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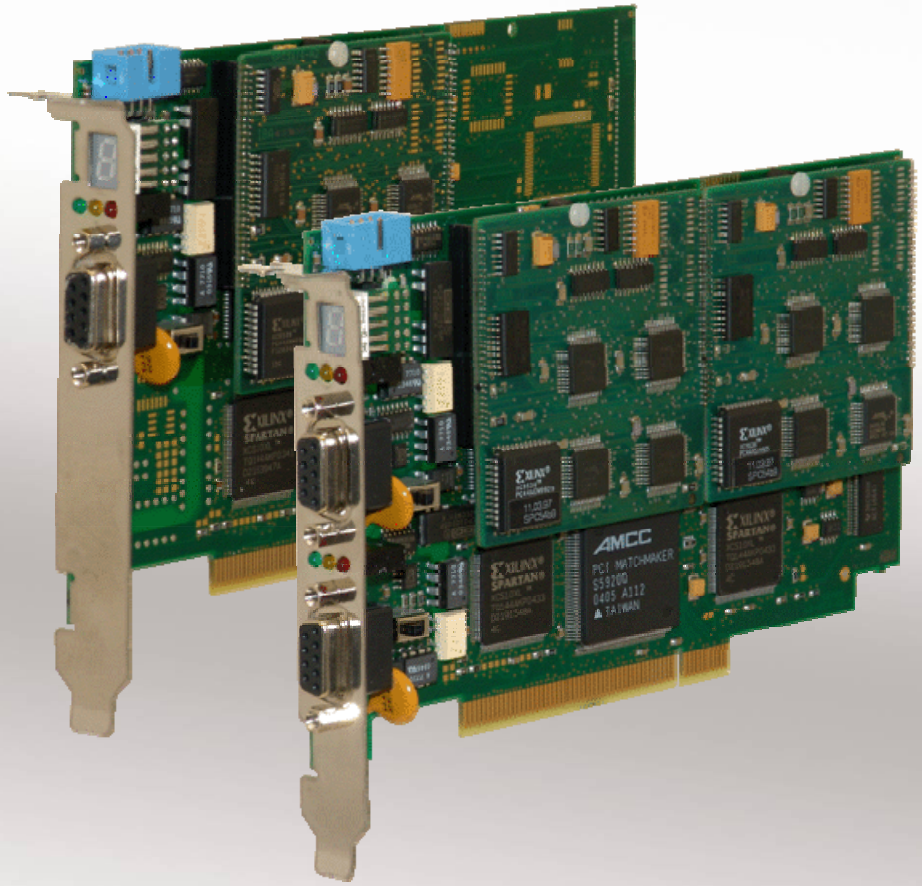
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ibaCom-L2B-x-8

PROFIBUS Interface PCI Board
ibaCom-L2B-4-8 and ibaCom-L2B-8-8



Manual

Issue 3.2

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

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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.

CE

Issue	Date	Revision	Chapter	Author	Version HW / FW
V 3.2 en	07/23/13	Card is only PCI 2.2 (5 V) compatible	2, 6.1, 12		

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1 About this manual

This manual describes the construction, the use and the operation of the device ibaCom-L2B-x-8.

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 Notations

The following designations are used in this manual:

Action	Notations
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!

⚠ 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 Product properties

The ibaCom-L2B-x-8 cards are communication cards which are used to connect standard PC PROFIBUS master devices such as Simatic CPUs and CPs. The ibaCom-L2B-x-8 boards are the successors of the L2B x-8-F PROFIBUS boards.

As far as this description does not refer explicitly to an ibaCom-L2B-4-8 or ibaCom-L2B-8-8, the two boards are referred to as ibaL2B boards or cards.

The ibaL2B card is, unlike most iba communication interfaces, a copper based interface which holds 4 or 8 so called Profibus DP slaves. The L2B features the following functionality.

- ❑ Compliant PCI V2.2 (5 V) board, needs one PCI-slot, Plug & Play functionality
- ❑ 1 Mbyte of PCI dual port ram for PC access
- ❑ Standard PROFIBUS DP slave processors (SPC3)
- ❑ No configuration jumpers or switches – fully software controlled
- ❑ Firmware control in the PC without uninstalling the card
- ❑ Dynamic reassigning of interrupt sources and interrupt generation (board and driver synchronization)
- ❑ Up to 4 ibaL2B boards can run in the same PC at the same time (board ids #0..#3)
- ❑ 4 DP slaves on one PROFIBUS line (ibaL2B-4-8) or 2x4 DP slaves on 2 PROFIBUS DP lines (ibaL2B-8-8-PCI)
- ❑ Each PROFIBUS-link has its own processor which controls and manages the four slave-processors.
- ❑ ibaL2B supports DP multi master mode that means, that on one PROFIBUS line several masters can be present each controlling their corresponding slaves (one master for one slave only !)
- ❑ For each slave (each slave represents an iba module which consists of 32 analog plus 32 binary signals) the following telegram modes can be chosen:
  - Integer
  - Real
  - S7-Real (Note in this mode there are only 28 Real values instead of the 32 normally found)
  - QDA-Flatness (special mode for connection to Siemens flatness measurement systems).
  - S7-Request

- ❑ Each slave may send and receive data simultaneously (same telegram mode for both directions)
- ❑ LEDs for each PROFIBUS-line for CPU active (green), PROFIBUS-line o.k. (yellow), internal error (red)
- ❑ 7-segment display for board id and synchronization status
- ❑ Baud rates up to 12 Mbaud
- ❑ Automatic baud rate detection
- ❑ Profibus termination resistors for each PROFIBUS-line (switch)
- ❑ 100% compatibility to its predecessors on the PROFIBUS side (GSD data)

3 Scope of delivery

After unpacking check the completeness and intactness of the delivery.

The scope of delivery includes:

- ❑ Device ibaCom-L2B-x-8
- ❑ Manual
- ❑ Synchronization cable preassembled
- ❑ GSD files

4 System requirements

4.1 Hardware

IBM-compatible PC with the following minimum configuration:

- 400 MHz Pentium II or better
- 128 MB RAM or better
- At least one free PCI slot with 5V cable (V2.2, 5 V, 32/64 bit)

Please see http://www.iba-ag.com for further details on a properly outfitted workstation.

4.2 Software

- ❑ Microsoft Windows NT4.0 (SP 6), 2000, XP, 2003, Win 7
- ❑ PDA Version 4.07 with PCI support or higher or
- ❑ ibaLogic V3.65 or higher

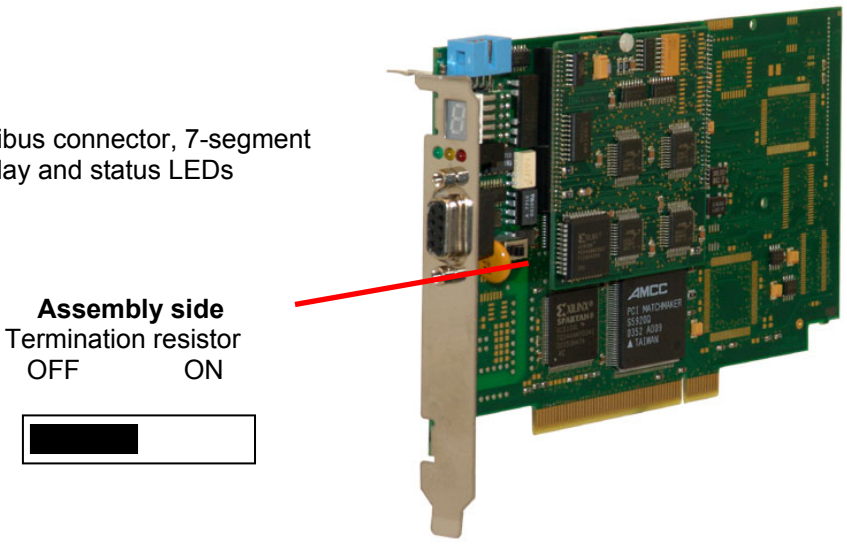
5 Device Indicators, Interfaces & Connectors

Device **Front plate** **View**

ibaL2B-4-8

Profibus connector, 7-segment display and status LEDs

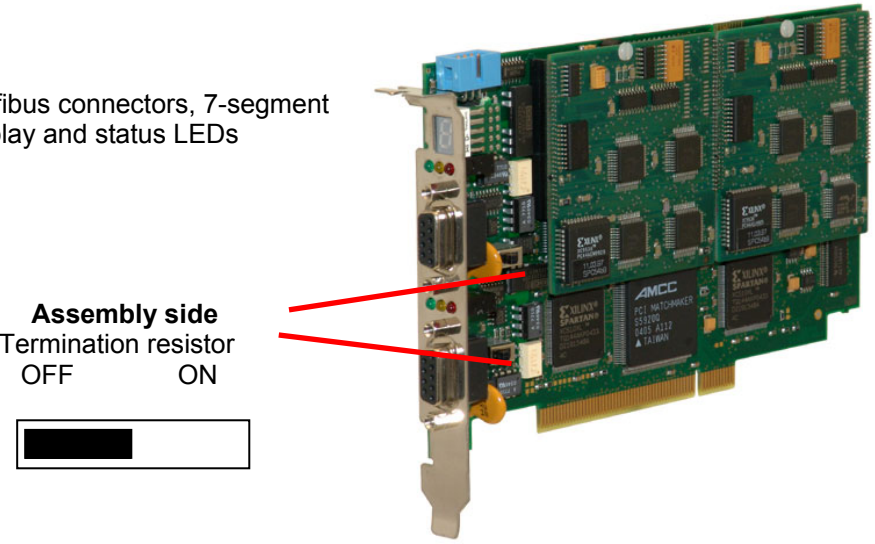
Assembly side
Termination resistor
OFF ON



ibaL2B-8-8

Profibus connectors, 7-segment display and status LEDs

Assembly side
Termination resistor
OFF ON



5.1 Interfaces and Indicators Found on Device Front at Top

5.1.1 Device LEDs

Run, Link and Error LEDs indicate the operational state of the L2B channels. The following table describes the states in which you may find the LEDs and their respective meanings. On power on all LEDs are on for a few seconds to prove their proper function.

LED	Status	Indication
Run (green)	blinking off	power is on and the channel is functioning properly controller stopped
Link (orange)	on off	telegrams received/sent on this channel no telegrams transmitted;
Err (red)	on off	internal error on controller link normal state; after resolution of error, LED automatically resets

5.1.2 7-Segment Display

The 7-segment display shows the following information:

- ❑ Board ID (ranging from 0...3) - after board was initialized
- ❑ The decimal point in the display indicates whether the
  - board is working as interrupt master / internal (dot is on) or
  - board is working as interrupt master / external (dot is blinking) or
  - board is working as interrupt slave (dot is off)

Note

External synchronization is not supported for PROFIBUS because it is not a synchronized bus.

5.1.3 PROFIBUS Interface on ibaL2B-4-8

The ibaL2B-4-8-PCI connects the 4 L2B DP-slaves to one PROFIBUS DP-line.

5.1.4 PROFIBUS Interface on ibaL2B-8-8

The ibaL2B-8-8 connects the 2x4 L2B DP-slaves to two PROFIBUS DP-lines.

Upper PROFIBUS-connector “Channel A”

Lower PROFIBUS-connector “Channel B”

5.1.5 PROFIBUS Multimaster Mode

Each slave on the ibaL2B board can be assigned to be controlled by its individual master. This means that on one DP bus several masters may be active, each controlling his slave(s).

Note

It is not allowed to assign more that one master to a slave.

5.1.6 Activate / Deactivate PROFIBUS Bus Terminal Resistors

For each PROFIBUS line the line termination resistor can be activated or deactivated. This allows the use of standard SUBD-9 connectors for connecting the PROFIBUS instead using special connectors with included resistor termination networks.

You’ll find the switches for the termination resistors on the assembly side of the board between front plate and piggy-back board.

Switch to the left side: Resistor off (disabled)

Switch to the right side: Resistor on (enabled)

Note

Please make sure, that the internal termination does not collide with an eventual external termination (e. g. within the switch).

6 Installation of the Board

6.1 Safety Instructions

The card fits in every compatible PCI slot (32 / 64 bit, 5 V).

⚠ CAUTION

Use a ground line or discharge any electrostatic charge from yourself before touching the card.



The standards for handling electrostatic sensitive devices (ESD) must be followed.

⚠ CAUTION

Please follow carefully the advices below. Not to do so may void your warranty!

- ❑ Remove and install cards only in an ESD designated workspace.
- ❑ Remove all power connections from the PC before opening the PC and/or installing/removing any device.
- ❑ Never remove or (un-)solder chips or other parts of the device because this may damage the device and void your warranty.

6.2 Installing the Card

1. Switch off the PC, disconnect it from power supply and open it, so that you can see the PCI slots.
2. Unpack the card carefully. Use a ground line or discharge any electrostatic charge from yourself before touching the card.
3. No settings of jumpers or switches are required.
4. Take hold of the card on the board edges and the front panel.
5. Press the card carefully into the desired PCI connector of the main board. Check that the card is fully plugged into the slot and fix the card with the screw on the front panel.
6. If more than one iba card are used connect all iba cards with the synchronization cable.
7. Close the computer, connect the power supply and start it.

6.3 Removing the Card

In order to remove the card from the PC, please follow these steps:

1. Stop and switch off the computer, disconnect it from the power supply and open it.
2. Release the screw in the front panel.
3. Pull out the card off the PCI slot carefully and put in a safe place or conductive plastic bag.

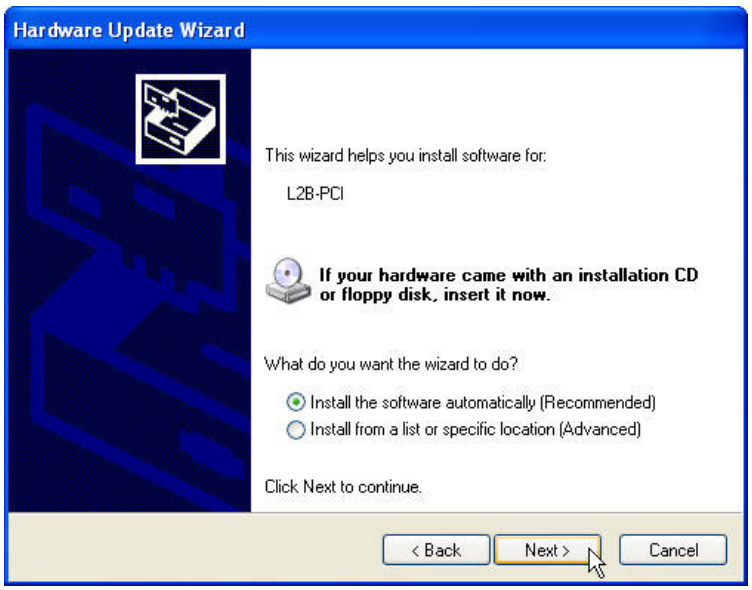
7 Windows XP Driver installation

The ibaCom-L2B-x-8 cards comply with the Plug & Play standard of Windows.

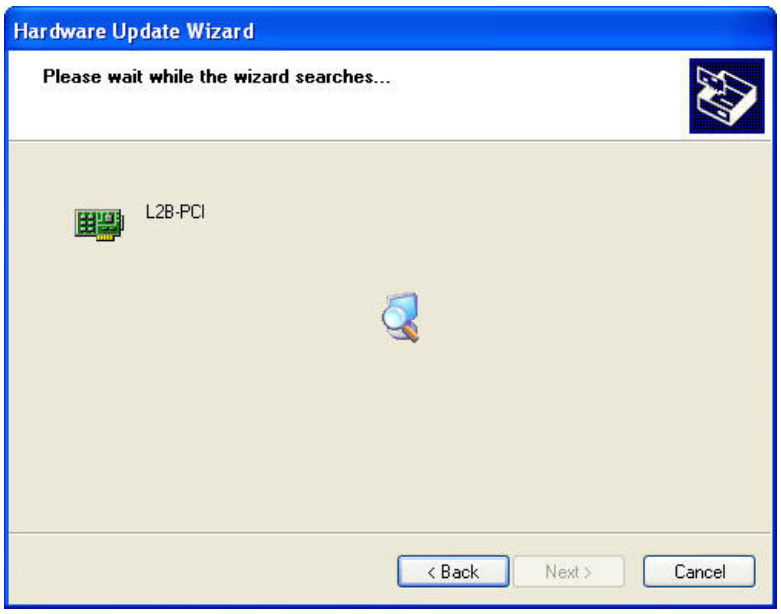
After the card has been plugged in for the first time and after Windows has finished its startup after booting the Found New Hardware Wizard pops up for introduction to the installation of the drivers. In case the dialog should not open use the Windows “Add Hardware Wizard” in the control panel in order to look for new hardware.



If the dialog appears select “No, not this time“. Continue with <Next>.

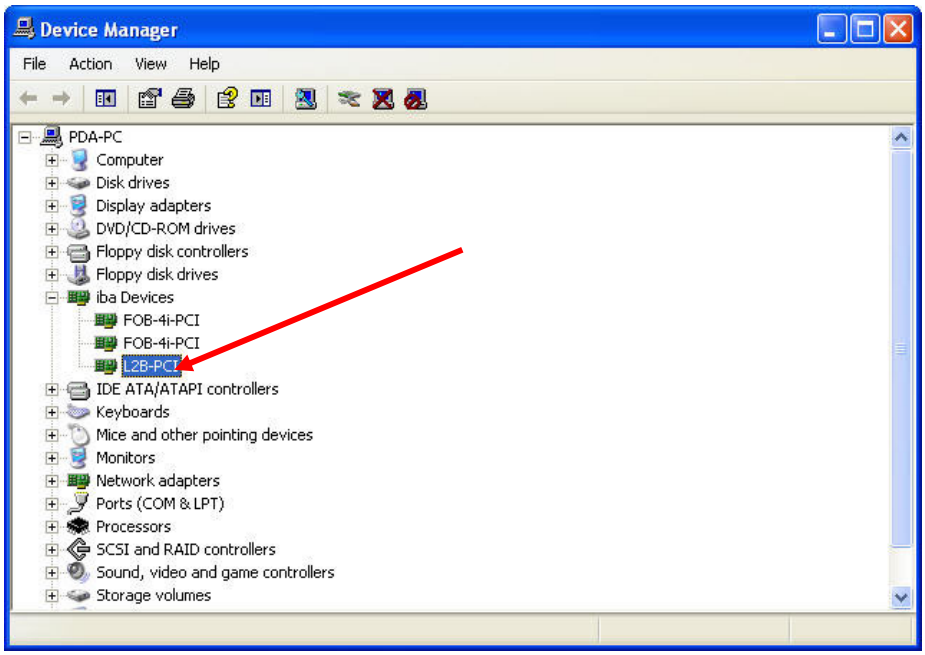


In the next step select the option “Install the software automatically“ and click on <Next>.



The system is looking for driver software and installs it automatically. Finally click on <Finish>.

If you like to check if the card was properly installed open the Windows „Device Manager“ and look for the card under the iba devices node.

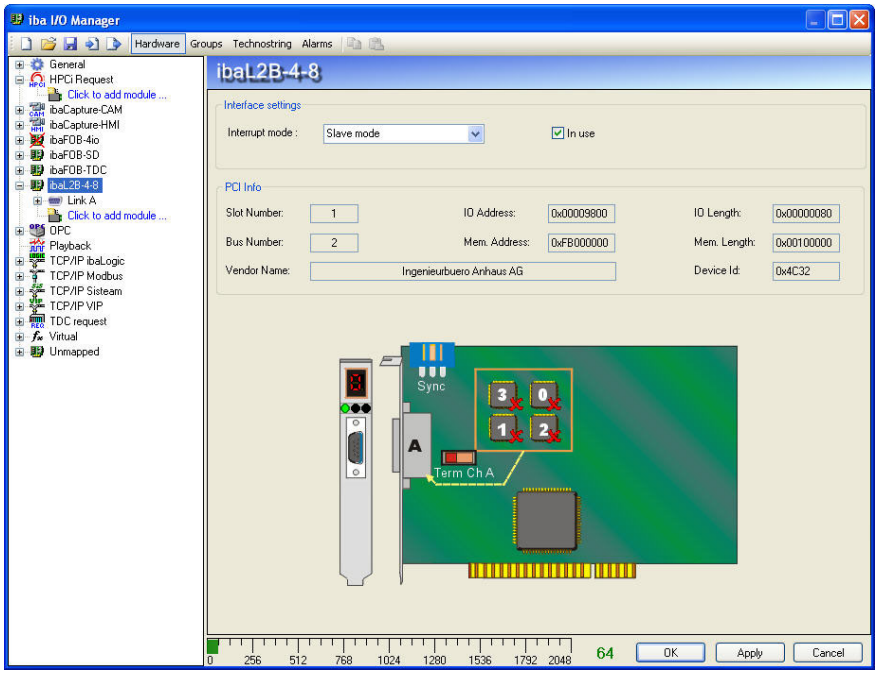


8 Configuration in ibaPDA-V6

Other documentation

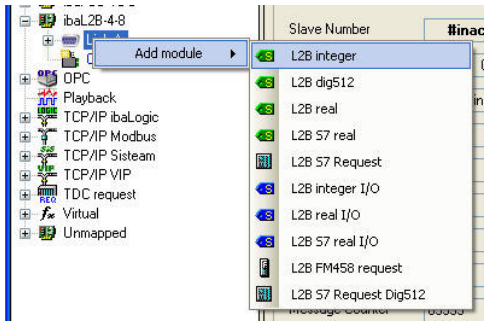
For a more detailed description of the board's configuration in ibaPDA-V6 please refer to the ibaPDA-V6 manual or online help.

If card has been installed correctly and the license for L2B Profibus is enabled in the dongle the card should be available in the I/O manager's signal tree as a data interface. If you click on the interface icon in the tree you will get a simplified image of the card and essential information in the right part of the dialog. Here, you should set the required interrupt mode of the card and check the option "In use" in order to reserve the card for use by ibaPDA-V6 only (and not by other applications such as ibaLogic).



Example: ibaCom-L2B-4-8 in I/O manager of ibaPDA-V6

Each link of the card has assigned up to 4 modules. Different module types to be selected from a list are available for communication via Profibus. The modules have to be created before you can configure the measurement signals.



Module types

9 Diagnosis in ibaPDA-V6

The essential tools for diagnosis are integrated in the I/O manager of ibaPDA-V6.

9.1 General card diagnosis

The image of the card as shown in chapter 8 provides essential information.

The graphical representation of the card shows the animated displays and indicators of the real card. The 7-segment display shows the actual card number and the LEDs indicate the actual status of the links.

The indicators and their meaning are described in chapters 5.1.1 and 5.1.2.

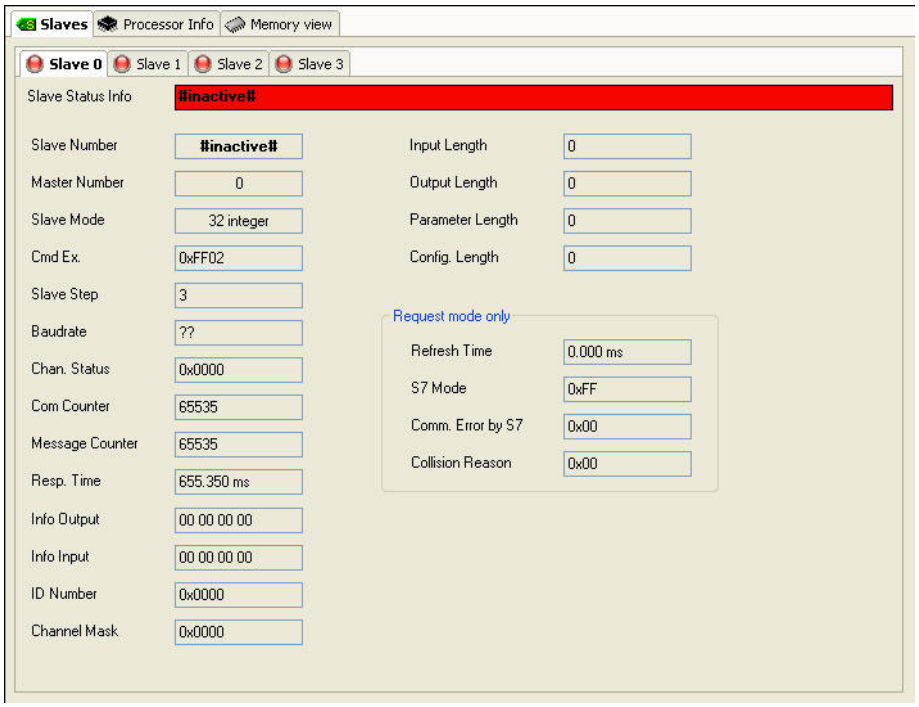
Depending on the card type 4 (ibaCom-L2B-4-8) or 8 (ibaCom-L2B-8-8) processors can be found on the card's image.

A red cross on a processor indicates that the respective processor has no connection to the Profibus master. A green hook indicates that the connection is established and stable.

Moreover, the relation between bus connector and processor group, including the default slave number is indicated in the representation.

9.2 Slave diagnosis

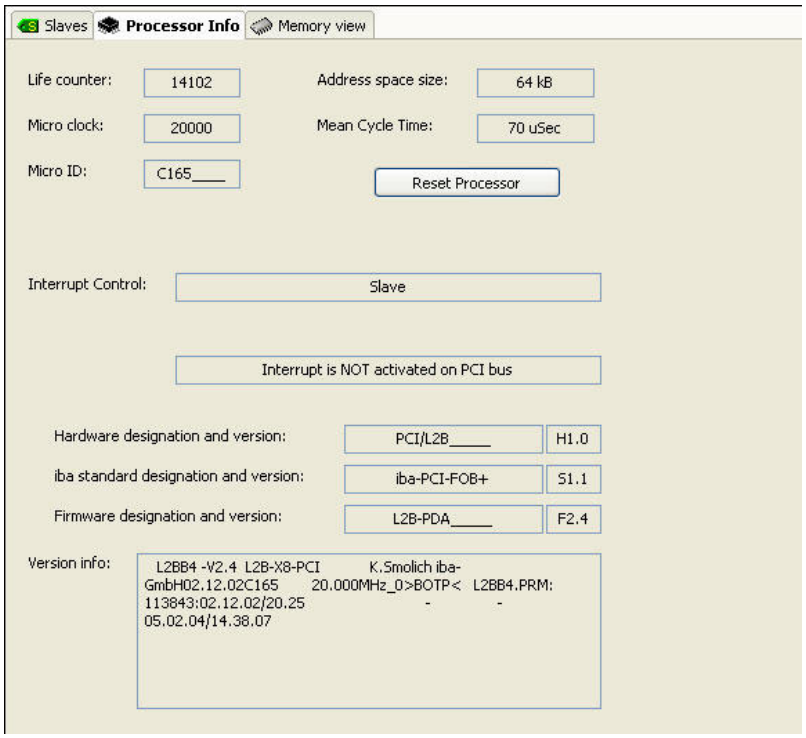
Click on the link icon below the card icon in the signal tree. The slave diagnosis page will open in the right part of the dialog. Please refer to the ibaPDA-V6 manual or online help for more information about the different parameters.



Slave diagnosis

9.3 Processor information

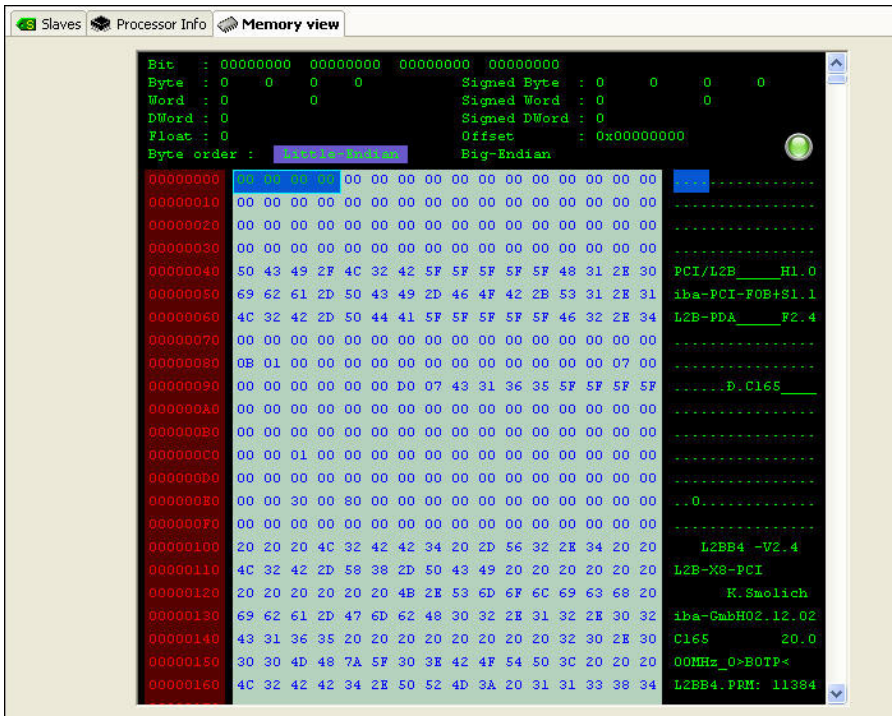
Processor information is for support service and error diagnosis only.



Processor information

9.4 Memory view

This view provides very detailed information about memory use for service purposes. It shows communication data and telegram contents. The flashing green light indicates a running system.

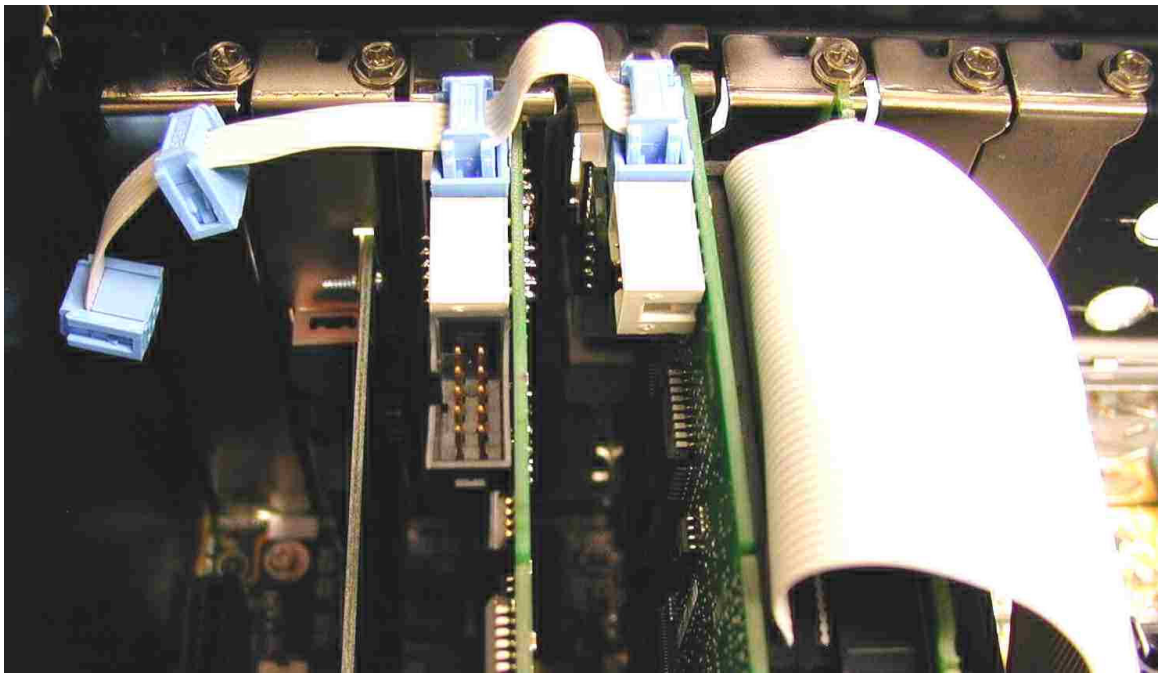


Memory view

10 Synchronizing Multiple iba PCI Devices

Shut down the computer, remove the power connection and plug in the other iba PCI cards.

Connect the synchronization cable between the devices. This is now necessary because the PCI bus does not support any synchronization signal on the bus which is available at all slot simultaneously. The sync cable (a 6-pole flat ribbon connector) ensures that all buffers (and data steams) of multiple fiber optic cards are exactly synchronized.



⚠ CAUTION

A bad or missing sync-connection may lead to inconsistent data blocks. This would affect the data integrity and data correlation!

Tip

Every delivered card holds a spare jack plugged into the FPB PCI connector. Use this connector(s) and the flat ribbon cable to manufacture your own sync cable when needed.

⚠ CAUTION

Installing additional components may alter your signal configuration (if a system upgrade is made) and interrupt assignments. Save all settings before any changes are done.

Start the PC again, boot windows and start PDA.

11 PROFIBUS GSD Data and L2B Operating Modes

The data to be measured from the PROFIBUS is defined using the GSD data files which must be registered on the DP Master.

Each slave processor can be configured to one of the following modes:

Integer format	2 x 32 analog / digital channels
Real format	2 x 32 analog / digital channels
QDA- Flatness	on request only
S7- Real format	2 x 28 analog / 32 digital channels

Any of the L2B Interface Card Processors controls 4 PROFIBUS-DP slaves. A slave transmits the 32 digital / 32 analog channels (one module) of the ibaPDA acquisition software. Different operating modes may need different GSD data.

Generally, the card can send and receive data, while it's always working as a slave. In order to reduce bus traffic it is recommended to install GSD files for receiving only, if sending is not needed.

The DP masters programming software, e. g. S7 configurator, defines the PROFIBUS-Slaves for the DP-masters. But first the enclosed GSD data file must be loaded with your (S7-) configuration software. Once the PROFIBUS is configured, one or several L2B-slaves can be activated.

S7-addresses are assigned when the slaves are configured. The data is organized in pre-designed structures (refer to the telegram listed below) and the S7-program continuously updates the data. The transfer rate needs to be adjusted according to each application.



Note

Note that the S7 can transfer only 28 floats instead of the normal 32 because of additional framing information within the S7 telegram.

This is valid for old S7-Profibus master only! With S7-400, firmware version 3.0 or higher and S7-300, firmware version 2.0 or higher, also 32 FLOAT values can be used.

11.1 GSD Files in Scope of Delivery

Depending on DP-master system or data type, the following gsd-files which are part of the delivery should be used:

Please note that there are new file names for the gsd-files. In the table below you'll find the old names in brackets.

GSD file	Telegram type / application	Simatic S7
iba_0F01.gsd (L2B_32I.GSD)	32 Inputs – Integer / ibaPDA	●
iba_0F02.gsd (L2B_32R.GSD)	32 Inputs – Reals / ibaPDA	● 1)
iba_0F04.gsd (L2B_28R4.GSD)	28 Inputs - Reals (for S7 300/400) / ibaPDA	●
iba_0F08.gsd (L2B32IOI.GSD)	32 Inputs/Outputs - Integer /ibaLogic	●
iba_0F09.gsd (L2B32ROI.GSD)	32 Inputs/Outputs - Real /ibaLogic	● 1)
ibaF0b_4.gsd (L2B28ROI.GSD)	28 Inputs/Outputs - Real (for S7-400) /ibaLogic	●
ibaF0b_3.gsd (L2B28SOI.GSD)	28 Inputs/Outputs - Real (for S7-300) /ibaLogic	●
iba_0F05.gsd (L2B_S7FP.GSD)	S7-Request(free variable access) / ibaPDA	●
iba_0F0C.gsd (L2B_PLAN.GSD)	QDA (special function: Sorcus-Master) / ibaPDA, ibaLogic	

1) S7-400 Firmware V3.0 or higher, S7-300 Firmware V2.0 or higher

Note about terms

The terms "inputs" and "outputs" refer to the point of view of the slave,
i. e. the ibaL2B-card.

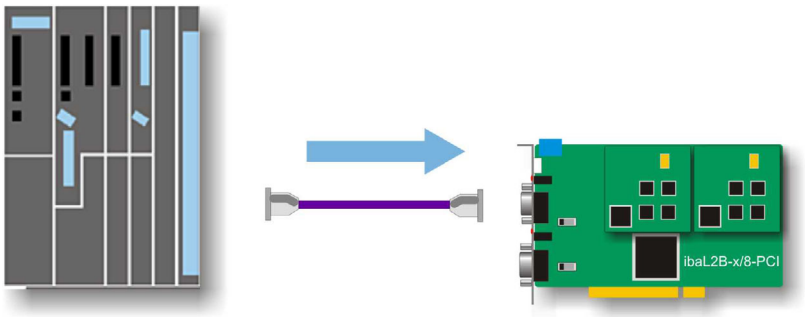
Inputs = ibaL2B receives data via the PROFIBUS = output of the DP-master

Outputs = ibaL2B sends data to the PROFIBUS = input of the DP-master

The following section describes the major telegram types and GSD-file relation.

11.1.1 iba_0F01.gsd – 32 Integer Inputs

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



DP-Master

11.1.1.1 DP-Master 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
	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

Slave data space

11.1.1.2 DP-Master Input data

No inputs

11.1.1.3 GSD File

GSD filename	Remark
iba_0F01.gsd	Transfer as word (S7-300/400)

11.1.1.4 Applications

ibaPDA, ibaLogic, system coupling Simatic S7, TDC, Simadyn D

11.1.2 iba_0F02.gsd – 32 Real Inputs

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

11.1.2.1 DP-Master 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

11.1.2.2 DP-Master Input data

No inputs

11.1.2.3 GSD File

GSD filename	Remark
iba_0F02.gsd	

11.1.2.4 Applications

ibaPDA, ibaLogic, system coupling

NO Simadyn D

11.1.3 iba_0F04.gsd – 28 Real Inputs

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.

11.1.3.1 DP-Master 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

11.1.3.2 DP-Master Input data

No inputs

11.1.3.3 GSD File

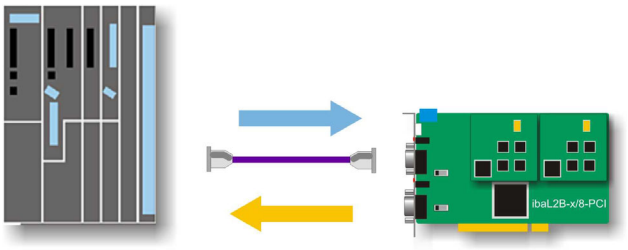
GSD filename	Remark
iba_0F04.gsd	Transfer as double word (S7-300/400)

11.1.3.4 Applications

ibaPDA, ibaLogic, system coupling, Simatic S7, TDC, Simadyn D

11.1.4 iba_0F08.gsd – 32 Integer In-/Outputs

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).



DP-Master

11.1.4.1 DP-Master 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
	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								

Slave data space

11.1.4.2 DP-Master Input data

INPUT DATA										
Byte no.	Offset	Contents								Remark
1	**0**	FO message counter-A								incremented by each new FO message, **Bit 7** always = 1
2	**1**	FO reception status								**Bit 0**: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, **Bit 7** always = 1

Slave data space

11.1.4.3 GSD File

GSD filename	Remark
iba_0F08.gsd	Transfer as word (S7-300/400)

11.1.4.4 Applications

ibaLogic, system coupling, Simatic S7, TDC, Simadyn D

11.1.5 iba_0F09.gsd – 32 Real In-/Outputs

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).

11.1.5.1 DP-Master 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

11.1.5.2 DP-Master Input data

INPUT DATA			
Byte no.	Offset	Contents	Remark
1	**0**	FO message counter-A	incremented by each new FO message, **Bit 7** always = 1
2	**1**	FO reception status	**Bit 0**: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, **Bit 7** always = 1

Slave data space

11.1.5.3 GSD File

GSD filename	Remark
iba_0F09.gsd	

11.1.5.4 Applications

ibaLogic, system coupling

NO TDC, Simadyn D

11.1.6 ibaF0b_4.gsd – 28 Real In-/Outputs

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 datatype only 28 values can be used (IN 122 Bytes / OUT 122 Bytes).

11.1.6.1 DP-Master 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	

11.1.6.2 DP-Master Input data

INPUT DATA			
Byte no.	Offset	Contents	Remark
1	**0**	FO message counter-A	incremented by each new FO message, **Bit 7** always = 1
2	**1**	FO reception status	**Bit 0**: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, **Bit 7** always = 1

11.1.6.3 GSD File

GSD filename	Remark
ibaF0_b4.gsd	Transfer in one block with SFC (S7-400) other masters
ibaF0_b3.gsd	Transfer in four blocks with SFC (S7-300)

11.1.6.4 Applications

ibaLogic, system coupling, Simatic S7, TDC, Simadyn D

12 Technische Daten

Manufacturer	iba AG, Germany
Order no.	ibaCom-L2B-4-8: 12.116200 ibaCom-L2B-8-8: 12.116300
Mechanical	Short PCI card (32 bit, 5 V)
Operating Temperature	32 °F to 122 °F (0 °C to 50 °C)
Storage Temperature	-13 °F to 158 °F (-25 °C to 70 °C)
Transport Temperature	-13 °F to 158 °F (-25 °C to 70 °C)
Cooling	Air cooled
Power Supply	via PCI bus
Current consumption	950 mA max. (without connected modules)
Distance between devices (PROFIBUS line)	See PROFIBUS definitions
Weight (incl. packaging and documentation)	200g
Number of PROFIBUS lines	ibaCom-L2B-4-8: 1 ibaCom-L2B-8-8: 2
Number of signals	ibaCom-L2B-4-8: 128 A + 128 D (4*32) ibaCom-L2B-8-8: 256 A + 256 D (8*32)

13 Accessories

Product	Order no.	Description
ibaFOB-4i-S	11.115200	Expand the system to measure analog and binary inputs, e. g. over ibaPADU
ibaPADU-8	10.120000	8 analog + 8 digital inputs; 14 Bit; +/-10V
Profibus cables	-	on request
ibaPDA Process Data Acquisition	30.505120	for 512 analog + 512 digital signals /ms
	30.510240	for 1024 analog + 1024 digital signals /ms

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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