



Switch-disconnector 4p 1250A 1000VDC

Part no. **N4-4-1250-S1-DC**  
 Catalog No. **119886**  
 EL-Nummer (Norway) **4356078**



Similar to illustration

**Delivery program**

|   |             |  |
|---|-------------|--|
| Product range                               |             | Switch-disconnectors   |
| Protective function                         |             | Disconnectors/main switches<br>Photovoltaic applications   |
| Product range                               |             | DC switch-disconnectors  |
| Application field                           |             | Utility buildings<br>Open areas  |
| Part no.                                    |             | N...DC   |
| Standard/Approval                           |             | IEC  |
| Rated operational voltage                   |             | 1000   |
| Installation type                           |             | Fixed  |
| Construction size                           |             | N4   |
| Description                                 |             | IEC/EN 60947-3<br>CCC China Compulsory Certificate<br>Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. Isolating characteristics to IEC/EN 60947-3 and VDE 0660.<br>N switch-disconnectors can, in addition, be combined with NZM...-XU, NZM...-XA shunt releases and auxiliary contacts as well as with NZM...-XR... remote operator. For DC switching, all 4 contacts must be connected in series. Refer to the information on jumper kit accessories.<br>Supplied as standard: Screw connection; box terminal optional.<br>When working with ungrounded systems (e.g., IT), the installation must ensure that a double ground fault will be impossible.<br>Switch can not be combined with plug-in/withdrawable units and/or connection on rear.<br>N4-4-...-S15-DC feeder unit and outgoer from the bottom only. |
| Connection options                          |             |  |
| Number of poles                             |             | 4-pole basic device, usable in a 1-pole or 2-pole configuration depending on the type of connection  |
| Standard equipment                          |             | Screw connection   |
| Switch positions                            |             | I, +, 0  |
| Rated current = rated uninterrupted current | $I_n = I_u$ | A 1250   |
| Remotely control / trip                     |             | Remote operation with shunt releases / remote operator   |

|                           |  |    |
|---------------------------|--|----|
| Rated operating frequency |  | DC |
|---------------------------|--|----|

## Technical data

### Switch-disconnectors

|   |                |      |  |
|---|----------------|------|--|
| Rated operational voltage, max.                   | U <sub>e</sub> | V DC | 1000   |
| Rated uninterrupted current with terminal jumpers |                |      |  |
| at 40°  |                |      | 1250   |
| at 65°  |                |      | 1250   |
|   |                |      | Values for rated uninterrupted current at 65 °C include jumpers. |
| Utilization category                              |                |      | DC-22A   |
| Rated operational current                         | I <sub>e</sub> | A    |  |
| DC 22-A   | I <sub>e</sub> | A    | 1250   |
| DC-21B  | I <sub>e</sub> | CSA  | 1400   |
| Overvoltage category/pollution degree             |                |      | III/3  |
| Rated insulation voltage                          | U <sub>i</sub> | V    | 1250   |
| Ambient temperature                               |                |      |  |
| Ambient temperature, storage                      |                | °C   | - 40 - + 70  |
| Operation   |                | °C   | -25 - +70  |

### Rated short-time withstand current

|           |                 |    |    |
|-----------|-----------------|----|----|
| t = 0.1 s | I <sub>cw</sub> | kA | 34 |
|-----------|-----------------|----|----|

### Lifespan, mechanical

|                          |            |       |   |
|--------------------------|------------|-------|---|
| Max. operating frequency |            | Ops/h | 60  |
| Lifespan, mechanical     | Operations |       | 10000   |
|                          |            |       | Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release |

### Terminal capacity

|   |      |                 |                                   |
|---|------|-----------------|-----------------------------------|
| Standard equipment  |      |                 | Screw connection                  |
| Round copper conductor                                    |      |                 |                                   |
| Tunnel terminal   |      |                 |                                   |
| Stranded  |      |                 |                                   |
| 4-hole  |      | mm <sup>2</sup> | 4 x (50 - 240)                    |
| Bolt terminals  |      |                 |                                   |
| Direct on the switch                                      |      |                 |                                   |
| Stranded  |      | mm <sup>2</sup> | 1 x (120 - 185)<br>4 x (50 - 185) |
| Module plate  |      |                 |                                   |
| Single hole   | min. | mm <sup>2</sup> | 1 x (120 - 300)                   |
| Single hole   | max. | mm <sup>2</sup> | 2 x (95 - 300)                    |
| Module plate  |      |                 |                                   |
| Double hole   | min. | mm <sup>2</sup> | 2 x (95 - 185)                    |
| Double hole   | max. | mm <sup>2</sup> | 4 x (35 - 185)                    |
| Connection width extension                                |      | mm <sup>2</sup> |                                   |
| Connection width extension                                |      | mm <sup>2</sup> | 4 x 300<br>6 x (95 - 240)         |
| Al conductors, Cu cable                                   |      |                 |                                   |
| Tunnel terminal   |      |                 |                                   |
| Stranded  |      |                 |                                   |
| 4-hole  |      | mm <sup>2</sup> | 4 x (25 - 240)                    |
| Bolt terminal and rear-side connection                    |      |                 |                                   |
| Flat copper strip, with holes                             | min. | mm              | (2x) 10 x 50 x 1.0                |
| Flat copper strip, with holes                             | max. | mm              | (2x) 10 x 50 x 1.0                |
| Connection width extension                                |      | mm              | (2x) 10 x 80 x 1,0                |
| Cu strip (number of segments x width x segment thickness) |      |                 |                                   |
| Flat conductor terminal                                   |      |                 |                                   |
|   | min. | mm              | 6 x 16 x 0.8                      |
|   | max. | mm              | (2x) 10 x 32 x 1.0                |

|  |      |    |                                |
|--|------|----|--------------------------------|
| Module plate                           |      |    |                                |
| Single hole                            |      | mm | (2x) 10 x 50 x 1,0             |
| Bolt terminal and rear-side connection |      |    |                                |
| Flat copper strip, with holes          | min. | mm | (2x) 10 x 50 x 1.0             |
| Flat copper strip, with holes          | max. | mm | (2x) 10 x 50 x 1.0             |
| Connection width extension             |      | mm | (2x) 10 x 80 x 1,0             |
| Copper busbar (width x thickness)      |      | mm |                                |
| Bolt terminal and rear-side connection |      |    |                                |
| Screw connection                       |      |    | M10                            |
| Direct on the switch                   |      |    |                                |
|  | min. | mm | 25 x 5                         |
|  | max. | mm | 2 x (50 x 10)<br>2 x (80 x 10) |
| Module plate                           |      |    |                                |
| Single hole                            | min. | mm | 25 x 5                         |
| Single hole                            | max. | mm | 2 x (50 x 10)                  |
| Module plate                           |      |    |                                |
| Double hole                            |      | mm | 2 x (50 x 10)                  |
| Connection width extension             |      | mm |                                |
| Connection width extension             | min. | mm | 60 x 10                        |
| Connection width extension             | max. | mm | 2 x (10 x 80)                  |

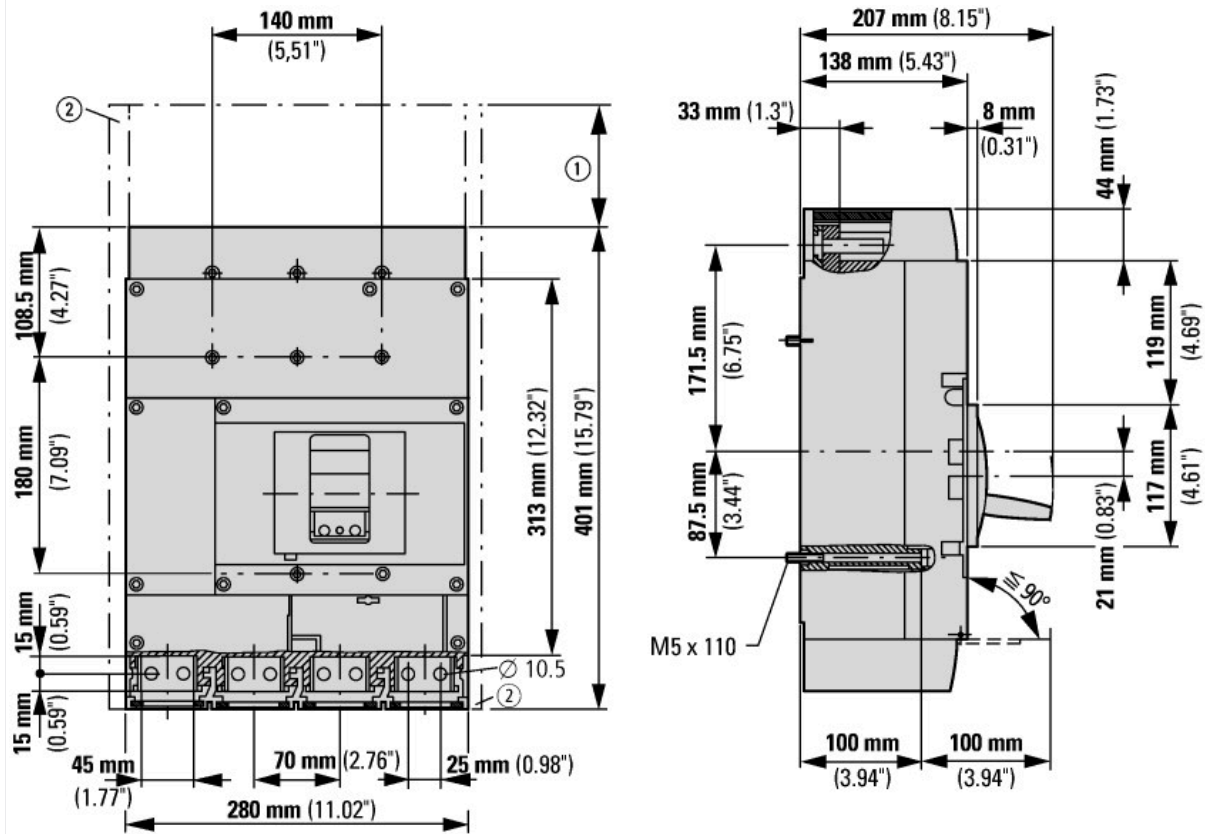
## Design verification as per IEC/EN 61439

|  |           |    |  |
|--|-----------|----|--|
| Technical data for design verification   |           |    |  |
| Rated operational current for specified heat dissipation   | $I_n$     | A  | 1250   |
| Equipment heat dissipation, current-dependent  | $P_{vid}$ | W  | 231  |
| Operating ambient temperature min.   |           | °C | -25  |
| Operating ambient temperature max.   |           | °C | 70   |
| IEC/EN 61439 design verification   |           |    |  |
| 10.2 Strength of materials and parts   |           |    |  |
| 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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties   |           |    |  |
| 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.                         |

## Technical data ETIM 7.0

| Low-voltage industrial components (EG000017) / Switch disconnecter (EC000216)  |    |  |  |
|--|----|--|--|
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnecter (ec@ss10.0.1-27-37-14-03 [AKF060013]) |    |  |  |
| 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  |  | 0  |
| Rated operating voltage  | V  |  | 1000 - 1000                              |
| Rated permanent current Iu   | A  |  | 1250                                     |
| 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 |  | 34                                       |
| Rated operation power at AC-23, 400 V  | kW |  | 0  |
| Switching power at 400 V   | kW |  | 0  |
| Conditioned rated short-circuit current Iq   | kA |  | 0  |
| 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 fixed built-in technique |
| Suitable for ground 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                         |
| Degree of protection (IP), front side  |    |  | IP20                                     |
| Degree of protection (NEMA)  |    |  |  |

## Dimensions



- ① Blow out area, minimum clearance to other parts  $\geq 260$  mm  
 ② Minimum clearance to adjacent parts  $\geq 15$  mm

## Additional product information (links)

|  |   |
|--|---|
| CurveSelect characteristics program                                    | <a href="http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm">http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm</a>         |
| Eaton configurator   | <a href="http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm">http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm</a> |
| Additional technical data: Photovoltaics catalog (starting on page 35) | <a href="http://www.moeller.net/binary/pdf_kat/br01601001z_en.pdf">http://www.moeller.net/binary/pdf_kat/br01601001z_en.pdf</a>   |