

SK NHD-480/3-F 500E Size 1

Part number: 278 273 003

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-480/3-F			
Line filter	TI 278273003	V 1.1	4016	EN

Scope of delivery

1 x	Module	SK NHD-480/3-F 500E Size 1
1 x	Plug part	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 ¹⁾			Size	Limit value classes ²⁾	
				Cable-related emission 150 kHz - 30 MHz	
				Class C2	Class C1
SK 5xxE-550-340-A	...	SK 5xxE-750-340-A	1	100 m	50 m
SK 5xxE-550-340-O	...	SK 5xxE-750-340-O	1	100 m	25 m

¹⁾ SK 5xxE -...-O frequency inverters must **not** be used with footprint line filters of type number **B 0912046!**

²⁾ Class C1 / C2 as per EN 61800-3

Technical Data

General

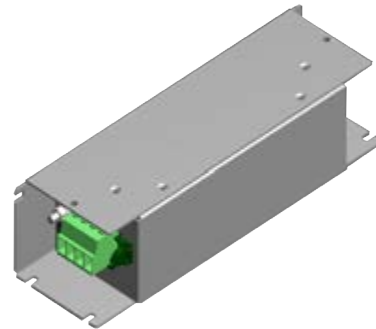
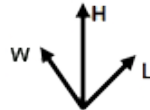
Temperature range	°C	0 ... 40 (100 % duty cycle / S1) 0 ... 50 (70 % duty cycle / S3)
Climate class		25/085/21 (EN 60068-1)
Certifications		RoHS, EAC
Tightening torque	Nm	0.7 – 0.8 terminal 3.0 PE connection
Weight	kg	2.0

European standard	EN 60939-2
Mounting 1)	
Standard position	4 x M5 x 8 (mounting surface)
F1 on line filter	2 x M5 x 8 (F1)
Booksize	2 x M5 x 8 (mounting surface)
Protection class	IP00

¹⁾ not part of the delivery, use washers if applicable

Dimensions

Envelope dimensions [mm]	L x W x H	250 x 75 x 60
Mounting [mm]		
Standard position	L x W	240 x 50
FI	L	220
Booksize	L x W	240 x 50
Output / length [mm]		
Flexible strand	L	500
Wire end sleeve	L	10



Connections

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

¹⁾ incl. 2 washers, 1 spring washer, 1 M5 nut

²⁾ Name can differ for older versions.

³⁾ Style 1015

Electrical data

Number of phases		3
Rated voltage	V ~	480
Rated frequency	Hz	50 ... 60
Rated current	A	2.3 (U _T ≈ 50 °C)
Inductance L₁	mH	3 x 15.3
Leakage current¹⁾	mA	40.0 / 4.3

Test voltage²⁾	V -	2150 / 2700
Resistance of windings	Ω	0.6
Power dissipation	W	12.0
Short-circuit voltage U_{sh} (400 V / 50 Hz)	%	4.2

¹⁾ 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 %

²⁾ 1st value: between 2 phases

2nd value: between phase and housing

Installation

Installation location	In a control cabinet: <ul style="list-style-type: none"> underneath the frequency inverter, or in its immediate vicinity
Installation orientation	Standard (vertical) or Booksize: <ul style="list-style-type: none"> Keep a minimum distance of 100 mm above and below other devices or control cabinet components
Fastening	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>	
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>	 <p style="text-align: center;">Standard position</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 ¹⁾ 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: www.nord.com").</p>	 <p style="text-align: center;">Booksize</p>

¹⁾ 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.

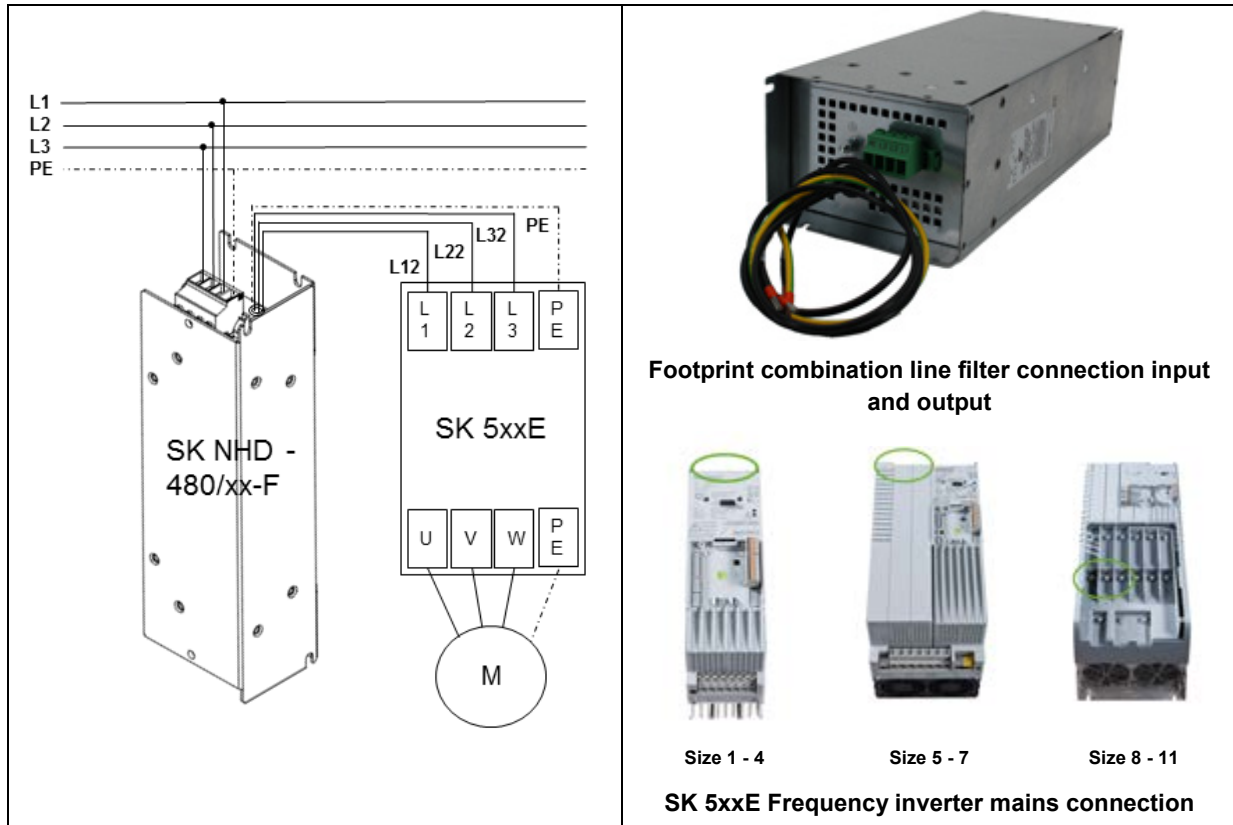
NOTICE

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". 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

Document	Name
BU_0500	SK 500E – SK 535E frequency inverter manual

Document	Name
BU_0505	SK 54xE frequency inverter manual