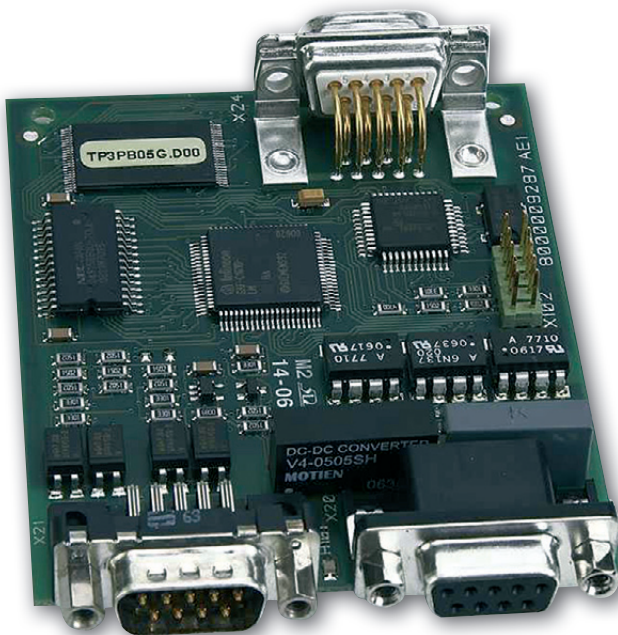


INTERFACE CARD PROFIBUS DPV1

Suitable for Thyro-P and
Thyro-P MC devices

DE EN



CONTACT

TECHNICAL QUERIES

Do you have any technical queries regarding the subjects dealt with in these operating instructions?
If so, please get in touch with our team for power controllers:
Tel. (02902) 763-520

COMMERCIAL QUERIES

Do you have any commercial queries on power controllers?
If so, please get in touch with our team for power controllers.
Tel. (02902) 763-558

SERVICE-HOTLINE

Our team is at your service on the following hotline:
AEG Power Solutions GmbH
Emil-Siepmann-Straße 32
D-59581 Warstein
Tel. (02902) 763-600
<http://www.aegps.com>

COPYRIGHT

No part of these operating instructions may be transmitted, reproduced and/or copied by any electronic or mechanical means without the express prior written permission of AEG PS.
© Copyright AEG Power Solutions GmbH 2012.
All rights reserved.

FURTHER INFORMATION ON COPYRIGHT

Thyro- is an international registered trademark of AEG Power Solutions GmbH.
All other company and product names are (registered) trademarks of the respective owners.

CONTENTS

1. Introduction	5
2. Configuration	6
2.1 Setting the address	6
2.2 Start configuration	6
3. Operation	8
4. Cyclic data exchange	9
4.1 Setpoint values	10
4.2 Actual values	11
4.3 Functions	11
4.4 Modules	12
5. Diagnosis indications	13
6. Digital inputs	15
7. Local operation of the Motorpoti setpoint	16
8. Setpoint values, actual values and parameters	19

LIST OF ILLUSTRATIONS AND TABLES

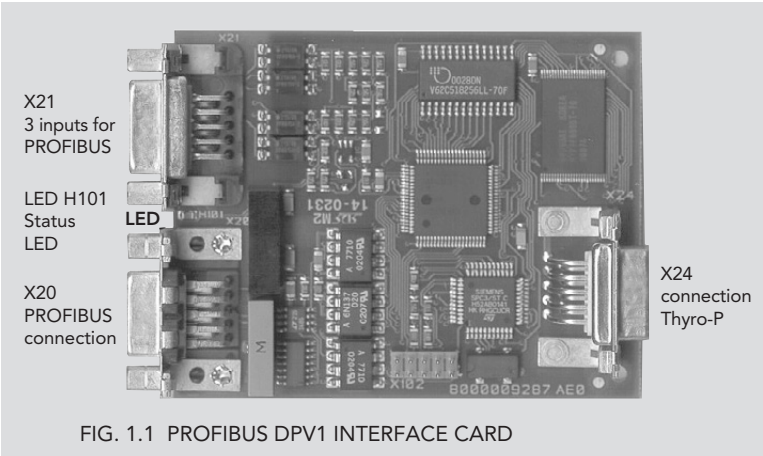
Fig. 1.1	PROFIBUS insert card	5
Fig. 6.2	Example of input connections	15
Fig. 7.1	Relative change of the Motorpoti setpoint over time	16
Fig. 7.2	Local operation of the Motorpoti setpoint	17
Fig. 7.3	State digram	18
Tab. 3.1	Status of diagnosis LED	8
Tab. 4.1	Implication of the first byte of the module configuration	9
Tab. 4.2	Functions	11
Tab. 5.1	Set up of the diagnosis diagram	13
Tab. 5.2	Set up of word's actual status	14
Tab. 6.1	Connection allocation X21	15
Tab. 8.1	Setpoint values (slot 0)	19
Tab. 8.2	Functions (Slot 0)	19
Tab. 8.3	Actual values (Slot 0)	20
Tab. 8.4	Operating mode (Slot 1)	21
Tab. 8.5	Durations (Slot 2)	21
Tab. 8.6	Control (Slot 3)	22
Tab. 8.7	Limit (Slot 4)	22
Tab. 8.8	Control characteristic (Slot 5)	23
Tab. 8.9	Temperature (Slot 6)	23
Tab. 8.10	Analogue outputs (Slot 7)	24
Tab. 8.11	Hardware parameters (Slot 8)	25
Tab. 8.12	Monitoring (Slot 9)	26
Tab. 8.13	LEDs and Relays (Slot 10)	27
Tab. 8.14	Other (Slot 11)	28
Tab. 8.15	Functions (Slot 12)	28

1. INTRODUCTION

This communication card complements the Thyro-P (Thyristor power controller) with the communication interface PROFIBUS DPV1. The interface card allows the Thyro-P to be integrated into complex installations via the field bus. Additionally, the card has 3 electrically isolated inputs (see Section 6) which can be accessed via terminal X21.

- Delivery includes:
- a PROFIBUS DPV1 interface card
 - a screen for installation into the Thyro-P
 - a CD with the GSD data necessary for projection
 - these instructions.

The PROFIBUS connection is lead through a 9-pole sub-D bushing (X20). It provides access to data lines A and B as well as an electrically isolated distribution voltage (5 V, 80 mA).



2. CONFIGURATION

2.1 SETTING THE ADDRESS

In order to communicate, the PROFIBUS DPV1 interface card needs an address. This same address is also used for communicating via LWL and RS232. This can be set with the LBA and the Thyro-Tool Family. Please note that in order to activate the new address the Thyro-P must be switched off after changing a controller address.

2.2 START CONFIGURATION

The following settings can be made via parameterization.

Valid output data:

Here the suppression of certain output data can be activated.

"Everything"	All telegrams are processed.
"Ignore Clear"	Ignores the "Master Clear" telegram and the output data with length 0.
"Only if bit is set"	New output data is only accepted if the bit "use output data" is set (see Section 4.3).

Motorpoti = Master:

Activates writing the "Master setpoint" onto the "Motorpoti setpoint" if the controller is in remote operation and the PROFIBUS is in the "DataExchange" state.

Setpoint error =:

Here the set point to be applied in the case of an error can be set.

"Setpoint Master error"	Application of the alternative setpoint
"Setpoint Master"	Do not adjust setpoint.

The following are considered errors:

- Watchdog response
- "Master Clear" telegram received
- Output telegram with length 0 received.

Actual values average:

Here the mean value of the actual values can be activated. In the Takt operating mode once per T_0 is measured, with VAR once per 0.2 s.

"5 values"	mean value taken above 5 values
"10 values"	mean value taken above 10 values
"20 values"	mean value taken above 20 values

Local values:

Here it can be determined which values can be set locally in "local operation".

"Only master setpoint"	Only the setpoints are preset locally.
"All values"	No value is preset by the master.

Status indications:

Every status indication (see Section 5) can be set to show up on the relevant diagnosis indication of each device.

3. OPERATION

After configuration of the interface card has been completed (Section 2) this can be built into the controller section of the Thyro-P. First the voltage in the control section must be switched off. Now the card can be inserted into the extension socket and the cover mounted. Next, the interface card can be tested. The voltage supply of the control section must hereby be switched on. The status-LED displays the status of the card (see Table 3.1). The status-LED is situated between the connectors X20 and X21.

After switching on the controller section the LED should blink with a frequency of 1Hz. Then the bus line can be connected. After communication with the master the status LED is extinguished.

STATUS LED	BUS	IMPLICATION
On	–	Card defect
Blinks with 4 Hz	–	No communication with Thyro-P (SSC error)
Blinks with 1 Hz	off	No bus signal exists
Blinks with 1 Hz	active	Card defect
Off	off	No connection to Thyro-P
Off	active	Everything OK

TAB. 3.1 STATUS OF STATUS LED

4. CYCLIC DATA EXCHANGE

Via the cyclic data exchange the input and output data are continuously transmitted from slave to master and vice-versa.

The Thyro-P possesses a large amount of input and output data. As all this data is not always required, it can be selected individually. This prevents an unnecessary enlargement of the protocol.

The collation of the input an output data is carried out by adding modules. All manufacturers of master systems offer the corresponding configuration tools for this.

When adding modules, the parameterization telegram is enlarged each time by two bytes. Via these bytes the slave is instructed which input and output data to transmit. A rough allocation takes place via the first byte (see Table 4.1). The second byte contains the index of the parameters concerned (see Section 8).

VALUE	INPUT, OUTPUT DATA
0	Setpoint values integer
1	Setpoint values float
2	Actual values float
3	Actual values integer
4	Functions
16-27	Write integer in slot 1-12
32-43	Read integer from slot 1-12

TAB. 4.1 IMPLICATION OF THE FIRST BYTE OF THE MODULE CONFIGURATION

Attention: Should the configuration data not correspond, this is due to the incorrect setting of these parameters, as the Thyro-P draws up its configuration from this data.

4.1 SETPOINT VALUES

The output control of the Thyro-P can take place via the following set-points:

“Setpoint master”

With this the load output can be controlled or adjusted.

“Setpoint master error”

If activated, this setpoint (see Section 2.2) is written onto the setpoint master if the PROFIBUS DPV1 should fail. In this case, it is important when configuring the master that the watchdog is activated. The „set-point master error“ is initialized with 0.

“Setpoint Motorpoti”

This too can control or adjust the load output. It should, however, only be applied in exceptions. Under no circumstances may it be applied if the “local operation of the Motorpoti” setpoint is to be applied (see Section 7).

Each of these setpoints can be indicated either as integer or float number, whereby only one number system at a time should be used.

Integer:

When applying the integer number system, 16383 corresponds to the setpoint 100%.

Float:

When applying the float number system the setpoint must be relayed in the controller’s unit, e.g. with I or I2 control the setpoint must be given in amperes.

Note: If the controller is in remote operation (only master setpoint is active) it is advisable to write the master setpoint onto the Motorpoti setpoint too, in order not to give a jump function to the controller in Thyro-P when switching from remote to local.

4.2 ACTUAL VALUES

These input values display the current status of the Thyro-P. Table 8.3 lists all the available actual values.

4.3 FUNCTIONS

Certain functions in Thyro-P can be carried out via this output word, whereby this can also take place acyclically via DPV1 (see Table 8.15).

BIT	PURPOSE	CONTROL
0	Control lock	Static
1	Ext. fault indication	
2	Use output data	
3-7	Reserved	
8	Acknowledge error	Jump triggered
9	Reset	
10	Save	
11	Reset Energie Indication	
12-15	Reserved	

TAB. 4.2 FUNCTIONS

Static:

Is set when the relevant bit is set to 1.

Jump trigger:

Is triggered when the relevant bit is set from 0 to 1.

Acknowledge error:

By setting the register to 1 a signal can be acknowledged. When the function has been carried out the register is set back to zero.

Reset:

By setting the register to 1 the Thyro-P’s control device can be reset. The bus card, however, is not reset. When the function has been carried out the register is reset to zero.

Save:

By setting the register to 1 all settings can be saved. Then Thyro-P will start with the most recent settings. The controller lock is also saved. After the function has been carried out the register is reset to zero.

Reset Energie Indication: By setting this Bit to 1 the energie will be reset.

Attention: After transmitting the order to save, no parameters may be changed for 3 seconds.

Controller lock:
By setting the register to 1 (controller lock = ON) the controller lock can be activated. By setting to zero it is deactivated again.

Ext. fault indication:
By setting or resetting this register, an external signal can be triggered in the Thyro-P. Via this function the relays or LEDs can be controlled (see Thyro-P instructions).

4.4 MODULES

The parameters of the Thyro-P (see Table 8.4 to Table 8.15) can be read or written cyclically via this input and output data. Hereby the slot number (0-12) and the index (0-48) of the corresponding parameter must always be given.

5. DIAGNOSIS INDICATIONS

Should a fault occur, the Thyro-P sends a device-specific diagnosis to the master.

VALUE	DEFINITION
...	Telegram header
06	Length of device-specific diagnosis
a0	Header of device-specific diagnosis
00	"
00	"
??	Status Hi-Byte (Table 5.2)
??	Status Low-Byte (Table 5.2)
...	Telegram end

TAB. 5.1 SET UP OF DIAGNOSIS DIAGRAM

The status word (2 bytes) is transmitted with the diagnosis indication. Each bit corresponds to a signal which indicates the current status of the Thyro-P. Further information on the individual values can be found in the instructions to Thyro-P.
Each of these signals can be deactivated via the parameterization programme (see Section 2.2), so that they are no longer shown via the diagnosis signal. The latest status can, however, still be read out (see Table 8.3).

BIT	STATUS
15	MOSI in peak current limit
14	SYNC fault
13	Overvoltage in mains
12	Undervoltage in mains
11	Overcurrent in load circuit
10	Undercurrent in load circuit
9	Controller lock
8	Excess temperature
7	Limit
6	U limit
5	I limit
4	P limit
3	Impulse cut-off
2	Sensor breakdown - short circuit
1	Res.
0	SSC fault

TAB. 5.2 SET UP OF THE WORD’S ACTUAL STATUS

On disturbances of communication between PROFIBUS DPV1 interface card and Thyro-P, the “static diagnosis” is released, and the message “SSC error” transfer. It is then no data exchange between master and Slave possible. This error knows on the fact that e.g. the PROFIBUS DPV1 interface card correctly does not sit in the slot.

6. DIGITAL INPUTS

Via the 9-pole sub-D bushing (X21) the PROFIBUS DPV1 interface card provides access to three digital inputs as well as one input to activate the local operation (see Section 7). They are automatically displayed on the PROFIBUS (see Table 8.3 index 81).

PIN	DESIGNATION	FUNCTION
1	Earth	Earth
2	M1	Ground for IN0 and IN1
3	IN 0	Input 0
4	IN 1	Input 1
5	M24	Ground/internal 24 V supply
6	M2	Ground for IN2 and IN3
7	IN 2	Input 2
8	Loc	Input 3
9	+24	+24 V/internal 24 V supply

TAB. 6.1 CONNECTION ALLOCATION X21

Hereby inputs 0 and 1 always refer to ground M1 and the inputs 2 and Loc refer to ground M2. For connection to simple indicators such as limiter switches an additional 24V supply is also available. Here the following connection would be possible:

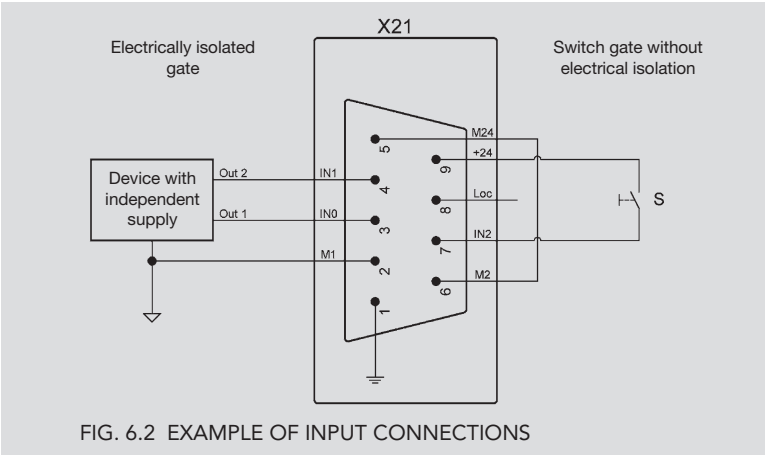


FIG. 6.2 EXAMPLE OF INPUT CONNECTIONS

7. LOCAL OPERATION OF THE MOTORPOTI SETPOINT

In certain situations, for example failure of the PROFIBUS, it can in some cases be necessary to change the setpoint quickly. Although this is possible via the LBA, it can be too involved for certain applications. In order to overcome this drawback, the option of operating Motorpoti locally with push buttons was created.

Local operation of the Motorpoti setpoint can be activated via the input Loc (Pin 8). It is then possible to switch the value SW_ACTIV between remote (open) and local (closed) via the input INO (Pin 3). The Motorpoti set value can now be changed in local modus via the inputs IN1 and IN2, whereby the setpoint changes when the switch is pressed down as in Fig. 7.1. E.g. the setpoint is increased by 30% when the UP key is pressed down for 10 seconds. If the Up and Down keys are pressed simultaneously the setpoint is reduced.

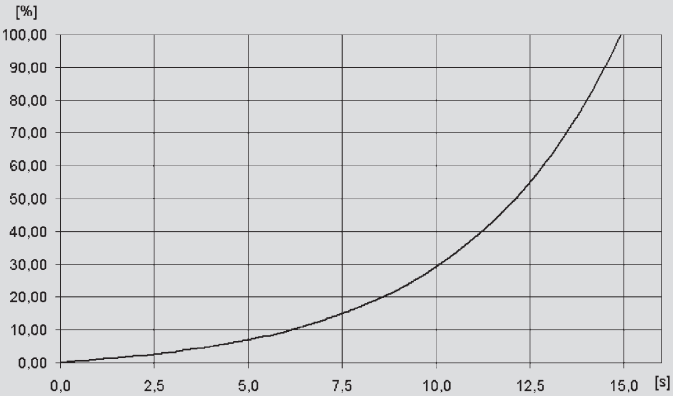


FIG. 7.1 RELATIVE CHANGE OF THE MOTORPOTI SETPOINT OVER TIME

For local operation the connector X21 is to be connected as follows:

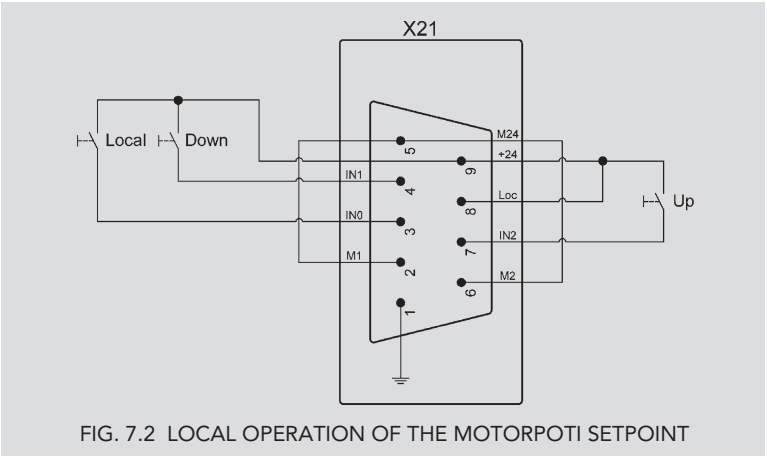
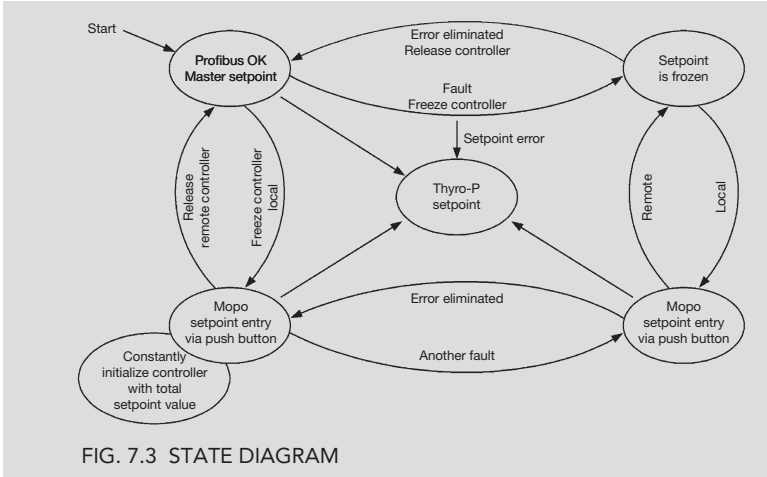


FIG. 7.2 LOCAL OPERATION OF THE MOTORPOTI SETPOINT

- Attention:** When applying the local operation the following points must be observed:
1. To avoid a sudden change in the setpoint when switching from remote to local, the „Motorpoti setpoint“ in remote operation must be set to equal the „master setpoint“ (see Section 2.2)
 2. With „local“ switched off („4 digital inputs“ bit 0 = 0) the process controller must be deactivated and the „master setpoint“ set equal to the „total setpoint value“ in order to ensure a smooth switch from local to remote. For this the total setpoint value is to be transmitted cyclically.
 3. When switching from local to remote the process controller must be initialized with the total setpoint value and then activated. The following flow-chart represents the above settings (see Fig. 7.3).



8. SETPOINT VALUES, ACTUAL VALUES AND PARAMETERS

All data of the Thyro-P (setpoint values, actual values and parameters) can either be read or changed cyclically (see Section 4) or acyclicly (DPV1). All the data is listed in the following tables. With acyclic communication the slot number and index must always be provided.

INDEX	SETPOINT	TYPE	SIZE	UNIT	R/W
0	Setpoint master	integer	1	16383 == 100[%]	r/w
1	Setpoint master Error	integer	1	16383 == 100[%]	r/w
2	Setpoint Motorpoti	integer	1	16383 == 100[%]	r/w
3	Empty	-	1	-	r
4	Setpoint master	float	2	[W,V,A,%]	r/w
6	Setpoint master error	float	2	[W,V,A,%]	r/w
8	Setpoint Motorpoti	float	2	[W,V,A,%]	r/w
10	Empty	-	2	-	r

TAB. 8.1 SETPOINT VALUES (SLOT 0)

INDEX	FUNCTION	TYPE	SIZE	UNIT	R/W
12	Functions	integer	1	See Tab. 4.2	w
13	Empty	-	3	-	r

TAB. 8.2 FUNCTIONS (SLOT 0)

INDEX	ACTUAL VALUES	TYPE	SIZE	UNIT	R/W
16	Output L1	float	2	[W]	r
18	Voltage L1	float	2	[V]	r
20	Current L1	float	2	[A]	r
22	Load L1	float	2	[S]	r
24	Supply voltage L1	float	2	[V]	r
26	Empty	–	6	–	r
32	Output L2	float	2	[W]	r
34	Voltage L2	float	2	[V]	r
36	Current L2	float	2	[A]	r
38	Load L2	float	2	[S]	r
40	Supply voltage L2	float	2	[V]	r
42	Empty	–	6	–	r
48	Output L3	float	2	[W]	r
50	Voltage L3	float	2	[V]	r
52	Current L3	float	2	[A]	r
54	Load L3	float	2	[S]	r
56	Supply voltage L3	float	2	[V]	r
58	Empty	–	6	–	r
64	Total output	float	2	[W]	r
66	Temperature	float	2	[°C]	r
68	Total setpoint	float	2	[W, V, A, %]	r
70	Setpoint Mopo	float	2	[W, V, A, %]	r
72	Total setpoint	integer	1	16383 == 100[%]	r
73	Setpoint Mopo	integer	1	16383 == 100[%]	r
74	Setpoint terminal 10	integer	1	16383 == 100[%]	r
75	Setpoint terminal 11	integer	1	16383 == 100[%]	r
76	Setpoint activated	integer	1	–	r
77	Connection angle alpha	integer	1	18000 == 180°el	r
78	Actual value connection time	integer	1	[period]	r
79	Period duration	integer	1	[μs]	r
80	LED and relay status	integer	1	–	r
81	Digital inputs	integer	1	4 Bit	r
82	Operating hour	float	2	[h]	r
84	Energy	float	2	[kWh]	r
86	Empty	–	2	–	r
88	Status	integer	1	See Table 5.2	r
89	Empty	–	15	–	r

TAB. 8.3 ACTUAL VALUES (SLOT 0)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	BETR	Operating mode	0...2	TAKT, VAR, SSSD		r/w	TAKT
1	MOSI	Oper. of molybdenum disilicide rods	0...2	OFF, RAMP, CONTR.		r/w	OFF
2	SEB	Service operation	0...1	OFF, ON		r/w	OFF
3	ASM	Automatic synchronisation for multiple controller applications	0...1	OFF, ON		r	OFF
4	ASM_SUMM	ASM total current	1...65535		[A]	r/w	65000
5	TYP	Number of controlled phases	1...3			r/w	1 phase
6	NLT	Zero conductor	0...1	OFF, ON		r/w	OFF
7	NACHIMP	Afterpulse	0...1	OFF, ON		r/w	
8	SCHW	Phase variation	0...1	OFF, ON		r/w	
9	SCHW_POL	Phase variation, polarity	0...1	PLUS, MINUS		r/w	plus
10	SCHW_L1	Phase variation L1	0...360°el		0.01 °el	r/w	0
11	SCHW_L2	Phase variation L2	0...360°el		0.01 °el	r/w	0
12	SCHW_L3	Phase variation L3	0...360°el		0.01 °el	r/w	0
13	SYNC_ANZ	Number of sync voltages	1...3			r/w	
14	SYNC_DREHF	Cyclic field	0...1	right, left		r/w	right
15	KANALTREN	Channel separation	0...1	OFF, ON		r/w	ON

TAB. 8.4 OPERATING MODE (SLOT 1)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	AN1	Phase angle of first half wave	0...180°el		0.01 °el	r/w	60°el
1	SST	Softstart duration (given)	0...9980 ms		20 ms	r/w	120 ms
2	SDN	Softdown duration (given)	0...9980 ms		20 ms	r/w	120 ms
3	T ₀	Pulse period duration	0...T ₀ _MAX		20 ms	r/w	1 s
4	T ₀ _MAX	Pulse period duration maximum	02...1310 s		20 ms	r/w	5 s
5	TSMAX	Max. pulse connection time	0...T ₀		20 ms	r/w	1 s
6	TSMIN	Min. pulse connection time	0...T ₀		20 ms	r/w	0 ms
7	MP	Minumum pause	0...200 ms		20 ms	r/w	
8	SYNC_EXT	Synchronous phase internal/external	0...1	Intern, Extern		r	internal
9	SYNC_ADR	Synchronous phase address	0...655350 ms		10 ms	r/w	1 ms

TAB. 8.5 DURATIONS (SLOT 2)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	RE	Control	0...8	Uload², Uload eff, lload², lload eff, output, res., res., res., Without control		r/w	Uload²
1	STD_RE	Standard controller	0...1	OFF, ON		r/w	ON
2	TI_1	PID controller, I part	0 = off 0...65535			r/w	800
3	KP_1	PID controller, P part	0 = off 0...65535			r/w	160
4	KR_1	PID controller, counter, P part	0...65535			r/w	1
5	TD_1	PID controller, D part	0 = off 0...65535			r/w	0
6	TI_1_STD	PID controller, I part, Standard value	0 = off 0...65535			r	800
7	KP_1_STD	PID controller, P part, Standard value	0 = off 0...65535			r	160
8	KR_1_STD	PID controller, counter P part, Standard value	0...65535			r	1
9	TD_1_STD	PID controller, D part, Standard value	0 = off 0...65535			r	0
10	MOSI_WI_GE_1	Angle change speed 1	0...65535			r/w	1100
11	MOSI_WI_GE_2	Angle change speed 2	0...65535			r/w	50

TAB. 8.6 CONTROL (SLOT 3)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	UEMI	Effective voltage setpoint minimum	0...65535 V		V	r / w	0V
1	UEMA	Effective voltage setpoint maximum	0...65535 V		V	r / w	440V
2	IEMI	Effective current setpoint minimum	0...65535 A		A	r / w	0A
3	IEMA	Effective current setpoint maximum	0...65535 A		A	r / w	110A
4	PMI_H	Output setpoint minimum hi	0...65535 xW		65536 W	r / w	0W
5	PMI_L	Output setpoint minimum low	0...65535 W		W	r / w	0W
6	PMA_H	Output setpoint max. hi	0...65535 xW		65536 W	r / w	0W
7	PMA_L	Output setpoint max. low	0...65535 W		W	r / w	48400 W
8	V_IE	Front impulse stop	0...180°el		0.01°el	r / w	180°el
9	H_IE	Back impulse stop	0...180°el		0.01°el	r / w	0°el

TAB. 8.7 LIMIT (SLOT 4)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	SW_ACTIV	Setpoint activation	0...15	Bit 0 = 1 (setpoint terminal 10 active) etc.		r/w	15
1	SW	Setpoint switch	0...3	_ADD, IADD, _PRO, IPRO		r/w	_ADD
2	MOSI_IS_FA	Factor peak current limit	0...1000			r/w	25
3	SW_SPRUNG	Setpoint jump correction	0.1	OFF, ON		r/w	ON
4	SW_INP_IU_10	Input voltage/current terminal 10	0...2	5 V, 10 V, 20 mA		r/w	20 mA
5	STA_REGLER	Start trigger regul. Input terminal 10	depending on SW_INP_IU_10		0.3 mV 0.6 mV 1.22 uA	r/w	292 uA (240)
6	STE_REGLER	End trigger regul. Input terminal 10	depending on SW_INP_IU_10		0.3 mV 0.6 mV 1.22 uA	r/w	20 mA (16383)
7	SW_INP_IU_11	Input voltage/ current terminal 11	0...2	5 V, 10 V, 20 mA		r/w	5 V
8	STA_POTI	Start trigger regul. Input terminal 10	depending on SW_INP_IU_11		0.3 mV 0.6 mV 1.22 uA	r/w	72 mV (240)
9	STE_POTI	End trigger regul. Input terminal 11	depending on SW_INP_IU_11		0.3 mV 0.6 mV 1.22 uA	r/w	5 V (16383)
10	STA_MASTER	Start trigger master	0...100%		0.0061%	r/w	0%
11	STE_MASTER	End trigger master	0...100%		0.0061%	r/w	100% (16383)
12	STA_MOPO	Start trigger master Motorpoti	0...100%		0.0061%	r/w	0%
13	STE_MOPO	End trigger Motorpoti	0...100%		0.0061%	r/w	100% (16383)

TAB. 8.8 CONTROL CHARACTERISTICS (SLOT 5)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	TEMP	Temperature probe	0.3	none, Pt100, PT1000, NTC		r/w	none
1	TEMP_KVE	Characteristic number	0...7	characteristic 0 ... characteristic 7		r/w	
2	FU_DR_BR	Level line break	0...4000		Ohm	r/w	
3	FU_KURZ	Level short circuit	0...4000		Ohm	r/w	
4	TEMP_FE_DAU	Temperature fault duration	1...1000		20 ms	r/w	10

TAB. 8.9 TEMPERATURE (SLOT 6)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	MITTEL	Establ. average mean	0...1000			r/w	25
1	IST_1	Actual value output 1	0..1	20 mA, 10 V		r/w	20 mA
2	OF_1	Offset 1	0...20000 uA		uA	r/w	0 uA
3	DAC1_VA_U	Measuring device end-scale deflection DAC1, voltage	0...10000 mV		mV	r/w	10 V
4	DAC1_VA_I	Measuring device end-scale deflection DAC1, current	0...20000 uA		uA	r/w	20 mA
5	DAC_1_CTRL	Configuration register analog output 1	bitwise			r/w	18
6	U_FA_1	Scale end value voltage actual value output 1	0...65535 V		V	r/w	150 A
7	I_FA_1	Scale end value current actual value output 1	0...65535 A		A	r/w	500 V
8	P_FA_1_H	Scale end value output actual value output 1	0...65535xW		xW	r/w	0 W
9	P_FA_1_L	Scale end value output actual value output 1	0...65535W		W	r/w	50000W
10	ALPHA_FA_1	Scale end value alpha actual value output 1	0...180°el		.01°el	r/w	180°el
11	IST_2	Actual value output 2	0..1	20 mA, 10V		r/w	20mA
12	OF_2	Offset 2	0...20000uA		uA	r/w	0uA
13	DAC2_VA_U	Measuring device end-scale deflection DAC2, voltage	0...10000mV		mV	r/w	10V
14	DAC2_VA_I	Measuring device end-scale deflection DAC2, current	0...20000uA		uA	r/w	20mA
15	DAC_2_CTRL	Configuration register analogue output 2	bitwise			r/w	18
16	U_FA_2	Scale end value voltage actual value output 2	0...65535 V		V	r/w	500 V
17	I_FA_2	Scale end value current actual value output 2	0...65535 A		A	r/w	150 A
18	P_FA_2_H	Scale end value output actual value output 2	0...65535xW		xW	r/w	0 W
19	P_FA_2_L	Scale end value output actual value output 2	0...65535W		W	r/w	50000 W
20	ALPHA_FA_2	Scale end value alpha actual value output 2	0...180°el		.01°el	r/w	180°el
21	IST_3	Actual value output 3	0..1	20 mA, 10 V		r/w	20 mA
22	OF_3	Offset 3	0...20000uA		uA	r/w	0 uA
23	DAC3_VA_U	Measuring device end-scale deflection DAC3, voltage	0...10000mV		mV	r/w	10 V
24	DAC3_VA_I	Measuring device end-scale deflection DAC3, current	0...20000uA		uA	r/w	20 mA
25	DAC_3_CTRL	Configuration register analogue output 3	bitwise			r/w	18
26	U_FA_3	Scale end value voltage actual value output 3	0...65535 V		V	r/w	500 V
27	I_FA_3	Scale end value current actual value output 3	0...65535 A		A	r/w	150 A
28	P_FA_3_H	Scale end value output actual value output 3	0...65535xW		xW	r/w	0 W
29	P_FA_3_L	Scale end value output actual value output 3	0...65535W		W	r/w	50000 W
30	ALPHA_FA_3	Scale end value alpha actual value output 3	0...180°el		.01°el	r/w	180°el

TAB. 8.10 ANALOGUE OUTPUTS (SLOT 7)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	I_TYP	Controller type current	0...65535A		A	r/w	110 A
1	I_TYP_LSB	Type current in LSB	0...65535			r	
2	UE_I	Current transformer conversion	0...65535			r/w	100
3	R_BUERDE_I	Load resistance current	0...653 Ohm		.01 Ohm	r/w	0.91 Ohm
4	NORM_I	Scaling factor current	0...65535			r/w	
5	I_SCHW	Current value threshold	0...65535		0.1 A	r/w	6500 A
6	U_TYP	Controller mains voltage	0...1000V		V	r/w	400 V
7	U_TYP_LSB	Type voltage in LSB	0...65535			r	
8	U_NETZ_ANW	Supply voltage user	0...1000V		V	r/w	400 V
9	UE_U	Voltage transformer conversion	0...1000			r/w	16
10	TYP_BEREICH	Voltage range switch	0...2	230 V, 400 V, 690 V		r/w	400 V
11	R_BUERDE_U	Load resistance voltage	0...65535 Ohm		Ohm	r/w	1680 Ohm
12	R_BUERDE_U_1	Load resistance voltage area 1	0...65535 Ohm		Ohm	r/w	1680 Ohm
13	R_BUERDE_U_2	Load resistance voltage area 2	0...65535 Ohm		Ohm	r/w	1680 Ohm
14	U_NORM_230	Scaling factor 230V	0...65535			r/w	
15	U_NORM_400	Scaling factor 400V	0...65535			r/w	
16	U_NORM_690	Scaling factor 500 V-690 V	0...65535			r/w	
17	FREQ_MIN	Minimum frequency	14286...25000, 1/X * 10^6		Hz	r/w	22222 (45 Hz)
18	FREQ_MAX	Maximum frequency	14286...25000, 1/X * 10^6		Hz	r/w	15151 (66 Hz)
19	FREQ_TOL	Frequency tolerance	0...100		%	r/w	10%
20	P_TYP_H	Controller type output Hi	0...65535xW		xW	r/w	0 W
21	P_TYP_L	Controller type output Lo	0...65535W		W	r/w	44000W
22	P_TYP_LSB_H	Type output Hi in LSB	0...65535x			r	
23	P_TYP_LSB_L	Type output Lo in LSB	0...65535			r	
24	TI_FA	Poti controller parameters Ti	0...65535			r/w	0
25	KP_FA	Poti controller parameters Kp	0...65535			r/w	0
26	R_TEIL	Voltage divider resistance	0...65535		Ohm	r/w	36000
27	MESS	Test switch	0...5	Aron, 1/2 Aron 1, 1/2 Aron 2, 1/2 Aron 3, asymmetrical load, symmetrical load			

TAB. 8.11 HARDWARE PARAMETERS (SLOT 8)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	SPG_MIN	Power monitor circuit minimum	0...1000 V		V	r/w	
1	SPG_MAX	Power monitor circuit maximum	0...1000 V		V	r/w	
2	UN_S	Undercurrent monitoring	0...1	OFF, ON		r/w	OFF
3	UE_S	Overcurrent monitoring	0...1	OFF, ON		r/w	OFF
4	REL_ABS	Load fault	0...1	REL_, ABS		r/w	REL_
5	LASTBRUCH_M IN	Load fault, minimum value	0...99%		%	r/w	0%
6	LASTBRUCH_M AX	Load fault, maximum value	101...255%		%	r/w	0%
7	LASTBRUCH_M IN_ABS	Load fault, minimum value	0...65535			r/w	0
8	LASTBRUCH_M AX_ABS	Load fault, maximum value	0...65535			r/w	0
9	L2_ENA	Monitoring L2 Enable	0...1	OFF, ON		r/w	OFF
10	L3_ENA	Monitoring L3 Enable	0...1	OFF, ON		r/w	OFF

TAB. 8.12 MONITORING (SLOT 9)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	K1RU	LED & relay working principle	0...256, bitwise	Operating current principle Zero signal current principle		r/w	
1	OUT0_CFG	LED CONTROL Mode	0...65535			r/w	
2	OUT1_CFG	LED LIMIT Mode	0...65535			r/w	
3	OUT2_CFG	LED PULSE LOCK Mode	0...65535			r/w	
4	OUT3_CFG	LED FAULT Mode	0...65535			r/w	
5	OUT4_CFG	LED OVERHEAT Mode	0...65535			r/w	
6	OUT5_CFG	Relay K1 Mode	0...65535			r/w	
7	OUT6_CFG	Relay K2 Mode	0...65535			r/w	
8	OUT7_CFG	Relay K3 Mode	0...65535			r/w	
9	OUT0_STOERM_L	LED CONTROL config. 0	0...65535			r/w	
10	OUT1_STOERM_L	LED LIMIT config. 0	0...65535			r/w	
11	OUT2_STOERM_L	LED PULSE LOCK config. 0	0...65535			r/w	
12	OUT3_STOERM_L	LED FAULT config. 0	0...65535			r/w	
13	OUT4_STOERM_L	LED OVERHEAT config. 0	0...65535			r/w	
14	OUT50_STOERM_L	Relay K1 config. 0	0...65535			r/w	
15	OUT6_STOERM_L	Relay K2 config. 0	0...65535			r/w	
16	OUT7_STOERM_L	Relay K3 config. 0	0...65535			r/w	
17	OUT0_STOERM_H	LED CONTROL config. 1	0...65535			r/w	
18	OUT1_STOERM_H	LED LIMIT config. 1	0...65535			r/w	
19	OUT2_STOERM_H	LED PULSE LOCK config. 1	0...65535			r/w	
20	OUT3_STOERM_H	LED FAULT config. 1	0...65535			r/w	
21	OUT4_STOERM_H	LED OVERHEAT config. 1	0...65535			r/w	
22	OUT5_STOERM_H	Relay K1 config. 1	0...65535			r/w	
23	OUT6_STOERM_H	Relay K2 config. 1	0...65535			r/w	
24	OUT7_STOERM_H	Relay K3 config. 1	0...65535			r/w	

TAB. 8.13 LEDS AND RELAYS (SLOT 10)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0	DA_EN_2	Data logger Enable Register Hi	0...65535			r/w	
1	DA_EN_1	Data logger Enable Register Low	0...65535			r/w	
2	RESET_2	Reset trigger with fault Hi	0...65535			r/w	
3	RESET_1	Reset trigger with fault Low	0...65535			r/w	
4	IMAB_2	Impulse cutoff with fault Hi	0...65535			r/w	
5	IMAB_1	Impulse cutoff with fault Low	0...65535			r/w	
6	VERS_J	Version year	0...9999			r	
7	VERS_M	Version month	1...12			r	
8	VERS_T	Version day	1...31			r	
9		Bus card version year	0...9999			r	
10		Bus card version month	1...12			r	
11		Bus card version day	1...31			r	
12	USER_PARA_0	User parameter 0	0...65535			r/w	
13	USER_PARA_1	User parameter 1	0...65535			r/w	
14	USER_PARA_2	User parameter 2	0...65535			r/w	
15	USER_PARA_3	User parameter 3	0...65535			r/w	
16	USER_PARA_4	User parameter 4	0...65535			r/w	
17	USER_PARA_5	User parameter 5	0...65535			r/w	
18	USER_PARA_6	User parameter 6	0...65535			r/w	
19	USER_PARA_7	User parameter 7	0...65535			r/w	
20	USER_PARA_8	User parameter 8	0...65535			r/w	
21	USER_PARA_9	User parameter 9	0...65535			r/w	
22	USER_PARA_10	User parameter 10	0...65535			r/w	
23	USER_PARA_11	User parameter 11	0...65535			r/w	
24	USER_PARA_12	User parameter 12	0...65535			r/w	
25	USER_PARA_13	User parameter 13	0...65535			r/w	
26	USER_PARA_14	User parameter 14	0...65535			r/w	

TAB. 8.14 OTHER (SLOT 11)

INDEX	SYMBOL	NAME	VALUE RANGE	COMBO-OPT	UNIT	R/W	DEFAULT
0		Acknowledge fault	0...1	OFF, QUIT		r/w	OFF
1		Reset	0...1	OFF, RESET		r/w	OFF
2		Save	0...1	OFF, SAVE		r/w	OFF
3		Controller lock	0...1	OFF, ON		r/w	OFF
4		External fault indication	0...1	OFF, ON		r/w	OFF

TAB. 8.15 FUNCTIONS (SLOT 12)



OPERATING INSTRUCTION/BETRIEBSANLEITUNG BAL 8000020265,
DE/EN, 11/12 - V2

Due to our policy of continuous development, the data in this document is subject to change without notice.
AEG is a registered trademark used under licence from AB Electrolux.

Aufgrund unserer kontinuierlichen Weiterentwicklung können die Daten in diesem Dokument ohne vorherige Ankündigung geändert werden.
AEG ist ein eingetragenes Warenzeichen verwendet unter Lizenz von AB Electrolux.

AEG Power Solutions GmbH
Emil-Siepmann-Str. 32
59581 Warstein-Belecke - Germany
Tel.: +49 (0) 2902 763-520/-290 - Fax: +49 (0) 2902 763-1201
www.aegpowercontrollers.com - www.aegps.com

AEG
POWER SOLUTIONS