ibaBM-DPM-S-64

Profibus Sniffer

Manual

Issue 2.5

Measurement and Automation Systems

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The content of this publication has been checked for compliance with the described hardware and software. Nevertheless, deviations cannot be excluded completely so that the full compliance is not guaranteed. However, the information in this publication is updated regularly. Required corrections are contained in the following regulations or can be downloaded on the Internet.

The current version is available for download on our web site http://www.iba-ag.com.

Protection note

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Certification

The device is certified according to the European standards and directives. This device corresponds to the general safety and health requirements. Further international customary standards and directives have been observed.

Issue	Date	Revision	Chapter	Author	Version HW / FW
V2.5	02/27/2014	Corrections in input data	9.2.5.2, 9.2.6.2, 9.2.7.2, 9.2.8.2, 9.2.9.2, 9.2.10.2		

Table of contents

1 About this manual

This manual describes the construction, the use and the operation of the device ibaBM-DPM-S-64.

1.1 Target group

This manual addresses in particular the qualified professionals who are familiar with handling electrical and electronic modules as well as communication and measurement technology. A person is regarded to as professional if he/she is capable of assessing safety and recognizing possible consequences and risks on the basis of his/her specialist training, knowledge and experience and knowledge of the standard regulations.

1.2 Designations

The following designations are used in this manual:

Action	Designations
Menu command	Menu „Logic diagram“
Call of menu command	„Step 1 – Step 2 – Step 3 – Step x” Example: Select menu „Logic diagram – Add – New logic diagram”
Keys	<Key name> Example: <Alt>; <F1>
Press keys simultaneously	<Key name> + <Key name> Example: <Alt> + <Ctrl>
Buttons	<Button name> Example: <OK>; <Cancel>
File names, Paths	„File name“, „Path” Example: „Test.doc“

1.3 Used symbols

If safety instructions or other notes are used in this manual, they mean:

⚠ DANGER

The non-observance of this safety information may result in an imminent risk of death or severe injury:

- By an electric shock!
- Due to the improper handling of software products which are coupled to input and output procedures with control function!

If you do not observe the safety instructions regarding the process and the system or machine to be controlled, there is a risk of death or severe injury!

⚠ WARNING

The non-observance of this safety information may result in a potential risk of death or severe injury!

⚠ CAUTION

The non-observance of this safety information may result in a potential risk of injury or material damage!

Note

A note specifies special requirements or actions to be observed.

Important note

Note if some special features must be observed, for example exceptions from the rule.

Tip

Tip or example as a helpful note or insider tip to make the work a little bit easier.

Other documentation

Reference to additional documentation or further reading.

2 Introduction

2.1 ibaBM-DPM-S-64

As a member of the bus monitor family ("ibaBM-.."), the ibaBM-DPM-S-64 device is used by the iba measured value acquisition or control systems as an interface for exchanging data on the Profibus DP ("..DPM.."). It belongs to a new generation of devices ("..-S") with a modular construction.

The device is designed for measuring a maximum number of 64 analog and digital signals.

Overview of the most important features:

- ❑ Profibus connectors for the connection of two DP lines or for looping through to one line
- ❑ Both lines can be terminated separately
- ❑ Bidirectional data transfer
- ❑ Profibus interface with up to 12 Mbit/s
- ❑ A total of 2 DP slaves with 32 analog and 32 digital signals each
- ❑ Logs up to 64 analog signals and 64 digital signals in 1 ms
- ❑ Slot for CompactFlash® cards for configuration data
- ❑ USB and Ethernet interfaces for configuring the device from your PC
- ❑ Windows CE® operating system

Note

The device supports Profibus DP-V0 (cyclical data traffic).
DP-V1 und DP-V2 are not supported.

The device can be integrated into an existing DP network without any significant physical changes to the network. Due to its size and mounting fixture, the ibaBM-DPM-S-64 device is easy to insert directly near the DP master between the master and the rest of the network. Due to the ibaNet fiber optic connection, data from the Profibus can be transmitted without disruption over long distances and through areas with strong electro magnetic fields.

Note

The device is not intended for the use of "Request" functions (S7-Request, FM-Request, TDC-Request).

2.2 Replacement for ibaBM-DPM-64 device (DPM64)

The device ibaBM-DPM-S-64 can be used as a replacement for the ibaBM-DPM-64 device in all modes of operation (Modes 5, 6, 7 for “input”, modes 8, 9, 11 for “in/output” and modes 0, 1, 3 for “output).

The device is compatible in all functions and can substitute directly an ibaBM-DPM-64. Neither the ibaPDA or ibaLogic settings nor the Profibus configuration or the Profibus master program need to be changed.

Furthermore, the two Profibus connectors can be separated and the two Profibus slaves can be distributed over both connectors. The two station numbers do not need to be consecutive numbers anymore.

Note

An ibaFO-A adapter for the fiber optic connection via ibaPCMCIA-F card for notebook application is necessary because the bus module doesn't support a RJ11 jack for a direct connection via spiral cable to the PCMCIA-F card.

Alternatively an ibaFOB-io-ExpressCard can be used.

3 Safety instructions

3.1 Designated use

The device is electrical equipment. It may be used only in the following applications:

- ❑ Automation of industrial systems
- ❑ Measurement data logging and analysis
- ❑ Applications of ibaSoftware products (ibaPDA-V6, ibaLogic-V4 etc.)

The device is only to be applied as shown in the Technical Data.

3.2 Special safety instructions

⚠ CAUTION

Do not exceed the operating voltage range!

The device may not be operated at voltages exceeding DC +24 V! An overly high operating voltage destroys the device and may result in death or serious injury.

Important note

Do not open the device! There are no serviceable parts inside the device

4 Scope of delivery

Check after unpacking the completeness and intactness of the delivery.

The scope of delivery includes:

- ❑ ibaBM-DPM-S-64 device
- ❑ Manual
- ❑ USB cable
- ❑ GSD files
- ❑ USB driver
- ❑ Sample parameter file *.csv

↗ Other, not in the scope of delivery contained equipment, see at www.iba-ag.com.

5 System Requirements

5.1 Hardware

For operation:

- ❑ DC 24 V, 1 A power supply

To set the device's parameters:

- ❑ Ethernet or USB connection to a PC or
- ❑ CompactFlash® card with CompactFlash® card reader

For measuring:

- ❑ IBM-compatible PC with the following minimum requirements:
  - 1 GHz Pentium III or better
  - At least one free PCI slot (PC)
  - At least 512 MB RAM
  - 4 GB free memory on the hard drive for measurement values
- ↗ For further information on PC requirements, visit our homepage www.iba-ag.com.
- ❑ At least one fiber optic input card ibaFOB-S, -X or -D
- ❑ One ibaNet fiber optic patch cable for connecting ibaBM-DPM-S-64 and ibaPDA-PC

For system coupling:

- ❑ At least one interface board ibaLink-SM… which can be used as an interface to an automation system or a second ibaBM-DPM-S-64
- ❑ A duplex fiber optic cable to connect ibaBM-DPM-S-64 and the ibaLink-SM-board
- ❑ Profibus DP network

5.2 Software

- ❑ Any automation system with DP master function can send data to ibaBM-DPM-S-64.
- ❑ ibaPDA, ibaQDR or ibaLogic for measuring and recording data or for control

6 Mounting and dismounting

6.1 Mounting

1. Locate the DIN rail mounting clip on the rear side of the device. Place the device on the DIN rail so that the top part of the mounting clip engages the top part of the rail appropriately. Slowly push down and in so that the bottom part of the mounting clips snaps onto the bottom part of the rail and firmly fixes the device to the DIN rail.
2. If there is a rule to ground the device, connect the device to the ground (shield connector X29).
3. Once fixed, connect the DC 24 V power supply to the termination shown on the device. Ensure that the polarity is correct prior to applying power. Then install the other connections like:

⚠ CAUTION

Connecting the Profibus cable
The PROFIBUS cable should be connected after proper completion of the active slave configuration only to ensure that the slave numbers do not exist twice. A conflict due to slaves with the same number can lead to a breakdown of the Profibus communication and finally to a complete standstill of the system.

4. Connect the FO cable and if needed, activate the Profibus terminating resistor with switch S4 or S5.

6.2 Dismounting

1. Disconnect all external connections from the device.
2. Grasp the device with one hand firmly on the top side. With your free hand, grasp the bottom of the device so that your index and pointer fingers rest on the grounding screw.
3. Lightly push down with the hand on the top side of the device and simultaneously pull forward with your other hand. With this action, the device should free itself from the DIN rail.

7 Device Description

7.1 Device Design

2 circuit boards installed in a robust iba metal housing provide the circuitry necessary for interfacing with the Profibus.

The main circuit board:

- ❑ Controls the device as a whole
- ❑ Stores the parameters
- ❑ Manages the dual port RAM
- ❑ Operates the communication interfaces ibaNet, USB and Ethernet, as well as the CompactFlash® card

The second circuit board mounted on the top contains the interface to the DP bus.

The division of functions is reflected in the design of the device front.

7.2 Communication Interfaces

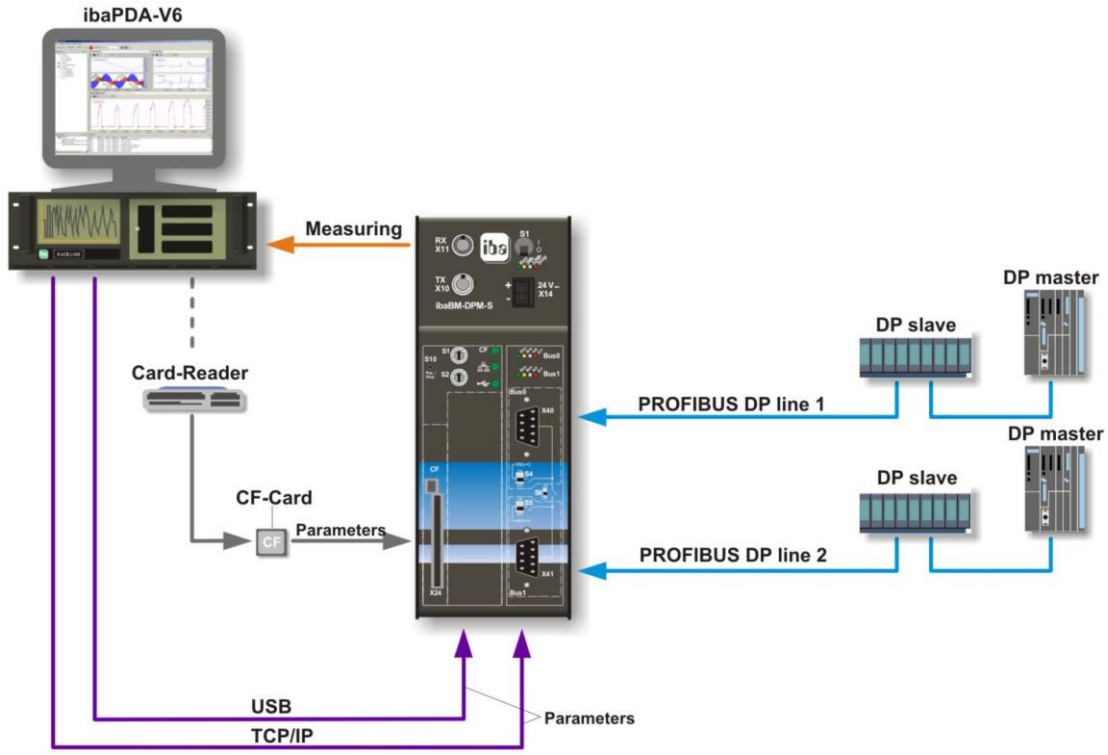


Figure 1: Communication interfaces

7.3 View of the Device, Controls and Connectors

7.3.1 View of the Device

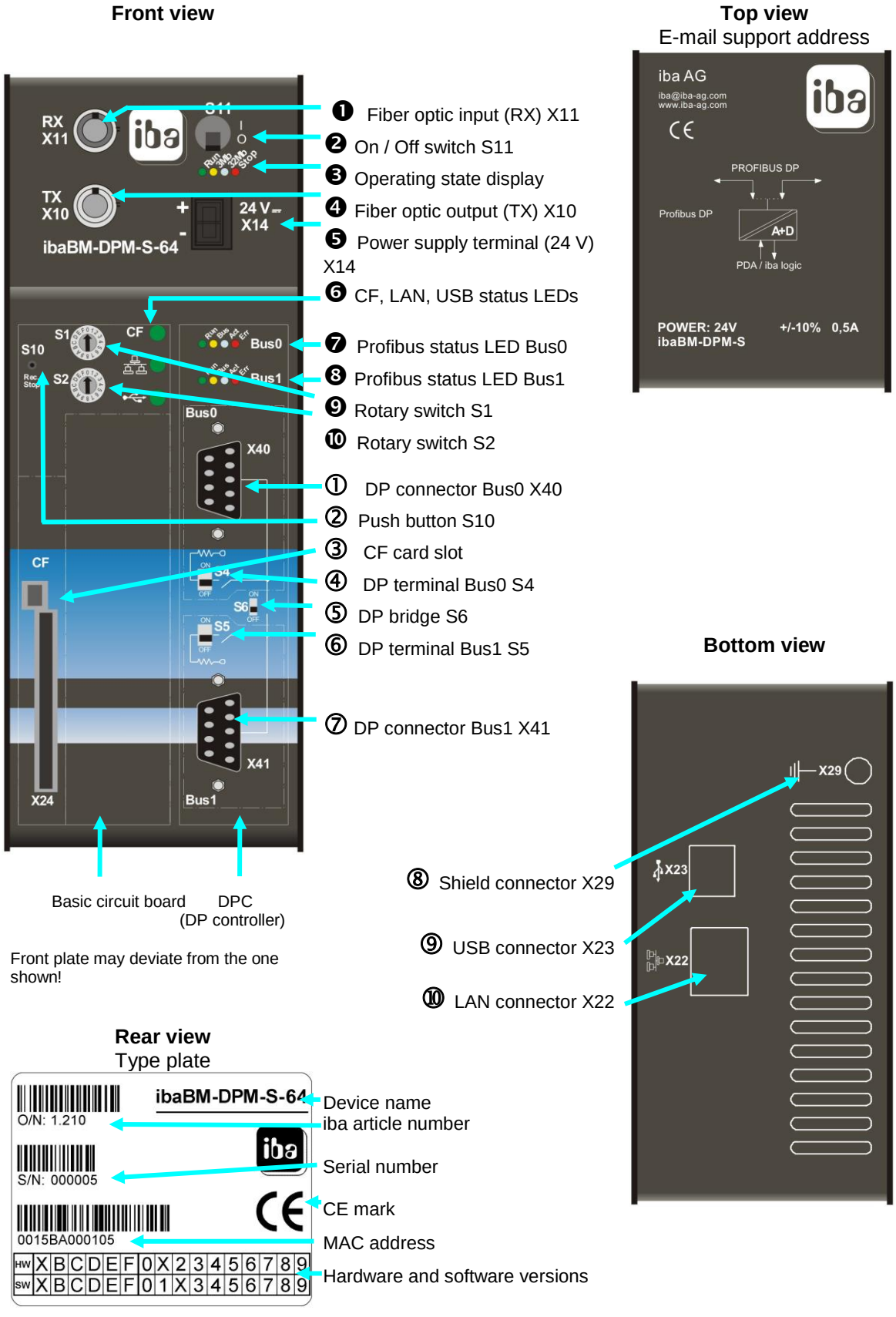


Figure 2: Connectors, controls and display elements

7.3.2 Fiber Optic Cable Connectors RX/TX ❶ ❹

The fiber optic (FO) connectors and transmitters are the physical interfaces for a simple send/receive connection with an ibaFOB card. The connectors are designed for 62.5/125 µm multi mode fibers with ST coupling, which can be purchased at iba too. Each connector can transmit up to 64 analog and 64 digital signals per millisecond.

TX: FO transmitter with 3.3 Mbit/s data transmission rate.

The ibaPDA or ibaLogic system must be equipped with cards

- ibaFOB-4i-D
- ibaFOB-io-D
- ibaFOB-2io-D
- ibaFOB-2i-D
- or corresponding cards of the older S and X types

in order to receive the data.

RX: FO receiver with 3.3 Mbit/s data transmission rate

The ibaPDA or ibaLogic system must be equipped with cards

- ibaFOB-4o-D
- ibaFOB-io-D
- ibaFOB-2io-D
- or corresponding cards of the older S and X types

in order to send the data to the device.

7.3.3 On/Off Switch S11 ❷

Use this switch to turn the device on and off.

Important note

Turning the device on and off has no effect on the Profibus, i. e. other Profibus communication will continue without disruption when the device is switched off.

Exception: If the Profibus is terminated by the device, switching-off may disrupt the Profibus.

When you turn the device off and then restart it, it will be rebooted. This is useful for instance when a fatal error has occurred (Error LED) or if you want to load new device parameters.

7.3.4 Operating Status Display (Status LEDs) ❸

LED	Status	Description
Run (green)	Blinking (approx. 1 Hz)	Device is working; irregular blinking rate indicates device is overloaded
	On or off	Controller ok, device has "crashed"
3Mb (yellow)	Off	No communication 3 Mbit/s to TX
	blinking	Data transfer rate 3 Mbit/s (send only)
	On	Data transfer rate 3 Mbit/s (send and receive)
32Mb (white)	On	-
	Off	-
Stop (red)	Off	Normal, everything Okay
	blinking	Defect (error while booting)
	On	Error, device-internal applications not running

7.3.5 24 V Power Supply ❺

The ibaBM-DPM-S-64 device requires an external DC 24 V power supply (unregulated) and should be operated at a maximum of 600 mA. The operating voltage should be run through the provided 2-pin Phoenix threaded coupling connector. If desired, you can order DIN rails or plug-in power supply units from iba.

7.3.6 Status LEDs of the Communications Interface ❻

LED	Status	Description
CF	Off	No CF card inserted
	Green	Card detected (card may also be empty), driver loaded; LED flickers during data transfer
	Red	Error CF card, e.g. incorrect card type or start-up phase
Ethernet	Off	Ethernet cable not connected
	Green	Driver loaded, LAN ready; LED flickers during data transfer
	Red	Defect; driver not loaded
USB	Off	Normal if nothing is connected
	Green	Connected device detected, driver loaded, LED flickers during data transfer
	Red	Defect or communication setup

7.3.7 Switches S1 and S2 ❾ ❿

The rotary switches are used to reset the device to default settings. In contrast to the predecessor ibaBM-DPM-64 the address setting is done via software not by rotary switches.

↗ For more information see chapter “Setup of Mode and Station Number”, page 48.

Reset to default settings:

1. Turn switch S1 to “6” and S2 to “9”.
2. Push and hold push button S10 and switch device off and on with switch S11. The status LEDs blink for approximately 10 s with 1 Hz.
3. As soon as the LEDs start blinking release the push button S10. We recommend turning the switches S1 and S2 back to “0” afterwards. The device will restart again automatically.

Now all customized settings are deleted and set back to default settings, i. e. also specific settings for TCP/IP or USB are reset, incl. passwords. Saved settings of signal parameters (*.csv) remain.

7.3.8 Push button S10 ②

↗ For more information see chapter “Switches S1 and S2 ” page 16.

7.3.9 CompactFlash® Card Slot X24 ③

Standard card slot for CompactFlash® cards

The card works with CF, CF+, Type I and Type II. There is no speed-up advantage when using faster cards (CF+).

There may be minor occurrences of data loss when using very slow cards, seen only with Ultron CompactFlash 128 MB yet. Please don’t use this card with our device.

Important note

The card must be formatted in FAT or FAT32.

1. Create a folder “DPMS” in the root directory of the card and copy the four sample configuration files (*.csv) from the CD into this new folder, because the programs need a complete set of configuration files.
   The CompactFlash® card serves as an alternative storage medium for configuration files. Usually the files should be stored in the internal flash memory. The files can be copied to a CompactFlash® card using a card reader or a card slot on the PC. When the CompactFlash® card is inserted into ibaBM-DPM-S-64, the configuration files stored there are used.
2. Although the cards are keyed to prevent them from being inserted incorrectly, you should insert the cards carefully and press them down until they click into place.
3. To remove the card, press the button firmly above the slot. This releases the card from its fixed position so that you can remove it.

Note

The CompactFlash® card must not be removed during startup or during write access. This could damage or destroy data.

When you remove the card, ensure that the "CF" LED is not blinking either green or red.

The device does not have to be switched off to insert or remove the card.

7.3.10 TCP/IP Interface (bottom) ⑩

The device can be connected to a PC or a network over a TCP/IP interface.

The interface has a unique MAC address and is used for transferring configuration files (device parameters).

Note

Use a crossover cable for a direct connection to a PC!

↗ For more information, see chapter “Ethernet TCP/IP Interface” page 38.

7.3.11 USB Interface (bottom) ⑨

The device can be connected to a PC over a USB interface. It can be used for parameterize the device.

The interface conforms to the USB 2.0 Standard.

↗ For more information, see chapter “USB Interface” page 39.

7.3.12 LEDs for Profibus Bus0, Bus1 ❼ ❽

Profibus LED	Status	Description
Run (green)	Blinking	Profibus controller active and OK
	Off	CPU of the DP controller not running
Bus (yellow)	Off	No Profibus found or no communication
	Rapid blinking (approx. 0.1 s)	At least one master active in the DP, but no slave
	Slow blinking (ca. 0.8 s)	At least one master and at least one slave are active in the DP, but not all slaves that were configured
	On	All configured master and slaves are active in the DP
Act (white)	Off	-
Error (red)	Off	Normal state
	On	DP line error or boot phase, incorrect parameterization or error while starting
	Blinking (lights up briefly, approx. 0.125 s)	Sporadic errors in the DP

7.3.13 Profibus DP connectors X40 (Bus0) and X41 (Bus1) ①, ⑦

Standard Profibus DP connector (sub-D 9)

These connectors can each accommodate one Profibus line.

You can use connectors with incoming and outgoing wires as well as end plugs with only incoming lines.

Important note

Ensure that switches S4, S5 and S6 are correctly set.

➚ For more information see chapter “Profibus switches S4, S5, S6 ” page 19.

7.3.14 Profibus switches S4, S5, S6 ④, ⑤, ⑥

For all switches:

- ON = switch closed
- OFF = switch open

Note

Before connecting a Profibus network, please carefully check the switch position with regard to bus termination. We recommend that you first set all switches to OFF as termination is often provided in the connector.

- Switch S4 is used to switch the terminating resistor for Bus0 on and off
- Switch S5 is used to switch the terminating resistor for Bus1 on and off
- Switch S6 is used to disconnect or connect both lines Bus0 and Bus1

The following switch positions are possible:

Connection configuration/operating mode	S4	S5	S6
Bus0 and Bus1 are to be operated separately. (a different PROFIBUS line is connected to each connection)			OFF
ibaBM-DPM-S-64 is not the last device on Bus0	OFF		OFF
ibaBM-DPM-S-64 is not the last device on Bus1		OFF	OFF
ibaBM-DPM-S-64 is the last device on Bus0	ON		OFF
ibaBM-DPM-S-64 is the last device on Bus1		ON	OFF
ibaBM-DPM-S-64 is to be looped into a PROFIBUS line, whereby only two cable ends with end plugs of the same line are available.	OFF	OFF	ON

7.3.15 Shield connector ⑧

Socket for connecting the protective ground. Depending on the control cabinet configuration it may be necessary to connect the Profibus cable shields to the X29 connector.

If the Profibus cable shields are already connected to the protective ground of the control cabinet, connect the X29 connector also to the protective ground of the control cabinet.

8 System Integration

8.1 ibaBM-DPM-S-64 in the ibaPDA environment

In the following examples, only ibaPDA-V6 is referred to as the receiving system. The topologies apply analogously to ibaLogic.

8.1.1 Connection to the DP Master (unidirectional)

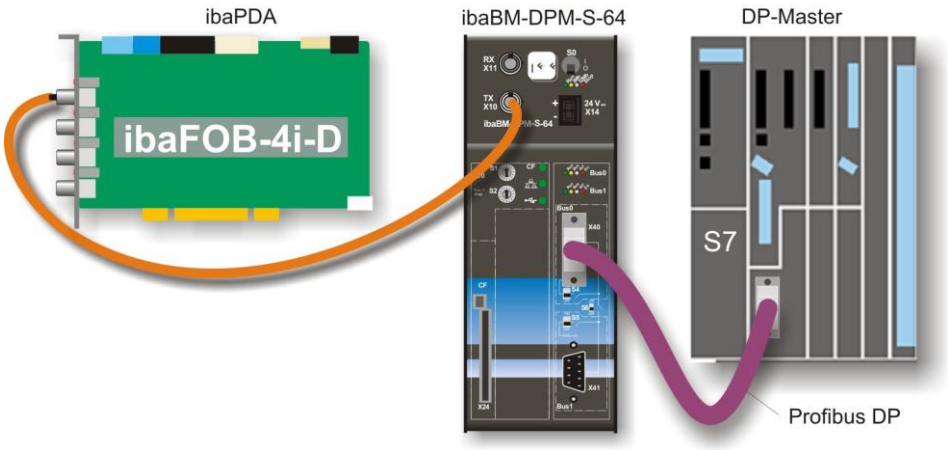


Figure 3: ibaBM-DPM-S-64 connected to the DP Master and ibaFOB-4i-D in the measuring station PC

The configuration shown above illustrates the ibaBM-DPM-S-64 device connected to a DP Master device (for example the SIMATIC S7). The measured values can be logged with a stationary ibaPDA-V6 PC using an ibaFOB-D card.

If the device is the last device on the DP line, the corresponding terminating resistor must be activated (switch S4 is set to ON).

8.1.2 Connection to DP master and other DP slaves (unidirectional)

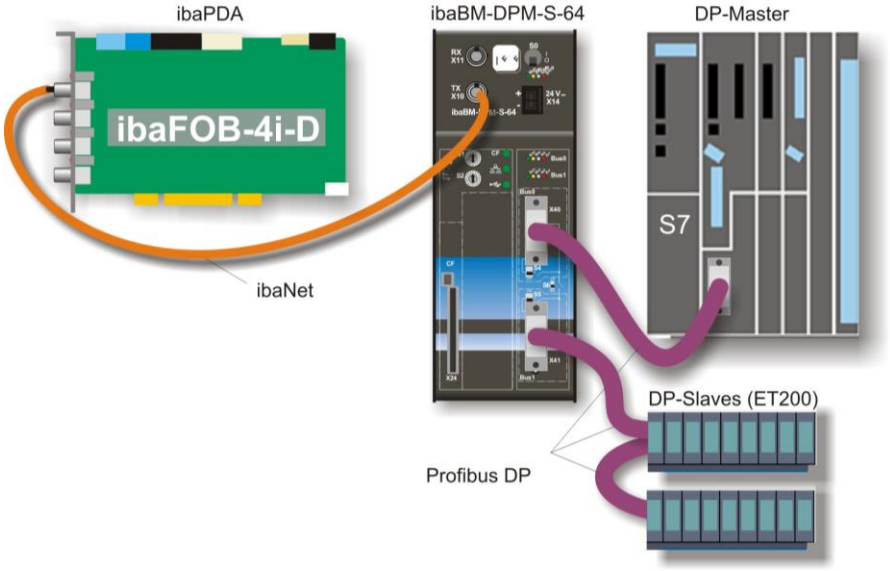


Figure 4: ibaBM-DPM-S-64 connected to the DP master, further DP slave devices and measuring station PC

ibaBM-DPM-S-64 can be inserted anywhere into an existing Profibus DP network. Various cases are conceivable:

- The Profibus cable has two cable ends with end plugs at the point where the device is to be installed. One end is connected to the Bus0 connection, and the other end to the Bus1 connection. The switch S6 must then be closed (ON); the terminating resistors (S4, S5) must be switched off (OFF).
- The Profibus cable has a plug and incoming and outgoing wires at the point where the device is to be installed. The plug can then be plugged onto one of the connections Bus0 or Bus1. The switch S6 must be opened (OFF).
- The Profibus cable has two neighboring plugs with incoming and outgoing wires at the point where the device is to be installed. Both plugs can be plugged onto the connectors Bus0 and Bus1. S4, S5, and S6 must be open (OFF).

8.2 ibaBM-DPM-S-64 for coupling of two DP networks

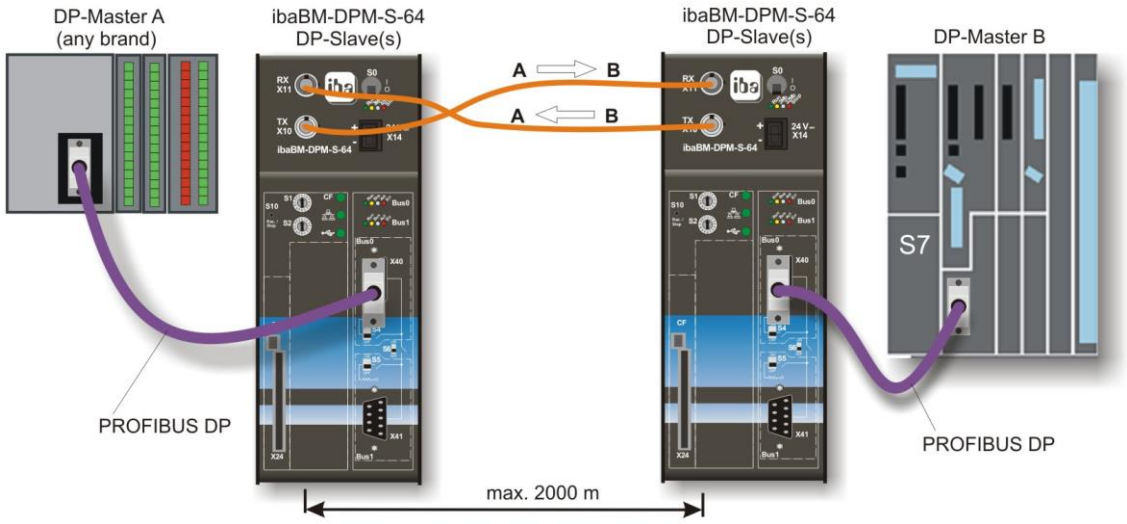


Figure 5: ibaBM-DPM-64 connected to DP master, other DP slaves and stationary PC

In case those 2 Profibus DP networks should be linked, maybe over long distances, two ibaBM-DPM-S-64 provide a solution for up to 64 analog and 64 digital signals in each direction.

If, moreover, these signals should be measured by an ibaPDA-system, it's easy to install an ibaBM-FOX-i-3o device in each ibaNet fiber optic line in order to duplicate the signals for the ibaPDA.

8.3 ibaBM-DPM-S-64 with DP master and ibaLogic (bidirectional)

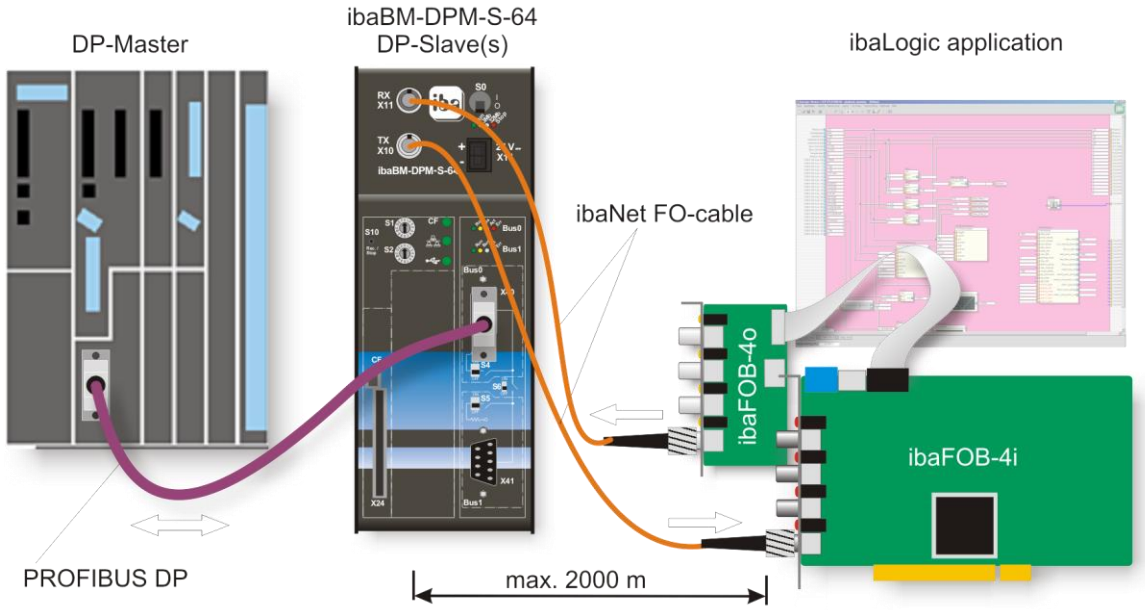


Figure 6: ibaBM-DPM-64 connected to DP master and ibaLogic (bidirectional)

In input mode (modes 5, 6, 7) or bidirectional mode (modes 8, 9, B) the ibaBM-DPM-S-64 can write data on the Profibus.

A PC, equipped with an ibaFOB-io card or a combination of ibaFOB-4i and ibaFOB-4o and an application such as ibaLogic, can send data to a Profibus DP master via the ibaBM-DPM-S-64. In that case ibaLogic itself is neither a Profibus DP master nor a DP slave.

Other systems can use this capability, for example SIMATIC S5 or MMC with iba's ibaLink-SM-64-io interface card or even VME-based systems with iba's ibaLink-SM-128V-i-2o interface card. These cards also offer a fiber optic input and output link for up to 64 channels.

The advantage for such third party systems is that no Profibus specific driver or GSD-file is required on their side.

When running in input mode the ibaBM-DPM-S-64 just copies the contents of its memory, connected to the fiber optic RX-connector, into the DP input data block every millisecond.

8.4 ibaBM-DPM-S-64 for systems coupling

8.4.1 Coupling of Profibus DP and VMEbus system

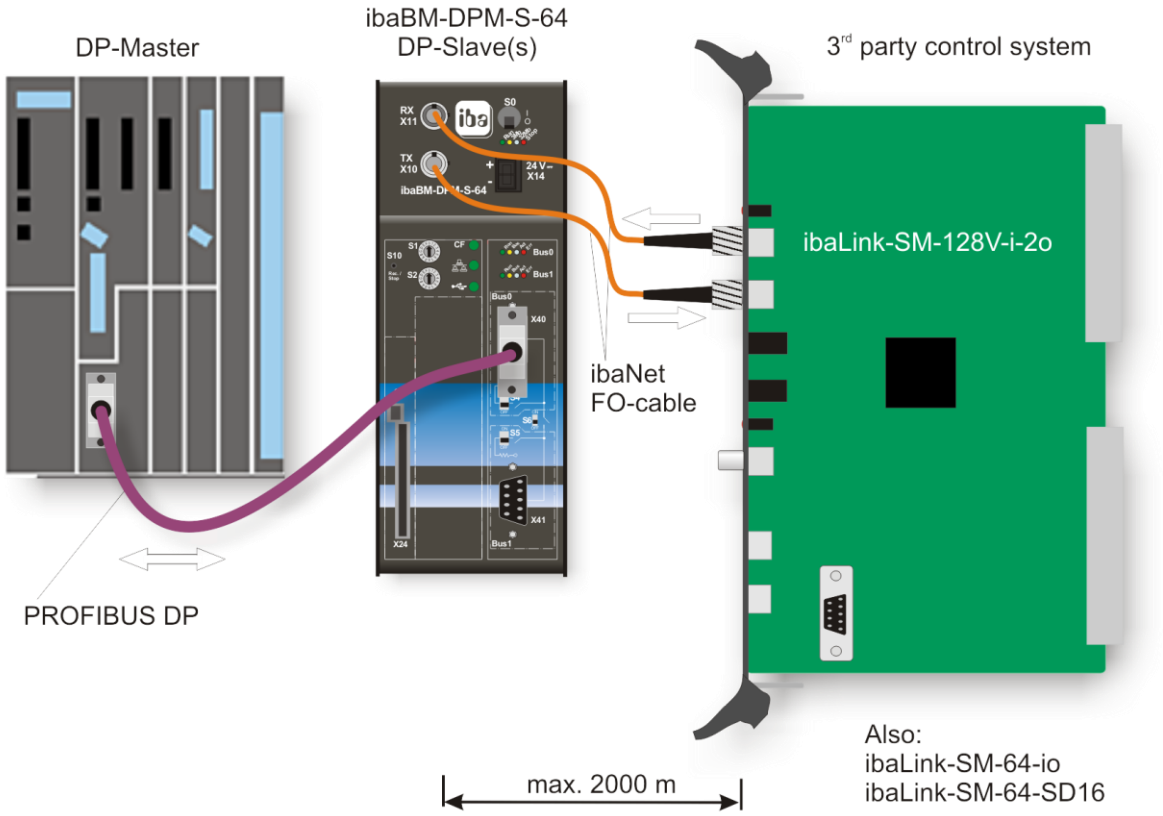


Figure 7: ibaBM-DPM-64 connected to DP master and 3rd party VME-based system (bidirectional)

In this example a typical configuration of systems coupling is shown.

The iba interface board ibaLink-SM-128V-i-2o is designed for VME-based control systems, like from ALSTOM, SMS or VAI.

The ibaBM-DPM-S-64 controls the communication between Profibus and the VME-memory by copying the memory content from one side to the other.

This is a simple way to connect third party systems to Profibus networks.

Other interface boards are available for SIMATIC S5 and MMC (ibaLink-SM-64-io) and SIMADYN D/16 bit (ibaLink-SM-64-SD16).

9 Configuring and Parameterize the Device

9.1 Basics

The device is always configured by a number of parameters. These parameters can be set by means of a web interface which is provided by the device. Profibus-specific communication parameters, such as address segments and slave numbers, as well as all signals to be measured, are part of the parameters and stored in the configuration files on the device. If required these files (*.csv) can be edited with the help of a text editor or MS Excel.

Important note

Basically, we recommend configuring the device via the web interface because operation is safer and easier.

For this reason the description of the configuration files and how to edit them is not part of this documentation. Further information is available on request.

9.2 Modes of Operation and Data Types

The data to be measured from the Profibus is defined using the GSD data files which must be registered on the DP Master. The data types for both slaves on the device are furthermore selected over the web interface by choosing the mode of operation. GSD file and mode of operation must fit together.

In general, the following data types may be processed:

- 2 * (32 * 16 bit integer + 32 binary) in modes 0, 5, 8
- 2 * (32 bit floats + 32 binary) in modes 1, 6, 9
- 2 * (28 SIMATIC S7 Floats + 32 binaries) in modes 3, 7, B

Depending on whether you want to read data from the Profibus master or write data to it or both the mode switch has to be set appropriately.

↗ For more information see chapter „Setup of Mode and Station Number “, page 48.

The transmission of data is usually managed by message block transmission.

Each DP slave uses one block for data transmission in each direction, i. e. an ibaBM-DPM-S-64 uses two blocks in total (slave 1 and 2).

The data structure of these blocks for reception (outputs) and transmission (inputs) is shown in the following for each of the different operation modes.

Please note that the description gives examples for one slave. The description applies to the second slave as well.

Important note

When connecting a SIMATIC S5 to an ibaBM-DPM-64 via Profibus, e. g. by an IM308C interface board, you should prevent a data format conflict. Because the data formats of S5 do not comply with IEEE standard, the S5-data should be converted on S5-side before being transferred to the Profibus interface!

9.2.1 Modes of Operation Overview

The following table gives an overview about the modes of operation which are available on the device. For each mode you'll find the appropriate GSD files in the corresponding row which should be installed on the DP master. For more information please refer to the following chapters.

Mode	Name	Outputs	Inputs	GSD-file	Application
0	PDA 32 Integers	2 * 32 analog (int) 2 * 32 digital	-	ibaF01n4.gsd ibaF01n3.gsd iba_0F01.gsd	ibaPDA, ibaLogic, SIMATIC S7 system coupling
1*	PDA 32 Reals	2 * 32 analog (real) 2 * 32 digital	-	iba_0F02.gsd	ibaPDA, ibaLogic, system coupling no S7, SD
2	n/a	-	-	-	-
3	PDA 28 Reals	2 * 28 analog (real) 2 * 32 digital	-	ibaF04n4.gsd ibaF04n3.gsd iba_0F04.gsd	ibaPDA, ibaLogic, S7, system coupling
4	n/a	-	-	-	
5	INPUT 32 Integers	(4 byte reserved)	2 * 32 analog (int) 2 * 32 digital	ibaF00n4.gsd ibaF00n3.gsd	ibaLogic, S7, system coupling
6*	INPUT 32 Reals	(4 byte reserved)	2 * 32 analog (real) 2 * 32 digital	iba_0F06.gsd	ibaLogic, system coupling no S7, SD
7	INPUT 28 Reals	(4 byte reserved)	2 * 28 analog (real) 2 * 32 digital	ibaF07n4.gsd ibaF07n3.gsd	ibaLogic, S7, system coupling
8	IN-OUT 32 Integers	2 * 32 analog (int) 2 * 32 digital	2 * 32 analog (int) 2 * 32 digital	ibaF08n4.gsd ibaF08n3.gsd iba_0F08.gsd	ibaLogic, S7, system coupling
9*	IN-OUT 32 Reals	2 * 32 analog (real) 2 * 32 digital	2 * 32 analog (real) 2 * 32 digital	iba_0F09.gsd	ibaLogic, system coupling no S7, SD
A	n/a	-	-	-	-
B	IN-OUT 28 Reals	2 * 28 analog (real) 2 * 32 digital	2 * 28 analog (real) 2 * 32 digital	ibaF0Bn4.gsd ibaF0Bn3.gsd	ibaLogic, S7 system coupling

* Not applicable to former CPUs SIMATIC S7 (firmware <2.0 for S7-300, firmware < 3.0 for S7-400) or SIMADYN D

Note

Please note that the terms "in" and "out" refer to the point of the Profibus master's view, i.e. "in" means signals being transmitted from the ibaBM-DPM-S-64 to the Profibus master (e. g. SIMATIC S7), "out" vice versa.
Both slaves are always set to the same mode for the analog values!

The file names of the GSD files which come with our Profibus products had been renamed for standardization purposes (eff. 10/2005).

If you still use the old files please refer to the following table for reference.

New GSD file name	Old GSD file name
ibaF01n4.gsd	DPM32IO.GSD
ibaF01n3.gsd	DPL32IO.GSD
iba_0F01.gsd	L2B_32I.GSD
iba_0F02.gsd	L2B_32R.GSD
ibaF04n4.gsd	DPM28RO.GSD
ibaF04n3.gsd	DPL28RO.GSD
iba_0F04.gsd	L2B_28R4.GSD
ibaF00n4.gsd	DPM32II.GSD
ibaF00n3.gsd	DPL32II.GSD
iba_0F06.gsd	L2B32RI.GSD
ibaF07n4.gsd	DPM28RI.GSD
ibaF07n3.gsd	DPL28RI.GSD
ibaF08n4.gsd	DPM32IOI.GSD
ibaF08n3.gsd	DPL32IOI.GSD
iba_0F08.gsd	L2B32IOI.GSD
iba_0F09.gsd	L2B32ROI.GSD
ibaF0Bn4.gsd	DPM28ROI.GSD
ibaF0Bn3.gsd	DPL28ROI.GSD

9.2.2 Mode 0 – PDA 32 Integers

This mode is used to read up to 32 integer values and 32 digital signals from the Profibus (OUT 72 Bytes).

9.2.2.1 Output data

OUTPUT DATA									
Byte no.	Offset	Contents								Remark
1	**0**	Status								not used
2	**1**	Status								not used
3	**2**	Status								not used
4	**3**	Status								not used
5	**4**	7	6	5	4	3	2	1	0	Dig. outputs channel 0...7
6	**5**	15	14	13	12	11	10	9	8	Dig. outputs channel 8...15
7	**6**	23	22	21	20	19	18	17	16	Dig. outputs channel 16...23
8	**7**	31	30	29	28	27	26	25	24	Dig. outputs channel 24...31
9	**8**	MSB								Analog output channel 0
10		LSB								Integer (2 byte), Big Endian Motorola
11	**10**	MSB								Analog output channel 1
12		LSB								Integer (2 byte), Big Endian Motorola
Slave data space	**12**									Analog outputs in total: 32 Words (16-bit integer), Big Endian Motorola
71	**70**	MSB								Analog output channel 31
72		LSB								Integer (2 byte), Big Endian Motorola

9.2.2.2 Input data

No inputs

9.2.2.3 GSD-File

GSD file name	Remark
ibaF01n4.gsd	Transfer in one block with SFC (S7-400)
ibaF01n3.gsd	Transfer in three blocks with SFC (S7-300)
iba_0F01.gsd	Transfer as word (S7-300/400)

9.2.2.4 Applications

- ibaPDA
- ibaLogic
- System coupling SIMATIC S7
- SIMATIC TDC
- SIMADYN D

9.2.3 Mode 1 – PDA 32 Reals

This mode is used to read up to 32 real values and 32 digital signals from the Profibus (OUT 136 Bytes).

9.2.3.1 Output data

OUTPUT DATA										
Byte no.	Offset	Contents								Remark
1	**0**	Status								not used
2	**1**	Status								not used
3	**2**	Status								not used
4	**3**	Status								not used
5	**4**	7	6	5	4	3	2	1	0	Dig. outputs channel 0...7
6	**5**	15	14	13	12	11	10	9	8	Dig. outputs channel 8...15
7	**6**	23	22	21	20	19	18	17	16	Dig. outputs channel 16...23
8	**7**	31	30	29	28	27	26	25	24	Dig. outputs channel 24...31
9	**8**	MSB								Analog output channel 0 Real (4 byte), Big Endian Motorola
10										
11										
12		LSB								
13	**12**	MSB								Analog output channel 1 Real (4 byte), Big Endian Motorola
14										
15										
16		LSB								
	16									Analog outputs in total: 32 Longs (Real), Big Endian Motorola
133	**132**	MSB								Analog output channel 31 Real (4 byte), Big Endian Motorola
134										
135										
136		LSB								

Slave data space

9.2.3.2 Input data

No inputs

9.2.3.3 GSD File

GSD file name	Remark
iba_0F02.gsd	-

9.2.3.4 Applications

- ❑ ibaPDA
- ❑ ibaLogic
- ❑ System coupling
- ❑ SIMATIC TDC
- ❑ NO SIMATIC S7 (FW < 2.0 for S7-300, FW < 3.0 for S7-400), SIMADYN D

9.2.4 Mode 3 – PDA 28 Reals

This mode is used to read up to 28 real values and 32 digital signals from the Profibus (OUT 120 Bytes) from a SIMATIC S7 as Profibus master. Due to limitations of the S7 real data type only 28 values can be used.

9.2.4.1 Output data

OUTPUT DATA			
Byte no.	Offset	Contents	Remark
1	**0**	Status	not used
2	**1**	Status	not used
3	**2**	Status	not used
4	**3**	Status	not used
5	**4**	7 6 5 4 3 2 1 0	Dig. outputs channel 0...7
6	**5**	15 14 13 12 11 10 9 8	Dig. outputs channel 8...15
7	**6**	23 22 21 20 19 18 17 16	Dig. outputs channel 16...23
8	**7**	31 30 29 28 27 26 25 24	Dig. outputs channel 24...31
9	**8**	MSB	Analog output channel 0 Real (4 byte), Big Endian Motorola
10			
11			
12		LSB	
13	**12**	MSB	Analog output channel 1 Real (4 byte), Big Endian Motorola
14			
15			
16		LSB	
	16		Analog outputs in total: 28 Longs (Real), Big Endian Motorola
117	**116**	MSB	Analog output channel 27 Real (4 byte), Big Endian Motorola
118			
119			
120		LSB	

Slave data space

9.2.4.2 Input data

No inputs

9.2.4.3 GSD File

GSD file name	Remark
ibaF04n4.gsd	Transfer in one block with SFC (S7-400)
ibaF04n3.gsd	Transfer in four blocks with SFC (S7-300)
iba_0F04.gsd	Transfer as double word (S7-300/400)

9.2.4.4 Applications

- ibaPDA
- ibaLogic
- System coupling
- SIMATIC S7
- SIMATIC TDC
- SIMADYN D

9.2.5 Mode 5 – INPUT 32 Integers

This mode is used to write up to 32 integer values and 32 digital signals to the Profibus (IN 72 Bytes/OUT 4 Bytes).

9.2.5.1 Output data

OUTPUT DATA			
Byte no.	Offset	Contents	Remark
1	**0**	Status	not used
2	**1**	Status	not used
3	**2**	Status	not used
4	**3**	Status	not used

9.2.5.2 Input data

INPUT DATA										
Byte no.	Offset	Contents								Remark
1	**0**	FO message counter-A								incremented by each new FO message
2	**1**	FO reception status								**Bit 7**:FO reception OK; **Bit 3**: 0 = integer, 1 = real
3	**2**	7	6	5	4	3	2	1	0	Dig. inputs channel 0...7
4	**3**	15	14	13	12	11	10	9	8	Dig. inputs channel 8...15
5	**4**	23	22	21	20	19	18	17	16	Dig. inputs channel 16...23
6	**5**	31	30	29	28	27	26	25	24	Dig. inputs channel 24...31
7	**6**	MSB								Analog input channel 0
8		LSB								Integer (2 byte), Big Endian Motorola
9	**8**	MSB								Analog input channel 1
10		LSB								Integer (2 byte), Big Endian Motorola
	12									Analog inputs in total: 32 Words (16-bit integer), Big Endian Motorola
69	**68**	MSB								Analog input channel 31
70		LSB								Integer (2 byte), Big Endian Motorola
71	**70**	Device-ID of FO transmitter								see list of iba device-IDs
72	**71**	FO message counter-B								incremented by each new FO message

Slave data space

9.2.5.3 GSD File

GSD file name	Remark
ibaF00n4.gsd	Transfer in one block with SFC (S7-400)
ibaF00n3.gsd	Transfer in three blocks with SFC (S7-300)

9.2.5.4 Applications

- ibaLogic
- System coupling
- SIMATIC S7
- SIMATIC TDC
- SIMADYN D

9.2.6 Mode 6 – INPUT 32 Reals

This mode is used to write up to 32 real values and 32 digital signals to the Profibus (IN 136 Bytes/OUT 4 Bytes).

9.2.6.1 Output data

OUTPUT DATA			
Byte no.	Offset	Contents	Remark
1	**0**	Status	not used
2	**1**	Status	not used
3	**2**	Status	not used
4	**3**	Status	not used

9.2.6.2 Input data

INPUT DATA			
Byte no.	Offset	Contents	Remark
1	**0**	FO message counter-A	incremented by each new FO message
2	**1**	FO reception status	**Bit 7**:FO reception OK; **Bit 3**: 0 = integer, 1 = real
3	**2**	7 6 5 4 3 2 1 0	Dig. inputs channel 0...7
4	**3**	15 14 13 12 11 10 9 8	Dig. inputs channel 8...15
5	**4**	23 22 21 20 19 18 17 16	Dig. inputs channel 16...23
6	**5**	31 30 29 28 27 26 25 24	Dig. inputs channel 24...31
7	**6**	MSB	Analog input channel 0 Real (4 byte), Big Endian Motorola
8			
9			
10		LSB	
11	**10**	MSB	Analog input channel 1 Real (4 byte), Big Endian Motorola
12			
13			
14		LSB	
	14		Analog inputs in total: 32 Longs (Real), Big Endian Motorola
131	**130**	MSB	Analog input channel 31 Real (4 byte), Big Endian Motorola
		LSB	
135	**134**	Device-ID of FO transmitter	see list of iba device-IDs
136	**135**	FO message counter-B	incremented by each new FO message

Slave data space

9.2.6.3 GSD File

GSD File name	Remark
iba_0F06.gsd	-

9.2.6.4 Applications

- ibaLogic
- System coupling
- SIMATIC TDC
- NO SIMATIC S7 (FW < 2.0 for S7-300, FW < 3.0 for S7-400), SIMADYN D

9.2.7 Mode 7 – INPUT 28 Reals

This mode is used to write up to 28 real values and 32 digital signals to a SIMATIC S7 (resp. TDC, SD) as Profibus master. Due to limitations of the SIMATIC real data type only 28 values can be used (IN 122 Bytes/OUT 4 Bytes).

9.2.7.1 Output data

OUTPUT DATA			
Byte no.	Offset	Contents	Remark
1	**0**	Status	not used
2	**1**	Status	not used
3	**2**	Status	not used
4	**3**	Status	not used

9.2.7.2 Input data

INPUT DATA										
Byte no.	Offset	Contents								Remark
1	**0**	FO message counter-A								incremented by each new FO message
2	**1**	FO reception status								**Bit 7**:FO reception OK; **Bit 3**: 0 = integer, 1 = real
3	**2**	reserved								
4		reserved								
5	**4**	7	6	5	4	3	2	1	0	Dig. inputs channel 0...7
6	**5**	15	14	13	12	11	10	9	8	Dig. inputs channel 8...15
7	**6**	23	22	21	20	19	18	17	16	Dig. inputs channel 16...23
8	**7**	31	30	29	28	27	26	25	24	Dig. inputs channel 24...31
9	**8**	MSB								Analog input channel 0 Real (4 byte), Big Endian Motorola
10										
11										
12		LSB								
13	**12**	MSB								Analog input channel 1 Real (4 byte), Big Endian Motorola
14										
15										
16		LSB								
	16									Analog inputs in total: 28 Longs (Real), Big Endian Motorola
117	**116**	MSB								Analog input channel 27 Real (4 byte), Big Endian Motorola
		LSB								
121	**120**	Device-ID of FO transmitter								see list of iba device-IDs
122	**121**	FO message counter-B								incremented by each new FO message

Slave data space

9.2.7.3 GSD File

GSD file name	Remark
ibaF07n4.gsd	Transfer in one block with SFC (S7-400)
ibaF07n3.gsd	Transfer in four blocks with SFC (S7-300)

9.2.7.4 Applications

- ibaLogic
- System coupling
- SIMATIC S7
- SIMATIC TDC
- SIMADYN D

9.2.8 Mode 8 – IN-OUT 32 Integers

This mode is used to read / write up to 32 integer values and 32 digital signals from / to a Profibus master (IN 72 Bytes / OUT 72 Bytes).

9.2.8.1 Output data

OUTPUT DATA										
Byte no.	Offset	Contents								Remark
1	**0**	Status								not used, fill with zero
2	**1**	Status								not used, fill with zero
3	**2**	7	6	5	4	3	2	1	0	Dig. outputs channel 0...7
4	**3**	15	14	13	12	11	10	9	8	Dig. outputs channel 8...15
5	**4**	23	22	21	20	19	18	17	16	Dig. outputs channel 16...23
6	**5**	31	30	29	28	27	26	25	24	Dig. outputs channel 24...31
7	**6**	MSB								Analog output channel 0
8		LSB								Integer (2 byte), Big Endian Motorola
9	**8**	MSB								Analog output channel 1
10		LSB								Integer (2 byte), Big Endian Motorola
Slave data space	**10**									Analog outputs in total: 32 Words (16-bit integer), Big Endian Motorola
69	**68**	MSB								Analog output channel 31
70		LSB								Integer (2 byte), Big Endian Motorola
71	**70**	Status								customized functions possible (e.g. status, watchdog etc.)
72		Status								

9.2.8.2 Input data

INPUT DATA										
Byte no.	Offset	Contents								Remark
1	**0**	FO message counter-A								incremented by each new FO message
2	**1**	FO reception status								**Bit 7**:FO reception OK; **Bit 3**: 0 = integer, 1 = real
3	**2**	7	6	5	4	3	2	1	0	Dig. inputs channel 0...7
4	**3**	15	14	13	12	11	10	9	8	Dig. inputs channel 8...15
5	**4**	23	22	21	20	19	18	17	16	Dig. inputs channel 16...23
6	**5**	31	30	29	28	27	26	25	24	Dig. inputs channel 24...31
7	**6**	MSB								Analog input channel 0
8		LSB								Integer (2 byte), Big Endian Motorola
9	**8**	MSB								Analog input channel 1
10		LSB								Integer (2 byte), Big Endian Motorola
Slave data space	**12**									Analog inputs in total: 32 Words (16-bit integer), Big Endian Motorola
69	**68**	MSB								Analog input channel 31
70		LSB								Integer (2 byte), Big Endian Motorola
71	**70**	Device-ID of FO transmitter								see list of iba device-IDs
72	**71**	FO message counter-B								incremented by each new FO message

9.2.8.3 GSD File

GSD file name	Remark
ibaF08n4.gsd	Transfer in one block with SFC (S7-400)
ibaF08n3.gsd	Transfer in three blocks with SFC (S7-300) with SFC (S7-300)
iba_0F08.gsd	Transfer as Word (S7-300/400)

9.2.8.4 Applications

- ibaLogic
- System coupling
- SIMATIC S7
- SIMATIC TDC
- SIMADYN D

9.2.9 Mode 9 – IN-OUT 32 Reals

This mode is used to read / write up to 32 real values and 32 digital signals from/to a Profibus master (IN 136 Bytes/OUT 136 Bytes).

9.2.9.1 Output data

OUTPUT DATA			
Byte no.	Offset	Contents	Remark
1	**0**	not used	
2		not used	
3	**2**	7 6 5 4 3 2 1 0	Dig. outputs channel 0...7
4	**3**	15 14 13 12 11 10 9 8	Dig. outputs channel 8...15
5	**4**	23 22 21 20 19 18 17 16	Dig. outputs channel 16...23
6	**5**	31 30 29 28 27 26 25 24	Dig. outputs channel 24...31
7	**6**	MSB	Analog output channel 0 Real (4 byte), Big Endian Motorola
8			
9			
10		LSB	
11	**10**	MSB	Analog output channel 1 Real (4 byte), Big Endian Motorola
12			
13			
14		LSB	
	14		Analog outputs in total: 32 Longs (Real), Big Endian Motorola
131	**130**	MSB	Analog output channel 31 Real (4 byte), Big Endian Motorola
		LSB	
135	**134**	not used	customized functions possible (e.g. status, watchdog etc.)
136	**135**	not used	

Slave data space

9.2.9.2 Input data

INPUT DATA										
Byte no.	Offset	Contents								Remark
1	**0**	FO message counter-A								incremented by each new FO message
2	**1**	FO reception status								**Bit 7**:FO reception OK; **Bit 3**: 0 = integer, 1 = real
3	**2**	7	6	5	4	3	2	1	0	Dig. inputs channel 0...7
4	**3**	15	14	13	12	11	10	9	8	Dig. inputs channel 8...15
5	**4**	23	22	21	20	19	18	17	16	Dig. inputs channel 16...23
6	**5**	31	30	29	28	27	26	25	24	Dig. inputs channel 24...31
7	**6**	MSB								Analog input channel 0 Real (4 byte), Big Endian Motorola
8										
9										
10		LSB								
11	**10**	MSB								Analog input channel 1 Real (4 byte), Big Endian Motorola
12										
13										
14		LSB								
	14									Analog inputs in total: 32 Longs (Real), Big Endian Motorola
131	**130**	MSB								Analog input channel 31 Real (4 byte), Big Endian Motorola
		LSB								
135	**134**	Device-ID of FO transmitter								see list of iba device-IDs
136	**135**	FO message counter-B								incremented by each new FO message

Slave data space

9.2.9.3 GSD File

GSD file name	Remark
iba_0F09.gsd	-

9.2.9.4 Applications

- ibaLogic
- System coupling
- SIMATIC TDC
- No SIMATIC S7 (FW < 2.0 for S7-300, FW < 3.0 for S7-400), SIMADYN D

9.2.10 Mode B – IN-OUT 28 Reals

This mode is used to read / write up to 28 real values and 32 digital signals from / to a SIMATIC S7 (resp. TDC, SD) as Profibus master. Due to limitations of the SIMATIC real data type only 28 values can be used (IN 122 Bytes/OUT 122 Bytes).

9.2.10.1 Output data

OUTPUT DATA										
Byte no.	Offset	Contents								Remark
1	**0**	not used								
2	**1**	not used								
3	**2**	not used								
4	**3**	not used								
5	**4**	7	6	5	4	3	2	1	0	Dig. outputs channel 0...7
6	**5**	15	14	13	12	11	10	9	8	Dig. outputs channel 8...15
7	**6**	23	22	21	20	19	18	17	16	Dig. outputs channel 16...23
8	**7**	31	30	29	28	27	26	25	24	Dig. outputs channel 24...31
9	**8**	MSB								Analog output channel 0 Real (4 byte), Big Endian Motorola
10										
11										
12		LSB								
Slave data space	**12**									Analog outputs in total: 28 Longs (Real), Big Endian Motorola
117	**116**	MSB								Analog output channel 27 Real (4 byte), Big Endian Motorola
118										
119										
120		LSB								
121	**120**	not used								customized functions possible (e.g. status, watchdog etc.)
122	**121**	not used								

9.2.10.2 Input data

INPUT DATA										
Byte no.	Offset	Contents								Remark
1	**0**	FO message counter-A								incremented by each new FO message
2	**1**	FO reception status								**Bit 7**:FO reception OK; **Bit 3**: 0 = integer, 1 = real
3	**2**	reserved								
4		reserved								
5	**4**	7	6	5	4	3	2	1	0	Dig. inputs channel 0...7
6	**5**	15	14	13	12	11	10	9	8	Dig. inputs channel 8...15
7	**6**	23	22	21	20	19	18	17	16	Dig. inputs channel 16...23
8	**7**	31	30	29	28	27	26	25	24	Dig. inputs channel 24...31
9	**8**	MSB								Analog input channel 0 Real (4 byte), Big Endian Motorola
10										
11										
12		LSB								
Slave data space	**12**									Analog inputs in total: 28 Longs (Real), Big Endian Motorola
117	**116**	MSB								Analog input channel 27 Real (4 byte), Big Endian Motorola
		LSB								
121	**120**	Device-ID of FO transmitter								see list of iba device-IDs
122	**121**	FO message counter-B								incremented by each new FO message

9.2.10.3 GSD File

GSD file name	Remark
ibaF0Bn4.gsd	Transfer in one block with SFC (S7-400)
ibaF0Bn3.gsd	Transfer in four blocks with SFC (S7-300)

9.2.10.4 Applications

- ibaLogic
- System coupling
- SIMATIC S7
- SIMATIC TDC
- SIMADYN D

9.3 Communication Channels

9.3.1 Ethernet TCP/IP Interface

The Ethernet TCP/IP interface on the bottom of the device is used to transfer the configuration data (device parameters) from and to the PC.

Each ibaBM-DPM-S-64 device has its own MAC address as ID in the network.

The MAC address is indicated on the type plate located on the rear of the device.

↗ For more information see chapter „View of the Device, Controls and Connectors “, page 14.

Furthermore, each device has a unique name so that it can be uniquely identified and addressed.

The name has the following structure: **dpms**_***nnnn***

nnnn represents the last four digits of the MAC address.

Example: The device with the MAC address 0015BA000101 has the name dpms_0101.

You can set a permanent IP address in the web interface (see chapter 10.1.2). Here you can select whether DHCP (dynamic IP address allocation) is to be used or set the IP address. If a DHCP server is available in the local network, we recommend the factory setting DHCP.

↗ For more information see chapter „General application“, page 51.

If the device has been set to dynamic IP address, or if it is entered in a name server, the device can always be addressed with its unique name.

After the device is connected to an active network, a DHCP server is searched automatically, if DHCP is enabled, to find an IP address ("Auto-IP").

Tips for establishing a connection

Depending on the existing PC network configuration the following steps should be performed:

- ❑ Your PC is connected to a network with a DHCP server which is dispatching the IP addresses; the network interface of your PC is set “Get IP address from DHCP server”:
  Connect the ibaBM-DPM-S-64 device to the network and you get immediate access to the device.
- ❑ Your PC is connected to a network without a DHCP server and all stations in the network have a fixed IP address:
  You first have to disable the DHCP mode of the Ethernet interface of the device by connecting via USB to the device and enter an IP address which is compatible to your network. After, you’ll also have access to the web interface of the device via Ethernet.
- ❑ You want to connect the device directly with your PC and you have a fixed IP address in the network interface of your PC:
  You first have to disable the DHCP mode of the Ethernet interface of the device by connecting via USB to the device and enter an IP address which is compatible to your network. After, you’ll also have access to the web interface of the device via Ethernet.

- ❑ You want to connect the device directly with your PC and the network adapter in your PC is set to “Get IP address from DHCP server”.
  After you have connected the device with the PC it takes approximately one minute until the communication is established. During this time you’ll see a message “get network address” in the status field for the network connection on your PC. After, you’ll also have access to the web interface of the device via Ethernet.

Tip

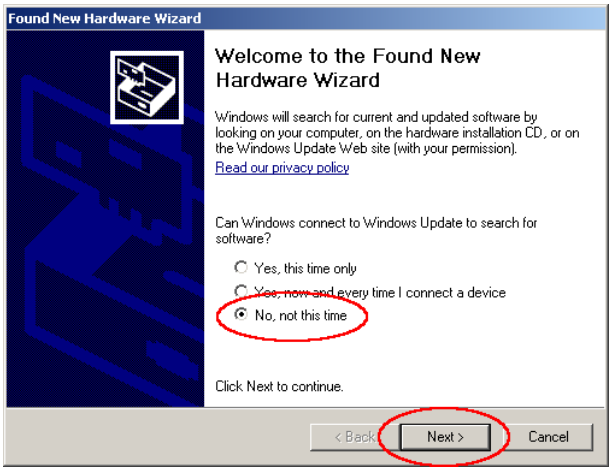
For a direct link between the device and your PC, i. e. without hub or switch, you should use a cross-over Ethernet cable.

9.3.2 USB Interface

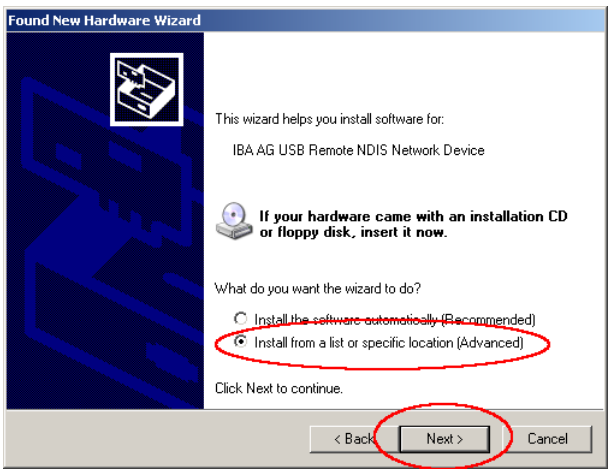
The USB interface is located on the bottom side of the device, too, and can also be used for configuration data. The procedure is basically the same like described for the Ethernet TCP/IP interface.

As soon as the PC or laptop computer is connected for the first time over the USB interface by a standard USB cable (A/B), the “Found New Hardware Wizard” will show up.

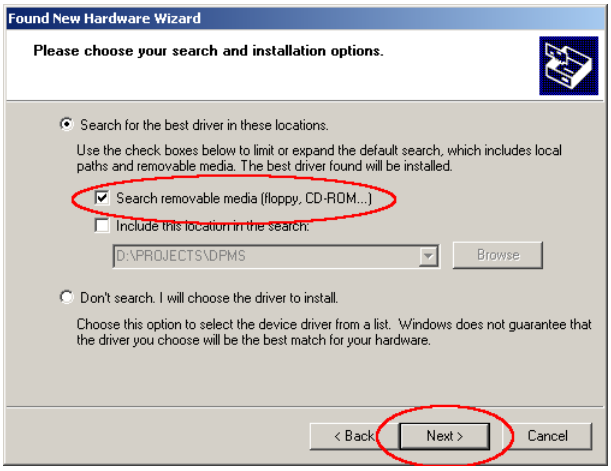
1. Choose „No, not this time“ in the dialog box and click on <Next>.



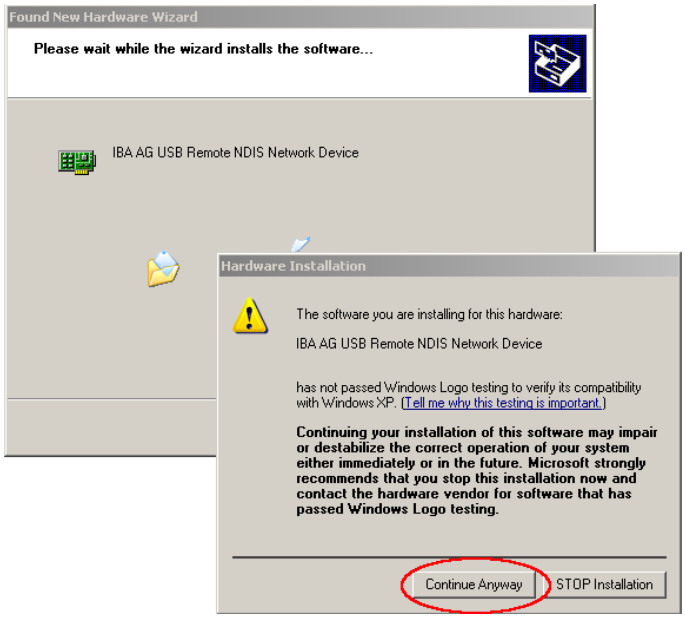
2. In the following dialog choose „Install from a list or specific location..“ and click on <Next>.



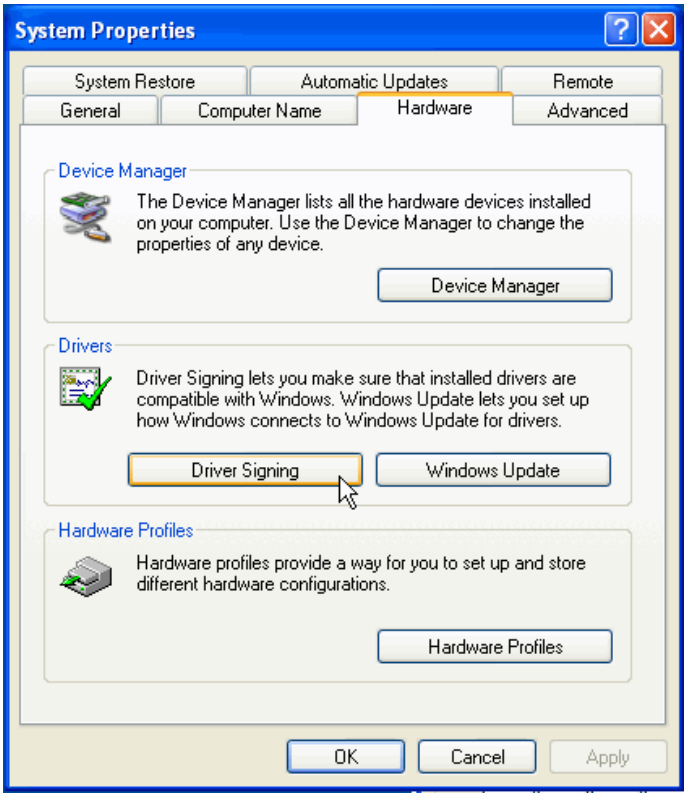
3. Choose „Search for the best driver in these locations“ and check „Search removable media...“. Insert the delivered CD-ROM into your CD drive and click on <Next>. The driver for „IBA AG USB Remote NDIS Network Device“ will be found.

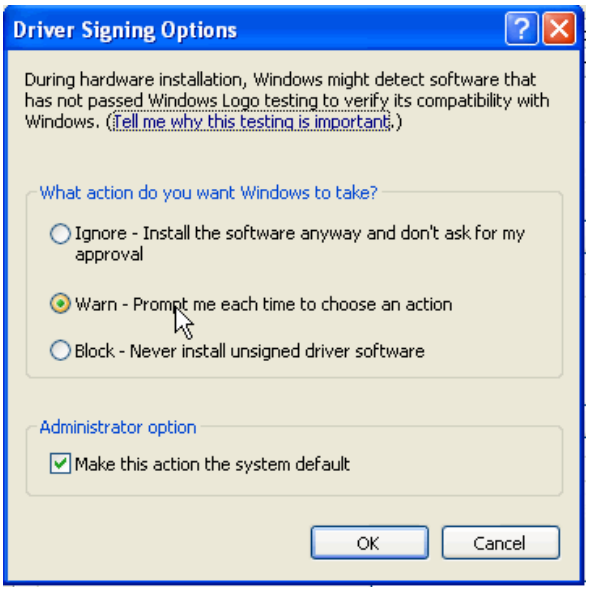


4. The message box which points out that „The software you are installing... has not passed the Windows Logo testing..” is typical can be closed by click on <Continue Anyway> because it’s not dangerous.

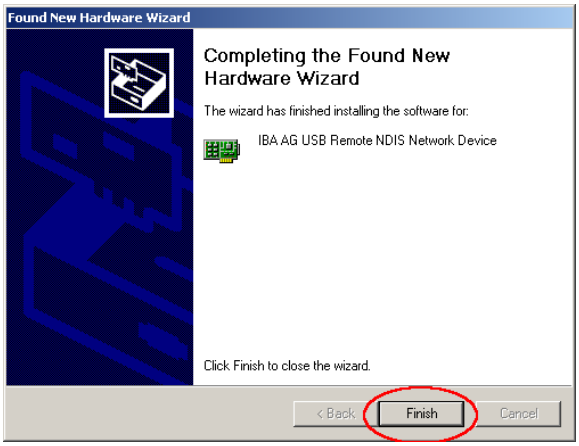


If this message does not appear and you cannot continue the installation, check the security settings for the driver signing. They should be as follows:

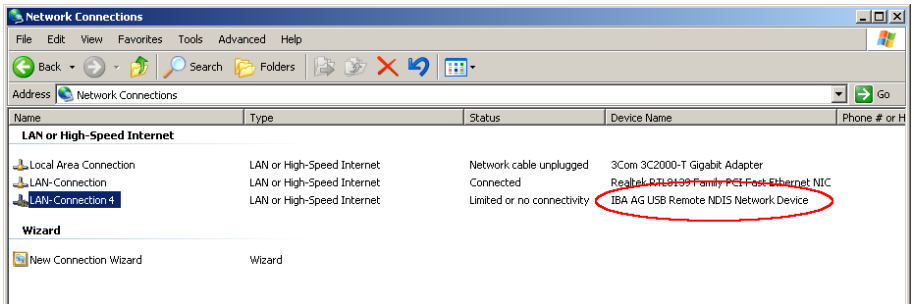




5. After copying the required files click on <Finish>.

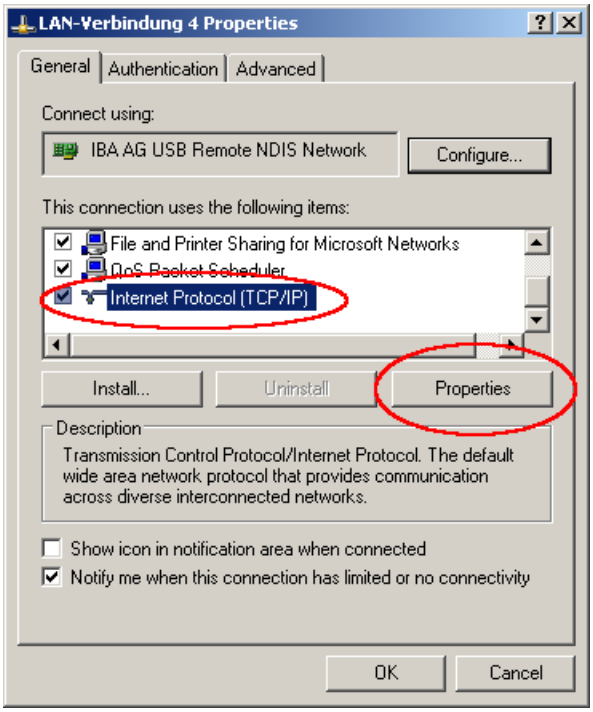


Now the USB interface is available as an additional Ethernet interface to the device. You should now configure the interface in order to establish a communication to the device over the USB cable. Therefore, choose “Settings” in the Windows Start menu and then “Control Panel”. There open “Network Connections” to see a list of available network connections.

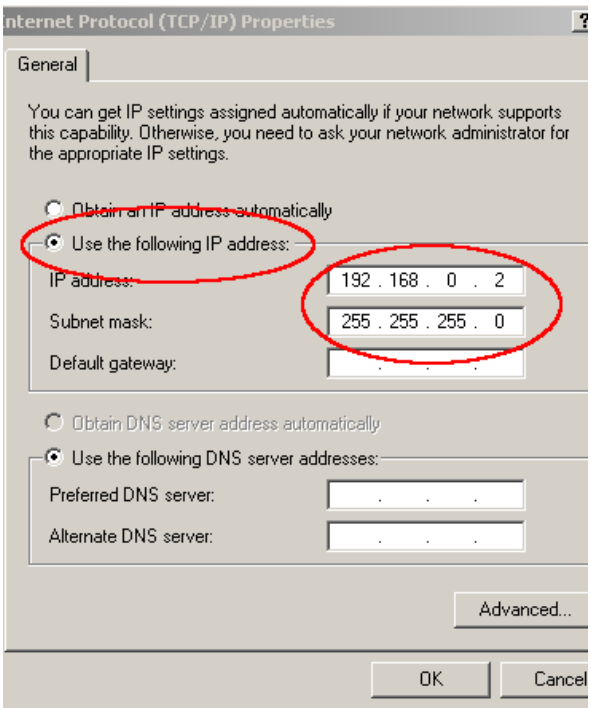


There, in section “LAN or High-Speed Internet” you’ll find a LAN connection with the device name “IBA AG USB Remote NDIS Network Device”. Highlight this line and select “Properties” from the “File” menu. A new dialog box “LAN-connection... Properties“ will open.

6. Look for entry „Internet Protocol (TCP/IP) and highlight it. Click on <Properties>. A new dialog box “Internet Protocol (TCP/IP) Properties” will open.



7. Choose „Use the following IP address“ and enter the address “192.168.0.2” into the field “IP address” and the value “255.255.255.0” into the field “Subnet mask”.



8. Then close this dialog and the previous one by click on <OK>.
Now you can parameterize the device over USB.
The default IP address for TCP/IP over USB in the device is 192.168.0.1.

10 Configuration by Means of the Web Interface

To assist you during parameterization, the device has its own web server. Once the Ethernet connection between the device and the PC has been established, you can access the device from your Internet browser (Internet Explorer, Mozilla Firefox etc.). Suitable web pages for parameterization are stored in the device.

10.1 Access to the Web Interface

1. After you have connected PC and ibaBM-DPM-S-64 via Ethernet or USB start the Internet Explorer.
2. Type in the internet address (URL) of the device:

When connection via…	then URL…
USB interface	http://192.168.0.1
Ethernet interface (if a DHCP server is available in the network)	http://dpms_nnnn nnnn = last four digits of the MAC address (see label on device

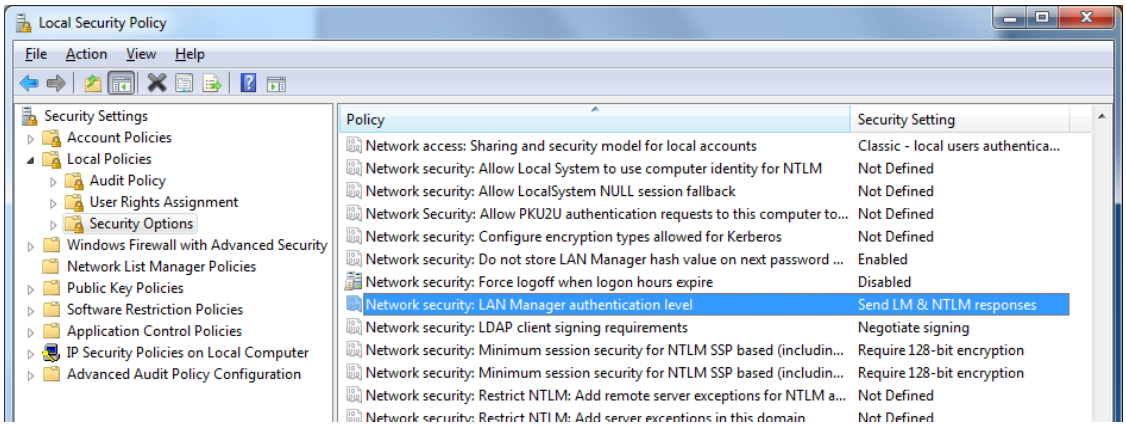
Important note

When working under Windows 7, you might get no access to the Website, although a connection is established. Please check or change the following parameters in the Windows security settings:

Path: Local Security policy “Security settings - Local policies - Security options”

Parameter: Network security: LAN manager authentication level

Value: “Send LM & NTLM responses”



Note

Depending on the security level settings of the Internet Explorer it might be necessary to add the address http://dpms_nnnn/diag to the trusted sites.

The first time you access the web interface you will be prompted to enter a username and password to prevent unauthorized access.

The device recognizes 2 users for operating the web interface (input without quotation mark):

User	Rights	User name	Password
Normal user	Makes settings for analog and digital values as well as active slaves and operational mode of device.	dpms	dpms
Administrator	In addition to the above mentioned: change the network parameters and the passwords of the two users, execute firmware updates.	admin	dpms

The „admin“ user should only be assigned to experienced users. As network parameters might be changed accidentally, access to the device via Ethernet would no longer be possible. You would have to reset the configuration to default values. For this reason, you should only use the user "admin" if you wish to change the network parameters.

Note

You can reset the passwords to default values, e.g. if you have forgotten the password. For further information, see chapter 7.3.7.

After login with the user name mentioned above, the home page opens.

10.1.1 Home page - Info

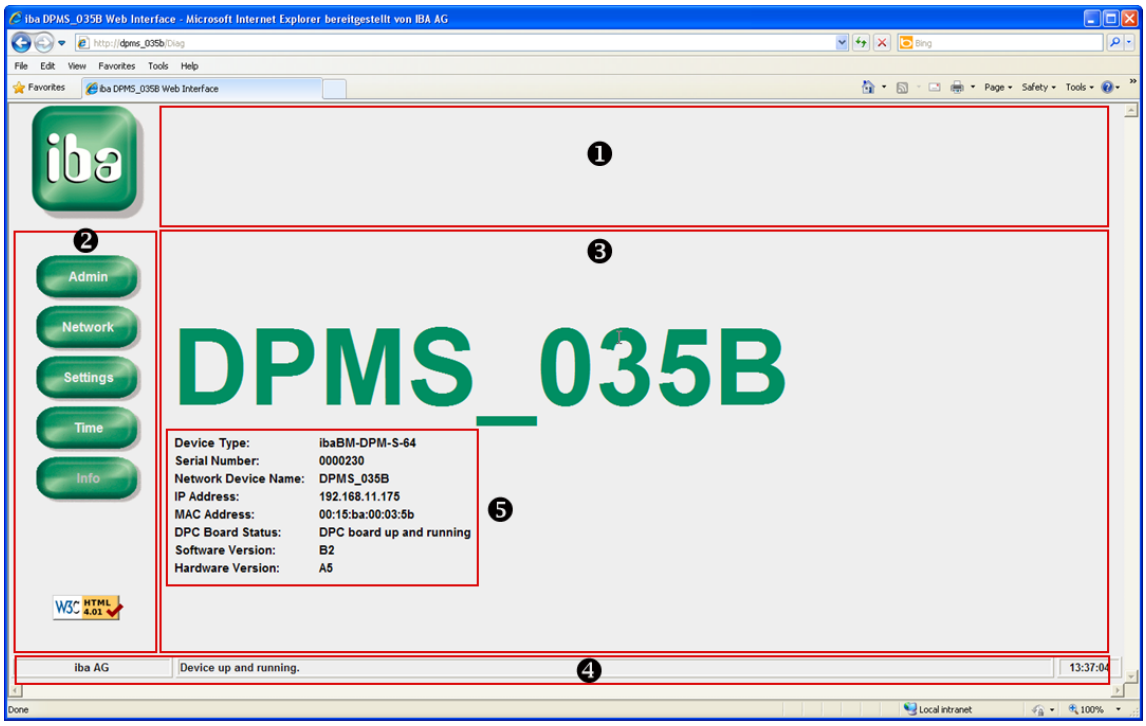


Figure 8: Web interface – Homepage Info

The web pages all have the same basic layout:

The header section ❶ on the upper part of the page contains information about the currently selected page. The navigation section ❷ provides buttons for selecting the individual web pages. The pages information section ❸ provides the desired information of the selected web page and permits data entry whenever necessary. The status line ❹ provides information about the device status and the current device time. Due to system restrictions, the status information is not continually updated: the information is only updated each time the web page is refreshed.

The home page provides additional information ❺ about the device:

- ❑ Device type
- ❑ Serial number
- ❑ Device name in the network (required for automatic network address assignment by DHCP server)
- ❑ Network IP address of the device
- ❑ MAC address (hardware network address) of Ethernet access point
- ❑ Status of Profibus controller board
- ❑ Software version
- ❑ Hardware version

You can go to the homepage from any other website by clicking the <Home> button.

10.1.2 Network Configuration Data

Clicking the <Network> button in the navigation section takes you to the configuration data of the network accesses.

You must be logged in as “admin” in order to change network settings.

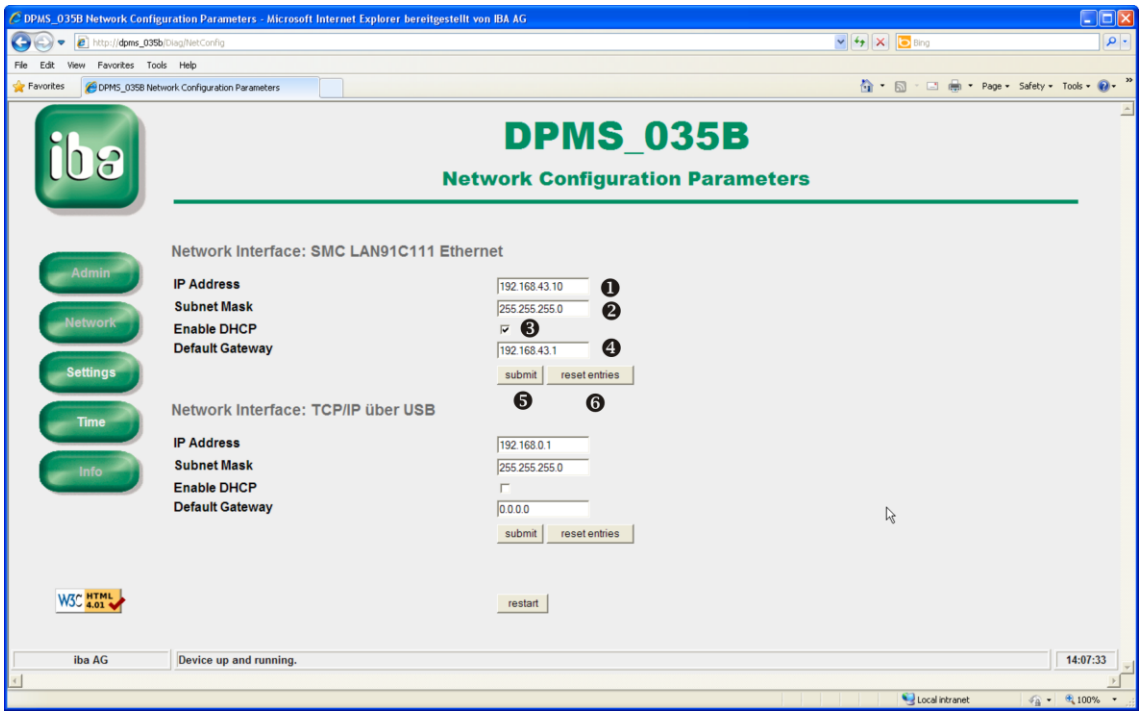


Figure 9: Web interface - Page with network settings

This page shows all network adapters of the device. You can set the IP address❶, the appropriate network subnet mask ❷ and the default gateway ❹ for each adapter. Furthermore, you can select if an existing DHCP server in the network is to be used ❸.

Click the <Submit> button ❺ to save the entries for the appropriate network adapter. <Reset entries> ❻ deletes the entries.

The network settings will not take effect until you have restarted the device. The device can be restarted either by turning it off and then back on or by clicking the <Restart> button ❼.

Important note

In case of wrong entries, it may occur that you lose access after restart!

Tip

There is a possibility to reset the network parameters to default values.

↗ For more information see chapter „Switches S1 and S2 “, page 16.

Note

Due to the simple point-to-point connection and the considerable slower establishing of connection we recommend avoiding the use of DHCP in conjunction with USB.

10.1.3 Setup of Mode and Station Number

To go to the mode of operation data, click the <Settings> button in the navigation section. This page is divided into several subpages which can be selected by clicking the tabs. The page has the following layout:

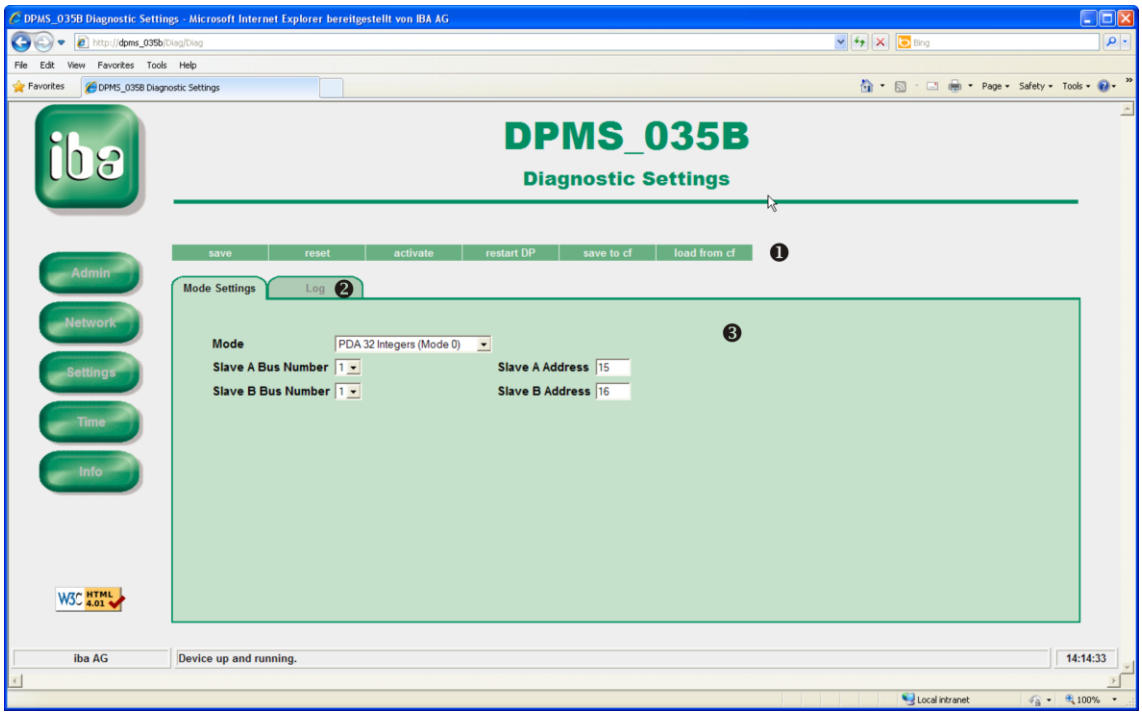


Figure 10: Web interface - Page with mode settings

The buttons in section ❶ apply to all diagnostic values. Here you can select the following functions:

Working with current configuration:

- ❑ "save": Saves the currently selected values to internal CSV files
- ❑ "reset": Resets the values displayed to the values stored in the internal CSV files
- ❑ "activate": Activates the currently displayed values. The values are also saved in the internal CSV files (see above)
- ❑ „restart DP“: Saves and activates actual values and „search baud rate“

Working with a CompactFlash® card:

- ❑ "save to cf": Copies the internal CSV files to the CompactFlash® card into the directory DPMS
- ❑ "load from cf": Copies the CSV files from the CompactFlash® card into the internal file system. Thus, you can import the configuration permanently from the memory card into the device, enabling the device to operate without memory card later.
- ❑ The tabs located in section ❷ allow you to switch between the various types of settings. Here you can select:
  “Mode Settings”: The Setting of the mode of operation of the device
  "Log": Status information about the last activation.

The section (3) shows all configured values.

Click on the arrow in the combo box “mode” For mode setting and select the desired operating mode. The mode names correspond to those in chapter 9.2.1 ff.

- ❑ Make sure that the two slaves are assigned to the correct bus line (bus 0 – connector X40, bus 1 – connector X41). Enter for each slave the slave address, as they are given in DP project engineering.
- ❑ Permissible address range: 0 to 125

Note

When setting the value to „255“, you can deactivate the address of the slave.

Note

Difference to ibaBM-DPM-64

You can enter also station numbers which are not consecutive numbers.

You can separate the two Profibus connectors X40 and X41 by setting switch S6 to OFF position. Thus, you can measure on 2 different Profibus lines with one DP slave each.

10.1.4 Administrative Functions

The administrator’s page provides functions for changing passwords and updating firmware. The page is only accessible for “admin” user.

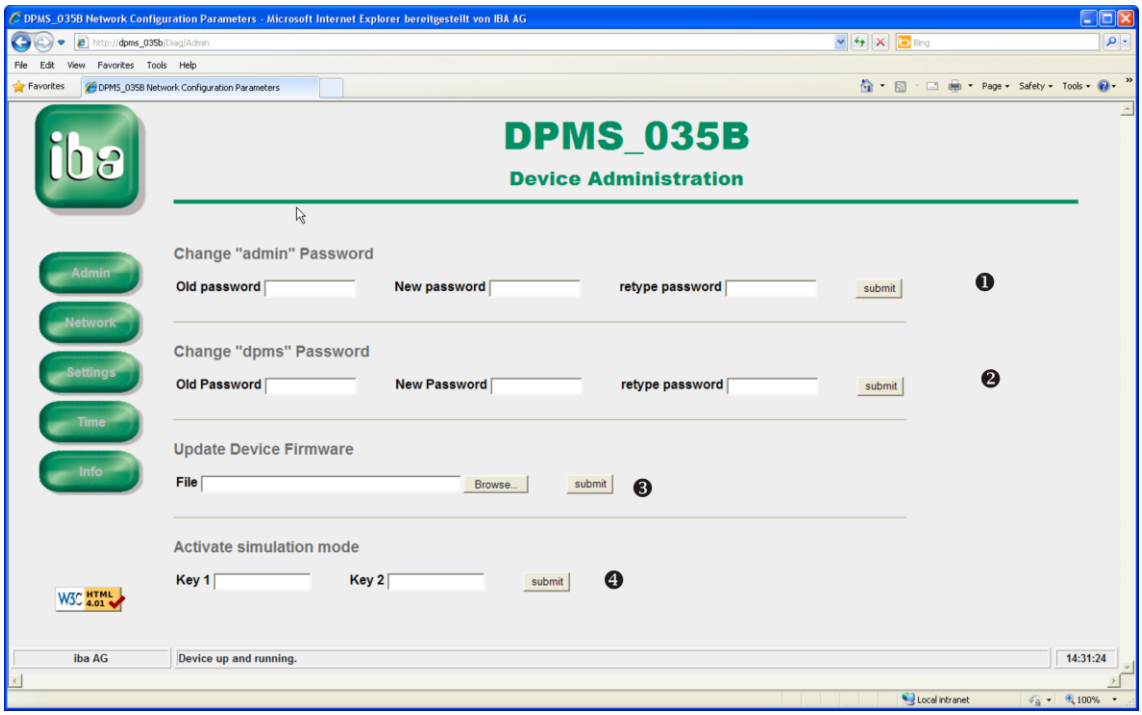


Figure 11: Web interface - Administrator’s page

In area ❶ you can change the password of user „admin“, in area ❷ the one of user „dpms“ (standard user). For safety reasons the current password must be entered first, then the new password should be entered twice. The default setting for both passwords is “dpms”. By means of the corresponding “submit” buttons the new password will be loaded into the device.

The function in area ❸ permits the update of firmware. Firmware updates will be released by iba AG when they are recommended due to technical development or improvement.

The area ❹ „Active simulation mode“ is a future expansion for ibaBM-DPM-S and has no function for ibaBM-DPM-S-64.

Update:

After you have received a firmware update from iba AG select the update file from the dialog box “browse” on the administrator’s page. Usually, it is a file with extension “.CAB”. The filename may be, for example, “update.SH4.CAB”.

Click on the <submit> button in order to load the update. The file will then be downloaded into the device, unpacked and installed.

Note

The installation may take several minutes. Don’t switch off the device in this time because this would interrupt the update process.

10.1.5 Time Function

On the “Time” page, you can define the system time. After having entered the time parameters, you can transfer the current time to the device by clicking on the <submit> button.

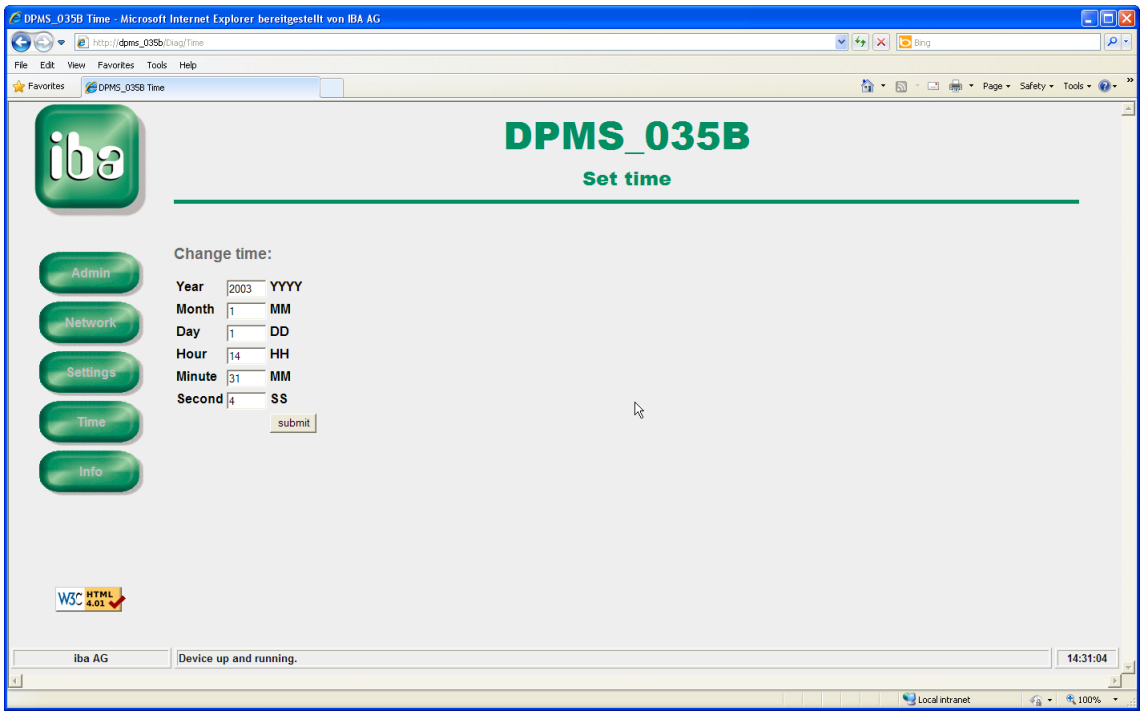


Figure 12: Web interface – Time function

11 Applications

11.1 General application

1. Install or copy the appropriate GSD file(s) on the Profibus master. The choice of GSD-file depends on the mode to be used.
   For more information see chapter „Modes of Operation and Data Types “, page 24.
2. By means of the master configuration program register the GSD-file(s) in order to assign the ibaBM-DPM-S-64 slaves.
3. Connect the ibaBM-DPM-S-64 physically with the DP line.

⚠ CAUTION

Connecting the Profibus cable
The PROFIBUS cable should be connected after proper completion of the active slave configuration only to ensure that the slave numbers do not exist twice. A conflict due to slaves with the same number can lead to a breakdown of the Profibus communication and finally to a complete standstill of the system.

4. Activate application-specific transfer programs in the master.
5. Connect the fiber optical links of the ibaBM-DPM-S-64 with the other application, e. g. ibaPDA, ibaLogic etc.

11.2 Applications with SIMATIC S7

In the following sections you will find a description of 2 very simple applications for uni- and for bidirectional communication with ibaBM-DPM-S-64 which show the principles in configuration and engineering.

The following remarks concerning applications with SIMATIC S7 basically apply also to SIMATIC TDC and SIMADYN D accordingly.

11.2.1 The first Test

11.2.1.1 SIMATIC S7 Application unidirectional (S7- 300)

An analog value (e.g. a temperature scaled with FC105 from S7 standard library) is to be transferred as a REAL-variable from S7-PLC to ibaBM-DPM-S-64.

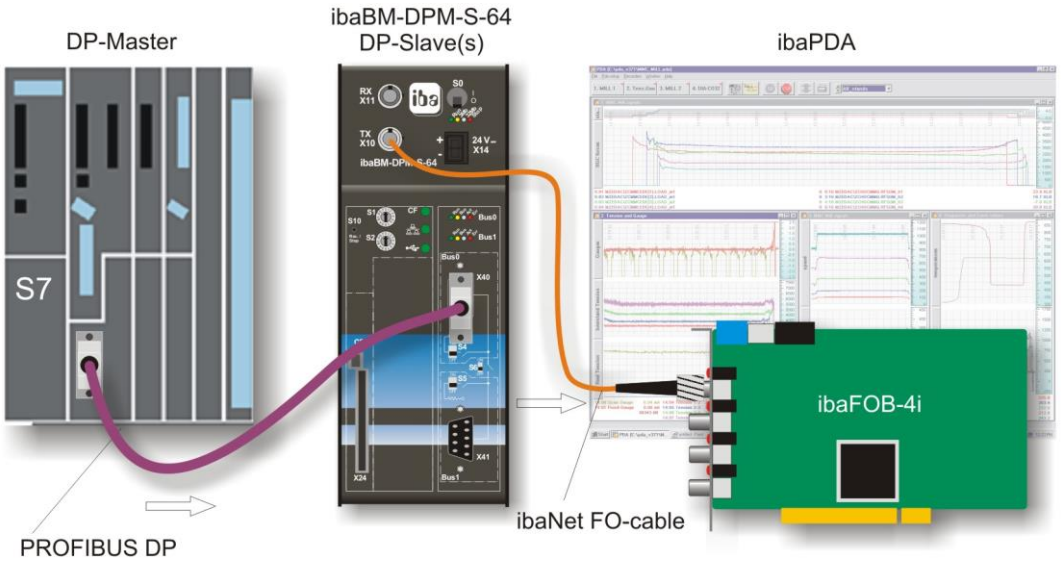


Figure 13: Connection between ibaBM-DPM-S-64 and ibaPDA

Step 1: FO connecting and cabling

Because ibaPDA is a passive application and thus only reads data from the Profibus, the modes 0, 1 and 3 are available.

1. Connect the fiber optical transmitting link (TX) on the ibaBM-DPM-S-64 with a receiving link on the FOB-card in the ibaPDA-PC.
2. Start the ibaPDA-software and define 2 SM64-modules in the “Module selection” menu of ibaPDA v 5.x or a module “DPM64” in the IO manager of ibaPDA-V6 respectively.
3. Start the diagnostics tool in ibaPDA v 5.x (<F12>) and select a SM64- module of the FOB-card in the tree structure. In ibaPDA-V6 mark in the IO manager the corresponding link under the FOB card in the signal tree.
   Without being connected to the Profibus line, the ibaBM-DPM-S-64 should send valid messages to ibaPDA. Using the diagnostics of ibaPDA or the software ibaDiag you should be able to watch the message counter running.
   As soon as the connection between the DP master and both slaves of ibaBM-DPM-S-64 has been established the “Bus” LED should light yellow and the “Act” LED white.

Step 2: GSD file installation and hardware configuration

1. Start the “HW Config” tool in the current S7-project and install the GSD-file named “ibaF04n3.gsd “.
2. In the web interface of the ibaBM-DPM-S-64 set the operation mode to mode 3 (PDA 28 Reals).
3. Open the “Profibus DP”- folder in the hardware catalog of "HW Config".

4. Connect an ibaBM-DPM-S-64-module with the Profibus line per Drag & Drop and set an even DP address (in the example 10) for this module.

Important note

The same address has to be set in the Webinterface of ibaBM-DPM-S-64!

5. If you want to use both slaves in ibaBM-DPM-S-64, connect another module to the Profibus line and assign the other address configured in the Web interface of the device to this module in the “HW Config” program.

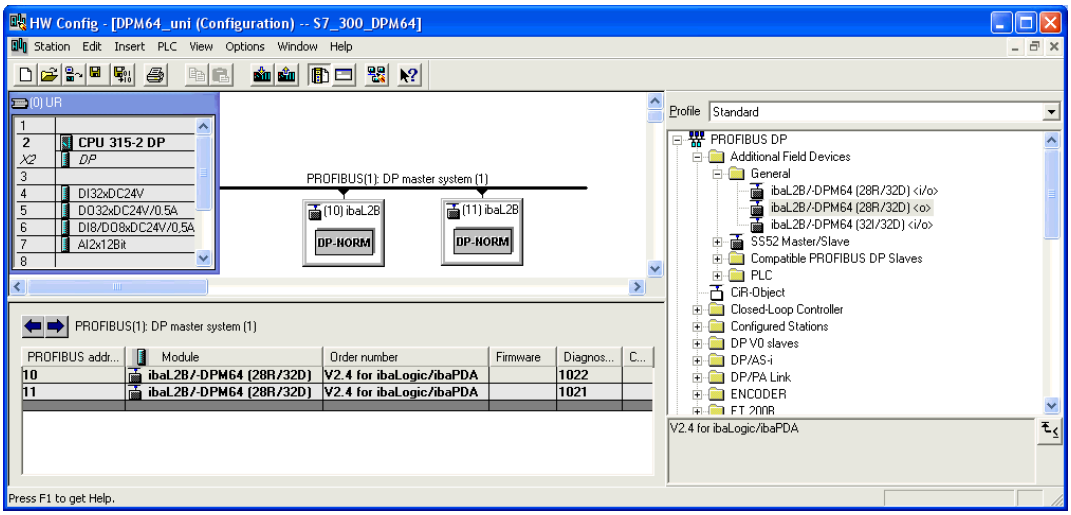


Figure 14: PLC S7 hardware configuration user interface HW Config

Step 3: Connecting **DP**

1. Connect the upper DP interface on the ibaBM-DPM-S-64 with the DP interface of your S7 PLC.
2. Activate the DP termination switch S4 on the ibaBM-DPM-S-64 if the device is the last in the DP line.
3. Download the system data to S7-PLC with HW Config and start the PLC.
4. As soon as the connection between the DP master and the slave(s) has been established via the Profibus line the “Bus“ LED should light yellow and the “Act” LED white.

Step 4: S7 test program

1. Enter the DB11 (or any free DB- number) into your S7-project.

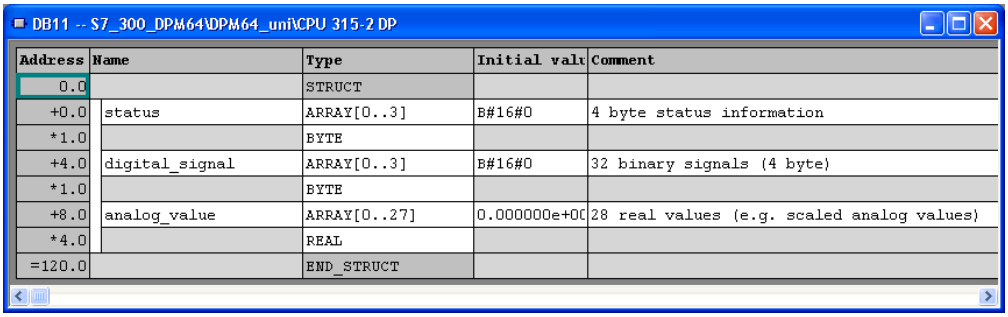


Figure 15: DB11 contains 120 byte data for DPM64

2. Define the local variables and call up FC105 and SFC15 (both blocks from S7 standard library) in OB1 or any other FC.
The scaled temperature (0.0 - 700.0 °C) is saved as a REAL-value
in DB 11.DBD8 (the first memory range for analog signals)!

```
OB1 :  "Main Program Sweep (Cycle)"
Network 1: static "0"- and static "1"- flag
          A     M      0.0
          R     M      0.0
          AN    M      0.1
          S     M      0.1


Network 2: reading in and scaling the temperature (from PIW 304)

          CALL  FC   105
           IN     :=PIW304                  //temperature (0-32767)
           HI_LIM :=7.000000e+002
           LO_LIM :=0.000000e+000
           BIPOLAR:=M0.0                    //static "0" -flag
           RET_VAL:=#error_code_fc105
           OUT    :=DB11.DBD8               //temperature (0-700 °C)


Network 3: DPM 64 connection (ibaPDA)
          CALL  SFC   15
           LADDR  :=W#16#200                //peripheral output- address (PQW) 512
           RECORD :=P#DB11.DBX0.0 BYTE 32   //starting address of data source length of data block (32 byte)
           RET_VAL:=#error_code_sfc15       //error code
          NOP   0
```

Figure 16: Example how to transfer a consistent range of 32 byte from S7 PLC (DB11) to DPM64 using SFC15

3. In your program you have to adjust the peripheral output-address in network 3 (LADDR-parameter) with the DP output addresses in the HW-configuration (column Q Address).

Note

Do not forget the offset of the data set in the Profibus message.

Example: In order to address the first analog value in mode 3, please consider an offset of 8 Bytes / 4 Words.

↗ For more information see chapter „Output data “, page 29

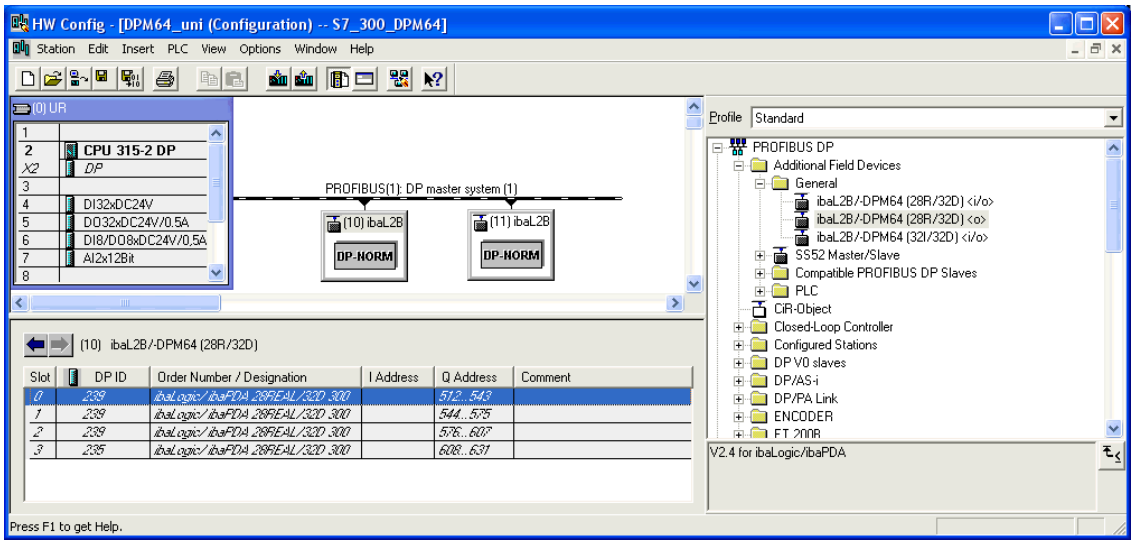


Figure 17: PLC S7 hardware configuration, Profibus slave address space

4. Now, download all modified blocks to PLC.

Step 5: ibaPDA setup and test

1. In step 1 you should have already defined two modules of type Sm64 in the Module selection dialog of ibaPDA (v 5.xx) or one module “DPM64” in the IO manager of ibaPDA-V6 respectively.
2. In the Module setup dialog of ibaPDA (v 5.xx), respectively in the signal tables of the DPM64-module in ibaPDA-V6, activate (check) the analog and digital channels of the module(s) and enter signal names or comments if required.
3. Configure a recorder window by using the recorder setup dialog (ibaPDA v 5.xx). Drag & Drop the desired signals into the list of signals to be displayed and set the recorder "visible". In ibaPDA-V6 Drag & Drop the signals from the signal tree into the signal monitor area.
4. Start measurement by click on the green <GO> button.
5. If all connections are done and if the S7 PLC sends data to the Profibus then signal curves should appear in the recorder window. If the signals are not displayed properly, please try Auto scale strip in the context menu after clicking in the strip where you expect the desired signal.

11.2.1.2 SIMATIC S7 and ibaLogic Application bidirectional (S7-300)

A temperature signal is to be transferred from S7-PLC to ibaLogic and a generator signal is to be transferred from ibaLogic to S7-PLC!

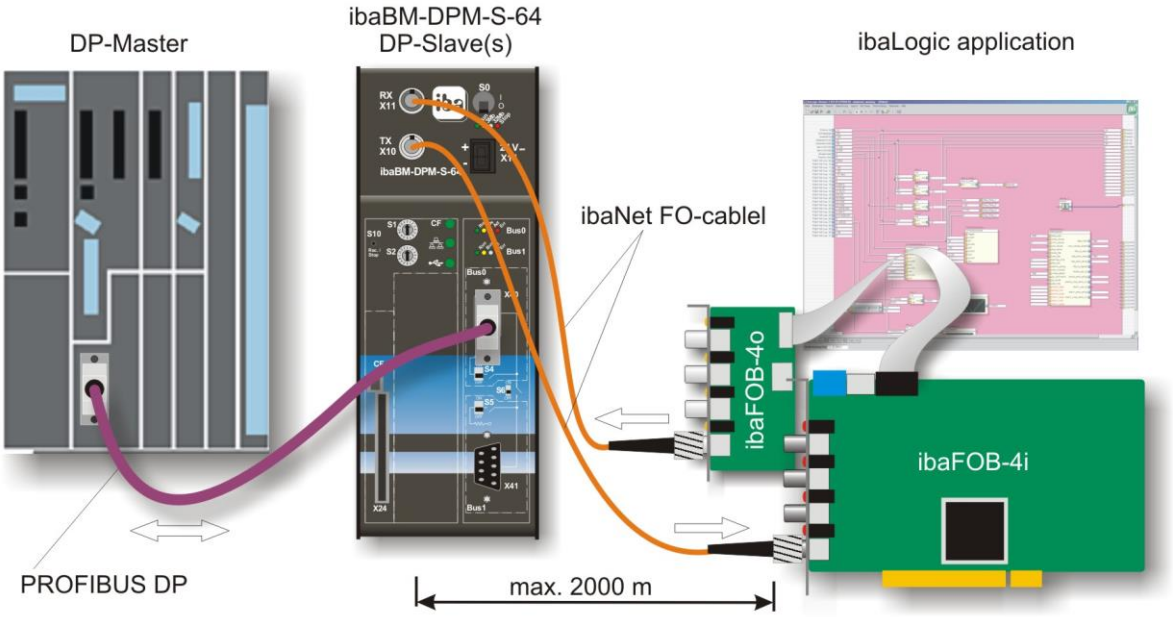


Figure 18: Testing configuration with ibaBM-DPM-S-64 and SIMATIC S7

Step 1: FO connecting and cabling

Because the data are to be transmitted in two directions, the bidirectional modes 8 and B are available.

1. Take a duplex fiber optic cable and connect the transmitting link (TX) on the ibaBM-DPM-S-64 with a receiving link of the ibaFOB-io-S and the receiving link (RX) on the ibaBM-DPM-S-64 with a transmitting link of the ibaFOB-io-S.

Step 2: GSD-installation and hardware configuration

1. Start the “HW Config” tool in the current S7-project and install the GSD-file with name ibaF08n3.gsd

↗ For more information see chapter „Modes of Operation Overview“, page 25

2. In the web interface of the ibaBM-DPM-S-64 set the operation mode to mode 8.
3. Open the “Profibus DP”- folder in the hardware catalog.
4. Connect an ibaBM-DPM-S-64 module with the Profibus line by Drag & Drop and set a DP address for this module.

Important note

The same address has to be set in the web interface on ibaBM-DPM-S-64.

5. If you want to use both slaves on ibaBM-DPM-S-64 connect another module with the Profibus line and assign in HW Config the other DP address set in the Web interface.

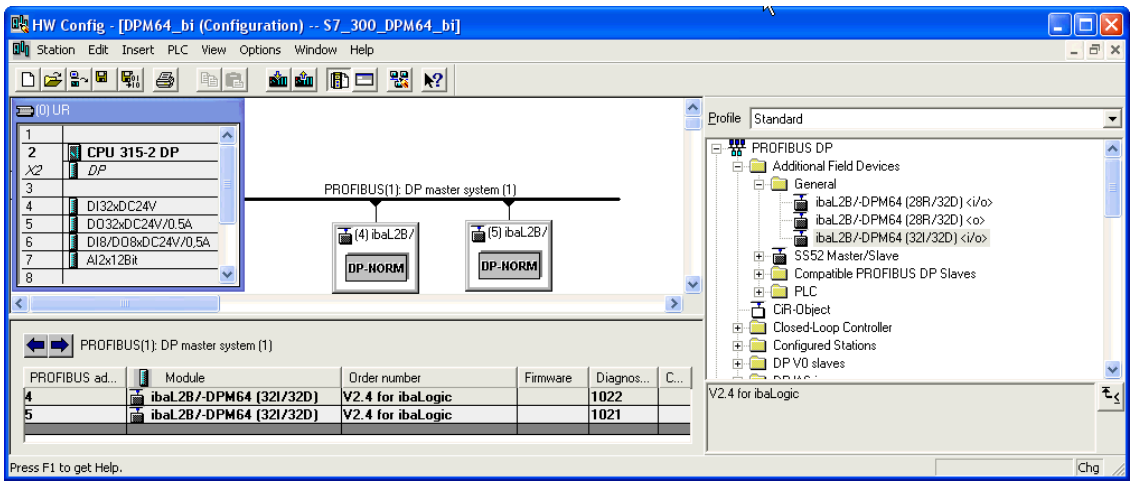


Figure 19: PLC S7 hardware configuration for bidirectional DP communication

Step 3: Connecting DP

1. Connect the upper DP interface on the ibaBM-DPM-S-64 with the DP interface of your S7-PLC.
2. Activate the DP termination switch S4 on the ibaBM-DPM-S-64 if the device is the last one in the DP line.
3. Download the system data to S7-PLC with HW Config and start the PLC.
   As soon as the connection between the DP master and the slave(s) has been established via the Profibus line the “Bus” LED should light yellow and the “Act” LED white.

Step 4: S7-test program

1. Enter the SEND-DB12 (or any free DB- number) into your S7-project.

DB12 -- S7_300_DPM64_bi\DPM64_bi\CPU 315-2 DP

Addres	Name	Type	Initial val	Comment
0.0		STRUCT		
+0.0	status_1	ARRAY[0..1]	B#16#0	2 byte status information
*1.0		BYTE		
+2.0	digital_signal	ARRAY[0..3]		32 binary signals (4 byte)
*1.0		BYTE		
+6.0	analog_value	ARRAY[0..31]		32 INT values (e.g. unscaled analog values)
*2.0		INT		
+70.0	status_2	ARRAY[0..1]	B#16#0	2 byte status information
*1.0		BYTE		
=72.0		END_STRUCT		

Figure 20: DB12 S7-Test program

2. Enter the RECEIVE-DB13 (or any free DB- number) into your S7-project.

DB13 -- S7_300_DPM64_bi\DPM64_bi\CPU 315-2 DP

Addres	Name	Type	Initial val	Comment
0.0		STRUCT		
+0.0	FOB_message_counter_A	BYTE	B#16#0	
+1.0	FOB_reception_status	BYTE	B#16#0	
+2.0	digital_signal	ARRAY[1..4]		32 binary signals (4 byte)
*1.0		BYTE		
+6.0	analog_value	ARRAY[0..31]		32 INT values (e.g. unscaled analog values)
*2.0		INT		
+70.0	device_ID	BYTE	B#16#0	
+71.0	FOB_message_counter_B	BYTE	B#16#0	
=72.0		END_STRUCT		

3. Enter the content of OB1. Define the local variables and call up SFC14 (DP receive) and SFC15 (DP send), both blocks from S7 standard library, in OB1 or any other FC.
The unscaled temperature (0 - 32767) is saved as an INT- value in DB 12. DBW6 (the first memory range for analog signals) and is to be transferred to ibaLogic!

```
OB1 :   "Main Program Sweep (Cycle)"
Network 1: static "0"- and static "1"- flag
          A     M      0.0
          R     M      0.0
          AN    M      0.1
          S     M      0.1


Network 2: copy send data to send- DB
          L     PIW  304                  //e.g. unscaled temperature value (0-32767)
          T     DB12.DBW    6            //save to send- DB (1. analog value in the OUTPUT block; DPM mode 8)

Network 3: DPM 64 SEND- connection (to ibaLogic)
          CALL  SFC   15
           LADDR  :=W#16#100              //peripheral output- address (PQW) 256
           RECORD :=P#DB12.DBX0.0 BYTE 32  //starting address of data source; length of data block 32 byte
           RET_VAL:=#error_code_sfc15      //error code
          NOP   0

Network 4: DPM 64 RECEIVE- connection (from ibaLogic)

          CALL  SFC   14
           LADDR  :=W#16#100              //peripheral input- address (PIW) 256
           RET_VAL:=#error_code_sfc14      //error code
           RECORD :=P#DB13.DBX0.0 BYTE 32  //starting address of data destination; length of data block 32 byte



Network 5: read out from receive- DB and process received data
          L     DB13.DBW    6            //load INT- variable from receive- DB (1. analog value in the INPUT block; DPM m
          L     2500                     //load a limit
          >I                             //compare greater than
          =     M     30.0               //assign the result to a flag
```

Figure 21: Example for transfer of 32 bytes transmitting (DB12, SFC15) and receiving data (DB13, SFC14) in S7-PLC

4. In your program you have to adjust the peripheral input-/ output-address in network 3+4 (LADDR- parameter) with the DP input-/ output addresses in the HW-configuration (column I-/ Q- Address).

Note

Do not forget the offset of the data set in the Profibus message.

Example: In order to address the first analog value in mode 8, please consider an offset of 6 Bytes / 3 Words. (see tables in section 9.2.8)

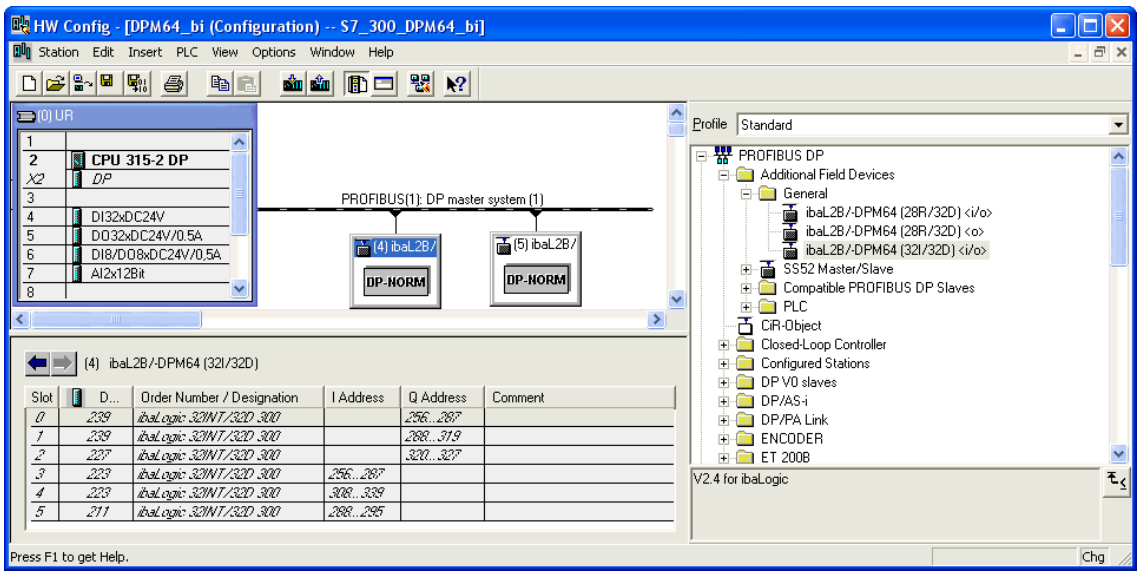


Figure 22: PLC S7 hardware configuration, Profibus slave I/O address space

In this example the addresses PIW 256 and PQW256 are displayed in HW Config. For S7-300 3 ranges (2 with 32 bytes and 1 with 8 bytes) are automatically created per slave. The maximum size of transfer data with SFC14 and SFC15 to any DP device is limited to 32 bytes (only for S7-300). That means, if you want to transfer the complete block of 72 bytes, you have to call up the DP-SFCs three times in your S7-program.

5. Now, download all modified and new blocks (incl. the DBs!) to PLC.

Step 5: ibaLogic test program

1. Start ibaLogic and create a new test-layout. Activate the FOB-i/o-S card in the system settings.

2. Received data from S7
To display the received value (temperature) from S7-PLC, you have to position the input resource from the 1st analog INT-value

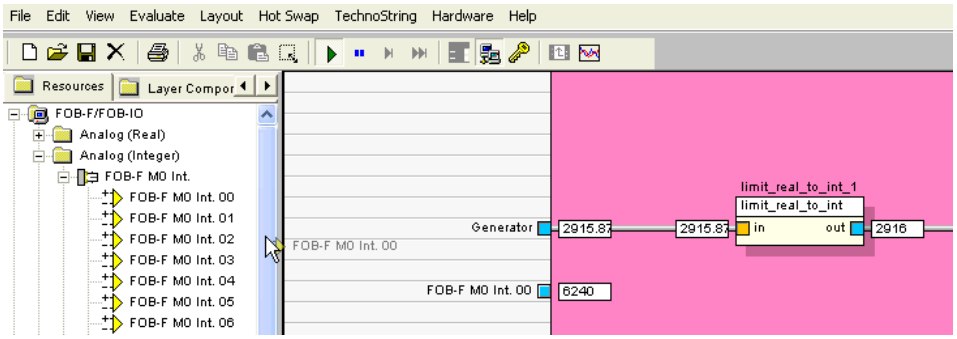


Figure 23: ibaLogic, input signal from S7

3. Transmit data to S7
To create a signal in ibaLogic, you can use the generator (input resource).
To transmit data from ibaLogic to S7-PLC you have to position the output resource from the 1st analog INT-value! Don't forget to connect generator with the output resource. (The converter is inserted automatically.)

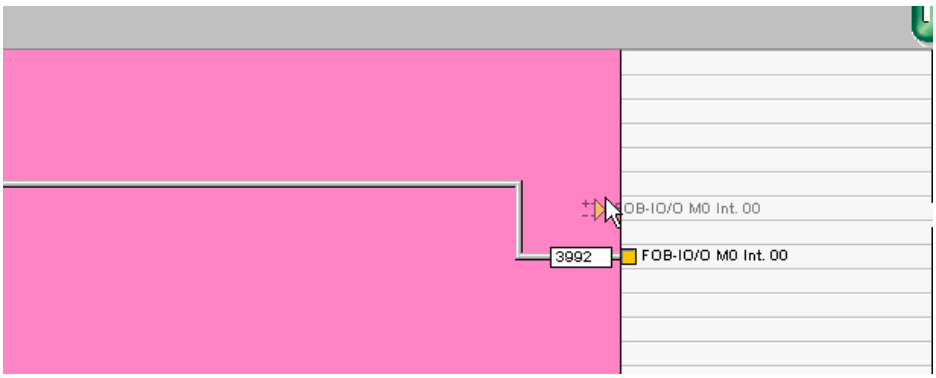


Figure 24: ibaLogic, output signal to S7

4. Start the SIMATIC-Manager, enter a new variable table and display the transmitted generator signal (DB13.DBW6) in INT format.

11.2.2 Sample projects

On the disk which is part of the delivered package you will find four sample projects with examples for the different modes:

- ❑ S300_SFC_DPM-S64.zip Using SFC14/15 with S7-300
- ❑ S400_SFC_DPM-S64.zip Using SFC14/15 with S7-400
- ❑ S7_L2B-DPM.zip Using PEW/PAW accesses

11.2.3 Reloading S7 Application Data from/to DP Master

When assigning the slaves in the master system several data blocks are defined in the peripheral address space at the same time. The block-wise reloading of application data is used to reach a higher security and a better detection of short termed failures.

In order to reload the data from or to the periphery the use of SFC14 and SFC15 is recommended. Please refer to the sample projects in order to see how it's done.

When dealing with the S7-300 family more than one call of SFC14/SFC15 is required because the data block length is limited to 32 Bytes. When working with the S7-400 family, 122 Bytes are available per data block. This is the reason why you find different GSD-files on the disk.

Note

In former version V1.1 the delivered GSD files permitted to work with reload commands directly in the peripheral output area ("PQ-area"). You will find these GSD files on the disk too (folder \L2B_Card), since this mode of operation is still supported. But unlike this older version the method of using the SFCs for reloading offers a better behaviour in case of DP faults and data-consistent blocks. When using the new GSD files the usage of SFCs is required because the direct reload commands are not supported.

11.2.4 DP Faults with S7 Master may cause Zeros in Data

Please note that slave data can be overwritten with zeros in case of a DP slave failure.

Such failures can lead to zeros or no values in the data flow, even for a few milliseconds. In real time automation systems this effect may cause failures of the entire system which are hard to examine.

Concerning incoming data (master's view), there are some possibilities using the DP monitoring functions of the S7-system, such as alert function blocks.

When it comes to outgoing data the receiving systems, which are connected to the Profibus via ibaBM-DPM-S-64 and interface boards like ibaLink-SM-64-io or ibaLink-SM-128V-i-2o, can only read 32 analog and 32 digital data per slave (= module in ibaPDA) from the iba interface cards (e.g. SM64, SM128V).

On that end even the breakdown of the entire DP line cannot be detected. In case of a Profibus failure the most recent signal values remain.

Note

There is a way to realize corresponding indications by using the data set. For example a digital channel of this data set can serve as a "hot wire". The master should hold this digital value always on TRUE (= 1). In case of a short DP failure the master will write zero to all outgoing data for a short time. When the receiving system reads a FALSE (= 0) on the digital channel it is clear that all other values are not valid and therefore should not be taken into account.

Other methods may be engineered as well by means of the data set. Particularly a dynamic life sign, i. e. a toggling digital signal, from the master is recommended.

12 Configuration

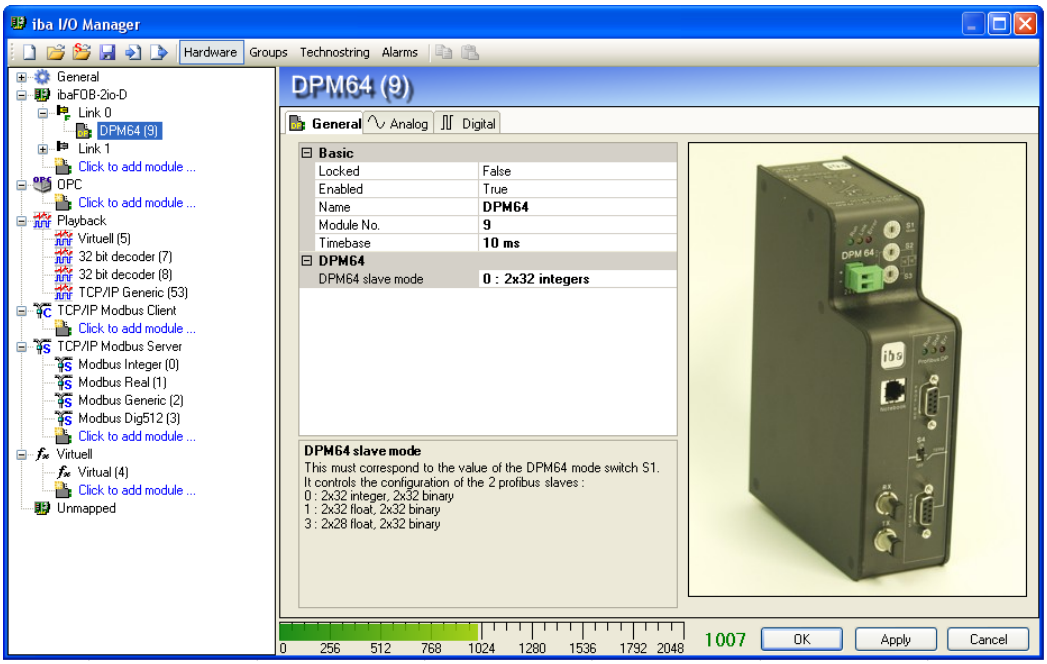
12.1 ibaPDA-V6 I/O Manager

To measure and record data over ibaBM-DPM-S-64, you need ibaPDA-V6, ibaPDA (v5.xx) or ibaLogic 3 and 4.

In older programs the configuration needs to be done like used with the predecessor device ibaBM-DPM-64.

For configuration in ibaPDA-V6 you'll find a short description as follows.

1. Select an ibaFOB-D card as data interface.
2. Add a DPM64 module under this interface. (If the device is turned on and connected to the ibaPDA-V6, it will normally be detected automatically.) If necessary, perform "Automatic detection."
3. Provided that the device is already configured, the mode of operation will be displayed in the general module view. If the device is not configured, select the mode in the "DPM64" field on the "General" tab.



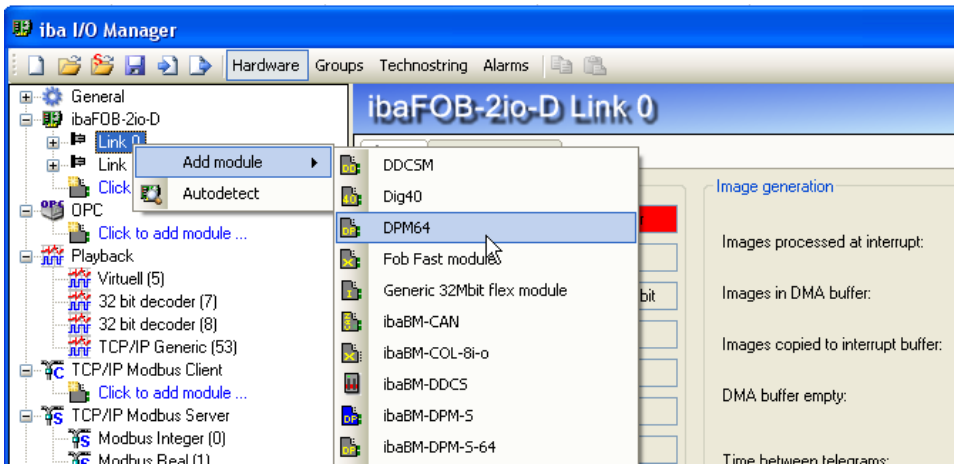
4. On the tab "Analog", column "Name", enter now the signals one after the other and the physical units in column Unit, if applicable.
5. Also enter the values for gain and offset on the" Analog" tab, if applicable.
6. For the digital signals proceed correspondingly on the tab "Digital" but only the signal names are required.

12.2 Outputs from ibaPDA to Profibus Master (bidirectional)

Depending on the analog value type (Integer or Real) mode 8, 9 or B has to be set for bidirectional operation on the device.

↗ For more information see chapter 10 „Configuration by Means of the Web Interface“.

1. Install an applicable GSD file on the DP master.
2. Choose the correct ibaFOB card in the ibaPDA-V6 I/O Manager and add a "DPM64" module.



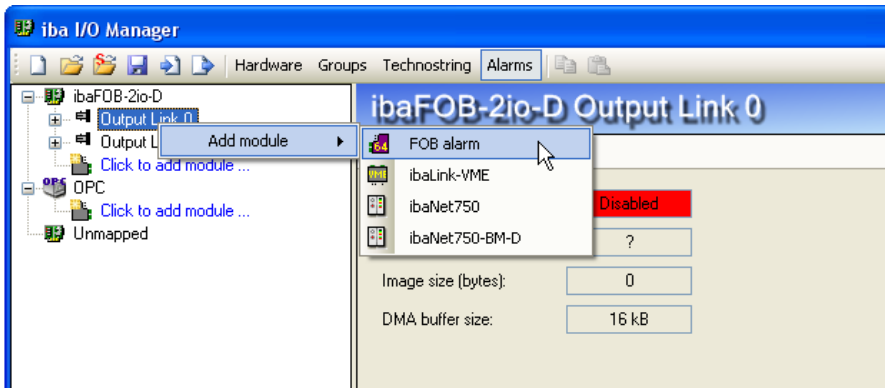
3. Choose the “DPM64 slave mode” on the “General” tab.

Note

The mode set in the Web interface must correspond with the mode in ibaPDA-V6.

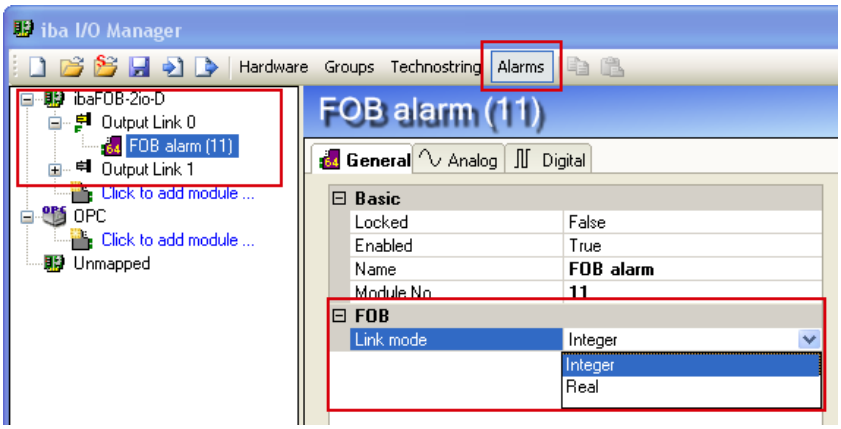
Device mode	DPM64 slave mode (ibaPDA I/O Manager)
8	0 (2 x 32 integer)
9	1 (2 x 32 float)
B	3 (2 x 28 float)

4. Choose the “Alarm” menu and add a FOB alarm module at the appropriate output link.



5. Choose the “General” tab of this module and select the correct link mode “Integer” or “Real”.

Device mode	Link mode
8	Integer
9	Real
B	Real



6. Click on <OK>.
7. Enter the data to be captured in the “Analog” and “Digital” tables.

13 Technical Data

13.1 Main Data

Order number	13.121010
Manufacturer	iba AG, Germany
Mechanical properties	DIN IEC 68-2-6 (if properly assembled and with DIN rail)
Operation temperature range	0 ˚C to 50 ˚C (32 °F to 122 °F)
Storage temperature	-25 ˚C to 70 ˚C (-13 °F to 158 °F)
Transport temperature range	-25 ˚C to 70 ˚C (-13 °F to 158 °F)
Cooling	Passive
Assembly	Snapped onto a DIN rail
Humidity rating	F, no moisture condensation
Protection class	IP20
Voltage supply	DC 24 V ±10 % non-stabilized
Power consumption (without load current supply)	Up to 600 mA
FO-cable Coupling	62.5/125 µm ST Lean
Maximum fiber optic length without repeater	2000 m (6561 ft.)
Dimensions (width x height x depth)	69.5 mm x 189 mm x 142 mm (incl. DIN rail clip) 2.74 in x 7.44 in x 5.59 in
Weight (including packaging and documentation)	2.2 lb (1000 g)

13.2 Connections, Indicators

13.2.1 Basic Device

Fiber optic cable connectors	2 ST plug connectors	
Switches	S1: Device address; S2: Operating mode; push button S10 (Reset)	
Voltage supply	2-pin Phoenix terminal plug (black)	
Voltage switch	On/Off switch for complete device	
LEDs	ibaNet communication (top right)	Run (green); 3Mb (yellow); 32Mb (white), Error (red)
	Interface status	CompactFlash® (green / red) Ethernet (green / red) USB (green / red)
Other interfaces	Bottom of device	Ethernet (parameterization access) USB (parameterization access) Ground socket

13.2.2 Profibus Module

Profibus-DP	2 x 9-pin. D-Sub socket		
Terminating switch	S4: Terminator network for Bus0 S5: Terminator network for Bus1		
LEDs	Status	Bus0	Run (green); Bus (yellow), Active (white), Error (red)
		Bus1	Run (green); Bus (yellow), Active (white), Error (red)

13.3 Data Transmission

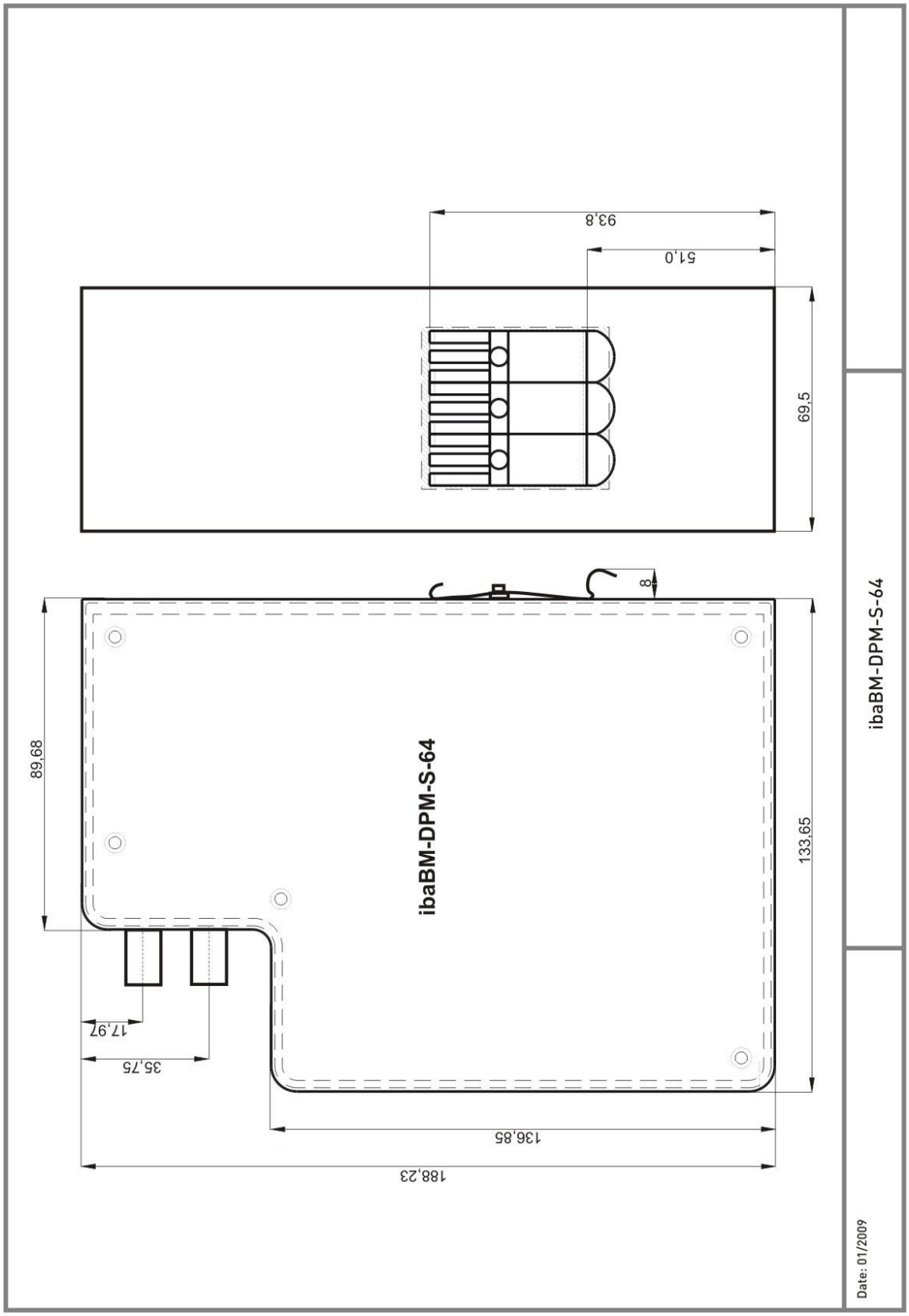
13.3.1 Main Circuit Board

Data transfer rate (ibaNet fiber optic cable)	3.3 Mbit/s
Logging rate	1 ms
Data volume	64 analog signals + 64 digital signals per ms
Ethernet	1/10/100 MBit/s
USB	2.0
CompactFlash®	CF and CF+ cards; type I and type II. **Warning:** Very slow PIO 0 cards can cause errors during data transmission. As a result, a configuration may be incorrectly read. For this reason, you may have to check the log file. Cards with read errors: Ultron 128 MB. In addition, these cards have no partition table. Cards that have been tested to be error-free: Kingston 1 GB Fujifilm "Microdrive™" 4 GB

Profibus Module

Profibus data transfer rates	187.5 kBit/s 500 kBit/s 1.5 MBit/s 3 MBit/s 6 MBit/s 12 MBit/s
Number of physical Profibus channels	1 or 2 (switch-selectable)
Number of DP slaves	2 (distributable over one or two lines)
DP slave addresses	0 to 125

13.4 Dimension Sheet



(Dimensions given in mm)

14 Support and contact

Support

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Note

If you require support, specify the serial number (iba-S/N) of the product.

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