

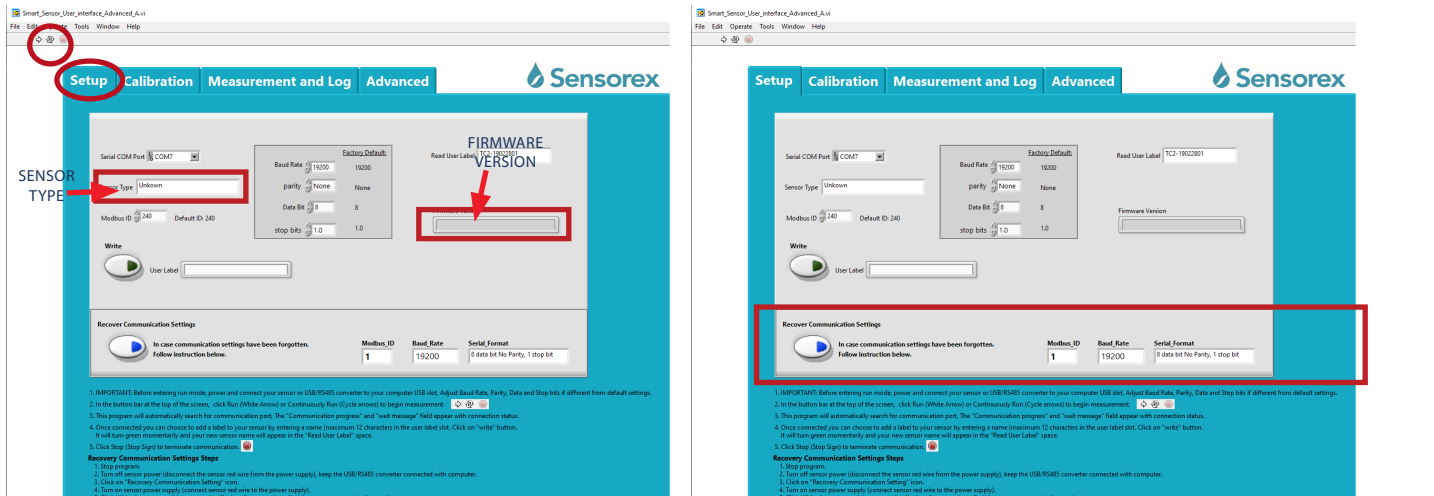
INTRODUCTION

The Smart Sensor User Interface Advanced A software allows simple communication, calibration, monitoring and configuration of Sensorex smart sensors

Follow the link below to download, unzip and install the software.
<https://sensorex.com/product/sensorex-smart-sensor-user-interface-software/>

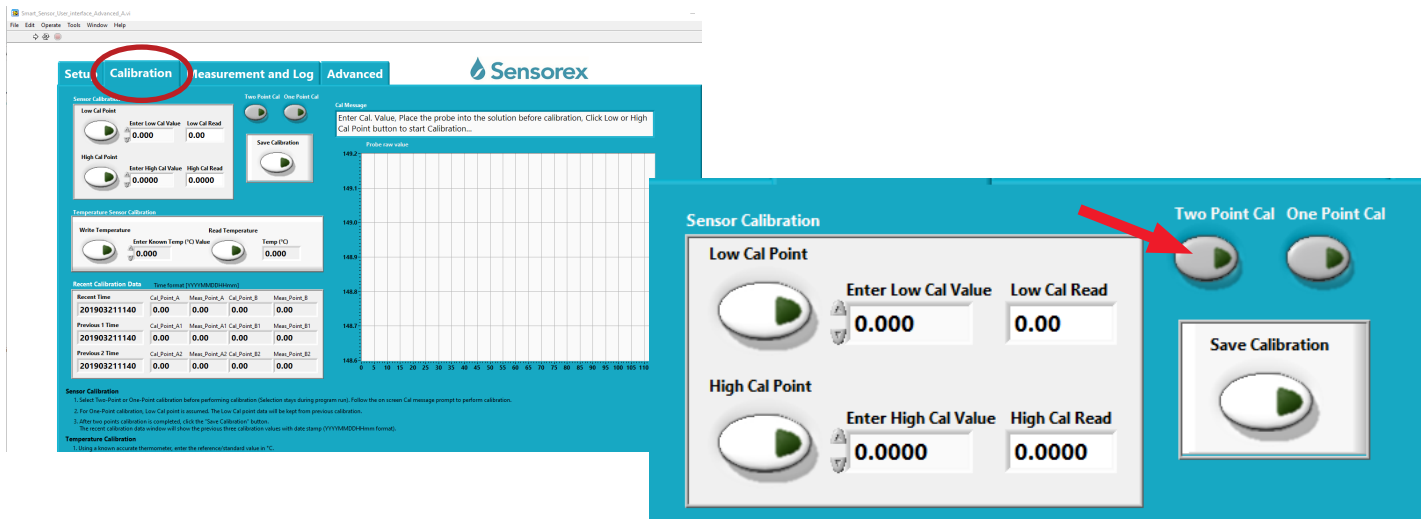
COMMUNICATING WITH YOUR SMART SENSOR

Open the software interface to the Setup tab. Press the Right arrow or continuous run arrow to start communication. The sensor type will appear in the "Sensor Type" window. The Firmware version will be shown in window as well. If the sensor does not communicate you can use the "Recover Communication Settings" in box below.

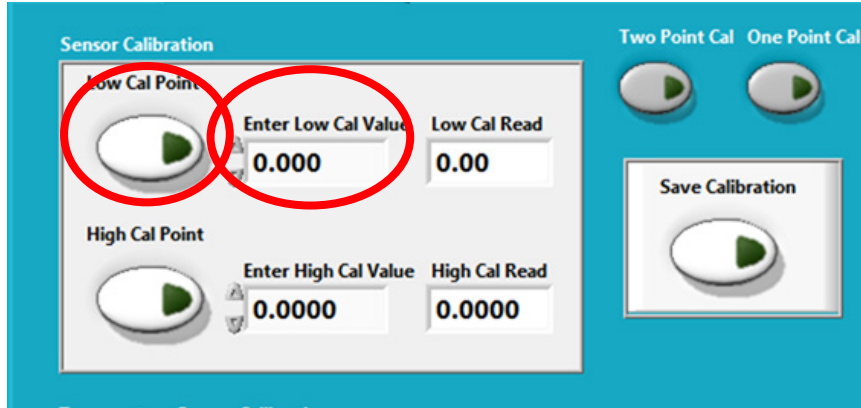


CALIBRATION OF YOUR SMART SENSOR

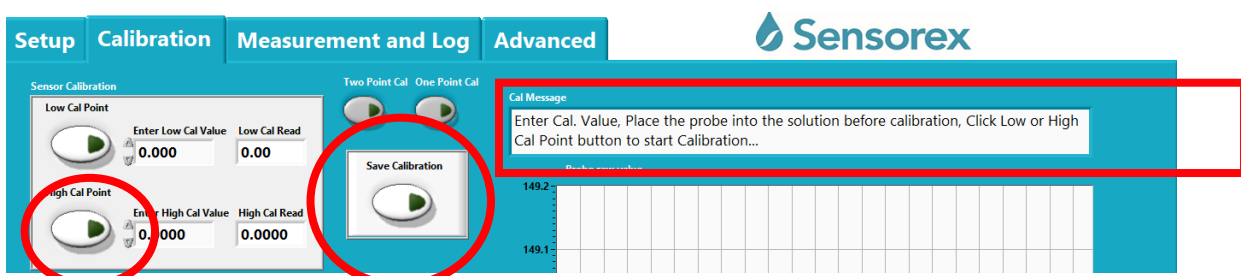
Open the software interface to CALIBRATION tab. First, click "Two Point Calibration" button. Button will light up green.



First, click the "Low Cal Point" button. It will light up green, Next, For pH, enter 4.01 as "Low Cal Value" in window above. For Conductivity, hold sensor in the air then enter "0". For FCL and CLD, enter "0". For DO, choose "One Point Cal".



Once the reading is stable un-click the "Low Cal Point" button. Follow CAL MESSAGE window instructions. Press High cal point button (if pH use pH7 or pH10, if Conductivity choose solution > than your expected range). Once the reading is stable un-click the button. Lastly, click the "Save Calibration" button. Wait for CAL MESSAGE to confirm calibration is done. Calibration values will be written to the top of the table.

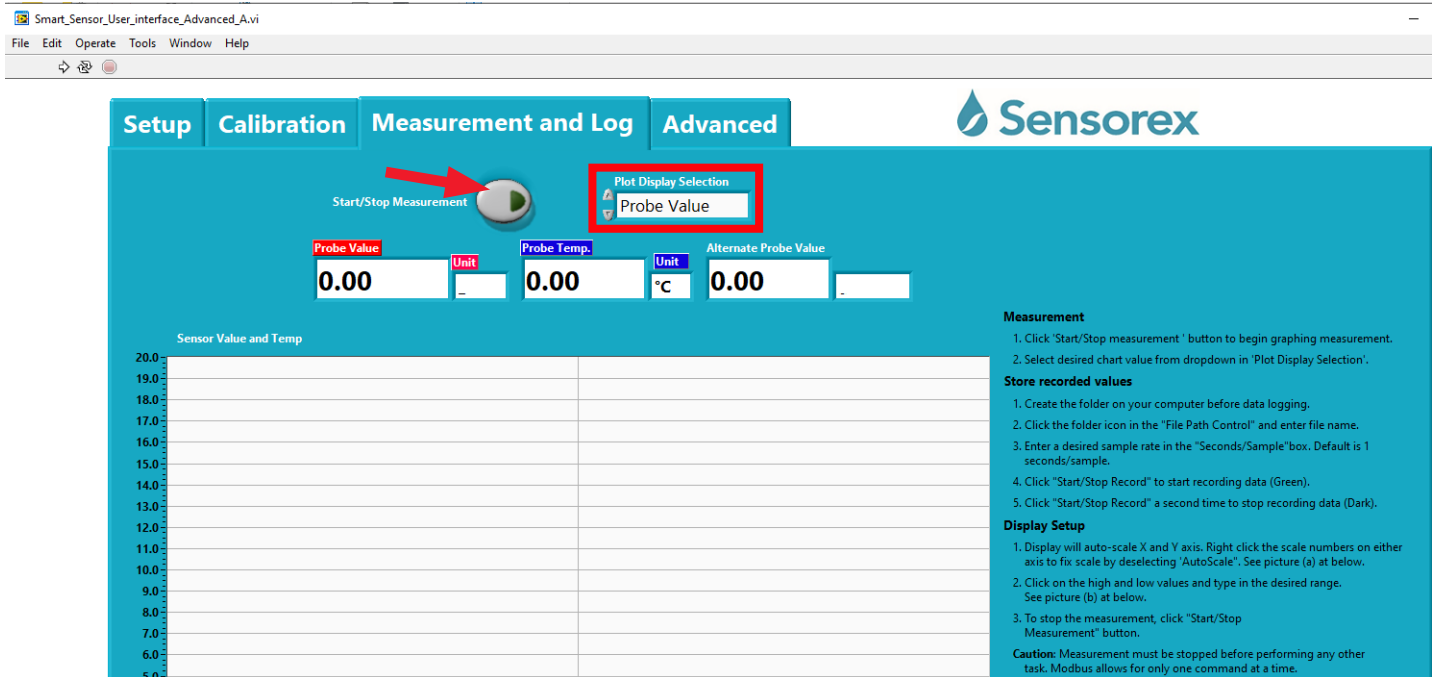


NEWEST VALUE
WILL BE WRITTEN
TO TOP LINE

Recent Calibration Data				
Time format [YYYYMMDDHHmm]				
Recent Time	Cal_Point_A	Meas_Point_A	Cal_Point_B	Meas_Point_B
201903211140	0.00	0.00	0.00	0.00
Previous 1 Time	Cal_Point_A1	Meas_Point_A1	Cal_Point_B1	Meas_Point_B1
201903211140	0.00	0.00	0.00	0.00
Previous 2 Time	Cal_Point_A2	Meas_Point_A2	Cal_Point_B2	Meas_Point_B2
201903211140	0.00	0.00	0.00	0.00

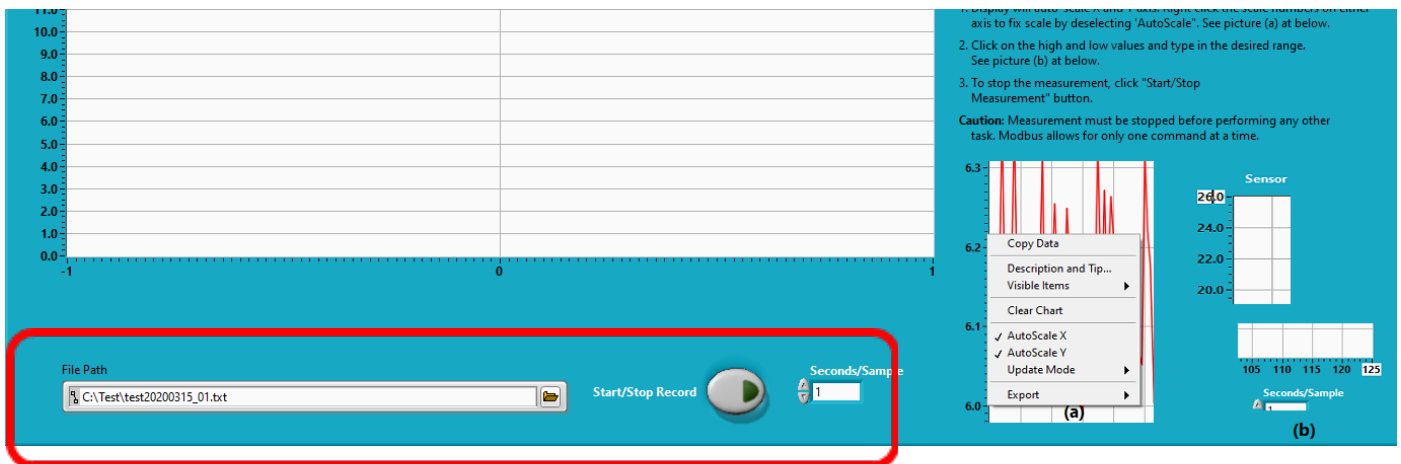
MEASUREMENT AND LOG OF YOUR SMART SENSOR

Go to the Measurement and Log tab. Set value to measure as “probe value” or “temperature”. Press “Start/Stop Measurement” button. It will turn green.



If values are as expected then you can monitor the value you want in the windows and on the graph. The graph range is auto-ranging.

Sensor data can be saved using the “File Path” at bottom of the screen. Set first the “seconds per sample”. Next, uses the “Start/Stop Record” button to determine the time interval you will capture the sensor data. You can then the data as a .txt file and choose the location you want in the “File Path” window



Products covered by this manual: *Smart Sensor User Interface Advanced A*

INSTR-SMARTSENSORUSER
INTERFACE ADVANCED A - REV 02092024

SENSOREX CORPORATION

11751 MARKON DRIVE • GARDEN GROVE, CA 92841, USA
714.895.4344 • WWW.SENSOREX.COM

SENSOREX SRO

OKRUŽNÍ • 2615, 370 01 CESKE BUDEJOVICE, CZECH REPUBLIC
+420 72.796.3481 • WWW.SENSOREX.COM

© Sensorex Corporation. All rights reserved. In the interest of improving and updating its equipment, Sensorex reserves the right to alter specifications to equipment at any time.

ADVANCED FEATURES/SETTINGS OF YOUR SMART SENSOR

READ/WRITE MODBUS ID

The screenshot shows the 'Advanced' settings page with the 'Modbus ID' section highlighted by a red box. The 'Read Modbus ID' and 'Write Modbus ID' buttons are dark green, and their respective input boxes show the value '1'. The 'Read Baud Rate' and 'Write Baud Rate' buttons are also dark green, with the input box showing '19200'. The 'Read Serial Format' and 'Write Serial Format' buttons are dark green, with the input box showing '8 data bit No Parity, 1 stop bit'. The 'Read Operation Mode' and 'Write Operation Mode' buttons are dark green, with the input box showing 'Default(Modbus)'. The 'Read 4mA Value' and 'Write 4mA Value' buttons are dark green, with the input box showing '0.0000'. The 'Read 20mA Value' and 'Write 20mA Value' buttons are dark green, with the input box showing '14.0000'. The 'Restart/Confirm' button is highlighted with a red arrow and the text 'RESTART/CONFIRM' below it.

Modbus ID

Read Modbus ID: Modbus ID R: 1

Write Modbus ID: Modbus ID W: 1

Communication Baud Rate

Read Baud Rate: Baud Rate R: 19200

Write Baud Rate: Baud Rate W: 19200

Communication Serial Format

Read Serial Format: Serial Format R: 8 data bit No Parity, 1 stop bit

Write Serial Format: Serial Format W: 8 data bit No Parity, 1 stop bit

Reading and setting communication parameters

1. Read modbus ID, Baud Rate or Serial Format in the three boxes at the top of the page by clicking the dark green arrow buttons.
2. To change settings, type the new setting into the box next to the write button and then click the blue arrow button.

Change Operation Mode

1. Your sensor or module's default will be preset to Modbus or MA based on model number. However, you still can change sensor's operation mode.
2. The Modbus Mode requires 7-30VDC power supply.
3. The 4-20mA loop current mode requires 23-30VDC power supply.
4. To change operation mode, select operation mode next to "Write Operation Mode" arrow button then clicking the blue button.
5. Read back operation mode by clicking "Read Operation Mode" make sure that the operation mode has been changed.

Change 4-20mA Scale Setup

1. If mA mode is selected, you can read the current 4 and 20 mA values by clicking the dark green arrow "Read" buttons.
2. To change settings enter values in the white boxes next to the blue "Write Value" buttons and then clicking the button.

Reset to Factory Calibration

1. Reset Factory Calibration, sets two calibration points so that the slope equals 1.0 with zero offset.

Reset to Factory settings

1. Set 4-20mA Scale to Factory setting.
2. Set communication setting to factory default.

Restart/Confirm

Except 4-20mA scale, you must restart(Reset) the sensor for the change to take effect. Click the "Restart/Confirm" button and it will stop the program.

READ/WRITE BAUD RATE

First, read Baud Rate, in Red square. It will say 19200 as factory preset. Next write Baud Rate change to "9600" (circled). Last, press "Restart/Confirm" to restart sensor and save the Baud rate change to the sensor's memory.

The screenshot shows the 'Advanced' settings page with the 'Communication Baud Rate' section highlighted by a red box. The 'Read Baud Rate' and 'Write Baud Rate' buttons are dark green, and their respective input boxes show the value '19200'. The 'Read Serial Format' and 'Write Serial Format' buttons are dark green, with the input box showing '8 data bit No Parity, 1 stop bit'. The 'Read Operation Mode' and 'Write Operation Mode' buttons are dark green, with the input box showing 'Default(Modbus)'. The 'Read 4mA Value' and 'Write 4mA Value' buttons are dark green, with the input box showing '0.0000'. The 'Read 20mA Value' and 'Write 20mA Value' buttons are dark green, with the input box showing '14.0000'. The 'Restart/Confirm' button is highlighted with a red arrow and the text 'RESTART/CONFIRM' below it.

Modbus ID

Read Modbus ID: Modbus ID R: 1

Write Modbus ID: Modbus ID W: 1

Communication Baud Rate

Read Baud Rate: Baud Rate R: 19200

Write Baud Rate: Baud Rate W: 19200

Communication Serial Format

Read Serial Format: Serial Format R: 8 data bit No Parity, 1 stop bit

Write Serial Format: Serial Format W: 8 data bit No Parity, 1 stop bit

Reading and setting communication parameters

1. Read modbus ID, Baud Rate or Serial Format in the three boxes at the top of the page by clicking the dark green arrow buttons.
2. To change settings, type the new setting into the box next to the write button and then click the blue arrow button.

Change Operation Mode

1. Your sensor or module's default will be preset to Modbus or MA based on model number. However, you still can change sensor's operation mode.
2. The Modbus Mode requires 7-30VDC power supply.
3. The 4-20mA loop current mode requires 23-30VDC power supply.
4. To change operation mode, select operation mode next to "Write Operation Mode" arrow button then clicking the blue button.
5. Read back operation mode by clicking "Read Operation Mode" make sure that the operation mode has been changed.

Change 4-20mA Scale Setup

1. If mA mode is selected, you can read the current 4 and 20 mA values by clicking the dark green arrow "Read" buttons.
2. To change settings enter values in the white boxes next to the blue "Write Value" buttons and then clicking the button.

Reset to Factory Calibration

1. Reset Factory Calibration, sets two calibration points so that the slope equals 1.0 with zero offset.

Reset to Factory settings

1. Set 4-20mA Scale to Factory setting.
2. Set communication setting to factory default.

Restart/Confirm

Except 4-20mA scale, you must restart(Reset) the sensor for the change to take effect. Click the "Restart/Confirm" button and it will stop the program.

Products covered by this manual: *Smart Sensor User Interface Advanced A*

INSTR-SMARTSENSORUSER
INTERFACE ADVANCED A - REV 02092024

SENSOREX CORPORATION

11751 MARKON DRIVE • GARDEN GROVE, CA 92841, USA
714.895.4344 • WWW.SENSOREX.COM

© Sensorex Corporation. All rights reserved. In the interest of improving and updating its equipment, Sensorex reserves the right to alter specifications to equipment at any time.

SENSOREX SRO

OKRUŽNÍ • 2615, 370 01 CESKE BUDEJOVICE, CZECH REPUBLIC
+420 72.796.3481 • WWW.SENSOREX.COM

READ/WRITE SERIAL FORMAT

First, read "Read Serial Format", in Red square. It will say 8 data bit No Parity, 1 stop bit" as factory preset . Next write desired serial format. Last, press "Restart/Confirm" to restart sensor and save the Baud rate change to the sensor's memory.

Setup **Calibration** **Measurement and Log** **Advanced** **Sensorex**

Modbus ID
Read Modbus ID: Modbus ID R: 1
Write Modbus ID: Modbus ID W: 1

Communication Baud Rate
Read Baud Rate: Baud Rate R: 19200
Write Baud Rate: Baud Rate W: 19200

Communication Serial Format
Read Serial Format: Serial Format R: 8 data bit No Parity, 1 stop bit
Write Serial Format: Serial Format W: 8 data bit No Parity, 1 stop bit

Operation Mode Setup
Read Operation Mode: Operation Mode R: Default(Modbus)
Write Operation Mode: Operation Mode W: Default(Modbus)

4-20mA Scale Setup
Read 4mA Value: 4mA Value: 0.000
Write 4mA Value: New 4mA Set Point: 0.0000
Read 20mA Value: 20mA Value: 14.000
Write 20mA Value: New 20mA Set Point: 14.000

Restart/Confirm **Reset to Factory Calibration** **Reset to Factory Settings** **Read Glass Impedance**
Glass Impedance(Mohm): 0.000

RESTART/CONFIRM

Reading and setting communication parameters
1. Read modbus ID, Baud Rate or Serial Format in the three boxes at the top of the page by clicking the dark green arrow buttons.
2. To change settings, type the new setting into the box next to the write button and then click the blue arrow button.

Change Operation Mode
Your sensor or module's default will be preset to Modbus or mA based on model number. However, you still can change sensor's operation mode.
1. The Modbus Mode requires 7-30VDC power supply.
2. The 4-20mA loop current mode requires 23-30VDC power supply.
3. To change operation mode, select operation mode next to "Write Operation Mode" arrow button then clicking the blue button.
4. To change operation mode by clicking "Read Operation Mode" make sure that the operation mode has been changed.

Change 4-20mA Scale Setup
1. If mA mode is selected, you can read the current 4 and 20 mA values by clicking the dark green arrow "Read" buttons.
2. To change settings enter values in the white boxes next to the blue "Write Value" buttons and then clicking the button.

Reset to Factory Calibration
1. Reset Factory Calibration, sets two calibration points so that the slope equals 1.0 with zero offset.

Reset to Factory settings
1. Set 4-20mA Scale to Factory setting.
2. Set communication setting to factory default.

Restart/Confirm
Except 4-20mA scale, you must restart(Reset) the sensor for the change to take effect. Click the "Restart/Confirm" button and it will stop the program.

READ/WRITE OPERATION MODE

First, read "Read Operation Mode", in Red square. Options are Default(Modbus) or 4-20mA . Next write desired operation mode. Last, press "Restart/Confirm" to restart sensor and save the Baud rate change to the sensor's memory.

Setup **Calibration** **Measurement and Log** **Advanced** **Sensorex**

Modbus ID
Read Modbus ID: Modbus ID R: 1
Write Modbus ID: Modbus ID W: 1

Communication Baud Rate
Read Baud Rate: Baud Rate R: 19200
Write Baud Rate: Baud Rate W: 19200

Communication Serial Format
Read Serial Format: Serial Format R: 8 data bit No Parity, 1 stop bit
Write Serial Format: Serial Format W: 8 data bit No Parity, 1 stop bit

Operation Mode Setup
Read Operation Mode: Operation Mode R: Default(Modbus)
Write Operation Mode: Operation Mode W: Default(Modbus)

4-20mA Scale Setup
Read 4mA Value: 4mA Value: 0.000
Write 4mA Value: New 4mA Set Point: 0.0000
Read 20mA Value: 20mA Value: 14.000
Write 20mA Value: New 20mA Set Point: 14.000

Restart/Confirm **Reset to Factory Calibration** **Reset to Factory Settings** **Read Glass Impedance**
Glass Impedance(Mohm): 0.000

RESTART/CONFIRM

Reading and setting communication parameters
1. Read modbus ID, Baud Rate or Serial Format in the three boxes at the top of the page by clicking the dark green arrow buttons.
2. To change settings, type the new setting into the box next to the write button and then click the blue arrow button.

Change Operation Mode
Your sensor or module's default will be preset to Modbus or mA based on model number. However, you still can change sensor's operation mode.
1. The Modbus Mode requires 7-30VDC power supply.
2. The 4-20mA loop current mode requires 23-30VDC power supply.
3. To change operation mode, select operation mode next to "Write Operation Mode" arrow button then clicking the blue button.
4. To change operation mode by clicking "Read Operation Mode" make sure that the operation mode has been changed.

Change 4-20mA Scale Setup
1. If mA mode is selected, you can read the current 4 and 20 mA values by clicking the dark green arrow "Read" buttons.
2. To change settings enter values in the white boxes next to the blue "Write Value" buttons and then clicking the button.

Reset to Factory Calibration
1. Reset Factory Calibration, sets two calibration points so that the slope equals 1.0 with zero offset.

Reset to Factory settings
1. Set 4-20mA Scale to Factory setting.
2. Set communication setting to factory default.

Restart/Confirm
Except 4-20mA scale, you must restart(Reset) the sensor for the change to take effect. Click the "Restart/Confirm" button and it will stop the program.

Products covered by this manual: *Smart Sensor User Interface Advanced A*

INSTR-SMARTSENSORUSER
INTERFACE ADVANCED A - REV 02092024

SENSOREX CORPORATION

11751 MARKON DRIVE • GARDEN GROVE, CA 92841, USA
714.895.4344 • WWW.SENSOREX.COM

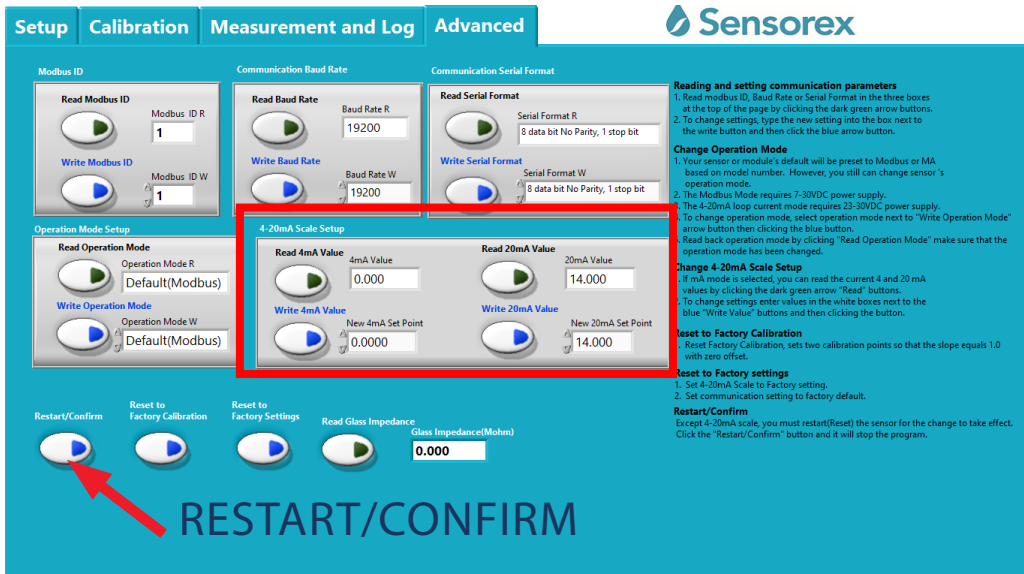
© Sensorex Corporation. All rights reserved. In the interest of improving and updating its equipment, Sensorex reserves the right to alter specifications to equipment at any time.

SENSOREX SRO

OKRUŽNÍ • 2615, 370 01 CESKE BUDEJOVICE, CZECH REPUBLIC
+420 72.796.3481 • WWW.SENSOREX.COM

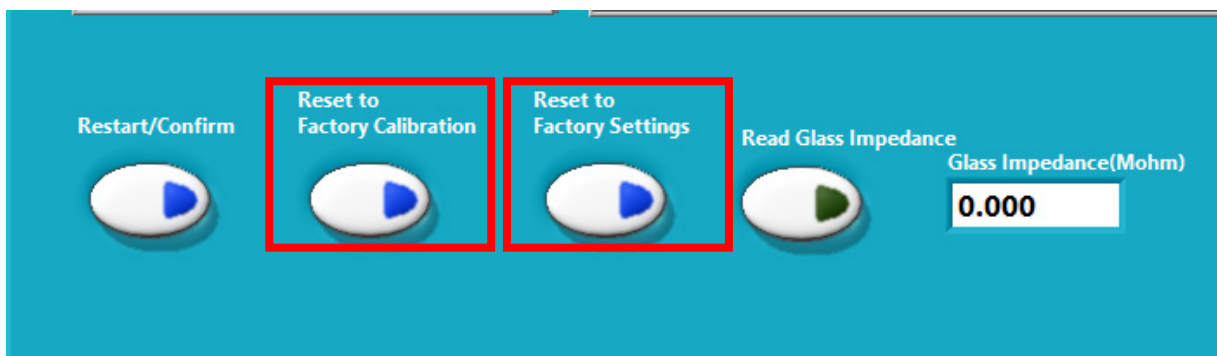
READ/WRITE 4-20MA SCALE SETUP

First, read "Read 4mA" value in Red square by pressing the "Read 4mA" button. Button will light up green and then go off and value will be displayed in the window. Next write "0" for pH, Conductivity, dissolved oxygen, free chlorine or chlorine dioxide in the "Write 4mA" window. Then press the "Write 4mA" button. Button will light up green then go off when value is written to sensor memory. Repeat the process for 20mA read and write. Last, press "Restart/Confirm" to restart sensor and save the change to the sensor's memory.



RESET FACTORY CALIBRATION/RESET FACTORY SETTINGS

By pressing "Reset to Factory Calibration" you will remove any written data from the sensor memory. Note that the last 3 calibration values are written to the sensor's memory. Only Reset factory calibration if you are having trouble with standard calibration. "Reset to Factory Settings" can be used if the sensor requires a complete reset.



TROUBLESHOOTING

COMMUNICATION:

If sensor does not communicate using the software:

- a) check to make sure sensor Modbus wires are correct: white Modbus A, green Modbus B
- b) check to see you have the correct sensor id.
- c) check to see if you have the correct baud rate

If communication still does not work and all connections and settings are correct then go to: recover communication settings" on setup tab. Follow instructions:

Stop the program by pressing the stop button on the top of the interface screen. If successful, the correct Modbus ID, baud

Recover Communication Settings

In case communication settings have been forgotten. Follow instruction below.

Modbus_ID	Baud_Rate	Serial_Format
1	19200	8 data bit No Parity, 1 stop bit

- IMPORTANT: Before entering run mode; power and connect your sensor or USB/RS485 converter to your computer USB slot, Adjust Baud Rate, Parity, Data and Stop bits if different from default settings.
- In the button bar at the top of the screen, click Run (White Arrow) or Continuously Run (Cycle arrows) to begin measurement.
- This program will automatically search for communication port, The "Communication progress" and "wait message" field appear with connection status.
- Once connected you can choose to add a label to your sensor by entering a name (maximum 12 characters in the user label slot. Click on "write" button. It will turn green momentarily and your new sensor name will appear in the "Read User Label" space.
- Click Stop (Stop Sign) to terminate communication.

Recovery Communication Settings Steps

- Stop program.
- Turn off sensor power (disconnect the sensor red wire from the power supply), keep the USB/RS485 converter connected with computer.
- Click on "Recovery Communication Setting" icon.
- Turn on sensor power supply (connect sensor red wire to the power supply).
- Click White Arrow to run this program. It will take a few seconds to find the sensor communication settings.
- If failed, remove unrelated USB connectors, and try steps 1-5 again.

CALIBRATION:

If Calibration values did not get written to the sensor's memory chip:

The "SAVE CALIBRATION" button was not pressed after the calibrations were complete. See "Cal Message" screen to know when the calibrations were complete. You will also see the green "Low Cal Point" or "high point light go off.

Recent Calibration Data Time format [YYYYMMDDHHmm]

Recent Time	Cal_Point_A	Meas_Point_A	Cal_Point_B	Meas_Point_B
201903211140	0.00	0.00	0.00	0.00

Previous 1 Time	Cal_Point_A1	Meas_Point_A1	Cal_Point_B1	Meas_Point_B1
201903211140	0.00	0.00	0.00	0.00

Previous 2 Time	Cal_Point_A2	Meas_Point_A2	Cal_Point_B2	Meas_Point_B2
201903211140	0.00	0.00	0.00	0.00

Cal Message

Enter Cal. Value, Place the probe into the solution before calibration, Click Low or High Cal Point button to start Calibration...