Softstarter 22/30kW

Manual and Safety Instructions
General Information

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>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch cycles</td>
<td>Max. 20 starts/h</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>400 V AC</td>
</tr>
<tr>
<td>Operating current</td>
<td>Max. IEC 60 A, UL 59,4 A</td>
</tr>
<tr>
<td>Rated power AC3/400V</td>
<td>Max. 30 kW</td>
</tr>
<tr>
<td>Supply frequency</td>
<td>50 - 60 Hz</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-20 - +60°C</td>
</tr>
<tr>
<td>Softstarter-cooling</td>
<td>Integrated fan</td>
</tr>
<tr>
<td>Therm. Tripping</td>
<td>Yes</td>
</tr>
<tr>
<td>Magn. Tripping</td>
<td>Yes</td>
</tr>
<tr>
<td>Temp. Compensation</td>
<td>Yes</td>
</tr>
<tr>
<td>Motor protection tripping</td>
<td>See chart</td>
</tr>
<tr>
<td>Housing</td>
<td>Solid rubber, black</td>
</tr>
<tr>
<td>Ventilation</td>
<td>FIBOX</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP44</td>
</tr>
<tr>
<td>Cable glands (2x each)</td>
<td>M 40 (19-28 mm), M16 (4-10 mm)</td>
</tr>
<tr>
<td>Cross sections of the main conductors</td>
<td>0,5 - 10 mm² rigid/ 0,5 - 10 mm² flexible, directly pluggable 1 - 16 mm² / 20 - 8 AWG</td>
</tr>
<tr>
<td>Dimensions</td>
<td>565 x 450 x 460 mm (L x W x H incl. handle)</td>
</tr>
<tr>
<td>Weight</td>
<td>24.5 kg</td>
</tr>
</tbody>
</table>

### Tripping Chart

![Tripping Chart](chart.jpg)

- 3 poles from cold state
- 2 poles from cold state
- 3 poles from hot state
**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 nominal motor current
- Overcurrent protection device must be ensured on site
- In automatic mode, the connected consumer can start up at any time
- In automatic mode, manual switch-off is only possible by pressing the main switch or switching to manual-mode

**Notes**
- If a thermal contact is connected, the jumper on the terminal blocks X1-1 and X1-2 must be removed
- Setting the soft start with regard to the start and stop ramp as well as the starting voltage according to the enclosed operating instructions for ABB soft start PSR
- Setting the level monitoring relay with regard to the sensitivity and the operating functions of the enclosed operating instructions for Finder level monitoring relay 72.01
- Connection of level electrodes or level controllers according to the enclosed operating instructions for Finder level monitoring relay 72.01
- Connection of a float switch according to the instructions in the "Installation" section - the float switch used must be suitable for low voltages
- With a left rotating field or phase failure of the supply line, the red LED lights up and the consumer cannot be switched on

- For the connection of 3 level electrodes the cable gland set 10 5103 is required
- Only connect suitable cables respectively level controllers or level electrodes and observe the maximum cable length
Installation

Connection of the supply line, the motor and the thermal contact according to the terminal assignment diagram on the inside of the housing.

The softstarter can be controlled in automatic mode via level controllers, level electrodes or a float switch, the possible connection options are as follows (take the required sealing kits and bridge from the enclosed accessory pack):

**Connection of level electrodes in combination with submersible pumps**

Connect level electrode for upper level to terminal block X1-4, level electrode for lower level to terminal block X1-3. Connect terminal block X1-5 and terminal block X1-7 using the enclosed bridge.

**Connection of level electrodes in combination with dry installed pumps**

Therefor the cable gland set for the connection of 3 level probes (article number 10 5103) is required. Insert the M20 extension into one of the two M16 cable entries and insert the sealing set with a 2 x 5 mm bushing. Connect level electrode for upper level to terminal block X1-4 and level electrode for lower level to terminal block X1-3.

Connect the ground electrode to terminal block X1-5 (see connection diagrams in the enclosed operating instructions for level monitoring relay 72.01).

**Connection of level-controllers**

Connect level controller for upper level (normally open contact) to terminal block X1-4 and terminal block X1-5, connect level controller for lower level (normally open contact) to terminal block X1-3 and terminal block X1-6. Connect PE of both level controllers to terminal block X1-7.

**Connection of a float switch**

Connect the normally open contact to terminal block X1-4 and terminal block X1-5, connect PE of the float switch to terminal block X1-7. The NOLTA KR2 float switch (order number 40 0035 ..) is recommended for use with low voltages.

Intended use

The NOLTA soft start 30 kW is intended for use in industrial and commercial areas in accordance with the EMC guideline 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.

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.
# EU Declaration of Conformity

We hereby declare that the Nolta – Sanftanlauf 22/30kW specified below will, due to its design and construction, comply with the relevant regulations listed.

<table>
<thead>
<tr>
<th>Product Designation</th>
<th>Nolta – Sanftanlauf 22/30kW</th>
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</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>Nolta GmbH</td>
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<td></td>
<td>Industriestr. 8</td>
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<tr>
<td></td>
<td>35091 Cölbe</td>
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<tr>
<td></td>
<td>Restriction of use of certain hazardous substances in electrical and electronic equipment (RoHS) – Directive 2011/65/EU &amp; 2015/863/EU</td>
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<tr>
<td></td>
<td>EN 60204-1:2018 Safety of machinery – Electrical equipment of machines – Part 1: General requirements</td>
</tr>
<tr>
<td>Authorized representative</td>
<td>David Loechelt</td>
</tr>
<tr>
<td>Name and address</td>
<td>Nolta GmbH</td>
</tr>
<tr>
<td></td>
<td>Industriestr. 8</td>
</tr>
<tr>
<td></td>
<td>35091 Cölbe</td>
</tr>
<tr>
<td>We confirm that a CE mark according to the European directives is affixed to the above mentioned Nolta – Sanftanlauf 22/30kW.</td>
<td></td>
</tr>
</tbody>
</table>

Date: 24.06.2020

CEO
Dr. Ing. J. Knake

Head of Quality Management
D. Loechelt
**Operation**

**Main switch**
Switching the power supply on / off

**On button**
Switches on the softstarter in manual mode

**Off button**
Switches off the softstarter in manual mode

**Selector switch manual / automatic**
In the manual mode, the connected consumer works according to the On / Off buttons
In the automatic mode, the connected consumer works according to the function set on the built-in level monitoring relay, depending on the status of the level electrodes or level controllers connected to X1-3, X1-4 and X1-5

**Phase control**
Red LED lights up = incorrect phase sequence or phase failure, the consumer then cannot be switched on or is switched off.

**Operating display**
Green LED lights up = device is operating

**Setting the soft starter**
Depending on the connected consumer, the start ramp, the stop ramp and the initial voltage must be set on the soft starter using 3 rotary controls (see also the accompanying operating instructions for the soft starter):

**Start ramp**
The ramp time for start is the time from which the soft starter starts the ramp (initial voltage) until full voltage is reached.
The ramp time should not be too long, as this leads to unnecessary heating of the motor and the risk of the motor protection being triggered.
If the motor is without a load, the start-up time of the motor is probably shorter than the set ramp time; if the motor is heavily loaded, the start-up time is likely to be longer.

**Stop ramp**
The deceleration ramp time is used when the motor needs to run down smoothly, e.g. with a pump or a conveyor belt. The ramp time for the run-down is the time from full voltage to reaching the stop voltage (initial voltage).
If the ramp time is set to zero, the deceleration corresponds to a direct stop.

**Initial voltage**
This is the point from which the starter starts or stops the ramps. The torque of the motor decreases with the square of the voltage.
If the voltage is too low, e.g. is set to 20%, the starting torque is only $0.2^2 = 0.04 = 4\%$ and the motor does not start at all.
It is therefore very important to find a value that is just large enough that the motor starts immediately so that there is no unnecessary heating.