

GETRIEBEBAU NORD

Member of the NORD DRIVESYSTEMS Group



Getriebebau NORD GmbH & Co. KG

Getriebebau-Nord-Straße 1 • 22941 Bargteheide, Germany • www.nord.com

SK CU4-MBR-C

Part number: 275 271 510

Electronic brake rectifier

NOTICE

Validity of this document

This document is only valid in combination with the operating instructions for the relevant electronic drive technology and under strict compliance with the safety and warning instructions which they contain. Safe commissioning of this module and the electronic drive technology depends on the availability of this information.

Scope of supply

1 x	Module	SK CU4-MBR-C
1 x	Mains voltage cable set	brown / black* * incl. fuse (5 A slow-acting)
1 x	24 VDC cable set	brown / blue
1 x	Connection cable (digital signal)	black
2 x	Connecting screws	M4 x 20, cross-head



Field of use

Electronic brake rectifier for installation in a decentralised electronic drive technology frequency inverter without own brake management (NORDAC *BASE* SK 180E / SK 190E, NORDAC *FLEX* SK 2x0E). With this module it is possible to directly control an electromagnetic brake of between 5 Nm and 150 Nm and a coil voltage of 105 V DC and 205 V DC.

Monitoring of the brake coil current is integrated.

The module has a water-repellent coating. Reliable operation is retained even with condensation.

Function description

The module must be supplied with 24 VDC.

The module can be operated with bridge or one way rectification and is designed for various mains and brake coil voltages. The brake is controlled via a digital input. Feedback of the brake status is output via a digital output. The module is equipped with a mains filter, which can be deactivated via a jumper.

Technical data

Temperature range	-25°C ... 50 °C
Temperature class	Class 3K3

Vibration resistance	3M7
Protection class	IP20

Mains voltage	100 ... 275 V AC ± 10 % (10 A)
	380 ... 500 V AC ± 10 % (10 A)

Brake current	≤ 0.5 A
---------------	---------

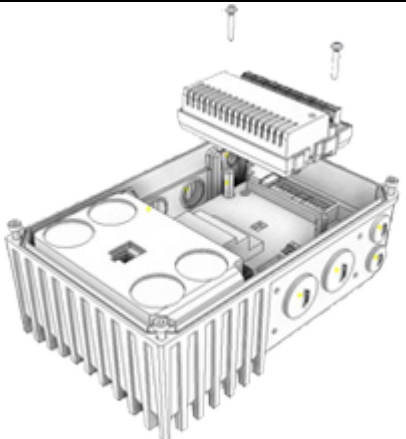
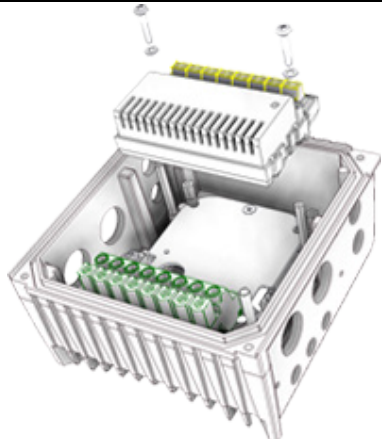
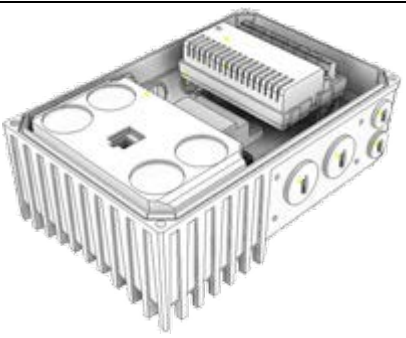
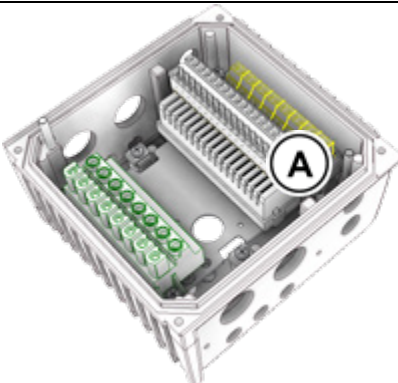
Technical Information / Datasheet	SK CU4-MBR-C			
Electronic brake rectifier	TI 275271510	V 1.1	0523	en

For details of the electrical data please refer to the descriptions of the connections (📖 Section "Control terminal details").

Installation

Installation location	In defined option slot inside the NORDAC device.
Fastening	with screw fastenings

Installation steps

	NORDAC BASE	NORDAC FLEX *)
1.		
2.		

*) Before carrying out installation step 1 it may be necessary to remove the control terminal bar (A),
The control terminal bar (A) must be fitted after installation step 2.

Connections

Terminals	Screw terminals	1 terminal bar with 16 connections, (5 mm spacing)
Cable cross section	0.14...2.5 mm	AWG 14-26
PE connection	Via device	Via screws for installation in the device

Control terminal details

Labelling, function

24 V Control voltage (input)

DIN: Digital input

DOUT: Digital output

GND: Reference potential for digital signals

MB: Brake control

L: Mains connection for a phase

Connections, Functions

SK CU4-MBR-...

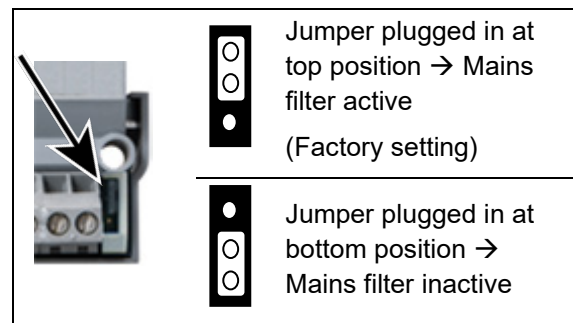
Labelling	Function	
		Mains potential level:
L2/N	2nd Phase	
L2/N	2nd Phase	
L1 _B	1st Phase (B)	
L1 _B	1st Phase (B)	
L1 _E	1st Phase (E)	
L1 _E	1st Phase (E)	Brake potential level:
79	MB+	
80	MB-	
		24 V DC potential level:
B5	DOUT	
C5	DIN	
40	GND	
44	24 V	



Compliance with the radio interference class C2 can only be ensured if the mains filter is active (jumper plugged into the upper position).

For use in non-earthed networks (IT network), the mains filter must be deactivated.

To do this, the jumper must be transferred from the top to the bottom.




Meaning, Functions		Description / Technical data		
Terminal No.	Designation	Meaning	Parameter No.	Function of factory setting
Control voltage		For the 24 V control voltage supply to the module		
		24 V DC ± 25 % 50 ... 500mA (according to load on the digital output)	Short circuit and limited excess temperature or overload monitoring available.	
44	24V	voltage (input)	-	-
40	GND / 0V	Reference potential GND	-	-
Digital inputs		Digital input for DC brake switching		
		10 ... 27 V DC ± 10 % <i>Switching thresholds</i> ON: > approx. 8.5 V OFF: < approx. 7.5 V	<i>Current demand for</i> 30 V DC: 13 mA 24 V DC: 10 mA 15 V DC: 5.5 mA Note: This input must be controlled by the frequency inverter via a digital output (parameter P434) with the function: "external brake".	
C5	DIN	Digital input	-	-
Digital outputs		Reporting of the current status of the mechanical brake		
		SPS compatible in accordance with EN 61131-2 15 – 30 V DC, 200 mA	Low signal: 0 V / < 30 mA High signal: 24 V / > 70 mA	
B5	DOUT	Digital output	-	-


Brake control		Output voltage for control of an electromagnetic brake.		
		Assignment of the brake depending on the mains voltage:		The output voltage depends on the supply voltage and the connection of the supply cable to the one-way (L1 _E) or bridge rectification (L1 _B) of the module. <i>Output voltage</i> ...For one-way rectification 0.45 x mains voltage ...for bridge rectification 0.9 x mains voltage Permissible cycle time (1 cycle = 1 x ON + 1x OFF) ≥ 0.5 s (for 5 ... 100 Nm brake) ≥ 1.0 s (for 150 Nm brake)
		Mains	Brake	
		115 V AC	105 V DC	
		230 V AC	205 V DC	
		400 V AC	180 V DC	
		460/480 V AC	205 V DC	
		Current: max. 0.5 A		
79	MB+	Brake control (+)		-
80	MB-	Brake control (-)		-
Mains connection		Mains voltage connection for one way rectification		
		Mains connection 380 - 500 VAC ± 10%, max. 10 A		
L1 _E	L1	Mains connection 1st Phase		-
L2/N	L2/N	Mains connection 2nd Phase / N		-
		Mains voltage connection for bridge rectification		
		Mains connection 100 - 275 VAC ± 10%, max. 10 A		
L1 _B	L1	Mains supply 1st Phase		-
L2/N	L2/N	Mains supply 2nd Phase / N		-

Connection example

44	brown	24 V DC	Connection to the 24 V output of the electronic drive technology
40	blue	AGND / 0V	Connection to the Ground of the electronic drive technology
C5	black	DIN	Digital signal (input) Connection to a digital output of the electronic drive technology
B5		DOUT	Digital signal (output) - feedback: Connection to a digital input of the electronic drive technology
80		MB-	Brake control (-): Connection to the electromechanical brake
79		MB+	Brake control (+) Connection to the electromechanical brake
L1 _E	brown	L1 _E	Connection to L1 of the electronic drive technology for 380 ... 500 V AC mains
L1 _B	brown	L1 _B	Connection to L1 of the electronic drive technology for 100 ... 275 V AC mains
L2/N	black	L2/N	Connection to N or L2 or L2/N of the electronic drive technology
L2/N			

Further documentation (www.nord.com)

Document	Name
 BU 0180	Frequency inverter manual NORDAC BASE

Document	Name
 BU 0200	Frequency inverter manual NORDAC FLEX