

# Special Documentation **OXY5500 optical oxygen analyzer**

Service software





# Table of Contents

<b>1 About this document.....</b>	<b>4</b>		
1.1 Document function .....	4		
1.2 Target group .....	4		
1.3 Using this document .....	4		
1.4 Symbols .....	5		
1.5 U.S. export compliance .....	5		
<b>2 Installation.....</b>	<b>6</b>		
2.1 Installation requirements .....	6		
2.2 Installing the software .....	6		
<b>3 Operation .....</b>	<b>9</b>		
		3.1 Structure and function of the operating menu ..	10
		<b>4 Operation options .....</b>	<b>11</b>
		4.1 Overview of operation options .....	11
		4.2 Measurement Control .....	12
		4.3 Device Manager .....	13
		<b>5 Diagnostics and troubleshooting.....</b>	<b>28</b>
		<b>6 Repair .....</b>	<b>29</b>
		6.1 Endress+Hauser services .....	29
		6.2 Return .....	29
		6.3 Disclaimers .....	29

# 1 About this document

## 1.1 Document function

This manual is a Special Documentation. It does not replace the Operating Instructions pertaining to the device. It serves as a reference for the service software.

## 1.2 Target group

This manual should be read and referenced by anyone installing, operating, or having direct contact with the OXY5500 analyzer.

## 1.3 Using this document

Take a moment to familiarize yourself with this software instruction by reading the Table of Contents.

Images and tables are included to provide a visual understanding of the analyzer software functions. Special symbols are also used to provide the user with key information regarding the system configuration or operation. Pay close attention to this information.

### 1.3.1 Document overview

Endress+Hauser's OXY5500 service software is used to communicate via a PC or laptop with the OXY5500 optical oxygen analyzer. This manual provides an overview of the service software operation.

### 1.3.2 Documentation

Enclosed in your analyzer system order is the product Safety Instructions manual for your reference. Review all necessary safety instructions before installing or operating the analyzer.

This Special Documentation manual is an integral part of the complete document package listed in the table below.

All documentation is available:

- On the media device supplied (not included in the delivery for all device versions)
- On the Endress+Hauser mobile app: [www.endress.com/supporting-tools](http://www.endress.com/supporting-tools)
- In the Downloads area of the Endress+Hauser website: [www.endress.com/downloads](http://www.endress.com/downloads)



This document is an integral part of the document package, which includes:

Part number	Document type	Description
BA02195C	Operating Instructions	A complete overview of the operations required to install, commission, and maintain the device
BA02196C	Sample conditioning system (SCS) Operating Instructions	Commissioning, operation, and maintenance details for the OXY5500 optical oxygen analyzer sample conditioning system
TI01656C	Technical Information	Technical data for the device with an overview of associated models available
XA02754C	Safety Instructions	Requirements for installing or operating the analyzer as it relates to personnel or equipment safety


For custom orders, refer to the Endress+Hauser website for the list of local sales channels to request order-specific documentation: [www.endress.com/contact](http://www.endress.com/contact)

## 1.4 Symbols

### 1.4.1 Safety symbols

Structure of Information	Meaning
<p> <b>WARNING</b></p> <p>Causes (/consequences)                      Consequences of noncompliance (if applicable)                      ▶ Corrective action</p>	<p>This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation can result in a fatal or serious injury.</p>
<p> <b>CAUTION</b></p> <p>Causes (/consequences)                      Consequences of noncompliance (if applicable)                      ▶ Corrective action</p>	<p>This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.</p>
<p><b>NOTICE</b></p> <p>Cause/situation                      Consequences of noncompliance (if applicable)                      ▶ Action/note</p>	<p>This symbol alerts you to situations which may result in damage to property.</p>

### 1.4.2 Symbols for certain types of information

Symbol	Meaning
	<p>General notes and important information concerning the installation and operation of the analyzer.</p>

## 1.5 U.S. export compliance

The policy of Endress+Hauser is in strict compliance with U.S. export control laws as detailed on the website of the [Bureau of Industry and Security](#) at the U.S. Department of Commerce.

## 2 Installation

This chapter provides instructions for configuring a PC or laptop to connect with the OXY5500 and installing the OXY5500 service software.

### 2.1 Installation requirements

The table below provides PC or laptop minimum and suggested configuration requirements.

Item	Minimum system requirements	Suggested configuration
Operating system	Microsoft Windows 7, 8 (32 or 64 Bit)	Microsoft Windows 10 (64 Bit)
Processor	2.4 GHz single core processor	3 GHz multi-core processor
RAM	2 GB	4 GB or more
USB	USB 2.0	USB 2.0
Screen resolution	1024 x 768	1680 x 1050 or higher

### 2.2 Installing the software

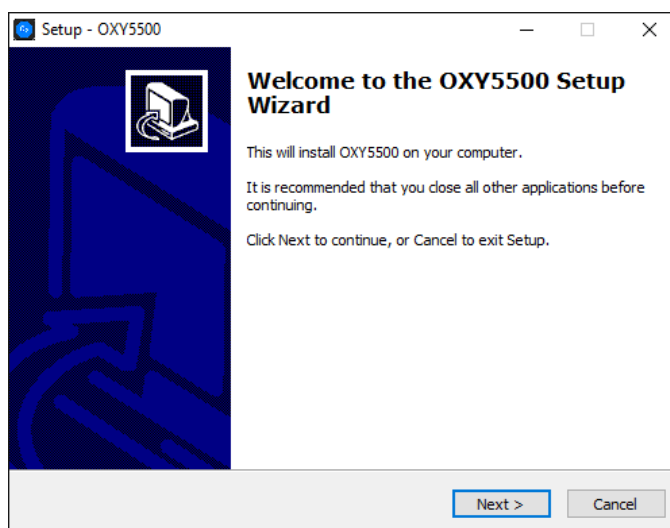
Follow the steps below to install the OXY5500 service software.

1. Close all open applications.



Additional open applications may interfere with the operation of the OXY5500 service software.

2. Insert the supplied USB drive in a USB port on the PC or laptop.  
If a dialog box does not automatically display, use Explorer to open the file menu.
3. Click the OXY5500 setup executable (.exe) file from the directory to launch the software.  
The OXY5500 Setup Wizard opens and guides the user through the installation process.



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Figure 1: OXY5500 Setup window

- 4. Select a destination location and Start Menu folder for the program files.

A window displays indicating the drivers that will be installed with the software.

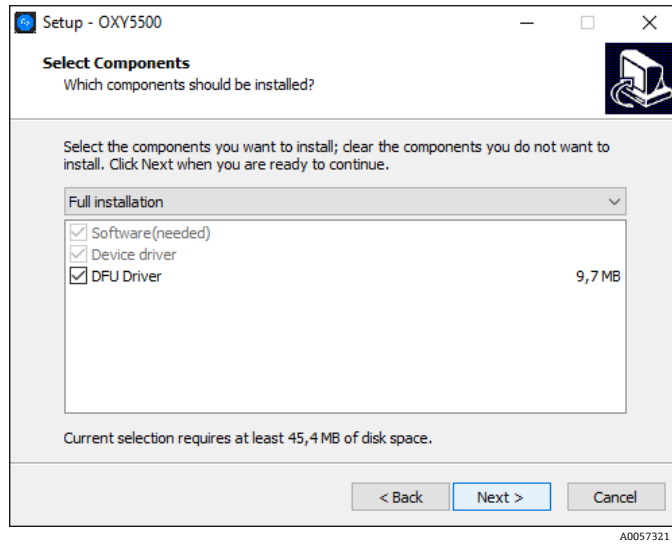


Figure 2: Drivers installed with the service software

- 5. When all installation settings are selected, click **Install** to begin the installation process.

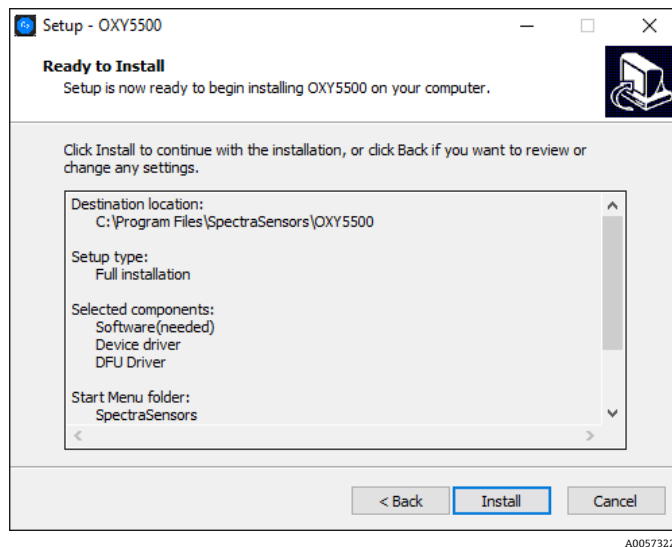
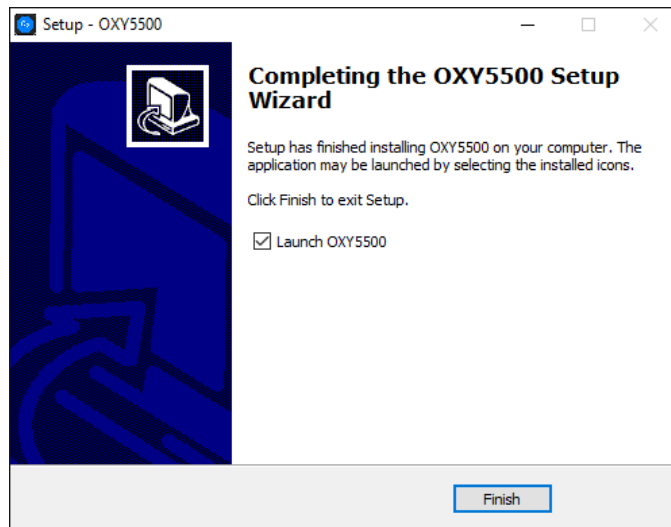


Figure 3: Ready to install

A progress bar displays while the OXY5500 software installs on the computer. A notification displays when the drivers are successfully installed.

- Click **Finish** to complete the installation.



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Figure 4: Completing the installation



### 3 Operation



Changes performed in the software are not stored on the analyzer.

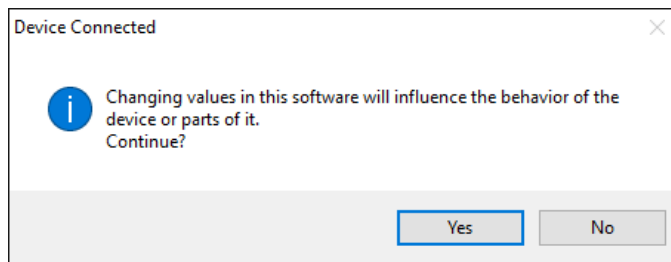
**NOTICE**

**If the USB connection between the analyzer and the PC or laptop is disrupted while the software is running, the analyzer remains in USB mode for a few seconds after disconnection.**

- Wait for approximately 10 seconds before operating the OXY5500 without the service software.

**To start the software**

1. Connect the OXY5500 to a USB port on the PC or laptop.  
Refer to the *OXY5500 optical oxygen analyzer Operating Instructions (BA02195C)* for more information on connecting and handling the analyzer.
2. Close all other applications. Open applications may interfere with the service software.
3. Click on the OXY5500 service software icon on the PC desktop to start the OXY5500 service software.  
Alternatively, use the Windows Start-Up button to navigate to the folder designated during installation.  
A message window displays stating that the analyzer is connected and value changes made in the software will influence the analyzer operation.



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Figure 5: Analyzer connected information window

4. Click **Yes** to continue.  
After successful initialization, the Main screen displays. Information for the connected OXY5500 is shown in the Device pane.



If the analyzer is not detected, check all connections. Refer to *Diagnostics and troubleshooting* → for more information.

5. To view software information and version number, select About from the ? menu. Click **OK** to close the dialog box.

To leave the OXY5500 service software and close the window, select Exit from the File menu.

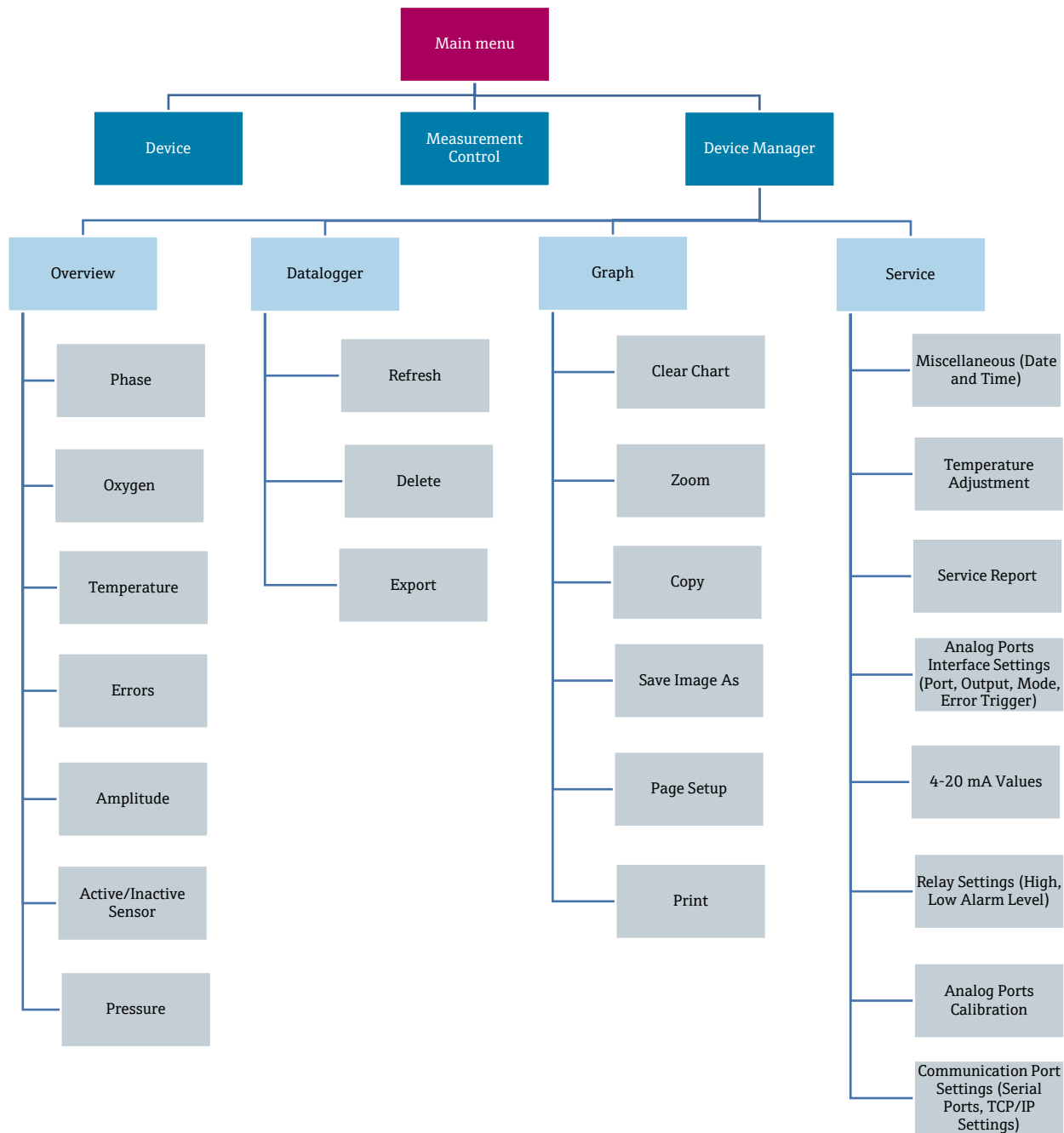


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Figure 6: Main screen options to view software information or exit the software

### 3.1 Structure and function of the operating menu

The map below outlines the software menus.



## 4 Operation options

### 4.1 Overview of operation options

The Main screen consists of the areas shown below.

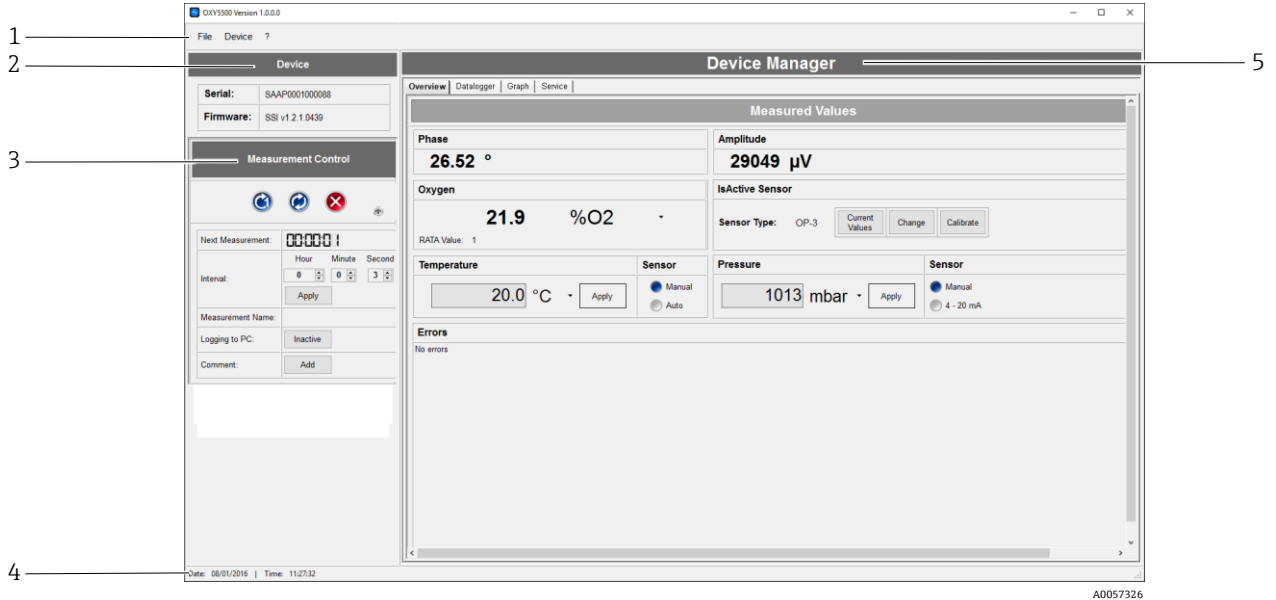


Figure 7: Main screen

#	Name	Description
1	Menu bar	Available drop-down menus.
2	Device	Serial number and firmware version of the connected OXY5500 device.
3	Measurement Control	Details of the analyzer measurement. Refer to <i>Measurement Control</i> →  for additional information.
4	Status bar	Date and time; synchronized with the laptop or PC date and time.
5	Device Manager	Tabs for functional screens: <ul style="list-style-type: none"> <li>▪ Overview</li> <li>▪ Datalogger</li> <li>▪ Graph</li> <li>▪ Service</li> <li>▪ Refer to <i>Device Manager</i> →  for additional information.</li> </ul>

## 4.2 Measurement Control

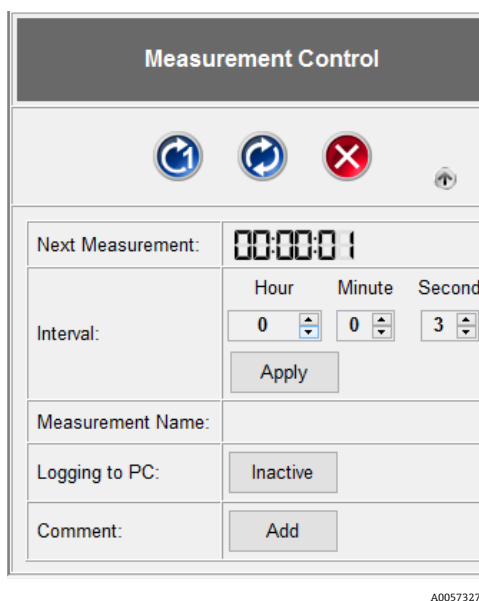





Figure 8: Measurement Control pane of the Main screen

### 4.2.1 Measurement Control buttons

Use the buttons at the top of the Measurement Control pane to start and stop analyzer measurements. Click the arrow icon to minimize the buttons.

Symbol	Name	Function
 A0057328	Single Scan	Performs a single measurement.
 A0057329	Continuous	Performs measurements at the set time interval.
 A0057330	Stop	Halts the interval measurement.

### 4.2.2 Data viewing and input

The Measurement Control fields described below are used for data viewing and input.



While the service software is operating, the data cannot be stored to the analyzer. The data capture to the analyzer resumes after exiting the service software application.

Name	Function
Next Measurement	Shows a countdown until the next measurement is taken.
Interval	Shows the set time interval for continuous measurements. <ul style="list-style-type: none"> <li>To change the interval, select a new value using the arrow keys to the right of the hour, minute, and second fields.</li> <li>Click <b>Apply</b> to transfer the new values to the analyzer.</li> </ul>
Measurement Name	Shows the name of the selected measurement file for storing the measurement data. Data is written to the designated file after Logging is active.
Logging to PC	Shows whether measurement data is stored. Click the button to change the status. <ul style="list-style-type: none"> <li>When set to Inactive, measurement data is not stored.</li> <li>When set to IsActive, measurement is stored. In the dialog box, select a file name and directory for storing the data on the PC or laptop.</li> </ul>
Comment	Enables addition of comments. To place a comment with the measurement file: <ol style="list-style-type: none"> <li>Click <b>Add</b>.</li> <li>Type the comment in the dialog window.</li> <li>Click <b>OK</b>.</li> </ol>

### 4.3 Device Manager

Use the tabs at the top of the window to access the functional screens.

- Overview
- Datalogger
- Graph
- Service

The Device Manager window initially displays the Overview screen.

#### 4.3.1 Overview

The Overview screen displays the measured values.

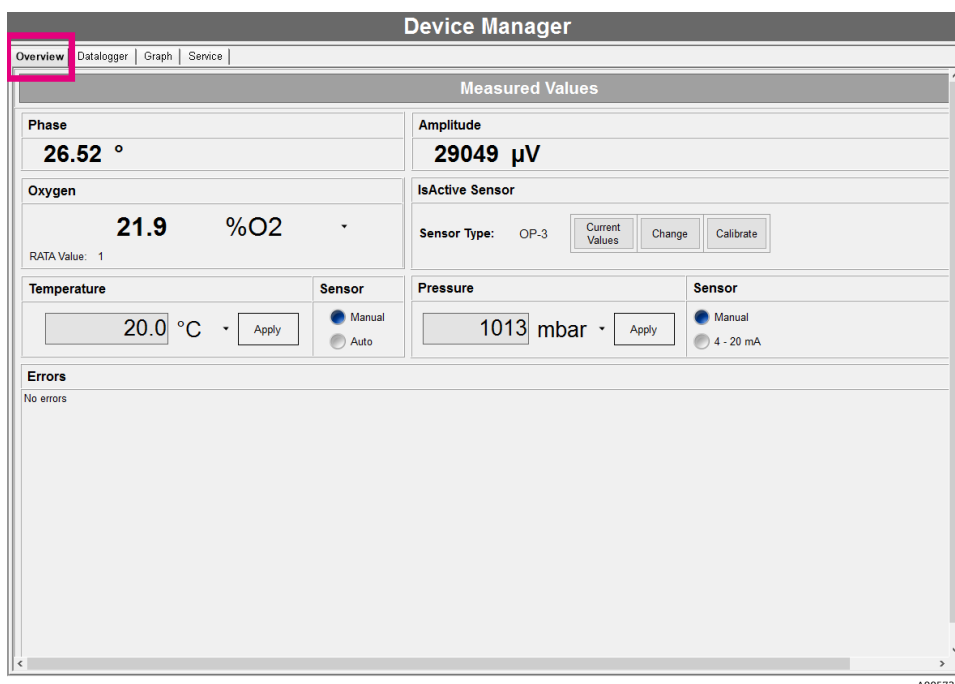








Figure 9: Device Manager Overview screen

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The fields are described below.

Name	Function
Phase	Displays the last measured raw value.
Amplitude	Displays the last measured raw value.
Oxygen	<p>Displays the last measured oxygen value and the current RATA value.</p> <p> The RATA value cannot be adjusted in the service software. It is only adjusted on the analyzer.</p> <p>Oxygen values can be displayed in the following units:</p> <ul style="list-style-type: none"> <li>▪ OP-3 sensor: % O2</li> <li>▪ OP-6 sensor: % O2 or ppmv</li> <li>▪ OP-9 sensor: ppmv</li> </ul>
Temperature and Sensor	<p>Displays the measured or set temperature value used for temperature compensation in K, °C, or °F. The temperature unit is selected from the drop-down menu.</p> <p> To make a temperature sensor selection, click <b>Stop</b> in the Measurement Control pane to stop measurement. </p> <p>Temperature sensor options:</p> <p><b>Manual.</b> Select to enter a temperature value in the input field. The temperature must be known and remain constant throughout measurements.</p> <p><b>Auto.</b> Select to measure the temperature with the temperature sensor connected to the OXY5500.</p> <p>Click <b>Apply</b> to transfer any changes to the analyzer.</p>
Errors	Shows error warnings and information messages. If a critical error occurs (e.g., No sensor detected, ADC overflow, PME error), the field is outlined in red.
IsActive Sensor	<p>Contains the following displays and functionality:</p> <ul style="list-style-type: none"> <li>▪ Shows the Sensor Type for the connected sensor.</li> <li>▪ Provides the Current Value for sensor constraints and calibration.</li> <li>▪ Allows manual adjustments to the Change sensor data.</li> <li>▪ Provides option to perform a Calibration.</li> </ul> <p>Refer to <i>Change sensor data</i> or <i>Calibrate the oxygen sensor</i> →  for additional information.</p>
Pressure and Sensor	<p>Displays the measured or set atmosphere pressure value used for pressure compensation in hPa, mbar, PSI, atm, or Torr. The pressure unit is selected from the drop-down menu.</p> <p> To make a pressure sensor selection, click <b>Stop</b> in the Measurement Control pane to stop measurement. </p> <p>Pressure sensor options:</p> <p><b>Manual.</b> Select to enter a pressure value in the input field. The pressure must be known and remain constant throughout measurements.</p> <p><b>4-20 mA.</b> Select to perform auto-pressure measurements with the pressure sensor connected to the OXY5500.</p> <p>Click <b>Apply</b> to transfer any changes to the analyzer.</p>

### 4.3.1.1 Change sensor data

When a new sensor is connected to the analyzer, the sensor data can be changed following the steps below.



To make a selection, click **Stop** in the Measurement Control pane to stop measurement.

1. In the IsActive Sensor pane of the Overview screen, click **Change**.  
The Change Sensor window opens.

Figure 10: Change Sensor window

2. Select the Sensor Type (OP-3, OP-6, or OP-9) for the oxygen sensor connected to the analyzer.

**NOTICE**

**The User Signal Intensity changes the measurement signal intensity of the device. Do not change this setting unless instructed by Service.**

- ▶ The nominal signal intensity setting is 0.
- ▶ The signal intensity level adjusts from -5 (minimum signal intensity) to 5 (maximum signal intensity).

3. Edit the Sensor Constants values using the values on the calibration certificate delivered with the oxygen sensor. Refer to the example certificate below.



The Sensor Constants default values change automatically when a different sensor type is used.

**NOTICE**

**The O2-2<sup>nd</sup> and the pATM unit values can also be changed. Ensure the selected units match the calibration certificate provided.**

## OXY5500 Calibration Certificate

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**SYSTEM INFORMATION**

Calibration Date: 1-12-2022	Sensor Type: OP-9 Range: 0 to 300 ppm
Optical Module S/N: SAAP0001000579	Sensor S/N: 211029-006 PSt9-1729-01
OXY5500 S/N: SC009C28000	Firmware: SSI v1.4.1.0519
SSI Sales Order No.: 15451	SSI P/N: OXY5500- 11011120-00000-00
Job No.: J58595	Tag No.: N/A

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**CALIBRATION SPECIFICATIONS**

Calibration Point: CAL0 ppm: 0.00	User Signal Intesity: 0
Calibration Point: CAL2ND ppm: 200.00	Operating Temperature [°C]: 21.22
	Atmospheric Pressure [mbar]: 989.01

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**CALIBRATION DATA**

Calibration Points	Phase Signal [°]	Valid Range [°]	Temperature [°C]	Valid Range [°C]	Amplitude [µV]	Pass / Fail
Cal0:	64.12	60.00 - 70.00	21.21	18.00 - 60.00	25738.03	PASS
Cal2nd:	34.77	32.00 - 45.00	20.92	18.00 - 60.00	14956.97	PASS

Sensor Constants: 0 to 60 °C				Cal Gas	Cylinder	Station
F1 = 0.786	dPhi1= -0.0035	dKSV1 = -0.08		N2 (6.0)	3200152	OXY
m = 15.8	dPhi2= -0.00038	dKSV2 = 0		O2 In N2	2810220	OXY

Sensor Constants: -20 to 50 °C				Sensor Constant Used		
F1 = 0.786	dPhi1= -0.01229	dKSV1 = -0.1		-20 to 50 C		
m = 15.8	dPhi2= -0.00022	dKSV2 = 0				

---

**VALIDATION DATA**

O2 Reading		O2 ppm	Valid Range ppm	Temperature [°C]	Valid Range [°C]	Pressure [mbar]	Valid Range [mbar]	Pass-Fail
O2 ppm	Set Point	0.03	< 2.00	21.22	18.00 - 60.00	989.01	900.00 - 1025.00	PASS
		200.15	180.00 - 210.00	20.99	18.00 - 60.00	989.01	900.00 - 1025.00	PASS

Analog Outputs					
Set Point [mA]	Port1 [mA]	Valid Range [mA]	Port2 [mA]	Valid Range [mA]	Pass-Fail
4.00	4.000	3.995 - 4.005	4.000	3.995 - 4.005	PASS
20.00	20.001	19.995 - 20.005	20.000	19.995 - 20.005	PASS

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**COMMENTS**

NOTE: Calibration was performed using SpectraSensors instrumentation at ambient conditions. OXY5500 manual recommends for end users to calibrate the unit prior to use. End users to check calibration frequency based on manual recommended intervals.

Calibrated by: FT20		Date: 1-12-2022
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Figure 11: Example of the calibration certificate

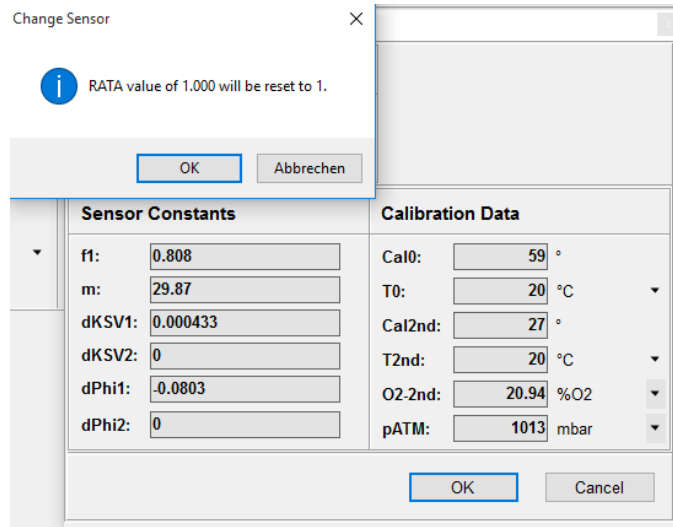
4. When all entries are complete, click **OK**.

The new sensor data is applied.



When sensor data is changed and RATA is set to a value other than 1, an information window displays. Click **OK** to reset RATA to 1.





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Figure 12: Reset RATA to 1

#### 4.3.1.2 Calibrate the oxygen sensor

Oxygen sensors must be calibrated before use. A conventional two-point calibration is required. Zero point calibration is performed in an oxygen-free environment (typically nitrogen). The second calibration point is performed in one of the following environments:

- Air (OP-3)
- 1 to 2 % O<sub>2</sub> (OP-6)
- 100 to 200 ppmv O<sub>2</sub> (OP-9)

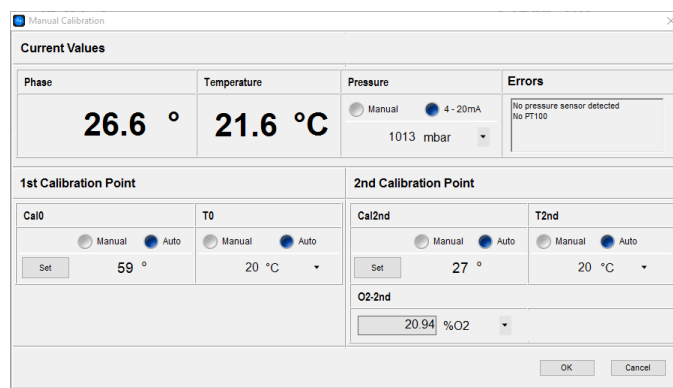
Refer to the *OXY5500 optical oxygen analyzer Operating Instructions (BA02195C)* for more information. Recalibration after 100,000 measurement points is recommended.

#### To calibrate the oxygen sensor

1. In the IsActive Sensor pane of the Overview screen, click **Calibrate** to recalibrate the connected oxygen sensor and update the sensor calibration data.

The Manual Calibration window opens. The top of the window displays the following information:

- **Phase and Temperature.** The currently measured values.
- **Pressure.** The measured or set values.
- **Errors.** Additional information and warnings.



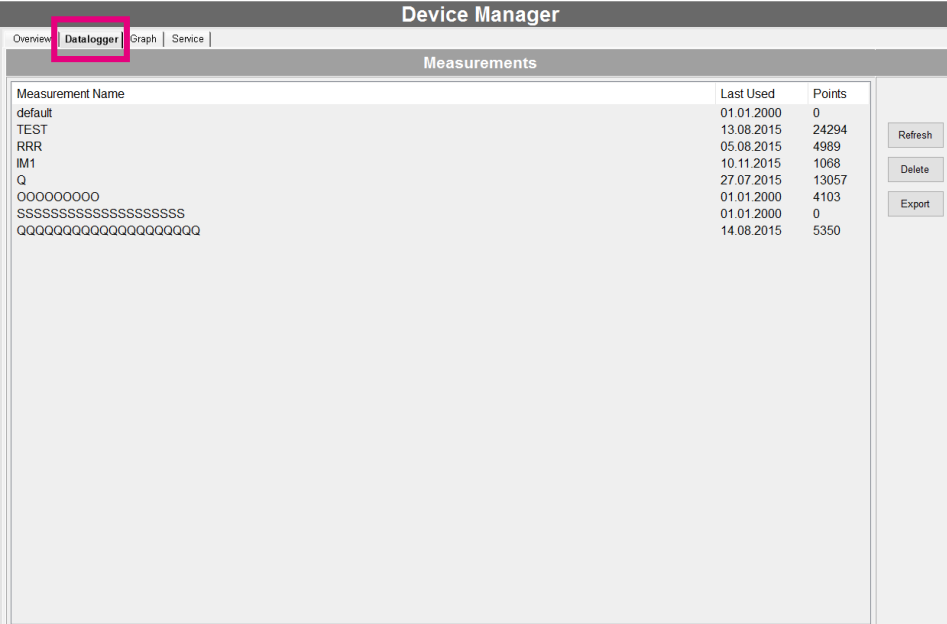
A0057335

Figure 13: Manual Calibration window

2. In the Pressure area, choose the mode for atmospheric pressure compensation pATM.
  - **Manual.** If selected, the value of the current atmospheric pressure is entered in the box. Use the drop-down menu to choose the appropriate pressure unit.
  - **4-20 mA.** If selected, the atmospheric pressure is measured with the pressure sensor connected to the analyzer.
3. In the 1<sup>st</sup> Calibration Point area, choose the mode for the Temperature (T0).
  - **Auto.** Select to measure the temperature at the first calibration point with the temperature sensor. The temperature sensor must be connected to the analyzer as indicated in the operating instructions. Ensure the sensor is inserted into the mid-range of the first calibration point.
  - **Manual.** Select to input the current temperature.

### 4.3.2 Datalogger

The Datalogger screen provides information about the measurement files stored on the analyzer. The list shows the number of measurement points stored to each file and the date the measurement file was last used. Measurement data can be moved from the analyzer to the PC.



Measurement Name	Last Used	Points
default	01.01.2000	0
TEST	13.08.2015	24294
RRR	05.08.2015	4989
IM1	10.11.2015	1068
Q	27.07.2015	13057
OOOOOOOOO	01.01.2000	4103
SSSSSSSSSSSSSSSSSSSS	01.01.2000	0
QQQQQQQQQQQQQQQQQQ	14.08.2015	5350

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Figure 14: Device Manager Datalogger screen

The following actions are available for the files:

- **Refresh.** Refresh the display during a running measurement with data logging to receive the actual number of stored measurement points.
- **Delete.** Delete the highlighted measurement file. A dialog box opens to confirm the action.
- **Export.** Export the selected measurement file in .csv format to a directors on the PC or laptop. A dialog box opens to enter the desired directory for storage.



Large measurement files may take a longer time to transfer from the analyzer to the PC.

### 4.3.3 Graph

The Graph screen provides a graphical display of the current analyzer measurement. The current values for oxygen and temperature are displayed at the top of the screen.

Two parameters can be displayed together in the graph:

1. Oxygen or Phase
2. Temperature or Amplitude

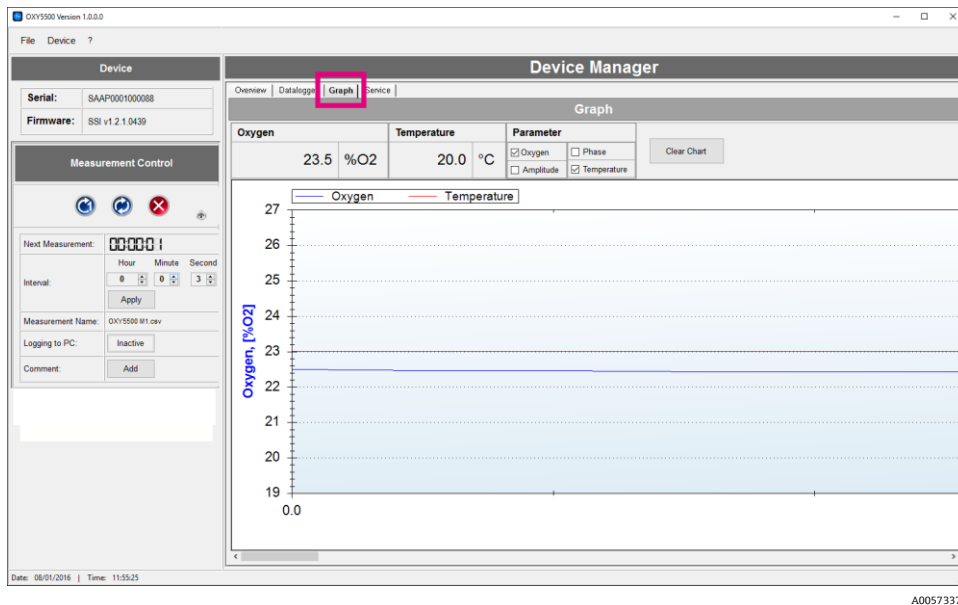


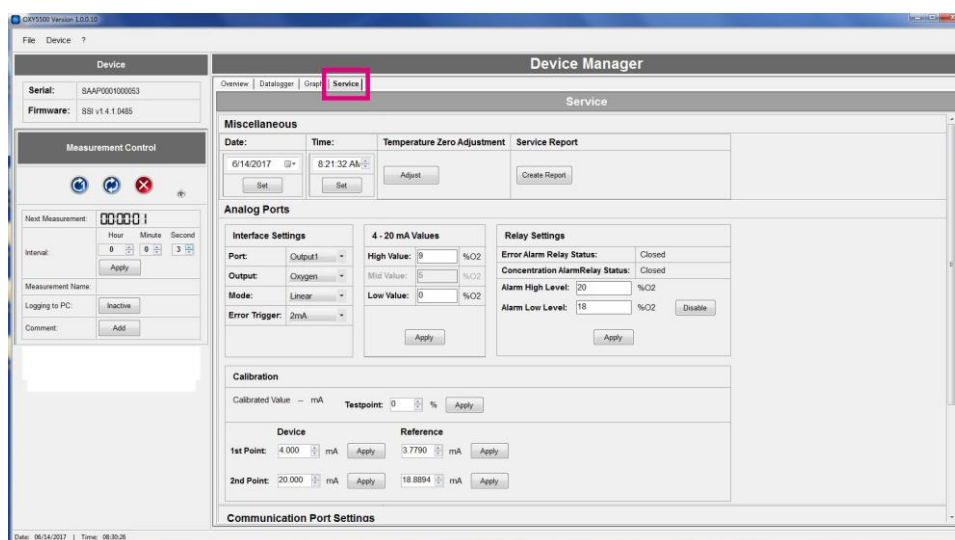
Figure 15: Device Manager Graph screen with oxygen and temperature displayed

The functions listed below are available from the Graph screen.

Function	Description
Clear Chart	Clears the currently displayed graph. <ul style="list-style-type: none"> <li>▪ If Logging is active, clicking <b>Clear Chart</b> does not delete the stored measurement data.</li> <li>▪ If Logging is activated during a running measurement, clicking <b>Clear Chart</b> clears the graph. Only the measurement data stored in the measurement file is displayed.</li> </ul>
Zoom in	Left-click and drag a frame around the area of interest.
Undo zoom	Right-click on the graph and select one of the following options from the menu: <ul style="list-style-type: none"> <li>▪ <b>Un-Zoom</b>. The last zooming step is undone.</li> <li>▪ <b>Undo All Zoom/Pan</b>. All zooming steps are undone.</li> <li>▪ <b>Set Scale to Default</b>. The original scale of the graph is reset.</li> </ul> Alternatively, double-left-click to reset the graph to the original scale.
Copy	Right-click on the graph and select this option to copy and paste the graph into a document.
Save Image As	Right-click on the graph and select this option to save the graph as an image file. A dialog box opens to enter the desired directory, filename and file type for storage.
Page Setup	Right-click on the graph and select this option to change the page settings for printing the graph.
Print	Right-click on the graph and select this option to open a Print dialog and choose a printer. Click <b>OK</b> .

### 4.3.4 Service

The Service screen displays analyzer settings, such as analog and digital connections. Service reports can also be created from this screen.



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Figure 16: Device Manager Service screen

The fields are listed below. Refer to the appropriate sections below for additional explanations.

Field	Function
Miscellaneous	Set the date and time.
Temperature Zero Adjustment	Adjust the temperature values to a standardized zero value.
Service Report	Generate a service report in .xlsx format.
Analog Ports Interface Settings	Configure the interface settings.
4-20 mA Values	Enter the 4 to 20 mA values.
Relay Settings	Define the valid range of the Concentration Alarm Relay.
Analog Ports Calibration	Set the input and output calibration points.
Communication Port Settings	Set the communication port information.

#### 4.3.4.1 Miscellaneous

Enter the desired Date and Time values into the fields. Click **Set** for the new date and time to take effect.

#### 4.3.4.2 Temperature Zero Adjustment

A 0 °C simulator must be connected to the OXY5500 temperature sensor to adjust the temperature values to a standardized zero value. Refer to the *OXY5500 optical oxygen analyzer Operating Instructions (BA02195C)* for more information.

To perform the adjustment, click **Adjust** and confirm that the 0 °C simulator is connected to the analyzer. Click **OK** to perform the zero adjustment.

#### 4.3.4.3 Service Report

##### To create a service report for the connected analyzer

1. Click **Create Report**.
2. Select a filename for the report and a directory on the PC for storage.

A prompt displays a message to connect an oxygen sensor to the analyzer and expose the sensor to nitrogen gas of arbitrary concentration.

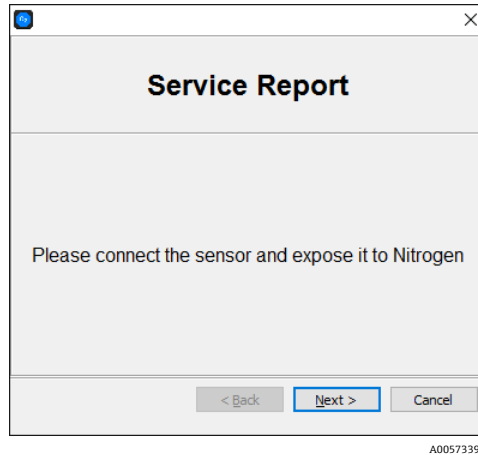



Figure 17: Connect oxygen sensor message

3. Expose the OP probe to nitrogen gas by flowing gas into the system. Click **Next**.
4. Wait for 60 seconds for the sensor to equilibrate.
  - A countdown status displays in the message window.
  - When the sensor has equilibrated, the software automatically starts reading phase values.
  - A status message displays.
5. When the final message window displays, click **Finish** to create the service report.

An example of the service report is shown below.

	A	B	C	D	E	F
1	Created with:	1.0.0.0				
2						
3						
4						
5						
6						
7	<b>Endress+Hauser</b> 					
8	<b>Service Report</b>					
9	<b>Item</b>	<b>Value</b>	<b>Unit</b>			
10						
11	Date	08/01/2016	[-]			
12	Serial Number	SAAP0001000088	[-]			
13	Firmware	SSI v1.2.1.0439	[-]			
14	Time on Device	12:03	[hh:mm] (24h)			
15	Date on Device	08/01/2016	[MM/DD/YY]			
16	MACAddress	FF:FF:FF:FF:FF:FF	[-]			
17	IP Address	0.0.0.0 / 255.255.255.0	[-]			
18	Signal LED: Basis	15	[x*0.36 mA]			
19	Signal LED: Relative	1	[-]			
20	User Signal Intensity	0	[-]			
21	Reference LED: Basis	50	[x*0.36 mA]			
22	Reference LED: Relative	1	[-]			
23	Reference LED Amplitude	39063	[µV]			
24	Error Alarm Relay Status	Closed	[-]			
25	Concentration Alarm Relay Status	Open	[-]			
26	AD Input Mode	Linear	[-]			
27	AD Output 1 Mode	Off	[-]			
28	AD Output 2 Mode	Off	[-]			
29	Selftest Error Code	0	[-]			
30	RS232 Port Settings	BusType: RS232, Parity: Even, Baudrate: 9600				
31	Modbus ID	1	[-]			
32	RS485 Port Settings	RS485, Parity: Off (2 stop bits), Baudrate: 19200				
33	Modbus ID	1	[-]			
34	IP Mode	DHCP	[-]			
35	Port	502	[-]			
36	Ethernet Modbus ID	1	[-]			
37	Sensor Type	PS13	[-]			
38	Current Pressure	1013	[mbar]			
39	Phase Value	26.473	[°]			
40	Amplitude Value	28922	[µV]			
41	O2 Unit	%O2	[-]			
42	Errorcode	0	[-]			
43	Temperature Sensor	inactive	[-]			
44	Pressure Sensor	inactive	[-]			
45	cal0	59	[-]			

A0057340

Figure 18: Example of the service report

#### 4.3.4.4 Analog Ports Interface Settings

Use this section to apply the following settings to the selected port:

- Output
- Mode
- Error Trigger

##### To select the port and apply settings

1. Set the Port to Output 1, Output 2, or Input.
2. Set the Output to the appropriate setting based on the Port selected.
  - **Output 1.** Select Oxygen or Temperature.
  - **Output 2.** Select Oxygen or Temperature.
  - **Input.** Pressure is the only input option.
3. Set the Mode.
  - **Off.** No input reading or output writing.
  - **Linear.** A high and low value must be set to correspond with 4 and 20 mA, respectively. Values between those 2 options are calculated linearly. Values outside this range trigger the output trigger level.
  - **Bilinear.** A high, mid, and low value must be set to correspond with 4, 12, and 20 mA, respectively. This mode allows a higher resolution in a certain range.
4. Set the Error Trigger value (2 or 22 mA). In the event of any error, the Error Trigger Level is applied to the currently selected port.



Any value outside the 4 to 20 mA range is interpreted as “not valid.”

#### 4.3.4.5 4-20 mA Values

Use this section to set the values that correspond to 4 mA (Low Value), 12 mA (Mid Value), or 20 mA (High Value).

4 - 20 mA Values		
High Value:	<input type="text" value="200"/>	ppmv
Mid Value:	<input type="text" value="100"/>	ppmv
Low Value:	<input type="text" value="0"/>	ppmv
<input type="button" value="Apply"/>		

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Figure 19: Setting the 4 to 20 mA values

The values available for selection depend on the mode that was chosen in the Interface Settings section of the Service screen. Once the values are selected, click **Apply** to transfer changes to the analyzer.

Mode	4 to 20 mA settings
Off	No values can be entered.
Linear	<p>High Value and Low Value can be entered. The values are used to calculate the output or input value on the next measurement.</p> <p>The unit depends on the selected output and oxygen sensor.</p> <ul style="list-style-type: none"> <li>▪ If the output is set to Temperature, the unit is always °C.</li> <li>▪ If the output is set to Oxygen, the unit is based on the oxygen sensor: <ul style="list-style-type: none"> <li>○ OP-3: % O2</li> <li>○ OP-6: ppmv</li> <li>○ OP-9: ppmv</li> </ul> </li> </ul>
Bilinear	<p>High Value, Mid Value, and Low Value can be entered. The values are used to calculate the output or input value on the next measurement.</p> <p>The units are the same as described above for the Linear mode.</p>

#### 4.3.4.6 Relay Settings

Use this section to define the valid range of the Concentration Alarm.

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Figure 20: Relay settings

1. Enter the Alarm High Level and the Alarm Low Level.

If the measured oxygen value is outside the entered range, the relay is triggered and an error message displays.



The Alarm Low Level can be disabled by clicking **Disable**.

The unit for the alarm levels depends on the currently selected oxygen sensor:

- OP-3: % O2
- OP-6: ppmv
- OP-9: ppmv

2. Click **Apply** to transfer the new settings to the analyzer.



### 4.3.4.7 Analog Ports Calibration

Use this section to enter information for the Output or Input calibration. The analyzer is delivered from the manufacturer calibrated to the required specifications. Analog calibration may be performed in the field as needed.

**NOTICE**

**Recalibration of the analog ports causes the factory calibration to be lost.**

#### To test the current calibration

1. In the Testpoint field, select different percentage values which correspond to the 4 to 20 mA values.

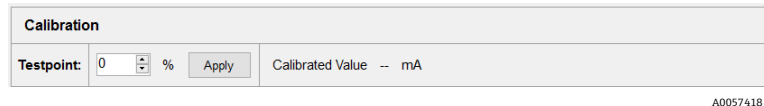


Figure 21: Testpoint field

%	mA
0	4
25	8
50	12
75	16
100	20

2. Click **Apply**.
3. Check the values against a reference current measurement device.  
Example: Fluke-705 Loop Calibrator

#### To perform calibration for either Output 1 or Output 2

1. Connect a current measurement device to Output 1 or Output 2. This serves as the reference device.
2. Set the 1<sup>st</sup> Point value for the Device to any low value.  
Example: 4.000 mA
3. Click **Apply** to transfer the new value to the analyzer.
4. Read the current value shown on the reference device.  
Example: 3.90 mA
5. Enter the current value into the Reference column field to the right of the 1<sup>st</sup> Point.  
The output values are adjusted to the entered value.
6. Set the 2<sup>nd</sup> Point value to any high value.  
Example: 20.000 mA
7. Click **Apply** to transfer the new value to the analyzer.
8. Read the current value shown on the analyzer.  
Example: 19.54 mA
9. Enter the current value into the Reference column to the right of the 2<sup>nd</sup> Point field.  
The output values are adjusted to the entered value.

Calibration				
Testpoint:	0	%	Apply	Calibrated Value -- mA
	Device		Reference	
1st Point:	4.000	mA	Apply	4.0000
				mA
			Apply	
2nd Point:	20.000	mA	Apply	20.0000
				mA
			Apply	

A0057343

Figure 22: Calibration for Output

**To perform calibration for Input**

1. Apply a 4 mA current to the OXY5500.
2. Enter this value into the Reference column to the right of the 1<sup>st</sup> Point field.
3. Click **Apply**.
4. When the reading is steady, click **Apply** next to the 1<sup>st</sup> Point field.

The last measured value displays in the top row as the Raw Value. This is the uncalibrated value that is used as the 1<sup>st</sup> Point calibration value.

5. Apply a 20 mA current to the OXY5500.
6. Enter this value into the Reference column to the right of the 2<sup>nd</sup> Point field.
7. Click **Apply**.
8. When the reading is steady, click **Apply** next to the 2<sup>nd</sup> Point field.

This is the uncalibrated value that is used as the 2<sup>nd</sup> Point calibration value.

Calibration				
				Raw Value 0.011 mA
				Calibrated Value 0.011 mA
	Device		Reference	
1st Point:	4.000	mA	Apply	4.0000
				mA
			Apply	
2nd Point:	20.000	mA	Apply	20.0000
				mA
			Apply	

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Figure 23: Calibration for Input

**4.3.4.8 Communication Port Settings**

Use this section to set the values for the communication ports.

Communication Port Settings				
<b>Serial Ports</b>			<b>TCP/ IP Settings</b>	
Port:	RS232		Obtain IP:	DHCP
Baudrate:	9600		IP:	0 0 0 0
Parity:	Even			Apply
Modbus ID:	1	Apply	Subnet Mask:	255 255 255 0
				Apply
			Port:	502
				Apply
			Modbus ID:	1
				Apply

A0057345

Figure 24: Communication port settings

**To set the Serial Ports**

1. In the Port field, select RS232 or RS485.
2. Set the Baud rate for the selected Port to one of the following options: 9600, 19200, 38400, 57600, or 115200.
3. Set the Parity to Even, Odd, or None.
  - **Even.** If selected, the number of stop bits is set to 1.
  - **Odd.** If selected, the number of stop bits is set to 1.
  - **None.** If selected, the number of stop bits is set to 2.
4. Set the Modbus ID to any value between 1 and 32.

**To set the TCP/IP address**

1. In the Obtain IP field, select either DHCP or Static.
  - **DHCP.** If selected, the IP and Subnet Mask are assigned by the DHCP server and are not editable.
  - **Static.** If selected, enter the IP and Subnet Mask manually. Consult your Network Administrator if you are unsure what should be entered in these fields.
2. In the Port field, enter the network port under which Modbus application takes place.




The default value for most Modbus applications is 502.

3. Set the Modbus ID to any value between 1 and 32.
4. Click **Apply** for each value setting to transfer the changes to the analyzer.

## 5 Diagnostics and troubleshooting

Refer to the table below for frequently asked questions related to troubleshooting the OXY5500 before contacting Service.

Symptom	Response
Unable to start the OXY5500 Setup Wizard	<ul style="list-style-type: none"> <li>▪ Ensure the PC or laptop meets the system requirements. Refer to <i>Installation requirements</i> → .</li> <li>▪ Ensure the OXY5500 analyzer is not connected to the PC or laptop.</li> <li>▪ Copy and paste the OXY5500 executable (.exe) file from the USB drive to the PC or laptop desktop for startup.</li> <li>▪ Restart the PC or laptop.</li> <li>▪ Restart the OXY5500 executable (.exe) file.</li> <li>▪ If the problem persists, contact Service.</li> </ul>
Service software does not open after installation or is crashing	<ul style="list-style-type: none"> <li>▪ Ensure the OXY5500 analyzer is connected to the PC or laptop USB port.</li> <li>▪ Restart the PC or laptop and retry activating the service software.</li> <li>▪ Uninstall the service software and then reinstall.</li> <li>▪ If the problem persists, contact Service.</li> </ul>
Service software is not initializing, recognizing, or able to start measurement	<ul style="list-style-type: none"> <li>▪ Check the USB cable connection between the PC or laptop and the OXY5500 analyzer.</li> <li>▪ Connect the OXY5500 to a different USB port on the PC or laptop.</li> <li>▪ Ensure the OXY5500 has the latest firmware release.</li> <li>▪ Close the service software application, disconnect the OXY5500 analyzer from the PC or laptop, and restart the OXY5500. Reconnect the OXY5500 to the PC or laptop and reactivate the service software application.</li> <li>▪ If the problem persists, contact Service.</li> </ul>

## 6 Repair

### 6.1 Endress+Hauser services

For service, refer to our website ([www.endress.com/contact](http://www.endress.com/contact)) for the list of local sales channels in your area.

### 6.2 Return

#### 6.2.1 Service Repair Order

If returning the unit is required, obtain a **Service Repair Order (SRO) number** from service before returning to the factory. Service can determine whether the analyzer can be serviced on site or should be returned to the factory. All returns should be shipped to:

Endress+Hauser  
11027 Arrow Route  
Rancho Cucamonga, CA 91730  
USA

#### 6.2.2 Renewity returns

Returns can also be made inside the USA through the Renewity system. Refer to our website and complete the online form: [www.us.endress.com/return](http://www.us.endress.com/return).

### 6.3 Disclaimers

Endress+Hauser accepts no responsibility for consequential damages arising from the use of this software.

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[www.addresses.endress.com](http://www.addresses.endress.com)

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