### **Operating Manual**

# **BioPAT® Xgas Vis**

Software Manual



85037-545-79





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# 1 About This Document

All information and instructions in this operating manual have been compiled in consideration of applicable standards and guidelines, the state of technology and our many years of experience and knowledge.

These operating instructions provide you with all the information necessary to install and to configure the BioPAT<sup>®</sup> Xgas Vis Software.

In addition to the operating manual, all generally valid, legal and otherwise binding regulations for accident protection and environmental protection of the country of use must be observed.

The operating manual must always be kept at the place of use of the device.

### 1.1 Accompanying Documents

The operating manual describes how to install and to configure the BioPAT<sup>®</sup> Xgas Vis Software.

In addition to these operating instructions, follow the information in the operating manual "BioPAT<sup>®</sup> Xgas" and in the documentation of the other software and hardware components.

### 1.2 Symbols Used

### NOTE

- is an indication of a function or setting on the device.
- is an indication that caution should be exercised while working.
- identifies useful information.

The following presentations will also be used:

- Texts that follow this mark are lists.
- Texts that follow this mark describe activities that must be carried out in the specified order.
- > Texts that follow this mark describe the result of an action.
- "" Texts in quotes are references to other chapters or sections.
- [→] Texts following this symbol make reference to other chapters, sections or documents.

# 2 Safety Information

## 2.1 General Safety Precautions

The BioPAT<sup>®</sup> Xgas Vis Software may only be installed and configured after gaining familiarity with this operating manual.

Always keep the operating manual in the location where the device is in use.

In addition to the operating manual, follow all general and local regulations for accident prevention and environmental protection.

### 2.2 Intended Use and Foreseeable Misuse

The operational safety of the device is only ensured when it is used for its intended purpose and operated by trained personnel.

#### Application

The device is only intended for industrial, commercial, training, and research facilities.

The BioPAT® Xgas Vis Software is intended for use with the BioPAT® Xgas Sensor and the BioPAT® MFCS/win Software.

# 3 Overview

With the BioPAT<sup>®</sup> Xgas hardware, the  $O_2$  and  $CO_2$  concentration can be monitored and controlled for any given bioprocesses in real time.

The BioPAT<sup>®</sup> Xgas is a dual oxygen-carbon dioxide sensor featuring automatic compensation for humidity and pressure. The oxygen concentration can be measured in a range of 1-50 % and the carbon dioxide concentration in a range of 0-10 %.

The BioPAT<sup>®</sup> Xgas Sensor can be directly connected by analog signals to the DCU system. Therefore, only a cable and two free analog input ports at the DCU systems need to be available.

Alternatively, if there are no available analog input ports on the DCU system, then it is possible to connect the BioPAT® Xgas hardware using the BioPAT® Xgas Vis Software interfacing to the MFCS/win SCADA software. Herein, the direct connection of the BioPAT® Xgas Sensors to the MFCS/win software with all necessary hardware and software components is described.

## 3.1 Requirements

- The BioPAT® Xgas Vis Software requires MFCS/win Version 3.0
- The Firmware version of the used Perle device is minimum 4.5

#### **Computer Configuration**

General	CD ROM drive
	USB Port
Operating	Microsoft Windows XP (32 bit)
System	Microsoft Windows Server 2003 R2 (32 bit & 64 bit)
	Microsoft Windows 7 (32 bit & 64 bit)
	Microsoft Windows Server 2008 SP2 (32 bit & 64 bit)
	Microsoft Windows Server 2008 R2 Sp1 64 bit
Operating System Language	English, German

## 3.2 Contents of Delivery

The delivery of the  $\mathsf{BioPAT}^{\otimes}\,\mathsf{Xgas}\,\mathsf{Vis}\,\mathsf{Software}\,\mathsf{contains}\,\mathsf{the}\,\mathsf{following}\,\mathsf{components:}$ 

- CD-ROM, containing all necessary software items
- Software activation Dongle
- User Manual for the BioPAT® Xgas Vis

# 4 Installation

## 4.1 Installation Steps

The following table presents an overview on the necessary steps to install and configure the BioPAT<sup>®</sup> Xgas Vis Software. Please follow the recommended order in the table step by step.

Each entry refers to a separate chapter or sub-chapter in this handbook where the procedure is described in detail.

Step	Installation Procedure	Remark
0	Hardware installation [ $\rightarrow$ 4.2, page 12]	
1	Preparation step for installation on Windows XP and Windows Server 2008, only [→5.1, page 14]	Only for Windows XP and Windows Server 2008
2	Software installation of BioPAT® Xgas Vis Software [→5.2, page 19]	
3	Installation and configuration of the Perle device driver [→5.3, page 24]	
4	Installation of TruePort application $[\rightarrow 5.4, page 28]$	
5	Checking hardware jumper settings at the Perle device [ $\rightarrow$ 6.1, page 32]	
6	Reset Perle device [ $\rightarrow$ 6.2, page 33]	
7	Configure Perle device [ $\rightarrow$ 7.1, page 34]	
8	Configure serial port with TruePort Management Tool [→7.2.1, page 41]	

Step	Installation Procedure	Remark
9	Configure serial port with Device Manager [→7.2.2, page 47]	
10	Activate the BioPAT® Xgas Vis OPC License [→7.3, page 49]	
11	Configuration of one BioPAT® Xgas sensor [→7.4.1, page 51]	
12	Configuration of multiple sensors with one Ethernet Modbus Converter [→7.4.2, page 56]	
13	How to change the Modbus Address [→7.5, page 58]	Multiple sensors only
14	Installation of BioPAT® Xgas OPC Server [→8, page 61]	
15	Installation of MFCS/win OPC Client [→8.1, page 61]	
16	Configuration work inside MFCS/win Configuration Management [→8.2, page 62]	
17	How to browse the BIOPATXGA.OPC.1 Server with OPC Test Client [ $\rightarrow$ 8.3, page 69]	Optional
18	How to check   upgrade the firmware version of the Perle device [ $\rightarrow$ 9.1, page 72]	Update only necessary, if firmware < 4.5
19	Configure settings for Windows Modbus Service [→9.2, page 76]	

## 4.2 Hardware Installation

- ► Install the BioPAT<sup>®</sup> Xgas according the operating manual "BioPAT<sup>®</sup> Xgas", delivered together with the BioPAT<sup>®</sup> Xgas hardware.
- The installation is described in chapter "4. Installation".



Connection of BioPAT® Xgas to BioPAT® MFCS/win with BioPAT® Xgas Vis Software

#### Accessories

The following articles are available for the BioPAT® Xgas Vis Software:

Article Number	Description	Remark
BPX0009	BioPAT® Xgas Vis Software	Can be used with one MFCS/ win server system.
BPX00(11-15)	BioPAT® Xgas Sensor	Includes power supply & cable and article number depends on vessel size and corresponding gas flow path.
BPXOO18	PC connection package (includes Ethernet   Modbus converter and Bus termination)	One is needed for each DCU system or independent vessel fitted with BioPAT® Xgas [see figure in chapter →6.2, page 33].
BB-34147295 Serial Modbus Connection cable 2 m		One cable (2 m or 5 m) is needed to connect each sequential
BB-34147298	Serial Modbus Connection cable 5 m	BioPAT® Xgas unit.

13

# 5 Software Installation

## 5.1 Preparation Steps

For Windows XP, only

leg DotNetFX35SP1						- 7 🛛
File Edit View Favorites Tools Help						1
Ġ Back 🝷 🚫 🕤 🏂 🔎 Search 陵 Fol	ders 🛄 -					
Address 😂 :\DotNetFX355P1						🔽 🄁 Go
Folders	Name	Size	Туре	Date Modified	Location	
🕝 Desktop	Files Currently on the CD					
🗉 😂 My Documents			e1 e 11		st o ut ut op	
😑 🧕 My Computer	dotNetFX20		File Folder	2/25/2014 5:14 PM	Files Currently on the CD	
🗉 🥯 Local Disk (C:)	dotNetFX30		File Folder	2/25/2014 5:14 PM	Files Currently on the CD	
BioPAT XGac2 1 4 (D:)	dotNetFX35		File Folder	2/25/2014 5:14 PM	Files Currently on the CD	
🖃 🦾 DotNetFX35SP1	dotsionare		File Folder	2/25/2014 5:14 PM	Files Currently on the CD	
UUUNBUFA20	🚰 dotNetFx35setup.exe	237,054 KB	Application	2/25/2014 1:47 PM	Files Currently on the CD	
III 🛅 dotNetFX30						
dotNetFX35						
dotNetMSP						
🗷 🧰 FTDI						
🖽 🫅 perle iolan						
WindowsInstaller3_1						
Image: Barrier Barr						
Control Panel						
Shared Documents						
BBI Admin's Documents						
MFCS's Documents						
My Network Places						
👿 Recycle Bin						

Start ":\DotNetFX35SP1\dotNetFx35setup.exe" from the XGAS-CD.

### NOTE

NET Framework 3.5.1 must be installed manually from the BioPAT® Xgas VIS CD.

- ▶ Open Windows Explorer and browse to the CD into the directory.
- ▶ Double click the file ":\DotNetFX35SP1\dotNetFx35setup.exe".

😂 DotNetFX 35SP1						_ 7 🗙
File Edit View Favorites Tools Help						<b>1</b>
🕒 Back 🝷 🕥 🚽 🏂 🔎 Search 🔊 Fold	lers 📰 -					
Address D:\DotNetFX355P1						💌 🔁 Go
Folders ×	Name	Size	Туре	Date Modified	Location	
🞯 Desktop 🗷 💼 My Documents	Files Currently on the CD					
<ul> <li></li></ul>	dotNetFX20 dotNetFX30 dotNetFX35		File Folder File Folder File Folder File Folder	2/25/2014 5:14 PM 2/25/2014 5:14 PM 2/25/2014 5:14 PM 2/25/2014 5:14 PM	Files Currently on the CD Files Currently on the CD Files Currently on the CD Files Currently on the CD	
	dotNetFx35setup.exe	237,054 KB	Application	2/25/2014 1:47 PM	Files Currently on the CD	
	Extracting Files Extracting File: would To Directory. c.NB	LVVV dotNetFram	work\dotNetMSP\x8 02d6aab62a2			

▶ Files will be extracted.

Microsoft .NET Framewor	k 3.5 SP1 Setu	P		
Welcome to Setup		.net	Frame	work
Be sure to carefully read and und license terms. You must accept th	erstand all the right elicense terms befo	s and restrictions ire you can instal	described in th the software.	
				-
MICROSOFT SOF	TWARE S	UPPLEM	NTAL	~
Press the Page Down key to see n	ore text.		L .	Erint
I have read and ACCEPT the b	arms of the License	Agreement		
O I DO NOT ACCEPT the terms o	f the License Agree	nent		
Send information about my set	up experiences to I	Acrosoft Corpora	tion.	
Details regarding the data collection	an policy			
Download File Size:	10 MB			
Download Time Estimate:	24 min (56 kbp 2 min (512 kbp	) ;)		
		-		

.net Framework

Est

soft .NET Framework 3.5 SP1 Setu

Microsoft JNET Framework 3.5 SP1 has been installed successfully. R is highly recommended that you download and install the latest servic updates for the product. For more information, see Windows Update

up Complete

► Accept the terms and press "Install" button.

- ▶ Press "Exit" button.
- ▶ Continue with chapter [ $\rightarrow$ 5.2, page 19].

#### For Windows Server 2008 R2, only

#### NOTE

NET Framework 3.5.1 must be activated for Windows Server 2008.

- Windows Server 2008 includes the necessary .Net framework.

Follow the steps below in order to activate the .Net framework.



► Go to "Administrative Tools".

Start the "Server Manager".



- Open "Roles / Features".
- Click "Add Features".

Add Features Wizard		×
Select Features		
Features Confirmation Progress Results	Select one or more features to install on this server. Eeatures: NET Framework 3.5.1 Features WCF Activation Background Intelligent Transfer Service (BITS) BitLocker Drive Encryption BranchCache Connection Manager Administration Kit Desktop Experience DirectAccess Management DirectAccess Management Direct	Description: <u>Microsoft.NET Framework 3.5.1</u> combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes.
	< Previous Next :	> Install Cancel

- Expand ".NET Framework 3.5.1 Features".
- Select ".NET Framework 3.5.1".
- ▶ Click on the "Next" button.



- "Confirm Installation Selection" opens.
  Press button "Install".
- The installation is completed; the installation message "Installation succeeded" is displayed.
- Click "Close" button.

## 5.2 BioPAT<sup>®</sup> Xgas Vis Software

This chapter describes the installation of the BioPAT® Xgas Vis Software.

### NOTE

Please consider that MFCS/win must have been already installed. Please note, the installation of this software requires local administrative rights.

The CD-ROM containing the BioPAT® Xgas Vis Software is labeled as "BioPAT® Xgas Vis Software". A separate program named SETUP.EXE performs the software installation.

The following steps describe the installation on your computer system.

#### Installing the BioPAT® Xgas Vis Software

- Shutdown the MFCS/win system from the MFCS/win Shell.
- ▶ Insert the CD-ROM into the CD drive.
- > Open the windows explorer and change to the CD drive.
- Double-click on file SETUP.EXE to start the installation program.
- ▶ If the ".Net Framework 3.5" is not installed, then the following dialog will be shown on the screen.



▶ Press the button "Accept" to continue.



- The welcome screen is shown.
- Press button "Next".

🕼 BioPAT Xgas Vis	_ 🗆 🗙
Select Software Parts	
Please select which additional parts of the Software you want to install	
Measurement Data (Dongle required)	
Cancel KBack	<u>N</u> ext >

- Keep the default settings as shown in the picture.
- ▶ Press button "Next".

🕞 BioPAT Xgas	
Select Installation Folder	
The installer will install BioPAT $ imes$ gas to the following folder.	
To install in this folder, click "Next". To install to a different folder, enter it be	low or click "Browse".
<u>F</u> older:	
C:\Program Files (x86)\Sartorius\BioPAT Xgas\	Browse
	<u>D</u> isk Cost
Install BioPAT Xgas for yourself, or for anyone who uses this computer.	
◯ Just <u>m</u> e	
Cancel < <u>B</u> ack	Next >

Press button "Next" to install the software in the specified directory.



▶ Press button "Next" to confirm installation.

🖶 BioPAT Xgas			_ 🗆 🗙
Installing BioPAT Xgas			5
BioPAT Xgas is being installed.			
Please wait	_	_	_
	Cancel	< <u>B</u> ack	<u>N</u> ext>

▷ The installation progress is shown on the screen.



The message "Installation Complete" appears.
 Press button "Close".



- $\triangleright$  Restart message appears.
- Press button "Yes".

### 5.3 Perle Device Driver

This chapter describes the installation and configuration of the Perle device driver.



 Start the application "\perle iolan\setup.html" from the delivered CD.

CIOLAN - Windows Internet Exp	wer and a second se	
🕒 🕑 🖉 D:\BkPATXgas\Bk	AT_00.0 - 47 × @ tolan ×	
🔘 perle	IOLAN Setup	
Home EasyConfig	Home	www.pene.com
DeviceManager TruePort	EasyConfig First Time Setup Wizard.	
Product Files     Utilities     Consent	DeviceManager Install IOLAN Configuration and Management tool.	
Support	TruePort TruePort Drivers and Documentation.	
	Product Files IOLAN Firmware, Manuals, and related files.	
	Utilities IOLAN Utilities.	
	Support Product Registration, Warranty, and Support Information.	
	For the latest downloads, please visit Perle's website.	

Press button "DeviceManager".

### NOTE

If there is a message to "allow blocked content" then enable blocked content.



 Press link "IOLAN DeviceManager V4.4" to start Device Manager installation.



 Press "Next" button to continue with the installation.

🕝 Perle DeviceManager 4.4 Setup 📃 🗌 🔯					
Choose Components Choose which features of Perle DeviceManager 4.4 you want to install.					
Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.					
Select components to install:	DeviceManager     Desktop Icon	Description Position your mouse over a component to see its description.			
Space required: 10.2MB					
< Back Next > Cancel					

▶ Use default settings and press "Next" button.

🕙 Perle DeviceManager 4.4 Setup
Choose Install Location Choose the folder in which to install Perle DeviceManager 4.4.
Setup will install Perle DeviceManager 4:4 in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
Destination Folder Ci\Programme\Perle Systems Limited\DeviceManager  Browse
Space required: 10.2MB Space available: 14.5GB
<pre></pre>

▶ Use default settings and press "Next" button.

🕄 Perle DeviceManager 4.4 Setup	
Choose Start Menu Folder Choose a Start Menu Folder for the Perle DeviceManager 4.4 shortcuts.	3
Select the Start Menu folder in which you would like to create the program's shor can also enter a name to create a new folder.	tcuts. You
Perle\DeviceManager	
Advosol Autostart Development FreeMind Games Graphics Internet InfanView McAfee Microsoft Online Services	
Do not create shortcuts	
< Back Instal	Cancel

#### ▶ Use default settings and press "Install" button.



 Uncheck both topics and press "Finish" button.

## 5.4 TruePort Application

The following pages describe how to install and configure the TruePort application.



Click on the button "TruePort" on the left side of the IOLAB Setup.

### NOTE

Select the operating system which is installed at your pc.

- For the 32 bit version of the operating system click to "(x86)".
- For the 64 bit version of the operating system click to "(x64)".



#### ▶ Press "Next" button to continue.

Perle TruePort 6.4 Setup		
Choose Components Choose which features of Perle	TruePort 6.4 you want to install.	6
Check the components you war install. Click Next to continue.	t to install and uncheck the comp	onents you don't want to
Select components to install:	✓ TruePort ✓ Desktop Icon	Description Position your mouse over a component to see its description.
Space required: 10.9MB		
	< <u>B</u> ack	Next > Cancel

Keep default settings and press "Next" button to continue.



 Keep default settings and press "Next" button to continue.

Perle TruePort 6.4 Setup	_ 🗆 X
Choose Start Menu Folder Choose a Start Menu folder for the Perle TruePort 6.4 shortcuts.	
Select the Start Menu folder in which you would like to create the program's shortcuts can also enter a name to create a new folder.	. You
Perle\TruePort	
Accessories Administrative Tools BioPAT® Xgas Vis Broadcom Dell Games Intel Corporation Intel PROSet Wireless Maintenance PDFCreator	
Do not create shortcuts	
< <u>B</u> ack [Install	Cancel

 Keep default settings and press button "Install" to continue.



 Uncheck both topics and press "Finish" button.

# 6 Hardware Settings

6.1 Checking Jumper Settings at the Perle Device



- Loosen the two screws on the side of the housing to open the Perle device.
- ▶ Set the jumpers as specified below:
- Set jumper J1 (1) open.
- Set jumper J8 (3) all open.
- Set jumper J9 (2) closed.
- Close the Perle device and fasten the two screws.



- ▶ Set the switch (1) to "OFF" (upper position).
- $\triangleright$  The perle device is set to serial mode.

### 6.2 Reseting Perle Device



- ▶ Press the "RESET" button with a paper clip to reset the Perle device.
- ▷ After 5 s the lamp "Power/Ready" changes color from green to orange.

#### NOTE

After "Reset" please wait at least 2 min to let the Perle device finish the reset.

# 7 Configuration

## 7.1 Perle Device

### NOTE

Double check, whether the Windows firewall is disabled or the Perle device manager is enabled in the firewall. In Windows firewall open all ports especially for the "devicemanager.exe" (UDP) and for the "tftp\_svr.exe" (TCP) or temporarily disable the firewall.

### NOTE

For server OS deactivate or stop "DHCPClient" service before starting the configuration. Otherwise the device will receive an IP address automatically.



Start Perle "Device Manager".

Establish Connection to						8 23
MAC Address	IP Address	Model	Server Name	Firmware	Discovered	ОК
	Not Configured	IOLAN SDS1	IOLAN-070	4.4	Auto	Cancel
Add	P	Assign IP Assign IP The IOL Not Enter th 17 Have Lemp	AN's current IP Ad Configured el P Address of the '2 . 18 . 3 . e the IDLAN autom orary IP Address. ign IP Ca	dress: IDLAN: 148 atically get a ncel		

- ▶ Press button "Assign IP".
- Enter your IP address for the Perle device.
- ▶ Press button "Assign IP".
- $\triangleright$  The following message is shown.

DeviceMan	ager 🗾 🔀
<u> </u>	IP Address successfully assigned.
	ОК

▶ Press "OK" button.

#### **Test connection**

tablish Connection to					8 ×
MAC Address	IP Address	Model	Server Name Fire	mware Discovered	ОК
∎-00-80-D4-07-08-8F	172.18.3.148	IOLAN SDS1	IOLAN-070 4.4	Auto	Cancel
Add	P	Ping Pinging 172.18 Reply from 172 Reply from 172 Reply from 172 Ping statistics fr Packets: Sr Approximate ror Minimum =	3.148 with 18 bytes of d 18.3.148: bytes=18 time 18.3.148: bytes=18 time 18.3.148: bytes=18 time 18.3.148: bytes=18 time y r122.18.3.148: ent = 4 Received = 4, Lo and trip times in millisec ms, Maximum = 0ms, Av	lata: ==Oms TTL=64 ==Oms TTL=64 ==Oms TTL=64 ==Oms TTL=64 ==Oms TTL=64 set = 0, onds: verage = Oms	8 2
				2	

- ▶ Press "Ping" (3) button to test connection.
- Close Ping window (2).
- ▶ Press "OK" button (1) to connect to Perle device.



- Enter the default password "superuser" (1).
- ▶ Press the "OK" button.


- Open menu "Configuration / Serial / Serial Port".
- ▶ Press "Edit" button.



- ▶ Press button "Change Profile".
- Select option "TruePort" and press "OK" button.

erial Port	t 1 Settings	8
Profile: T	TruePart Change Profile	
General	Advanced Hardware Email Nett Packet Forwarding SSL/TLS	
TrueF	Port Settings	
0	Connect to remote system (Server-Initiated Connection):	
	Host name: None TCP Port: 10000	
	Connect to Multiple Hosts [TruePort Lite Mode] Define Additional Hosts	
	Send Name On Connect	
۲	Listen for connection (Client-Initiated Connection).	
	TCP Port: 10001	
	Allow Multiple Hosts to Connect [TruePort Lite Mode]	

### Select option "Listen for connection" under tab "General".

▶ Press "OK" button.

ial Port 1 Settings			3
file: TruePort			
Change Pr	file		
me:			
Second Advanced	Hardware Email Alext Packet Fear	autine SCI /TI S	
ierielai Auvariceu	Enal Neit Facker Forw	along 332/123	
Serial Interface:	FI4-485		
Speed:	38400 -		
Data Bits:	8 v Duplex:	Haff	
Parity:	None - TX Drive	r Control: Auto 👻	
Stop Bits:	2 🕶		
Flow Control:	None 👻		
V Enable Int	ound Flow Control		
C Enable Ou	bound Flow Control		
Monitor DSR			
Monitor DCD			
Discard Charac	ters Received With Errors		
Enable Echo S	ppression		

- ▶ Change to tab "Hardware".
- ▶ Make the selections as shown in the picture.
- ▶ Press "OK" button.

SeviceManager - IOLAN-07088F (172.1	18.3.148) - Connected		_	
<u>File Edit Tools View Window He</u>	elp			
□∎₫₫₫∦?				
Sonne (172.18.3.148) - Conne (172.18.3.148) - Conne	ected			- • •
System Info     Gonfiguration	Serial Ports:			
Network     Serial	Enable Name	Profile	Details	
Serial Port	1	TruePort	Listen on: / 10001	
- Port Buffering				
Advanced				
Golds     G				
Clustering				
System     Statistics				
Network				
Serial Ports				
HTTP Tuppel				
	Edit			
1				
	,			
Download All Changes	1 Download is Required			

▶ Press button "Download All Changes".



### ▶ Press button "Yes" to confirm.



▶ Press "OK" button.

SeviceManager - IOLAN-07088F (172	2.18.3.148) - Connected				1
<u>File Edit Iools View Window H</u>	jelp				1
□⊒₫₫≛₩??					
Solution - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1	nected				
→ ↓ System Info ⊖ ↓ Configuration	Serial Ports:				
	Enable Name	Profile	Details		
Serial Port	1	TruePort	Listen on: / 10001		
Port Buffering     Vers     Vers     Clustering     System     Satistics     Vers     Serial Ports     Ver     Ver     Ver     Ver     System	Edi	Reboot IOLAN	2		
For Help, press F1				NUM	

- ▶ Press button "Reboot IOLAN" (2).
- Close the DeviceManager (1).

## 7.2 Serial Port

### 7.2.1 Configuring Serial Port with TruePort Management Tool



 Start the "TruePort ManagementTool" to configure the serial port.

Add TruePort Adapter Wizard	
Configure TruePort Adapter Configure the adapter's name and associate it with a device server on the network.	
TruePort Adapter Properties Adapter Name: Perle TruePort Adapter Device Server Network Location (* IP Address: 172.18.3.148	1
C Hostname:	
Next > Cancel	

- ▶ Enter the IP address of the Perle device to the field "IP Address" (1)
- ▶ Press "Next" button.

Add Serial Ports Associate COM ports with your new TruePort ad	lapter
You may add up to 49 serial ports to your new TruePort adapter: Select COM Port Range Number of Ports:	The following ports will be added: COM5
	Next > Cancel

- Select an available port from the drop down list "Starting COM Port" (1).
- ▶ Press "Next" button.

### NOTE

It is recommended to start with COM5, because COM5 will not be used (and therefore available) on most of the systems. Continue with COM6, COM7 if more Perle devices will be connected.



### ▶ Press button "Finish".

🔊 TruePort Management Tool	×
🔘 perle	
This tool permits you to add, remove and configure TruePort adapters.	
Installed TruePort adapters:	
Perle TruePort Adapter (172:18:3:148)	
Add <u>R</u> emove <u>Properties</u>	
Close	

Select the recently configured device and press button "Properties".

Perle TruePort Adapter (172.18.	3.148) Properties
Genera Configuration Driver	Details
Perle TruePort Adapte	er (172.18.3.148)
This TruePort adapter is a device server.	ssociated with the following
Device Server Information	n
Number of Ports:	1
IP Address:	172.18.3.148
Active Connections:	None
To configure this Device DeviceManager or one o Web Config	Server at this time use the Perke If the following configuration methods.
	Settings
	OK Cancel

Change to register card "Configuration".
Press button "Settings".

lumber of ports: 1	Connection Advanced SSL/TLS Packet Forwarding
Perle TruePort Adapter (172.1	8 3.1- Connection Settings (COM5)
- 🍠 COM5 (Connect: 10001)	Access Davies Course Serial Part
	Connection Market Parts
	Connection wode: Automatic
	C Accept connection from device server
	Listen on I CP Port: 10000
	Initiate connection to device server
	Connect to TCP Port: 10001
	Client-Initiated Connection Settings
	Access Device Server I/O channels
	Connect to TCP Port: 33816
	I/O Application Type: I/O Access 👻
	Client-Initiated Connection Settings
	Connection Profile
	Current Profile: Minimize Latency
	Change Profile
< III	•
🖗 Add Ports 🗙 <u>F</u>	emove Ports Copy Settings To Restore Defaul
_	

- Select the COM port.
- Activate "Initiate connection to device server".
- ▶ Press button "Settings".

Client-Initiated Connection Settings
Connection Management Options
Connect at system startup
Close TCP connection when COM port is closed
✓ Delay close of TCP connection for: 300  seconds
Connection Options
Connection Retries
Retry forever
○ Number of retries: 5
Time between connection retries: 30 🚔 seconds
Restore dropped connections
Restore Defaults OK Cancel

- Change setting "Delay close of TCP connection for" to 300 seconds.
- Press button "OK" and close all the remaining windows.

### 7.2.2 Configuring Serial Port with Device Manager

•	🌒 🗢 📴 🕨 Control Panel 🕨 A	II Control Panel Items 🕨			Panel P	
Adj	ust your computer's setti	ngs		View by: 1	Small icons 🔻	
	Action Center Signetric Devices	Administrative Tools The Broadcom Control Suite 4 All Control Panel Items > Administrative Burn Name	Color Management	Credential Manager     Vectory and resource     Credential Manager     Vectory     Size	1 Administrative Tools	2
2 I 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Desktop	Compount Services	7/14/2009 6:57 AM Shortcut 7/14/2009 6:53 AM Shortcut	2 KB 2 KB	2	
	Libraries Documents Music Pictures	Image: Second Secon	MFCS4			Actions
	Videos Computer Cos (c:) DVD RW Drive (D:) C Lexar (E) Network	Biserof     > 11 System Tools       Biserof     > Task Scheduler       Biserof     > Biserof	Batteries     Batteries     Batteries     Computer     Computer     Display adapters     Display adapters     COUCD-ROM drives     Keyboards     Monitors     Monitors     Monitors		3	Device Manager  More Actions
	📄 🖸 🚿	🐖 🛃	E Radical Course Present	top Street, 41	٥	Image: Weight of the second

- ▶ Open the Windows "Control panel".
- Select "Administrative Tools" (1).
- ▶ Select "Computer Management" (2).
- Select Device Manager (3).



- Select Ports (COM & LPT) (2).
- Right mouse click to "Trueport Serial Port (COM5)" (2).
- Select "Properties" (3).

General Port Settings Driver Details	
Bits per second	38400 💌
Data bits:	8 -
Party:	None 👻
Sop bits:	2 👻
Elow control:	None 👻
Êď	vanced <u>R</u> estore Defaults

- ▶ Change to register card "Port Settings".
- Perform the settings shown in the picture above.
- Press "OK" button and close the Windows device manager.

### 7.3 BioPAT® Xgas Vis OPC License

This chapter describes how to activate the BioPAT<sup>®</sup> Xgas Vis OPC License.

Plug the blue license dongle (SG-Lock) into a free USB port of the MFCS/win computer.

### NOTE

The dongle must stay in the USB port all the time if you want to use all features. If the application without the dongle is used, then only the measurement of one analyzer in the BioPAT® Xgas Vis software (without logging) can be used in the Service Tool for the calibration and the changing the MODBUS ID.



 Start the "License Manager" to activate the BioPAT<sup>®</sup> Xgas VIS OPC license.



📙 BioPAT® Xgas	License Manager 🛛 🗖 🖾	
Serial number	1510462	
Sensor Key 3		1
00000000 000	00000 0000000 0000000	
Logging:	enabled	
OPC:	enabled write	
extended OUR:	disabled	
DMU:	disabled	
enabled Sensors:	12	

Select "Sensor Key 3" (1) from drop down menu.

📙 BioPAT® Xgas - Lie	cense Manager		
Serial number	1510462		
Sensor Key 3		-	
			2
Logging:	enabled		
OPC:	enabled	write	
extended OUR:	disabled		
DMU:	disabled		
enabled Sensors:	12		

- Enter the corresponding key in the four input fields (2).
- ▶ Press the button "write".
- $\triangleright$  The unlocked features and the number of enabled sensors is shown.
- Close the "License Manager".

## 7.4 BioPAT® Xgas Sensor

### 7.4.1 Configuring One Sensor



- Start the "Configuration" tool for BioPAT<sup>®</sup> Xgas to configure one XGAS Sensor.
- Press the "add" button for interfaces to add a new "Interface".

Name	Baudrate	Parity	State
add ensors:	edit dele	reset	
Name S	Sensor ID Co	m Interface	State
add	edit dele	te reset	calib

Configur	e Interface	
Interface:	COM5;TruePort Serial Port	(COM5) -
Baudrate:	38400 👻	scan for new
Parity:	none, 2 Stopbits 🛛 👻	extended scan
	cano	cel ok

- Select
- the correct Interface.
- Baudrate "38400".
- Parity "none, 2 Stopbits".
- ▶ Press "OK" button.
- Press the "add" button for sensors to add a new sensor.

BioPAT® X	gas - Service C	onfig	
Name	Baudrate	Parity	State
COM5	38400	none	working
add	edit delete	rese	
Sensors:			<u> </u>
Name	Sensor ID Com	Interface	State
add	edit delete	e rese	t calib

Sensor Configuratio	on 📃 🗖 📈	
Name:	XGAS1	
Modbus Interface: Modbus ID:	COM5 ▼ 1 ★	
Cancel OK		

- Enter a name, the Modbus interface and the Modbus ID 1.
- ▶ Press the "OK" button.

BioPAT® Xgas	- Service C	onfig	_ 🗆	×
Interfaces:				
Name	Baudrate	Parity	State	
COM1	38400	none	working	
add edit Sensors:	delete	reset		
Name Sen:	sor ID Com	Interface	State	
XGAS1_1 215	23 COM	5	ok	
add edit	delete	reset		
Versions			refresh	

- ▷ After the sensor has been added, it is shown in the Sensor list.
- If state "ok" is not shown in the Sensor list, press the "refresh" button to refresh the list.

### NOTE

For sensors naming conventions refer to examples on the following pages.

### 7.4.1.1 Naming conventions for XGAS Sensors

### Example 1:

Only one BioPAT® Xgas Sensor with a Biostat® fermentor

	Name	Modbus Interface	Modbus ID	Description
1. Sensor	XGAS1_1	COM5	1	Single

### Example 2:

Two BioPAT® Xgas Sensors with a twin fermentor system

	Name	Modbus Interface	Modbus ID	Description
1. Sensor	XGAS1_1	COM5	1	Twin A
2. Sensor	XGAS1_2	COM5	2	Twin B

### Example 3:

Four BioPAT® Xgas Sensors with a B-DCU II 6-fold fermentor system

	Name	Modbus Interface	Modbus ID	Description
1. Sensor	XGAS1_1	COM5	1	B6 A
2. Sensor	XGAS1_2	COM5	2	B6 B
3. Sensor	XGAS1_3	COM5	3	B6 C
4. Sensor	XGAS1_4	COM5	4	B6 D
5. Sensor	XGAS1_5	COM5	5	B6 E
6. Sensor	XGAS1_6	COM5	6	B6 F

### Example 4:

Nine BioPAT® Xgas Sensors with:

- One Biostat<sup>®</sup> B single fermentor system
- One Biostat<sup>®</sup> B twin fermentor system
- One Biostat® B-DCU II 6-fold fermentor system

	Name	Modbus Interface	Modbus ID	Description
1. Sensor	XGAS1_1	COM5	1	Single
2. Sensor	XGAS2_1	COM6	1	Twin A
3. Sensor	XGAS2_2	COM6	2	Twin B
4. Sensor	XGAS3_1	COM7	1	B6 A
5. Sensor	XGAS3_2	COM7	2	B6 B
6. Sensor	XGAS3_3	COM7	3	B6 C
7. Sensor	XGAS3_4	COM7	4	B6 D
8. Sensor	XGAS3_5	COM7	5	B6 D
9. Sensor	XGAS3_6	COM7	6	B6 D

## 7.4.2 Configuring Multiple Sensors with one Ethernet Modbus Converter

If more than one BioPAT<sup>®</sup> Xgas Sensor is to be connected to one Perle device (Ethernet Modbus converter), then additional configuration steps are needed, because the default delivery Modbus address of each BioPAT<sup>®</sup> Xgas Sensor is "1".

Please perform the following configuration steps one after each other:

Configuration Step	Description
1	Connect Sensor #1. Verify that it already has Modbus address #1.
2	Label Sensor #1 with the following information: Modbus ID : 1.
3	Disconnect Sensor #1.
4	Connect Sensor #2. Change the Modbus address for #1 to #2. Please refer to chapter [→7.5, page 58].
5	Label Sensor #2 with the following information: Modbus ID : 2.
6	Disconnect Sensor #2.
7	Connect Sensor #3. Change the Modbus address for #1 to #3. [→7.1, page 34].
8	Label Sensor #3 with the following information: Modbus ID : 3.
9	Disconnect Sensor #3. Do the same with all the others, which will be connected to the same Perle device.

Configuration Step	Description
10	Connect Sensor #n. Change the Modbus address for #1 to#n [→7.5, page 58].
11	Label Sensor #n with the following information: Modbus ID : n.
12	Disconnect Sensor #n.

After the Modbus addresses of all BioPAT® Xgas Sensors has been set correctly, perform the following steps:

- ► Connect all BioPAT<sup>®</sup> Xgas Sensors with the delivered Modbus cables.
- Connect the Modbus termination to the last sensor as shown in figure [→see chapter 4.2, page 12].

### 7.5 Changing the Modbus Address



 Start the tool "BioPAT<sup>®</sup> Xgas Vis / Tools / Sensor Config" to change the Modbus address.

BioPAT® Xga	s - Config					
ComPort Address	OM5;TruePort Serial Port (COM5)	<ul><li>▼</li><li></li></ul>	Auto Auto		Start	
Sensor ID	ComPort	Baud Rate	Parity	Address	Modbus Extended	
21524	COM5	38400	none	1	No	1
Searching 0, Ba	aud: 38400, Parity: 0, Address: 12				Configure	

- Select the ComPort, where the sensor is connected.
- Check the field (Address Auto).
- Press "Start" button.
- ▶ Wait until the sensor appears (1).
- ▶ Press "Stop" button.
- Select the sensor from the list.
- Press "Configure" botton.

### NOTE

A few seconds after pressing the "Start" button, the message "Searching" must appear in the upper left corner of the "Sensor Config" window.

- If this message is not shown, press "Start" button again.

21:524
2
ок

Enter the new address for the sensor.
Press "OK" button.

Values Changed
ОК

- $\,\triangleright\,$  The success message is shown.
- ▶ Press "OK" button.

## 8 Installation of BioPAT<sup>®</sup> Xgas OPC Server

Start the program "install OPC server" to install the  $\mathsf{BioPAT}^{\otimes}$  Xgas OPC Server.



SARTORIUS Done.  Open "BioPAT<sup>®</sup> Xgas Vis / tools menu / install OPC server".

Press button "OK" to finish the installation.

## 8.1 Installing MFCS/win OPC Client

If the MFCS/win OPC DA Client is already installed, then continue with next chapter.

If the MFCS/win OPC DA Client is not installed, install the MFCS/win OPC DA Client according the delivered documentation "MFCS/win OPC DA Client Handbook (MFCSOPCC)".

## 8.2 Configuring MFCS/win Configuration Management

Inside the MFCS/win SCADA software first a control unit of type "OPC" must be configured.

Then the variables for  $\rm O_2$  and  $\rm CO_2$  of the different fermentors must be configured.

🗓 MF	CS win
\$	Off-line Shell
- <b>1</b>	Service Control Program
\$	Shell
- 😰	System Manager's Handbook
	User Documentation
8	User's Handbook
	System Utilities
•	Back
Searc	h programs and files

M	IFCS Shell [PETETHEPIRATE (lo	ical)/MFC5]
File	Run View Help	
**	Operator Service Sample Data Management Batch Management Reporting Plotting	8
	Configuration Management	

БМ	FCSCMA [I	PETETHEPIRA	TE (local),	/MFC			
File	Configure	Maintenance	Help				
	Recipe						
	Alarm Blocks						
	Algorithms						
	Profiles						
	Storage						
	Average						
	Process Units						
	Interfaces						
	Contro	l Units					
	Users.						

Start MFCS/win Shell.

- Start "Configuration Management".
- ▶ Select "Configure / Control Units".

🗃 Control Unit Configuration	
Control Unit Tag: Xgas1	1
Туре: 0РО	2
Alarm Block:	<b>_</b>
Description:	
	<b>*</b>
	Parameter 3

- Create a new Control Unit of type "OPC" and enter a name (e.g. Xgas1):
- Press "New" button (4).
- Select Control Unit name (1).
- Select type "OPC" (2).
- Press button "Parameter" (3).

🗄 OPC Control Unit Parameters		×		
OPC DA				
Identification				
Control Unit: XGAS1	Unlock Computer Name List Limit			
Computer Name:	▼ Fill Computer Name List			
Fill in field if OPC Server is in another comp	outer. Leave field empty if the OPC server is installed in th	e same computer.		
Server	Dennistian			
Name: BioPatXgas.OPC.1	Decemption.	-	<u> </u>	
Description: BioPAT Xgas OPC	Server			
Parameters				
Update Hate: 15 se	c			
limeout: 60 se	c			
	De	lete Subscription		
			2	

 Select the "BioPatXgas.OPC.1" server from the drop down list (1) and confirm (2).

Configuration Manage	r C:\MFCS_win\Databas	e\MFCSCONF.MDB	<u></u>
		New Process Un	זונ
Variable Name	lype	Control Unit	F.D.
_BatchSync	Event	System	Eait
_BatchAge	Cyclic Variable	System	Variable:
_BatchAlarmCount	Cyclic Mariable	Custom	
ACIDT	Cycli 🖽 New Variab	le (26)	
AFOAMT	Cyclic	-	
BASET	Cyclic Variable Nar	ne: CO2	
EXT A	Cveli		Modify
EXT B	Cyclic Variable Typ	e: Cyclic Variable	•
FEEDT A	Cyclic		
FEEDTB	Cyclin		⊐ ∥ X ∣
FEEDT C	Cucli	OK Cancel	
EWEIGHT &	Cucli		
EWEIGHT B	Cuclic Variable		Config
	Cuolio Variable		coming
	Cyclic Variable		All:
	Cyclic Variable		
	Lyclic variable		Algorithms

Create a new cyclic variable "CO<sub>2</sub>".

• Create a new cyclic variable " $O_2$ ".

🗉 Cyclic Yariable	×
Variable Information Process Unit: PU 2	Variable Lag: E02
Control Unit: XGAS1	New Units: 1%
Description:	
Ranges	Limits
Low: 0.0	Low: 0.0 LowLow: 0.0
High: 10.0	High: 10.0 HighHigh: 10.0
After Decimals: 4	Alarm Block: Alarm Block:
Alarm Block:	Alarm Mode: Off  Alarm Db.: 0.0
Profile Algorithm	Driver Alarm Blocks

- ▶ Select control unit "XGAS1".
- For  $CO_2$  configure the range 0-10 %
- For  $O_2$  configure the range 1-50 %.
- ▶ Press "Driver" button.
- The "OPC Item Configuration" opens (see following picture).

🖴 OPC Item Configuration	×
Process Unit: PU_2	
Variable: CO2	
Control Unit: XGAS1	
Process Value Tag	
Value: XGAS1_1.Values.CO2 Range: 0 10	
Controller Tags	
Low High	
Setpoint: Range:	
Output; Range:	

If the sensor name is "XGAS1\_1", enter the OPC Tag "XGAS1\_1.Values.CO2".
 Confirm with "OK" button.

🗉 OPC Item Configuration	×
Process Unit: PU_2 Variable: 02 Control Unit: XGAS1	
Process Value Tag Low High Value: XGAS1_1.Values.O2 Range: 1 50	
Controller Tags Low High Setpoint: Coutput: Cout	

If the sensor name is "XGAS1\_1", enter the OPC Tag "XGAS1\_1.Values.O2".
 Confirm with "OK" button.

#### Sensor name

BioPAT® 2	BioPAT® Xgas - Service Config 📃 🔍 🗙						
Interfaces:							
Name	B	audrate	Parity	State	]		
COM1	3	8400	none	working			
add	edit	delete	rese	et			
Sensors:							
Name	Sensor	ID Com	Interface	State	]		
XGAS1_1	21523	COM	15	ok			

### NOTE

The sensor name (1) can be looked up in the Sensor configuration as described in chapter  $[\rightarrow 7.4, \text{ page 51}].$ 

### NOTE

Instead of directly filling in the OPC Tags, an OPC Test Client can be used to browse and then the OPC tags can be filled in with copy & paste.

- Refer to chapter [ $\rightarrow$ 8.3, page 69].

### Adding new variables to Storage list

After the interface configuration is finished, the new variables must be added to the Storage list.

🔚 MFCSCMA [PETI	ETHEPIRATE (loca	al)/MFC5]										
File Configure Mai	intenance Help											
				📙 Configurati							_0_	MF
											Fi	ile F
				Process III	nit PII2			Ŧ	Nou P	nones Unit		
	8 Storage										_	116
	Process Unit:	PIL 2		•							- Edit	
	1100000 01110.										Variable:	
	Variables:		F	Property:	Storage List:							
	Variable Tag name	Tune		/alue 🔹	Variable	Property	Deadhand	1   I nit	Averaned			
	_BatchAlarmCount	t Cyclic Variable	· /		ACIDT	Value	10.00	ml	×			
	_BatchSync	Event		Default	AFOAMT	Value	10.00	ml	x		Modify	
		Cuclic Variable		Deadband:	CO2	Value	0.01	201	x v			
	BASET	Cyclic Variable		0.1 %	FEED_A	Value	1.00	2	x		$\mathbf{X}$	
	C02	Cyclic Variable			FEED_A	Setpoint	1.00	%	x			
	EXT_A	Cyclic Variable			FEED_B	Value	1.00	*	×			
	FEED A	DCU Controller			FEEDT A	Value	10.00	î	x x		Config	
	FEED_B	DCU Controller		•	02	Value	0.05	%	x		All:	
	FEED_C	DCU Controller			02_SP	Value	1.00	%	×		Algorithms	
	FEEDT B	Cyclic Variable			102_SP	Value	1.00	%	×			
	FEEDT_C	Cyclic Variable		-	pH	Value	0.05	pH	x		Storage	
	FWEIGHT_A	Cyclic Variable			pH	Setpoint	0.05	pН	×		Storage	
	FWEIGHT_B	Cyclic Variable			p02	Value	3.00	%sat	×		A	
	GASEL SP	DCU Controller			STIRR	Value	1.00	rom	×		Average	
	JTEMP	DCU Controller			STIRR	Setpoint	1.00	rpm	x			
	02	Cyclic Variable	T.		TEMP	Value	0.20	°C	x	-		
	,									_		
	Add also to Ave	rage List: 🔽			Modify						Print	

Add the new variables O<sub>2</sub> and CO<sub>2</sub> to the Storage list as shown on the picture above.

	IFCS Shell [PETETHEPIRATE (local)/MFCS]
File	Run View Help
Lo	ogout 📆 🏦 🎖
U	pdate Configuration
SI	hutdown
B	eeping

 Perform "Update Configuration" from the "MFCS/win Shell to finalize the MFCS/win configuration".

MFCSOPR [PETETHEPIRA	TE (local)/MFCS]				
/ III III - III					
Batch Display					- 0 >
Process Unit: PU_1 PU_2 PU_3 PU_4	Batch Name: plotting test PU 2 Apr 09 2014	Age : A 60801 ho 013 hour 1	larm :	Count : Mess. Operation	<u>Actions</u> <u>Actions</u> <u>Start Batch</u> Start Batch
🛱 Control Unit Display					-1013
Control Unit:	Status :	Link Status	Last Message		
CU_1	Local	Simulation			
KGAS1		Communication	OPCC : communication sta	rted	
Batch	_XGA5] - [PU_2]				
Taq: PU_2 Apr 09 20	)14 Aqe: 0.	13 hours			
02	CO2				
50.0- <u>Value</u>	10.0- <b>Value</b>				
40.2 -	8.0-				
30.4-	6.0 -				
20.6-	4.0 -				
10.8-	2.0-				
1.0-	0.0				
Variable status	Variable status				
🕼 Start 🖉 🚞	0 🧭 🗮				

Verification of the communication between MFCS/win and BioPAT  $^{\circ}$  Xgas from the MFCS/win Operator Service Program



Verification of the communication between MFCS/win and BioPAT® Xgas with the MFCS/win Plotting

# 8.3 Browsing the BIOPATXGAS.OPC.1 Server with OPC Test Client

- Copy the tool "OPC\_Client.exe" to the MFCS/win server computer into directory ":\MFCS\_win\Tasks\OPC\".
- This tool is available at the BioPAT MFCS/win OPC DA Client CD in directory "<CD-ROM>:\SupportTools".
- Start the file "OPC\_Client.EXE" at the MFCS/win Server computer.
- ▷ Now the connection to the OPC server can be done, by doing the following steps.

<b>%</b> U	ntitled - FactorySoft OPC C	lient		
File	OPC View Help			
?	Connect			
Tag	Server Status	Value	Time	
	Group Parameters			
	Add Item			
	Item Properties			
	Write Value to Item			
	Read Item			
	Refresh			
	Remove Item			
l '		I		

▶ Connect to OPC Server with "OPC / Connect".

Select OPC Server	×
Server Name	ОК
BioPatXgas.OPC.1	Cancel
Server Node ("\\server" or "server" or "w	ww.server.com'') Refresh List
Available servers C 1 0 G	20
BioPatXgas.OPC.1 (BioPAT Xgas OPC S	erver)

 Select the "BioPatXgas.OPC.1" server from the list.

S, B	ioPatXgas.OPC.1 - Factorys	Soft OPC Client			
File	OPC View Help				
?	Connect				
Tag	Server Status	Value	Time	e	
	Group Parameters				
	Add Item				
1.	Item Properties	4			
	Write Value to Item				
	Read Item				
	Refresh				
	Remove Item				

After the Test Client is connected to the BioPATXgas.OPC.1 server, add items.

Click "OPC / Add Item...".

orySoft OPC Client			
Value		Time	
Add Item Access Path Item Name XGAS1_1. Browse items: □- XGAS1_1 □- XGAS1_1 □- Values ⊡- Sensordata	Values.CO2 Filter: 🛛 *	Item AhsHumidity CO2 O2 Pressure RelHumidity State Temperature	X Add Item Done Properties
	Add Item Access Path Item Name KGAS1_1 Browse items: P-Root C-XGAS1_1 Values C-Sensordata	Add Item Access Path Item Name XGAS1_1.Values.CO2 Browse items: Filter: Root C-XGAS1_1 Values Sensordata	Value     Time       Add Item       Access Path       Item Name       XGAS1_1.Values.CO2       Browse items:       Filter:       *       Item I       O2       Pressure       RelHumidity       State       Temperature

- **b** Browse for  $O_2$  and  $CO_2$ .
- Click "Add Item".

### NOTE

If the  $CO_2$  variable is selected in the list, then the OPC Tag will be shown in the field "Item Name".

This OPC Tag can be transferred with cut & paste to the MFCS/win configuration as shown in section [ $\rightarrow$ page 66].

### O<sub>2</sub> and CO<sub>2</sub> values in OPC Test Client:

👺 BioPatXgas.OPC.1 - FactorySoft OPC	BioPatXgas.OPC.1 - FactorySoft OPC Client						
<u>File OPC View H</u> elp							
<u>?</u>							
Tag	Value	Time					
XGAS1_1.Values.CO2	0.0730031	04/09/14 14:49:05					
XGAS1_1.Values.O2	21.0131	04/09/14 14:49:05					

## 9 Firmware Version

# 9.1 Checking | Upgrading Firmware Version of the Perle Device

For trouble free operation it is necessary, that the firmware version 4.5 is available in the Perle device. How to check the installed firmware version of the Perle device is described in this chapter.



- Start the "TruePort ManagementTool" for verification.
- 14 TruePort Management Tool
   Image: Comparison of Compari
- Select the Perle TruePort Adapter in question.
- ▶ Press the "Properties" button.
| Perle TruePort Adapter (172.18.3.147) Properties 👘 🕐   |
|--|
| General Configuration Driver   |
| Perle TruePort Adapter (172.18.3.147)  |
| This TruePort adapter is associated with the following<br>device server.   |
| Device Server Information  |
| Number of Ports: 1   |
| IP Address: 172.18.3.147   |
| Active Connections: 1  |
| To configure this Device Server at this time use the Perle<br>DeviceManager or one of the following configuration methods.<br>Web Config Ielnet Config |

- ▶ Change to register card "Configuration".
- ▶ Press button "Web Config".



- Enter username "admin" (1) and password "superuser" (2).
- ▶ Press button "Login".

🗿 WebManager - Confi	guration Summary Screen - Microsoft	Internet Explorer	
File Edit View Favorit	es Tools Help		
🕞 Back 🔹 🕥 🕤 🧧	👔 🙆 🏠 🔎 Search 👷 Favorites	• 🚱 🍃 😹 😹	
Address 🙋 http://172.18.3	.147/manage.cgi/config/summary		💌 🄁 Go 🛛 Links 🎽
🔘 per	le	WebManager	
			User's Guide   www.perle.com
Configuration Co	Configuration Services Network Serial Users Security Clustering System	IP Settings, Ethernet Settings, Routing tables, etc. Serial Port Profile, Serial Port Hardware setup. Local user database. Authentication, SSH, SSL/TLS, VPN, and IOLAN services. Single view of multiple IOLANs. System settings, IOLAN management, and Alerts.	Logged in as admin Logout EasyPortWeb System Name: IOLANO70885 Model: IOLANO70855 Model: IOLANO70855 MAC Address: 0-0-0-4-07-0-8-5 IP Address: 172.18.3.147

▷ Informations about the used Perle device are shown on the right side including the installed firmware version.

## Updating firmware

🗿 WebManager - Admir	n Summary Screen - Microsoft Internet Expl	orer	
File Edit View Favorit	es Tools Help		A
🚱 Back 🝷 🕥 🕤 💽	👔 🙆 🏠 🔎 Search 🤺 Favorites	🖉 · 😓 📼 🦀	
Address 🙆 http://172.18.3	.147/manage.cgi/admin/summary		🕑 🄁 Go 🛛 Links 🎽
🔘 per	le	WebManager	
			User's Guide   www.perle.com
Server Info Configuration Administration Rebot IOLAN Reset Updat Backup/Restore Date/Time Crash File Keys/ Certificates Custom Files Statistics	Administration Reboat IOLAN Reset Update Firmware Backup/Restore Date/Time Crash File Keys/Certificates Custom Files	Reboot IOLAN. Reset options including Firmware, Serial Ports, etc. Update Firmware. Backup/Restore Configuration. Set Date and Time. Recover Error Diagnostics File. Manage Keys and Certificates. Custom App/Plugin, Language, Terminal, and	Logged in as: admin Logout EasyPortWeb System Name: IOLAN-070885 Hodel: IOLAN SOS1 Firmware Version: 4.5 MAC Address: 00-80-d407-08-85 IP Address: 172.18.3.147

- ▶ If the installed firmware is below version 4.5, upgrade the firmware version of the Perle device.
- The newest firmware version can always be downloaded from the internet www.perle.com/downloads.

## NOTE

How the firmware will be installed at the Perle device is described in chapter "Downloading IOLAN Firmware" on page 348 in the manual "IOLAN\_SCS-SDS-STS\_UG\_v4.4.pdf", available on the BioPAT® Xgas VIS CD.

## 9.2 Configuring Settings for Windows ModbusService

Administrative Tools							
Control Panel • All Control Panel Items • Administrative Tools • • 5							
Organize 🔻 🔳 Open Burn				= -	?		
📩 Favorites	Name ^	Date modified	Туре	Size			
🧮 Desktop	길 Remote Desktop Services	7/13/2009 9:58 PM	File folder				
📙 Downloads	B Component Services	7/13/2009 9:58 PM	Shortcut	2 KB			
🔄 Recent Places	🛃 Computer Management	7/13/2009 9:57 PM	Shortcut	2 KB			
🚍 Libraries	Data Sources (ODBC)	7/13/2009 9:57 PM	Shortcut	2 KB			
Documents	🔝 Event Viewer	7/13/2009 9:58 PM	Shortcut	2 KB			
J Music	🔝 iSCSI Initiator	7/13/2009 9:57 PM	Shortcut	2 KB			
E Pictures	Local Security Policy	7/13/2009 9:58 PM	Shortcut	2 KB			
💾 Videos	Performance Monitor	7/13/2009 9:57 PM	Shortcut	2 KB			
	🛃 Security Configuration Wizard	7/13/2009 9:58 PM	Shortcut	2 KB			
Wip2008 (Cr)	Server Extensions Administrator	4/14/2014 11:23 AM	Shortcut	2 KB			
WinXP (D:)	🗟 Server Manager	7/13/2009 9:58 PM	Shortcut	2 KB			
Win2003 (E:)	a Services	7/13/2009 9:57 PM	Shortcut	2 KB			
Win7Enterprise_x8	Share and Storage Management	7/13/2009 9:58 PM	Shortcut	2 KB			
👝 Win7Enterprise (G:	Storage Explorer	7/13/2009 9:58 PM	Shortcut	2 KB			
👝 Lexar (I:)	🔂 System Configuration	7/13/2009 9:57 PM	Shortcut	2 KB			
Setwork	쥕 Task Scheduler	7/13/2009 9:58 PM	Shortcut	2 KB			
GOL11019W7	🔗 Windows Firewall with Advanced Security	7/13/2009 9:57 PM	Shortcut	2 KB			
GOL13683W7	Windows Memory Diagnostic	7/13/2009 9:57 PM	Shortcut	2 KB			
🖳 MEL12503W7	💦 Windows PowerShell Modules	7/13/2009 10:37 PM	Shortcut	3 KB			
1 MEL 12512W7	🐞 Windows Server Backup	7/13/2009 9:58 PM	Shortcut	2 KB			
MEW11005W7							
Services Date modified: 7/13/2009 9:57 PM Date created: 7/13/2009 9:57 PM Shortcut Size: 1.25 KB							

- Open "Windows Control Panel / All Control Panel Items / Administrative Tools".
- Double click "Services".

ices								
ction View	Help							
ICES (Local) C Services (Local)								
		News		Description	Charles	Charles Trees	11000.00	
	ModbusService	Name -	12	Description	Status	Disabled	Log Off As	
Stop the service		TD Heleer	.5)	Provides h	Started	Automatic	Local System	
	Restart the service	C IPeer Policy Agent		Internet Pr	Starteu	Manual	Network S	
		KtmDm for Distributed Transacti	on Coordinator	Coordinate		Manual	Network S	
		Link-Laver Topology Discovery I	Vanner	Creates a		Manual	Local Service	
		MECSKernel			Started	Automatic	Local System	
		Microsoft .NET Framework NGE	v2.0.50727 X64	Microsoft		Manual	Local System	
		Microsoft .NET Framework NGE	v v2.0.50727 X86	Microsoft		Manual	Local System	
		Microsoft Fibre Channel Platforr	n Registration S	Registers t		Manual	Local Service	
		Microsoft iSCSI Initiator Service		Manages I		Manual	Local System	
		in the second se	y Provider	Manages s		Manual	Local System	
		Service ModbusService			Started	Automatic	Local System	
		marancala class schedurer	odbusService Pr	operties (Loc	al Compute	ar)	×	
		🔅 Net.Msmq Listener Adapter						
		Net.Pipe Listener Adapter	General Log Or	Recovery De	ependencies			
		🔅 Net.Top Listener Adapter						
		Net. Tcp Port Sharing Service Select the computer's response if this service fails. Help me set up recovery!						
		Netlogon						
		Network Access Protection A     First failure:     Network Connections     Network List Service     Second failure:		Restart the Service				
				Restart the Service				
		Network Location Awareness						
		Network Store Interface Ser		res: Restart the Service			<u> </u>	
		OpcEnum	Reset fail count a	fter: 0		ays		
		Reformance Counter DLL Ho		-				
		Rerformance Logs & Alerts	Restart service at	fter: 1	n	ninutes		
		Rerle TruePort Service						
		🔍 Plug and Play	I Enable action	ns for stops with e	errors.	estart Computer O	ptions	
		🔍 PnP-X IP Bus Enumerator						
		Review Portable Device Enumerator !	Drogram					
		Ser Power	i-iograin.					
		Rint Spooler				Brov	vse	
		Problem Reports and Solution	Commendation					
		Protected Storage	Command line		1			
		Remote Access Auto Connec	Append fa	il count to end ol	command li	ne (/fail=%1%)		
		M Remote Access Connection №						
		Remote Desktop Configuratio						
		Remote Desktop Services			ОК	Cancel	Apply	
		Services Us						

- Scroll down the list until "ModbusService" appears in the list.
- ▶ Double click "ModbusService" and select register card "Recovery".
- Select the setting "Restart the Service" from the drop down list for the three items "First failure", "Second failure" and "Subsequent failure".

## 10 Troubleshooting

If you cannot correct a fault independently, contact:

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Tel.: +49 5665 407 0 www.sartorius.com

e-mail: mfcs.service@sartorius-stedim.com

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The information and figures contained in these instructions correspond to the version date specified below.

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