

Documentation:

Communication commands for serial controlling

Valid for the following types

SFU0051

SFU0151, SFU0152, SFU0154, SFU0156

SFU0200

SFU0300

SFU0303

RS232 Interface Setting: 115kB, 8 data, no parity, 1 stop bit

SFU0102, SFU0202

SFU0302

RS232 Interface Setting: 9,6kB, 8 data, no parity, 1 stop bit

1-Byte-Commands in HEX Format:

Command:	Start	
Transmit:	0x24	
Receive:	0xE4h	
	0xll	Low Byte rpm
	0xhh	High Byte rpm

Command:	Stop	
Transmit:	0x25	
Receive:	0xE5h	
	0xll	Low Byte rpm
	0xhh	High Byte rpm

Request:	duty rpm (*10)	Send set value of duty speed
Transmit:	0x41	
Receive:	0xC1	
	0xll	Low Byte duty rpm
	0xhh	High Byte duty rpm

To get the real value, the received value has to be multiplied with 10

Request:	actual rpm of the converter (*10)	
Transmit:	0x42	
Receive:	0xC2	
	0xll	Low Byte actual rpm
	0xhh	High Byte actual rpm

To get the real value, the received value has to be multiplied with 10

Request:	rpm of the spindle (*10)	
Transmit:	0x43	
Receive:	0xC3	
	0xll	Low Byte rpm of spindle
	0xhh	High Byte rpm of spindle

To get the real value, the received value has to be multiplied with 10

In case of using a hall sensor and being activated in the spindle characteristic, this is the true rpm of the spindle, otherwise it is the output frequency of the converter.

Request: **converter status**

Transmit: **0x60**

Receive: 0xE0h
 0xll Low Byte **Status Word**
 0xhh High Byte **Status Word**

Bits of the status word:

bit	0	reserved
bit	1	Status Start/Stop
bit	2	Status reserved
bit	3	Status Remote control on
bit	4	Status Real rpm reached (In case of using a hall sensor: real rpm = set value rpm)
bit	5	Status Duty rpm reached (= Set Value of Duty Speed)
bit	6	Status Spindle Stop
bit	7	Status Undervoltage
bit	8	Status Overvoltage
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 Excess Temperature Converter
bit	15	Status Excess Temperature Spindle

A t t e n t i o n !



Please make sure that the status word is requested subsequently after the command "Start" 0x24h. Otherwise the converter will stop the spindle automatically after the programmed delay time of 4sec, in order to guarantee that the spindle does not run without control in case of a lost communication with the converter.

3-Byte-Commands in HEX Format:

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

Transmit: **0x01**
 0xll Low Byte **duty rpm**
 0xhh High Byte **duty rpm**

Receive: 0xC1
 0xll Low Byte
 0xhh High Byte

The desired set value has to be divided by 10 and then send to the converter
 for example, set rpm to 20.000: $20.000/10 = 2.000d = 07D0h \Rightarrow$ send "01 D0 07"

Command: **Set Datapointer 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 pointer any variable within the converter can be read.
 A list of variables are listed at the end of the document

Command: **Set direction of rotation clockwise (with view at the backside)**

Transmit: **0x0A** **direction of rotation cw** (like drilling)
 0x00 Low Byte = irrelevant
 0x00 High Byte = irrelevant

Receive: 0xCA
 0xll Low Byte Value
 0xhh High Byte Value

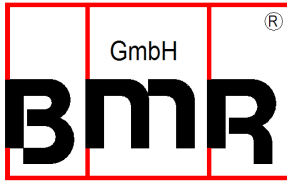
Command **Set direction of rotation counterclockwise (with view at the backside)**

Transmit: **0x0B** **direction of rotation ccw** (as losen a screw)
 0x00 Low Byte = irrelevant
 0x00 High Byte = irrelevant

Receive: 0xCB
 0xll Low Byte Value
 0xhh High Byte Value

List of the internal variables

Variable	Adresse[Hex]	Multiplier	further Operation
Load current	0BB6	0,01	convert to decimal
Load percent	08A4	0,1	convert to decimal
Temperature Heatsink	0CDA	0,1	convert to decimal
Minimum Speed	087C	10	
Maximum Speed	087E	10	
Operating hours Conv (H):	0AE2	1	
Operating hours Conv (Min):	0AE4	1	
Delay Overload	086C	1/256	
Delay Over temp Converter	086E	1/256	
Delay Over temp Spindle	0870	1/256	
Delay RS232	0872	1/256	
Digital/Relay Output	0908		
Analog Input 1	090A	1/1024	=> 10V/1024 proDigit
Analog Input 2	090C	1/1024	=> 10V/1024 proDigit
Analog Output 1	090E		
Analog Output 2	0910		
Digital Inputs	0906		digital image
	Bit	Function	
	0	Start-Stop	
	1	Locking Emergency Stop	
	2	Locking	
	3	Direction of Rotation	
	4	Error Reset	
	5	-	
	6	Output Stage Pulse Locking (if available)	
	7	-	
	8	-	
	9	-	
	10	-	
	11	-	
	12	Over temperature Spindle	
	13	-	
	14	-	
	15	-	
Error Status	085A		digital image
	Bit	Function	
	0	Error Overload (delay passed)	
	1	Over temp Converter (delay passed)	
	2	Over temp Spindle (delay passed)	
	3	Over temp.Conv/Spin (delay passed)	
	4	OFF because of Over Voltage	
	5	OFF because of Under Voltage	
	6	STOP because of Under Voltage	
	7	Power Stage deactivated (PDPINT)	
	8	Emergency Stop engaged / locked	
	9	without Spindle / Cable	
	10	Timeout ser. Interface	
	11	Characteristic invalid	
	12	Back Energy too high	
	13	Memory Error - Stop	
	14	Spindle not at standstill	
	15	Error Encoder / Speedsensor detection	



Walpersdorfer Str. 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

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