Documentation:

List of commands for serial control

frequency converter models:

SFU0051
SFU400
SFU0151, SFU0152, SFU0154, SFU0156
SFU1000

SFU0200
SFU0200X
SFU0103, SFU0203

SFU0300
SFU0303

DressView0200
DressView0303
RS232 Interface setting: 115kBd, 8data, no parity, 1stop bit

SFU0102, SFU0202
SFU0302
SFU0303/2, SFU0200(Bd96), SFU0303(Bd 96)
RS232 Interface setting: 9600Bd, 8data, no parity, 1stop bit

1-Byte-Commands in HEX Format:

1. _____

Command:	**Start**	
Transmit:	**0x24**	
Receive:	0xE4	Answer
	0xll	Low Byte rpm
	0xhh	High Byte rpm

For a continuous operation of the spindle after the command "Start" 0x24h, make sure that a permanent communication takes place. Either by permanently sending the start command or by continuously reading out the status word. Otherwise, a spindle stop is automatically triggered after 4 seconds to prevent the spindle from continuing to run uncontrolled in the event of a communication loss with the converter.

2. _____

Command:	**Stop**	
Transmit:	**0x25**	
Receive:	0xE5	Answer
	0xll	Low Byte rpm
	0xhh	High Byte rpm

3. _____

Command:	**Transmit duty speed (*10)**	
Transmit:	**0x41**	
Receive:	0xC1	Answer
	0xll	**Duty Speed** Low Byte
	0xhh	**Duty Speed** High Byte

the sent value comes in hex format and must be multiplied by 10

4. _____

Command:	**Transmit current speed of the converter (*10)**	
Transmit:	**0x42**	
Receive:	0xC2	Answer
	0xll	**Current output speed of the converter** Low Byte
	0xhh	**Current output speed of the converter** High Byte

the sent value comes in hex format and must be multiplied by 10

5. _____

Command:	**Transmit real speed of the spindle(*10)**	
Transmit:	**0x43**	
Receive:	0xC3	Answer
	0xll	**spindle real speed** Low Byte
	0xhh	**spindel real speed** High Byte

the sent value comes in hex format and must be multiplied by 10
If a rotary encoder is connected and activated in the characteristic, this is the real speed of the spindle, otherwise it is the output speed of the converter..

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6. _____ for DressViewLight Versions only **DV** _____

Command: **Calibration / zero value of the DV_Load Value**

Transmit: **0x30**

Receive:	0xF0	Answer
	0xll	(**irrelevant)** Low Byte
	0xhh	(**irrelevant)** High Byte

7. _____ nur für DressViewLight Versionen **DV** _____

Command: **Transmit current DV_Load Value (range of values 0-1023)**

Transmit: **0x31**

Receive:	0xF1	Answer
	0xll	**DV_Load** Low Byte
	0xhh	**DV_Load** High Byte

_____

8. _____

Command: **Transmit converter status**

Transmit: **0x60**

Receive:	0xE0	Answer
	0xll	**Status Word** Low Byte
	0xhh	**Status Word** High Byte

Bits des Status Worts:

Bit	0	**reserved**
Bit	1	Status **Start/Stop**
Bit	2	Status **Pulse blocking circuit active**
Bit	3	Status **Remote control active**
Bit	4	Status **Current speed reached** (with connected speed sensor = Duty Speed)
Bit	5	Status **Duty speed reached**
Bit	6	Status **Spindle Stop**
Bit	7	Status **Under voltage**
Bit	8	Status **Over voltage**
Bit	9	Status **Varioload reached**
Bit	10	Status **Error RS232 Interface**
Bit	11	Status **Spindle not ready**
Bit	12	Status **Converter not ready**
Bit	13	Status **Overload**
Bit	14	Status **Overtemperature converter**
Bit	15	Status **Overtemperature spindle**

Attention!

After the command "Start" 0x24h, please make sure that a permanent communication takes place e.g.: by continuous reading of the status word. Otherwise, a spindle stop is automatically triggered after 4 seconds to prevent the spindle from continuing to run uncontrolled in the event of a communication loss with the converter.

3-Byte-Commands in HEX Format:

9. _____

Command: **Set duty speed (= desired value / 10)**

Transmit:	**0x01**	
	0xll	Low Byte **Duty speed**
	0xhh	High Byte **Duty speed**
Receive:	0xC1	
	0xll	Low Byte
	0xhh	High Byte

The desired value must be divided by 10 and then sent to the converter.
for example, set the speed to 20.000: 20.000/10 = 2.000d = 07D0h => send "01 D0 07".

10. _____

Command: **Set data pointer for reading a data variable**

Transmit:	**0x0C**	
	0xll	Low Byte Pointer
	0xhh	High Byte Pointer
Receive:	0xCC	
	0xll	Low Byte value
	0xhh	High Byte value

With the help of this function every converter variable can be read out.
A list of available addresses can be found at the end of this document.

11. _____

Command: **Set direction of rotation to clockwise** (seen from behind on the spindle)

Transmit:	**0x0A**	**direction to clockwise** (like drilling)
	0x00	Low Byte = irrelevant
	0x00	High Byte = irrelevant
Receive:	0xCA	
	0xll	Low Byte Wert
	0xhh	High Byte Wert

12. _____

Command: **Set direction of rotation to counter clockwise** (seen from behind on the spindle)

Transmit:	**0x0B**	**direction to counter clockwise** (as when loosening a screw)
	0x00	Low Byte = irrelevant
	0x00	High Byte = irrelevant
Receive:	0xCB	
	0xll	Low Byte value
	0xhh	High Byte value

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List of addressable internal variables

Variable	Adresse[Hex]	Multiplicator	Required additional operation
Current load current	0BB6	0,01	Change into decimal
Spindle voltage	0BD4	0.1	Change into decimal
DC Bus Voltage	0BCC	0.1	Change into decimal
Current load value in %	08A4	0,1	Change into decimal
Heatsink temperature	0CDA	0,1	Change into decimal
Min speed	087C	10	
Max speed	087E	10	
Operating time conv (H):	0AE2	1	
Operating time conv (Min):	0AE4	1	
Delay overload	086C	1/256	
Delay overtemp converter	086E	1/256	
Delay overtemp spindle	0870	1/256	
Delay RS232	0872	1/256	
Digital / relay output	0908		
Analog input 1	090A	1/1024	=> 10V/1024 per Digit
Analog input 2	090C	1/1024	=> 10V/1024 per Digit
Analog input 1	090E		
Analog input 2	0910		
Digital Inputs	0906		digital
Bit	***Function***		
0	StartStop		
1	Emergency Stop		
2	Locking		
3	Direction of rotation		
4	Error Reset		
5	-		
6	Pulse Blocking circuit (if available)		
7	-		
8	-		
9	-		
10	-		
11	-		
12	Overtemperature Spindle		
13	-		
14	-		
15	-		
Error State	085A		digital
Bit	***Function***		
0	Error overload (Delay time expired)		
1	Overtemp converter (Delay time expired)		
2	Overtemp spindle (Delay time expired)		
3	Overtemp conv or spin. (Delay time expired)		
4	Overvoltage OFF		
5	Undervoltage OFF		
6	Undervoltage Stop		
7	Power Stage shut off (PDPINT)		
8	Emergency Input locking engaged		
9	No spindle or cable break		
10	Timeout ser. interface		
11	Spindle data invalid		
12	Back energy too high		
13	Memory Error		
14	No standstill spindle		
15	Error rotary encoder		

Example: **read actual current**
Address: 0x0BB6

Command Datapointer:

Transmit: **0x0C**
0xB6 Low Byte Pointer
0x0B High Byte Pointer

Transmit sequence → 0C B6 0B

Example: current load current = 2,3A

Receive: 0xCC
0xE6 Low Byte value
0x00 High Byte value

→ received value is $0x00E6_{hex} = 230_{decimal}$ * 0,01(Multiplicator) = 2,3A

The Sign of Quality

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Technische Änderungen vorbehalten.
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