

FAQ's - Signet 2850 Conductivity/Resistivity Sensor Electronics

1) What sensors can I use with the new 2850?

- All conductivity/resistivity sensors from the following sensor families:
 - Models 2819, 2820, 2821, 2822, 2823
 - Models 2839, 2840, 2841, and 2842

2818-2823 Sensors



2) What is the accuracy of the 2850 electronics with a 2839-2842 electrode?

- The 2850 is shipped from the factory with a calibrated sensor installed. The accuracy with the calibrated sensor is $\pm 2\%$.

3) Can I use a sanitary flange sensor with the new 2850?

- Yes, the new 2850 will accept any Signet conductivity sensor input, including those with a sanitary flange.

2839-1V(D)-2842-V(D) PVDF sensors



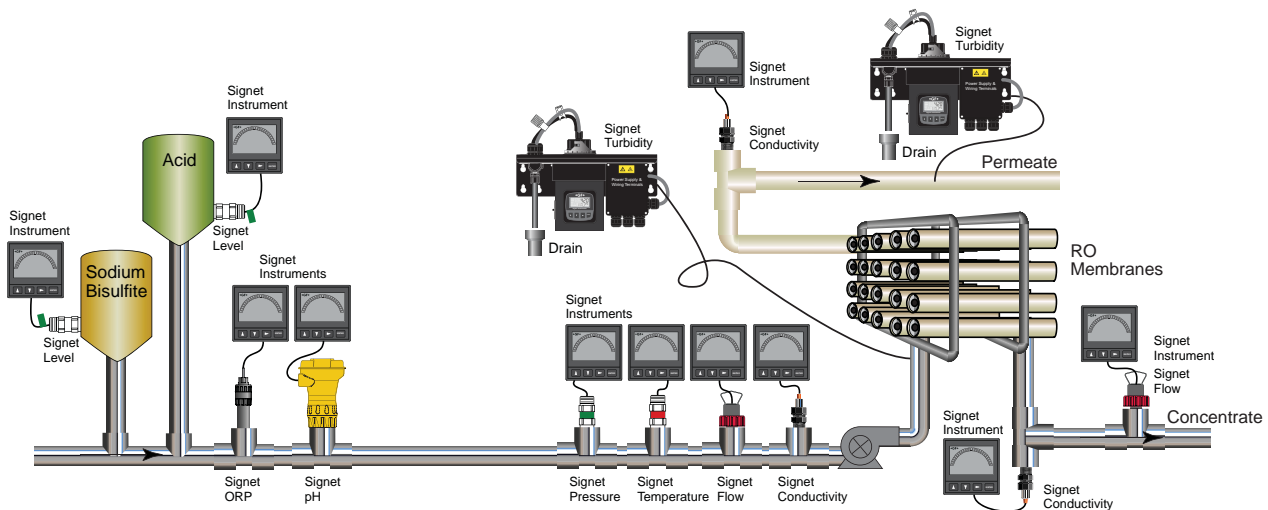
4) What is the advantage of using the dual channel 2850?

- The dual channel unit allows the customer to connect two conductivity/resistivity sensors into the 2850 and send both signals over one cable (via the Signet (S³L) digital system) to the 8900. This saves the customer money by purchasing only one unit, reduces cable installation costs, and allows them to send the signal up to 1000 ft. to the 8900.

5) Can Signet provide some application examples for the dual channel 2850?

- Reverse osmosis, cooling towers, boilers, and deionization units all require two conductivity measurements. An 8900, used with a dual channel 2850, can be further enhanced to receive 2 or 4 more inputs from Signet flow, pH, ORP, pressure, level, and temperature sensors. Review the 8900 data sheet for more information.

2850-63 dual Input electronics

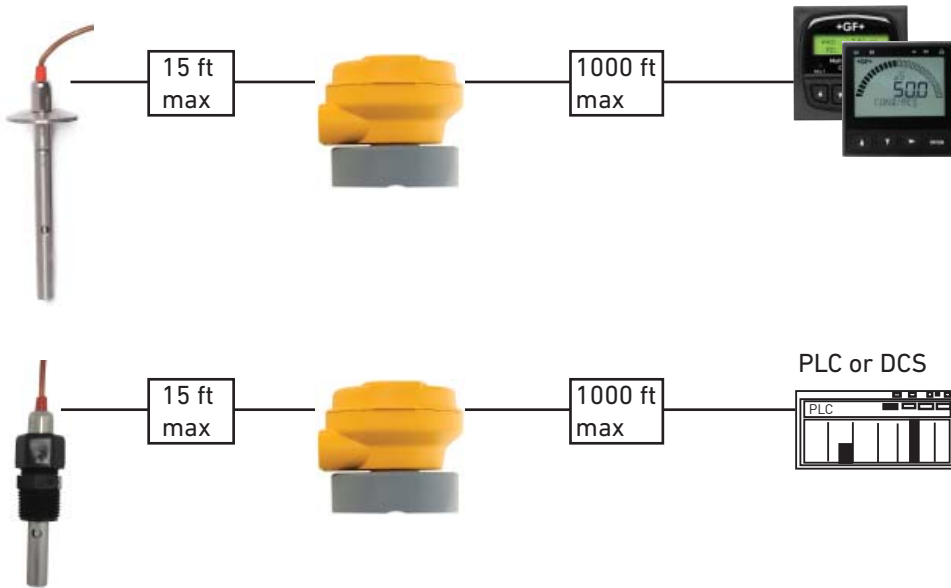


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Example: Reverse osmosis system with various required and optional measurements. In this example, two 6 channel 8900's can be used with one dual channel 2850, and one single channel 2850 (optional).

6) What is the maximum sensor cable length that can be run to the 2850 remote unit?

- 15 ft. which is standard on all Signet conductivity/resistivity sensors.



7) What is the maximum length of the extension cable coming out of the 2850?

- 1000 feet

8) Can the two output digital signals run on one wire?

- Yes

9) Is the 2850 CE certified?

- Yes and a copy of the certificate is available on the Signet website.

10) Does the new 2850 offer an option for EasyCal calibration?

- Yes, all new 2850 units are available with EasyCal at no additional charge.

11) What is EasyCal?

- The 2850 has a feature in the unit that allows for automatic recognition of standard conductivity test solutions.

12) Do I still need to calibrate the 2850 with calibration solutions?

- The 2850 electronics and sensor from the factory is programmed with the certified cell constant. This should give the user an out of the box accuracy of $\pm 2\%$. It is always recommended to use a certified calibration solution if the sensor is changed to a different cell constant or has been in a working application for more than 1 year.

13) Who supplies the standard conductivity solutions that EasyCal recognizes?

- Most laboratory chemical suppliers offer standard conductivity solutions. Alternatively, conductivity solutions can be made using potassium chloride (KCl) salts dissolved in distilled water (as stated in ASTM standard D 1125-95). For instance, a 1408.8 μS solution (at 25 °C) can be made by diluting 0.7440 g of KCl (weighed in air) in 1 liter of distilled water. Note the grade of KCl and the purity of the distilled water may change the actual value of 1408.8 μS to a higher or lower value.

14) What calibration solutions can be used with the EasyCal function?

- 146.93 μS , 1408.8 μS , 12856 μS
- 10 μS , 100 μS , 200 μS , 500 μS , 1000 μS , 5000 μS , 10,000 μS , 50,000 μS , 100,000 μS (@ 25 °C)

15) Can a dual channel unit be calibrated simultaneously?

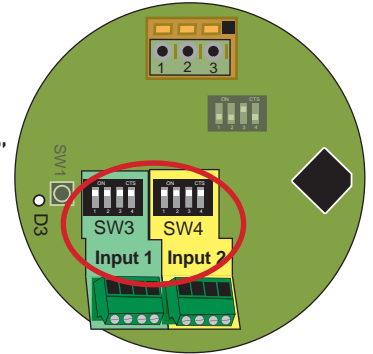
- Yes, both channels can be calibrated at the same time when using the EasyCal function.

16) Does the dual channel unit have the ability to calibrate one sensor at a time?

- Yes, by disabling the second channel, the first channel can be calibrated. It is recommended the larger cell constant sensor is placed on channel 1 because it is more likely this sensor will need calibration more often.

17) How does the unit recognize different cells?

- There are switches on the inside of the unit. Putting the switches “SW3” and “SW4” in the “open” or “closed” position will enable the new 2850 to identify the correct sensor cell constant.



18) Is there an option to turn “off” the temperature compensation for use in USP applications?

- Yes, turning the temperature compensation “off” is simply done with turning switch “SW4” to the closed position. This is only valid for 2850’s with a 4 to 20 mA output.

For 2850’s with digital (S³L) output, the unit is used with the 8900 Multi-Parameter controller and therefore, the temperature compensation mode should be turned off in the 8900; it does not need to be turned off in the 2850.

19) What are the certification tools used for?

- For electronics calibration / verification according to ASTM standard test methods. Used for applications such as natural and treated waters like boiler water, boiler feed water, cooling water, and saline and brackish water. Also used for high purity water applications needing to meet USP requirements

20) How can I verify the electronics are reading the sensor information correctly, and outputting the correct value?

- Using the calibration simulators 3-2850.101-X allows a fixed value to be entered into the sensor port of the 2850 electronics. The simulators are manufactured using 1% resistors to generate an accurate signal.
- When using the 2850-52 (4 to 20 mA output) calculate the mA output that should be seen on the voltmeter.
- Using the 2850-51 (S³L) versions verifies the value on the display of the instrument.

21) Why the LED does blinks rapidly for 4 seconds then goes out during AutoCal?

- Check the calibration solution. It may be expired.
- The sensor may be damaged
- The electronics may be damaged

- 22) What would cause the output of the 2850 to show a “Check Sensor “ on the 8900 and 9900 or 22 mA for the 4 to 20 mA output version?**
- SW3 and SW4 are all in the open position
 - The electrode plug is disconnected or has a broken wire
 - Check for open wires between the 2850 and the controller or PLC
- 23) Why would the output of the 2850 indicate a value that is more than off by a factor of 10X or 100X than the correct value?**
- Check SW3 and SW4 to verify the correct cell constant is selected.
- 24) Can the sensor be changed in the field with a different cell constant?**
- Yes, a key benefit of the 2850 is the ability to change the sensor cell constant by switching the 4 position dip switch SW 3 (and SW4 if the dual input 2850-6X is used) located in the cap.
- 25) Can the 2819 – 2823 family of conductivity sensors be used with the 2850 electronics?**
- Yes, the universal junction box assembly 3-2850-61 or 2850-62 electronics should be used.
- 26) Can the 2850 be used with the 9900?**
- Yes, you do not need the conductivity module to wire the 2850 directly to the 9900.
 - No matter what the cell constant of the 2850, SW3 and SW4 must be set to read a cell constant of 1.0 to work properly with the 9900.