Operating Instruction

OXY5500 Optical Oxygen Analyzer Service Software

Endress+Hauser

People for Process Automation

Table of Contents

THIS PAGE INTENTIONALLY LEFT BLANK

1 - Introduction

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.

Associated documents

Enclosed in your analyzer system order is the product Safety Instruction for your reference. Please review all necessary safety instructions before installing or operating your analyzer. This document is an integral part of the complete document package, which is listed in the following table.

Part Number	Document Type	Description
BA02195C	Operating Instruction	Provides a comprehensive overview of the analyzer and step-by-step installation instructions
BA02196C	Sample Conditioning System (SCS) Operating Instruction	Commission, operation and maintenance details for the OXY5500 Optical Oxygen Analyzer Sample Conditioning System
SD02868C	Service Software Instruction	Instructions for operating the OXY5500 Service software to diagnose and maintain OXY5500 Optical Oxygen Analyzer systems
TI01656C	Technical Information	Provides technical data on the device with an overview of associated models available
XA02754C	Safety Instruction	Safety Instructions for the OXY5500 Optical Oxygen Analyzer

For additional instruction manuals, please refer to the following:

- For custom orders:
    - Refer to the Endress+Hauser website (https://endress.com/contact) for the list of local sales channels to request order-specific documentation.[1]
- For standard orders:
    - Refer to the Endress+Hauser website product page to download the published manuals for the analyzer: www.endress.com

1. Order-specific documentation is located by analyzer serial number (SN).

Who Should Read This Manual

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

How to Use This Manual

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

Images and tables have been 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 and/or operation. Pay close attention to this information.

General note icons

Instructional icons are provided in this manual to alert the user of important information and valuable tips. The following symbols are used in this manual along with associated types of information.

General notes and important information concerning the installation and operation of the analyzer.

Failure to follow all directions may result in malfunction of the analyzer.

Conventions used in this manual

In addition to the symbols and instructional information, this manual is created with “hot links” to enable the user to quickly navigate between different sections within the manual. These links include table, figure and section references and are identified by a pointing finger cursor when rolling over the text. Simply click on the link to navigate to the associated reference.

2 - Installation

This chapter provides instruction for configuring a PC or laptop to connect with the OXY5500 and installing the OXY5500 Service Software.

System Requirements

Refer to Table 2–1 for PC or laptop minimum and suggested configuration requirements.

Table 2–1 *System requirements*

	Minimum System Requirements	Suggested Configuration
Operating System	Microsoft® Windows® 7, 8 (32 or 64 Bit)	Microsoft® Windows® 7 (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

Installing the Software

Follow the procedure 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 no dialog box automatically displays, use the 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** will open and guide the user through the installation process. Refer to Figure 2–1.

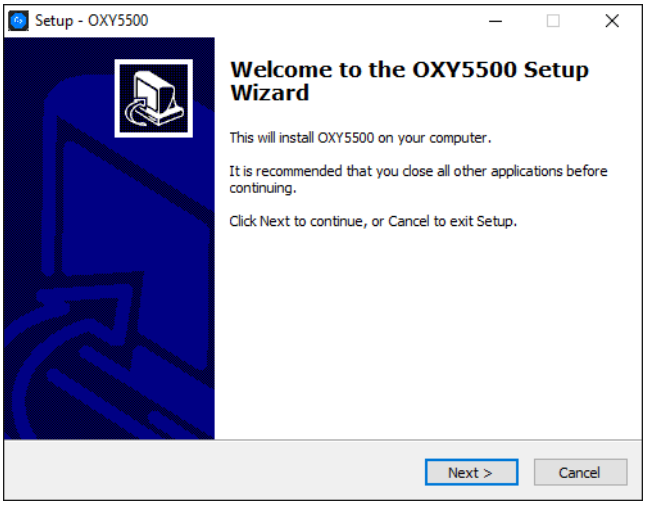

Figure 2–1 *OXY5500 Setup Window*

4. Select a destination location and Start Menu folder for the program files. A window will display indicating drivers that will be installed with the software. Refer to Figure 2–2.

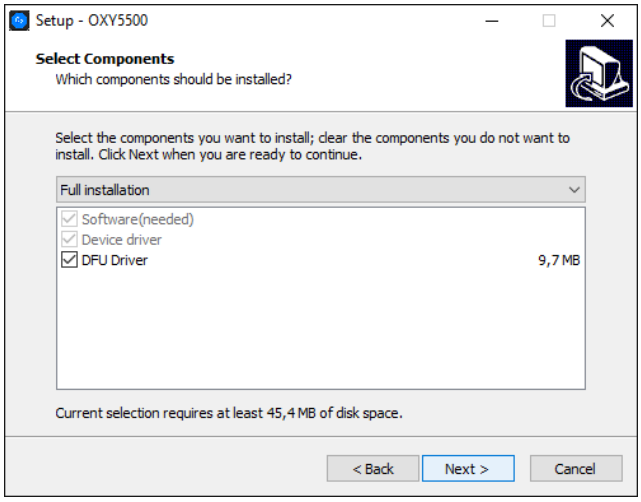

Figure 2–2 *Drivers installed with Service Software*

5. When all installation settings have been selected, click INSTALL to begin the installation process. Refer to Figure 2–3.

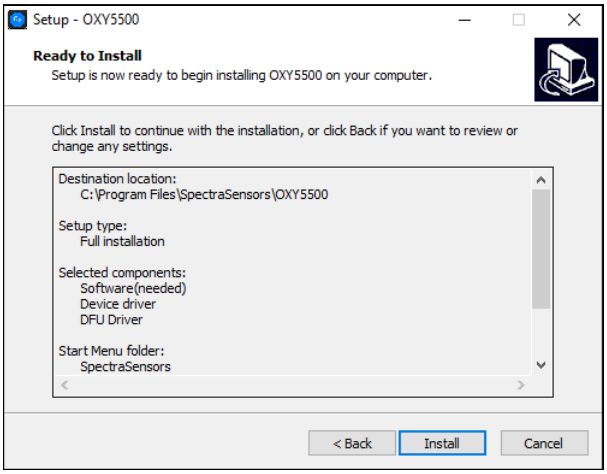

Figure 2–3 *Ready to install*

A progress bar displays while the OXY5500 software installs on the computer. A notification will display when the drivers have been successfully installed.

6. Click the FINISH button shown in Figure 2–4 to complete the installation.

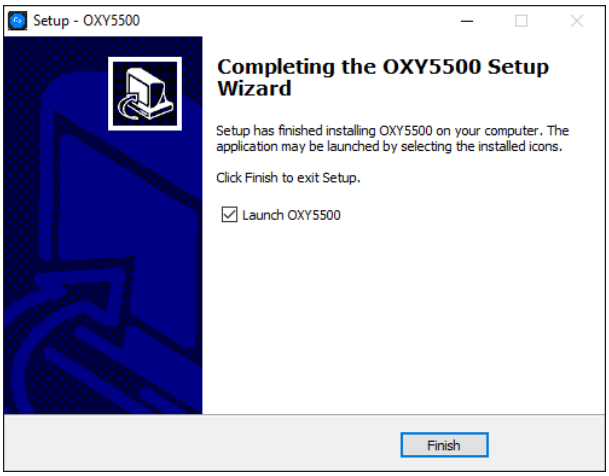

Figure 2–4 *Completing the installation*

THIS PAGE INTENTIONALLY LEFT BLANK

3 - Operation

Changes performed in the software will not be stored on the analyzer device.

Should the USB connection be disrupted between the analyzer and the PC or laptop while the software is running, the analyzer device will remain in USB Mode for a few seconds after disconnection. Wait for approximately 10 seconds before operating the OXY5500 without the Service Software.

Starting the Software

1. Connect the OXY5500 to a USB port on the PC or laptop.

Refer to the OXY5500 Optical Oxygen Analyzer Operating Instruction (BA02195C) Figure 2-3 for more information on connecting and handling the analyzer.

2. Close all other applications, as they may interfere with the Service Software.
3. Start the OXY5500 Service Software by clicking on the OXY5500 Service Software icon on the PC desktop or by clicking the Windows Start-Up button and navigating to the folder designated during installation. A message window will display stating that the analyzer is connected and value changes made in the software will influence the analyzer operation.
4. Click the **Yes** button on the message window. Refer to Figure 3–1.

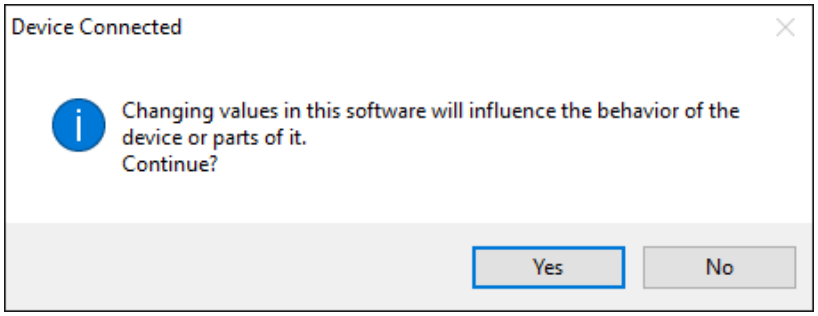

Figure 3–1 *Analyzer connected information window*

5. After successful initialization, the MAIN screen is displayed.

If the analyzer is not detected, check all connections, or refer to ***"Troubleshooting" on page A-1*** *for more information.*

6. The connected OXY5500 is shown in **Device** section (2) of the Main menu window referred to as the DEVICE MANAGER. Refer to **"Main Screen (Device Manager)"**.
7. Click **File**/**Exit** menu to leave the OXY5500 Service software and close the window.

   OR

   Click **?**/**About** to open a dialog box that provides the software information and version number. Click **OK** to close the dialog box. Refer to Figure 3–2.

File/Exit **?/About**

Figure 3–2 *Main screen; File/Exit and ?/About menus*

Main Screen (Device Manager)

The MAIN screen, also known as the DEVICE MANAGER window, consists of the following areas:

- **Menu bar (1)**: Displays the application's drop-down menus
- **Device (2)**: Shows the connected OXY5500 device information.
- **Measurement Control (3)**: Provides details of the analyzer measurement
- **Status bar (4)**: Location where Date and Time are displayed.
- **Device Manager (5)**: Displays the tabs for functional screens; Overview, Datalogger, Graph and Service.

Refer to Figure 3–3 for a view of the screen.

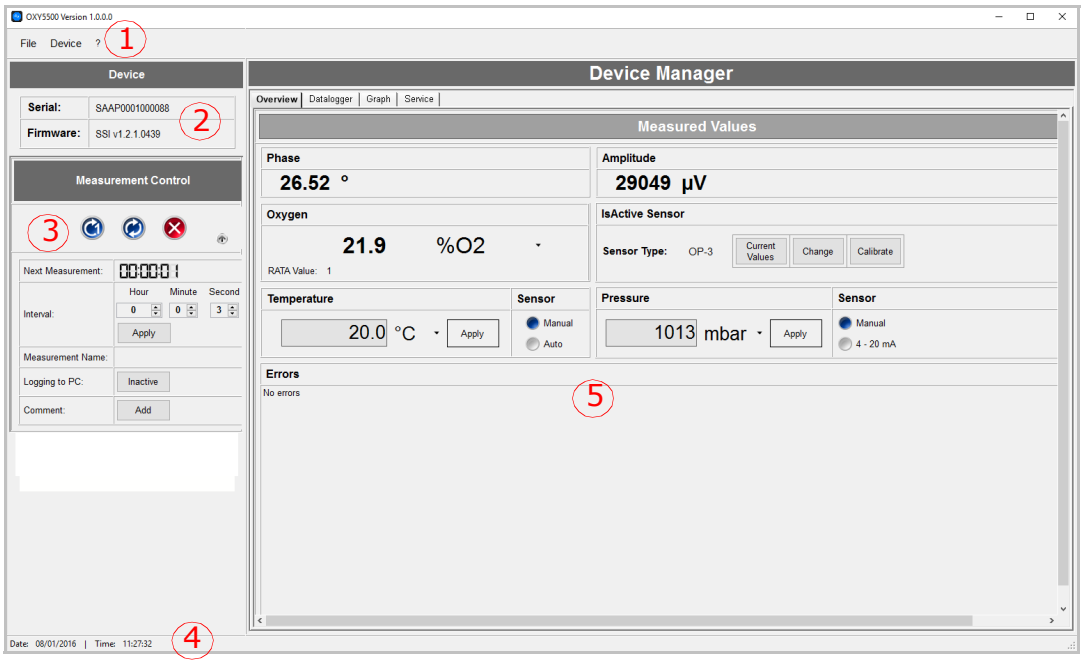

Figure 3–3 *Main screen; analyzer device and measurement controls on the left*

Refer to Figure 3–4 for the menu map that outlines the various menu options of the software. Each top-level menu and subordinate functions are discussed in detail in the following sections.

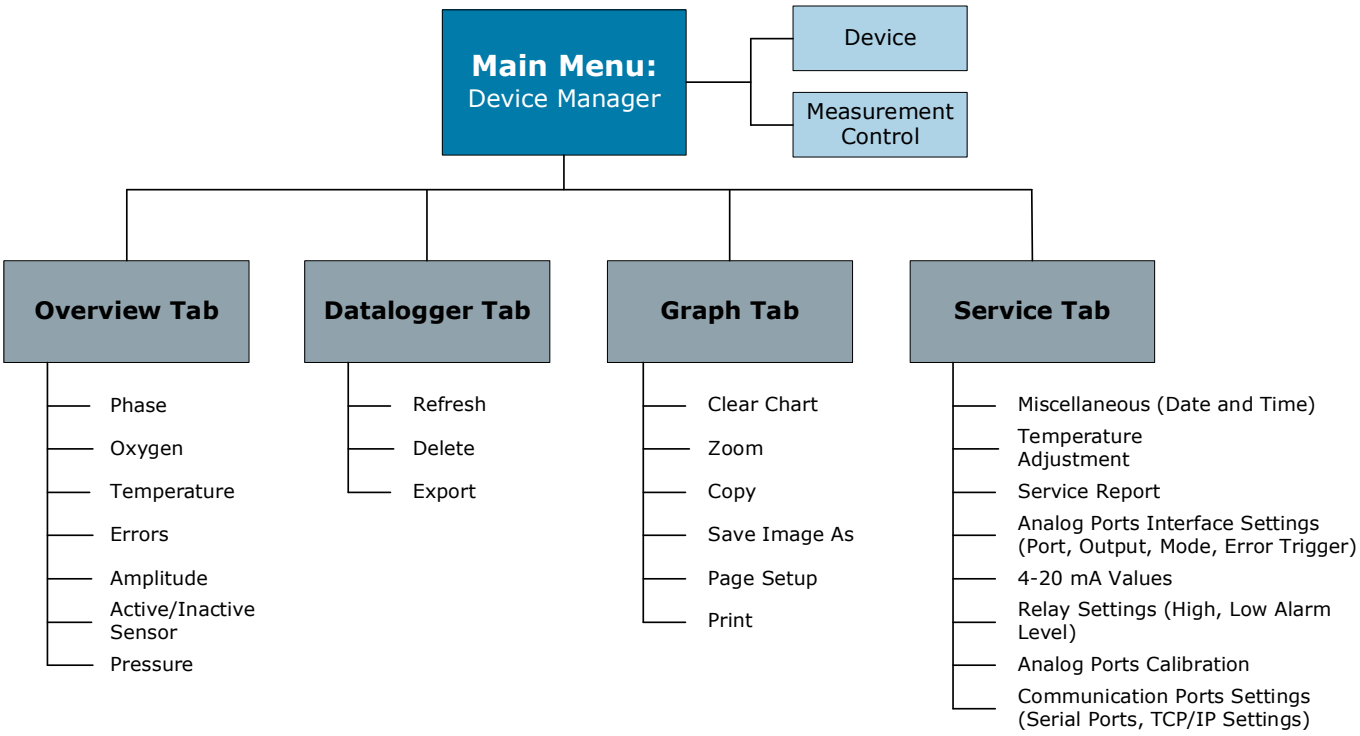

Figure 3–4 *Service Software Menu map*

Menu bar (1)

The Menu Bar is where the drop-down menus for FILE/Exit, Device and ? can be accessed.

Device (2)

The **Device** section of the DEVICE MANAGER screen displays the **Serial** number and **Firmware** version of the connected OXY5500 device. Refer to Figure 3–5**.**

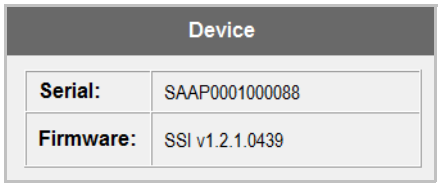

Figure 3–5 *Main screen; Device section*

Measurement control (3)

This section displays the measurement controls for the analyzer device. Refer to Figure 3–6.

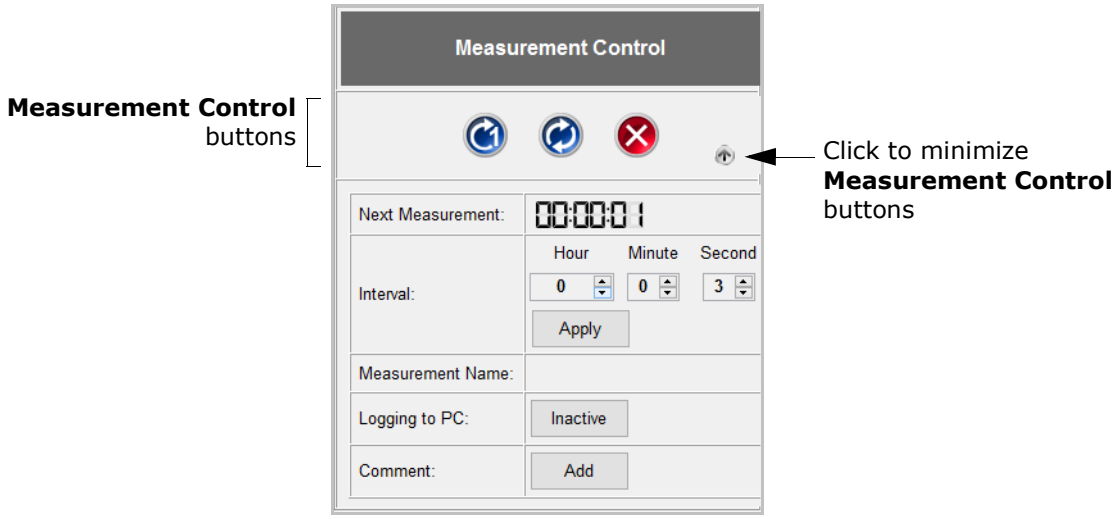

Figure 3–6 *Main screen; Measurement control buttons*

Measurement control buttons

Use the buttons at the top of the **Measurement Control** section to start and stop analyzer device measurements.

The **Single Scan** button performs a single measurement.

The **Continuous** button performs measurements at the set time interval.

The **Stop** button halts the interval measurement.

This section includes the following fields for data viewing and input.

- **Next Measurement**: The **Next Measurement** field shows a countdown until the next measurement is taken.
- **Interval**: The **Interval** field shows the set time interval for continuous measurements.
  - To change the interval, type a new value using the arrow keys to the right of each value; hour, minute, second.
  - Click the **Apply** button to transfer the new values to the analyzer device.
- **Measurement Name**: The **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**: When **Logging** is set to 'Inactive' (refer to Figure 3–6), measurement data is not being stored.
  - Click on the button under **Logging to PC:** to activate data logging. The button changes to 'IsActive'. Refer to Figure 3–7.
  - A dialog box will open for a file name and directory to be selected for storing the data on the PC or laptop. A message window indicates that the all the data is going to be stored as directed.

While the Service Software is in operation, the data cannot be stored to the analyzer device. The data capture to the analyzer device will resume after the Service Software application has been exited.

- **Comment**: This field enables specific comments to be added.
  - Click on the **Add** button to place a comment with the measurement file. Refer to Figure 3–7. A dialog window will open to type in a comment.
  - Press OK and the comment is stored with the measurement data.

Status bar (4)

The Status bar displays the date and time, which are synchronized with the laptop or PC date and time.

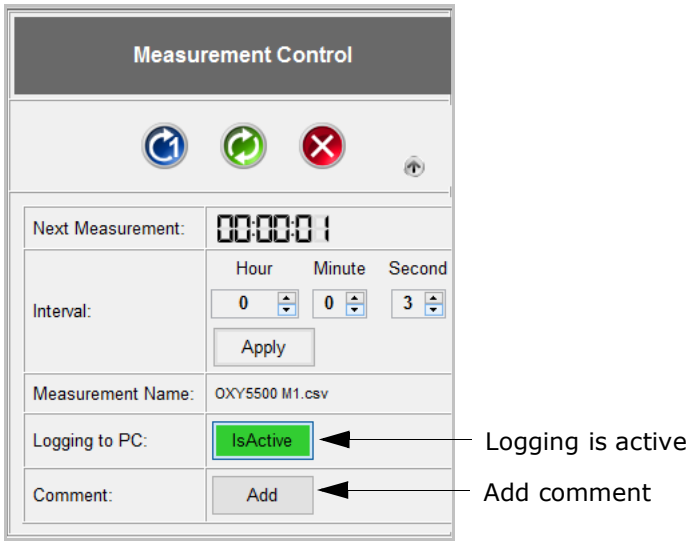

Figure 3–7 *Main screen; Logging active*

Device manager (5)

Initially, the DEVICE MANAGER window displays the OVERVIEW screen. Use the tabs at the top of this window to navigate to the respective functions screens. Refer to Figure 3–8.

Overview tab

The *Overview* tabs displays the Measured Values. This window is divided into six sections (refer to Figure 3–8 for associated screen locations for each numbered section):

- **Phase & Amplitude (1)**: These fields display the last measured raw values.
- **Oxygen (2)**: This section displays the last measured oxygen value and the currently applied RATA Value.

The RATA Value can only be adjusted on the analyzer device and not in the Service Software.

The oxygen values can be displayed in the following units:

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

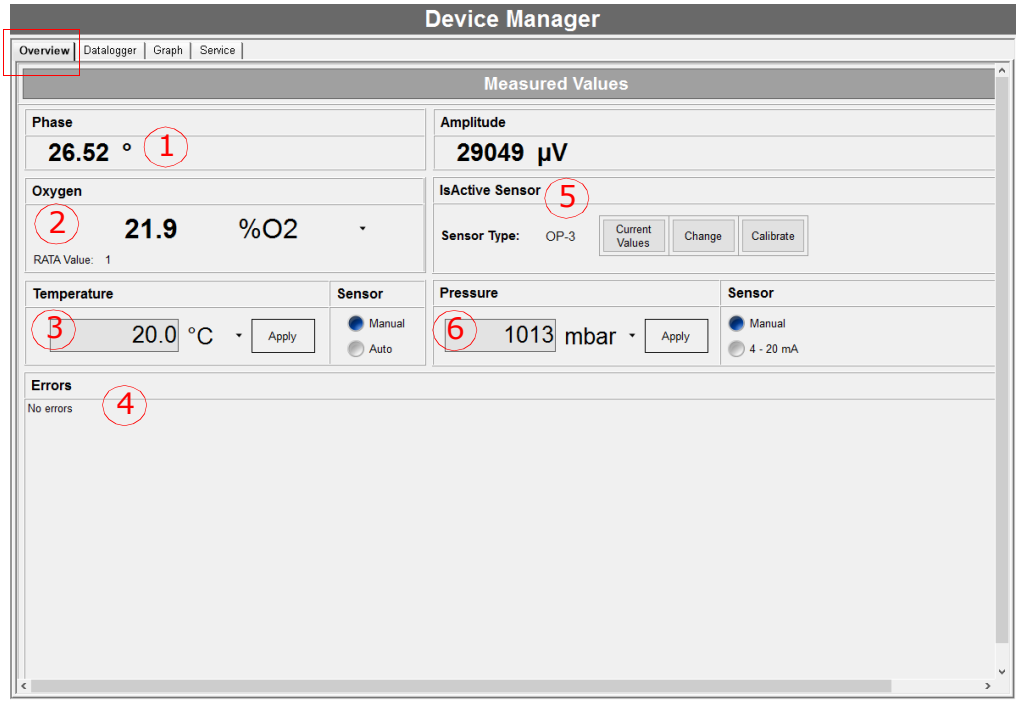

Figure 3–8 *Device Manager window; Overview screen*

- **Temperature (3)**: This section displays the measured or set temperature value used for temperature compensation in K, °C or °F (the temperature unit can be selected from the drop-down menu).

The button must be selected in the Measurement Control section to stop measurement in order to perform the manual/auto selections.

  - Select the **Manual** radio button to enter a temperature value in the input field (the temperature has to be know and remain constant throughout measurements).
  - Select the **Auto** radio button to measure the temperature with the temperature sensor connected to the OXY5500 device.
  - Click the **Apply** button to transfer any changes to the analyzer device.

- **Errors (4)**: This field shows error warnings and information messages. If a critical error occurs, the field will be outlined in **red**

(e.g., “No sensor detected,” “ADC overflow,” “PME error”). Refer to Figure 3–9.

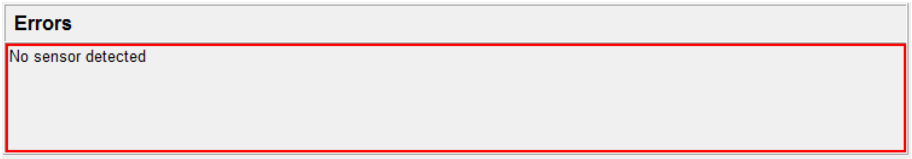

Figure 3–9 *Error warning - no sensor detected*

- **Active Sensor (5)**: This section shows the **Sensor Type** of the connected sensor, gives the Current Value for sensor constraints and calibration, allows manual adjustments to the Change sensor data, and gives the option to perform a Calibration. Refer to **"Change sensor data:"** and **"Calibrate the oxygen sensor:"**.
- **Pressure (6)**: This section displays the measured or set atmosphere pressure value used for pressure compensation in hPa, mbar, PSI, atm, or Torr (the pressure unit can be selected from the drop-down menu).

The button must be selected in the Measurement Control section to stop measurement in order to perform the manual/ 4-20 mA selections.

- Select the **Manual** radio button to enter a pressure value in the input field (the pressure has to be know and remain constant throughout measurements).
- Select the **4-20 mA** radio button to perform auto pressure measurements with the pressure sensor connected to the analyzer device.
- Click the **Apply** button to transfer any changes to the analyzer device.

Change sensor data:

When a new sensor has been connected to the analyzer device, the sensor data can be edited or changed using the following procedure.

The button must be selected in the Measurement Control section to stop measurement in order to perform the manual/auto selections.

1. Click the **Change** button in the **Active Sensor** section of the DEVICE MANAGER: OVERVIEW window. The *Change Sensor* dialog window opens. Refer to Figure 3–10.

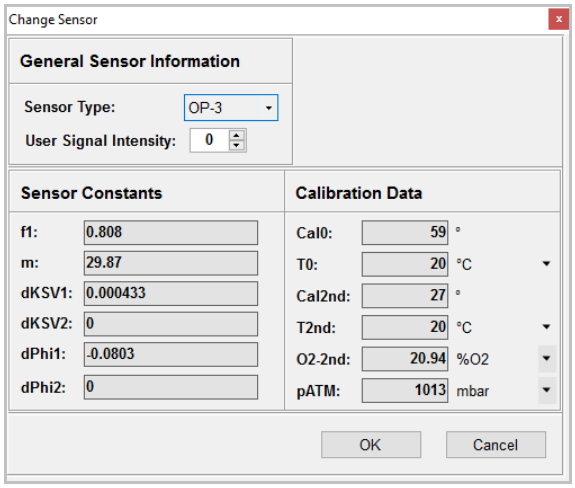

Figure 3–10 *Change Sensor dialog window*

2. Select the **Sensor Type** (OP-3, OP-6 or OP-9) of the oxygen sensor connected to the analyzer device.
3. The **User Signal Intensity** is used to change the measurement signal intensity of the device. The nominal signal intensity setting is '0'. The signal intensity level can be adjusted from -5 to 5 with -5 being the minimum amount of signal intensity and 5 being the maximum.

Do not change this setting unless instructed by Service. Refer to ***"Service"*** *on page A-2.*

4. Edit the **Sensor Constant** values according to those stated on the Calibration Certificate delivered with the oxygen sensor. Refer to Figure 3–11.

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

The O2-2nd and the pATM unit values can also be changed. Make sure the selected unit matches the one stated in the Calibration Certificate.

OXY5500 Calibration Certificate

Endress+Hauser

SYSTEM INFORMATION

Calibration Date	12-20-2021
Optical Module S/N	SAAP0001000581
OXY5500 S/N	SC009F28000
SSI Sales Order No.	15342
Job No.	J58633

Import

Save

Print

Sensor Type	OP-9 Range: 0 to 300 ppm
Sensor S/N	211029-008 PSt9-1729-01
Firmware	SSI v1.4.1.0519
SSI P/N	OXY5500- 17X9/0
Tag No.	N/A

CALIBRATION SPECIFICATIONS

Calibration Point: CAL0	ppm	0.00
Calibration Point: CAL2ND	ppm	200.00

User Signal Intesity	0
Operating Temperature [°C]	19.68
Atmospheric Pressure [mbar]	979.00

CALIBRATION DATA

Calibration Points	Phase Signal [°]	Valid Range [°]	Temperature [°C]	Valid Range [°C]	Amplitude [uV]	Pass / Fail
Cal0:	64.53	60.00 - 70.00	18.11	18.00 - 60.00	26342.44	PASS
Cal2nd:	34.93	32.00 - 45.00	18.21	18.00 - 60.00	15225.59	PASS

Sensor Constants: 0 to 60 °C					
F1 =	.786	dPhi1=	-0.0035	dKSV1 =	-0.1
m =	15.8	dPhi2=	-0.00038	dKSV2 =	0

Cal Gas	Cylinder	Station
N2 (6.0)	3200152	OXY
O2 In N2	2810220	OXY

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

Sensor Constant Used

-20 to 50 C

APPLY

VALIDATION DATA

O2 Reading

O2 ppm Set Point	O2 ppm	Valid Range ppm	Temperature [°C]	Valid Range [°C]	Pressure [mbar]	Valid Range [mbar]	Pass-Fail
0.00	0.13	< 2.00	19.68	18.00 - 60.00	979.00	900.00 - 1025.00	PASS
200.00	199.94	190.00 - 210.00	18.51	18.00 - 60.00	979.00	900.00 - 1025.00	PASS

Analog Outputs

Set Point [mA]	Port1 [mA]	Valid Range [mA]	Port2 [mA]	Valid Range [mA]	Pass-Fail
4.00	4.002	3.995 - 4.005	4.000	3.995 - 4.005	PASS
20.00	19.999	19.995 - 20.005	20.000	19.995 - 20.005	PASS

APPLY

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: 12-20-2021

11027 Arrow Route, Rancho Cucamonga, CA 91730

Page 1 of 1

QAF 851-LC-04 Rev. B
DCR 10594

Figure 3–11 *Sample calibration data certificate*

5. After all of the necessary steps have been performed, click on the **OK** button. The new sensor data will now be applied. Whenever sensor data is changed, and RATA is set to a value other than 1, an information window will display stating RATA will be reset to '1' as soon as the dialog window is closed. Refer to Figure 3–12.

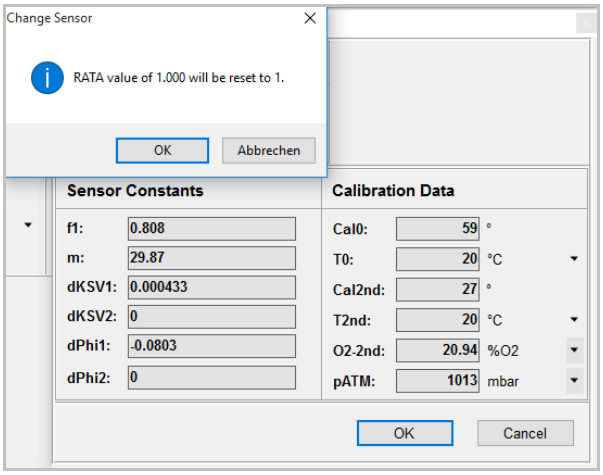

Figure 3–12 *Information window: RATA will be reset*

Calibrate the oxygen sensor:

Oxygen sensors have to be calibrated before use. A conventional two-point calibration in an oxygen-free (nitrogen or sodium sulfite), and air-saturated (OP-3), 1 to 2% oxygen (OP-6) or 100 to 200 ppmv O2 (OP-9) environment must be performed. Refer to the OXY5500 Optical Oxygen Analyzer Operating Instruction (BA02195C) for more information. A re-calibration is recommended after 100,000 measurement points.

From the MAIN screen, the **Calibrate** button in the **Active Sensor** section of the window provides the option to recalibrate the connected oxygen sensor and update the sensor calibration data. When CALIBRATE is selected, the MANUAL CALIBRATION dialog window opens. Refer to Figure 3–13.

In the **Current Values** section at the top of the window, the currently measured **Phase** and **Temperature** values, and the measured or set **Pressure** values are displayed. Additional information and warnings are displayed in the **Errors** box.

From this window, the following parameters can be set:

1. Choose the mode for atmospheric pressure compensation **pATM**:
   - If the **Manual** radio button is selected, the value of the current atmospheric pressure is entered in the box below. Use the drop-down menu to choose the respective pressure unit.
   - Selecting the **4-20 mA** radio button will cause the atmospheric pressure to measure with the pressure sensor connected to the analyzer device.
2. Select the temperature (**T0**) at the **1st Calibration Point**:
   - Select **Auto** to measure the temperature at the first calibration point with the temperature sensor. The temperature sensor must be connected to the analyzer device as instructed in the OXY5500

Optical Oxygen Analyzer Operating Instruction (BA02195C). Make sure it is inserted into the mid-range of the first calibration point.

- Select **Manual** to input the current temperature.

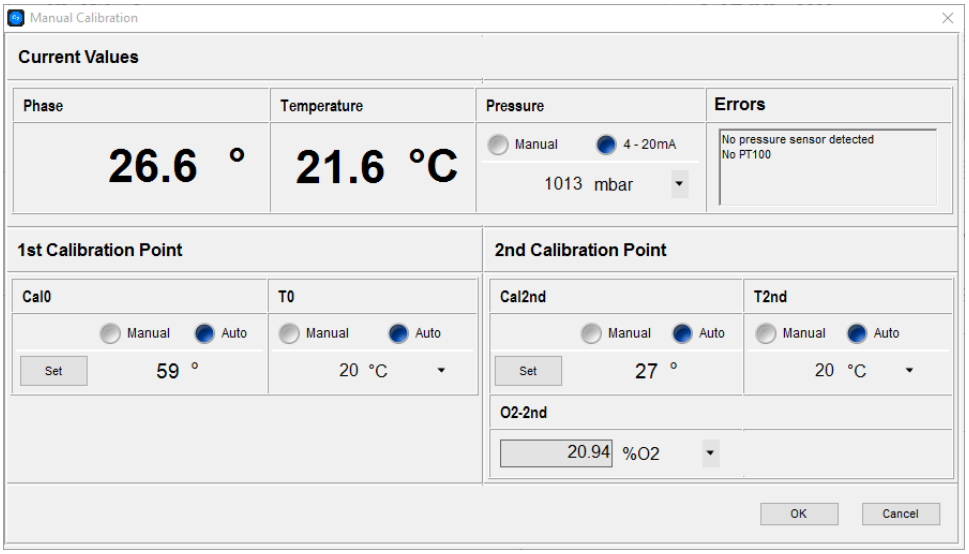

Figure 3–13 *Manual calibration dialog window*

Datalogger tab

From the *Device Manager* menu, the *Datalogger* tab provides information on the measurement files stored on the analyzer device. The list shows the number of measurement points stored to each file and the date that the measurement file was last used. Measurement data can be moved from the analyzer device to the PC. Refer to Figure 3–14.

1. Click on the desired measurement file to select it. The file will be highlighted.
2. Perform one of the following actions:
   - **Refresh**: Use this function to 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 will open confirming the action.
   - **Export**: Export the selected measurement file in .csv format to a directory on the PC/laptop. A dialog box opens to enter the desired directory for storing the file.

Data transfer and processing of large measurement files may take a longer time to transfer from the analyzer device to the PC.

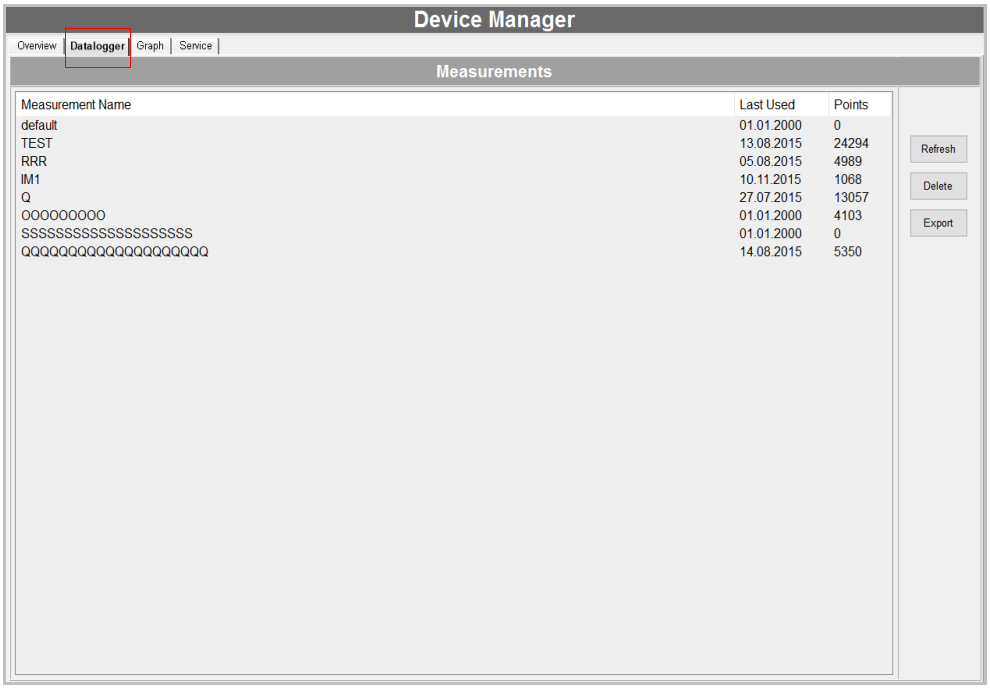

Figure 3–14 *Datalogger window; Measurements screen*

A dialog window will display showing a progress bar. See below. The data transfer can be canceled from this window. Refer to Figure 3–15.

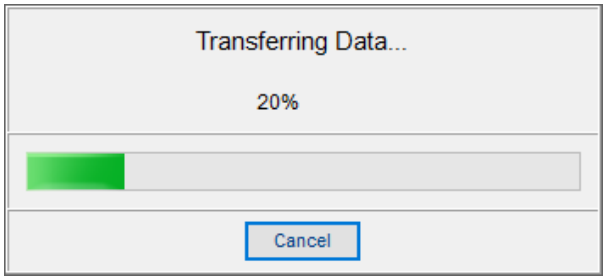

Figure 3–15 *Data transfer window: data transfer in progress*

Graph tab

The *Graph* tab on the DEVICE MANAGER window provides a graphical display of the current analyzer measurement. In the upper section of the screen, the currently measured values for oxygen and temperature are displayed.

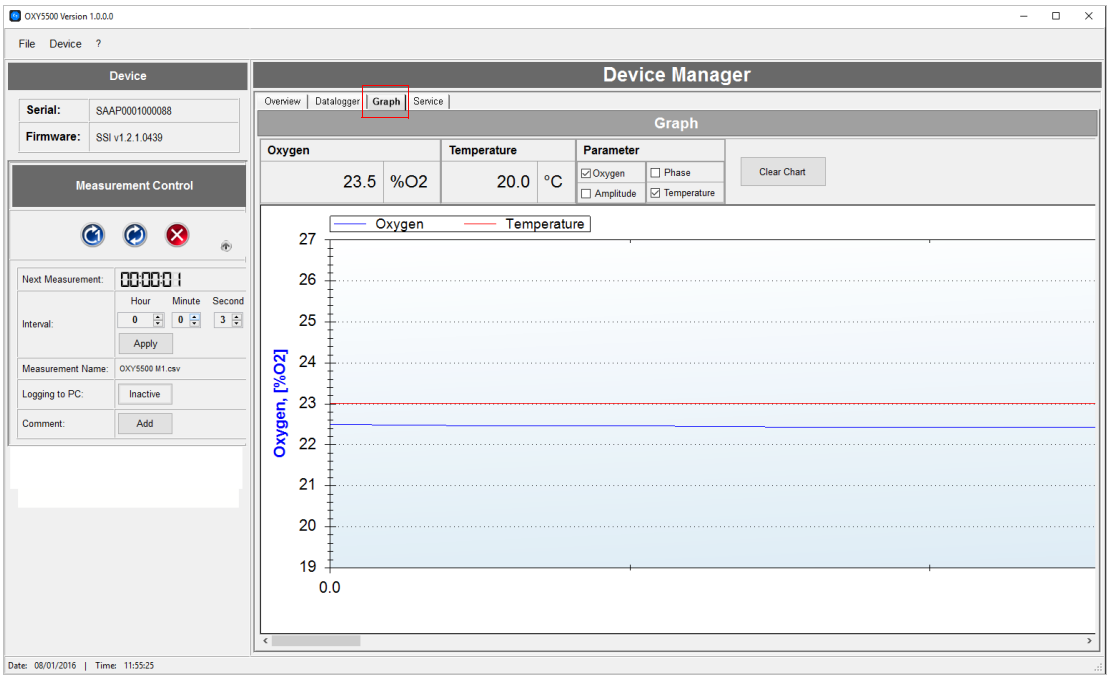

Figure 3–16 *Graph tab; graphical display of current measurement (oxygen and temperature)*

The values to be displayed on the graph can be selected as follows.

Either:

- Oxygen, or
- Phase

Can be displayed together with either:

- Temperature, or
- Amplitude

Only two of the parameters can be displayed at the same time.

Clear chart:

To clear the currently displayed chart, click on the **Clear Chart** button.

If Logging is active, clicking on the CLEAR CHART will not delete the stored measurement data.

If Logging is activated during a running measurement, selecting the CLEAR CHART option will clear the graph and only the measurement data stored in the measurement file will be displayed.

Zoom:

To zoom in to increase the view size:

1. Left mouse click and drag a frame around the area of interest.

To undo the zoom:

1. Right mouse click on the graph. A menu opens that displays the following options (refer to Figure 3–17):
   - **Un-Zoom**: The last zooming step will be undone.
   - **Undo All Zoom/Pan**: All zooming steps will be undone.
   - **Set Scale to Default**: The original scale of the graph will be reset. (A double left mouse click will also perform **Set Scale to Default**.)

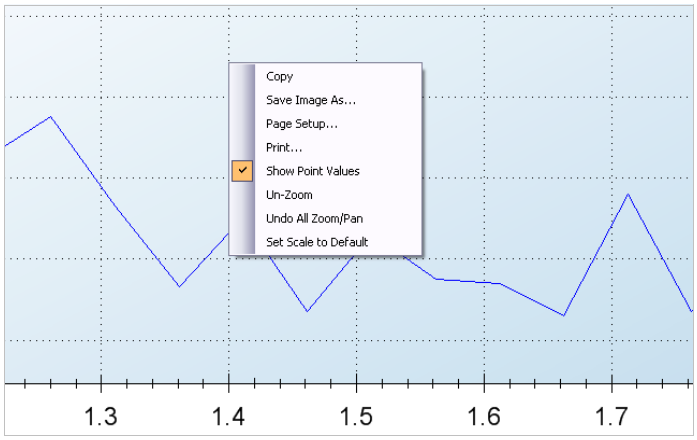

Figure 3–17 *Graph tab; Un-Zoom menu*

Additional functions:

With a right-click on the graph, the following additional functions can be performed:

- **Copy**: Copies the graph to be pasted into any document.
- **Save Image As**: Saves the graph as an image file. A dialog box opens to select the directory, filename and the file type for saving the graph.

- **Page Setup**: Changes the page settings for printing the graph.
- **Print**: Opens the *Print* dialog box to choose a printer. Click on OK to print a copy.

Service tab

The *Service* tab, selected from the DEVICE MANAGER window, select analyzer device settings, such as analog and digital connections. Service reports can also be created from this window.

The *Service* tab consists of the following areas (refer to Figure 3–18 for associated screen locations for each numbered section):

- **Miscellaneous (1)**: Location for setting the date and time.
- **Temperature Adjustment (2)**: To adjust the temperature values to a standardized zero value.
- **Service Report (3)**: To generate a service report in .xlsx format.
- **Analog Ports Interface Settings (4)**: Location for configuring the interface settings.
- **4-20 mA Values (5)**: Location for entering the 4-20 mA values.
- **Relay Settings (6)**: Used to define the valid range of the Concentration Alarm Relay.
- **Analog Ports Calibration (7)**: Location for setting the input and output calibration points.
- **Communication Ports Settings (8)**: Location for setting the communication port information.

Miscellaneous (1):

For the **Date** and **Time** settings, type in the desired values into the associated fields. Press the **Set** buttons for the new date and time to take affect.

Temperature zero adjustment (2):

To adjust the temperature values to a standardized zero value, a 0 simulator must be connected to the OXY5500 temperature sensor. Refer to the OXY5500 Optical Oxygen Analyzer Operating Instruction (BA02195C), Chapter 3 - Operation, for more information.

1. Click the **Adjust** button. A message window displays confirming that the simulator is connected to the analyzer device. Refer to Figure 3–19.
2. Click the **OK** button to perform the zero adjustment. A message window will display confirming that the Temperature Zero Adjustment has been performed.

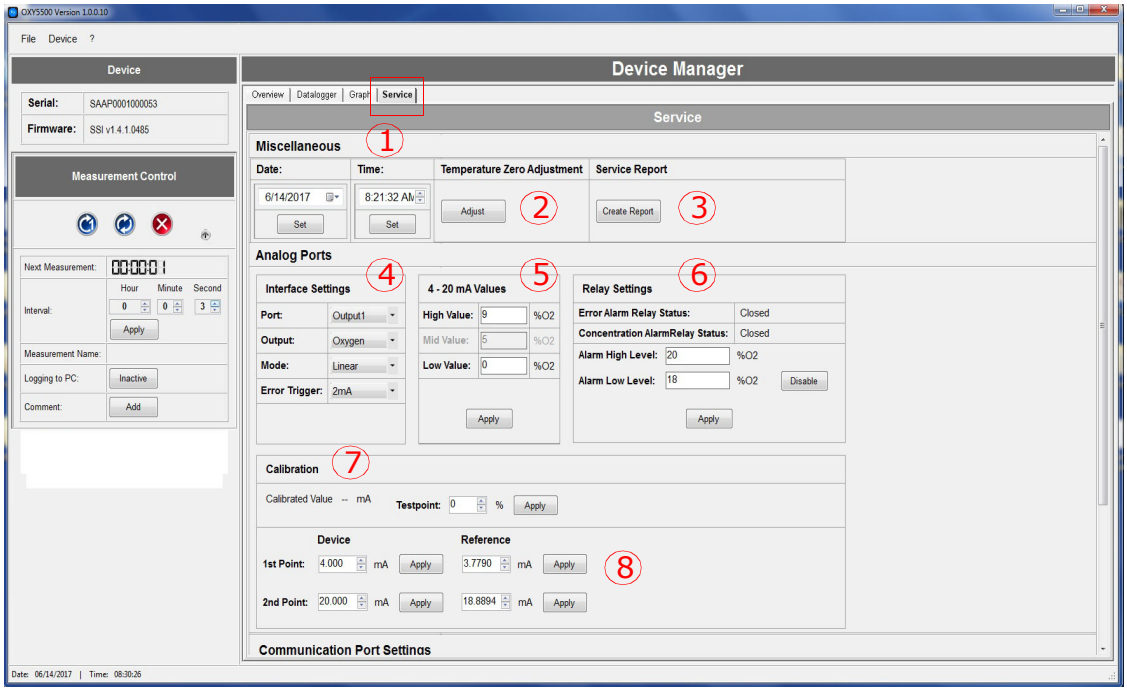

Figure 3–18 *Service tab*

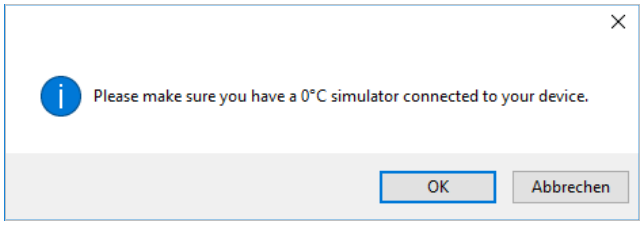

Figure 3–19 *Service tab; Temperature adjust message display*

Service report (3):

Use this function to create a Service Report for the connected analyzer device.

1. Click the **Create Report** button shown in Figure 3–18.
2. When the dialog window opens, select a filename for the report and a directory on the PC where it will be stored. A message window displays with a prompt to connect an oxygen sensor to the analyzer device and expose the sensor to nitrogen gas of arbitrary concentration. Refer to Figure 3–20.
3. Expose the OP probe to nitrogen gas by flowing gas into the system and click NEXT.

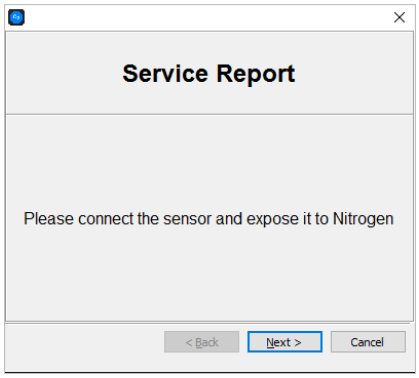

Figure 3–20 *Service tab; Connect oxygen sensor message display*

4. Wait for 60 seconds for the sensor to equilibrate. A countdown status displays in the message window. Refer to Figure 3–21.

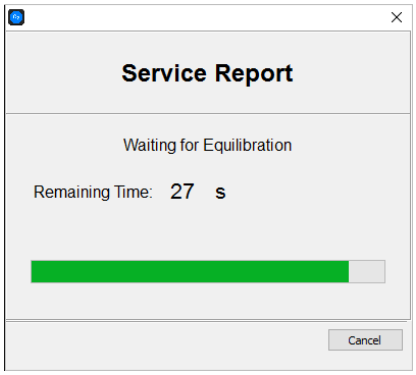

Figure 3–21 *Service tab; Status message display*

5. After the sensor has equilibrated, the software will automatically start to read phase values while a status bar displays in the window. Refer to Figure 3–22.

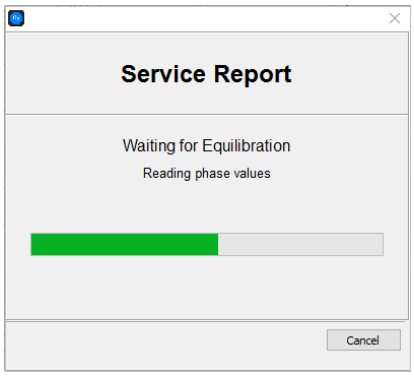

Figure 3–22 *Service tab; Phase values reading status message display*

6. Click FINISH when the final message window displays and the service report will be created. Refer to Figure 3–23.

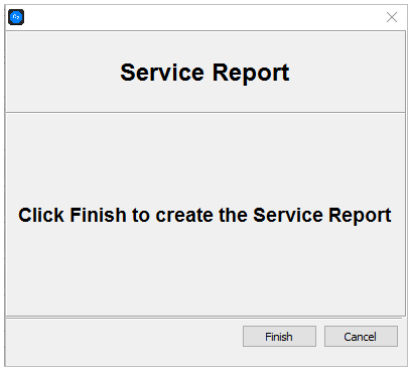

Figure 3–23 *Service tab; Service report create message display*

A sample service report is shown in Figure 3–24.

Analog ports interface settings (4):

Use the fields under the **Analog Ports** section to apply settings of the **Output**, **Mode** and **Error Trigger** applied to the selected **Port**.

1. Set the **Port** to Output 1, Output 2 or Input.
   - The output of Output 1 or Output 2 can be Oxygen or Temperature.
   - The Input is always Pressure and cannot be changed.
2. Set the appropriate value for **Output** to the appropriate setting as defined below.
3. Set the **Mode**.
   - **Off**: No input reading or output writing.
   - **Linear**: A high and low value must be set which will correspond to 4 and 20 mA respectively. Values between these two options will be calculated linearly. Values outside this range will trigger the output trigger level.
   - **Bilinear**: A high, mid and low value must be set which will correspond to 4, 12 and 20 mA respectively. This mode allows a higher resolution in a certain range.
4. Set the **Error Trigger** value. In the event of any error, the Error Trigger Level (2 or 22 mA) will be applied to the currently selected port.

	A	B	C	D	E	F
1	Created with:	1.0.0.0				
2						
3			Endress+Hauser			
4						
5						
6						
7	**Service Report**					
8						
9	**Item**	**Value**	**Unit**			
10						
11	Date	08/01/2016	[-]			
12	Serial Number	SAAP00001000088	[-]			
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	PSt3	[-]			
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	[-]			

Values

Figure 3–24 *Sample Service Report*

Any value outside the 4-20 mA range will be interpreted as "not valid."

4-20 mA values (5):

Set the 4-20 mA values in this section of the window. In these fields, enter the values that correspond to 4 (Low Value), 12 (Mid Value) or 20 (High Value) mA, depending on the selected mode. Refer to Figure 3–25.

Use the following settings as they correspond to the values set in the **Interface Settings** section of the SERVICE window.

- For **Mode Off**: No values can be entered.

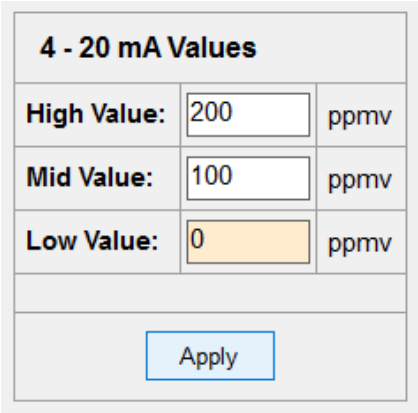

Figure 3–25 *Service tab; Set 4-20 mA values*

- For **Mode Linear**: The **High Value** and **Low Value** can be entered. The unit depends on the selected output and oxygen sensor. If the output is set to Temperature, the unit is always °C. Otherwise, the output depends on the oxygen sensor as follows:
  - OP-3: % O_2
  - OP-6: ppmv
  - OP-9: ppmv

  The values will be used for calculating the output or input value on the next measurement.
- For **Mode Bilinear**: The **High Value**, **Mid Value** and **Low Value** can be entered. The same units are used as in the **Linear** mode. The values will be used for calculating the output or input value on the next measurement.

5. Click the **Apply** button to transfer changes to the analyzer device.

Relay settings (6):

This section is used to define the valid range of the Concentration Alarm relay.

1. Enter the **Alarm High Level**.
2. Enter the **Alarm Low Level**.

*The **Alarm Low Level** can be enabled or disabled by clicking on the '**Disable**' button as shown in Figure 3–26.*

If the oxygen value is outside this range, the relay will trigger an error. The selected value unit depends on the currently selected oxygen sensor, as shown below.

- OP-3: % O_2
- OP-6: ppmv
- OP-9: ppmv

Refer to Figure 3–26.

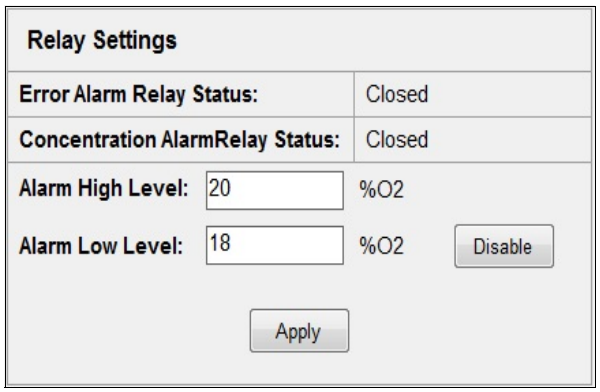

Figure 3–26 *Service tab; Relay settings*

3. Click the **Apply** button to transfer the new settings to the analyzer device.

Analog ports calibration (7):

The data entered in this section enables the Output or Input calibration. Refer to Figure 3–27. The analyzer device is delivered from the factory calibrated to the required specifications. Analog calibration may be performed in the field as needed.

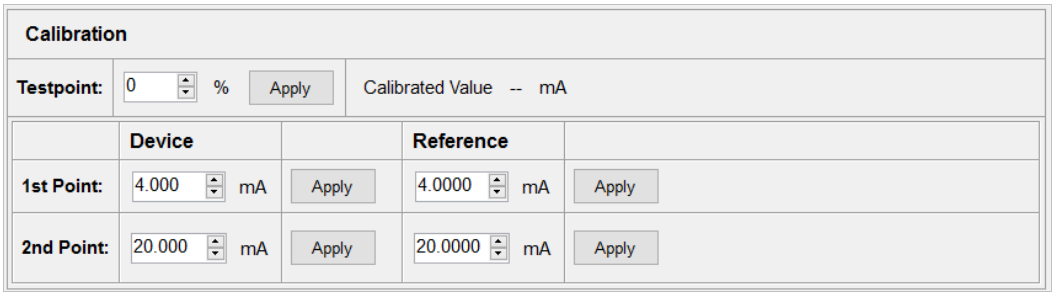

Figure 3–27 *Service tab; Calibration - Output calibration*

Re-calibration of the analog ports will cause the factory calibration to be lost.

To test the current calibration, follow the steps below.

1. Apply some **Testpoints** by selecting different percentage values (i.e., 0, 25, 50, 75 or 100% which corresponds to 4, 8, 12, 16 and 20 mA).
2. Check the values against a reference current measurement device, e.g., fluke 705 loop calibrator.

To perform a calibration for either Output 1 or Output 2:

1. Connect a current measurement device to either Output 1 or Output 2. This will serve as the reference device.
2. Set the **1st Point** value for the **Device** to any low value, e.g., 4.000 mA.
3. Click the **Apply** button to transfer the new value to the analyzer device.
4. Read the current value shown on your reference device (e.g., 3.90 mA). Type this value into the **Reference** column field to the right of the **1st Point** to adjust the output values accordingly.
5. Set the **2nd Point** value to any high value, e.g., 20.00 mA.
6. Click the **Apply** button to transfer the new value to the analyzer device.
7. Read the current value shown on the analyzer device (e.g., 19.54 mA). Type this value into the **Reference** column to the right of the **2nd Point** field to adjust the output values accordingly.

To perform a calibration for Input (refer to Figure 3–28):

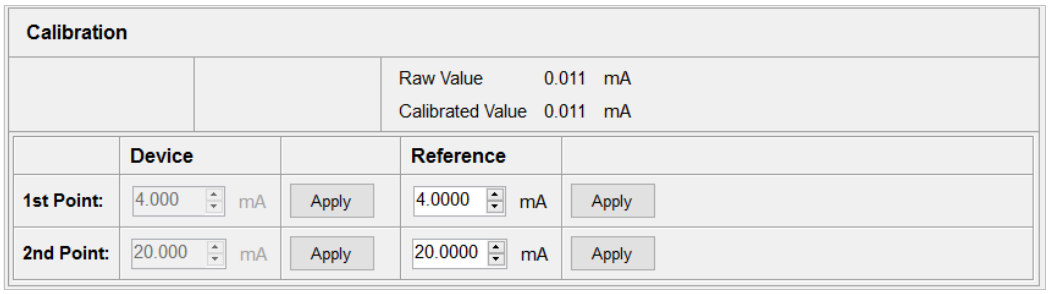

Figure 3–28 *Service tab; Calibration - Input*

1. Apply a 4 mA current to the OXY5500 device.
2. Enter this value into the **Reference** column to the right of the **1st Point** field.
3. Click the **Apply** button.

4. When the reading is steady, click the **Apply** button next to the **1st Point** field. The last measured value displays in the top row under **Raw Value**. This is the uncalibrated value that will be used as the **1st Point** calibration value.
5. Apply a 20 mA current to the OXY5500 device.
6. Enter this value into the **Reference** column to the right of the **2nd Point** field.
7. Click the **Apply** button.
8. When the reading is steady, click the **Apply** button next to the **2nd Point** field. This is the uncalibrated value that will be used as the **2nd Point** calibration value.

Communication ports settings (8):

Use this section to set the values for the communication ports. Refer to Figure 3–29.

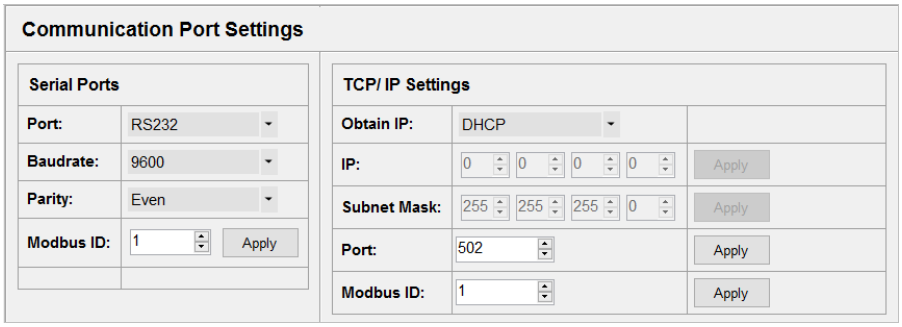

Figure 3–29 *Service tab; Communication port settings*

To set the **Serial Ports**, use the following steps:

1. Select RS232 or RS485 in the **Port** field.
2. Set the **Baudrate** for the selected **Port**.
   - For **Baudrate** RS232 or RS485, set to 9600, 19200, 38400, 57600 or 115200.
3. Set the **Parity** to Even, Odd or None.

*Setting the **Parity** to "None" will also set the number of stop bits to two (2). Setting the **Parity** to "Odd" or "Even" will set the number to one stop bit.*

4. Set the **Modbus ID** to any value between 1 and 32.

To set the TCP/IP:

1. Select either DHCP or Static in the **Obtain IP** field.
   - If DHCP is selected, the **IP** and **Subnet Mask** will be assigned by the DHCP server and will not be editable.
   - If Static is selected, enter the **IP** and **Subnet Mask** manually. Ask your Network Administrator for assistance if there is uncertainty about 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 the **Apply** button for each value setting to transfer the changes to the analyzer device.

THIS PAGE INTENTIONALLY LEFT BLANK

A - Troubleshooting

Overview

This section presents recommendations and solutions to possible issues related to the Service Software.

Troubleshooting

Refer to Table A–1 for frequently asked questions related to troubleshooting the OXY5500 before contacting the Service department. Refer to **"Service"** on page A-2 for contact information.

Table A–1 *Potential instrument problems and their solutions*

Symptom	Response
Unable to start the OXY5500 Setup Wizard	Make sure the PC or laptop meets the system requirements. Refer to Table 2–1 on page 2–1.
	Make sure the OXY5500 analyzer device is NOT connected to the PC or laptop.
	Copy and past the OXY5500 executable (.exe) file from the USB drive to the PC or laptop desktop for start-up.
	Restart the PC or laptop.
	Restart the OXY5500 executable (.exe) file.
	Refer to **"Service"** on page A-2 to contact Service if the problem persists.
Service Software does not open after installation or is crashing	Make sure the OXY5500 analyzer device is connected to the PC or laptop USB port.
	Restart the system and retry activating the Service Software.
	Un-install the Service Software and re-install.
	Refer to **"Service"** on page A-2 to contact Service if the problem persists.

Table A-1 *Potential instrument problems and their solutions (Continued)*

Symptom	Response
Service Software is not initializing, recognizing or able to start measurement	Check the USB cable connection between the PC or laptop and the OXY5500 analyzer device.
	Connect the OXY5500 to a different USB port on the PC or laptop.
	Make sure the OXY5500 has the latest release of firmware.
	Close the Service Software application, disconnect the OXY5500 analyzer device from the PC or laptop and power cycle the OXY5500. Reconnect the OXY5500 to the PC or laptop and re-activate the Service Software application.
	Refer to **"Service"** on page A-2 to contact Service if the problem persists.

Service

For Service, refer to our website (https://endress.com/contact) for the list of local sales channels in your area.

Service Repair Order

If returning the unit is required, obtain a **Service Repair Order** (**SRO**) **Number** from Sales channel representative before returning the analyzer to the factory. Your representative 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 Rte.
Rancho Cucamonga, CA 91730-4866
United States of America
1-909-948-4100

Renewity returns

Returns can also be made inside the USA through the Renewity system. From a computer, navigate to http://www.us.endress.com/return and complete the online form.

Disclaimers

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

THIS PAGE INTENTIONALLY LEFT BLANK

INDEX

Symbols

C

D

F

G

L

M

O

P

S

W

THIS PAGE INTENTIONALLY LEFT BLANK

SD02868C/66/EN/01.21

www.endress.com

Endress+Hauser

People for Process Automation