



# ibaPDA-Interface-Bachmann-Xplorer

PLC-Xplorer data interface to  
Bachmann systems

Manual  
Issue 1.1

Measurement Systems for Industry and Energy  
[www.iba-ag.com](http://www.iba-ag.com)

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# 1 About this Manual

This document describes the function and application of the software interface

*ibaPDA-Interface-Bachmann-Xplorer*

This documentation is a supplement to the *ibaPDA* manual. Information about all the other characteristics and functions of *ibaPDA* can be found in the *ibaPDA* manual or in the online help.

## 1.1 Target group and previous knowledge

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

This documentation in particular addresses persons, who are concerned with the configuration, test, commissioning or maintenance of Programmable Logic Controllers of the supported products. For the handling *ibaPDA-Interface-Bachmann-Xplorer* the following basic knowledge is required and/or useful:

- Windows operating system
- Knowledge of configuration and operation of the relevant control system

## 1.2 Notations

In this manual, the following notations are used:

Action	Notation
Menu command	Menu <i>Logic diagram</i>
Calling the menu command	<i>Step 1 – Step 2 – Step 3 – Step x</i> Example: Select the menu <i>Logic diagram – Add – New function block</i> .
Keys	<Key name> Example: <Alt>; <F1>
Press the keys simultaneously	<Key name> + <Key name> Example: <Alt> + <Ctrl>
Buttons	<Key name> Example: <OK>; <Cancel>
Filenames, paths	<i>Filename, Path</i> Example: <i>Test.docx</i>

## 1.3 Used symbols

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

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### Danger!



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

- Observe the specified measures.

---

### Warning!



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

- Observe the specified measures.

---

### Caution!



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

- Observe the specified measures

---

### Note



A note specifies special requirements or actions to be observed.

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### Tip



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

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### Other documentation



Reference to additional documentation or further reading.

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## 2 System requirements

The following system requirements are necessary for the use of the Bachmann-Xplorer data interface:

- *ibaPDA* v7.1.0 or higher
- License for *ibaPDA-Interface-PLC-Xplorer* or *ibaPDA-Interface-Bachmann-Xplorer*
- With more than 16 connections you need additional *one-step-up-Interface-Bachmann-Xplorer* licenses for each additional 16 connections.
- Bachmann M1 controllers

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### Note



The *ibaPDA-Interface-PLC-Xplorer* license contains, among others, the license for this interface.

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For further requirements for the used computer hardware and the supported operating systems, please refer to the *ibaPDA* documentation.

### License information

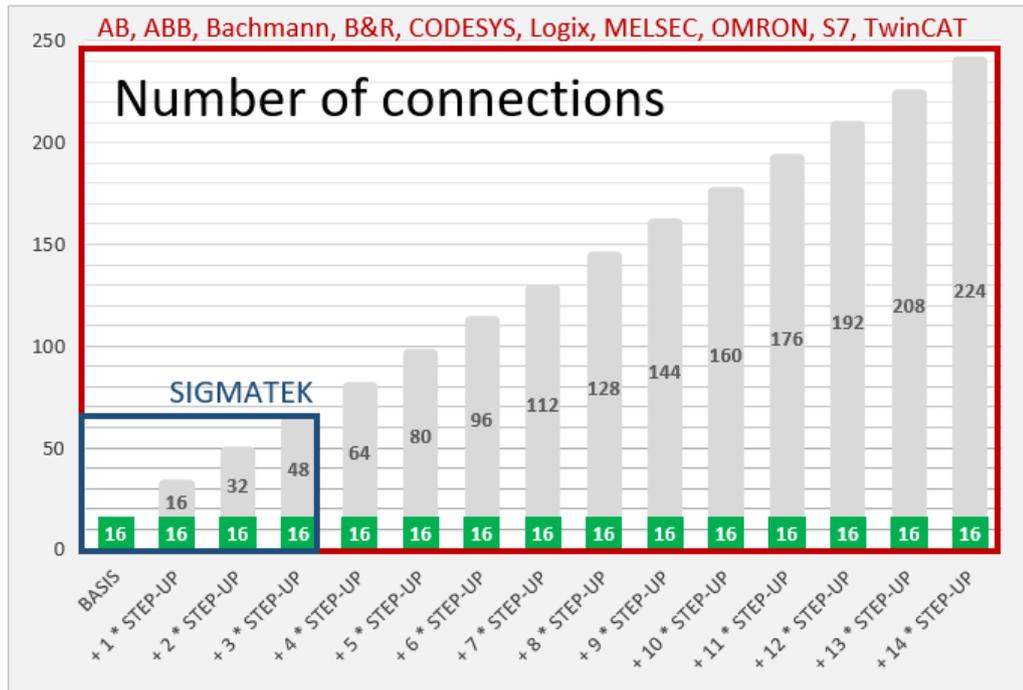
Order no.	Product name	Description
31.001042	ibaPDA-Interface-PLC-Xplorer	Extension license for <i>ibaPDA</i> -System. All additional Xplorer-data interfaces are added.  (Complete specifications under <a href="http://www.iba-ag.com">www.iba-ag.com</a> )
31.000034	ibaPDA-Interface-Bachmann-Xplorer	Extension license for an <i>ibaPDA</i> system adding the data interface:  + Bachmann-Xplorer (interface to Bachmann M1 systems)
31.100034	one-step-up-Interface-Bachmann-Xplorer	Extension license for 16 further Bachmann-Xplorer connections (a maximum of 14 permissible)

Table 1: Available Bachmann-Xplorer licenses

**Note**



To use more than 16 data connections per interface, you can purchase the one-step-up-... extension licenses separately for each interface. Up to 16 further connections to PLCs can be established on each one-step-up-license. Up to 240 connections can be configured and used per data interface with the multiple purchase or multiple release of these licenses (up to 15 in total). Exception of SIGMATEK: Here, only up to 4 licenses (64 connections) can be activated.



Consider the limitation of the number of signals by the *ibaPDA* base license.

## 3 PLC-Xplorer data interface to Bachmann systems

### 3.1 General information

The Bachmann-Xplorer interface is suitable for the acquisition of measured data with *ibaPDA* from a Bachmann M1 system via an Ethernet connection.

The data is cyclically read by *ibaPDA* instead of being sent by the PLC.

In the M1 controller, no programming and configuration is necessary for establishing a connection between *ibaPDA* and a controller with defined IP address and for sending the respective signals. For transferring measurement data, no additional software of Bachmann is necessary.

The M1 variables to be measured can conveniently be selected in the M1 address book browser.

#### Note



Depending on the number of signals to be recorded and the configured update time, the CPU load on the M1 controller always increases accordingly. The CPU load is also dependent on other factors, such as the CPU module type and other running applications.

### 3.2 System topology



The connections to the controllers can be established via standard Ethernet connections of the computer.

No special software is needed.

#### Note



It is recommended carrying out the TCP/IP communication on a separate network segment to exclude a mutual influence by other network components.

### 3.3 Configuration and engineering M1 controller

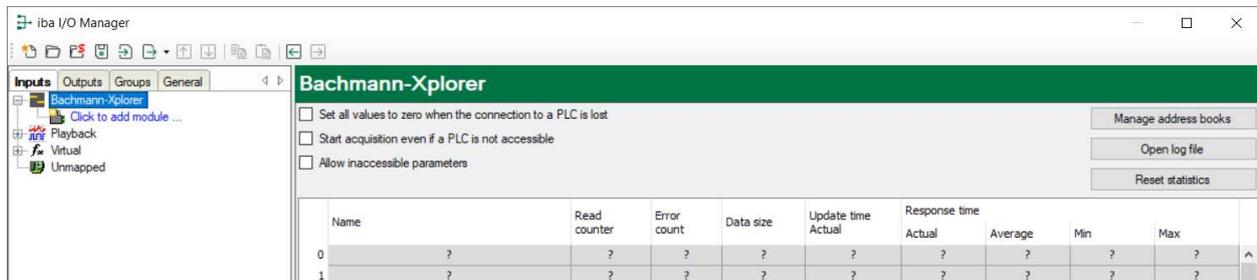
In principle, no specific configuration and programming is necessary on the controller side. In particular, it is not necessary to call any program modules.

### 3.4 Configuration and engineering ibaPDA

The engineering for *ibaPDA* is described in the following. If all system requirements are fulfilled, *ibaPDA* displays the *Bachmann-Xplorer* interface in the signal tree of the I/O Manager.

#### 3.4.1 Interface settings

The interface has the following functions and configuration options:



#### Set all values to zero when the connection to a PLC is lost

If this option is enabled, all measured values of the PLC are set to zero as soon as the connection is lost. If this option is disabled, *ibaPDA* will keep the last valid measured value at the time the connection was lost in the memory.

#### Start acquisition even if a PLC is not accessible

If this option is enabled, the acquisition will start even if an M1 controller is not accessible. In case of an error, a warning is indicated in the validation dialog. If the system has been started without a connection to the M1 controller, *ibaPDA* will periodically try to connect to the PLC. The measured values stay at zero as long as the PLC is disconnected.

#### Allow inaccessible parameters

Enable this option to start the acquisition even if no parameters are accessible. The inaccessible parameters are indicated as warnings in the validation dialog.

This can only occur if the address book is not up-to-date.

If this option is not enabled and inaccessible parameters are present, then the acquisition will not start.

#### Connection table

For each connection, the table shows the connection status, the current values for the update time (current, real value, average, min. and max.) as well as the data size. In addition, you will find an error counter here for the individual connections during the acquisition.

See [↗ Connection table](#), page 19.

#### <Manage address books>

Clicking on the <Manage address books> button takes you to the address book management of *ibaPDA*.

The table shows a list of all of the address books currently present in the system with IP address of the PLC from which the address book was created, as well as the creation time, size and modules that were configured for the respective CPU. Use the <Delete selected address books> button to delete selected address books.

#### <Open log file>

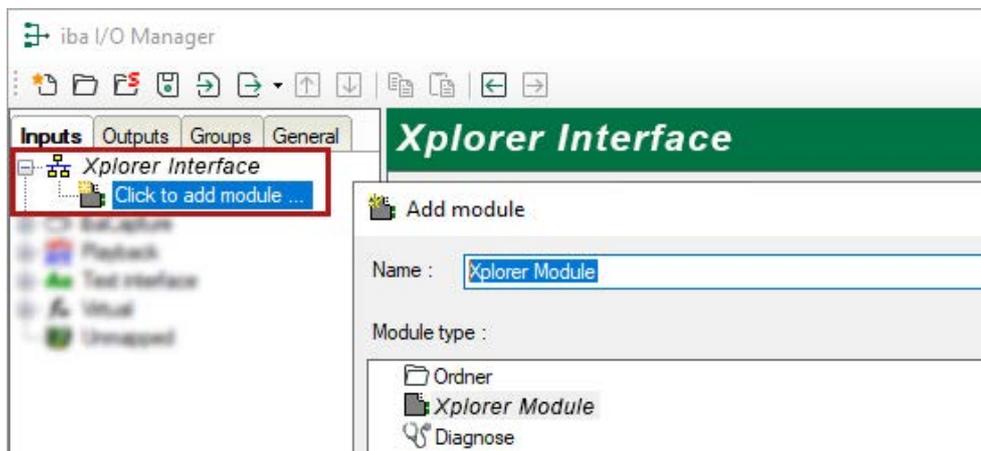
If connections to M1 controllers have been established, all connection-specific actions are logged in a text file. Using this button, you can open and see this file. In the file system on the hard disc, you will find the log file in the program path of the *ibaPDA* server (...\\Programs\\iba\\ibaPDA\\Server\\Log\\). The file name of the current log file is *BachmannLog.txt*, the name of the archived log files is *BachmannLog\_yyy\_mm\_dd\_hh\_mm\_ss.txt*.

#### <Reset statistics>

Click this button to reset the calculated times and error counters in the table to 0.

### 3.4.2 Adding a module

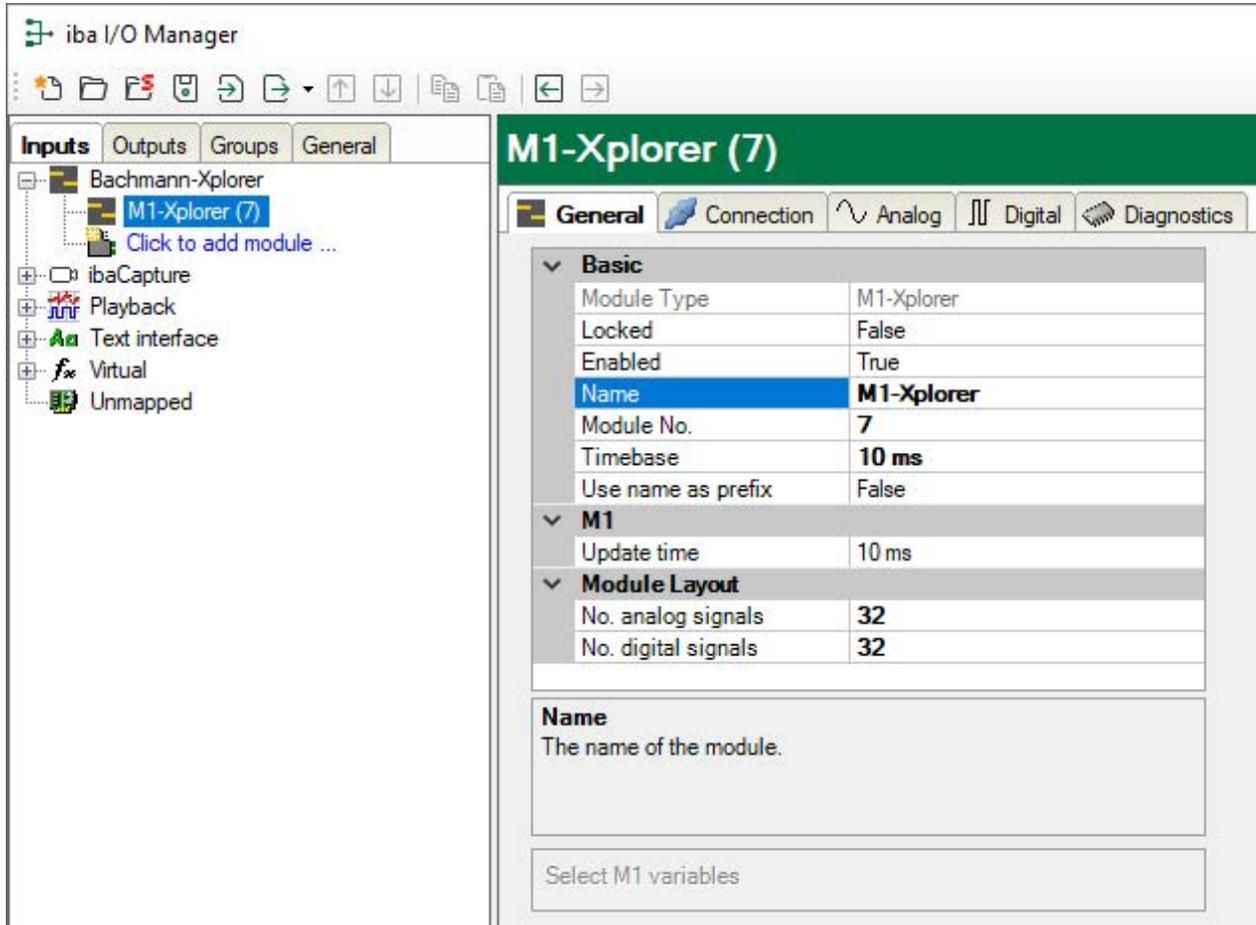
1. Click on the blue command *Click to add module...* located under each data interface in the *Inputs* or *Outputs* tab.
2. Select the desired module type in the dialog box and assign a name via the input field if required.
3. Confirm the selection with <OK>.



### 3.4.3 General module settings

To configure a module, select it in the tree structure.

All modules have the following setting options.



The screenshot displays the 'iba I/O Manager' application. On the left, a tree view shows the hierarchy: 'Bachmann-Xplorer' containing 'M1-Xplorer (7)' and 'Click to add module ...'. Other items include 'ibaCapture', 'Playback', 'Text interface', 'Virtual', and 'Unmapped'. The right pane is titled 'M1-Xplorer (7)' and has tabs for 'General', 'Connection', 'Analog', 'Digital', and 'Diagnostics'. The 'General' tab is active, showing a table of settings:

Basic	
Module Type	M1-Xplorer
Locked	False
Enabled	True
Name	<b>M1-Xplorer</b>
Module No.	<b>7</b>
Timebase	<b>10 ms</b>
Use name as prefix	False
M1	
Update time	10 ms
Module Layout	
No. analog signals	<b>32</b>
No. digital signals	<b>32</b>

Below the table, there is a 'Name' field with the description 'The name of the module.' and a 'Select M1 variables' button.

#### Basic settings

##### Module Type (information only)

Indicates the type of the current module.

##### Locked

A module can be locked in order to prevent change of module settings by accident or unauthorized users.

##### Enabled

Disabled modules are excluded from the signal acquisition.

##### Name

The plain text name should be entered here as the module designation.

##### Module no.

Internal reference number of the module. This number determines the order of the modules in the signal tree of *ibaPDA* client and *ibaAnalyzer*.

**Time base**

All signals of the module will be sampled on this time base.

**Use name as prefix**

Puts the module name in front of the signal names.

**M1****Update time**

The update time is the time in ms between two reading operations. You can set the value. The update time specifies how quickly the data is called up from the M1 controller.

**Module Layout****No. of analog signals/digital signals**

Define the number of configurable analog and digital signals in the signal tables. The default value is 32 for each. The maximum value is 1000. The signal tables are adjusted accordingly.

**<Select M1 variables>**

Clicking on the Link *Select M1 variables* opens the M1 address book browser. With the M1 address book browser, you can easily add analog or digital signals to the M1-Xplorer module by double clicking on any variable or selecting several variables and then clicking "Add."

See chapter [➤ Signal configuration](#), page 13

**3.4.4 Connection settings**

In the *Connection* tab of the module settings, you configure the connection to the PLC, generate address books and test the connection.

**Connection mode**

Either select TCP/IP, QSOAP or SSL. Note that some PLC types only support TCP/IP. You can find additional information in the manual for your PLC.

**Timeout (s)**

Time span after which a connection attempt is aborted.

**Address**

The IP address of the PLC

**User name/Password**

The user name and password needed to access the PLC according to the PLC configuration.

**<Get address book>**

By clicking on this button, *ibaPDA* establishes a connection to the PLC, reads the address book and saves it on the *ibaPDA* server. In the process, all previous address books relating to the selected IP address are overwritten.

The address book is only updated by manual request via the <Get address book> button.

**<Test connection>**

A connection test to the PLC is executed and available diagnostic data is issued.

### 3.4.5 Signal configuration

The selection of the signals to be measured is carried out in the I/O Manager by means of the symbol name supported by the address book browser.

In the *Analog* or *Digital* tab you configure the signals to be measured. In the *General* tab under *Module Layout* you define the length of the signal tables or the number of signals per table.

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**Note**

Observe the maximum number of signals permitted by your license.

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**Note**

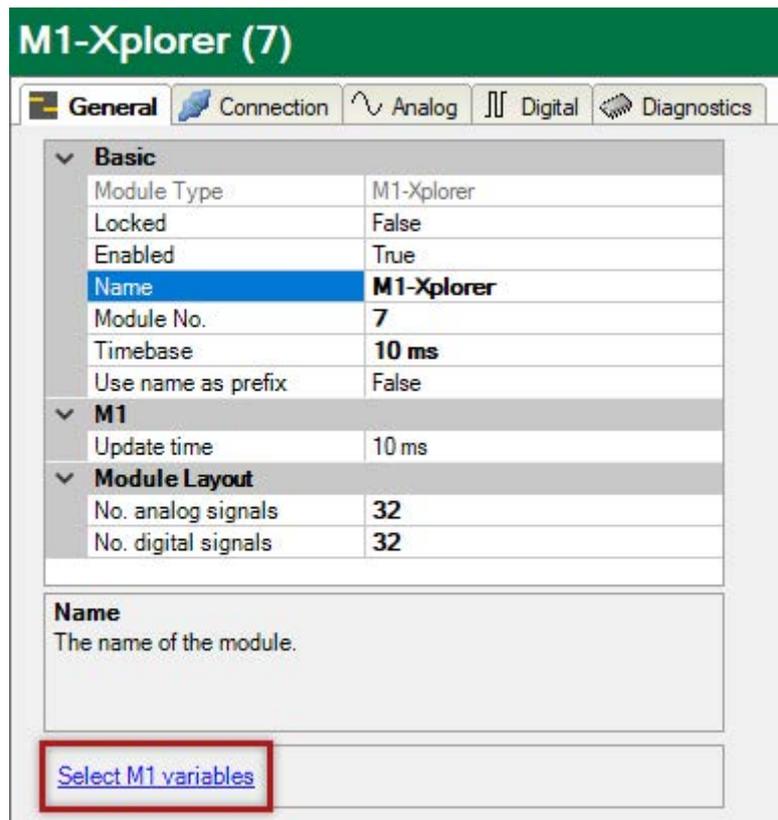
Take into consideration that the number of signals, which are read by a CPU, influences the minimum achievable read cycle. The more signals recorded, the slower the reachable reading cycle.

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**Selection of measuring signals**

You have two options to select the signals to be measured:

1. Click on the *Select M1 variables* hyperlink in the *General* tab of the module.



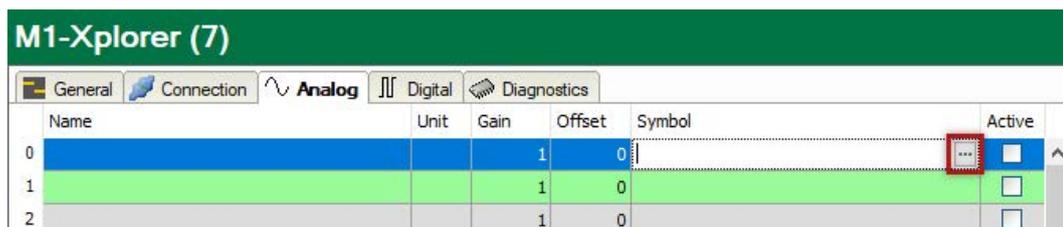
Click on the link and open the M1 address book browser:

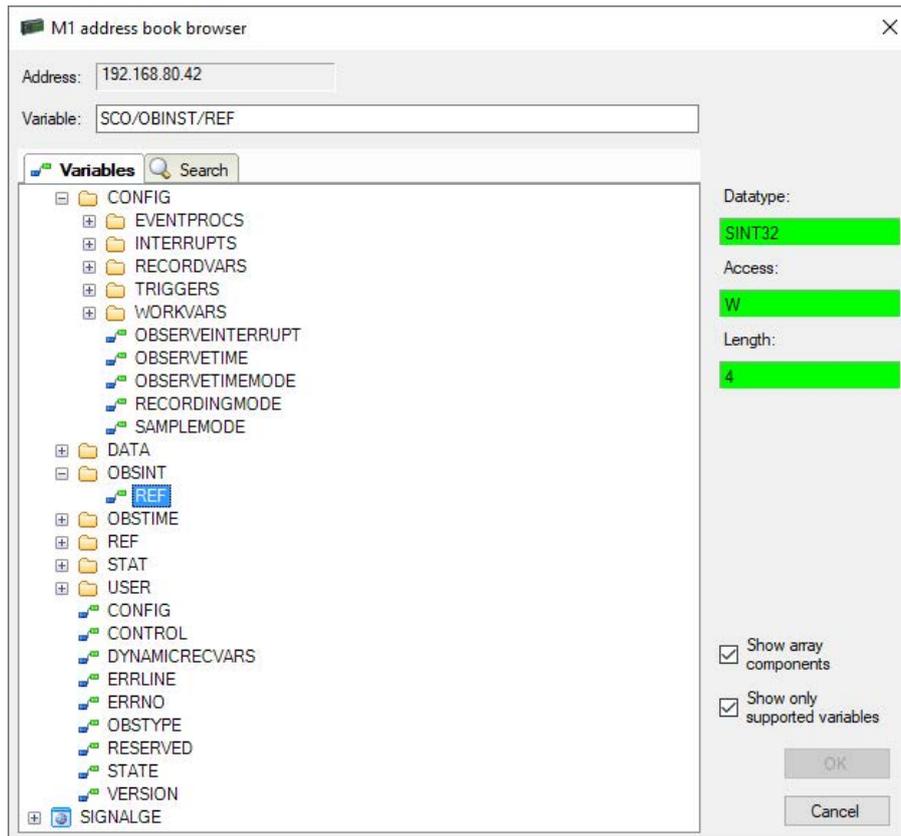
- Both the analog values as well as the digital values can be seen.
- Double click to apply the selected variables in the current row of the analog or digital table. Or select several variables and click <Add>.
- Close the browser by pressing <Close>.

2. In the *Analog or Digital* tab, click on the small browser button (...) in a field of the *Symbol* column.

A click on the icon opens the M1 address book browser.

- Only the analog values or digital values can be seen, depending on in which tab the browser is called up.
- Double click or click <Add> to apply the selected variable in the signal table and the browser is closed.





On the *Search* tab, you can search variables by name. The search result tree works in the same way as the complete variable tree.

By means of the checkbox “Show only supported variables” you can hide all not supported variables.

### 3.4.6 Module diagnostics

After applying the configuration the actual values of the analog and digital signals are displayed in the *Diagnostics* tab of the relevant module.

General Connection Analog Digital Diagnostics				
Analog values		Digital values		
	Name	Symbol	Datatype	Value
0	.Test.date	.Test.date		
1	.Test.date_time	.Test.date_time		
2	.Test.dint	.Test.dint	DINT	7225358
3	.Test.dt	.Test.dt	DINT	1167616836

Inactive signals are grayed out.

## 4 Diagnostics

### 4.1 License

If the interface is not displayed in the signal tree, you can either check in *ibaPDA* under *General – Settings* in the I/O Manager or in the *ibaPDA* service status application whether your license for this interface has been properly recognized. The number of licensed connections is shown in brackets.

The figure below shows the license for the *Codesys Xplorer* interface as an example.

License		License options:
License number:	<input type="text" value="1000000"/>	<ul style="list-style-type: none"> <li>ibaPDA-Data-Store-MindSphere (1024)</li> <li>ibaPDA-Data-Store-MQTT (1024)</li> <li>ibaPDA-Data-Store-InfluxDB (1024)</li> <li>ibaPDA-Interface-S7-Xplorer (16)</li> <li>ibaPDA-Interface-AB-Xplorer (16)</li> <li style="border: 2px solid red;">ibaPDA-Interface-Codesys-Xplorer (16)</li> <li>ibaPDA-Interface-Sigmatex-Xplorer (16)</li> <li>ibaPDA-Interface-TwinCAT-Xplorer (16)</li> <li>ibaPDA-Interface-B&amp;R-Xplorer (16)</li> <li>ibaPDA-Interface-...-Xplorer (16)</li> </ul>
Customer name:	<input type="text" value="iba AG"/>	
License time limit:	<input type="text" value="100 Unlimited days"/>	
Container id:	<input type="text" value="07-00-01-00-00-00-07-01"/>	
Container type:	<input type="text" value="IBA/PLC-ServerOS v3.1"/>	
Required EUP date:	<input type="text" value="24.09.2021"/>	
EUP date:	<input type="text" value="27.02.2024"/>	

### 4.2 Visibility of the interface

If the interface is not visible despite a valid license, it may be hidden.

Check the settings in the *General* tab in the *Interfaces* node.

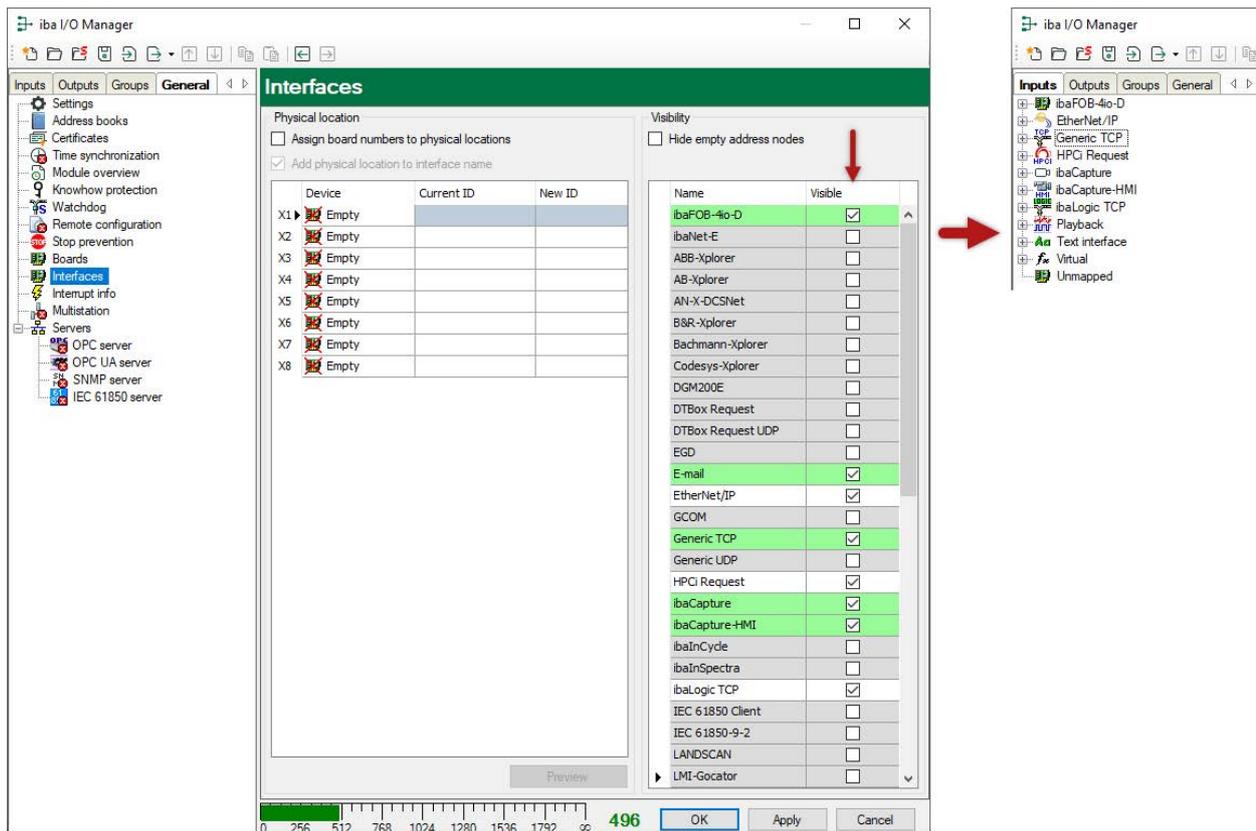
#### Visibility

The table *Visibility* lists all the interfaces that are available either through licenses or installed cards. These interfaces can also be viewed in the interface tree.

You can hide or display the interfaces not required in the interface tree by using the checkbox in the *Visible* column.

Interfaces with configured modules are highlighted in green and cannot be hidden.

Selected interfaces are visible, the others are hidden:



### 4.3 Log files

If connections to target platforms or clients have been established, all connection-specific actions are logged in a text file. You can open this (current) file and, e.g., scan it for indications of possible connection problems.

You can open the log file via the button <Open log file>. The button is available in the I/O Manager:

- for many interfaces in the respective interface overview
- for integrated servers (e.g. OPC UA server) in the *Diagnostics* tab.

In the file system on the hard drive, you can find the log files of the *ibaPDA* server (...\[ProgramData\iba\ibaPDA\Log](#)). The file names of the log files include the name or abbreviation of the interface type.

Files named [interface.txt](#) are always the current log files. Files named [Interface\\_yyyy\\_mm\\_dd\\_hh\\_mm\\_ss.txt](#) are archived log files.

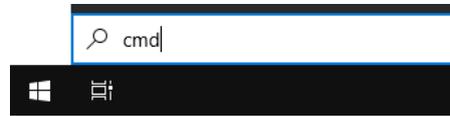
Examples:

- [ethernetipLog.txt](#) (log of EtherNet/IP connections)
- [AbEthLog.txt](#) (log of Allen-Bradley Ethernet connections)
- [OpcUAServerLog.txt](#) (log of OPC UA server connections)

## 4.4 Connection diagnostics with PING

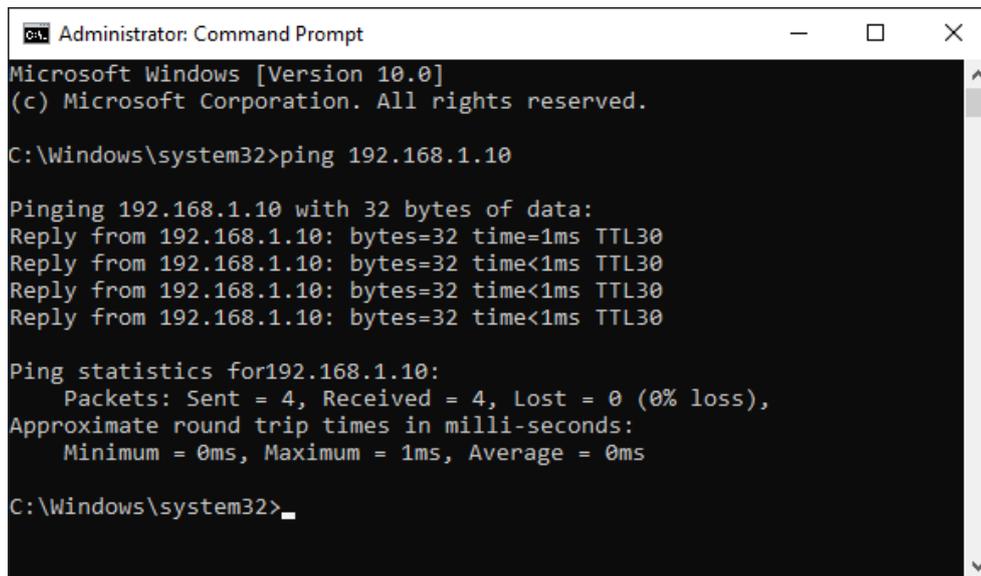
PING is a system command with which you can check if a certain communication partner can be reached in an IP network.

1. Open a Windows command prompt.



2. Enter the command "ping" followed by the IP address of the communication partner and press <ENTER>.

→ With an existing connection you receive several replies.

A screenshot of a Windows Command Prompt window titled 'Administrator: Command Prompt'. The window shows the following text:

```
Microsoft Windows [Version 10.0]
(c) Microsoft Corporation. All rights reserved.

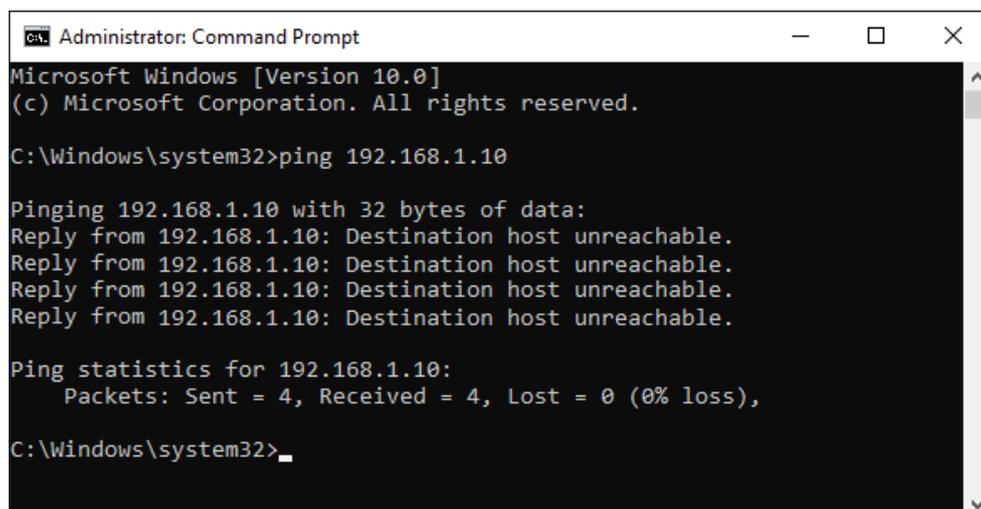
C:\Windows\system32>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:
Reply from 192.168.1.10: bytes=32 time=1ms TTL30
Reply from 192.168.1.10: bytes=32 time<1ms TTL30
Reply from 192.168.1.10: bytes=32 time<1ms TTL30
Reply from 192.168.1.10: bytes=32 time<1ms TTL30

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Windows\system32>_
```

→ With no existing connection you receive error messages.

A screenshot of a Windows Command Prompt window titled 'Administrator: Command Prompt'. The window shows the following text:

```
Microsoft Windows [Version 10.0]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\system32>ping 192.168.1.10

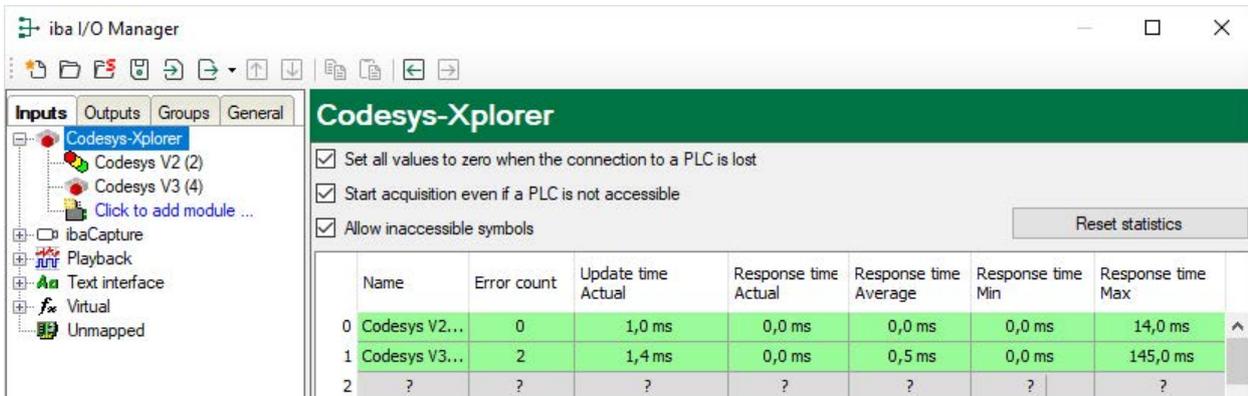
Pinging 192.168.1.10 with 32 bytes of data:
Reply from 192.168.1.10: Destination host unreachable.

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

C:\Windows\system32>_
```

## 4.5 Connection table

For every Ethernet-based interface, there is a table available in the I/O manager which shows the status of each connection. Each line represents one connection. The following figure shows, as an example, the connection table of the Codesys-Xplorer interface:



The connected target systems (controllers) are identified by their name or IP address in the first (left) column.

Depending on the interface type the table shows error counters, read counters and/or data sizes, as well as the cycle times, refresh times and/or update times of the different connections during the data acquisition. Click the <Reset statistics> button to reset the error counters and the calculation of the response times.

Additional information is provided by the background color of the table rows:

Color	Meaning
Green	The connection is OK and the data are read.
Yellow	The connection is OK, however the data update is slower than the configured update time.
Red	The connection has failed.
Gray	No connection configured.

Table 2: Meaning of background colors

## 4.6 Diagnostic modules

Diagnostic modules are available for most Ethernet based interfaces and Xplorer interfaces. Using a diagnostic module, information from the diagnostic displays (e. g. diagnostic tabs and connection tables of an interface) can be acquired as signals.

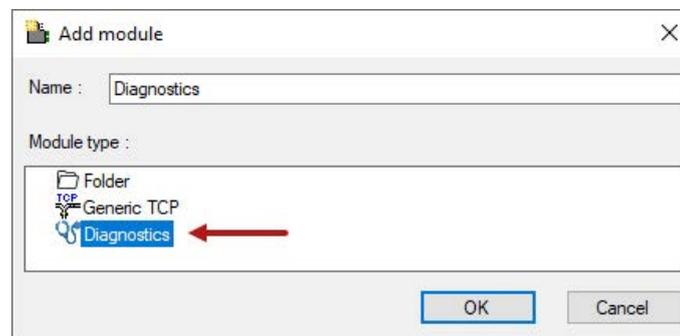
A diagnostic module is always assigned to a data acquisition module of the same interface and supplies its connection information. By using a diagnostic module you can record and analyze the diagnostic information continuously in the *ibaPDA* system.

Diagnostic modules do not consume any license connections, since they do not establish their own connection, but refer to another module.

Example for the use of diagnostic modules:

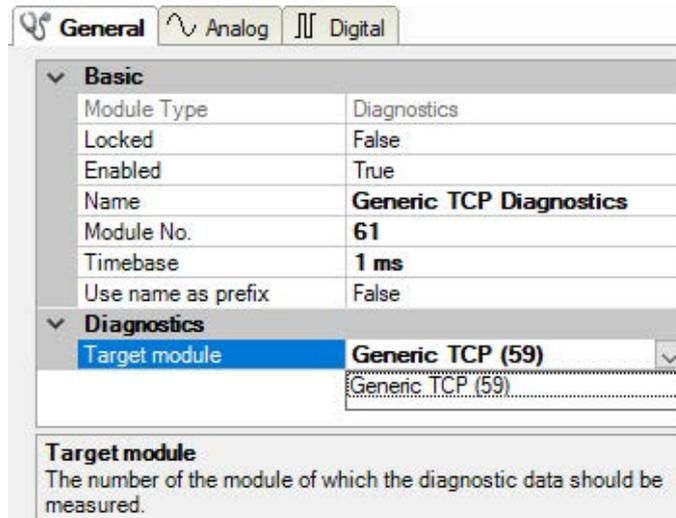
- A notification can be generated, whenever the error counter of a communication connection exceeds a certain value or the connection gets lost.
- In case of a disturbance, the current response times in the telegram traffic may be documented in an incident report.
- The connection status can be visualized in *ibaQPanel*.
- You can forward diagnostic information via the SNMP server integrated in *ibaPDA* or via OPC DA/UA server to superordinate monitoring systems like network management tools.

In case the diagnostic module is available for an interface, a "Diagnostics" module type is shown in the "Add module" dialog (example: Generic TCP).



### Module settings diagnostic module

For a diagnostic module, you can make the following settings (example: Generic TCP):



The basic settings of a diagnostic module equal those of other modules.

There is only one setting which is specific for the diagnostic module: the target module.

By selecting the target module, you assign the diagnostic module to the module on which you want to acquire information about the connection. You can select the supported modules of this interface in the drop down list of the setting. You can assign exactly one data acquisition module to each diagnostic module. When having selected a module, the available diagnostic signals are immediately added to the *Analog* and *Digital* tabs. It depends on the type of interface, which signals exactly are added. The following example lists the analog values of a diagnostic module for a Generic TCP module.

General Analog Digital						
Name	Unit	Gain	Offset	Active	Actual	
0 IP address (part 1)			1	0	<input checked="" type="checkbox"/>	
1 IP address (part 2)			1	0	<input checked="" type="checkbox"/>	
2 IP address (part 3)			1	0	<input checked="" type="checkbox"/>	
3 IP address (part 4)			1	0	<input checked="" type="checkbox"/>	
4 Port			1	0	<input checked="" type="checkbox"/>	
5 Message counter			1	0	<input checked="" type="checkbox"/>	
6 Incomplete errors			1	0	<input checked="" type="checkbox"/>	
7 Packet size (actual)	bytes		1	0	<input checked="" type="checkbox"/>	
8 Packet size (max)	bytes		1	0	<input checked="" type="checkbox"/>	
9 Time between data (actual)	ms		1	0	<input checked="" type="checkbox"/>	
10 Time between data (min)	ms		1	0	<input checked="" type="checkbox"/>	

For example, the IP (v4) address of a Generic TCP module (see fig. above) will always be split into 4 parts derived from the dot-decimal notation, for better reading. Also other values are being determined, as there are port number, counters for telegrams and errors, data sizes and telegram cycle times. The following example lists the digital values of a diagnostic module for a Generic TCP module.

General Analog Digital			
Name	Active	Actual	
0 Active connection mode	<input checked="" type="checkbox"/>		
1 Invalid packet	<input checked="" type="checkbox"/>		
2 Connecting	<input checked="" type="checkbox"/>		
3 Connected	<input checked="" type="checkbox"/>		

## Diagnostic signals

Depending on the interface type, the following signals are available:

Signal name	Description
Buffer file size (actual/avg/max)	Size of the file for buffering statements
Buffer memory size (actual/avg/max)	Size of the memory used by buffered statements
Buffered statements	Number of unprocessed statements in the buffer
Buffered statements lost	Number of buffered but unprocessed and lost statements
Connected	Connection is established
Connected (in)	A valid data connection for the reception (in) is available
Connected (out)	A valid data connection for sending (out) is available
Connecting	Connection being established
Connection attempts (in)	Number of attempts to establish the receive connection (in)
Connection attempts (out)	Number of attempts to establish the send connection (out)
Connection ID O->T	ID of the connection for output data (from the target system to <i>ibaPDA</i> ). Corresponds to the assembly instance number
Connection ID T->O	ID of the connection for input data (from <i>ibaPDA</i> to target system). Corresponds to the assembly instance number
Connection phase (in)	Status of the ibaNet-E data connection for reception (in)
Connection phase (out)	Status of the ibaNet-E data connection for sending (out)
Connections established (in)	Number of currently valid data connections for reception (in)
Connections established (out)	Number of currently valid data connections for sending (out)
Data length	Length of the data message in bytes
Data length O->T	Size of the output message in byte
Data length T->O	Size of the input message in byte
Destination IP address (part 1-4) O->T	4 octets of the IP address of the target system Output data (from target system to <i>ibaPDA</i> )
Destination IP address (part 1-4) T->O	4 octets of the IP address of the target system Input data (from <i>ibaPDA</i> to target system)
Disconnects (in)	Number of currently interrupted data connections for reception (in)
Disconnects (out)	Number of currently interrupted data connections for sending (out)
Error counter	Communication error counter
Exchange ID	ID of the data exchange
Incomplete errors	Number of incomplete messages
Incorrect message type	Number of received messages with wrong message type
Input data length	Length of data messages with input signals in bytes ( <i>ibaPDA</i> receives)
Invalid packet	Invalid data packet detected

Signal name	Description
IP address (part 1-4)	4 octets of the IP address of the target system
Keepalive counter	Number of KeepAlive messages received by the OPC UA Server
Lost images	Number of lost images (in) that were not received even after a retransmission
Lost Profiles	Number of incomplete/incorrect profiles
Message counter	Number of messages received
Messages per cycle	Number of messages in the cycle of the update time
Messages received since configuration	Number of received data telegrams (in) since start of acquisition
Messages received since connection start	Number of received data telegrams (in) since the start of the last connection setup. Reset with each connection loss.
Messages sent since configuration	Number of sent data telegrams (out) since start of acquisition
Messages sent since connection start	Number of sent data telegrams (out) since the start of the last connection setup. Reset with each connection loss.
Multicast join error	Number of multicast login errors
Number of request commands	Counter for request messages from <i>ibaPDA</i> to the PLC/CPU
Output data length	Length of the data messages with output signals in bytes ( <i>ibaPDA</i> sends)
Packet size (actual)	Size of the currently received message
Packet size (max)	Size of the largest received message
Ping time (actual)	Response time for a ping telegram
Port	Port number for communication
Producer ID (part 1-4)	Producer ID as 4 byte unsigned integer
Profile Count	Number of completely recorded profiles
Read counter	Number of read accesses/data requests
Receive counter	Number of messages received
Response time (actual/average/max/min)	Response time is the time between measured value request from <i>ibaPDA</i> and response from the PLC or reception of the data.  Actual: current value  Average/max/min: static values of the update time since the last start of the acquisition or reset of the counters.
Retransmission requests	Number of data messages requested again if lost or delayed
Rows (last)	Number of resulting rows by the last SQL query (within the configured range of result rows)
Rows (maximum)	Maximum number of resulting rows by any SQL query since the last start of acquisition (possible maximum equals the configured number of result rows)

Signal name	Description
Send counter	Number of send messages
Sequence errors	Number of sequence errors
Source IP address (part 1-4) O->T	4 octets of the IP address of the target system Output data (from target system to <i>ibaPDA</i> )
Source IP address (part 1-4) T->O	4 octets of the IP address of the target system Input data (from <i>ibaPDA</i> to target system)
Statements processed	Number of executed statements since last start of acquisition
Synchronization	Device is synchronized for isochronous acquisition
Time between data (actual/ max/min)	Time between two correctly received messages Actual: between the last two messages Max/min: statistical values since start of acquisition or reset of counters
Time offset (actual)	Measured time difference of synchronicity between <i>ibaPDA</i> and the <i>ibaNet-E</i> device
Topics Defined	Number of defined topics
Topics Updated	Number of updated topics
Unknown sensor	Number of unknown sensors
Update time (actual/average/ configured/max/min)	Specifies the update time in which the data is to be retrieved from the PLC, the CPU or from the server (configured). Default is equal to the parameter "Timebase". During the measurement the real actual update time (actual) can be higher than the set value, if the PLC needs more time to transfer the data. How fast the data is really updated, you can check in the connection table. The minimum achievable update time is influenced by the number of signals. The more signals are acquired, the greater the update time becomes. Average/max/min: static values of the update time since the last start of the acquisition or reset of the counters.
Write counter	Number of successful write accesses
Write lost counter	Number of failed write accesses

## 5 Support and contact

### Support

Phone: +49 911 97282-14  
Fax: +49 911 97282-33  
Email: support@iba-ag.com

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#### Note



If you need support for software products, please state the license number or the CodeMeter container number (WIBU dongle). For hardware products, please have the serial number of the device ready.

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### Contact

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