

# Rosemount™ 225

## Toroidal Conductivity Sensors



### **A reliable sensor for high conductivity sanitary applications**

Rosemount 225 toroidal conductivity sensors are intended to be used in many pharmaceutical and food and beverage applications where a sanitary design is required. These corrosion and fouling resistant sensors are ideal for measuring the concentration of CIP solutions, detecting product/water interfaces, checking product quality, and monitoring elements in chromatographic solutions.

## Overview

Rosemount 225 sensors are reliable sensors for high conductivity sanitary applications.

Rosemount 225 Toroidal Conductivity Sensors are intended to be used in many pharmaceutical and food and beverage applications where a sanitary design is required. These corrosion and fouling resistant sensors are ideal for measuring the concentrations of CIP solutions, detecting product/water interfaces, checking product quality, and monitoring eluents in chromatographic separations.



### Meet various sanitary requirements.

- USP Class VI compliant.
- FDA food contact 21CFR177.2415 compliant.
- 3-A Sanitary Standard 74-06 compliant.

### Ease of installation.

- 2-in. tri-clamp process connection.
- Installation flexibility with maximum cable lengths up to 200 ft. (61 m) (up to 100 ft. [30 m] is standard) between sensor and transmitter when paired with remote junction box (sold separately).

### High performance and reliability.

- Robust measurements - insensitive to process flow and direction.
- Meet application compatibility requirements with a selection of chemical resistant body options including PEEK and Tefzel®.

## Contents

Overview.....	2
Ordering information.....	3
Specifications.....	4
Dimensional drawing.....	5
Accessories.....	6
Engineering specifications.....	6

## Ordering information



Rosemount 225 Sanitary Toroidal Conductivity Sensors work well in high conductivity liquids up to 2 S/cm (2,000,000  $\mu$ S/cm). These sensors include an integral Pt-100 resistance temperature device (RTD) for temperature compensation and 20 ft. (6.1 m) of integral cable. Cables can be extended using a remote junction box PN 23550-00 (see [Accessories](#)).

### Note

The Rosemount 225 with 2-in. Tri-Clamp fitting is molded from unfilled or glass-filled PEEK. The sensor has an integral Pt 100 RTD and 20 ft. (6.1 m) of cable. For improved EMI/RFI shielding, choose cable option 56. Option 07 meets 3-A sanitary standards.

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## Model

Code	Description
225	Toroidal Conductivity Sensor

## Body material and mounting type

Code	Description
03	Glass-filled PEEK with Tri-Clamp
07	Unfilled PEEK with Tri-Clamp
08	USP Class VI unfilled PEEK with Tri-Clamp <sup>(1)</sup>
09	Unfilled Tefzel™ <sup>(1)</sup>

<sup>(1)</sup> Only available with 56 option.

## Transmitter compatibility

Code	Description
50	For use with Rosemount 1181T
54	For use with Rosemount series 1054 and 2054
56	Integral cable with additional shielding for improved EMI/RFI protection. Recommended for use with Rosemount transmitter models 56, 1056, 5081, and 1056.

## Additional cable options: 20 ft. (6.1 m) is standard

Code	Description
01	Integral 25-ft. (7.6 m) cable
35	Integral 35-ft. (10 m) cable
04	Integral 50-ft. (15 m) cable
06	Integral 100-ft. (30 m) cable
09	Integral 10-ft. (3 m) cable

## Calibration and conformance certificates

Code	Description
CC	Certificate of Calibration (no test data given)
LC	Loop Calibration Certificate (sensor and transmitter calibrated together with test data)
EC	Electronic Calibration Certificate (sensor calibrated against factory instrument with test data)

## Material traceability certificates - optional level

Code	Description
MC	Material Traceability Certificate

## Specifications

<b>Cell constant (nominal):</b>	2.7/cm
<b>Wetted materials:</b>	Body materials either glass-filled PEEK, glass-filled Tefzel, or unfilled Tefzel.
<b>Minimum conductivity:</b>	200 $\mu$ S/cm (15 $\mu$ S/cm when used with Rosemount 1056 and 56 transmitters)
<b>Process connection:</b>	2-in. Tri Clamp
<b>Conformance to 3-A sanitary standards:</b>	Sensors with option -07 meet 3-A sanitary standards for sensors and sensor fittings and connections used on milk and milk products equipment (74-06).
<b>Compliance with FDA food contact requirements:</b>	Sensors with option -07 are molded from PEEK that meet 21CF177.2415.
<b>Compliance with USP Class VI:</b>	Sensors with option -08 are molded from PEEK that meet USP Class VI requirements
<b>Standard cable length:</b>	20 ft. (6.1 m)
<b>Maximum cable length:</b>	200 ft. (61 m), up to 100 ft. (30 m) is standard.
<b>Weight/shipping weight:</b>	2 lb./3 lb. (1.0 kg/1.5 kg)

**Table 1: Maximum Temperature and Pressure**

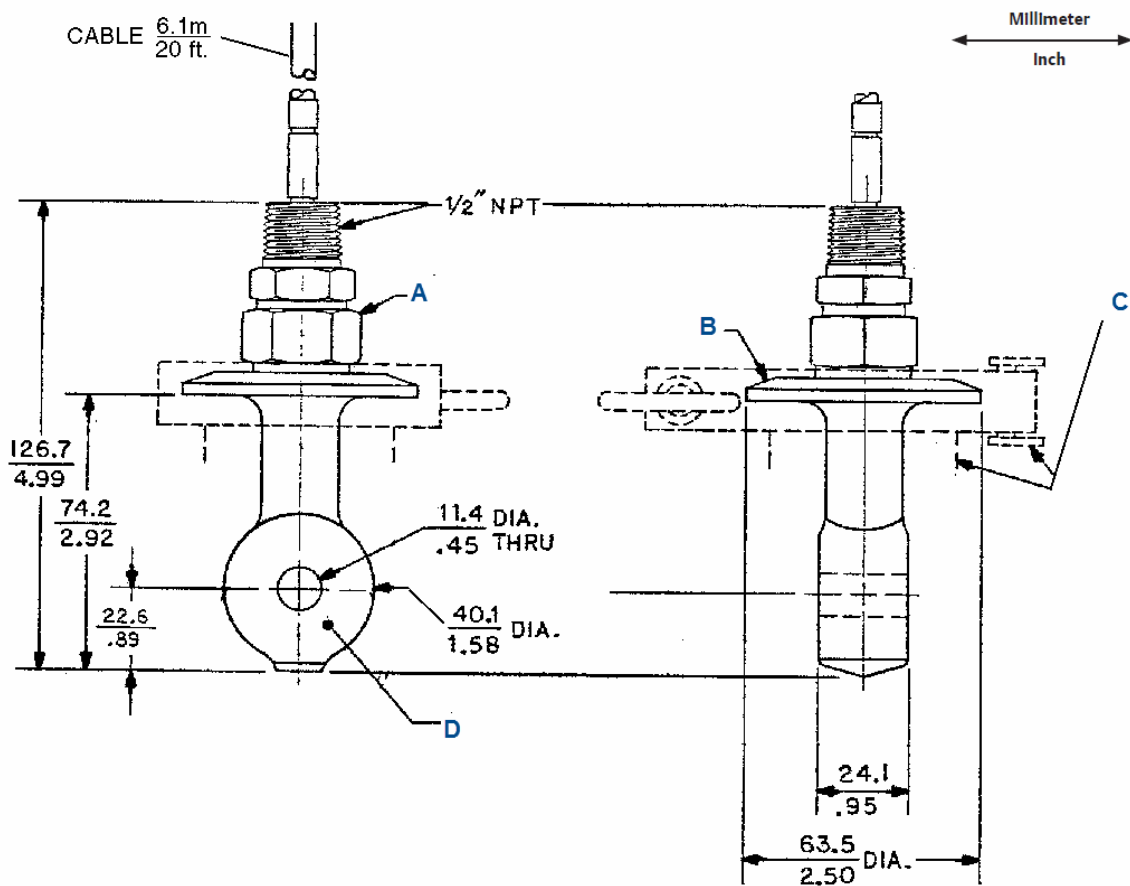
Body material option	Wetted materials	Maximum temperature	Maximum pressure
03	Glass-filled PEEK	230 °F (110 °C)	200 psig (1480 kpa[abs])

**Table 1: Maximum Temperature and Pressure (continued)**

Body material option	Wetted materials	Maximum temperature	Maximum pressure
07	Unfilled PEEK (meets 21CFR177.2415 and 3A standard 74-06)	266 °F (130 °C)	
08	Unfilled PEEK (meets USP Class VI standards)		
09	Unfilled Tefzel	230 °F (110 °C)	

## Dimensional drawing

**Figure 1: Rosemount 225 Dimensional Drawing**



- A. Male connector 316 stainless steel
- B. Cap 316 stainless steel
- C. Clamp tee and gasket (supplied by others)
- D. Molded housing

## Accessories

**Table 2: Accessory list**

Part number	Description
23550-00	Remote junction box without preamplifier
23294-00	Unshielded interconnecting cable for Rosemount 1054A, 1054B, and 2054C. Can also be used with Rosemount 1056, 56, 5081, and 1066-T, but not recommended. Prepped, specify length, per ft.
23294-05	Shielded interconnecting cable with additional shield wire for -03 option. For use with Rosemount 1056, 1066-T, 56, and 5081T. Prepped, specify length, per ft.
<b>Spare Part</b>	
Part number	Description
8950101	Pt-100 RTD assembly

## Engineering specifications

1. The sensor will measure electrolytic conductivity using the inductive or toroidal method.
2. The sensor will have a large bore to reduce fouling from fibrous materials in the process stream.
3. The sensor will be molded from glass-filled PEEK, unfilled PEEK, or unfilled Tefzel® and have a 2-inch tri-clamp fitting.
4. The unfilled PEEK sensor will be available in a version that meets 3A sanitary standard 74-06 and 21CFR177.2415.
5. The unfilled PEEK sensor will also be available in an option that is molded from USP Class VI material.
6. The glass-filled PEEK and unfilled Tefzel sensor will withstand 230 °F (110 °C) at 200 psig (1480 kPa abs).
7. The unfilled PEEK sensors will withstand 266 °F (130 °C) at 200 psig (1480 kPa abs).
8. The sensor will be Rosemount Model 225 or approved equal.



For more information: [Emerson.com/global](https://emerson.com/global)

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