

## SK NHD-480/6-F 500E Size 2

Part number: 278 273 006

Footprint combined line filter    incl. input choke



Only qualified electricians are allowed to install and commission the module. An electrician is a person who, because of their technical training and experience, has sufficient knowledge with regard to

- switching on, switching off, isolating, earthing and marking power circuits and devices,
- proper maintenance and use of protective devices in accordance with defined safety standards.

### **DANGER!**

#### **Danger of electric shock**

The frequency inverter continues to carry hazardous voltages for up to 5 minutes after it was switched off.

- Work must not be carried out unless the device has been disconnected from the voltage and at least 5 minutes have elapsed since the mains was switched off!

### **CAUTION**

#### **Danger of burns**

The module and all other metal components can heat up to temperatures above 70 °C.

Sufficient cooling time must be allowed for when working on the components in order to avoid injuries (local burns) to parts of the body coming into contact with the components.

In order to avoid damage to neighbouring objects, sufficient clearance must be maintained during installation.

### **NOTICE**

#### **Validity of this document**

This document is only valid in combination with the operating instructions for the relevant frequency inverter. Safe commissioning of this module and the frequency inverter depends on the availability of this information.

Technical Information / Datasheet	SK NHD-480/6-F			
Line filter	TI 278273006	V 1.1	4016	EN

### Scope of delivery

1 x	<b>Module</b>	SK NHD-480/6-F 500E Size 2
1 x	<b>Plug part</b>	4-pole



### Field of use

Footprint line filter (input filter) with integrated line choke (input choke) to reduce the emission of electromagnetic interference. In combination with this footprint combined line filter, the radio interference suppression level of the frequency inverter improves, a longer motor cable is possible, and the input voltage cause harmonics can be reduced. The module can be mounted underneath or in the immediate vicinity of the frequency inverter.

### Frequency inverter assignment

Permissible frequency inverters <sup>1)</sup>			Size	Limit value classes <sup>2)</sup> Cable-related emission 150 kHz – 30 MHz	
	...			Class C2	Class C1
SK 5xxE-250-323-A	...	SK 5xxE-750-323-A	1	100 m	50 m
SK 5xxE-111-340-A	...	SK 5xxE-221-340-A	2	100 m	50 m
SK 5xxE-111-340-O	...	SK 5xxE-221-340-O	2	100 m	25 m

<sup>1)</sup> SK 5xxE -...-O frequency inverters must **not** be used with footprint line filters of type number **B 0912048!**

<sup>2)</sup> Class C1 / C2 as per EN 61800-3

### Technical Data

#### General

<b>Temperature range</b>	°C	0 ... 40 (100 % duty cycle / S1) 0 ... 50 (70 % duty cycle / S3)
<b>Climate class</b>		25/085/21 (EN 60068-1)
<b>Certifications</b>		RoHS, EAC
<b>Tightening torque</b>	Nm	0.7 – 0.8 terminal 3.0 PE connection
<b>Weight</b>	kg	3.2

<b>European standard</b>	EN 60939-2
<b>Mounting 1)</b>	
Standard position	4 x M5 x 8 (mounting surface)
FI on line filter	2 x M5 x 8 (FI)
Booksize	2 x M5 x 8 (mounting surface)
<b>Protection class</b>	IP00

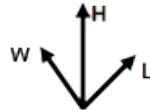
<sup>1)</sup> not part of the delivery, use washers if applicable

### Dimensions

<b>Envelope dimensions [mm]</b>	L x W x H	290 x 88 x 74
<b>Mounting [mm]</b>		
Standard position	L x W	280 x 50
FI	L	220 <sup>1)</sup> / 260 <sup>2)</sup>
Booksize	L x W	280 x 50
<b>Supply cable [mm]</b>		
Flexible strand	L	500
Wire end sleeve	L	10

<sup>1)</sup> Size 1 (3 x 230 V)

<sup>2)</sup> Size 2 (3 x 400 V)



### Connections

Name	PC connection	Input (PE, L1, L2, L3)		Output (PE2, L12, L22, L32) <sup>2)</sup>	
<b>Type</b>	Bolt <sup>1)</sup>	Socket part with provided plug part, screw terminals, 4-pole		Leads with wire end sleeves, 4-lead	
<b>Cross section / type</b>	M5	0.2 - 10 mm <sup>2</sup>	AWG 24 - 8	1.0 mm <sup>2</sup>	AWG 18 <sup>3)</sup>

<sup>1)</sup> incl. 2 washers, 1 spring washer, 1 M5 nut

<sup>2)</sup> Name can differ for older versions.

<sup>3)</sup> Style 1015

### Electrical data

<b>Number of phases</b>		3
<b>Rated voltage</b>	V ~	480
<b>Rated frequency</b>	Hz	50 ... 60
<b>Rated current</b>	A	5.5 (U <sub>T</sub> ≈ 50 °C)
<b>Inductance L<sub>1</sub></b>	mH	3 x 6.4
<b>Leakage current<sup>1)</sup></b>	mA	74.4 / 7.7

<b>Test voltage<sup>2)</sup></b>	V -	2150 / 2700
<b>Resistance of windings</b>	Ω	0.25
<b>Power dissipation</b>	W	24.0
<b>Short-circuit voltage U<sub>sh</sub> (400 V / 50 Hz)</b>	%	4.0

<sup>1)</sup> 1st value: Calculated with max. input voltage and failure of 2 phases (typically at 50 Hz)

2nd value: Rated for the maximum permissible input voltage fluctuation as per IEC 38 ± 10 %

<sup>2)</sup> 1st value: between 2 phases

2nd value: between phase and housing

### Installation

<b>Installation location</b>	In a control cabinet: <ul style="list-style-type: none"> <li>• underneath the frequency inverter, or</li> <li>• in its immediate vicinity</li> </ul>
<b>Installation orientation</b>	Standard (vertical) or Booksize: <ul style="list-style-type: none"> <li>• Keep a minimum distance of 100 mm above and below other devices or control cabinet components</li> </ul>
<b>Fastening</b>	With screws (fastening material has to be provided)

*Installation steps*

1.	<p>Installation of footprint accessories / unit</p> <p><i>Standard position:</i> Install a footprint unit with its underside flat on a level surface (control cabinet rear wall) and screw in with 4 screws to be provided (see  Technical Data – Fastening) into the respective fastening bores.</p> <p><i>Booksize:</i> Install a Booksize unit with a side on a level surface (control cabinet rear wall) in the vicinity of the frequency inverter and screw in with 2 or 4 screws to be provided (see  Technical Data – Fastening) into the respective fastening bores.</p>	  <p style="text-align: center;">Standard position</p>  <p style="text-align: center;">Booksize</p>
2.	<p>Installation of frequency inverter on footprint accessories</p> <p><i>Standard position:</i> Use 2 or 4 screws (depending on the size) to fasten the frequency inverter to the footprint unit.</p> <p><i>Booksize:</i> Not required</p>	
3.	<p>Connect the power cable and the PE connection to terminals PE, L1, L2, L3 of the input terminal block or the provided plug (depending on the size) while heeding the specified tightening torques (see  Technical Data – Connections).</p> <p>Note: Establish the PE connection first!</p>	
4.	<p>Connect the pre-assembled output cable (separate leads) (PE2, L12, L22, L32) to terminal strip X1 <sup>1)</sup> of the frequency inverter (PE, L1, L2, L3) for mains connection. Please refer to the manuals for the tightening torques (see  "Further documentation and software: <a href="http://www.nord.com">www.nord.com</a>").</p>	

<sup>1)</sup> X1 for sizes 1 - 7    X1.1 and X1.2 for size 8 and above


 **Information**

**Combination with brake resistor**

When using a footprint brake resistor, it should be mounted preferably underneath the frequency inverter and on the footprint line filter.

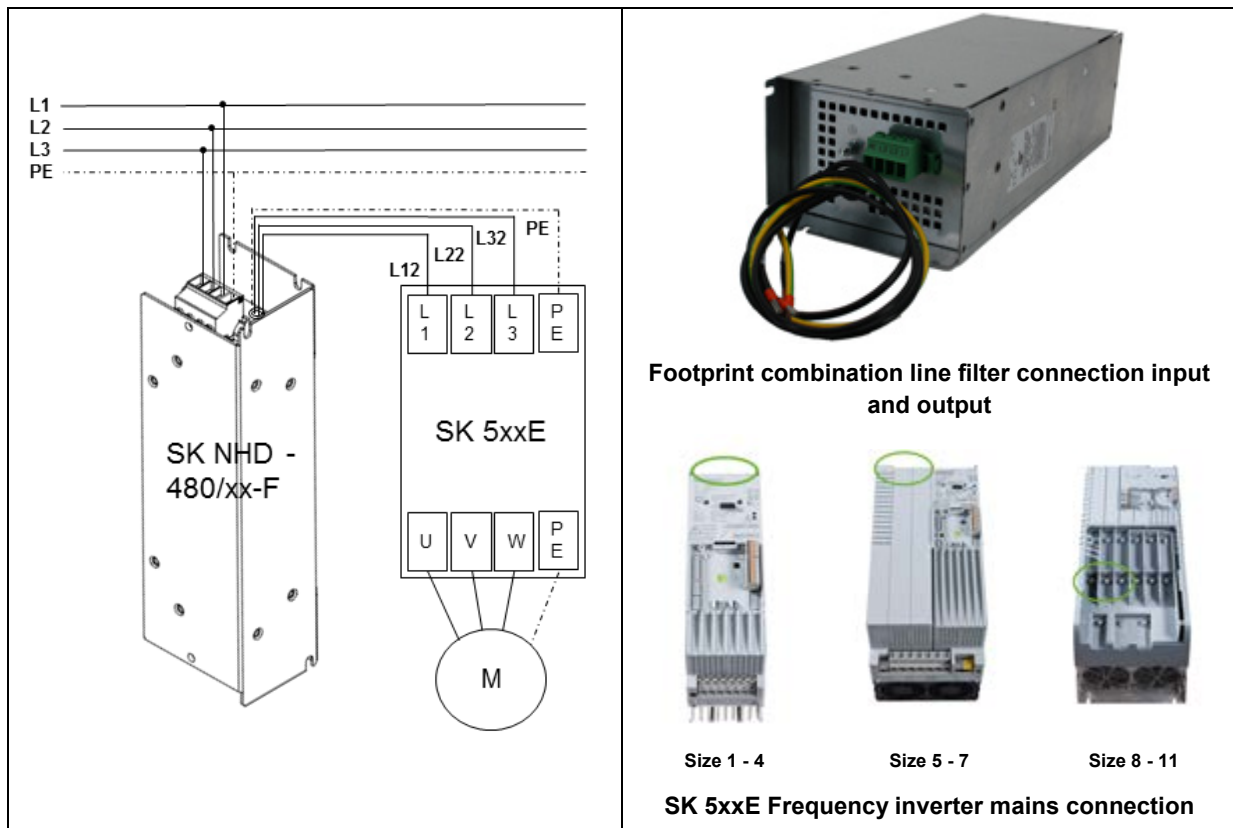
**NOTICE**

**Connection and EMC configuration**

For information on how to connect the line filter, on the jumper settings required for compliance with the limit value classes, please refer to the respective manual  "Further documentation and software: [www.nord.com](http://www.nord.com)". For frequency inverters of sizes 1 – 7, jumpers A and B have to be used. For frequency inverters of sizes 8 – 11, DIP switch EMC Filter has to be used.

Non-compliance or incorrect jumper settings can destroy the frequency inverter.

Wiring diagram



Further documentation and software: [www.nord.com](http://www.nord.com)

Document	Name
<a href="#">BU_0500</a>	SK 500E – SK 535E frequency inverter manual

Document	Name
<a href="#">BU_0505</a>	SK 54xE frequency inverter manual