
| Type of control element                                 |  |    | Rocker lever                             |
| Interlockable   |  |    | Yes                                      |
| Type of electrical connection of main circuit           |  |    | Screw connection                         |
| With pre-assembled cabling                              |  |    | No                                       |
| Degree of protection (IP), front side                   |  |    | IP20                                     |
| Degree of protection (NEMA)                             |  |    | Other                                    |
| Width   |  | mm | 105                                      |
| Height  |  | mm | 185                                      |
| Depth   |  | mm | 142                                      |
| Width in number of modular spacings                     |  |    |  |