

# Rosemount™ 404

## Contacting Conductivity Sensors



### Reliable conductivity measurements for your process

With the Rosemount 404 Contacting Conductivity Sensors, you will be able to accurately measure electrolytic conductivity in a broad range of applications from high purity water to clean cooling water. The Rosemount 404 contacting conductivity sensors are ideal for use in clean, non-corrosive liquid having conductivity less than 2,000  $\mu\text{S}/\text{cm}$  and where process conductivity and temperature changes quickly.

# Overview



## Minimize Start-up and Installation Time

- A factory-measured cell constant ensures out-of-the-box accuracy and no initial calibration requirements.
- Available in cell constants of 0.01 and 0.1/cm.

## A Robust Sensor Design

- The sensors have concentric titanium electrodes separated by a PEEK insulator.
- An EPDM O-ring seals the internal parts of the sensor from the process liquid.
- Meet process compatibility requirements with a choice of either a PVC or Stainless Steel body.
- Maximum operating temperature up to 100 °C.
- Maximum pressure rating up to 100 psig.

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## Ordering Information



The Rosemount 404 Contacting Conductivity sensor features an integrated flow cell design. The flow through sensor design has a small holdup volume allowing for rapid response to sudden changes in process conductivity and temperature. The sensor must be used in a sidestream sample. Rosemount 404 sensors are available with either a PVC or stainless steel body. The stainless steel version can be disassembled for cleaning, whereas the PVC version cannot be taken apart.

### Additional Information

Specifications: see [“Specifications” on page 4](#)

Dimensional drawings: see [“Dimensional Drawings” on page 5](#)

Accessories: see [“Accessories” on page 6](#)

Engineering Specifications: see [“Engineering Specifications” on page 7](#)

**Table 1. Rosemount 404 Contacting Conductivity Sensor ordering information**

Model	Sensor type
404	Contacting Conductivity Sensor
<b>Cell constant</b>	
11	0.01/cm
12	0.1/cm
<b>Flow cell type</b>	
16	PVC
17	Stainless Steel
<b>Temperature Compensation</b>	
_	Pt-1000 <sup>(1)</sup>
54	Pt-100
<b>Options</b>	
_	No selection
50	Extended Integral Cable Length (50 ft; 15 m)
<b>Typical Model Number: 404-12-17_-50</b>	

1. Recommended for use with Rosemount transmitters 1056, 56, 1057, 1066, and 5081.

## Specifications

**Table 2. Rosemount 404 Contacting Conductivity Sensor specifications**

<b>Wetted materials</b>	
Electrodes	Titanium
Insulator	Glass Filled PEEK
Body	Option -16: PVC Option -17: 303 Stainless Steel
O-ring	EPDM
Fittings	Option -16: Polyethylene Option -17: 316 Stainless Steel
<b>Temperature range</b>	
Option -16	32 to 140 °F (0 to 60 °C)
Option -17	32 to 212 °F (0 to 100 °C)
<b>Pressure</b>	
Option -16	100 psig (791 kPa abs) at 77 °F (25 °C); 20 psig (239 kPa abs) at 140 °F (60 °C)
Option -17	100 psig (791 kPa abs) maximum
<b>Process connection</b>	
Option -16	3/8 in. barbed tubing connector
Option -17	Compression fitting for 3/8 in. OD tubing. Fittings can be removed to leave ¼ in. FNPT ports.
<b>Cell constants</b>	
0.01 and 0.1/cm	
<b>Cable length</b>	
10 ft (3.1 m) standard; 50 ft (15.2 m) optional	

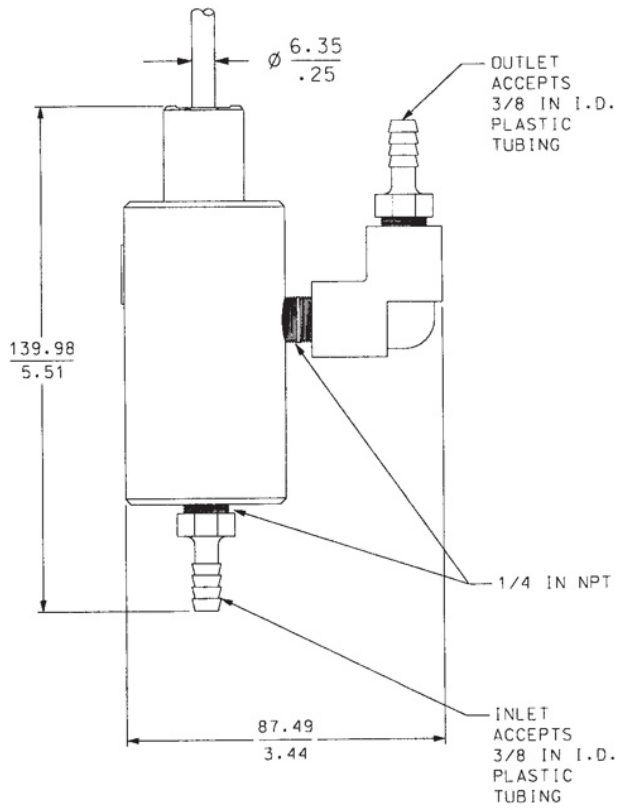
**Table 3. Rosemount 404 weights and shipping weights\***

<b>Model</b>	<b>With 10 ft. (3.1 m) cable</b>		<b>With 50 ft. (15.2 m) cable</b>	
	<b>Weight</b>	<b>Shipping Weight</b>	<b>Weight</b>	<b>Shipping Weight</b>
Rosemount 404-16	2 lb. (1.0 kg)	3 lb. (1.5 kg)	4 lb. (2.0 kg)	5 lb. (2.5 kg)
Rosemount 404-17	4 lb. (2.0 kg)	5 lb. (2.5 kg)	6 lb. (3.0 kg)	7 lb. (3.5 kg)

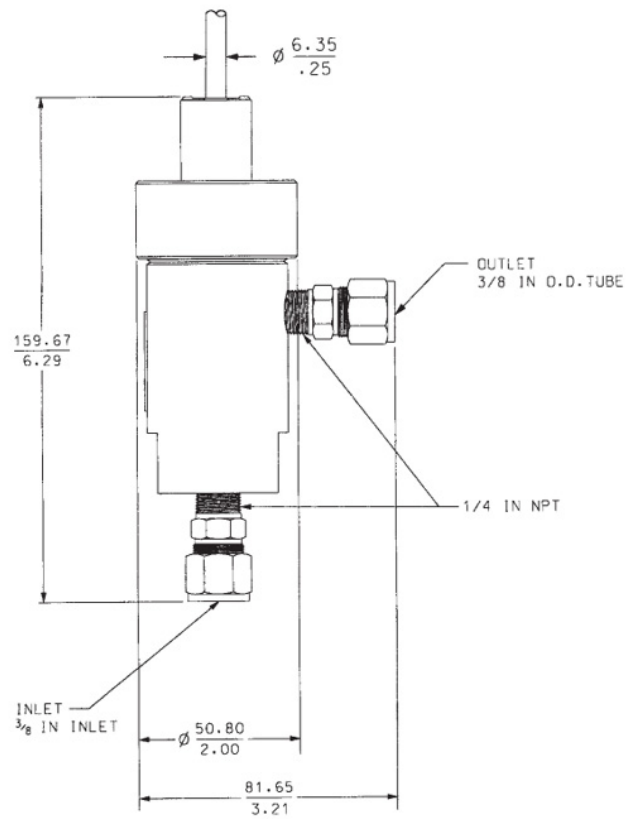
\* Rounded up to the nearest 1 lb or 0.5 kg.

# Dimensional Drawings

Figure 1. Rosemount 404 dimensional drawing



Option -16 PVC Flow Cell



Option -17 Stainless Steel Flow Cell

## Accessories

**Table 4. Rosemount 404 Contacting Conductivity Sensor accessories information**

Part number	Description
23550-00	Remote junction box without preamplifier
23747-00	Interconnect cable, prepped (must specify length)
9200275	Extension cable, unprepped (must specify length)
05010781899	Conductivity standard SS-6, 200 $\mu\text{S}/\text{cm}$ , 32 oz (0.95 L)
05010797875	Conductivity standard SS-6A, 200 $\mu\text{S}/\text{cm}$ , 1 gal (3.78 L)
05010782468	Conductivity standard SS-5, 100k0 $\mu\text{S}/\text{cm}$ , 32 oz (0.95 L)
05010783002	Conductivity standard SS-5A, 1000 $\mu\text{S}/\text{cm}$ , 1 gal (3.78 L)
05000705464	Conductivity standard SS-1, 1409 $\mu\text{S}/\text{cm}$ , 32 oz (0.95 L)
05000709672	Conductivity standard SS-1A, 1409 $\mu\text{S}/\text{cm}$ , 1 gal (3.78 L)
9210004	Conductivity standard, 2000 $\mu\text{S}/\text{cm}$ , 16 oz

## Engineering Specifications

### Cell constants 0.01, 0.1, and 1.0/cm

- The sensor shall be suitable for the determination of electrolytic conductivity in clean, noncorrosive sidestream samples where rapid response to changes in conductivity or temperature is needed.
- The sensor shall incorporate titanium electrodes and a PEEK insulator.
- The sensor shall have an integral platinum RTD for temperature measurement.
- The sensor shall be available with either a PVC or stainless steel body flow cell.
- The PVC body sensor shall have 3/8-in. barbed tubing connectors.
- The stainless steel body sensor shall have compression fittings for 3/8-in. OD tubing. The compression fittings shall be removable to leave 1/4-in. FNPT ports.
- The maximum temperature for the PVC body sensor shall be 140 °F (60 °C) at 20 psig (239 kPa abs).
- The maximum temperature for the stainless steel body sensor shall be 212 °F (100 °C) at 100 psig (791 kPa abs).
- The sensor shall be Rosemount 404 or approved equal.

### Global Headquarters

#### Emerson Automation Solutions

8200 Market Blvd  
Chanhassen, MN 55317  
+1 800 999 9307 or +1 952 906 8888  
+1 952 949 7001  
Liquid.CSC@Emerson.com

### North America Regional Office

#### Emerson Automation Solutions

8200 Market Blvd.  
Chanhassen, MN 55317, USA  
+1 800 999 9307 or +1 952 906 8888  
+1 952 949 7001  
RMT-NA.RCCRFQ@Emerson.com

### Latin America Regional Office

#### Emerson Automation Solutions

1300 Concord Terrace, Suite 400  
Sunrise, FL 33323, USA  
+1 954 846 5030  
+1 954 846 5121  
RFQ.RMD-RCC@Emerson.com

### Europe Regional Office

#### Emerson Automation Solutions GmbH

Neuhofstrasse 19a P.O. Box 1046  
CH 6340 Baar  
Switzerland  
+41 (0) 41 768 6111  
+41 (0) 41 768 6300  
RFQ.RMD-RCC@Emerson.com

### Asia Pacific Regional Office

#### Emerson Automation Solutions Asia Pacific Pte Ltd


1 Pandan Crescent  
Singapore 128461  
+65 6777 8211  
+65 6777 0947  
Enquiries@AP.Emerson.com

### Middle East and Africa Regional Office

#### Emerson Automation Solutions


Emerson FZE P.O. Box 17033,  
Jebel Ali Free Zone - South 2  
Dubai, United Arab Emirates  
+971 4 8118100  
+971 4 8865465  
RFQ.RMTMEA@Emerson.com


 [Analyticexpert.com](http://Analyticexpert.com)

 [Linkedin.com/company/Emerson-Automation-Solutions](https://www.linkedin.com/company/Emerson-Automation-Solutions)

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