

Switch-disconnector 4p 400A + withdrawable unit



**Part no. N3-4-400-AVE
110872**

| General specifications | | |
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| Product name | | Eaton Moeller series NZM switch-disconnector |
| Part no. | | N3-4-400-AVE |
| EAN | | 4015081104017 |
| Product Length/Depth | | 260 millimetre |
| Product height | | 346 millimetre |
| Product width | | 230 millimetre |
| Product weight | | 20.241 kilogram |
| Compliances | | RoHS conform |
| Certifications | | IEC IEC/EN 60947 |
| Product Tradename | | NZM |
| Product Type | | Switch-disconnector |
| Product Sub Type | | None |
| Delivery program | | |
| Application | | Use in unearthed supply systems at 690 V |
| Type | | Switch-disconnector |
| Circuit breaker frame type | | N3 |
| Accessories required | | NZM3-4-XAVS socket base |
| Number of poles | | Four-pole |
| Amperage Rating | | 400 A |
| Features | | Version as emergency stop installation Motor drive optional Version as main switch Version as maintenance-/service switch |
| Special features | | Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. Busbar tag shroud to VDE 0160 Part 100. Rated current = rated uninterrupted current: 400 A |
| Technical Data - Electrical | | |
| Voltage rating | | 690 V - 690 V |
| Rated operating voltage (Ue) at AC - max | | 690 V |
| Rated insulation voltage (Ui) | | 1000 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 | | 630 A (690 V AC-22/23A, making and breaking capacity) 630 A (415 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 | | 80 kA at 690 V PN3(N3)-400...630: 630 AgGgL 100 kA at 400/415 V |
| Rated conditional short-circuit current with downstream fuse | | PN3(N3)-400...630: 630 AgGgL 100 kA at 400/415 V 80 kA at 690 V |
| Rated short-time withstand current (Icw) | | 12 kA |
| Rated short-time withstand current (t = 0.3 s) | | 12 kA |
| Rated short-time withstand current (t = 1 s) | | 12 kA |
| Rated operating frequency | | 50 Hz |
| Rated short-circuit making capacity Icm at 690 V, 50/60 Hz | | 25 kA |
| Rated operating power at AC-3, 400 V | | 0 kW |
| Rated operating power at AC-23, 400 V | | 200 kW |

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| Switching power at 400 V | | 0 kW |
| Short-circuit protective device fuses - max | | 630 A gL |
| Electrical connection type of main circuit | | Screw connection |
| Isolation | | 500 V AC (between auxiliary contacts and main contacts) 300 V AC (between the auxiliary contacts) |
| Number of operations per hour - max | | 60 |
| Handle type | | Rocker lever |
| Overvoltage category | | III |
| Pollution degree | | 3 |
| Lifespan, electrical | | 5000 operations at 400 V AC-1 2000 operations at 690 V AC-3 5000 operations at 415 V AC-1 3000 operations at 690 V AC-1 3000 operations at 400 V AC-3 3000 operations at 415 V AC-3 |
| Direction of incoming supply | | As required |
| Technical Data - Mechanical | | |
| Mounting Method | | Withdrawable Ground mounting Intermediate mounting Distribution board installation Built-in device slide-in technique (withdrawable) |
| Degree of protection | | IP20 (basic protection type, in the area of the HMI devices) Other |
| Degree of protection (IP), front side | | IP66 (with door coupling rotary handle) IP20 IP40 (with insulating surround) |
| Degree of protection (terminations) | | IP10 (tunnel terminal) IP00 (terminations, phase isolator and band 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 Damp heat, constant, to IEC 60068-2-78 |
| Special features | | Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. Busbar tag shroud to VDE 0160 Part 100. Rated current = rated uninterrupted current: 400 A |
| Lifespan, mechanical | | 15000 operations |
| Technical Data - Mechanical - Terminals | | |
| Terminal capacity (aluminum solid conductor/cable) | | 16 mm ² (1x) at tunnel terminal 16 mm ² (1x) direct at switch rear-side connection 10 mm ² - 16 mm ² (2x) direct at switch rear-side connection |
| Terminal capacity (aluminum stranded conductor/cable) | | 25 mm ² - 185 mm ² (1x) at 1-hole tunnel terminal up to 240 mm ² depending on the cable manufacturer. |
| Terminal capacity (copper busbar) | | Min. 20 mm x 5 mm direct at switch rear-side connection Max. 10 mm x 50 mm (2x) at rear-side width extension M10 at rear-side screw connection |
| Terminal capacity (copper solid conductor/cable) | | 16 mm ² (2x) at box terminal 300 mm ² (2x) at rear-side width extension 16 mm ² (1x) direct at switch rear-side connection 16 mm ² (2x) direct at switch rear-side connection |
| Terminal capacity (copper stranded conductor/cable) | | 50 mm ² - 240 mm ² (1x) at 2-hole tunnel terminal 50 mm ² - 240 mm ² (2x) at 2-hole tunnel terminal 25 mm ² - 120 mm ² (2x) at box terminal 25 mm ² - 120 mm ² (1x) direct at switch rear-side connection 35 mm ² - 240 mm ² (1x) at box terminal 25 mm ² - 185 mm ² (1x) at 1-hole tunnel terminal 25 mm ² - 120 mm ² (2x) direct at switch rear-side connection |
| Terminal capacity (copper strip) | | Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) Max. 8 segments of 24 mm x 1 mm (2x) at box terminal 10 segments of 50 mm x 1 mm (2x) at rear-side width extension Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm Min. 6 segments of 16 mm x 0.8 mm at box terminal |

| Design verification as per IEC/EN 61439 - technical data | | |
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| Rated operational current for specified heat dissipation (In) | | 400 A |
| Equipment heat dissipation, current-dependent | | 43.2 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 |
| Design verification as per IEC/EN 61439 | | |
| 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. |
| Additional information | | |
| Functions | | Disconnectors/main switches Voltage release optional Interlockable |

Technical data ETIM 9.0

| 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 (ec1@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 | |
| 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 | 12 |
| Rated operation power at AC-23, 400 V | kW | 200 |
| Switching power at 400 V | kW | 0 |
| Conditioned rated short-circuit current Iq | kA | 0 |

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| Number of poles | | | 4 |
| 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 | | | Yes |
| Motor drive integrated | | | No |
| Voltage release optional | | | Yes |
| Device construction | | | Built-in device slide-in technique (withdrawable) |
| 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 | 230 |
| Height | | mm | 346 |
| Depth | | mm | 260 |
| Width in number of modular spacings | | | |