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SK HE5-EMC-MS-HSxx

SK HE5-EMC-IS-HSxx

SK HE5-EMC-CS-HSxx

EMC kits for NORDAC *PRO* SK 5xxP

Part number:

**275 292 300, 275 292 301, 275 292 302,
275 292 304, 275 292 305, 275 292 306,
275 292 308, 275 292 310, 275 292 311**



Field of use

Frequency inverters have been developed for operation in industrial environments. In these environments, the device may be subject to electromagnetic interferences or emit them itself.

Advantages

Using an optional EMC kit facilitates or improves the basis for an optimal and EMC-compliant wiring. They depend on the size and configuration level of the respective frequency inverter type. As an alternative, the EMC kit can also be used as a strain relief (e.g. for the connection cable of an encoder and IO signals).

Application

For the EMC-compliant connection to the NORDAC *PRO* SK 5xxP frequency inverter of shielded

- Motor cables
- Control cables (IO ports)
- Signal cables (STO and encoder connections)
- Connection cables for optional accessories (e.g. braking resistors)

Technical Information / Datasheet	SK HE5-EMC-xx-HSxx			
EMC kit	2752923xx	V 1.1	3722	en

It only is allowed for qualified electricians to install and commission the module. An electrician is a person who, because of their technical training and experience, has sufficient knowledge relating 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.

The following optional EMC kits are available depending on the size:

Size assignment

SK 5xxP Frequency inverter Size	EMC kit		
	Motor connection (MS)	Control connections (IS)	Signal and encoder connection (CS) ¹⁾
	Part No.	Part No.	Part No.
1	SK HE5-EMC-MS-HS12 275 292 300	SK HE5-EMC-IS-HS1 275 292 304	SK HE5-EMC-CS-HS1 275 292 310
2	SK HE5-EMC-MS-HS12 275 292 300	SK HE5-EMC-IS-HS2 275 292 305	SK HE5-EMC-CS-HS23 275 292 311
3	SK HE5-EMC-MS-HS34 ²⁾ 275 292 301	SK HE5-EMC-IS-HS34 275 292 306	SK HE5-EMC-CS-HS23 275 292 311
4	SK HE5-EMC-MS-HS34 ²⁾ 275 292 301	SK HE5-EMC-IS-HS34 275 292 306	-
5	SK HE5-EMC-MS-HS5 ³⁾ 275 292 302	SK HE5-EMC-IS-HS5 275 292 308	-

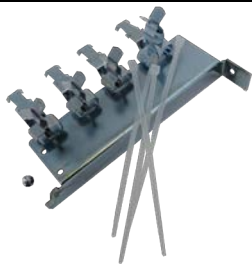


1) For SK 530P and higher with SK CU5-... customer unit

2) Two-part



3) Three-part

Information


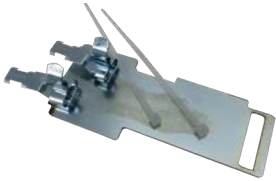
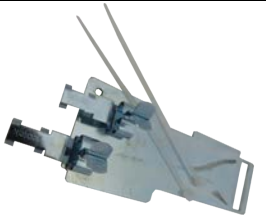

All optional EMC kits are delivered in a transparent accessories kit containing all fastening materials.

Motor connection (MS)		Frequency inverter	
Designation	Scope of delivery	Size	Permissible type
SK HE5-EMC-MS-HS12		1	SK 5xxP-250-...-A SK 5xxP-370-...-A SK 5xxP-550-...-A SK 5xxP-750-...-A
		2	SK 5xxP-111-...-A SK 5xxP-151-...-A SK 5xxP-221-...-A
SK HE5-EMC-MS-HS34		3	SK 5xxP-301-340-A SK 5xxP-401-340-A SK 5xxP-551-340-A
		4	SK 5xxP-751-340-A SK 5xxP-112-340-A
SK HE5-EMC-MS-HS5		5	SK 5xxP-152-340-A SK 5xxP-182-340-A SK 5xxP-222-340-A



Motor connection (MS)	Screw type			Fastening	EMC shielding plate
	Countersunk head	Fillister head			
Designation	M3 x5	M3 x8	M4 x 8	Cable tie	Type
SK HE5-EMC-MS-HS12	1	-	-	4	Motor and encoder connection Sizes 1 + 2
SK HE5-EMC-MS-HS34	-	1	2	4	Motor connection + encoder connection Sizes 3 + 4
SK HE5-EMC-MS-HS5	-	1	-	2	Encoder connection Size 5

Motor connection (MS)	Retaining/shielding plate ¹⁾ of SK 5xxP	Fastening	EMC shielding plate
Designation		Shielding terminals SK20	Type Size
SK HE5-EMC-MS-HS5		2 	Motor connection Size 5

1) SK 5xxP delivery scope contained and installed on the device

Control connection (IS)		Frequency inverter	
Designation	Scope of delivery	Size	Permissible type
SK HE5-EMC-IS-HS1		1	SK 5xxP-250-...-A SK 5xxP-370-...-A SK 5xxP-550-...-A SK 5xxP-750-...-A
SK HE5-EMC-IS-HS2		2	SK 5xxP-111-...-A SK 5xxP-151-...-A SK 5xxP-221-...-A
SK HE5-EMC-IS-HS34		3	SK 5xxP-301-340-A SK 5xxP-401-340-A SK 5xxP-551-340-A
		4	SK 5xxP-751-340-A SK 5xxP-112-340-A
SK HE5-EMC-IS-HS5		5	SK 5xxP-152-340-A SK 5xxP-182-340-A SK 5xxP-222-340-A


Control connection (IS)	Fastening	EMC shielding plate
Designation	Cable tie 2.5 mm x 100 mm	Type Size
SK HE5-EMC-IS-HS1	1	IO port Size 1
SK HE5-EMC-IS-HS2	2	IO port Size 2
SK HE5-EMC-IS-HS34	2	IO port Sizes 3 + 4
SK HE5-EMC-IS-HS5	2	IO port Size 5


Signal and encoder connection (CS)		Frequency inverter	
Designation	Scope of delivery	Size	Permissible type
SK HE5-EMC-CS-HS1		1	SK 5xxP-250-...-A SK 5xxP-370-...-A SK 5xxP-550-...-A SK 5xxP-750-...-A
SK HE5-EMC-CS-HS23		2	SK 5xxP-111-...-A SK 5xxP-151-...-A SK 5xxP-221-...-A
		3	SK 5xxP-301-340-A SK 5xxP-401-340-A SK 5xxP-551-340-A

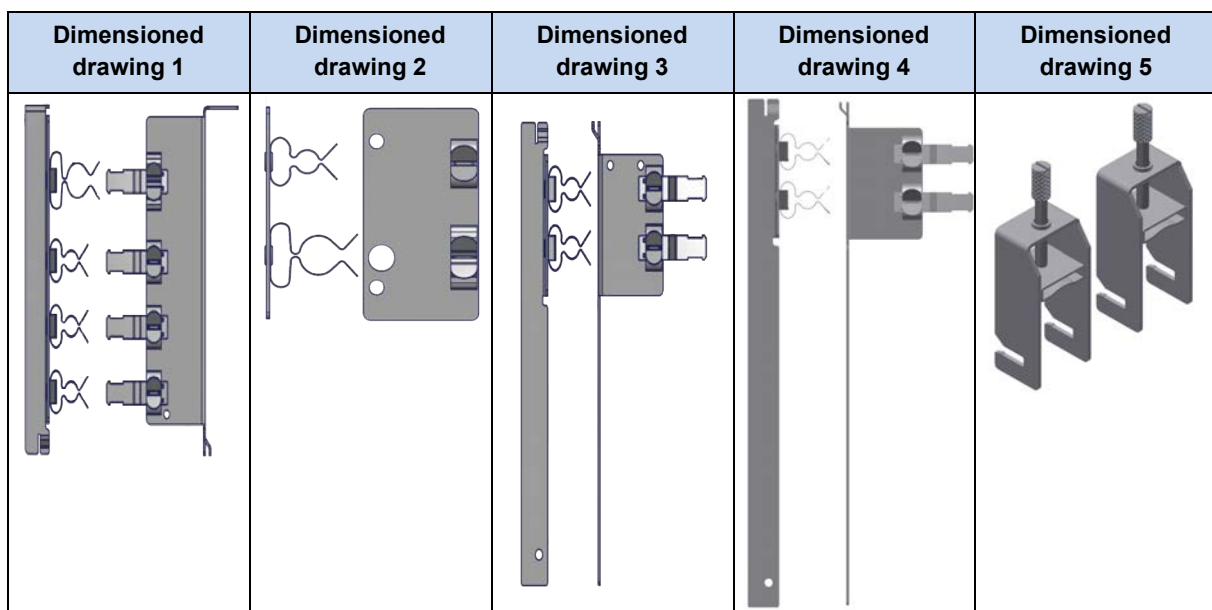
Signal and encoder connection (CS) Designation	Screw/nut type		Fastening Cable tie 2.5 mm x 100 mm	EMC shielding plate Type Size
	Cylinder M3 x 5	Hexagonal M3		
SK HE5-EMC-CS-HS1	2	2	2	Signal/encoder connection Size 1
SK HE5-EMC-CS-HS23	2	2	2	Signal/encoder connection Sizes 2 +3


Technical data

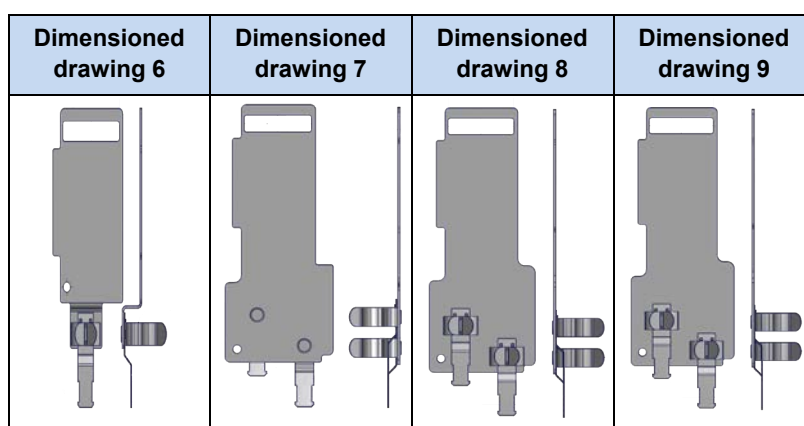
Material	Galvanised EMC plates, 1 mm thick
Fastening	Fastening screws and nuts Icotek terminals and shielding terminals


Motor connection (MS)	Dimensioned drawing 	Dimensions [mm]			Icotek Terminals Quantity	Weight [g]
		Overall dimensions				
		H	W	D		
SK HE5-EMC-MS-HS12	1	115.3	76.0	41.0	4	59
SK HE5-EMC-MS-HS34	2	64.5	35.0	28.0	2	65
	3	145.3	60.0	33.5	2	
SK HE5-EMC-MS-HS5	4	194.0	33.3	56.5	2	43

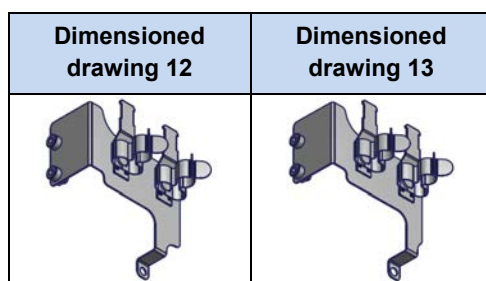
Motor connection (MS)	Dimensioned drawing 	Dimensions [mm]			Shielding terminals Quantity	Weight [g]
		Overall dimensions				
		H	W	D		
SK HE5-EMC-MS-HS5	5	75.0	24.0	24.0	2	2 x 28



Control connection (IS)	Dimensioned drawing 	Dimensions [mm]			Icotek Terminals Quantity	Weight [g]
		Overall dimensions				
		H	W	D		
SK HE5-EMC-IS-HS1	6	82.0	35.3	21.5	1	26
SK HE5-EMC-IS-HS2	7	108.0	45.8	21.5	2	42
SK HE5-EMC-IS-HS34	8	114.0	45.8	21.5	2	44
SK HE5-EMC-IS-HS5	9	114.0	45.8	21.5	2	44



Signal and encoder connection (CS)	Dimensioned drawing 	Dimensions [mm]			Icotek Terminals Quantity	Weight [g]
		Overall dimensions				
		H	W	D		
SK HE5-EMC-CS-HS1	12	70.0	52.0	42.5	2	30
SK HE5-EMC-CS-HS23	13	70.0	53.0	42.5	2	29



Installation

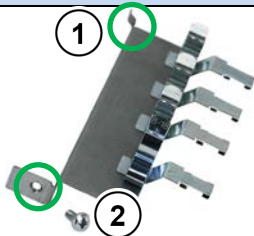
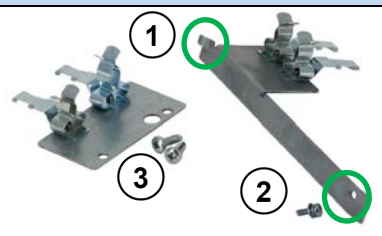
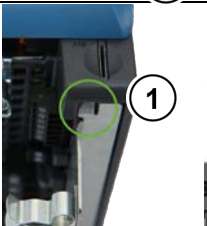
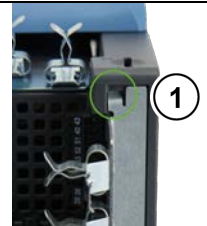





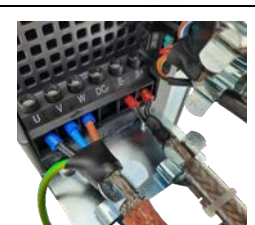
Installation location	Bottom, front and back of the frequency inverter housing
Fastening	By using supplied fastening screws Large-area connection of cable shield to the Icotek terminal device Large-area connection of cable shield to the SK 20 shielding terminals Securing connection cable to the Icotek terminal/shield angle bracket using cable ties

Installation steps*

Information

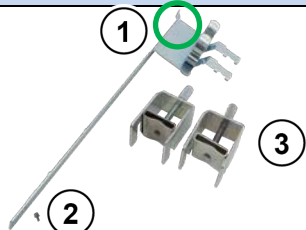
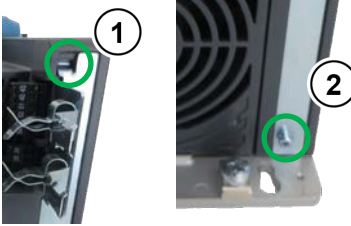


EMC kits of type SK HE5-MS-HSxx must be mounted before the installation of the frequency inverter.

Sizes 1 to 4

Motor connection (MS)		Sizes 1 and 2	Sizes 3 and 4
		SK HE5-EMC-MS-HS12	SK HE5-EMC-MS-HS34
1.	EMC kit Shield bracket and fastening screws ② / ③		
	<ul style="list-style-type: none"> Latch shield bracket at the bottom of the housing using sheet metal bracket ① Tighten screw ② at the back/bottom of the housing 		
	<ul style="list-style-type: none"> 2. Latch shield bracket at the bottom of the housing Tighten screw ② at the bottom of the housing 		
	<ul style="list-style-type: none"> Installed EMC kit on the frequency inverter * 		
2.	<ul style="list-style-type: none"> Strip connection cable sheath and insert shield into the Icotek terminal Fasten connection cable to the shield angle bracket using cable ties 		

* Illustration similar for different sizes




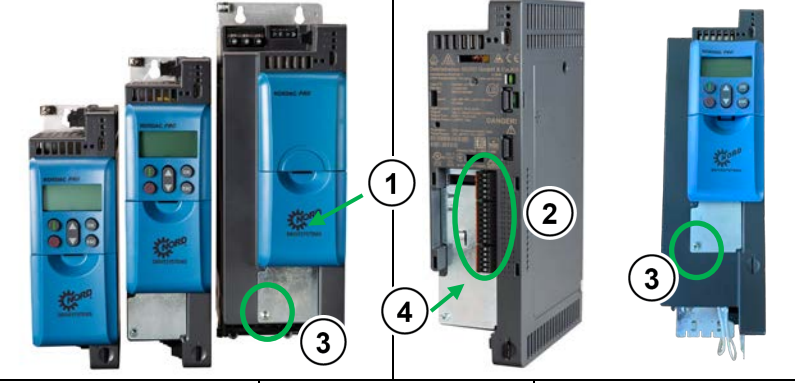
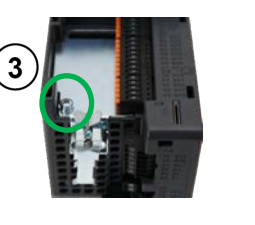
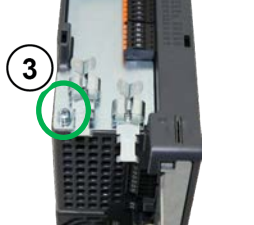


Size 5

Motor connection (MS)		Size 5
		SK HE5-EMC-MS-HS5
1.	<p>EMC kit Shield bracket and fastening screw ② 2 x SK 20 shielding terminals ③</p>	
2.	<ul style="list-style-type: none"> Latch shield bracket at the bottom of the housing using sheet metal bracket ① Tighten screw ② at the bottom of the housing 	
	<ul style="list-style-type: none"> Both SK 20 shielding terminals are pre-installed on the standard shielding plate ④ of the frequency inverter 	
	<ul style="list-style-type: none"> EMC kit installed on the frequency inverter 	
3.	<ul style="list-style-type: none"> Strip connection cable sheath and insert shield into the SK 20 shielding terminals Fasten connection cable to the shielding plate using screw fasteners 	

i Information

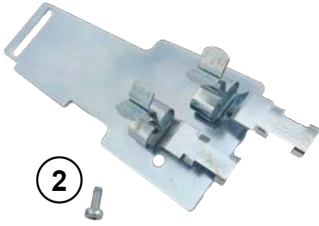
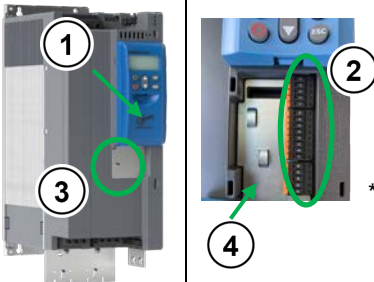
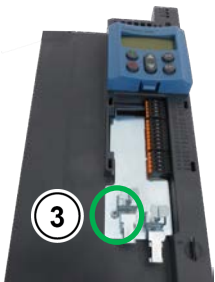

EMC kits of type SK HE5-IS-HSx **cannot** be installed when using an SK CU5-... customer unit, or installing an EMC kit of type SK HE5-CS-HSxx!

Sizes 1 to 4

Control connection (IS)		Size 1	Size 2	Size 3
		SK HE5-EMC-IS-HS1	SK HE5-EMC-IS-HS2	SK HE5-EMC-IS-HS34
1.	EMC kit Shield bracket and fastening material			
2.	<ul style="list-style-type: none"> Remove control terminal cover ① Loosen and remove control terminal plugs * ② Loosen screw ③ Remove standard shielding plate * ④ from the frequency inverter * 			
3.	<ul style="list-style-type: none"> Install shield bracket on the front Tighten screw ③ Installation of disassembled components ① / ②, see installation step 2 			
4.	<ul style="list-style-type: none"> Strip connection cable sheath and insert shield into the Icotek terminal Fasten connection cable to the shield angle bracket using cable ties 			

* Illustration similar for different sizes

Size 5

Control connection (IS)		Size 5
		SK HE5-EMC-IS-HS5
1.	EMC kit Shield bracket and fastening material / screw ②	
2.	<ul style="list-style-type: none"> Remove control terminal cover ① Loosen and remove control terminal plugs * ② Loosen screw ③ Remove standard shielding plate * ④ from the frequency inverter * 	
3.	<ul style="list-style-type: none"> Install shield bracket on the front Tighten screw ③ Installation of disassembled components ① / ②, see installation step 2 	
4.	<ul style="list-style-type: none"> Strip connection cable sheath and insert shield into the Icotek terminal Fasten connection cable to the shield angle bracket using cable ties 	

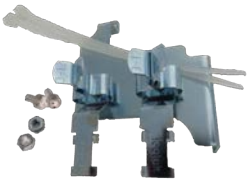




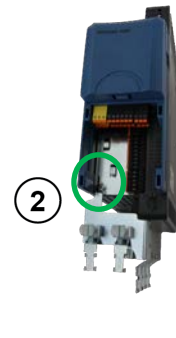
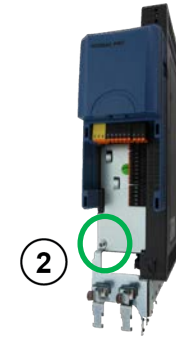



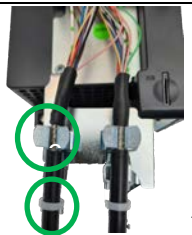
* Illustration similar for different sizes

i Information

EMC kits of type SK HE5-CS-HSxx can only be installed when using or after the installation of an EMC kit of type SK HE5-MS-HSxx!

The installation of the EMC kit for the motor connection is assumed for the following description.

Sizes 1 to 3

Signal and encoder connection (CS)		Size 1	Size 2	Size 3
		SK HE5-EMC-CS-HS1	SK HE5-EMC-CS-HS23	
1.	EMC kit Shield bracket and fastening material			
2.	<ul style="list-style-type: none"> Remove control terminal cover ① (size 1 only) Loosen and remove screw ② 			
3.	<ul style="list-style-type: none"> Install EMC shield bracket on the front Tighten screw ② Installation of disassembled control terminal cover ①, see installation step 2 			
	<ul style="list-style-type: none"> Tighten screws ③ and nuts ④ at the shield bracket of the motor connection (MS) 			
4.	<ul style="list-style-type: none"> Strip connection cable sheath and insert shield into the Icotek terminal Fasten connection cable to the shield angle bracket using cable ties 			

* Illustration similar for different sizes

Further documentation and software (www.nord.com)

Document	Description	Document	Description
BU 0600	Manual for frequency inverter NORDAC <i>PRO</i> SK 5xxP	TI 275298000	Technical information NORDAC <i>PRO</i> SK CU5-STO Safety extension
BU 0610	Supplementary instructions for frequency inverter NORDAC <i>PRO</i> SK 5xxP POSICON Positioning control	TI 275298200	Technical information NORDAC <i>PRO</i> SK CU5-MLT Multi IO extension
BU 0630	Supplementary instructions for frequency inverter NORDAC <i>PRO</i> SK 5xxP Functional safety	TI 80_0011	Technical information EMC-compliant installation of NORD components

Flyer	Description
E3000	NORDAC – Electronic drive technology
E3060	NORDAC <i>PRO</i> – SK 500P frequency inverter