



Conductivity/TDS Troubleshooting Guide

Troubleshooting guide for Equipment, Meter/Controller, Conductivity Electrode, and Conductivity Cell Ranges. If you can't find what you're looking for, please [Contact Us](#).

Troubleshooting Equipment

The following tools are recommended to assist you in problem identification:

- A DVM (Digital Volt Meter)
A DVM will help to check for electrical continuity from the measuring electrode to its connector and to measure resistance between the conductive pins to see if a short circuit is present. It will also verify that the temperature sensor in the electrode is working based on resistance reading at room temperature.
- Conductivity Simulator or resistor and loop of wire
Simulators (not available from Sensorex) will help test the ability of the conductivity system (electrode + meter/controller) to read properly. A resistor connected via wires to the conductivity instrument in place of conductivity sensor inputs can also help simulate measurement of conductivity if no conductivity standards are available. Use the following formula to figure out which resistor(s) to choose:
Resistor (R) = Cell constant x 1,000,000 / conductivity value to simulate (uS)
Example: R = 1.00 x 1,000,000 / 2000us = 500 Ohms
- [Conductivity Standards](#)
A wide range of conductivity standards/calibration solutions are available. Use at least two standards that are at the high and low end of the range in which you need to measure.

Meter/Controller Troubleshooting

The meter or controller is the easiest component to eliminate as a possible cause of your problem. Disconnect conductivity sensor from meter/controller and connect conductivity simulator in its place. Input conductivity readings and make sure controller/meter display matches the reading from the simulator. Use fixed resistor if a simulator is not available. If readings do not match, the problem is in the meter or controller. Contact meter/controller supplier for help or refer to meter/controller troubleshooting section. If simulator inputs are correctly displayed on the meter/controller, then the electrode is the most likely cause of the problem.

DESIGNED AND ASSEMBLED IN CALIFORNIA, USA

11751 MARKON DRIVE • GARDEN GROVE, CA 92841 • 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.

Conductivity Electrode Troubleshooting

Check electrode in conductivity calibration/standard solutions as recommended above. Compare results to those on the following table:

Conductivity standard solution output	Possible Cause	Corrective Action
No output	<ul style="list-style-type: none"> a) Conductivity sensor not connected to instrument b) Bad connection at connector c) Break in cable or internal connection broken in sensor 	<ul style="list-style-type: none"> a) Check all connections from electrode to instrument b) Check for electrical continuity from conductivity pin to connector using Ohms setting on DVM (should be <1 Ohm) c) Contact Sensorex
Output in standard solution is more than 10% different than value of solution	<ul style="list-style-type: none"> a) Solution is not fresh, contaminated, or labeled wrong b) Electrode is dirty c) Standard solution is outside of cell range** 	<ul style="list-style-type: none"> a) Use fresh solutions or new lost of solution b) Clean electrode per instruction manual. Do not abrade measuring surface. c) Pick standards based on ranges shown below**
Unstable or drifting reading	Bubbles in electrode or flow cell	<ul style="list-style-type: none"> a) Shake or stir electrode to remove bubbles if testing solution in beaker. b) Mount electrode horizontally so bubbles rise up and away from electrode.
Readings in line do not change but electrode calibrates in conductivity standard solutions	<ul style="list-style-type: none"> a) Electrode not completely immersed in process fluid b) Electrode not connected to controller 	<ul style="list-style-type: none"> a) Check installation fittings and make sure sensor is completely installed. b) Check wiring to instrument

Conductivity Cell Ranges**

Cell Constant (k)	Conductivity Range(uS)
1.0	10,000 uS
0.1	1,000 uS
0.01	100 uS

If you are still having problems after trying the above diagnostics, fill out our [Application Questionnaire](#) and e-mail it to us for assistance.

DESIGNED AND ASSEMBLED IN CALIFORNIA, USA

11751 MARKON DRIVE • GARDEN GROVE, CA 92841 • 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.