



## Technical Information

Electronic Brake Rectifier SK EBGR-1

Part No. 19140990

### Technical characteristics:

Temperature range	0°C ... 40°C (75°C)*
Temperature class	Class 3K3
Protection class	IP20
Vibration resistance	2M1

\* Temperature > 40°C: Note derating

### Field of application:

Control of electro-mechanical brakes with a coil voltage of 180V DC and 205VDC with sizes 5Nm to 250Nm by means of frequency inverters or their accessories (IO-extension) with digital output, incl. monitoring of brake coil current.

Only series SK 500E frequency inverters after year of manufacture 2008 (from Serial ID: 01 I ... ⇒ 01= Calendar week, I=Calendar year (A= 2000 ... I = 2008 ...)) may be combined with the SK EBGR-1!

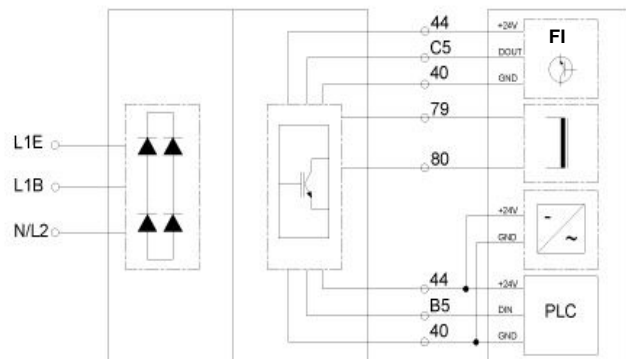
### Technical parameters:

Power supply, bridge rectification	100...275V AC± 10%
Power supply, half-wave rectification	380...500V AC± 10%
Output voltage of bridge rectifier*	0.9 * UAC
Output voltage of half-wave rectifier*	0.45 * UAC
Rated current up to 40°C	0.7 A
Rated current up to 75°C	0.5 A
Suppression level	C2
24V control voltage	24VDC ± 25%, 50mA ... 500mA**
Digital input (current consumption)	At 30V DC: 13mA, at 24VDC: 10mA, at 15V DC: 5.5mA
Digital input (switching threshold)	On: approx. 8.5 V, Off: approx. 7.5V
Digital output (Output of current status of the mechanical brake)	15 .. 30 VDC, 200mA, SPS-compatible as per EN61131-2, Low: 0V / <30mA (no current through brake coil), High: 24V / >70mA (current through brake coil),
Permissible cycle time (1 switching cycle = 1 x ON/OFF)	Brake: 5 ... 60Nm: ≥ 0.5s, Brake: 100Nm / 150Nm: ≥ 2.0s, Brake: 250Nm (180V) ≥ 6.0s, Brake: 250Nm (205V): ≥ 4.0s
Recommended release/application time for brake (FI parameter (P107))	Brake: BRE5, BRE10, BRE40: 0.02s Brake: BRE20, BRE60, BRE100, BRE150: 0.03s Brake: BRE250: 0.04s

\* not short-circuit proof, \*\* according to load on the digital output

### Schematic circuit diagram, - electrical connection:

(Example of terminal designations for frequency inverter SK 200E)

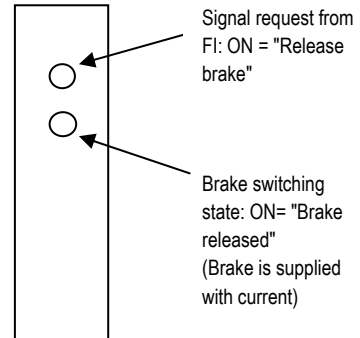
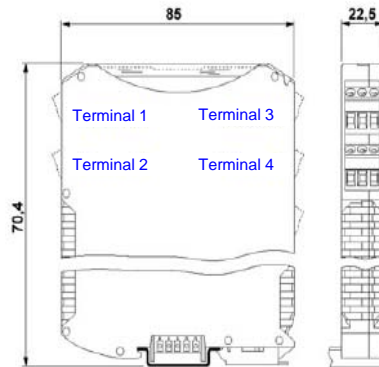


NOTE: The SK EBGR-1 can be supplied by the frequency inverter or a separate power source.

## Connections

Terminals	Screw terminals	4 terminal blocks, each with 3 connections, (7.5mm spacing)
Cable cross section	0.2...2.5 mm	AWG 12-30
PE connection	via snap-on DIN rail	The snap-on rail must be grounded

Terminal	PIN	Description	Contact No.
1 Top layer	PIN 1	Supply voltage (+24V)	44
	PIN 2	Digital input for DC brake switching	C5
	PIN 3	Reference potential (0V/GND)	40
2 Top layer	PIN 1	Supply voltage 380V ... 500V $\pm 10\%$ AC (L1)	L1 <sub>E</sub>
	PIN 2	Supply voltage 100V ... 275V $\pm 10\%$ AC (L1)	L1 <sub>B</sub>
	PIN 3	Reference potential (N/L2)	N/L2
3 Bottom layer	PIN 1	Supply voltage (+24V) - as for terminal 1 PIN 1 (internally bridged)	44
	PIN 2	Digital output (output to SPS)	B5
	PIN 3	Reference potential (0V/GND) - as for terminal 1 PIN 3 (internally bridged)	40
4 Bottom layer	PIN 1	Brake connection +	79
	PIN 2	-	-
	PIN 3	Brake connection -	80



## Installation data:

Dimensions: [mm] H85xW22.5xD70.4  
 Mounting: Snap-on rail mounting (35mm snap-on DIN rail)

## Commissioning and operating information:

Observe the brake coil voltage! Select the correct mains voltage and connect the appropriate contact.

NOTE: Incorrect voltage or incorrect connection of the supply voltage (L1<sub>E</sub> or L1<sub>B</sub>) may cause destruction of the SK EBGR 1 and the brake coil!

Brake coil voltage	Mains voltage	Terminal	PIN	Contact No.
205V DC	230V AC	2	2 + 3	L1 <sub>B</sub> + N/L2
180V DC	400V AC	2	1 + 3	L1 <sub>E</sub> + N/L2
205V DC	460V AC or 480V AC	2	1 + 3	L1 <sub>E</sub> + N/L2

Brake control: Set digital input = Brake released.

The device must be provided with a 24V control voltage.

NOTE: Make a GND connection between the frequency inverter and the SK EBGR-1.

## Scope of delivery:

Electronic brake rectifier SK EBGR-1 without other accessories

<b>Getriebebau NORD GmbH &amp; Co. KG</b> Rudolf-Diesel-Straße 1 · D-22941 Bargteheide Tel.: +49 45 32 - 40 10 · Fax: +49 45 32 - 40 12 53 · www.nord.com				SK EBGR-1	
1.8	Supplement to series ID	28.02.11	Rck	TI 059 19140990	2/2
1.7	Radio interference suppression C2, Supplement of brake release/application times	21.02.11	Rck		
Version	Amendment	Date	Name	Document	Page