

Data sheet

Profibus Adapter *pb_adp*

Doc.-No. : D2MF160 100

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The Profibus Adapter *pb_adp* allows to read / write 32 data bits (= 4 Byte I/O) over the Profibus.

The transfused data bits are provided in the application software as 32 digital inputs and 32 digital outputs.

The Profibus Adapter *pb_adp* is connected to an *IMB-sm1* module.

By the error LED of the Profibus Adapter *pb_adp* Profibus errors are shown.

When the error LED is on (=error), then the Profibus Adapter *pb_adp* was not yet initialized by the Profibus-Master.



Art.-No. F160 100

Technical data

Mechanical characteristics

Case	Plastic
Dimension W x D x H	66 x 66 x 28 mm

Electrical characteristics

Power supply by <i>IMB-sm1</i>	+5V
Power consumption	220mA
Interface	Profibus (galvanically isolated)

Environmental conditions

Working temperature range	0...45°C
Storage temperature range	-30...+80°C

Connection of Profibus Adapter *pb_adp*

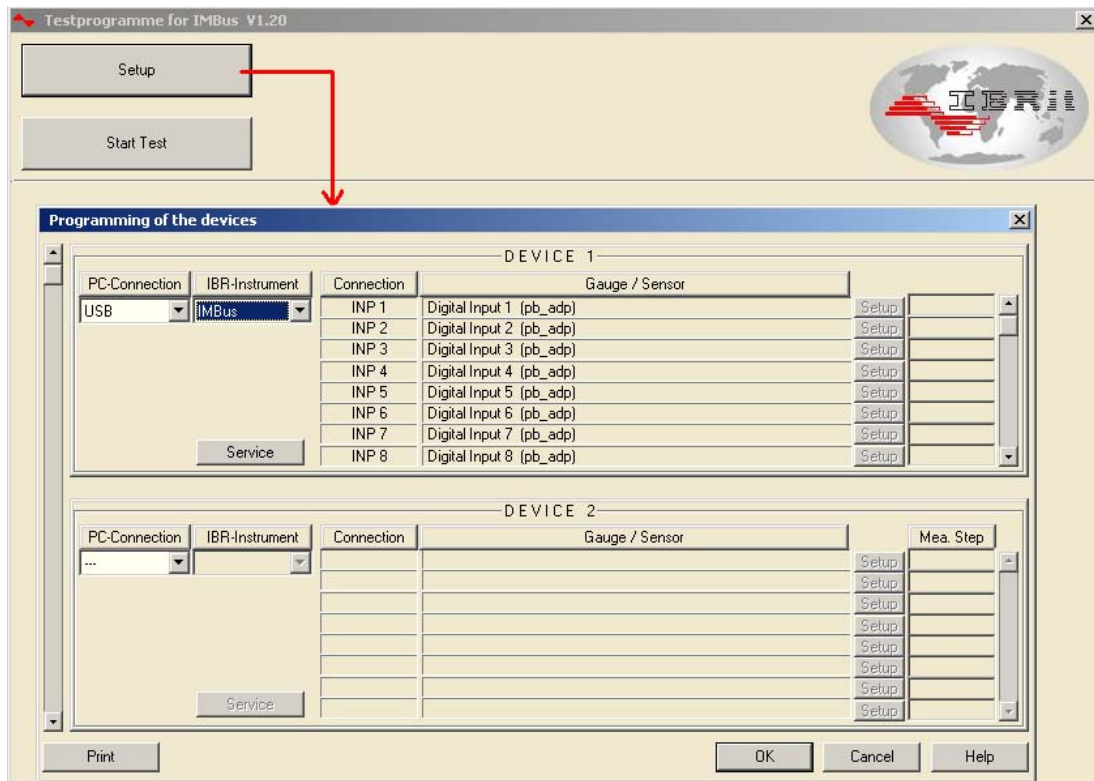
- Connect *IMB-sm1* to IMBus like described in IMBus manual
- Connect cable of Profibus Adapter *pb_adp* to *IMB-sm1*
- Connect Profibus connector to 9-pol. SUB/D female connector of Profibus Adapter *pb_adp*
- Switch power supply of IMBus on

GSD-File

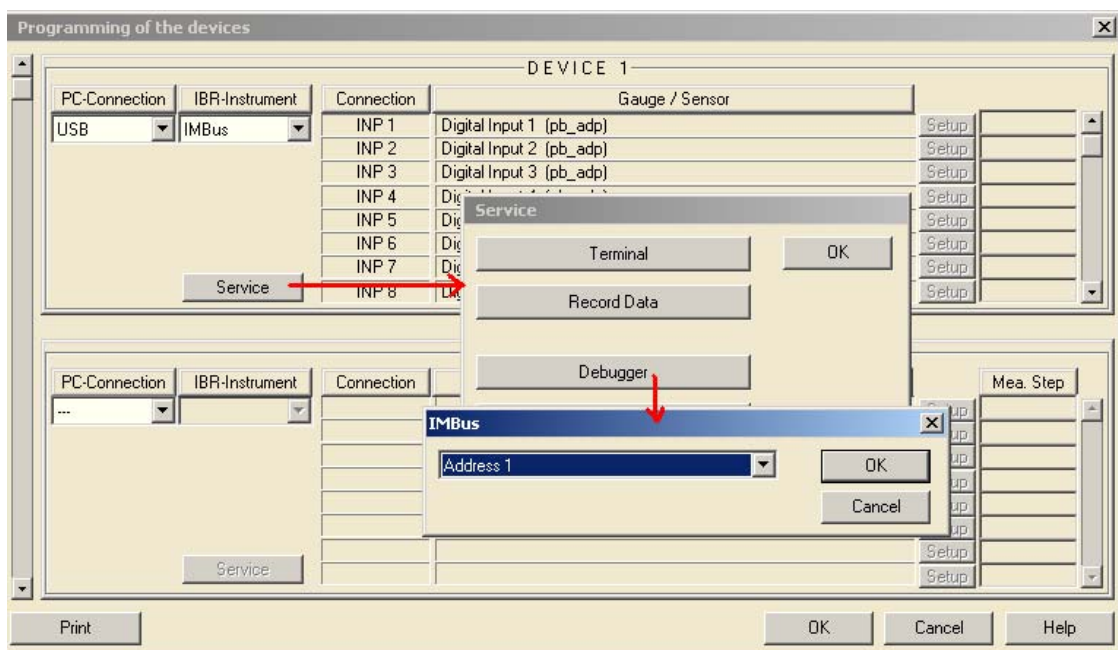
- The GSD-File **UGIC3218.GSD** is stored on **IBR Support CD** in directory **IMB_PB**
- Vendor = "Deutschmann Automation GmbH"
- Model = "UNIGATE IC - Profibus"
- Module = "4 Byte I/O (konsistent)"

Programming of Profibus-Address

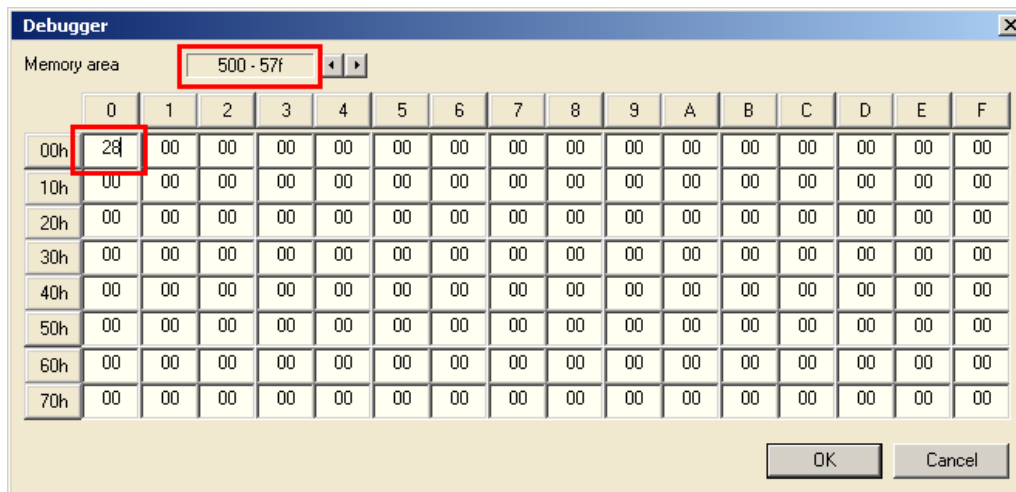
- For programming only the *IMB-sm1* with Profibus Adapter *pb_adp* shall be connected to IMBus
- Install software **IMB_Test** from **IBR Support CD**
- Start software **IMB_Test** and press Button **Setup**
- Select **PC-Connection** and **IBR-Instrument** :
 - The software must now show 32 x „Digital Input (pb_adp)“
 - The software must now show 32 x „Digital Output (pb_adp)“



- Press button **Service**
- Press button **Debugger**
- Insert password **simb**
- Select **Address 1** :

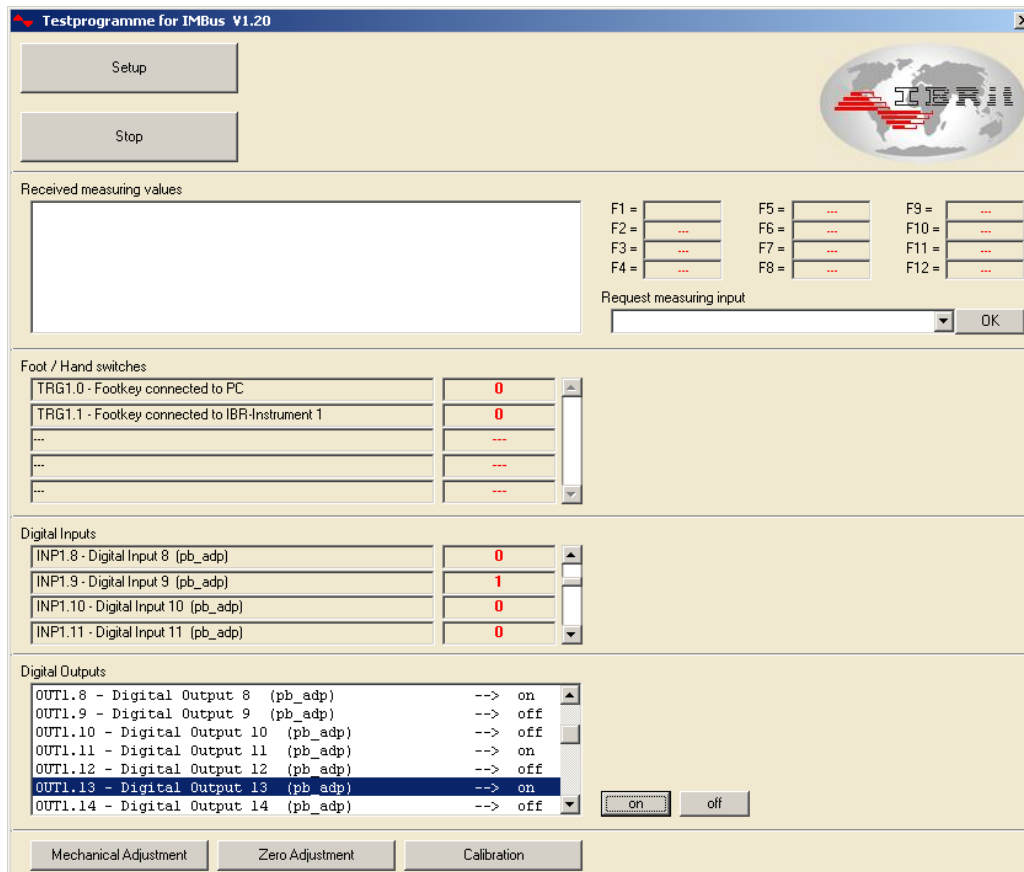


- In cell **500h** the Profibus-Address can be input as HEX-number. In the example the Profibus-Address 28h = 40 is programmed :



Usage of digital inputs / outputs in application software :

- In the application software **ComGage / IMB_Test** 32 digital inputs and 32 digital outputs are now provided : (see box „Digital Inputs“ / „Digital Outputs“)



- On the initialisation of IMBus the *IMB-sm1* transfers the Profibus-Address to the Profibus Adapter *pb_adp*. After that the Profibus Adapter *pb_adp* needs additional 2 sec for its initialisation. During these 2 sec initialisation time no data are transfered over Profibus, the error LED of the Profibus Adapter *pb_adp* is on and the PC-Software reads as values from the 32 inputs = „0“.
- After the initialisation time of 2 sec the correct values of the 32 digital inputs are read by the PC-Software.

Structure of transfused data on Profibus :

The Profibus Adapter *pb_adp* reads 32 data bits (= 4 Byte) from Profibus :

Byte	Bit	Digital input in PC-Software
1	0	INP 1
1	1	INP 2
1	2	INP 3
1	3	INP 4
1	4	INP 5
1	5	INP 6
1	6	INP 7
1	7	INP 8
2	0	INP 9
2	...	...
2	7	INP 16
3	0	INP 17
3	...	...
3	7	INP 24
4	0	INP 25
4	...	...
4	7	INP 32

Example : (4 Bytes in HEX-Format)

80 14 00 00

in binary format : 1000 0000 / 0001 0100 / 0000 0000 / 0000 0000

The following 3 Bits = inputs are set :

- Byte 1 / Bit 7 → INP 8
- Byte 2 / Bit 2 → INP 11
- Byte 2 / Bit 4 → INP 13

The Profibus Adapter *pb_adp* outputs 32 data bits (= 4 Byte) on Profibus :

Byte	Bit	Digital output in PC-Software
1	0	OUT 1
1	1	OUT 2
1	2	OUT 3
1	3	OUT 4
1	4	OUT 5
1	5	OUT 6
1	6	OUT 7
1	7	OUT 8
2	0	OUT 9
2	...	...
2	7	OUT 16
3	0	OUT 17
3	...	...
3	7	OUT 24
4	0	OUT 25
4	...	...
4	7	OUT 32

Note on the usage of a Siemens S7 with CPU-Series 300 :

- In I/O-Manager only Addresses < 256 can be read / written.
- On Addresses >= 256 a data block must be created, which is read / written over **PED / PAD** commands.