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SK CU4-MBR

Electronic brake rectifier

Part number: 275 271 010

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
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.

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 Information / Datasheet	SK CU4-MBR			
Electronic brake rectifier	TI 275271010	V 1.0	0116	EN



Technical data

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

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

Vibration resistance	3M7
Protection class	IP20

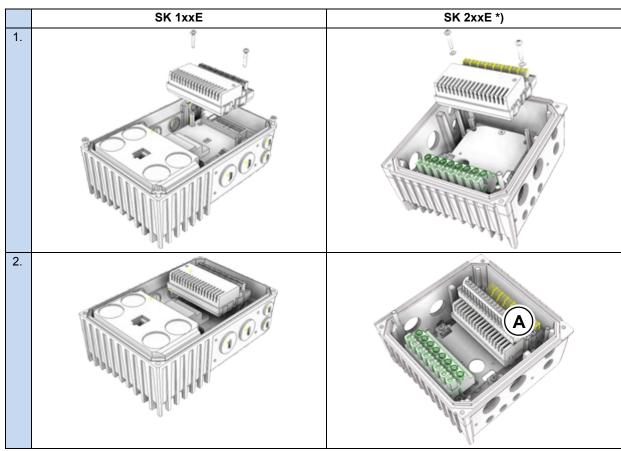
Brake current	≤ 0.5 A

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)



^{*)} 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.

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Connections

Terminals	Screw terminals	1 terminal bar with 16 connections, (5 mm spacing)
Cable cross section	0.142.5 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

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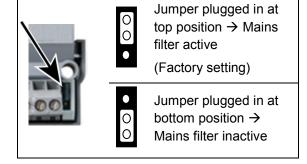
Labelling	Function		
		<u>::</u>	
L2/N	2nd Phase	al le	
L2/N	2nd Phase	~ Mains potential level:	
L1 _B	1st Phase (B)	s pot	
L1 _B	1st Phase (B)	/ains	
L1 _E	1st Phase (E)	≥	
L1 _E	1st Phase (E)		
		=	
79	MB+	entia	
		e pote level:	
80	MB-	Brake potential level:	
		ā	
B5	DOUT	ē	
C5	DIN	DC alle	
40	GND	24 V DC potential level	
44	24 V	pot ;	
		ı	



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.



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Meaning, Functions		Description / Technical data				
Terminal				Parameter		
1		Meaning	Meaning		Function of factory setting	
Cont	rol voltage	For the 24 V control voltage supply to the module				
		24 V DC ± 25 % 50 500mA (accord	ling to load on the		Short circuit and limited excess temperature or overload monitoring available.	
		digital output)				
44	24V	voltage (input)		-	-	
40	GND / 0V	Reference poter	ntial GND	-	-	
Digit	al inputs	Digital input for I	DC brake switching	g		
		10 27 V DC ± 10 9	%	Current demand	for	
		Switching thresholds		30 V DC: 13 mA		
		ON: > approx. 8.5 V	,	24 V DC: 10 mA		
C5	DIN	OFF: < approx. 7.5 V		15 V DC: 5.5 mA		
Co	אווע	Digital input		-	-	
Digit	al outputs	Reporting of the current status of the mechanical brake				
			accordance with EN	Low signal: 0 V / < 30 mA		
		61131-2 15 – 30 V DC, 200 mA		High signal: 24 \	// > 70 mA	
B5	DOUT	,	IA	-	_	
3						
Brake control		Output voltage for control of an electromagnetic brake.				
		Assignment of the brake depending on		The output voltage depends on the supply voltage and the		
		the mains voltage: Mains Brake		connection of the supply cable to the one-way (L1 _E) or bridge rectification (L1 _B) of the module.		
		115 V AC	105 V DC	Output voltage	of the module.	
		230 V AC	205 V DC	For one-way rectification 0.9 x mains voltage		
		230 V AC	203 V DC	for a local alone and att	fication 0.45 x mains voltage	
		400 V AC	180 V DC	for bridge recti	neadon of to A maine Tollage	
		400 V AC 460/480 V AC	180 V DC 205 V DC	Permissible cycl	e time (1 cycle = 1 x ON + 1x OFF)	
		400 V AC 460/480 V AC	180 V DC 205 V DC	Permissible cycle ≥ 0.5 s (for 5	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake)	
				Permissible cycl	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake)	
79	MB+	460/480 V AC	205 V DC	Permissible cycle ≥ 0.5 s (for 5	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake)	
79 80	MB+ MB-	460/480 V AC Current: max. 0.5 A	205 V DC	Permissible cycl ≥ 0.5 s (for 5 ≥ 1.0 s (for 150	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake)) Nm brake)	
80		460/480 V AC Current: max. 0.5 A Brake control (+) Brake control (-)	205 V DC	Permissible cycl ≥ 0.5 s (for 5 ≥ 1.0 s (for 150	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake)) Nm brake) -	
80	MB-	460/480 V AC Current: max. 0.5 A Brake control (+) Brake control (-)) onnection for one v	Permissible cycl ≥ 0.5 s (for 5 ≥ 1.0 s (for 150	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake) 0 Nm brake) -	
80	MB-	460/480 V AC Current: max. 0.5 A Brake control (+) Brake control (-) Mains voltage control (-) Mains connection 38	205 V DC) Donnection for one v 0 - 500 VAC ± 10%,	Permissible cycl ≥ 0.5 s (for 5 ≥ 1.0 s (for 150	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake)) Nm brake) -	
80 Main	MB- s connection	460/480 V AC Current: max. 0.5 A Brake control (+) Brake control (-) Mains voltage co Mains connection 38 max. 10 A	205 V DC) Donnection for one v 0 - 500 VAC ± 10%, on 1st Phase	Permissible cycl ≥ 0.5 s (for 5 ≥ 1.0 s (for 150	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake) O Nm brake)	
80 Main	MB- s connection	460/480 V AC Current: max. 0.5 A Brake control (+) Brake control (-) Mains voltage companies connection 38 max. 10 A Mains connection Mains connection Mains connection	205 V DC) Donnection for one v 0 - 500 VAC ± 10%, on 1st Phase	Permissible cycl ≥ 0.5 s (for 5 ≥ 1.0 s (for 150 way rectification	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake) O Nm brake)	
80 Main	MB- s connection	460/480 V AC Current: max. 0.5 A Brake control (+) Brake control (-) Mains voltage companies connection 38 max. 10 A Mains connection Mains connection Mains connection	onnection for one von 1st Phase on 2nd Phase / Nonnection for bridge	Permissible cycl ≥ 0.5 s (for 5 ≥ 1.0 s (for 150 way rectification	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake) O Nm brake)	
80 Main	MB- s connection	460/480 V AC Current: max. 0.5 A Brake control (+) Brake control (-) Mains voltage companies connection 38 max. 10 A Mains connection Mains connection Mains connection 10	onnection for one von 1st Phase on 2nd Phase / Nonnection for bridg 0 - 275 VAC ± 10%,	Permissible cycl ≥ 0.5 s (for 5 ≥ 1.0 s (for 150 way rectification	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake) O Nm brake)	
Main L1 _E L2/N	MB- s connection L1 L2/N	460/480 V AC Current: max. 0.5 A Brake control (+) Brake control (-) Mains voltage companies connection 38 max. 10 A Mains connection Mains connection Mains connection 10 max. 10 A	onnection for one vone to the control of the contro	Permissible cycl ≥ 0.5 s (for 5 ≥ 1.0 s (for 150 way rectification - e rectification	e time (1 cycle = 1 x ON + 1x OFF) . 100 Nm brake) Nm brake)	

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Connection example

	brown	24 V DC	
44	Diowii		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
В5		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 _E	brown	L1 _B	Connection to L1 of the electronic drive technology for 100 275 V AC mains
L1 _B	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 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

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