Sanitary Flow-Through Toroidal Conductivity Sensor

- Flow through design is ideal for use with viscous, abrasive or fibrous solutions.
- ½-inch, 1-inch, 1-½-inch, or 2-inch Tri Clamp process connections.
- Liner and O-rings meet FDA and USP class VI requirements.



Features and Applications

The 245 Sanitary Flow-Through Toroidal Conductivity Sensor is intended for use in the pharmaceutical, biopharmaceutical, and food and beverage industries where a conductivity sensor that does not obstruct the process flow is required.

The sensor consists of two toroids surrounding a PEEK liner through which the liquid flows. An alternating voltage applied to the first toroid induces a voltage in the liquid, which causes an ionic current to flow. The ionic current is directly proportional to the conductance of the liquid. The ionic current, in turn, induces a proportional current in the second toroid. The analyzer measures this current and displays the conductivity of the liquid.

For a current to flow in the second toroid, a complete electric circuit must exist around the toroids. The sample passing through the toroid openings forms part of the circuit. The metal mounting flanges at the end of the sensor, which contact the liquid and are connected by the metal housing passing outside the toroids, complete the circuit.

The 245 sensor is available with 0.5, 1.0, 1.5, and 2 inch Tri Clamp connections. The liner meets the requirements of 21CFR177.2415, and the O-rings meet 21CFR177.2600. Both the liner and the O-rings are compliant with USP Class VI requirements.

The 245 sensor is easy to install. It clamps into the process piping between two Tri Clamp flanges. Installation of special grounding rings is not needed because contact rings are already built into the sensor. A junction box to facilitate wiring is included.

Conductivity depends strongly on temperature, and conductivity measurements are typically corrected to a reference value. A Pt 100 or Pt 1000 RTD, provided by the user, can be wired into the sensor junction box, allowing the analyzer to measure temperature and use it for automatic temperature correction.

The 245 is not sensitive to flow rate or direction. It does not obstruct the process flow.

The 245 Sanitary Flow-Through Conductivity Sensor is compatible with the 1056, 56, 5081T, and 1066-T.





Specifications

Installation Type: Flow through Conductivity Range: Consult analyzer product data sheet Process Connections: ½ inch, 1 inch, 1 ½ inch, and 2 inch Tri Clamp Wetted Materials: 316L stainless steel (mounting flanges); unfilled PEEK (liner); EPDM (O-rings). PEEK liner meets 21CFR177.2415 and USP Class VI. EPDM O-rings meet 21CFR177.2600 and USP Class VI, Surface Finish: Mounting flanges have a 16 micro inch (0.41 um) Ra surface finish. PEEK liner has a 32 micro inch (0.81 um) Ra surface finish. Minimum Temperature: 32 °F (0 °C) Maximum Temperature: 250 °F (121 °C) continuous; 266 °F (130 °C) in steam for 45 minutes Maximum Pressure (1/2 inch sensor only): 300 psig (2170 kPa abs) Maximum Pressure (all others): 100 psig (791 kPa abs) Shipping Weight: 9 lb (4.5 kg)



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Ordering Information

The 245 Sanitary Flow-Through Sensor is configurable to meet the needs of many applications and installations. A NEMA 7D junction box is also included. Compatible instruments include Rosemount Analytical 1056, 56, 5081T, and 1066-T.

The extension cable required for wiring from the junction box to the instrument is ordered separately. The customer supplies the mating flanges, clamps, gaskets, and Pt 1000 RTD.

Model 245	Sanitary Flow-Through Toroidal Conductivity Sensor
CODE	LINE SIZE (Required Selection)
01	1/2"
02	1"
03	1-1/2"
04	2"
CODE	PROCESS CONNECTION (Required Selection)
12	Tri Clamp
CODE	CONTACT RING MATERIAL (Required Selection)
SS	316L Stainless Steel
CODE	LINER MATERIAL (Required Selection)
PK	unfilled PEEK
CODE	PROCESS O-RING MATERIAL (Required Selection)
EP	EP O-rings
245	-01 -12 -SS -PK -EP EXAMPLE

Accessories

Part #	Description
23909-00	Extension cable, prepped, for connection to instruments 1056, 56, 5081, 1066-T (Specify length)
24086-00	RTD Mounting Accessory Kit, consisting of ¾" NPT tee, nipple, and cable connectors



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