

Short Instruction For Use

EN

HF Inverter e@syDrive® TV 4503, TV 4506, TV 4538



INDUSTRIAL DRIVES





This short instruction for use includes only the essential control functions.

It does not however replace the Sieb & Meyer Hardware Description "Drive System SD2T" that must be downloaded before commissioning:

*- on the SycoTec homepage at the download area under
<https://www.sycotec.eu/en/about-sycotec/downloads2/>
 respectively*

*- at Sieb & Meyer under
<https://www.sieb-meyer.com/file-detail.html?item=423>*

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

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1.0 Scope of Supply

HF Inverter e@syDrive® TV 4503 (Drive System SD2T / device variant 0362160DB)	Material no. 2.000.6670
HF Inverter e@syDrive® TV 4506 (Drive System SD2T / device variant 0362162EB)	Material no. 2.000.6784
HF Inverter e@syDrive® TV 4538 (Drive System SD2T / device variant 0362161EC)	Material no. 2.000.5530
SycoTec – Short Instruction For Use HF Inverter e@syDrive® TV 4503, TV 4506, TV 4538	Material no. 2.000.7718
Mains cable, 10 A, length approx. 1.8 m	
USB cable, screened with Ferrite, length approx. 2 m	
25-pole female Submin D connector	

2.0 Motor Connection - Rear Side

The device variant of the SD2T series provides the following terminal block for the motor connection.

6 lead-through terminals DFK 4 (PHOENIX)

	Pin	I/O	Name	Meaning
	2	I/O	GND	Ground
	1	I	PTC	PTC contact
			PE	Protective conductor
	W	0	W	Motor phase W
	V	0	V	Motor phase V
	U	0	U	Motor phase U

- ▶ The motor cable shield is connected to the shield connection clamp.
- ▶ The EMC characteristics of these device variants are restricted.
Thus the device meets the interference limit values of EMC category C3.
- ▶ If using a KTY connect the black wire to PTC (Pin 1) and the white Kabel to Ground (Pin 2).



[Fig.: e@syDrive TV 4506]

3.0 Operation

At the first start (mains on) of the inverter the display shows:



This display indicates the start of the electronics and will change to the first selected parameter set:



3.1 Parameter Set Selection

This function is only possible if the device is stopped.

- ▶ Press keys [START] and [STOP / ESC] for at least 3 seconds at the same time to switch to the parameter menu ("PARAMETER SELECT").
- ▶ Select a different parameter set using the arrow buttons [Up / Down]
 - Press the button [START] to apply the selected parameter set.
 - Press the button [STOP / ESC] to returns to the preset selection.

3.2 Configuration of the Rotational Speed

- ▶ The setting of the speed in steps is possible with the arrow buttons.
 - With the arrow keys [Left / Right] move the cursor to the desired position.
 - With the arrow keys [Up /Down] change the selected digit.
- ▶ It is possible to set negative speed values.

3.3 Starting and Stopping the Spindle

Using the keys on the front panel the motor spindle can be started and stopped.

1x Button [START] = controller on
 2x Button [START] = motor spindle runs

1x Button [STOP / ESC] = controller still on
 2x Button [STOP / ESC] = controller off

4.0 Analog and Digital Inputs and Outputs

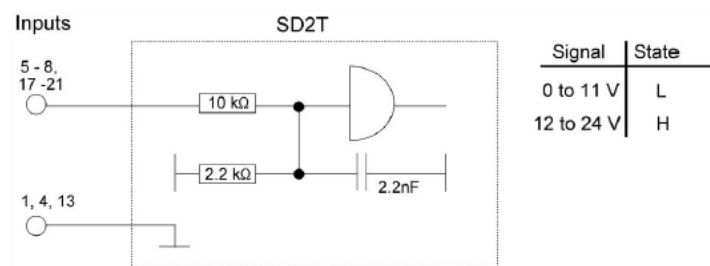
A parameter set with the addition "FB" in the motor spindle description, the inverter can be operated by remote control or external control unit.



The functions of the digital and analog inputs and outputs are different depending on the drive function. The following inputs and outputs are set by default.

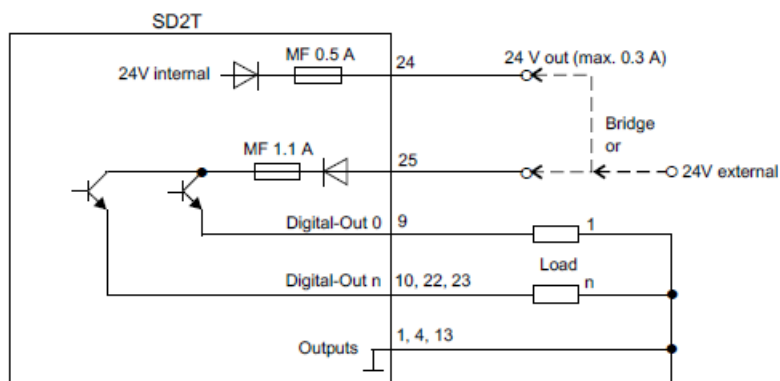
4.1 Digital Inputs

Name	I/O	Function / Assignment	Pin
IN0	I	Switch on	X53/6
IN1	I	Operation enable	X53/18
IN2	I	Error reset	X53/5
IN3	I	Speed direction	X53/17
IN4	I	External hardware OK	X53/19
GND	I/O	Ground	X53/1,4,13
VCC24_OUT	O	24 V output for inputs/outputs (max. 0,3 A)	X53/24
VCC24_EXT	I	24 V supply for external inputs/outputs	X53/25



4.2 Digital Outputs

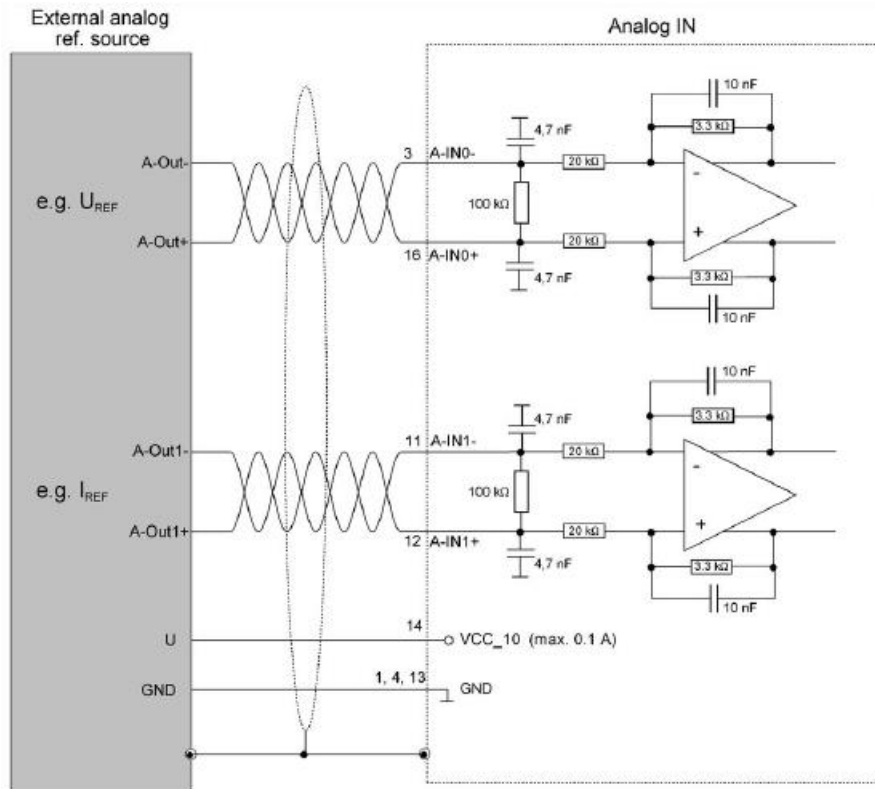
Name	I/O	Function / Assignment	Pin
OUT0	O	Ready type 1	X53/9
OUT1	O	M02 – Message operation enabled	X53/22
OUT2	O	M12 – Speed zero	X53/23
OUT3	O	M10 – Ref. Value reached	X53/10
GND	I/O	Ground	X53/1,4,13
VCC24_OUT	O	24 V output for inputs/outputs (max. 0,3 A)	X53/24
VCC24_EXT	I	24 V supply for external inputs/outputs	X53/25



Every output can be loaded with 100 mA

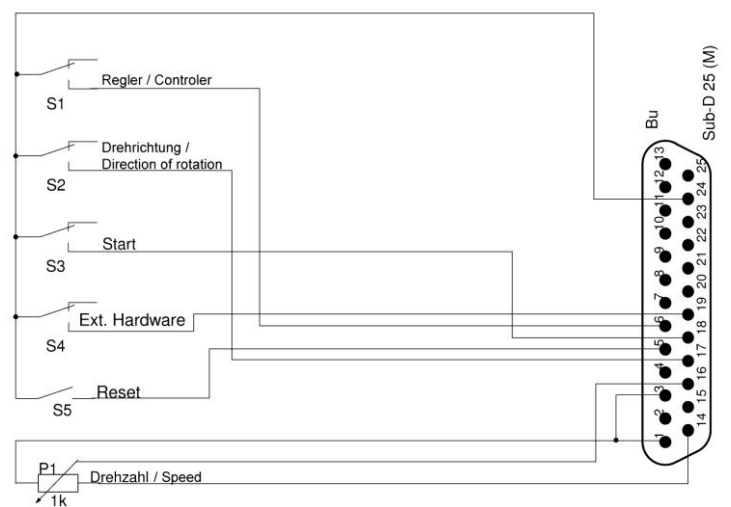
4.3 Analog Input

Name	I/O	Function / Assignment	Pin
AIN0+	E	Speed reference value	X53/16
AIN0-	E	Reference point of AIN0+ (bridge with ground)	X53/3
GND	E/A	Ground	X53/1,4,13
VCC10	A	10 V for analog measuring systems (max. 0,1 A)	X53/14



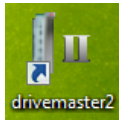
Input voltage range: ± 10 V

5.0 Example of Remote Control

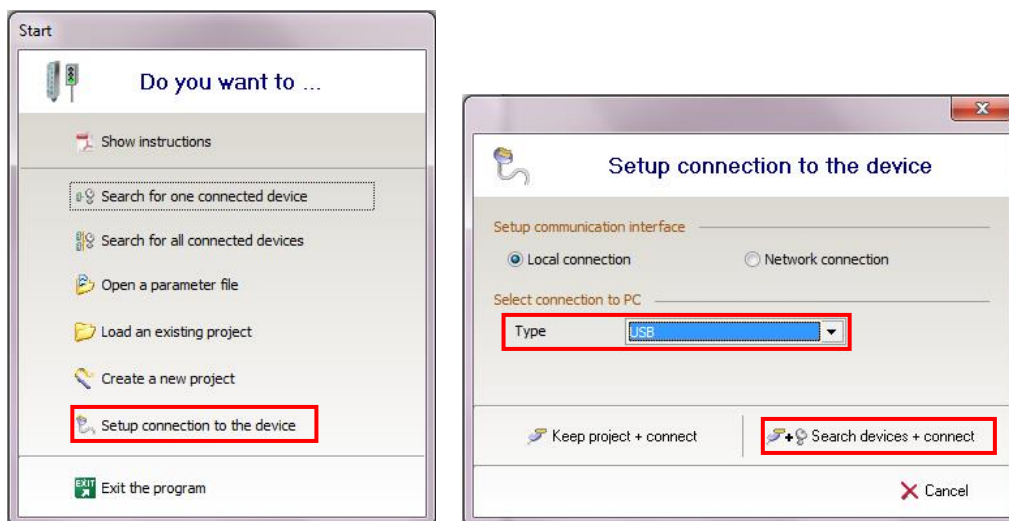


6.0 Connecting to the computer

- Connect the inverter via USB interface to the computer
- Plug in the inverter
- Start Sieb & Meyer "SD2 Windows software drivemaster2"
<https://www.sieb-meyer.com/file-detail.html?item=413>

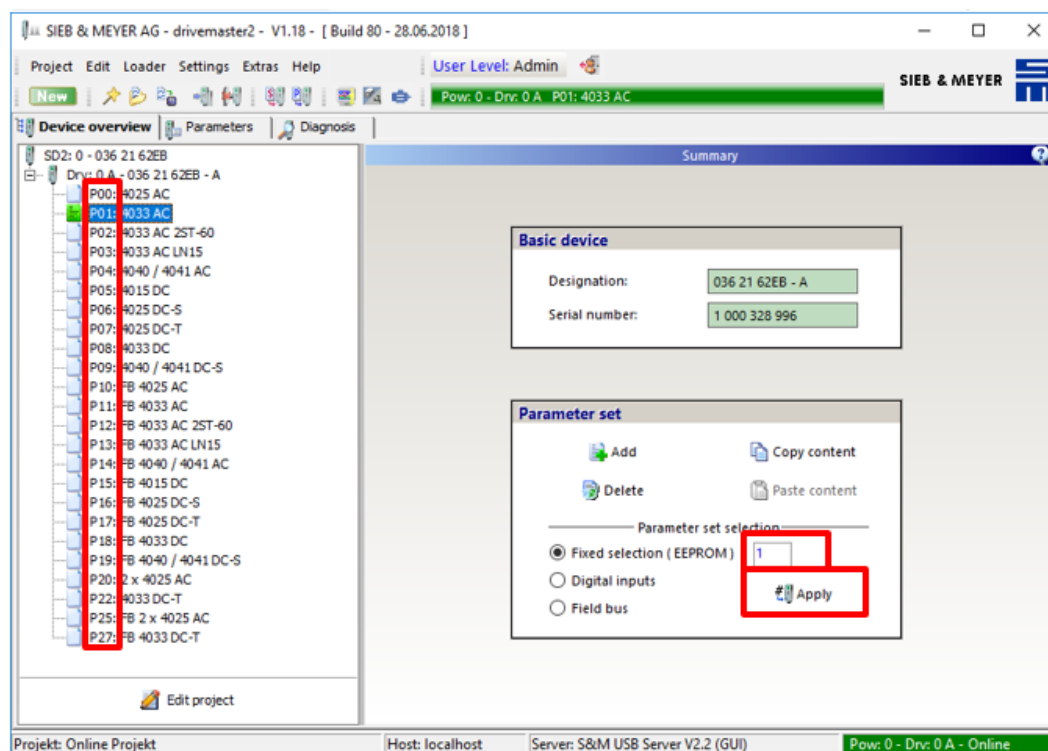


To establish a connection to the device click "Setup connection to the device", adjust "USB" for connection type and select "Search devices + connect".



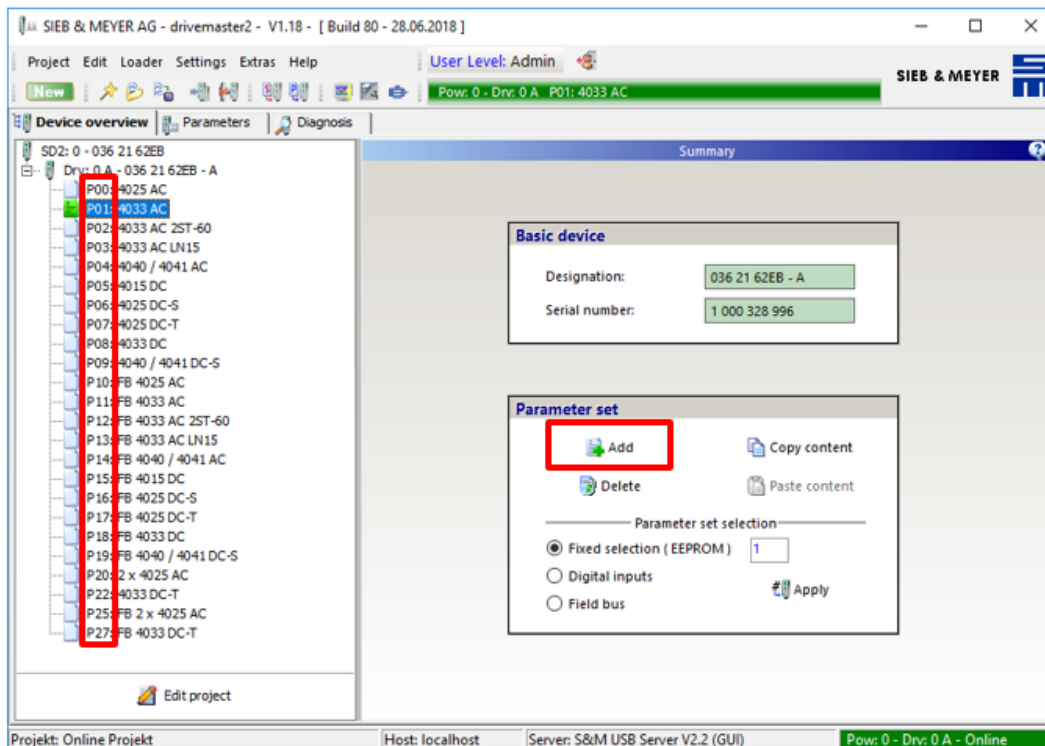
7.0 Activate another parameter set

To activate a different parameter file, enter the number (P00 ... Pxx) of the required parameter file and click "Apply".

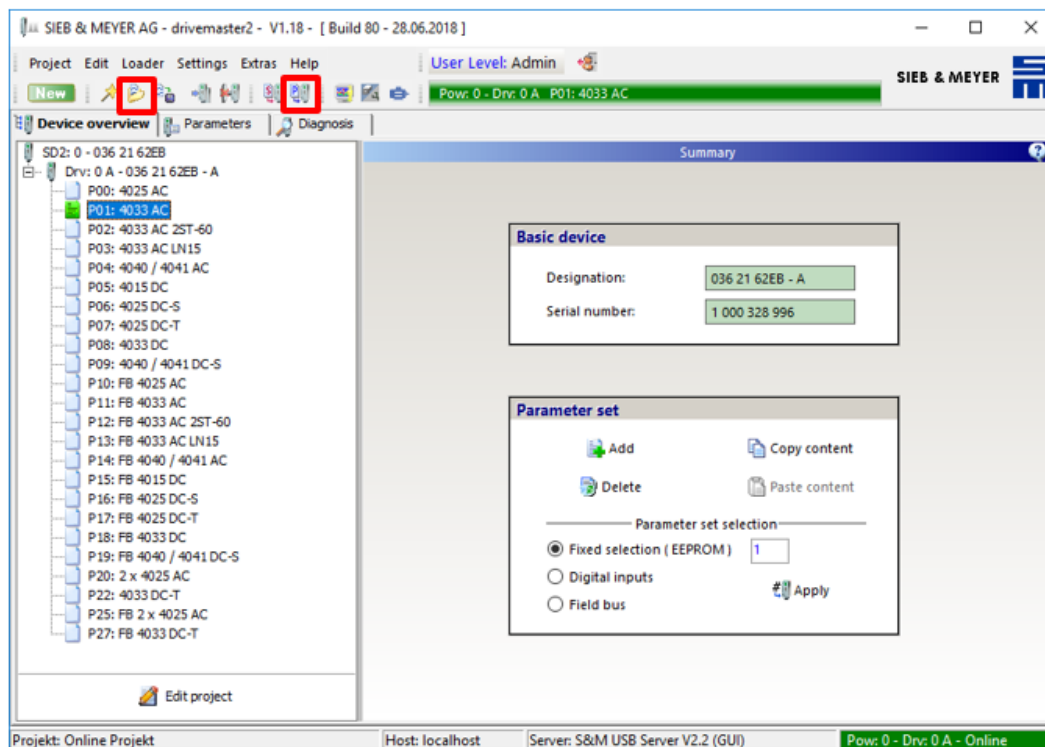


8.0 Load parameter file

Before opening the parameter file select the right position (Pxx) or add a new parameter set.



To open a parameter file click "Open parameters" on the toolbar and select the required parameter file. To write the parameter file into the inverter click "Write parameters to drive" on the toolbar.

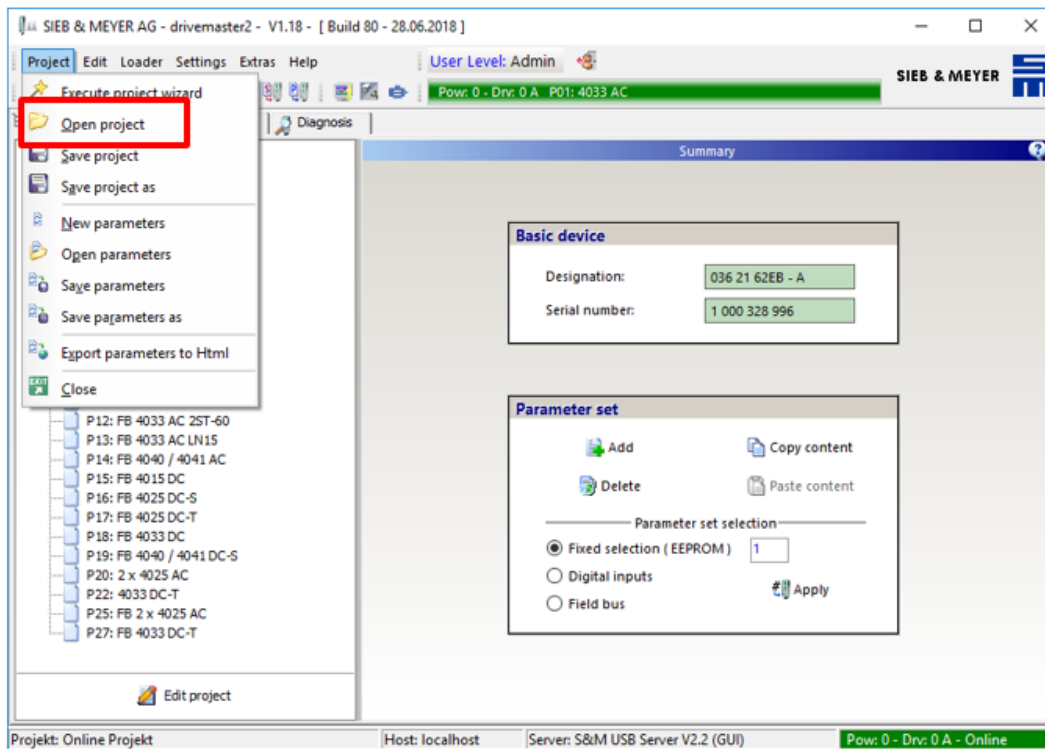


ATTENTION

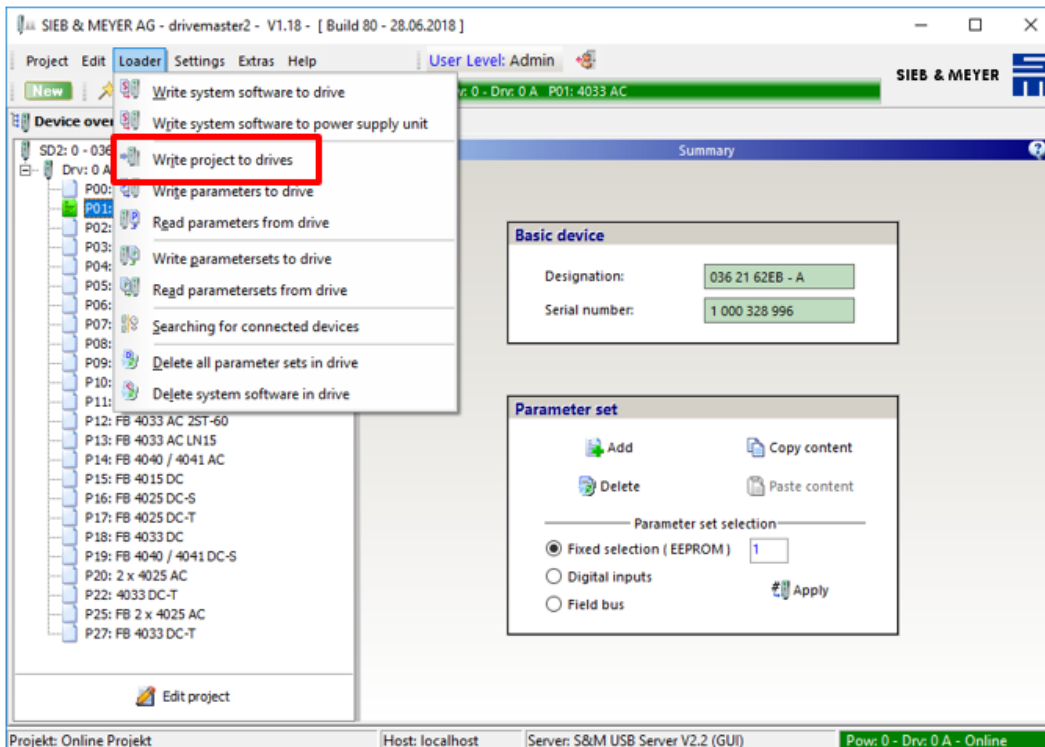
Parameters with the Drive function type HSPWM must not be written to the drive.

9.0 Load Project

To open a project select "Project" and then "Open project". Select the required project file and click "Open".



To write the project to the inverter select "Loader" in the menu bar and then "Write project to drive".



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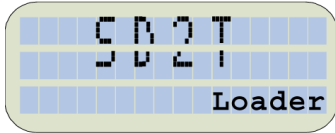
Parameters with the Drive function type HSPWM must not be written to the drive.

10.0 Status Display and Error Messages

The display indicates status and error messages.

Examples:

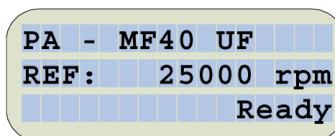
1. Switch-on message



Status: "Loader" flashes

The device is in boot loader mode: Display appears short-time when the device is booted and if the system software is loaded.

2. Initialization finished

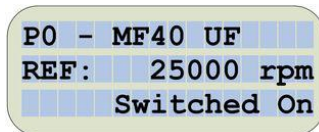


Line 1 = parameterized name of the active parameter set

Line 2 = active reference speed value in rpm

Line 3 = status ("Ready" = ready to be switched on)

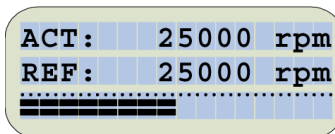
3. Switch-on



With the button [START] the drive switches to the status "Switched On".

The parameterized holding current flows.

4 Operation enabled



After pressing the button [START] a second time, the drive switches to the status "Operation Enabled", the spindle accelerates to the set reference speed.

"ACT" = actual speed

"REF" = reference speed value

Progress bar = load in % of the parameterized motor rated current

5. Error

```
PA - MF40 UF
REF: 25000 rpm
Error:E.41
```

The device stopped due to "Error E.41". The error is still present (indicated by the dot behind "E")

```
PA - MF40 UF
REF: 25000 rpm
Error: E41
```

The device stopped due to "Error E41". The error is not present anymore.

6. Parameterized quick stop message

```
PA - MF40 UF
REF: 25000 rpm
QStop:H03
```

If the controller can not be switched on due to a quick stop, the corresponding quick stop code is displayed.

7. Parameter set selection

```
PARAMETER SELECT
0
PA - MF40 UF
```

This function is only possible if the device is stopped.

Line 1 = PARAMETER SELECT - > Parameter menu

Line 2 = Parameter set number

Line 3 = Parameter set description / Spindle name

8. Switch-off message

```
PA - MF40 UF
REF: 0 rpm
Main voltage NOK
```

After switch-off the switch-off message is displayed.

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)

INDUSTRIAL DRIVES

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