



# ibaPDA-Interface-Sigmatek-Xplorer

PLC-Xplorer Data Interface to  
SIGMATEK Systems

Manual

Issue 1.2

Measurement Systems for Industry and Energy

[www.iba-ag.com](http://www.iba-ag.com)

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

Version	Date	Revision	Author	Version SW
1.2	03-2023	Diagnostic modules	RM/IP	7.3.7

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# 1 About this Manual

This document describes the function and application of the software interface

*ibaPDA-Interface-Sigmatek-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-Sigmatek-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.

---

### 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.

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## 2 System requirements

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

- *ibaPDA* v7.3.7 or higher
- License for *ibaPDA-Interface-PLC-Xplorer* or *ibaPDA-Interface-Sigmatek-Xplorer*
- If you need more than 16 connections, you will require additional *one-step-up-Interface-Sigmatek-Xplorer* licenses for each additional 16 connections.

### Note



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

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

### License information

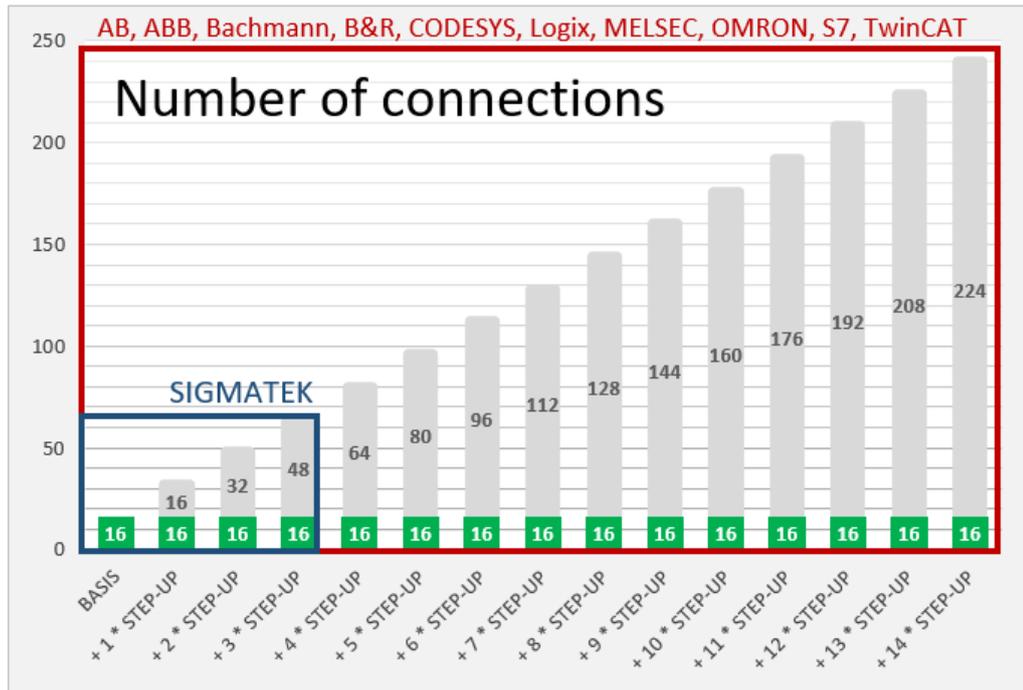
Order no.	Product name	Description
31.001042	ibaPDA Interface PLC-Xplorer	Extension license for an ibaPDA system adding all available Xplorer data interfaces. (Full specification under <a href="http://www.iba-ag.com">www.iba-ag.com</a> )
31.000004	ibaPDA-Interface-Sigmatek-Xplorer	Extension license for an ibaPDA system adding the data interface: + Sigmatek-Xplorer (interface to SIGMATEK)
31.100004	one-step-up-Interface-Sigmatek-Xplorer	Extension license for 16 further Sigmatek-Xplorer connections, a maximum of 3 permissible

Table 1: Available Sigmatek-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 SIGMATEK

### 3.1 General information

The Sigmatek-Xplorer data interface is suitable for the acquisition of measured data from a SIGMATEK PLC using TCP/IP over standard network cards. Access is transparent for the controller. It is not necessary to configure or program the PLC separately.

Up to 16 connections can be configured with a Sigmatek-Xplorer interface per license. In total, a maximum of 64 connections can be implemented by purchasing up to three additional *one-step-up-Sigmathek-Xplorer* licenses. One connection is required for each SIGMATEK PLC.

The signals to be measured can be conveniently selected using their symbolic names with support from the *ibaPDA* Symbol Browser. This allows access to all measurable symbols (servers, clients, global variables), based on the imported server object list of the SIGMATEK LASAL project. LASAL SERVICE is SIGMATEK's programming software.

### 3.2 System topologies

The connections to the controllers can be established via the computer's standard Ethernet interface.

No further software is necessary for operation.

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#### Note



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

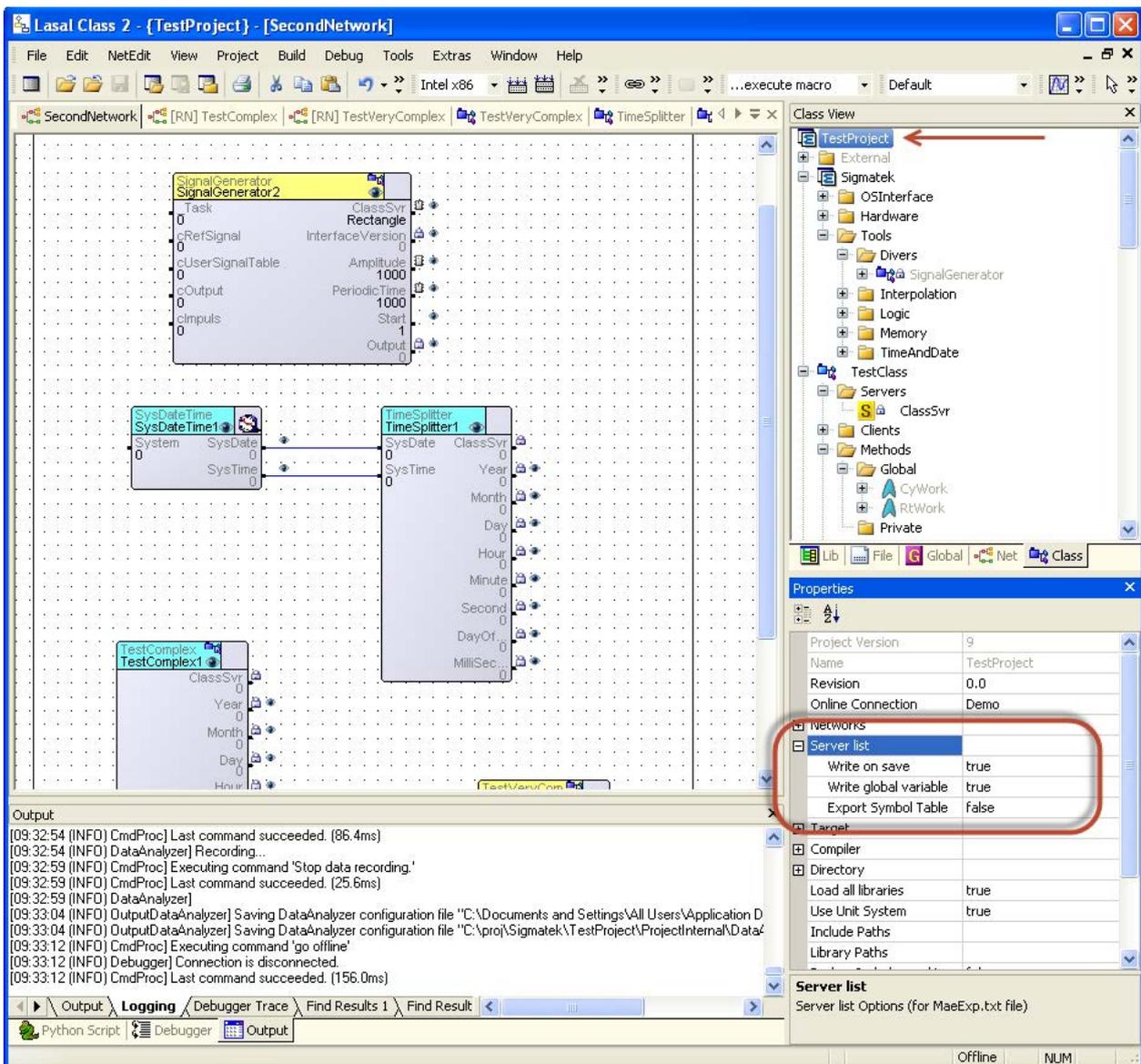
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### 3.3 Configuration and engineering SIGMATEK

Generally, no particular configuration and programming is required on the controller side. In particular, it is not necessary to call any program modules. *ibaPDA* can use the following objects for measurements:

- Servers
- Clients
- Global variables (not if they have the STRUCT data type)

The SIGMATEK Lasal software has to be used to create a so-called server object list so that the measurement signals can be selected in *ibaPDA* via the symbol browser. This list then contains all the objects with the "Visualized" property.



You can create this list either manually or automatically.

Use the *Build – Write Server List* menu item to create the list manually.

Enable *Server list – Write on save* in the project options to have the list created automatically. Each time the project is saved, a current list is automatically created.

The global variables will also be exported together with the server objects if the *Server list – Write global variable* option is also enabled.

The generated list is exported to a specific file `MaeExp.txt` which can be found in the same folder as the project file (\*.lcp).

Later, when configuring the system in *ibaPDA*, you can open and load this file using the <Create addressbook> button. The symbol browser will then access it.

Since the objects to be measured in SIGMATEK controllers are always accessed by the full name of the objects, the name is sent from *ibaPDA* to the PLC. The PLC then returns the address that *ibaPDA* has to read.

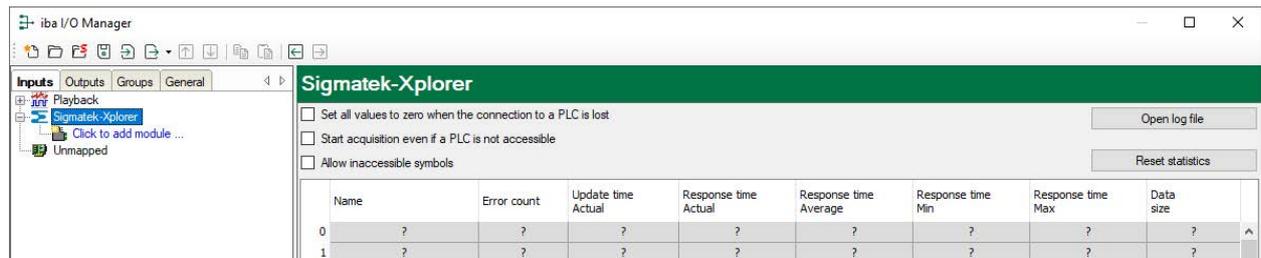
## 3.4 Configuration and engineering ibaPDA

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

### 3.4.1 Interface settings

If the Xplorer interface is selected in the tree, you can see an overview of diagnostics information on the configured connections between *ibaPDA* and the controllers.

The interface has the following features and configuration options.



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

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

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

If this option is enabled, the acquisition will start even if the SIGMATEK-CPU is not accessible. Instead of an error, a warning is indicated in the validation dialog. If the system has been started without a connection to the controller, *ibaPDA* will periodically try to connect to the PLC.

#### Allow inaccessible symbols

Enable this option if you wish to start acquisition even if symbols are not accessible. The inaccessible symbols are issued as warnings in the validation dialog.

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

If you do not enable this option, measurement will not start when inaccessible symbols are present.

#### 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 22.

#### <Open log file>

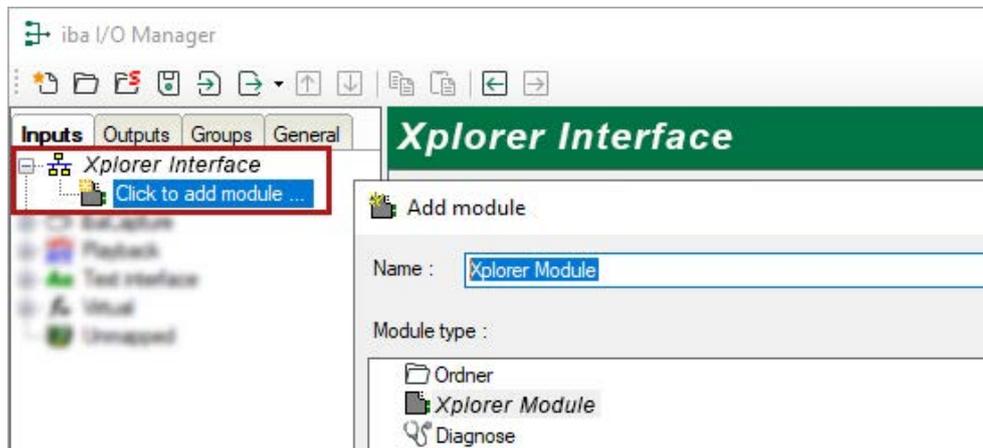
If connections to controllers have been established, all connection specific actions are recorded in a text file. Using this button, you can open and check this file. In the file system on the hard disk, you find the log files of the *ibaPDA* server (...\\ProgramData\\iba\\ibaPDA\\Log). The file name of the current log file is `InterfaceLog.txt`; the name of the archived log files is `InterfaceLog_yyyy_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

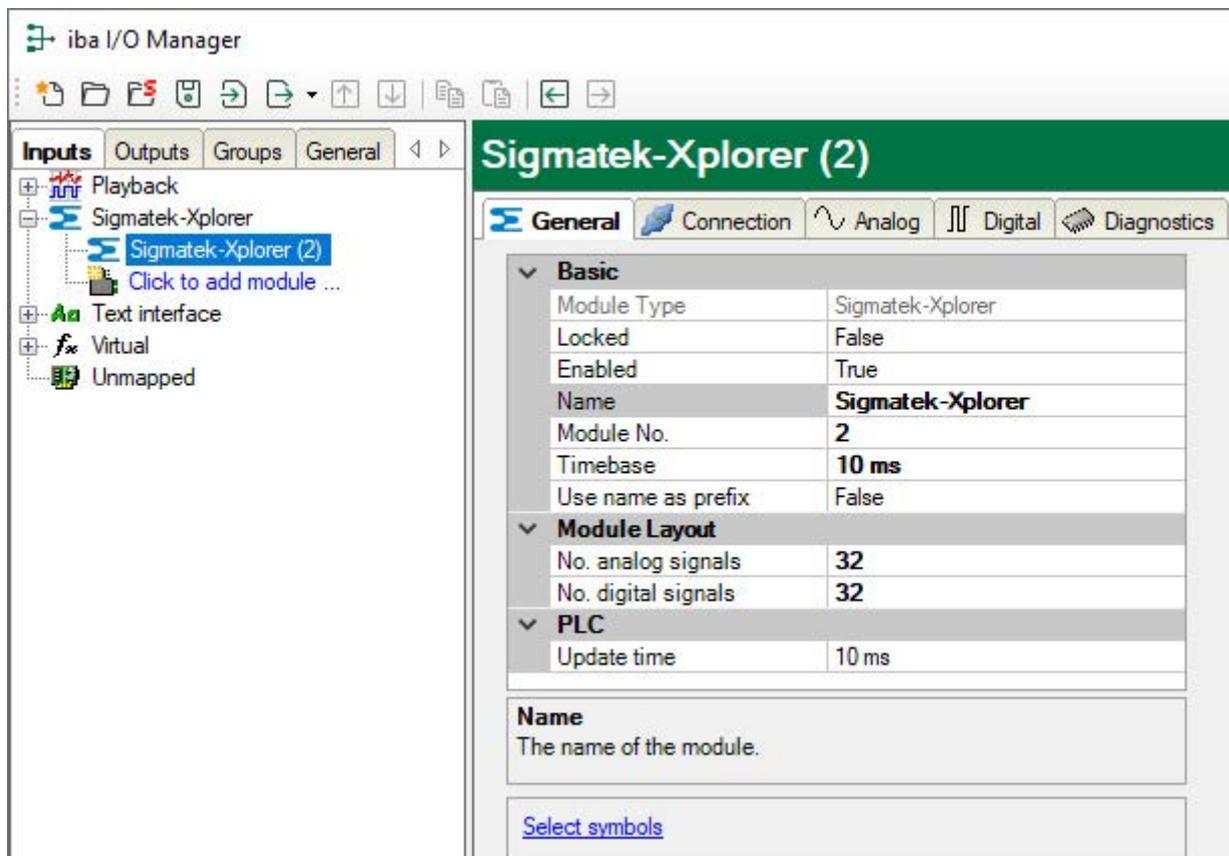
1. Click on the blue command *Click to add module...* located under each data interface in the *Inputs* or *Outputs* tab.
2. Select the desired module type in the dialog box and assign a name via the input field if required.
3. Confirm the selection with <OK>.



### 3.4.3 General module settings

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

All modules have the following setting options.



#### Basic settings

##### Module Type (information only)

Indicates the type of the current module.

##### Locked

You can lock a module to avoid unintentional or unauthorized changing of the module settings.

##### Enabled

Enable the module to record signals.

##### Name

Here you can enter a name for the module.

##### Module No.

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

##### Timebase

All signals of the module are sampled on this time base.

##### Use name as prefix

This option puts the module name in front of the signal names.

## 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.

## PLC

### Update time

Specifies the reference update time in which the data is requested from the PLC. During measurement, the real current update time may be higher than the specified value if the PLC needs more time to transmit the data. You can check in the connection table how fast the data is actually updated.

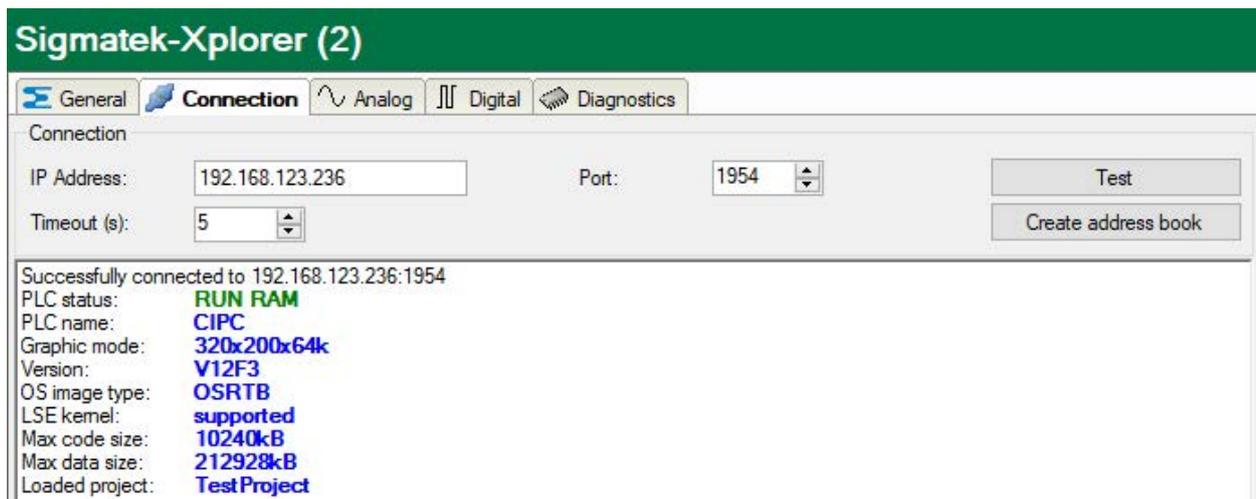
### <Select symbols>

Click on this link after the connection has been successfully established to configure the measurement signals. As another pre-requisite for this, you should have generated an address book.

For further information see [➤ Signal configuration](#), page 14.

## 3.4.4 Connection settings

Configure the connection of the module to the controller in the *Connection* tab.



## Connection

### IP address

Enter the IP address of the PLC here to establish a connection.

### Port

The port number can remain on the default setting of 1954 usually.

### Timeout

Here you can specify a value for the timeout in seconds for establishing the connection and for read accesses. If the time set here is exceeded, the controller will be declared not accessible or not responsive.

**<Test>**

An attempt is made to establish a connection to the controller using the connection parameters specified. If successful, information about the PLC is displayed, such as status, name, currently loaded project and some characteristic values of the CPU.

**<Create addressbook>**

Click on this button to open the [MaeExp.txt](#) file previously generated with the SIGMATEK Lasal software and to create the address book.

Once the address book has been generated you are able to open the symbol browser for selecting the measurement signals by clicking on the *Select symbols* hyperlink in the *General* tab of the module or in the *Symbol* column of the *Analog* and *Digital* tabs.

### 3.4.5 Signal configuration

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.

**Note**

Observe the maximum number of signals permitted by your license.

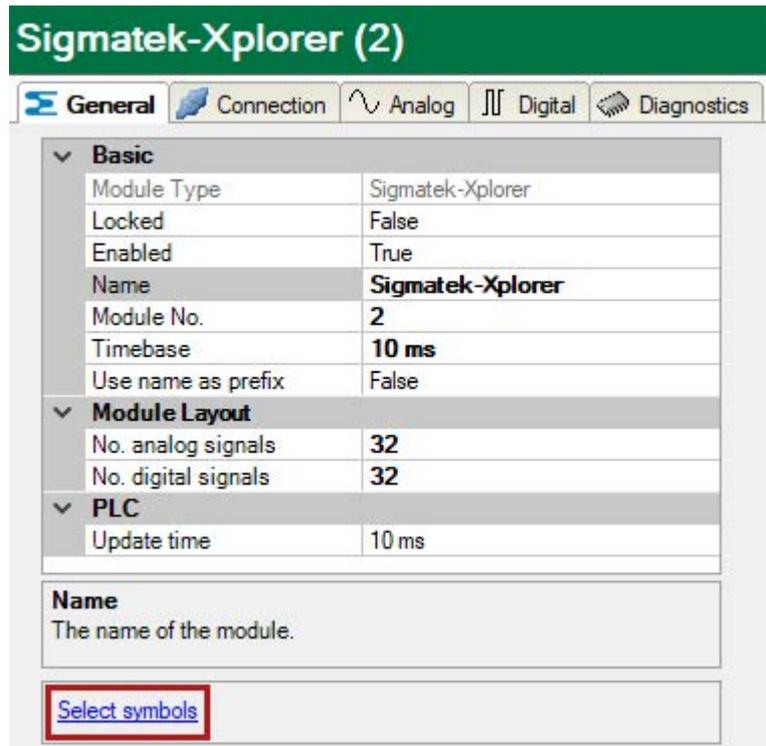
**Note**

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.

**Selection of the signals to be measured**

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

1. Click on the *Select symbols* hyperlink in the module's *General* tab.



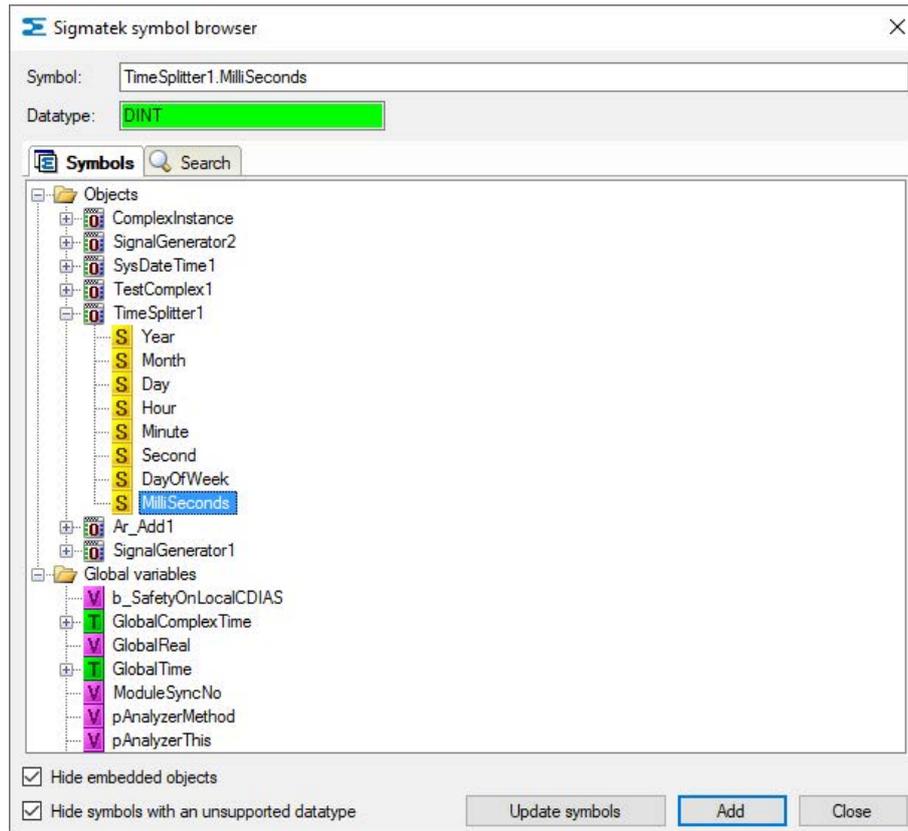
Clicking on the link opens the Sigmatek symbol browser.

2. Click on a field in the *Symbols* column of the *Analog* or *Digital* tab.

The icon  becomes visible. A click on the icon opens the Sigmatek symbol browser.

All the available signals are listed if you open the signal browser via the hyperlink in the *General* tab. The *Analog* or *Digital* tab will be opened in the background depending on whether you select an analog or digital signal in the browser's signal tree. When you add a signal it will be inserted in the next free row of the appropriate signal table.

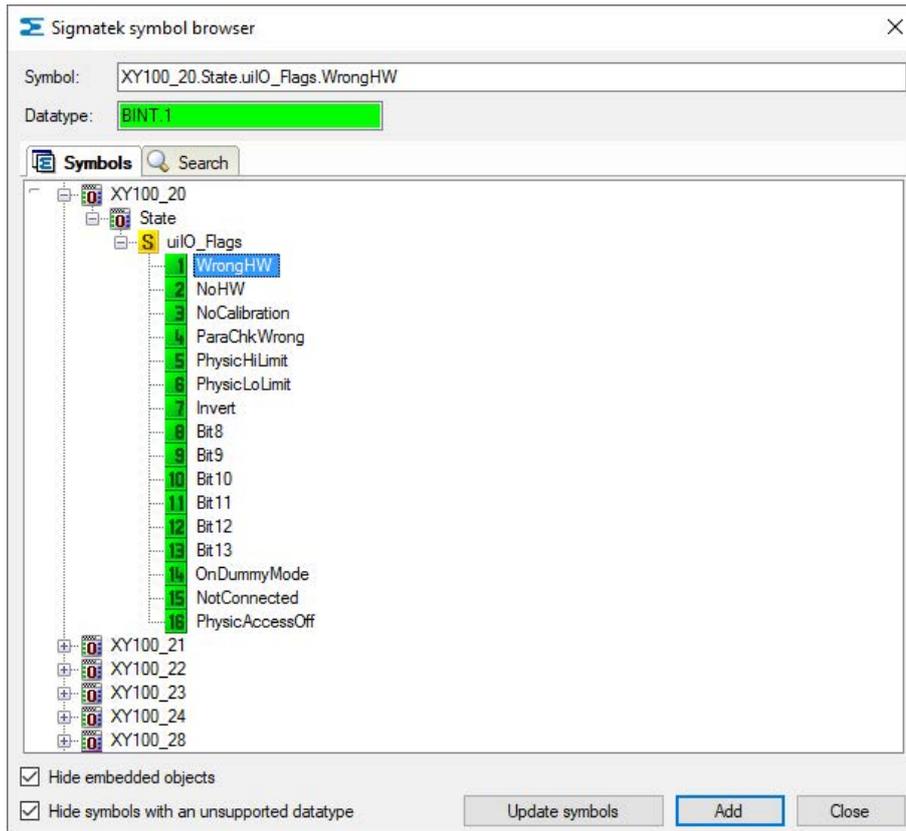
When you open the signal browser via a field in the *Symbols* column of a signal table (analog or digital), all the signals of the corresponding data type are shown in the browser signal tree. When you add a signal, it will be inserted into the row where you opened the symbol browser.



You can select individual or multiple signals from the signal tree.

Click on <Add> to add them to the corresponding analog or digital signal table. When you select a single signal, the next signal is highlighted when you click on <Add>. You can add several consecutive signals by clicking on <Add> multiple times. You can also add a signal to the signal table by double-clicking on a signal.

You can import the [MaeExp.txt](#) file again or select a different file with a click on the <Update symbols> button.



The symbol browser also supports bit fields (BSINT, BINT and BDINT). The individual bits can be used as digital signals or the integer value can be used as an analog signal.

You can search for the symbol name in the Search tab of the symbol browser. The signal tree for the search result can be used just like the complete signal tree.

**Note**



You can hide all unsupported datatypes by checking the "Hide symbols with an unsupported datatype" checkbox.

**Description of the tables**

The analog signals to be measured have to be entered into the signal tables with the complete name (symbol) and the data type. This is done automatically for visualized servers and global variables when the symbol browser is used. You have to enter the information manually for clients and non-visualized servers. You can assign the text names for the symbols individually.

Sigmatek-Xplorer (2)							
General Connection Analog Digital Diagnostics							
	Name	Unit	Gain	Offset	Symbol	DataType	Active
0	SignalGenerator2.Output			1	0 SignalGenerator2.Output	DINT	<input checked="" type="checkbox"/>
1	SignalGenerator1.Output			1	0 SignalGenerator1.Output	DINT	<input checked="" type="checkbox"/>
2	GlobalReal			1	0 GlobalReal	REAL	<input checked="" type="checkbox"/>
3	TimeSplitter1.Year			1	0 TimeSplitter1.Year	DINT	<input checked="" type="checkbox"/>
4	TimeSplitter1.Month			1	0 TimeSplitter1.Month	DINT	<input checked="" type="checkbox"/>
5	TimeSplitter1.Day			1	0 TimeSplitter1.Day	DINT	<input checked="" type="checkbox"/>

The full symbol name, the datatype and the bit number have to be entered for each digital signal. Digital signals may occur as a variable of datatype BOOL or come from a bit field.

**Sigmathek-Xplorer (2)**

General Connection Analog Digital Diagnostics

	Name	Symbol	DataType	Bit no.	Active
0	TimeSplitter 1.Status.Bit0	TimeSplitter 1.Status.Bit0	BDINT	1	<input checked="" type="checkbox"/>
1	TimeSplitter 1.Status.Bit1	TimeSplitter 1.Status.Bit1	BDINT	2	<input checked="" type="checkbox"/>
2	TimeSplitter 1.Status.Bit2	TimeSplitter 1.Status.Bit2	BDINT	3	<input checked="" type="checkbox"/>
3	TimeSplitter 1.Status.Bit3	TimeSplitter 1.Status.Bit3	BDINT	4	<input checked="" type="checkbox"/>
4	TimeSplitter 1.Status.Bit5	TimeSplitter 1.Status.Bit5	BDINT	5	<input checked="" type="checkbox"/>
5	TimeSplitter 1.Status.Bit6	TimeSplitter 1.Status.Bit6	BDINT	6	<input checked="" type="checkbox"/>

### 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* in the I/O Manager under *General – Settings* 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-Sigmatek-Xplorer (16)</li> <li>ibaPDA-Interface-TwinCAT-Xplorer (16)</li> <li>ibaPDA-Interface-B&amp;R-Xplorer (16)</li> <li>ibaPDA-Interface-Logic-Xplorer (16)</li> </ul>
Customer name:	<input type="text" value="iba AG"/>	
License time limit:	<input type="text" value="1000000000"/>	
Container id:	<input type="text" value="17-00-01-00-00-00-00-00"/>	
Container type:	<input type="text" value="MindSphere 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.

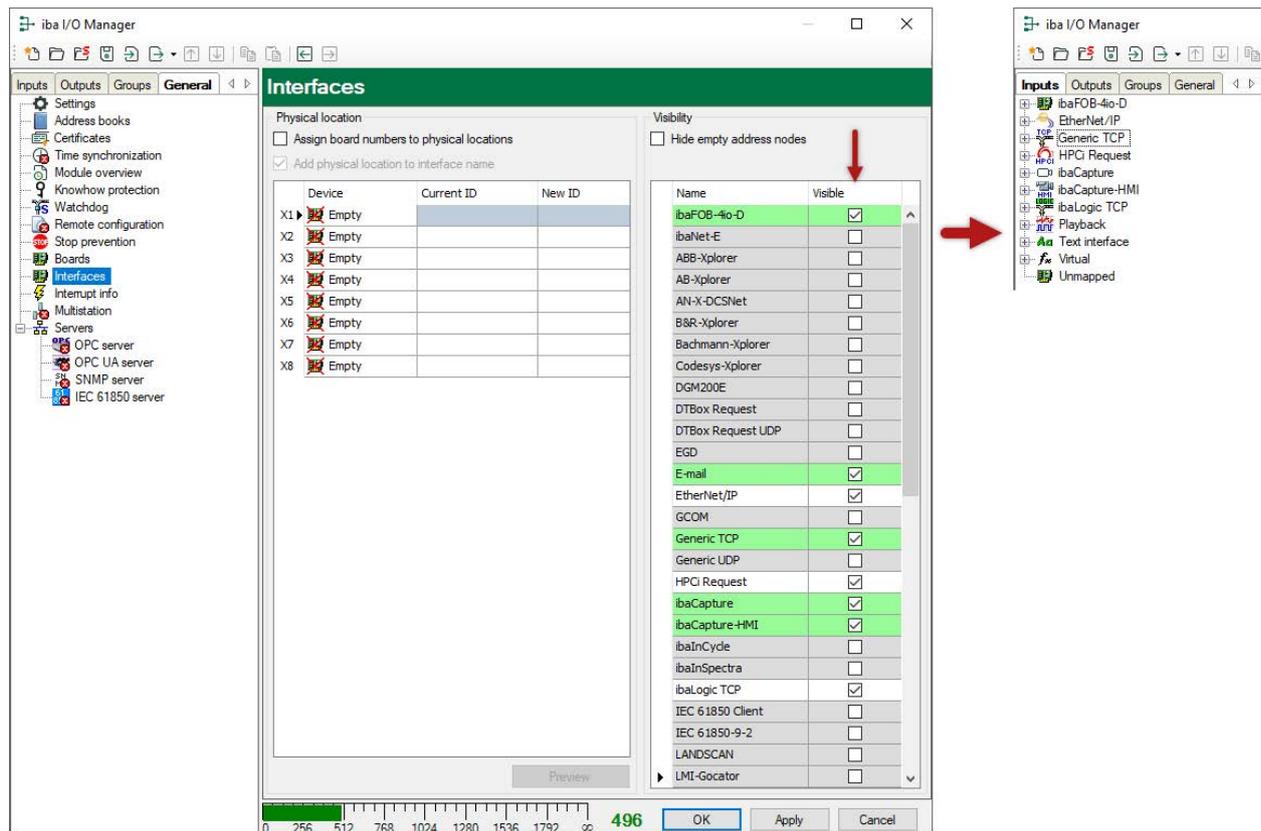
#### Visibility

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.

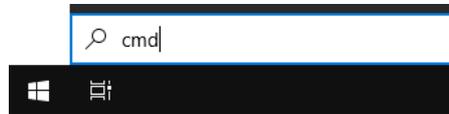
Examples:

- `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

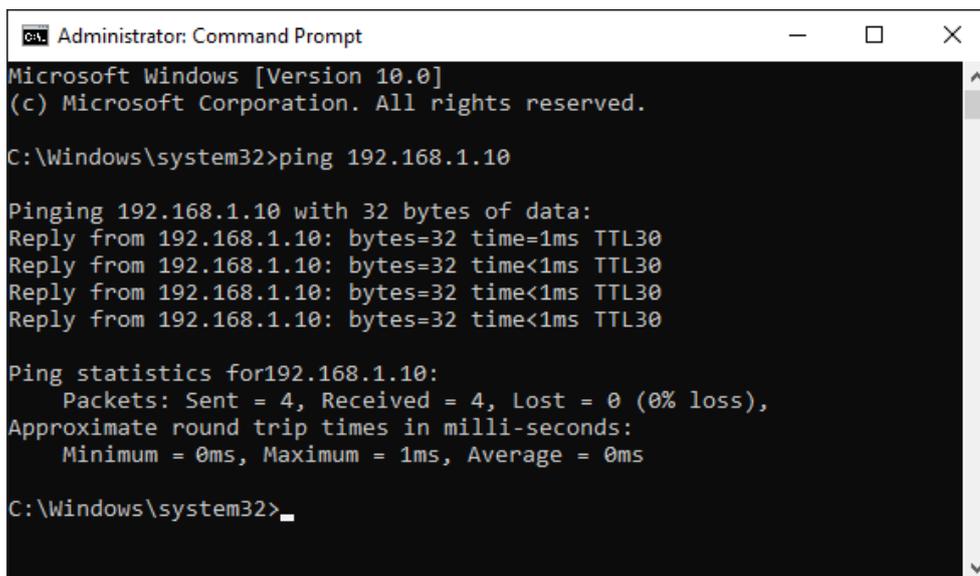
PING is a system command with which you can check if a certain communication partner can be reached in an IP network.

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 the 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.

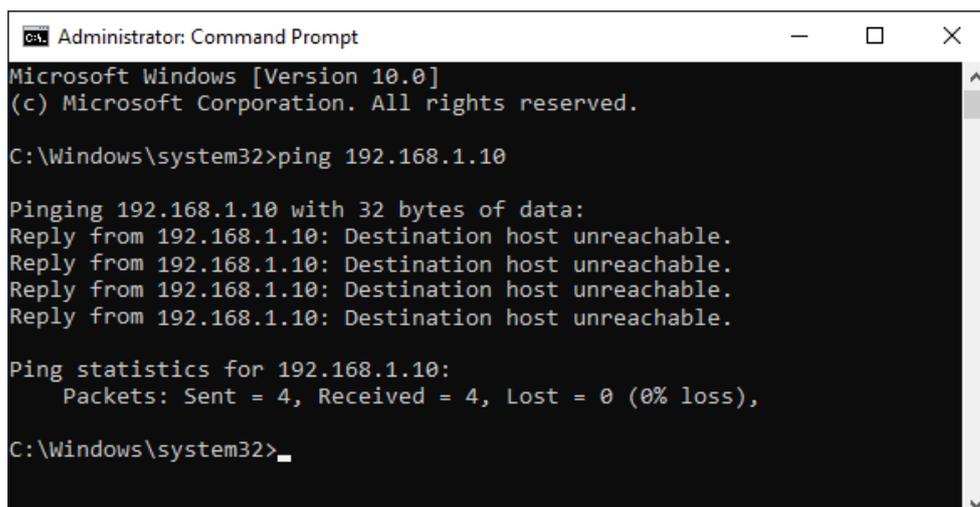
C:\Windows\system32>ping 192.168.1.10

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 the 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

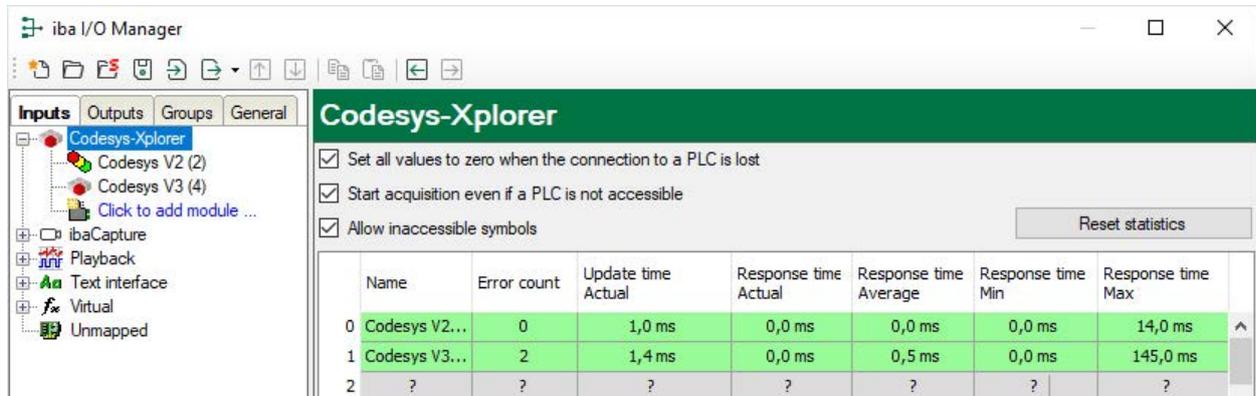
Pinging 192.168.1.10 with 32 bytes of data:
Reply from 192.168.1.10: Destination host unreachable.

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.

## 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.

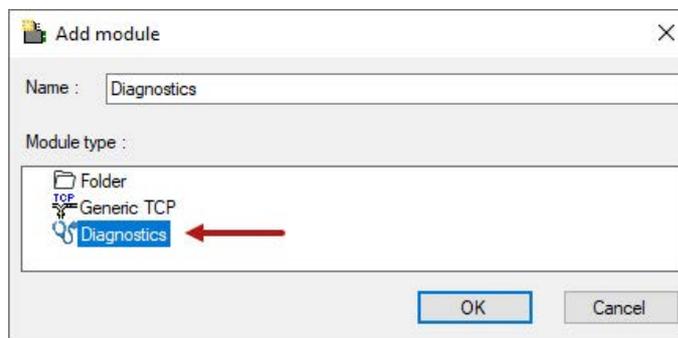
A diagnostic module is always assigned to a data acquisition module of the same interface and supplies its connection information. By using a diagnostic module you can record and analyze the diagnostic information continuously in the *ibaPDA* system.

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:

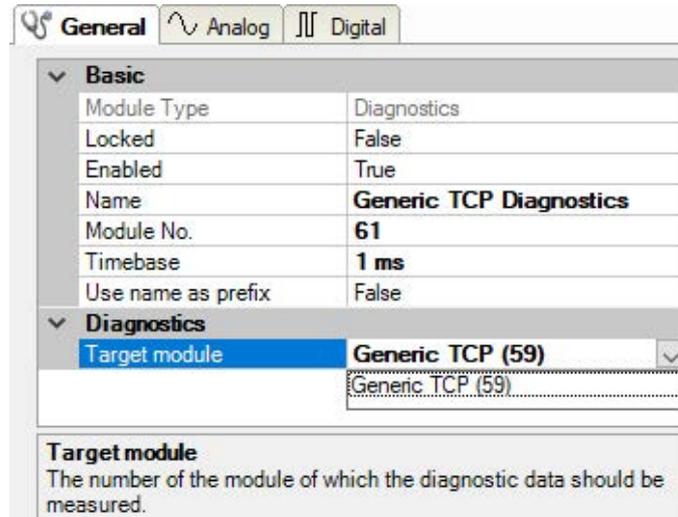
- A notification can be generated, whenever the error counter of a communication connection exceeds a certain value or the connection gets lost.
- In case of a disturbance, the current response times in the telegram traffic may be documented in an incident report.
- The connection status can be visualized 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 <i>ibaNet-E</i> data connection for reception (in)
Connection phase (out)	Status of the <i>ibaNet-E</i> 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

Signal name	Description
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
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

Signal name	Description
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)
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

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#### Note



If you need support for software products, please state the license number or the Container ID. For hardware products, please have the serial number of the device ready.

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### Contact

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