star-delta switching device

Manual and Safety Instructions
Read this manual before installing and activating this product. Respect all safety instructions and local laws and regulations.

The installation may only be executed by qualified electricians. This product may only be used according to its intended use set forth in this manual.

The following Symbols and hazard statements are used in this operating and assembly instructions:

**Hazard statements**

**Danger**
Indicates a hazardous situation which, if not avoided, will result in death or serious personal injury.

**Warning**
Indicates a hazardous situation which, if not avoided, could result in death or serious personal injury.

**Caution**
Indicates a hazardous situation which, if not avoided, could result in minor or moderate personal injury.

**Notes**
A blue or grey circle with a white graphical symbol indicates that an action must be taken.

A red or grey circle with a diagonal bar, possibly with a black graphical symbol, indicates that an action must not be taken or must be stopped.

If these instructions are not observed, it may result in malfunction or damage to the equipment.

The hazard statements are structured in the following way:

**Signal Word**
**Description of Hazard**
Consequence of ignoring the warning.
Action to avoid the hazard.
### Technical Data

<table>
<thead>
<tr>
<th>Technical Data</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing material:</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Protection class:</td>
<td>IP 44</td>
</tr>
<tr>
<td>Length:</td>
<td>315 mm</td>
</tr>
<tr>
<td>Width:</td>
<td>145 mm</td>
</tr>
<tr>
<td>Height:</td>
<td>200 mm</td>
</tr>
<tr>
<td>Weight:</td>
<td>approx. 2.7 kg</td>
</tr>
<tr>
<td>Supply voltage:</td>
<td>400 V, 50 Hz</td>
</tr>
<tr>
<td>Tolerance range:</td>
<td>6% - 10% of the rated voltage according to $D_{IN}$ EN 60038 (VDE 0175)</td>
</tr>
<tr>
<td>Switching capacity:</td>
<td>Star-delta start up to 15 kW</td>
</tr>
<tr>
<td>Ambient temperature:</td>
<td>-15 °C to +40 °C</td>
</tr>
<tr>
<td>Supply:</td>
<td>Connection cable with CEE plug 5-pole with phase inverter</td>
</tr>
<tr>
<td>Motor side gland:</td>
<td>PG29 (clamping range 14 - 25 mm)</td>
</tr>
<tr>
<td>Technical changes reserved</td>
<td></td>
</tr>
</tbody>
</table>

### Intended use

The NOLTA star-delta switching device is intended for use in industrial and commercial areas in accordance with the EMC guidelines and taking interference emissions into account. When using the device, the permissible ambient conditions according to the specified IP protection class and the permissible temperature range must be observed. Special provisions apply to EX zones, areas with an increased risk of fire and underground. Mechanical and electrical changes may only be carried out after consulting the manufacturer and only by certified specialists. All changes to the device must meet the safety requirements. The manufacturer assumes no liability for damage resulting from improper use.
**Warnings**

**DANGER**

**Death or serious personal injury**
- The device may only be installed, serviced and commissioned by a suitably trained specialist taking into account the local regulations and technical regulations. The “5 safety rules” must be observed.
- Before any intervention or opening of the device, it must be switched off using the on / off switch, the power supply must be interrupted by pulling the mains plug and secured against being switched on again.
- Maximum current rating must not be exceeded.

**Attention**
- Set the tripping current of the motor protection switch to the rated motor current.
- The bimetals are interconnected in the switch so that they are in the motor’s phase circuit. This protects the motor winding in both the star and the triangle position. A conversion is not necessary.
- Overcurrent and residual current protective devices must be provided by the customer in order to ensure operation in accordance with standards, the cable length between the protective devices and the motor protection plug must not exceed 3m.

**Notes**
- If a thermal contact is connected, the bridge at connections T1 and T2 must be removed.
- A neutral conductor (N) must be provided via the mains plug.
- Wait at least 3 seconds before switching from star to delta operation.
- Only connect suitable cables and observe the maximum cable length.
- Do not use oils, greases or solvents, these substances impair the stability of the plastic.
**Operation**

- Wait at least 3 seconds before switching from star to delta operation.
- In the event of a pump failure due to overcurrent or winding temperature, set the star-delta switch to „0“. After the temperature sensor (F2) or the overcurrent release (F1) has cooled down, it can be switched on again. Attention: Eliminate the cause of the fault
- Resetting after a motor fault: Set the switch back to „0“.
- The direction of rotation can be changed by pushing in and turning the pole pins 180 ° in the CEE plug.

**Installation**

Connection of the consumer according to the circuit diagram to terminals U1, V1, W1, U2, V2, W2 and PE. The thermal contact of the connected consumer is installed on terminals T1 and T2, the factory-mounted bridge must be removed for this.

**Disposal**

This product or parts of it must be disposed of in an environmentally sound way: Use the public or private waste collection service. If this is not possible, please contact your NOLTA dealer.
Strom-Zeit-Kennlinie

Characteristic curve of tripping time and rated current

Kalter Zustand (Mittelwerte)
Cold condition (average values)

Die Auslösekennlinie zeigt den Öffnungsverzug der Schalter als Mittelwerte der Streubänder aus dem kalten Zustand bei 20 °C Umgebungstemperatur. Bei betriebswarmen Geräten sinkt die Auslösesezeit der Bimetallauslöser auf ca. 1/4 der abgelesenen Werte.

The tripping curve shows the delay in the opening of the switches as average values of tripping times from cold condition and an ambient temperature of 20 °C. With service warm switches, the corresponding time of the bimetal trips sinks to about 1/4 of the values taken out of the diagram.
Attention!

Do **not** disconnect under load!

Overcurrent protection device in the supply line according to DIN VDE 0113 Part 1 Section 7.2 required.
EU Declaration of Conformity

We hereby declare that the Nolta – Stern-Dreieck-Schaltgerät specified below will, due to its design and construction, comply with the relevant regulations listed.

Product Designation
Nolta – Stern-Dreieck-Schaltgerät

Manufacturer
Nolta GmbH
Industriestr. 8
35091 Köln

EU directives / Harmonized standards / national techn. Standards - Specifications
Low Voltage Directive 2014/35/EU
Restriction of use of certain hazardous substances in electrical and electronic equipment (RoHS) – Directive 2011/65/EU & 2015/863/EU
EN 60204-1:2018 Safety of machinery – Electrical equipment of machines – Part 1: General requirements

Authorized representative
Name and address
David Loechelt
Nolta GmbH
Industriestr. 8
35091 Köln

We confirm that a CE mark according to the European directives is affixed to the above mentioned Nolta – Stern-Dreieck-Schaltgerät.

31.01.2022
Date
CEO
Dr. Ing. J. Knake
Head of Quality Management
D. Loechelt