Short Instructions for Use EN
HF Inverters e@syDrive 4624, 4625, 4626

e@syDrive

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INDUSTRIAL DRIVES

▶ SycoTec

⚠️ *ATTENTION*

This start-up manual is only valid in connection with the operating manual of HF Inverter e@syDrive 4624, 4625, 4626 (material no. 2.002.1912)!

▶ *The safety information must be observed before commissioning!*

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CE

1.0 Symbols Used

| ⚠ DANGER	Indicates a hazardous situation that can directly cause death or serious injury.	ℹ	Important information for operator and engineer
⚠ ATTENTION	Indicates a hazardous situation that can cause damage to property or mild to moderate injuries.		

2.0 Related Products

This manual is valid for following HF inverters:

HF Inverter e@syDrive 4624	Material no. 2.002.1053
HF Inverter e@syDrive 4624 IP00	Material no. 2.002.6308
HF Inverter e@syDrive 4624 IP00-S	Material-Nr. 2.003.0591
HF Inverter e@syDrive 4625	Material no. 2.002.1054
HF Inverter e@syDrive 4626	Material no. 2.002.1055

3.0 Connections

(1) Supply input (max. 70 V DC/49 V AC) [1…3]
(2) Motor (U, V, W) [10…13]
(3) Safe Torque Off [20…27]
(4) Relays [30…35]
(5) Digital inputs / PLC [50...59]
(6) CAN interface [60…63]
(7) Motor temperature sensor [40…41]
(8) Frequency output [42…43]
(9) Analog inputs (0…10 V / 0…20 mA) [44…48]
(10) Analog output (0…10 V) [49]
(11) Mini USB connection

HF inverter with SN < 5,000
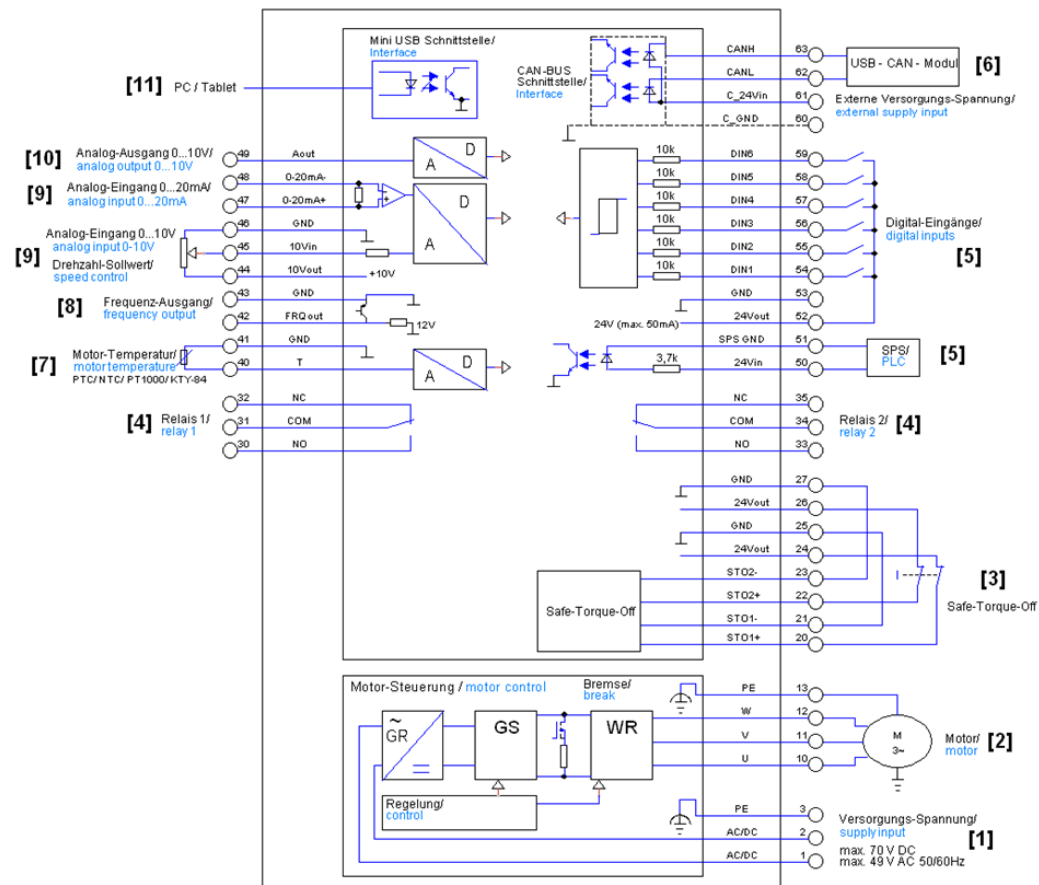
HF inverter with SN ≥ 5,000
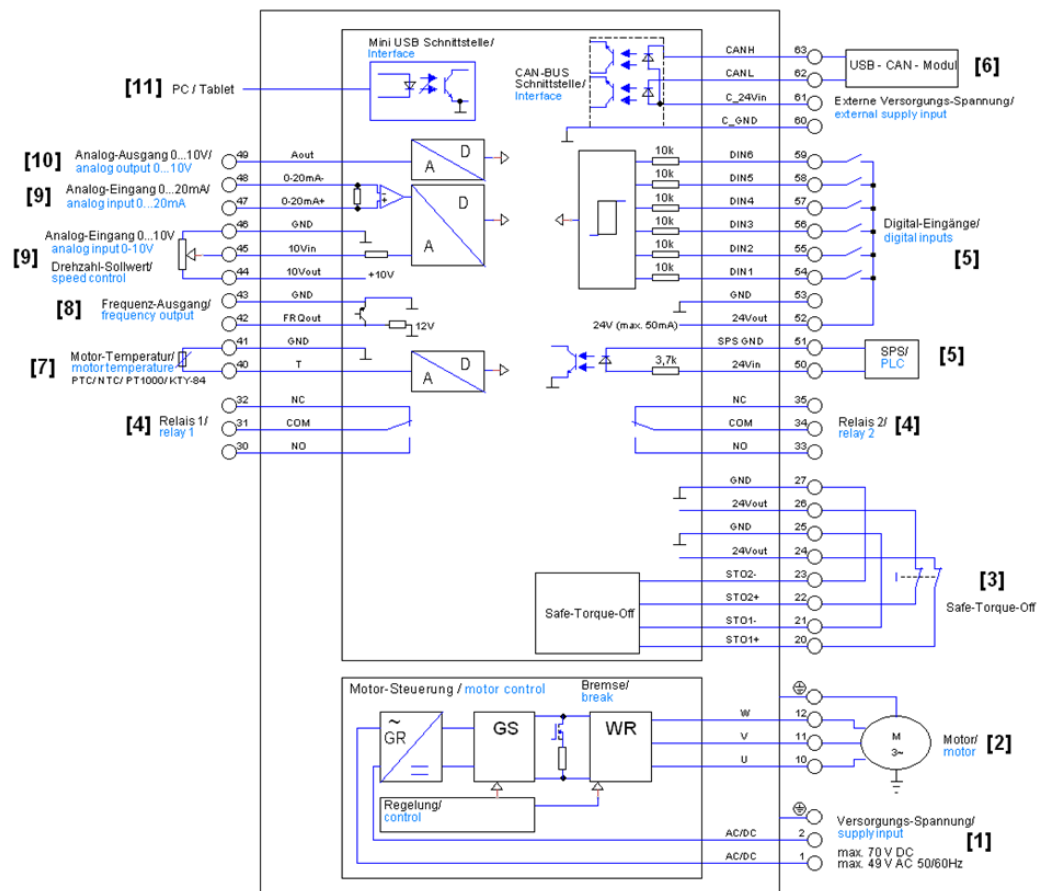
4.0   Supply Input

Pin	Name	I/O	Meaning
1	AC/DC	I	Main Supply
2	AC/DC	I	Main supply
3	PE / ⏚		Protective conductor

The HF inverter can be operated with a direct voltage or alternating voltage. The mains connection is single phase. The voltage supply is connected to Terminal 1 (AC/DC) and Terminal 2 (AC/DC) and the protective earth is connected to Terminal 3 (PE). When operating the HF inverters e@syDrive 4624, 4625, 4626, the following must be observed:

⚠ **DANGER**
AC voltage: *max. 49 V AC*
DC voltage: *max. 70 V DC*

HF inverter with SN < 5,000:
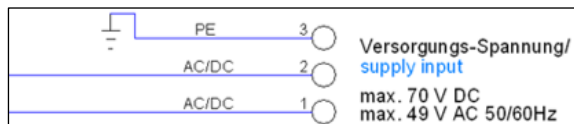
HF inverter with SN ≥ 5,000:
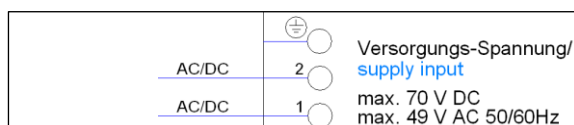
5.0   Motor

Pin	Name	I/O	Meaning
10	U	O	Motor phase U
11	V	O	Motor phase V
12	W	O	Motor phase W
13	PE		Protective conductor

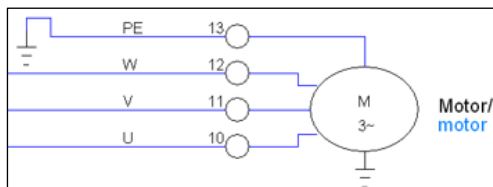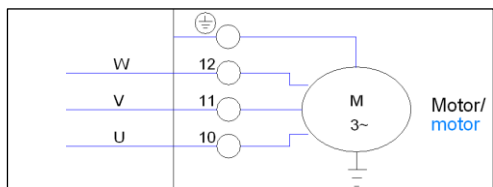Before connecting or disconnecting the motor, make sure that the HF inverter is disconnected from the power supply. When connecting the motor to U, V, W and PE, ensure that the cable shield is clamped properly under the strain relief, creating a secure contact to the housing of the HF inverter.

HF inverter with SN < 5,000:

HF inverter with SN ≥ 5,000:

⚠️ *DANGER*
Make sure that there is a proper connection between the protective earth conductor and the PE terminal..

6.0   Safe Torque Off

Pin	Name	I/O	Meaning
20	STO1+	I	Enabling of the safety circuit
21	STO1-	I	Ground reference point for STO1+
22	STO2+	I	Enabling of the safety circuit
23	STO2-	I	Ground reference point for STO2+
24	24 V	O	Logic voltage 24 V
25	GND	I/O	Ground
26	24 V	O	Logic voltage 24 V
27	GND	I/O	Ground

ℹ️ *The HF inverter is only operable if STO1+ (20) and STO2+ (22) are connected to 24 V (24/26) and STO1- (21) and STO2- (23) are connected to GND (25/27).*
If the safety function is not required, bridge the necessary pins.
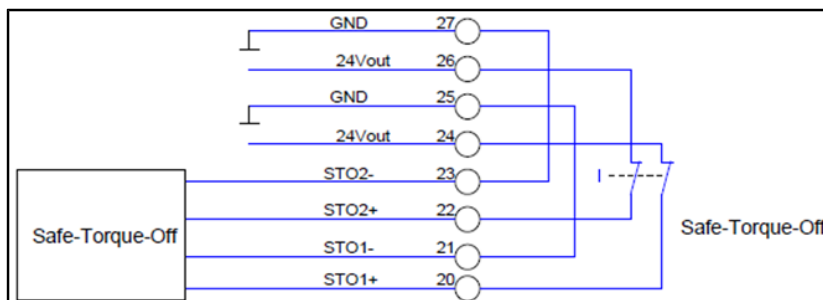
7.0   Relays

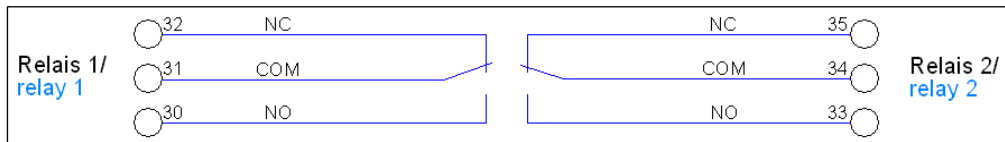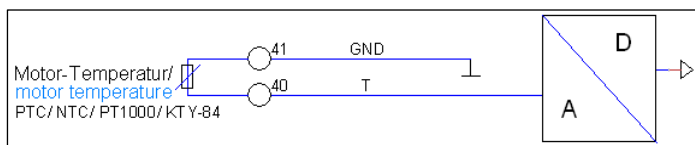| Pin	Name	I/O	Meaning	
30	NO	O	Normally open Relay 1	Motor runs
31	COM		Common Relay	
32	NC	O	Normally closed Relay 1	Motor runs
33	NO	O	Normally open Relay 2	Failure
34	COM		Common Relay	
35	NC	O	Normally closed Relay 2	Failure

The functions of the relays can be configured using the SycoDrive operating software.

8.0   Motor Temperature Sensor

Pin	Name	I/O	Meaning
41	GND	I/O	Ground
40	T	I	Motor temperature sensor

9.0   Analog Input

Pin	Name	I/O	Meaning
44	10Vout	O	10 V auxiliary voltage
45	10Vin	I	Speed reference value
46	GND	I/O	Ground
47	0-20mA+	I	Speed reference value
48	0-20mA-	I	Reference point of Pin 47 (0-20mA+)

The analog input can be used as input for the rated speed.
The voltage range is between 0 and 10 V, and the resolution is 16 bits.
A potentiometer (4.7 kΩ or 10 kΩ) can be connected or an external DC power supply can be used.
The current range is between 0 and 20 mA, and the resolution is 16 bits.
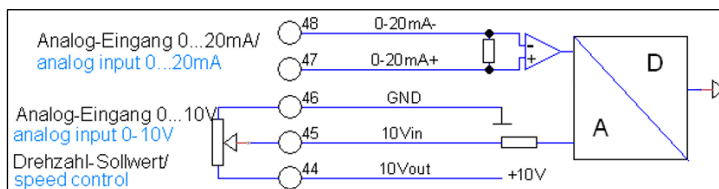
10.0   Digital Inputs

Pin	Name	I/O	Meaning
52	24 V	O	24 V auxiliary voltage
53	GND	I/O	Ground
54	DIN1	I	Start/Stop
55	DIN2	I	Reset
56	DIN3	I	Off
57	DIN4	I	Off
58	DIN5	I	Parameter import
59	DIN6	I	Parameter export

The digital inputs "DIN1…DIN6" can be configured with the SycoDrive operating software as needed.
An internal 24 V DC auxiliary voltage (max. 0,5 mA) is available from the HF inverter.
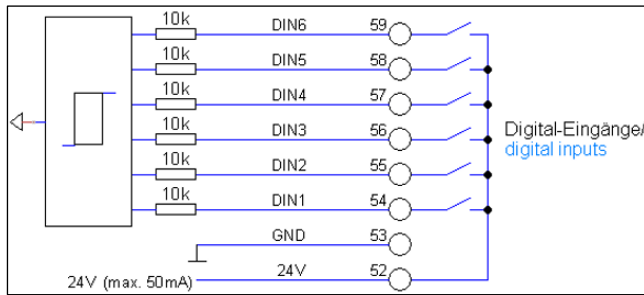
11.0 Micro SD Card

Error log
With a micro SD card, it is possible to read out the HF inverter's error log with associated timestamp, from the time that the micro SD card was connected.

Loading the parameters
Parameters can be saved to a micro SD card and then be read out again from the card.

For parameter import from the SD card to the HF inverter, DIN 5 has to be configured for Parameter import and 24 V must be connected to DIN 5. In addition a restart of the HF inverter or a reset via a digital input (only when the motor is stopped) must be initiated.
After a successful parameter import, the green LED flashes twice. If an error occurs during parameter import (no or faulty SD card), the red LED flashes twice.
The values of the parameters are limited to the valid values during the import.

For parameter export to the SD card, DIN 6 has to be configured for Parameter export and 24 V must be connected to DIN 6. In addition a restart of the HF inverter or a reset via a digital input must be initiated.
Successful parameter export is signaled by three flashes of the green LED, an export error with three flashes of the red LED.

| i	*Only the motor parameter set is saved on the micro SD card; the settings for the inputs and outputs remain as they were.*
	Only use the micro SD card provided, as a different micro SD card may not be readable by the HF inverter.

12.0 SycoDrive Operating Software

For the operation and configuration of the HF inverter, you will need a USB cable and a PC or tablet. The mini USB cable included in the scope of supply can be used to connect the PC to the HF inverter. Furthermore, the SycoDrive operating software is required, which can be downloaded from SycoTec's homepage www.sycotec.eu free of charge.

Connection:

➡ Install the SycoDrive operating software on your PC
➡ Open SycoDrive
➡ Switch on the HF inverter
➡ Connect the PC to the HF inverter (the inverter will detect the COM port automatically).

12.1   Configuration and Commissioning

The current connection status is displayed on the left on the bottom half of the user interface.
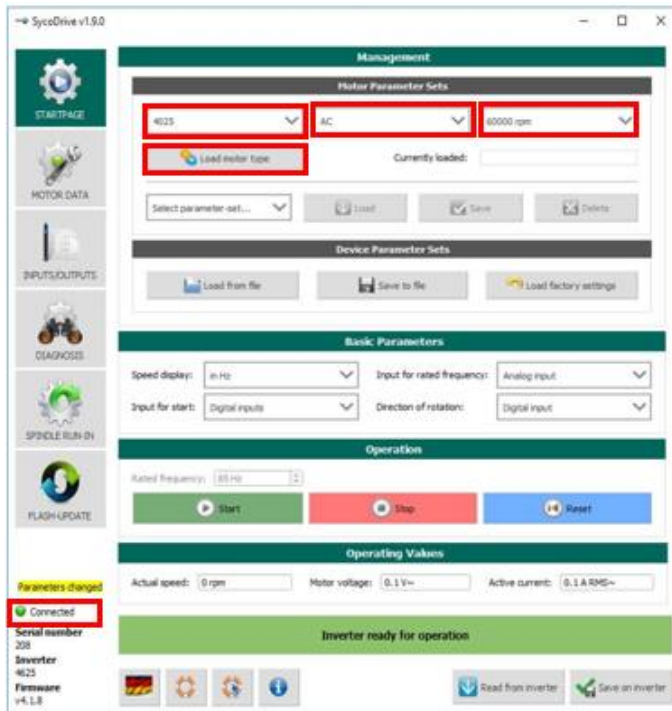
Once the inverter has been connected to the PC, select the desired type of motor from the "STARTPAGE" under "Management" and then confirm the selection with the "Load motor type" button.

This will initially load the motor parameters into the SycoDrive user interface.
These are not yet active in the HF inverter.

The "Save on inverter" button then transfers the parameters from the SycoDrive user interface to the HF inverter.

You can then choose whether to operate the system using the SycoDrive operating software or the digital/analog inputs.
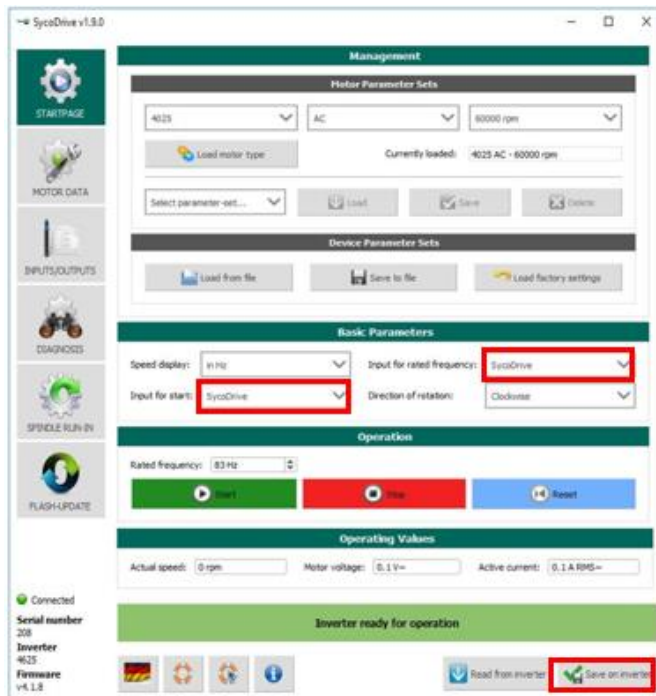
12.1.1 Operation with SycoDrive operating software

For operation using the SycoDrive operating software, please configure the following parameters on the "STARTPAGE" as shown:

    "Input for Start":   "SycoDrive"
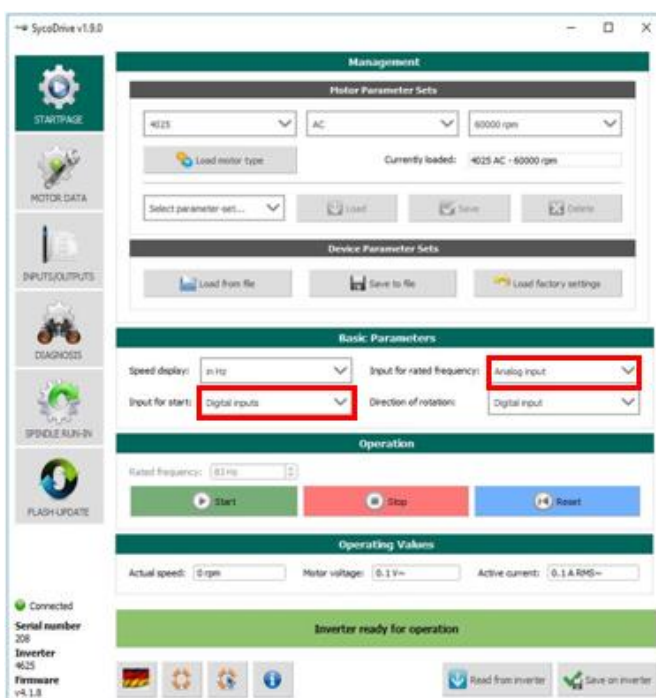   "Input for rated frequency":   "SycoDrive"

Then confirm the parameters with the "Save on inverter" button in order to transfer them to the inverter.

12.1.2 Operation with digital / analog inputs

For operation using a remote control unit, please configure the following parameters on the "STARTPAGE" as shown:

    "Input for start":   "Digital inputs"
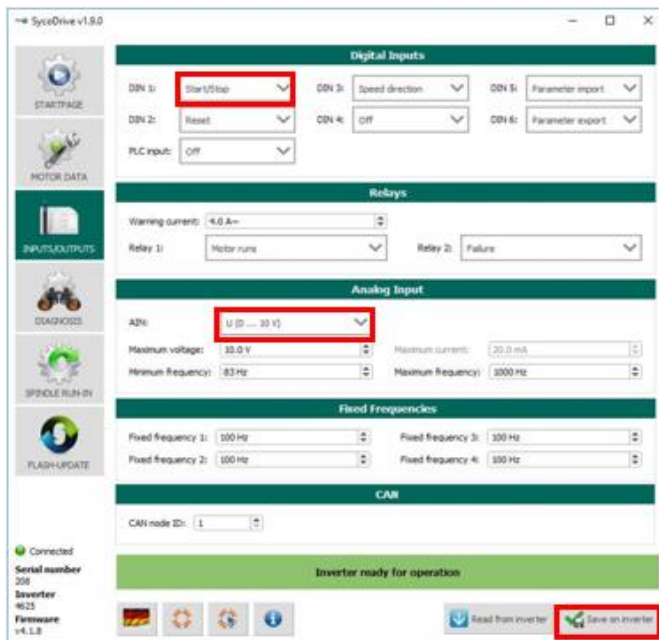   "Input for rated frequency":   "Analog input"

Then select the following in the "INPUTS/OUTPUTS" menu:

"DIN 1": "Start/Stop"
"AIN": "U (0…10 V)"

The parameters "Maximum voltage" and "Maximum frequency" allow the analog input to be scaled.

Then confirm the parameters with the "Save on inverter" button in order to transfer them to the HF inverter.

12.2 Diagnosis

The "DIAGNOSIS" menu is used to display various inverter states, such as operating values, runtimes, error messages, warnings etc.
In addition, an actuator/sensor test can be carried out.
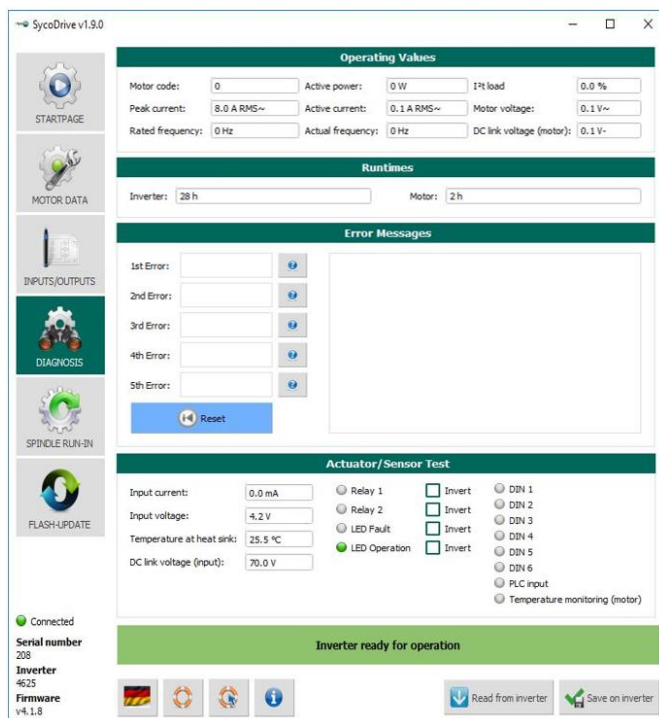
13.0   Switch-on sequence

For safety reasons, it is not possible to switch on the inverter and simultaneously indicate the start command and the setpoint.
A deliberate command must be executed to start the motor!

Note the following switch-on sequence:
1. Switch on the HF inverter
2. Wait during the initialization process until the inverter is ready for operation
3. Set the setpoint
4. Give the start command

⚠️ *ATTENTION*
Do not switch off the inverter during operation.

Warranty Conditions

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

The CE Declaration of conformity may be requested or downloaded from www.sycotec.eu

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(DE = original)

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