GETRIEBEBAU NORD
Member of the NORD DRIVESYSTEMS Group

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 (5A 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 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)

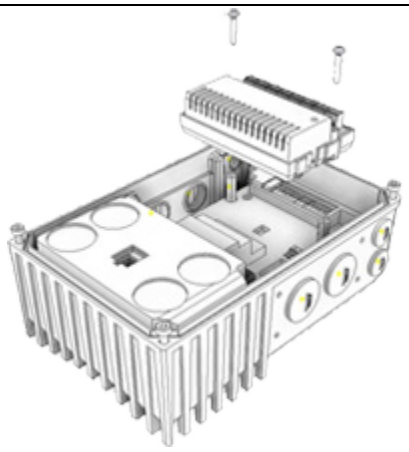
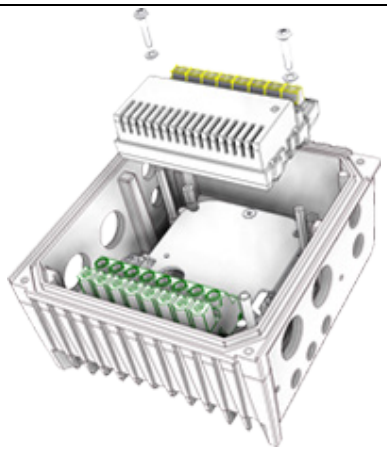
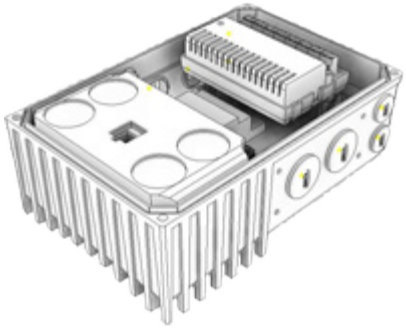
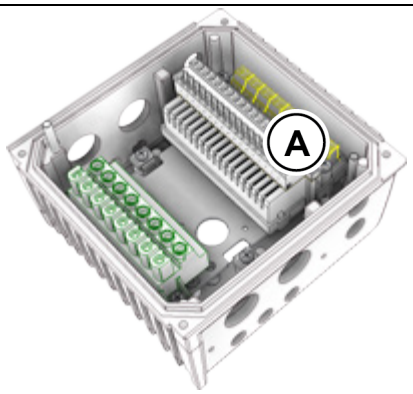
Brake current	≤ 0.5 A

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 frequency inverter (SK 1xxE, 2xxE)
Fastening	with screw fastenings

Installation steps (example illustration)

	SK 1xxE	SK 2xxE *)
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)	GND:	Reference potential for digital signals
DIN:	Digital input	MB:	Brake control
DOUT:	Digital output	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-	
B5	DOUT	24 V DC potential level
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.

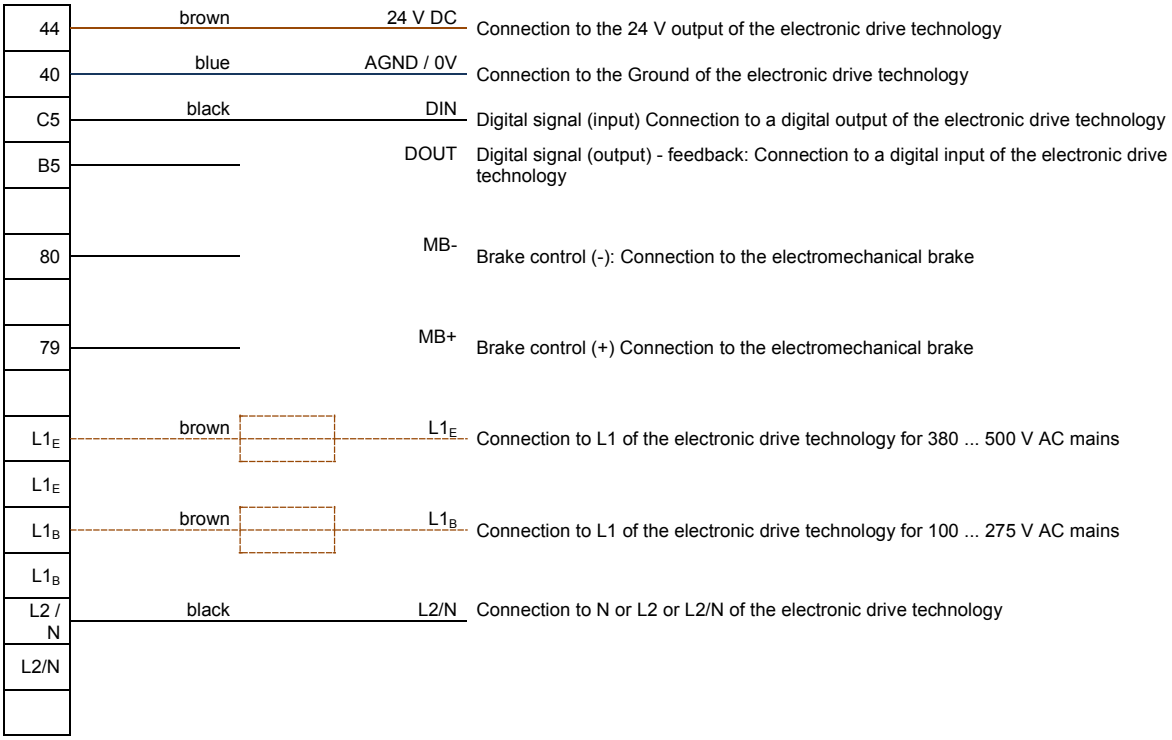
Jumper plugged in at top position → Mains filter active

(Factory setting)

Jumper plugged in at bottom position → Mains filter inactive

Meaning, Functions		Description / Technical data		
Terminal			Parameter	
No.	Designation	Meaning	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 % *Switching thresholds* ON: > approx. 8.5 V OFF: < approx. 7.5 V	*Current demand for* 30 V DC: 13 mA 24 V DC: 10 mA 15 V DC: 5.5 mA	
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: **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	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. *Output voltage* ...For one-way rectification 0.9 x mains voltage ...for bridge rectification 0.45 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)	
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



Further documentation (www.nord.com)

Document	Name
BU 0135	Motor starter manual SK 135E, SK 175E
BU 0180	Frequency inverter manual SK 180E, SK 190E

Document	Name
BU 0200	Frequency inverter manual SK 2xxE