

# High Pressure Conductivity Sensor

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## **CAUTION** **SENSOR/PROCESS** **APPLICATION COMPATIBILITY**

The wetted sensor materials may not be compatible with process composition and operating conditions. Application compatibility is entirely the responsibility of the user.



## **CAUTION**

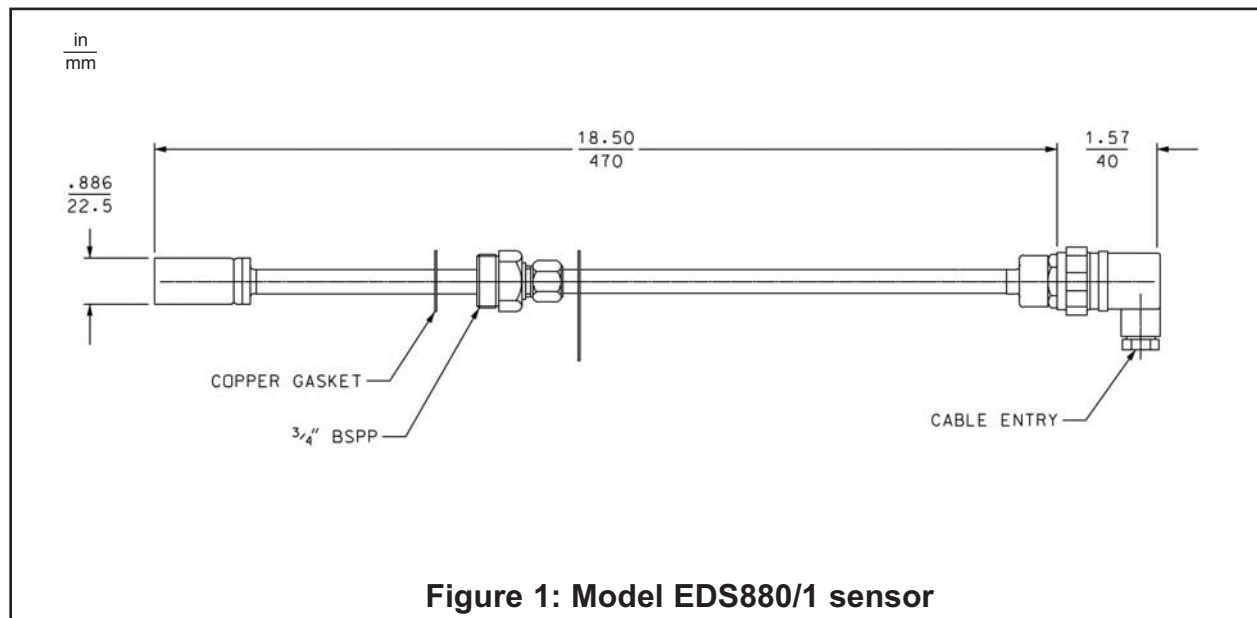


**BEFORE REMOVING THE SENSOR, be absolutely certain the process pressure is reduced to 0 psig and the process temperature is at a safe level!**

## SPECIFICATIONS—SENSOR

**Maximum Pressure:** 2880 psig (20,000 kPa abs)  
**Temperature:** 32-392°F (0-200°C)

**Process connection:** M25 male with copper gasket  
**Wetted materials:** titanium and zirconium oxide



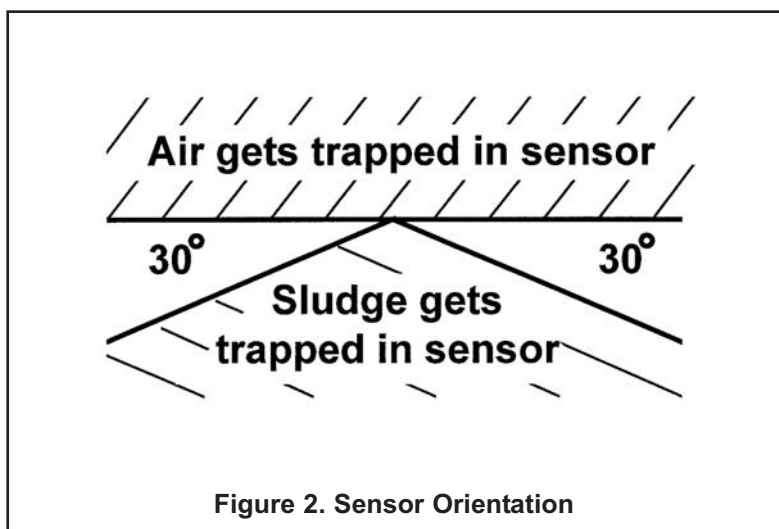
## SPECIFICATIONS—PROCESS CONNECTOR

**Adapter:** 1 inch MNPT x M25 female  
**Wetted materials:** 316 stainless steel

## INSTALLATION

Keep 1/4 inch (0.6 cm) clearance between the electrodes and piping. The electrodes must be completely submerged in the process liquid. See Figure, 2 for recommended orientation.

DO NOT TIGHTEN THE HEX NUT UNTIL THE SENSOR HAS BEEN PROPERLY POSITIONED. ONCE THE NUT HAS BEEN TIGHTENED, NO FURTHER ADJUSTMENT OF THE SENSOR LENGTH IS POSSIBLE.



## WIRING

The sensor is provided with unterminated cable. To wire the connector, remove the screw holding the sensor plug to the sensor, remove the plug, and pry off the cover using a small screwdriver. There is a slot for the screwdriver in one corner of the plug. Do not lose the gasket.

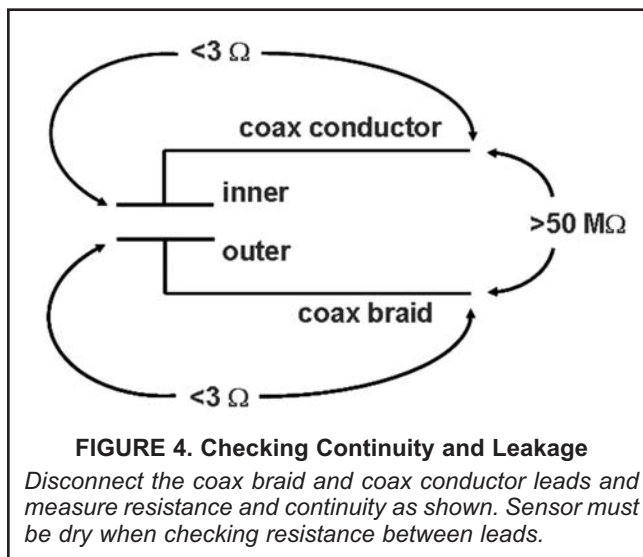
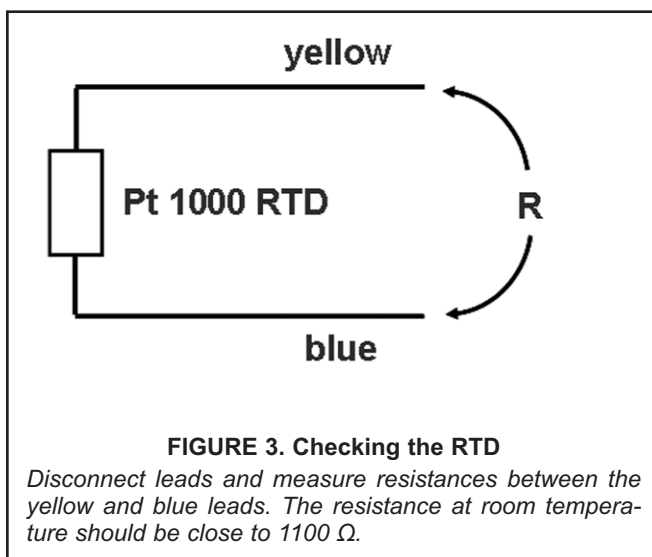
The terminals in the plug are numbered 1, 2, 3, and ground. The cable comprises two insulated conductors, a coaxial conductor, and an overall braid. Wire the cable to the plug and 54eC analyzer as shown in the table.

WIRE	FUNCTION	PLUG CONNECTION	54eC CONNECTION
coax braid	outer electrode	ground terminal	TB1-8
coax internal conductor	inner electrode	terminal 3	TB1-11
yellow conductor	RTD in	terminal 1	TB1-5
blue conductor	RTD return	terminal 2	TB1-3 (see note)
overall braid	shield	no connection	TB1-ground

**Warning:** The EDS880/1 sensor contains a Pt 1000 RTD for temperature measurement. Typically, RTDs are connected to the analyzer using a three-wire configuration. The third wire, the sense line, is used to correct for cable resistance and for changes in cable resistance caused by changes in ambient temperature. The cable used with the EDS880/1 contains no sense line. To satisfy the circuit requirements of the 54eC, which is designed for cables having sense lines, terminals TB1-3 and TB1-4 (RTD return and RTD sense) must be connected with a wire jumper. The wire jumper must be present. The analyzer displays the error message “sense line open” if the jumper is absent.

## TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	SOLUTION
Off-scale reading	Wiring is wrong.	Verify wiring in plug and at analyzer.
	Temperature element is open or shorted.	Check temperature element for open or shorts. See Figure 3.
	Sensor is not in process stream.	Be sure sensor is completely submerged in process stream.
	Sensor is defective.	Perform isolation checks. See Figure 4.
Noisy reading	Sensor is improperly installed in process stream.	Be sure sensor is completely submerged in process stream.
Reading seems wrong (lower or higher than expected)	Bubbles trapped in sensor.	Be sure sensor is properly oriented in pipe. See Figure 1.
	Wrong temperature correction algorithm.	Check that temperature correction is appropriate for the sample. See analyzer manual for more information.
	Wrong cell constant.	Verify that the correct cell constant has been entered in the analyzer and that the cell constant is appropriate for the conductivity of the sample. See analyzer manual.
Sluggish response	Electrodes are fouled.	Clean electrodes.
	Sensor is installed in dead area in piping.	Move sensor to a location more representative of the process liquid.



### CLEANING THE SENSOR

Use a warm detergent solution and a soft brush or pipe cleaner to remove oil and scale. Isopropyl alcohol (rubbing alcohol) can also be used to remove oily films. Avoid using acids to clean conductivity sensors.



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*Specifications subject to change without notice.*

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