

Intelligent Drivesystems, Worldwide Services

VARIABLE FREQUENCY DRIVE FOR CONTROL CABINET APPLICATIONS



US

NORDAC[®] PRO
VFD SK 500P

NORD[®]
DRIVESYSTEMS

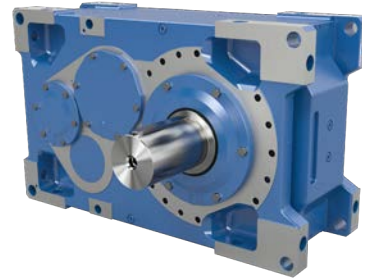
NORD DELIVERS COMPLETE DRIVE SOLUTIONS FROM A SINGLE SOURCE

Introduction



NORD Delivers

NORD offers full-featured drive solutions that can tackle the toughest requirements. All components are carefully selected and precisely configured to meet your exact specifications. In the rare case that standard components won't meet your needs, our in-house engineering team will work with you to design custom components or a complete customized system.



NORDAC PRO SK 500P



Reduce Lead Times and Decrease Inventory

- 25% of orders ship same day or next day with NO expedite fees
- 47% of orders ship within 5 working days
- 81% of orders ship in 2-3 weeks

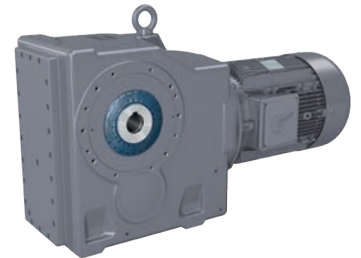


NORDAC LINK



Global Product Designs, Standards, and Support

- Innovative product range (one-stop shop)
- Global connected presence
- Mechanical and electrical application engineers ready to assist you
- Online resources



NORDAC FLEX



Increase Efficiency and Reduce Operation Costs

- First-class customer service and support, plus myNORD online tools
- Product flexibility through standard components and customizations
- Program personalization, such as weekly shipment schedules and custom nameplates
- Partner with a company that is easy to do business with and wants to see you succeed!



NORDAC BASE



NORDAC START

Accessories

Appendix

High-performance Solutions

NORD's extensive product portfolio is continuously evolving to meet the needs of today's fast-changing markets, but NORD does far more than manufacture the world's finest drive components. We provide our customers with optimum drive configurations for their specific purposes, providing each and every one of them with complete and efficient systems at a price/quality ratio that's unmatched.

By continuing to invest in the latest research, manufacturing, and automation technology, we are able to deliver innovative drive systems with the highest quality, reliability, and value found in the marketplace today. In short, we never stop improving.

On-time Delivery

NORD's linked global network of assembly and manufacturing operations gives you the best of both worlds – a world leader with local representatives. NORD has subsidiaries and sales partners in 98 countries on five continents, ensuring local inventory, assembly centers, technical support, and customer service.

This approach also allows us to provide the shortest lead times in the industry. As a NORD customer, you can rest assured that your order will be delivered on time and on spec. We offer our customers:

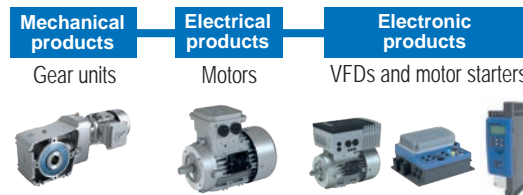
- Fast, accurate, reliable service
- Unmatched product versatility and customizations
- Short lead times
- Technical guidance from experienced engineers
- MyNORD online tools (configure, price, quote, and track your order)
- 24/7/365 after hours emergency support via the NORD 911 hotline

Peace of Mind

NORD's customer-first approach means superior drive solutions and peace of mind are just a call or click away. Put NORD's global team of engineers, manufacturing, service and support technicians to work for you. Together, we'll build something great!



Headquarters and technology center
in Bargteheide, near Hamburg



Innovative drive solutions
for more than 100 branches of industry

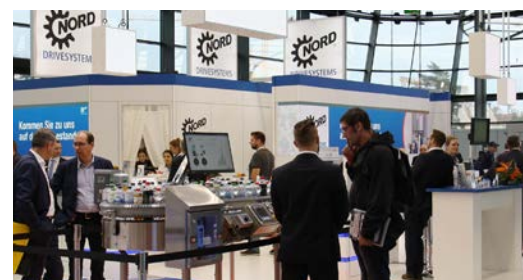


7 production locations with cutting-edge technology
produce gear units, motors, VFDs, and more to provide complete drive systems from a single source.



Subsidiaries and sales partners in 98 countries on 5 continents
provide local inventory, assembly, technical support, and industry-leading customer service.

The map shown above is for information only and does not claim to be created for or applicable to any legal purpose. For this reason, we do not assume any liability for legality, correctness and completeness.



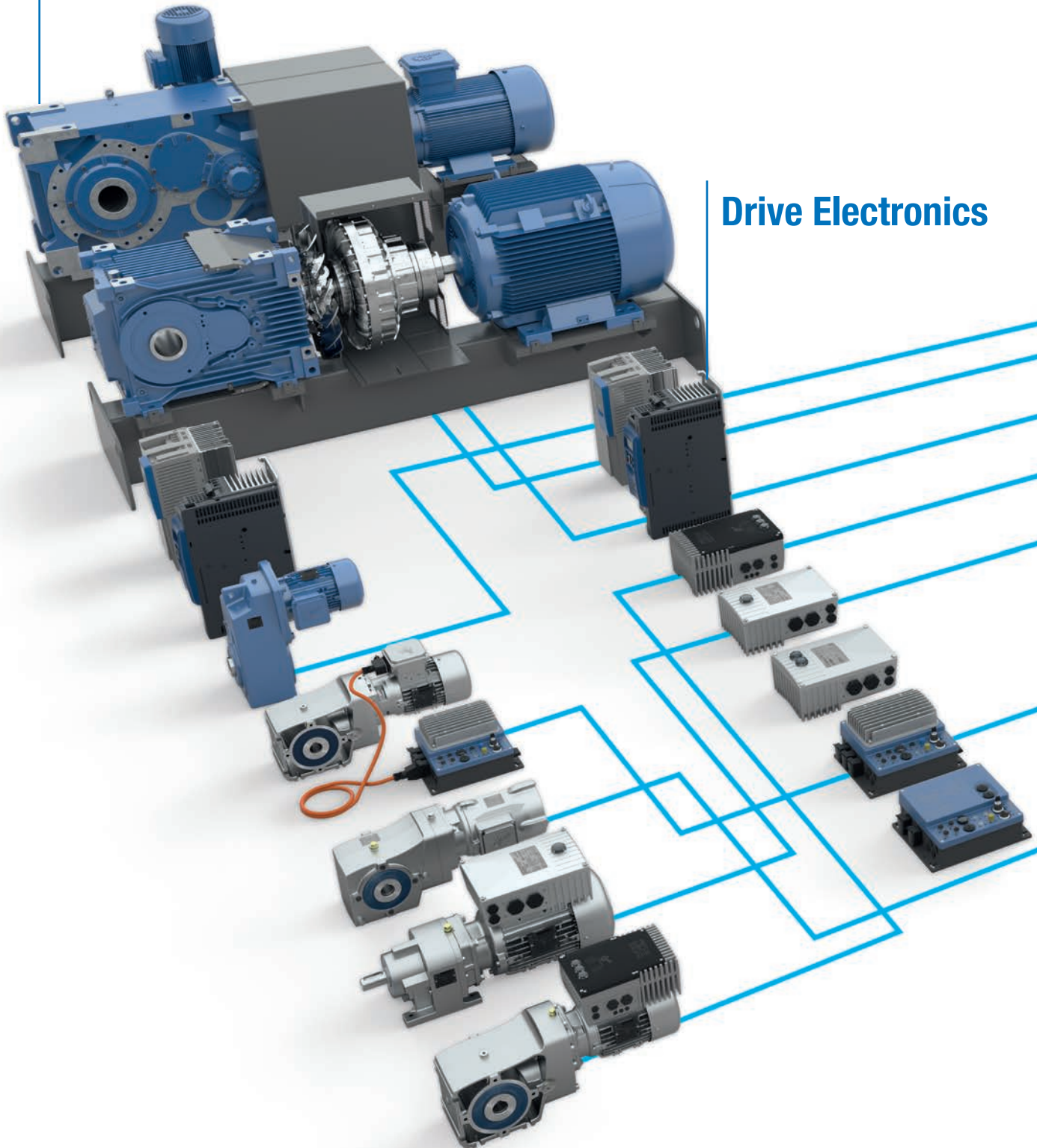
More than 4,000 employees throughout the world
create customized solutions.

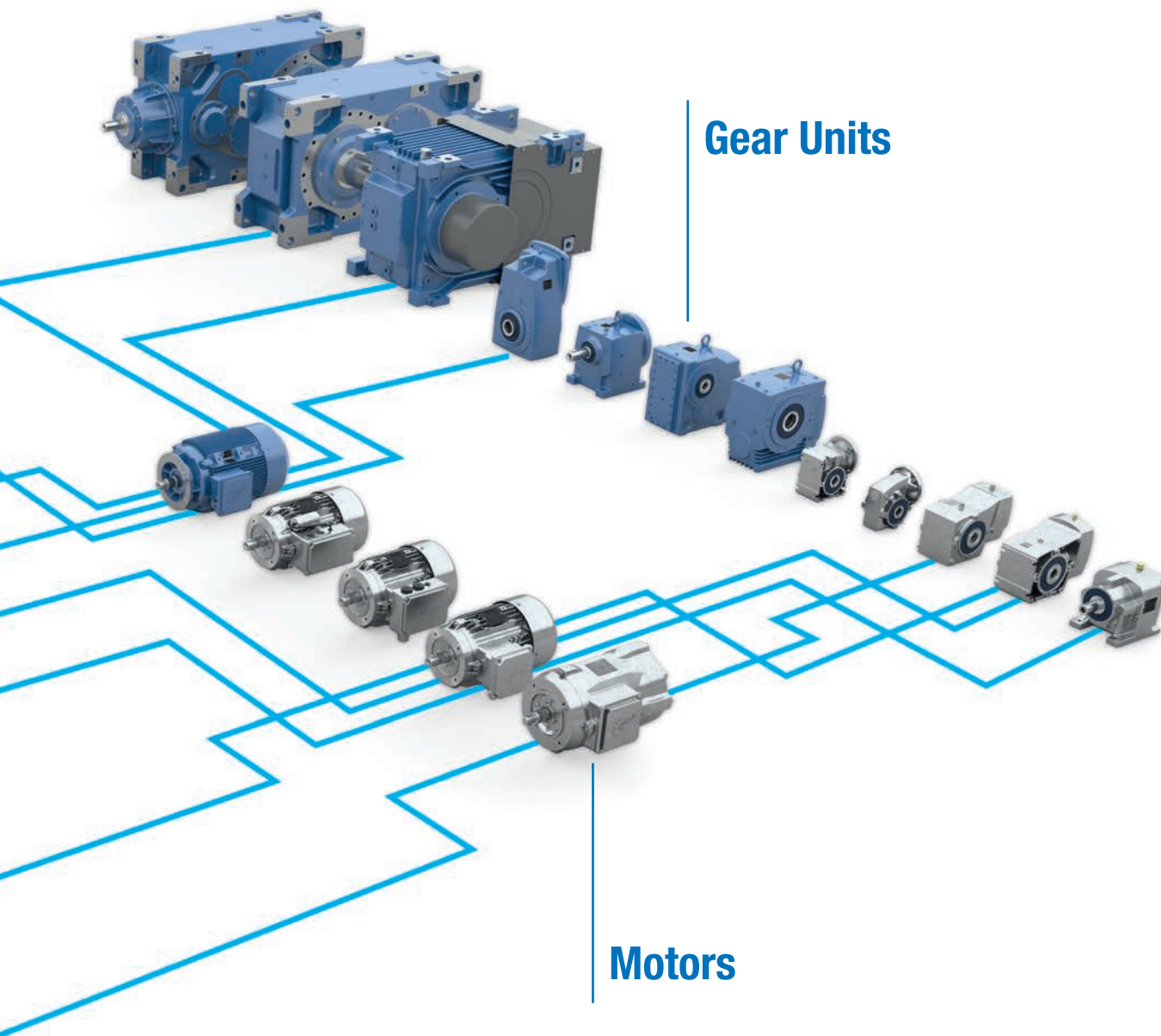


Contact Us Today! 888.314.6673
info.us@nord.com

Drive Solutions

Drive Electronics





Gear Units

Motors



Our products are available in ATEX certified versions.

An optimum and individual drive solution can therefore be created using the modular NORD system consisting of the gear unit, motor and drive electronics. The modular products are perfectly matched and can be combined in many variants. In addition, we offer planning, project management, installation, and service from a single source.

If required, industry solutions can be configured as a complete logistics package, programmed and ready for use. Each modular NORD product combines: highest product quality, short planning and assembly times, high delivery availability, and a good price/performance ratio. Our products are also available in ATEX certified versions.

NORDAC® PRO, SK 500P SERIES

Introduction

NORDAC PRO
SK 500P

NORDAC PRO
SK 500E

NORDAC LINK

NORDAC FLEX

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NORDAC PRO SK 500P variable frequency drives are available for motors with rated powers of 0.25 – 5.5 kW (0.33-7.5 HP). Their compact design makes them perfect for space-saving installation in control cabinets.

Notable features across the entire product line include:

- Sensorless current vector control ensures constant speeds in case of fluctuating loads and very high torques during start-up
- 200% overload capacity provides greater operational safety in cranes and lifting gear applications
- Flexibility to operate asynchronous and synchronous motors
- Integrated brake chopper for 4-quadrant operation
- Integrated line filter serving as the basis for optimal EMC performance
- Integrated PLC enables convenient programming of drive-related functions according to IEC 61131-3

These features are as much a part of the basic configuration as the separately configurable PID or the process controller.

Functional safety is increasingly becoming the focus of attention in drive technology. To meet the latest safety requirements, the NORDAC PRO also offers functional extensions to implement single or dual channel solutions for Safe Torque Switch-off and Safe Stop.

An optional removable operating display provides an extensive selection of operational displays and status information. Naturally, it also allows direct access to parameterization.

As standard, the variable frequency drives are equipped with an integrated AC voltage unit to supply the control board. The USB port, which is provided as standard for SK 530P and higher, also provides the ability to access the VFD's control board without connection of the AC voltage.

VFDs that are SK 530P and higher are equipped with a separate 24 V DC connection. With these devices, access to parameter data is possible when the power is switched off and communication with the bus is retained. Optional SK CU5 extensions, which can be combined with all SK 530P devices and above, round off the range of functions.

These functions include the encoder extension or the universal encoder interface for connection of a wide range of encoders (e.g. SSI, EnDat), which in combination with the installed POSICON are the ideal solution for all types of positioning (relative and absolute). Only one SK CU5 extension can be connected between the variable frequency drive and the operating display.

An Ethernet interface is integrated in configuration levels SK 550P and above. During commissioning this can be simply set by switching a parameter to the required dialect (Ethernet IP, EtherCAT, PROFINET IO or POWERLINK). The great flexibility for system planning is enhanced by the comparatively small variance in hardware.



Basic configuration

- Sensorless current vector control (ISD control) for high precision control and fast response times
- Brake management, electromechanical holding brake
- Brake chopper to divert generated energy to a brake resistor
- CANopen including drive profile DS402
- POSICON variants with positioning function (relative and absolute)
- RS-485/RS-232 diagnostic interface
- 4 switchable parameter sets for flexible use of parameter settings (e.g. switching between drive units with different motor data)
- All common drive functions, such as acceleration/braking on a ramp, S curves
- Parameters pre-set with standard values and ready for immediate use
- Scalable display values
- Stator resistance measurement to ensure optimal control characteristics
- Integrated PLC functionality
- Plug-in power connection terminals
Available for all devices up to 2.2 kW (3 HP)

Optional

- Interfaces for many Industrial Ethernet-based bus systems
- Removable operating display with extensive operating and status indicators. Parameter editing facility.
- Variants for implementation of safe drive functions (e.g. STO, SS1)
- Interface extensions for connection of encoders and IOs
Available for SK 530P and higher



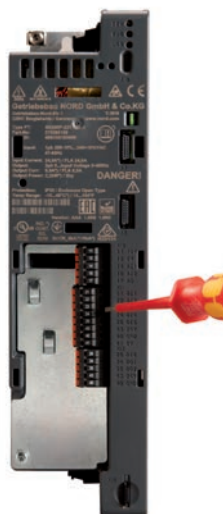
NORD provides the new SK 500P with features for easier working:

Electrical connection

Power terminals

In addition to the front-facing control terminals, which are always pluggable, all other power terminals (e.g. line and motor connections, connections to multi-function relays) of the two small sizes (variable frequency drives with rated powers up to 3 HP) can be removed for maintenance work. In this way, wiring can be carried out easily and safely even in the confined spaces in the control cabinets.

The architecture of Size 3 (VFDs with rated powers of 3 kW or 4 HP and above) allows so much space that a plugin design of the power terminals would not provide any further advantage.



Control terminals

Pluggable control terminals are not unique, however most technicians will gladly welcome the fact that the NORDAC PRO is equipped with an integrated "3rd hand" which simplifies wiring of the terminals.



Parameter setup

Do you want to view operating values or error messages or access and modify variable frequency drive parameter settings?


Use the right method for you:

- Direct access with the snap-on SK TU5-CTR technology unit (optional)
- Separate SK PAR-3E or SK CSX-3E (optional) control and parameterization units which can be mounted in the control cabinet doors
- NORDCON software (free) for connection to a Windows computer
- NORDCON APP (free) for connection to a mobile device via NORDAC® ACCESS BT (optional)



STANDARDS AND APPROVALS

All devices of the entire series comply with the standards and directives listed below.

Approval	Directive	Applied standards	Certificates	Code
CE (European Union)	Low Voltage Directive 2014/35/EU	EN 61800-5-1 EN 60529 EN 61800-3 EN 50581	C310601	
	EMC 2014/30/EU			
	RoHS 2011/65/EU			

Introduction

NORDAC PRO
SK 500P

NORDAC PRO
SK 500E

NORDAC LINK

NORDAC FLEX

NORDAC BASE

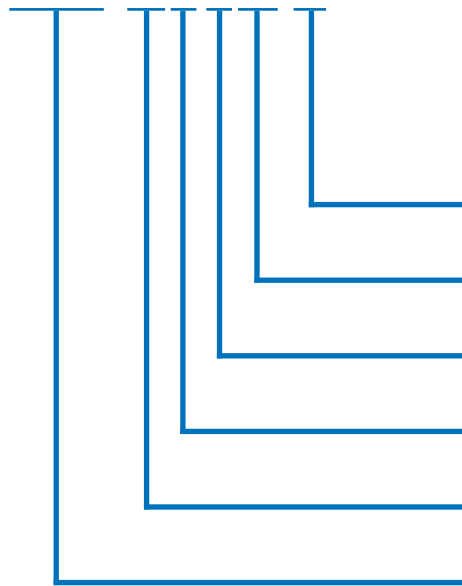
NORDAC START

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Variable Frequency Drives

SK 530P-370-340-A



Radio interference filter: **O** = without, **A** = Class A1(C2) or B (C1)

AC voltage: **x23** = 230 V, **x40** = 400 V

Number of AC voltage phases: **1xx** = 1-phase, **3xx** = 3-phase

Digits before decimal point for power: **0** = 0.xx, **1** = x.x0, **2** = xx.0

Device rated power: **250** = 0.25 kW, **370** = 0.37 kW, ... **551** = 5.5 kW

VFD series: SK 500P, SK 510P, SK 530P, SK 550P

Technology Units

SK TU5-CTR



Option type: **CTR** = Control Box

Group: **TU** = Technology Unit

Customer Units

SK CU5-STO



Option type: **STO** = Safe Stop, **ENC** = Encoder, **MLT** = Multi IO

Group: **CU** = Customer interface

NORDAC® PRO

ALL VERSIONS AT A GLANCE

		SK 500P	SK 510P	SK 530P	SK 550P				
Introduction	Basic functions	Sensorless current vector control (ISD control)	✓	✓	✓	✓			
		Brake management for mechanical holding brake	✓	✓	✓	✓			
		Brake chopper (brake resistor optional)	✓	✓	✓	✓			
		RS-232 diagnostic interface	✓	✓	✓	✓			
		4 switchable parameter sets	✓	✓	✓	✓			
		Parameters pre-set with standard values	✓	✓	✓	✓			
		Scalable display values	✓	✓	✓	✓			
		Stator resistance measurement	✓	✓	✓	✓			
		Energy-saving function, optimized efficiency in partial load operation	✓	✓	✓	✓			
		Line filter class C2, up to 20 m motor cable Class C1 up to 5 m motor cable (devices above 0.75 kW)	✓	✓	✓	✓			
		Shielding plate for connection of shielded control cables for EMC-compliant wiring.	✓	✓	✓	✓			
		Monitoring functions	✓	✓	✓	✓			
		Load monitor	✓	✓	✓	✓			
		Link circuit coupling	✓	✓	✓	✓			
		Lifting gear functionality	✓	✓	✓	✓			
		Process controller / PID controller	✓	✓	✓	✓			
		Synchronous motor operation (PMSM)	✓	✓	✓	✓			
		NORDAC PRO SK 500P	Basic functions	Incremental encoder input (HTL / TTL) for speed feedback - servo mode	✓ ¹	✓ ¹	✓	✓	
POSICON	✓			✓	✓	✓			
PLC functionality	✓			✓	✓	✓			
Bus systems	USS, Modbus RTU (RJ12)			✓	✓	✓	✓		
	CANopen (connection terminals)			✓	✓	✓	✓		
	EtherCAT, Ethernet IP, PROFINET IO, POWERLINK						✓		
Options	"Safe Torque Switch-off" and "Safe Stop" (STO, SS1) functions				✓ ²	○	○		
	Internal 24 V power supply unit to supply the control board			✓	✓	✓	✓		
	External 24 V DC supply for the control board voltage supply with automatic switch-over between the internal and external 24 V DC control voltage					✓	✓		
	Universal encoder interface					○	○		
	Removable data carrier (microSD) for backup and transfer of parameter data sets					○	○		
	Operating display, removable for display of status and operating information and for control			○	○	○	○		
	Communication interface, removable, for wireless communication between the VFD and mobile devices (tablet, smartphone)			○	○	○	○		
NORDAC PRO SK 500E	Basic functions			USS, Modbus RTU (RJ12)	✓	✓	✓	✓	
				CANopen (connection terminals)	✓	✓	✓	✓	
				EtherCAT, Ethernet IP, PROFINET IO, POWERLINK				✓	
				Options	"Safe Torque Switch-off" and "Safe Stop" (STO, SS1) functions		✓ ²	○	○
					Internal 24 V power supply unit to supply the control board	✓	✓	✓	✓
		External 24 V DC supply for the control board voltage supply with automatic switch-over between the internal and external 24 V DC control voltage				✓	✓		
		Universal encoder interface				○	○		
		Removable data carrier (microSD) for backup and transfer of parameter data sets				○	○		
		Operating display, removable for display of status and operating information and for control	○		○	○	○		
		Communication interface, removable, for wireless communication between the VFD and mobile devices (tablet, smartphone)	○		○	○	○		
		NORDAC LINK	Basic functions	USS, Modbus RTU (RJ12)	✓	✓	✓	✓	
				CANopen (connection terminals)	✓	✓	✓	✓	
				EtherCAT, Ethernet IP, PROFINET IO, POWERLINK				✓	
				Options	"Safe Torque Switch-off" and "Safe Stop" (STO, SS1) functions		✓ ²	○	○
					Internal 24 V power supply unit to supply the control board	✓	✓	✓	✓
					External 24 V DC supply for the control board voltage supply with automatic switch-over between the internal and external 24 V DC control voltage			✓	✓
					Universal encoder interface			○	○
					Removable data carrier (microSD) for backup and transfer of parameter data sets			○	○
Operating display, removable for display of status and operating information and for control	○				○	○	○		
Communication interface, removable, for wireless communication between the VFD and mobile devices (tablet, smartphone)	○				○	○	○		
NORDAC FLEX	Basic functions			USS, Modbus RTU (RJ12)	✓	✓	✓	✓	
				CANopen (connection terminals)	✓	✓	✓	✓	
				EtherCAT, Ethernet IP, PROFINET IO, POWERLINK				✓	
				Options	"Safe Torque Switch-off" and "Safe Stop" (STO, SS1) functions		✓ ²	○	○
					Internal 24 V power supply unit to supply the control board	✓	✓	✓	✓
					External 24 V DC supply for the control board voltage supply with automatic switch-over between the internal and external 24 V DC control voltage			✓	✓
					Universal encoder interface			○	○
					Removable data carrier (microSD) for backup and transfer of parameter data sets			○	○
		Operating display, removable for display of status and operating information and for control	○		○	○	○		
		Communication interface, removable, for wireless communication between the VFD and mobile devices (tablet, smartphone)	○		○	○	○		
		NORDAC BASE	Basic functions	USS, Modbus RTU (RJ12)	✓	✓	✓	✓	
				CANopen (connection terminals)	✓	✓	✓	✓	
				EtherCAT, Ethernet IP, PROFINET IO, POWERLINK				✓	
				Options	"Safe Torque Switch-off" and "Safe Stop" (STO, SS1) functions		✓ ²	○	○
					Internal 24 V power supply unit to supply the control board	✓	✓	✓	✓
					External 24 V DC supply for the control board voltage supply with automatic switch-over between the internal and external 24 V DC control voltage			✓	✓
					Universal encoder interface			○	○
					Removable data carrier (microSD) for backup and transfer of parameter data sets			○	○
Operating display, removable for display of status and operating information and for control	○				○	○	○		
Communication interface, removable, for wireless communication between the VFD and mobile devices (tablet, smartphone)	○				○	○	○		
NORDAC START	Basic functions			USS, Modbus RTU (RJ12)	✓	✓	✓	✓	
				CANopen (connection terminals)	✓	✓	✓	✓	
				EtherCAT, Ethernet IP, PROFINET IO, POWERLINK				✓	
				Options	"Safe Torque Switch-off" and "Safe Stop" (STO, SS1) functions		✓ ²	○	○
					Internal 24 V power supply unit to supply the control board	✓	✓	✓	✓
					External 24 V DC supply for the control board voltage supply with automatic switch-over between the internal and external 24 V DC control voltage			✓	✓
					Universal encoder interface			○	○
					Removable data carrier (microSD) for backup and transfer of parameter data sets			○	○
		Operating display, removable for display of status and operating information and for control	○		○	○	○		
		Communication interface, removable, for wireless communication between the VFD and mobile devices (tablet, smartphone)	○		○	○	○		
		Accessories	Basic functions	USS, Modbus RTU (RJ12)	✓	✓	✓	✓	
				CANopen (connection terminals)	✓	✓	✓	✓	
				EtherCAT, Ethernet IP, PROFINET IO, POWERLINK				✓	
				Options	"Safe Torque Switch-off" and "Safe Stop" (STO, SS1) functions		✓ ²	○	○
					Internal 24 V power supply unit to supply the control board	✓	✓	✓	✓
					External 24 V DC supply for the control board voltage supply with automatic switch-over between the internal and external 24 V DC control voltage			✓	✓
					Universal encoder interface			○	○
					Removable data carrier (microSD) for backup and transfer of parameter data sets			○	○
Operating display, removable for display of status and operating information and for control	○				○	○	○		
Communication interface, removable, for wireless communication between the VFD and mobile devices (tablet, smartphone)	○				○	○	○		
Appendix	Basic functions			USS, Modbus RTU (RJ12)	✓	✓	✓	✓	
				CANopen (connection terminals)	✓	✓	✓	✓	
				EtherCAT, Ethernet IP, PROFINET IO, POWERLINK				✓	
				Options	"Safe Torque Switch-off" and "Safe Stop" (STO, SS1) functions		✓ ²	○	○
					Internal 24 V power supply unit to supply the control board	✓	✓	✓	✓
					External 24 V DC supply for the control board voltage supply with automatic switch-over between the internal and external 24 V DC control voltage			✓	✓
					Universal encoder interface			○	○
					Removable data carrier (microSD) for backup and transfer of parameter data sets			○	○
		Operating display, removable for display of status and operating information and for control	○		○	○	○		
		Communication interface, removable, for wireless communication between the VFD and mobile devices (tablet, smartphone)	○		○	○	○		

¹ Only HTL
² Single channel

✓ Available as standard
 ○ Optional

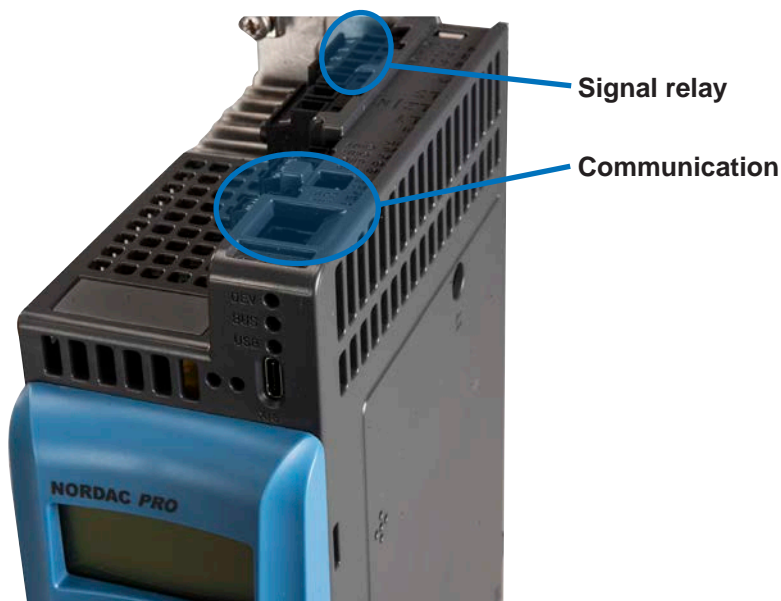
		SK 500P	SK 510P	SK 530P	SK 550P
Control terminals	DIN	5	5	6 ¹	6 ¹
	DOUT	0	0	2	2
	Signal relay ² (... 230 V AC, 2 A)	2	2	2	2
	AIN ³	2	2	2	2
	AOUT ³	1	1	1	1
	Temperature sensor (PTC)	1 ⁴	1 ⁴	1	1
Encoder interfaces	TTL RS422			✓	✓
	HTL ⁴	✓	✓	✓	✓
	SIN/COS			○ ⁵	○ ⁵
	SSI			○ ⁵	○ ⁵
	BISS			○ ⁵	○ ⁵
	Hiperface			○ ⁵	○ ⁵
	Endat 2.1			○ ⁵	○ ⁵
	CANopen	✓	✓	✓	✓
Communication	CAN / CANopen	✓	✓	✓	✓
	RS-485 / RS-232	✓	✓	✓	✓
	Modbus RTU	✓	✓	✓	✓

- 1 Extendable with the optional SK CU5-... customer interface
- 2 with parameterizable DOUT functions
- 3 AIN/AOUT can also be used for digital signals
AIN: 0(2) – 10 V, 0(4) – 20 mA,
AOUT: 0 – 10 V, 0 – 20 mA
- 4 Function can only be implemented through a digital input
- 5 Available via optional customer interface



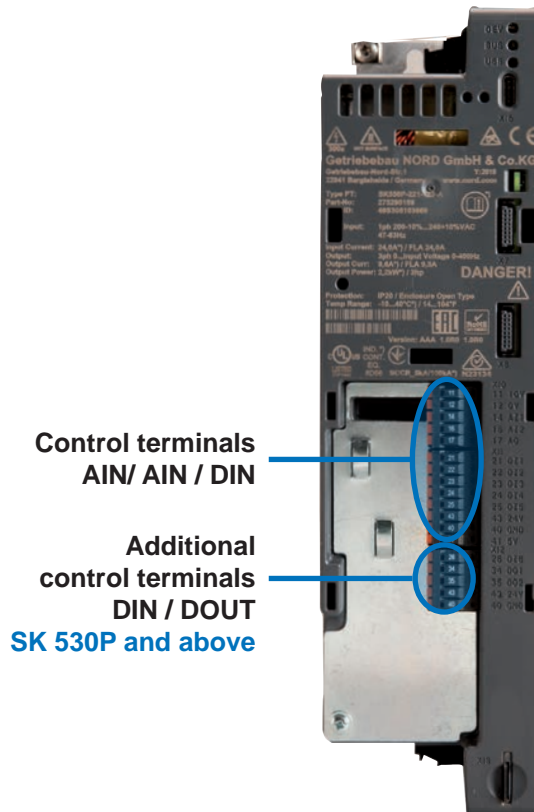
Temperature sensor (PTC) SK 530P and above

TTL encoder interface SK 530P and above



Signal relay

Communication



Control terminals AIN/ AIN / DIN

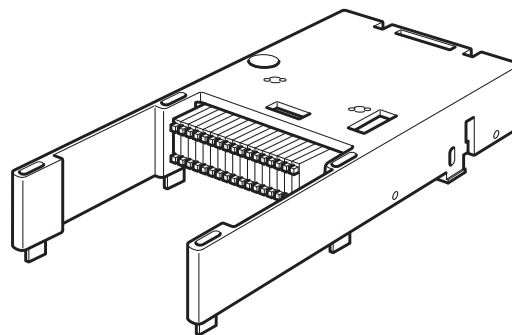
Additional control terminals DIN / DOUT SK 530P and above

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OPTIONAL MODULES

FOR FUNCTION EXTENSION

Variable frequency drives with configuration versions SK530P and higher can be extended with a plug-in option module. This increases the installation depth by 23 mm. One of the following variants can be selected.



Type	Material No.	Functions	IOs	Remarks
SK CU5-ENC	275 298 100	Encoder interface: TTL, SIN/COS, Hiperface, Endat, Biss, SSI	-	-
SK CU5-MLT	275 298 200	Encoder interface: TTL, SIN/COS, Hiperface, Endat, Biss, SSI Functional safety: STO, SS1	4 IO (usable as DIN or DOUT)	Functional safety: 2-channel connection
SK CU5-STO	275 298 000	Functional safety: STO, SS1	1 Safe DIN	Functional safety: 2-channel connection

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SK 500PNORDAC PRO
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NORDAC® PRO SK 500P

1~ 200 ... 240 V, 3~ 380 ... 480 V

Introduction

Output frequency	0.0 ... 400.0 Hz
Pulse frequency	3.0 ... 16.0 kHz
Typical overload capacity	150 % for 60 s, 200 % for 3.5 s
Efficiency	approx. 95 %
Ambient temperature	-10 °C ... +40 °C (S1) -10 °C ... +50 °C (S3, 70 % ED)
Protection class	IP20

Regulation and control

Sensorless current vector control (ISD), linear V/f characteristic

Motor temperature monitoring

I²t Motor
PTC / bi-metal switch

Leakage current

<30 mA, may be considerably less depending on the size and configuration of the VFD (refer to the manual for details)

NORDAC PRO SK 500P

NORDAC PRO SK 500E

NORDAC LINK

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NORDAC BASE

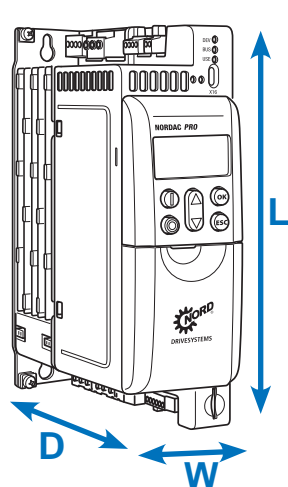
NORDAC START

Accessories

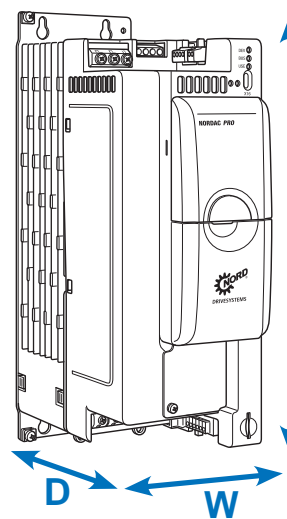
Appendix

Variable frequency drives SK 5xxP ...	Nominal motor power		Nominal output current rms [A]	AC voltage	Output voltage
	230 V [kW]	240 V [hp]			
-250-123-A	0.25	1/3	1.7	1~ 200 ... 240 V, +/- 10 %, 47 ... 63 Hz	3~ 0 up to AC line voltage
-370-123-A	0.37	1/2	2.4		
-550-123-A	0.55	3/4	3.2		
-750-123-A	0.75	1	4.2		
-111-123-A	1.1	1 1/2	5.7		
-151-123-A	1.5	2	7.3		
-221-123-A	2.2	3	9.6		

Variable frequency drives SK 5xxP ...	Nominal motor power		Nominal output current rms [A]	AC voltage	Output voltage
	400 V [kW]	480 V [hp]			
-250-340-A	0.25	1/3	1.0	3~ 380 ... 480 V, -20 % / +10 %, 47 ... 63 Hz	3~ 0 up to AC line voltage
-370-340-A	0.37	1/2	1.3		
-550-340-A	0.55	3/4	1.8		
-750-340-A	0.75	1	2.4		
-111-340-A	1.1	1 1/2	3.1		
-151-340-A	1.5	2	4.0		
-221-340-A	2.2	3	5.6		
-301-340-A	3.0	4	7.5		
-401-340-A	4.0	5	9.5		
-551-340-A	5.5	7 1/2	12.5		



L₂ Fastening dimensions



L₂ Mounting dimensions

Variable frequency drives SK 5xxP ...	Weight	Dimensions L (L ₂) x W (W ₂) x D	Size
-250-123-A	1.2 kg / 2.6 lbs	200 (186) x 66 (22) x 141 [mm] 7.87 (7.32) x 2.59 (.86) x 5.55 [in]	1
-370-123-A	1.2 kg / 2.6 lbs		
-550-123-A	1.2 kg / 2.6 lbs		
-750-123-A	1.2 kg / 2.6 lbs		
-111-123-A	1.6 kg / 3.5 lbs	240 (226) x 66 (22) x 141 [mm] 9.44 (8.89) x 2.59 (.86) x 5.55 [in]	2
-151-123-A	1.6 kg / 3.5 lbs		
-221-123-A	1.6 kg / 3.5 lbs		

Variable frequency drives SK 5xxP ...	Weight	Dimensions L (L ₂) x W x D	Size
-250-340-A	1.2 kg / 2.6 lbs	200 (186) x 66 (22) x 141 [mm] 7.87 (7.32) x 2.59 (.86) x 5.55 [in]	1
-370-340-A	1.2 kg / 2.6 lbs		
-550-340-A	1.2 kg / 2.6 lbs		
-750-340-A	1.2 kg / 2.6 lbs		
-111-340-A	1.6 kg / 3.5 lbs	240 (226) x 66 (22) x 141 [mm] 9.44 (8.89) x 2.59 (.86) x 5.55 [in]	2
-151-340-A	1.6 kg / 3.5 lbs		
-221-340-A	1.6 kg / 3.5 lbs		
-301-340-A	2.6 kg / 5.7 lbs	286 (266) x 90 (50) x 175 [mm] 11.25 (10.47) x 3.54(1.96)x.6.88 [in]	3
-401-340-A	2.6 kg / 5.7 lbs		
-551-340-A	2.6 kg / 5.7 lbs		

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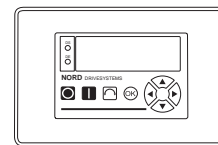
INTERFACES FOR OPERATION, PARAMETERIZATION AND COMMUNICATION

Operation and parameterization

Optional modules with up to 14 languages for displaying status and operational indicators, parameterization and operation of the variable frequency drive. In addition to variants for direct mounting on the device or installation in a control cabinet door, hand-held versions are also available.



SK TU5-CTR



SK PAR-3E

Type Designation Material No.	Description	Remarks
Control Box SK TU5-CTR 275 297 000	Suitable for operation and parameterization, LCD screen (illuminated), 5-digit, 7-segment display, display of measurement unit, various status and operating displays, display of utilization level, convenient keypad.	Installation in the SK TU5 slot on the device.
Parameter Box SK PAR-3E 275 281 414	Suitable for control and parameterization, LCD screen (illuminated), plain text display in 14 languages, direct control of up to 5 devices, memory for 5 device data sets, convenient control keypad, for installation in a control cabinet door.	Connection for data exchange with NORDCON on a PC via RS-232 (USB 2.0), including 1 m connection cable, 4.5 ... 30 V DC/1.3 W Supply e.g. directly via the VFD Control cabinet installation
Simple Control Box SK CSX-3E 275 281 413	Suitable for control and parameterization, 4-digit, 7-segment display, direct control of a variable frequency drive, convenient control keypad, for installation in control cabinet doors.	Electrical data: 4.5 ... 30 V DC / 1.3 W, Supply e. g. directly via the VFD Control cabinet installation
NORDCON Control and parameterization software	Software for control and parameterization as well as support for commissioning and fault analysis of NORD electronic drive technology. Parameter names in 14 languages	Free download at www.nord.com
NORDAC® ACCESS BT Bluetooth stick SK TIE5-BT-STICK 275 900 120	The NORDCON APP and NORDAC® ACCESS BT—a mobile app and Bluetooth stick—work together to provide a wireless solution for commissioning, drive optimization, and service requests for all NORD electronic drive systems	The app is available for free download through the App Store for iOS and Google Play for Android users. The Bluetooth stick can be purchased directly from any authorized NORD distributor.

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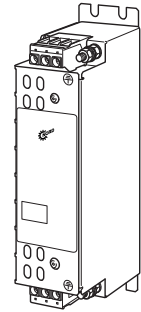
LINE FILTER

IMPROVEMENT OF EMC

General

Line filters are used to reduce the emission of electromagnetic interference. NORDAC® PRO SK 5xxP series variable frequency drives are equipped with an integrated class C2 (max. 20 m shielded motor cable) or class C1 (devices above 0.75 kW, max. 5 m shielded motor cable) line filter.

The line filter meets protection class IP20 and enables interference suppression Class C1 with max. 25 m shielded motor cable and Class C2 with max. 50 m cable. The line filters are installed separately from the VFD



For longer cable lengths or to improve radio interference suppression an optional chassis line filter (SK HLD) is available.

Variable frequency drives SK 5xxP ...		Line filter type Material No.	Continuous current [A]	Leakage current ¹ [mA]	L x W x D
3~ 400 V	0.25 ... 2.2 kW 1/3 ... 3 HP	SK HLD 110-500/8 278 272 008	8	20 / 190	190 x 45 x 75 mm 7.48 x 1.77 x 2.95 in
	3.0 ... 5.5 kW 4 ... 7.5 HP	SK HLD 110-500/16 278 272 016	16	21 / 205	250 x 45 x 75 mm 9.84 x 1.77 x 2.95 in

¹ Leakage current 1. Value: rated for the maximum permissible input voltage fluctuation according to IEC 38 + 10%

Leakage current 2nd value: calculated at maximum input voltage and failure of 2 phases (typically at 50 Hz)

AC VOLTAGE-SIDE INPUT CHOKES

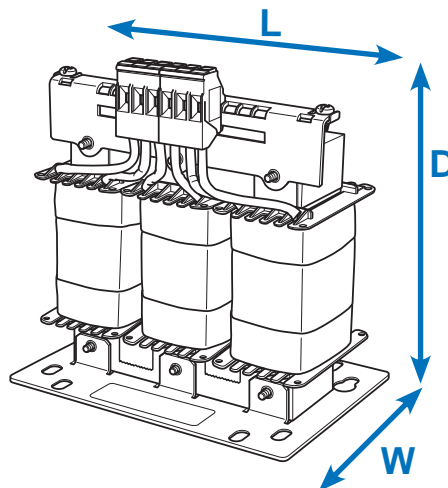
REDUCTION OF AC VOLTAGE FEEDBACK

General

It may be necessary for some drive systems to use AC line chokes to reduce dangerous AC voltage current peaks.

With their use, external feedback effects are considerably reduced and the proportion of current harmonics is reduced to a minimum. The input current is reduced to approximately the value of the output current. This will have an additional positive effect on device protection and EMC characteristics.

All chokes have protection class IP00 and are UL certified.



Variable frequency drives SK 5xxP ...		Choke type Material No.	Continuous current [A]	Inductance [mH]	L x W x D
1 ~ 230 V	0.25 ... 0.75 kW 1/3 ... 1 HP	SK CI1-230/8-C 278 999 030	8	2 x 1.0	65 x 78 x 89 mm 2.55 x 3.07 x 3.50 in
	1.1 ... 2.2 kW 1.5 ... 3 HP	SK CI1-230/20-C 278 999 040	20	2 x 0.4	90 x 96 x 106 mm 3.54 x 3.77 x 4.17 in
3 ~ 480 V	0.25 ... 2.2 kW 1/3 ... 3 HP	SK CI1-480/6-C 276 993 006	6	3 x 4.88	96 x 60 x 117 mm 3.77 x 2.36 x 4.60 in
	3.0 ... 4.0 kW 4 ... 5 HP	SK CI1-480/11-C 276 993 011	11	3 x 2.93	120 x 85 x 140 mm 4.72 x 3.34 x 5.51 in
	5.5 kW 7.5 HP	SK CI1-480/20-C 276 993 020	20	3 x 1.47	155 x 110 x 177 mm 6.10 x 4.33 x 6.96 in

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MOTOR-SIDE CHOKES

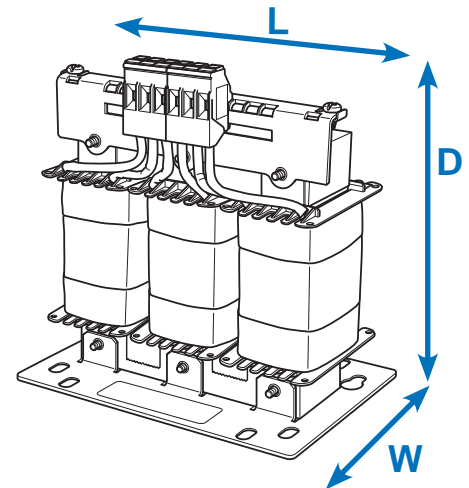
COMPENSATION FOR CABLE CAPACITANCES

General

Long motor cable lengths (cable capacity) often require the use of additional motor chokes (output chokes) on the VFD output.

In addition, the use of motor chokes has a positive effect on device protection and EMC characteristics.

The specified motor chokes are rated for a pulse frequency of 3 to 6 kHz and an output frequency of 0 to 120 Hz. All chokes have protection class IP00 and are UL certified.



Variable frequency drives SK 5xxP ...		Choke type Material No.	Continuous current [A]	Inductance [mH]	L x W x D
1 ~ 230 V	0.25 ... 0.75 kW 1/3 ... 1 HP	SK CO1-460/4-C 276 996 004	4	3 x 3.5	120 x 104 x 140 mm 4.72 x 4.09 x 5.51 in
	1.1 ... 1.5 kW 1.5 ... 2 HP	SK CO1-460/9-C 276 996 009	9	3 x 2.5	155 x 110 x 160 mm 6.10 x 4.33 x 6.29 in
	2.2 kW 3 HP	SK CO1-460/17-C 276 996 017	17	3 x 1.2	185 x 102 x 201 mm 7.28 x 4.01 x 7.91 in
3 ~ 480 V	0.25 ... 1.5 kW 1/3 ... 2 HP	SK CO1-460/4-C 276 996 004	4	3 x 3.5	120 x 104 x 140 mm 4.72 x 4.09 x 5.51 in
	2.2 ... 4.0 kW 3 ... 5 HP	SK CO1-460/9-C 276 996 009	9	3 x 2.5	155 x 110 x 160 mm 6.10 x 4.33 x 6.29 in
	5.5 kW 7.5 HP	SK CO1-460/17-C 276 996 017	17	3 x 1.2	185 x 102 x 201 mm 7.28 x 4.01 x 7.91 in

BRAKE RESISTORS

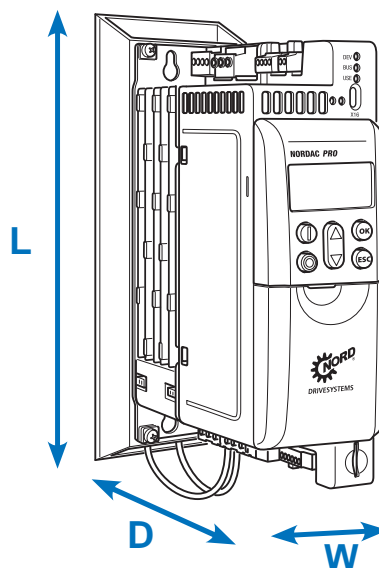
FOR DYNAMIC DRIVE CHARACTERISTICS

Bottom-mounted brake resistors SK BRU5

Available in three sizes, the brake resistor can be mounted flat underneath the VFD. Although this increases the installation length and depth by a few centimeters, the basic installation surface in the control cabinet is considerably reduced.

The specified resistance values are electrically matched to standard applications.

Brake resistors have protection class IP40 and are UL certified.



Variable frequency drives SK 5xxP ...		Resistor type Material No.	Resistance [Ω]	Continuous output [W]	Short-term power [kW] ¹	L x W x D
230 V	0.25 ... 0.37 kW 1/3 ... 1/2 HP	SK BRU5-1-240-050 275 299 004	240	50	0.75	240 x 66 x 181 mm 9.44 x 2.59 x 7.12 in
	0.55 ... 0.75 kW 3/4 ... 1 HP	SK BRU5-1-150/100 275 299 107	150	100	1.5	240 x 66 x 181 mm 9.44 x 2.59 x 7.12 in
	1.1 ... 2.2 kW 1.5 ... 3 HP	SK BRU5-2-075-200 275 299 210	75	200	3.0	280 x 66 x 181 mm 11.02 x 2.59 x 7.12 in
480 V	0.25 ... 0.75 kW 1/3 ... 1 HP	SK BRU5-1-400-100 275 299 101	400	100	1.5	240 x 66 x 181 mm 9.44 x 2.59 x 7.12 in
	1.1 ... 2.2 kW 1.5 ... 3 HP	SK BRU5-2-220-200 275 299 205	220	200	3.0	280 x 66 x 181 mm 11.02 x 2.59 x 7.12 in
	3.0 ... 4.0 kW 4 ... 5 HP	SK BRU5-3-100-300 275 299 309	100	300	4.5	340 x 91 x 225 mm 13.38 x 3.58 x 8.85 in
	5.5 kW 7.5 HP	SK BRU5-3-060-400 275 299 411	60	400	6.0	340 x 91 x 225 mm 13.38 x 3.58 x 8.85 in

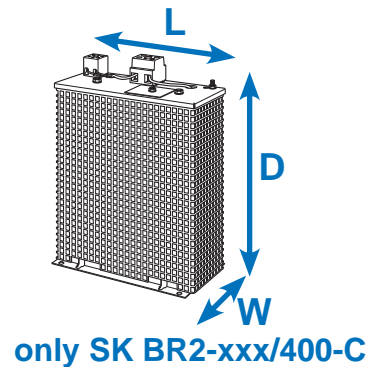
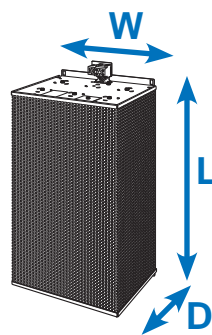
¹ Once within 120 s,
for a maximum duration of 1.2 s

Chassis brake resistors, SK BR2

The resistor elements are integrated into a housing cage and must be connected to the particular variable frequency drive via a separate connecting cable.

The brake resistors must be mounted horizontally (except SK BR2-xxx/400-C). A shielded cable, kept as short as possible, should be used for this purpose.

Brake resistors have protection class IP20.



Variable frequency drives SK 5xxP ...		Resistor type Material No.	Resistance [Ω]	Continuous output [W]	Short-term power [kW] ²	L x W x D
480 V	3.0 ... 4.0 kW 4 ... 5 HP	SK BR2-100/400-C ¹ 278 282 040	100	400	12	178 x 100 x 252 mm 7.00 x 3.93 x 9.92 in
	5.5 kW 7.5 HP	SK BR2-60/600-C 278 282 060	60	600	18	385 x 110 x 120 mm 15.15 x 4.33 x 4.72 in
Temperature monitoring for SK BR2 resistors integrated (2 terminals 4 mm ²)			Bimetallic switch as opener			

¹ Type of assembly: vertical

² Once within 120 s,
for a maximum duration of 1.2 s

RJ45 WAGO connection module

Adapter to implement a plug-in connection solution for CANopen via RJ45, snap-on rail mounting.
Material No.: 278 910 300

Signal converter +/- 10 V

For connection of a bipolar analog signal to the unipolar analog input of a variable frequency drive, snap-on rail mounting.
Material No.: 278 910 320

Electronic brake rectifier SK EBGR-1

For direct control and supply of an electromagnetic holding brake.
Material No.: 19 140 990

NORDAC® ACCESS BT

Bluetooth adapter SK TIE5-BT-STICK to establish wireless connection between the VFD and mobile devices. Together with the free NORDCON APP for Android or iOS, NORD provides a convenient tool for control, parameterization and troubleshooting.
Material No.: 275 900 120

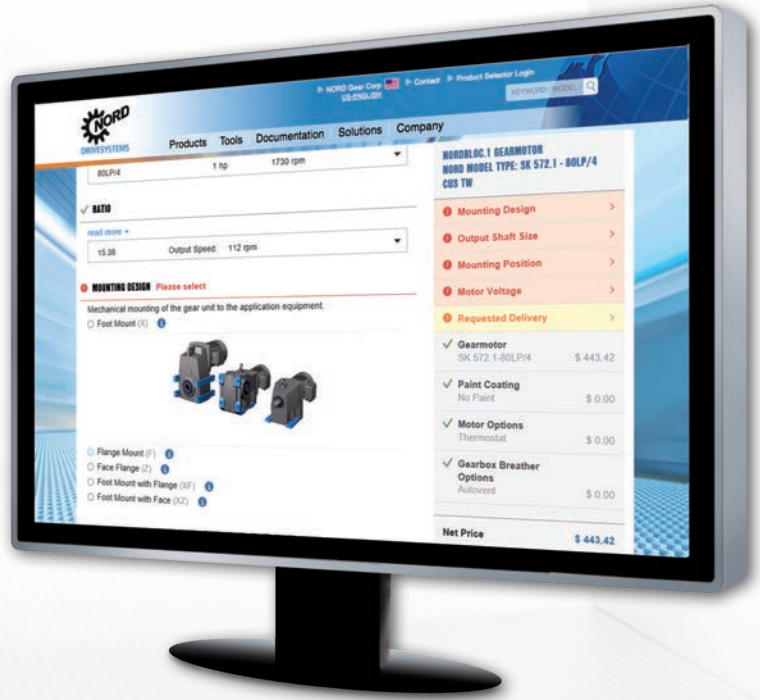
MicroSD card, 128 MB

Removable data carrier for archiving and transfer of parameter data sets for the variable frequency drive.
Material No.: 201 130 300

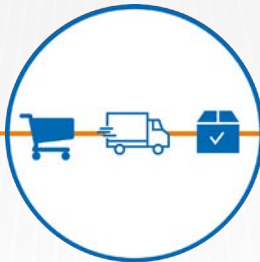
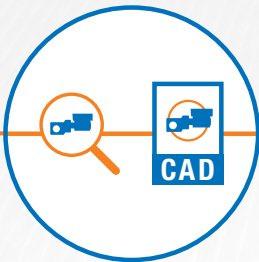


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Tel. 888.314.6673

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Charlotte, NC 28273
Tel. 888.314.6673

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info.ca@nord.com

Brampton, ON
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Brampton, ON L6T4A1
Tel. 800.668.4378

