

# Short Instruction For Use HF Inverter e@syDrive® TV 4504

EN



INDUSTRIAL DRIVES





*This short instruction for use includes only the essential control functions. It does not however replace the manual "Frequency Converter SFU 0200 / 1 / 2 / 3" which comes with the supplied CD !*

► *The safety information have to be observe before commissioning !*

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### Distribution:

Sycotec GmbH & Co. KG  
Wangener Strasse 78  
88299 Leutkirch, Germany  
Phone +49 7561 86-0  
Fax +49 7561 86-371  
info@sycotec.eu  
www.sycotec.eu

### Manufacturer:

BMR GmbH  
Walpersdorfer Straße 38  
D 91126 Schwabach  
Tel.: +49 (0)9122 63148-0  
Fax.: +49 (0)9122 63148-29  
e-mail: Info@bmr-gmbh.de  
Internet:www.bmr-gmbh.de



**1.0 Scope of Supply**

HF Inverter e@syDrive® TV 4504  
[Drive System SFU 0200/2]

Material no. 2.001.9226

SycoTec – Short Instruction For Use  
HF Inverter e@syDrive® TV 4504

Material no. 2.001.9377

BMR – CD "Manuals & Software"

Mains cable, length approx. 2 m

15-pole female Submin D connector

**2.0 Connections**



**3.0 Motor**

	Name	I/O	Meaning	Pin
	U	0	Motor phase U	1
	V	0	Motor phase V	2
	W	0	Motor phase W	3
	PE		Protective Conductor	4
	PTC	I	PTC-Signal	5
	GND	I/O	Ground for PTC	6

**4.0 Power Supply**

The inverter can be connected to either 230V or 115V networks.

The supply voltage can be adapted to the relevant mains supply at the bottom of the device using a rotary switch.

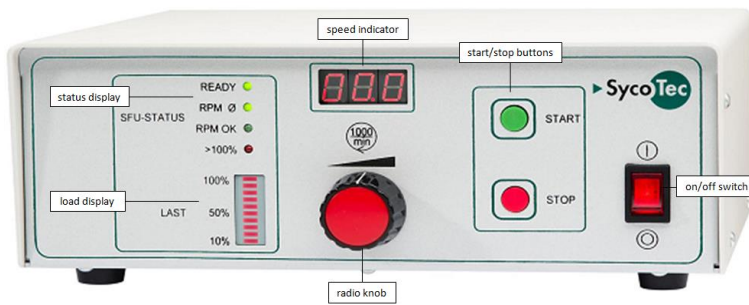
In addition, the mains fuse must be replaced accordingly (see table).

Supply voltage	Fuse
115 V	5,0AT
230 V	3,15AT



*Switching the mains voltage may only be carried out by qualified personnel!  
Incorrect setting will cause serious damage to the frequency converter.*

## 5.0 Operation



### 5.1 Assignment of the Spindle Characteristics

Assignment	Type of motor spindel
1	4010, 4025, 4026, 4029
2	4033 AC, 4033 AC-ESD
3	4033 AC "2ST-60", 4033 AC-ESD-LS "2ST-60"
4	4033 AC-LN15, 4033 AC-ESD-LN15
5	4015 DC, 4015 DC-G, 4015 DC-M, 4015 DC-R
6	4020 DC
7	4025 DC-T, 4025 DC-T "Sperrluft"
8	4033 DC

### 5.2 Selection of the spindle characteristics

- ➔ To select a different characteristic, press the START and STOP button for about 4 seconds simultaneously
- ➔ The next higher characteristic can be selected with the START button and the next lower with the STOP button
- ➔ If a characteristic place is not occupied, an "E" stands in front of the character number



### 5.3 Configuration of the direction of rotation

- ➔ Can only be set up before start
- ➔ Press the STOP button for about 4 seconds
- ➔ In the setup mode it can be switched with the START / STOP button alternating between Right and Left
- ➔ The direction of rotation is stored in the inverter, that this selection is maintained even after power off



### 5.4 Configuration of the rotational speed

- ➔ Preset manually with the radio knob of the front panel

### 5.5 Starting and stopping of the frequency inverter

- ➔ Start with the green START button on the control panel
- ➔ Stop with the red STOP button on the control panel

## 6.0 Digital and Analog Inputs / Outputs

Name	I/O	Meaning	Pin
AIN	I	Set Value Rotational Speed (0-10V)	11
DIN1	I	Start / Stop (24V)	12
DIN2	I	Locking (Emergency Stop) (24V)	15
DIN3	I	Direction of Rotation (24V)	5
+24 V	0	Auxillary voltage +24 V to Pin 8	6
GND	I/O	Ground	8
AOUT	0	Effective Load 1 V = 10%	4
Common Relay			1
Relay 1 (normally closed)	0	"Set Value Rotational Speed Reached"	2
Relay 1 (normally open)	0		3
Relay 2 (normally closed)	0	"Overload Spindle"	9
Relay 2 (normally open)	0		10
RxD		(RS232)	13
TxT		(RS232)	14

To use the digital and analog inputs adjust this with the "SFU-Terminal software".

## 7.0 Configuration of Digital and Analog Inputs and Outputs

The digital and analog inputs and outputs are freely configurable with the Windows PC software SFU-Terminal (<http://www.bmr-gmbh.de/software.htm>) via a D-Sub 15 pin fem.

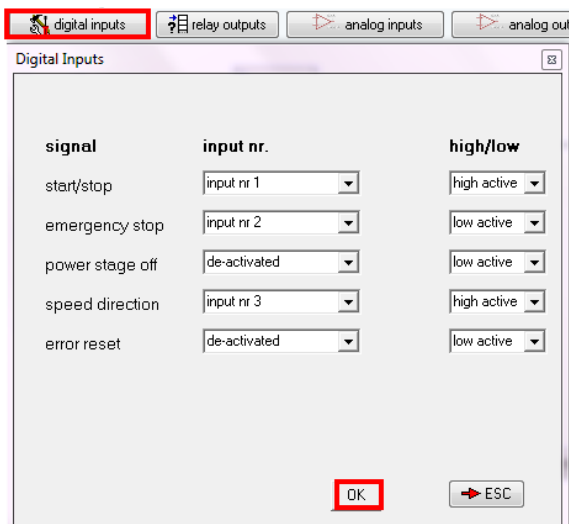
Each operating parameter can be assigned as a signal and each control signal can be allocated the required I/O pin. The logic level (high or low active) can be individually defined.

The same assignment is also possible for the analog measured data and control data at the analog I/O pin.

The standard allocations of operational parameters, their outputs, control signals and inputs, are listed in the table "Digital and analog inputs and outputs".

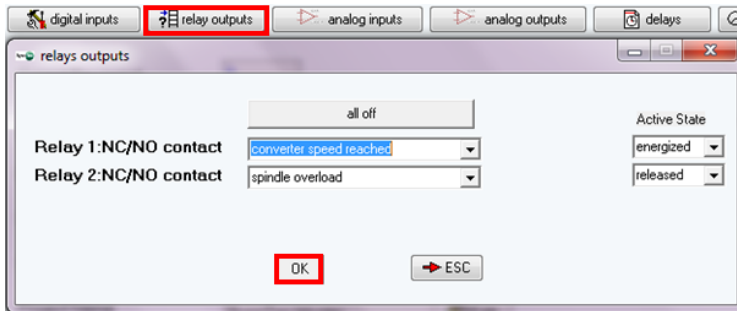
### 7.1 Digital Inputs

With the "digital inputs" button assign the desired signals to the "input nr." and define the logic level. Confirm with "OK".



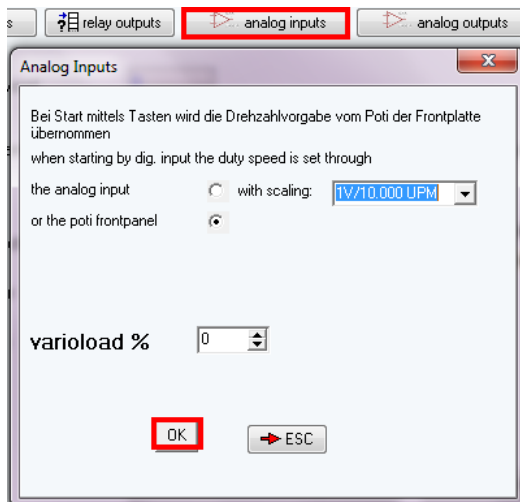
## 7.2 Digital Outputs

With the "relays outputs" button assign the desired message to the relay. Confirm with "OK".



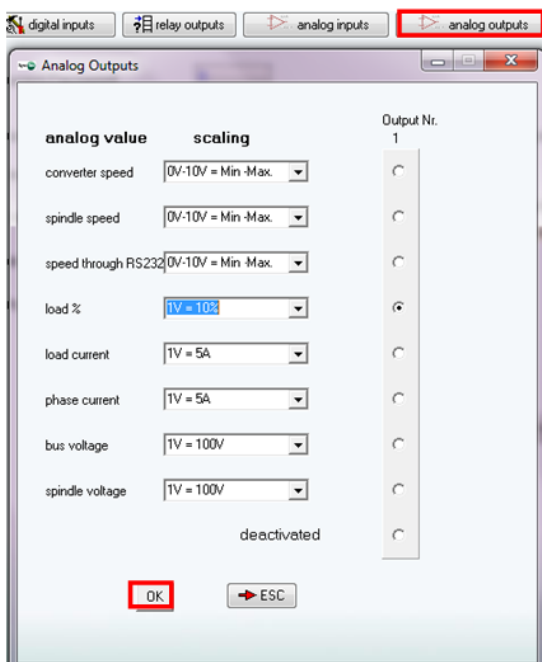
## 7.3 Analog Inputs

With the "analog inputs" button for the duty speed setting select the analog input and set the required scaling or select "poti frontpanel". Confirm with "OK".



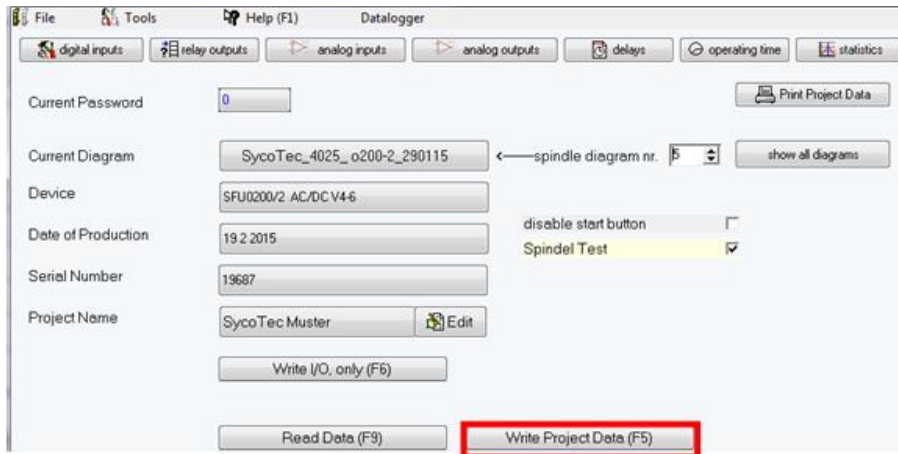
## 7.4 Analog Outputs

With the "analog outputs" button select the desired analog value and set the required scaling. Confirm with "OK".

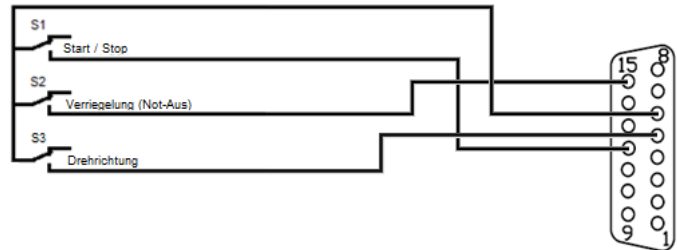


## 7.5 Write Configuration into the Inverter

To write the configured inputs and outputs into the inverter select "Write Project Data (F5)".



## 8.0 Example of Remote Control Element



## 9.0 Status Display and Error Messages

- The current rotational speed is displayed on a 3 digit 7 segment LED.
- The status LEDs "READY", "RPM 0", "RPM OK" and ">100%" give information on the current spindle status.
- The red LED ">100%" indicates generally an error or as an indicator for an overload condition.
- In case of need of more detailed information about an error, the errors can be evaluated with the help of the software SFU-Terminal.
- At the bar graph display the current load state of the inverter is displayed.
- Errors are displayed as error code in the display. If there are more than one errors present, the error codes are displayed sequentially.

E30	Overload switch off
E31	Over temperature of inverter
E32	Overtemperature of spindle
E33	Overtemperature of inverter or spindle
E34	DC-link over voltage
E35	DC-link under voltage off
E36	DC-link Under Voltage stop
E37	Over current trip -> power stage off
E38	Emergency-stop input locked
E39	No spindle or spindle cable defective
E40	Timeout serial interface
E41	Spindle characteristic invalid or corrupted
E42	Error back energy (AC) / spindle stall (DC) -> power stage off

## **10.0 Safety Functions**

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The following safety functions bring about controlled stop of the spindle according to predefined deceleration times:

- Safety stop by spindle over temperature (if activated)
- Safety stop by inverter over temperature
- Safety stop by overload
- Safety stop by exceeding the maximum admissible spindle current
- Emergency stop via digital input locking

## **Warranty Conditions**

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Under current SycoTec delivery and payment conditions, SycoTec undertakes warranty for satisfactory function and freedom from faults in material and manufacture for a period of 12 months from the date of sale certified by the vendor.

In the event of justifiable complaints, SycoTec shall supply spare parts or carry out repairs free of charge under warranty. SycoTec accepts no liability for defects and their consequences which have arisen or could have arisen as a result of natural wear and tear, improper handling, cleaning or maintenance, non-compliance with the maintenance, operating or connecting instructions, corrosion, impurities in the air supply or chemical or electrical influences which are unusual or not admissible in accordance with SycoTec's standards. The warranty claims shall become null and void if defects or their consequences can be attributed to interventions in or modifications to the product. Warranty claims can only be validated if they are notified immediately in writing to SycoTec.

A copy invoice or delivery note clearly showing the manufacture number shall be attached if products are returned.

## **CE Declaration of Conformity**

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The CE Declaration of conformity may be requested or downloaded from [www.sycotec.eu](http://www.sycotec.eu).





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(DE = original)

## INDUSTRIAL DRIVES

**SycoTec GmbH & Co. KG**  
Wangener Strasse 78  
88299 Leutkirch  
Germany

Phone +49 7561 86-0  
Fax +49 7561 86-371  
info@sycotec.eu  
www.sycotec.eu

