

# Rosemount™ 499AOZ

## Dissolved Ozone Sensor



### **A trusted sensor for reliably measuring dissolved ozone**

The Rosemount 499AOZ dissolved ozone sensor is an easy-to-use amperometric sensor with a rugged construction. This sensor is ideal for measuring dissolved ozone concentrations in municipal water filtration, bottling, and food processing plants.

# Overview



### Ease of maintenance

- Extend sensor life with simple membrane and electrolyte replacement; no special tools needed.
- Automatic temperature correction with integral Pt-100 resistance temperature device (RTD).
- Variopol (VP6) cable connector option eliminates cable twisting and allows for quick sensor replacement.

### High performance design

- Measures dissolved ozone concentrations between 0 and 3 ppm.
- Operates in process temperatures up to 122 °F (50 °C) and process pressures up to 65 psig.
- Polysulfone sensor body with forward and rear facing 1-in. male national pipe thread (MNPT) process connections.
- Internal flexible bladder allows automatic pressure equalization for minimal influence from pressure changes on sensor response.

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## Ordering information



The Rosemount 499AOZ Dissolved Ozone Sensor is ideal for measuring dissolved ozone concentrations in a variety of water treatment and food processing applications. The sensor is available with either an integral cable or Variopol (VP6) quick disconnect fitting. Three replacement membrane assemblies, three O-rings, and a 4 oz. (125 mL) bottle of electrolyte solution are provided with each sensor.

**Table 1: Rosemount 499AOZ Ordering Information**

Option	Description
499AOZ	Dissolved Ozone Sensor
<b>Transmitter compatibility</b>	
54	Rosemount 1056, 1066-DO, 56, and 5081-A compatible
<b>Cable options</b>	
–	Integral 25-ft. (7.6 m) optimum EMI/RFI protected cable
VP	Sensor with VP6 fittings (requires VP interconnecting cable)
02	Integral 15-ft. (4.6 m) optimum EMI/RFI protected cable
03	Integral 33-ft. (10 m) optimum EMI/RFI protected cable
50	Integral 50-ft. (15 m) optimum EMI/RFI protected cable
06	Integral 100-ft. (30 m) optimum EMI/RFI protected cable
<b>Special</b>	
–	No selection
99	Special (consult factory)
<b>Calibration and conformance certificates - optional level</b>	
CC	Certificate of Calibration (no test data given)

**Table 1: Rosemount 499AOZ Ordering Information (continued)**

Option	Description
LC	Loop Calibration Certificate (sensor and transmitter calibrated together, with test data)
EC	Electronic Calibration Certificate (sensor calibrated against factory instrument, with test data)

## Specifications

**Table 2: Sensor Specifications**

Physical characteristics	Specifications
Range	0 to 3 ppm (mg/L) as O <sub>3</sub>
Pressure	0 to 65 psig (101 to 549 kPa abs)
Temperature (operating)	32 to 122 °F (0 to 50 °C)
Process connection	1-in. male national pipe thread (MNPT)
Wetted parts	Polysulfone, Viton®, Teflon®, and silicone
Accuracy	Accuracy depends on the accuracy of the chemical test used to calibrate the sensor.
Linearity	±5% of reading or ±3 ppb (whichever is greater) at 77 °F (25 °C)
Repeatability	±2% of reading at constant temperature
Response time	30 sec to 90% of final reading at 25 °C (77 °F)
Membrane permeability connection	Defined between 32 and 122 °F (0 and 50 °C)
Electrolyte volume	0.8 oz. (25 mL), approximately
Electrolyte life	3 months (approximately); for best results, replace electrolyte monthly.
Cable length	See <a href="#">Table 1</a> for standard cable lengths.
Cable length (maximum)	300 ft. (91 m), up to 100 ft. (30.5 m) is standard.
Sample flow	Flow through: 1 to 5 gpm (3.8 to 19 L/min) Open channel: 1 ft./sec (0.3 m/sec) Low flow cell: 2 to 5 gph (7.6 to 19 L/hr)
Weight/shipping weight <sup>(1)</sup>	1 lb./3 lb. (0.5 kg/1.5 kg)

(1) Weights and shipping weights are rounded up to the nearest whole pound or 0.5 kg.

**Table 3: Other Specifications**

Type	PN	Wetted materials	Process connection	Maximum temperature	Maximum pressure
2-in. tee	915240-03	PVC and Buna N; body is schedule 80 PVC	¾-in. NFPT	120 °F (49 °C)	60 psig (515 kPa abs)
	915240-04		1-in. NFPT		
	915240-05		1½-in. NFPT		

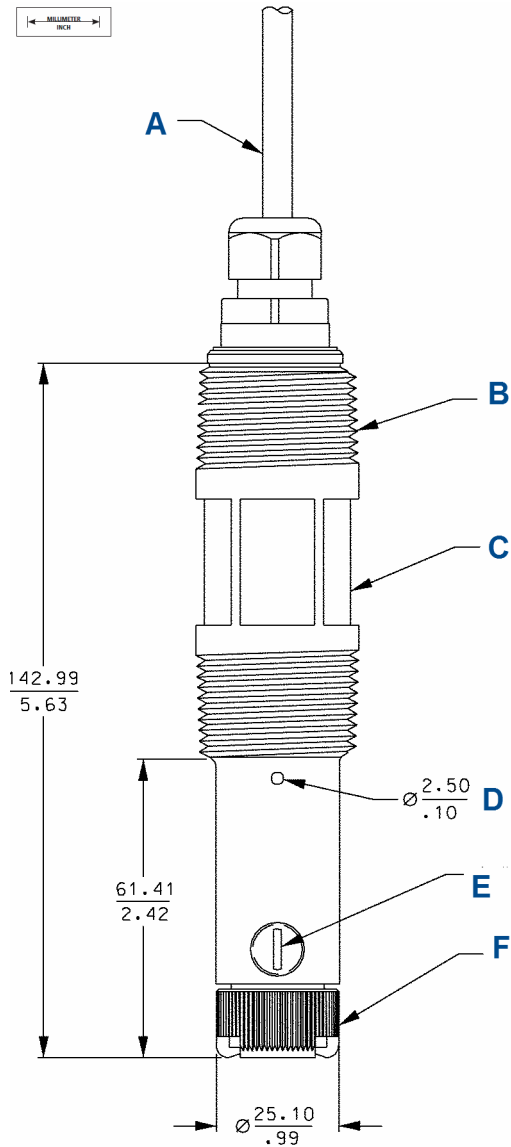
**Table 3: Other Specifications (continued)**

Type	PN	Wetted materials	Process connection	Maximum temperature	Maximum pressure
Low flow cell <sup>(1)</sup>	24091-00	Polycarbonate/ polyester, 316 stainless steel, and silicone	Compression fitting for ¼-in. O.D. tubing or ¼-in. female national pipe thread (FNPT)	158 °F (70 °C)	90 psig (722 kPa abs)
Valved rotameter	9390004 for use with low flow cell	Acrylic, 316 stainless steel, and Viton	¼-in. FNPT (316 stainless steel)	150 °F (65 °C)	100 psig (858 kPa abs)

(1) Temperature and pressure specifications for the low flow cell exceed the temperature and pressure specifications for the sensor.

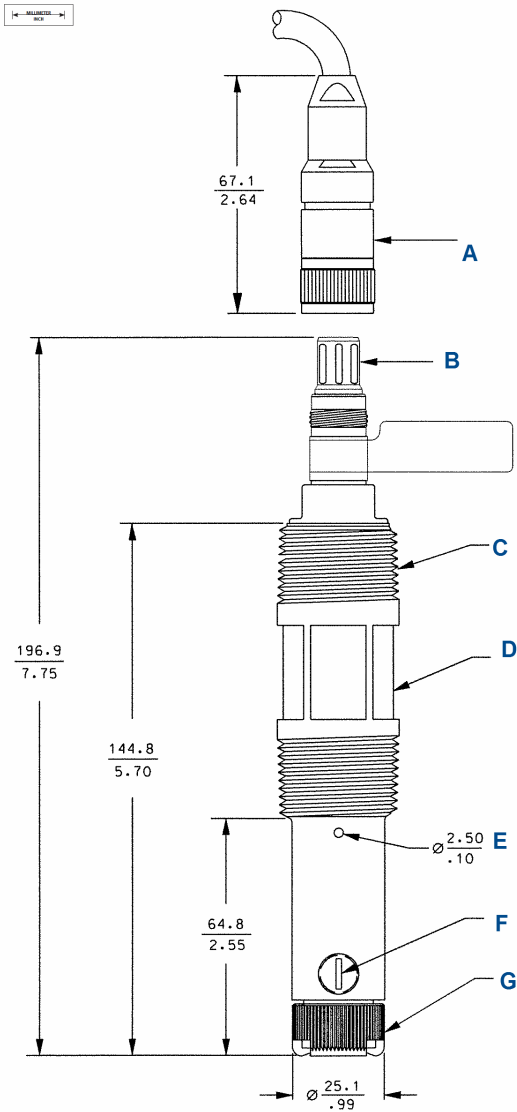
# Dimensional drawings

Figure 1: Standard Sensor with Integral Cable



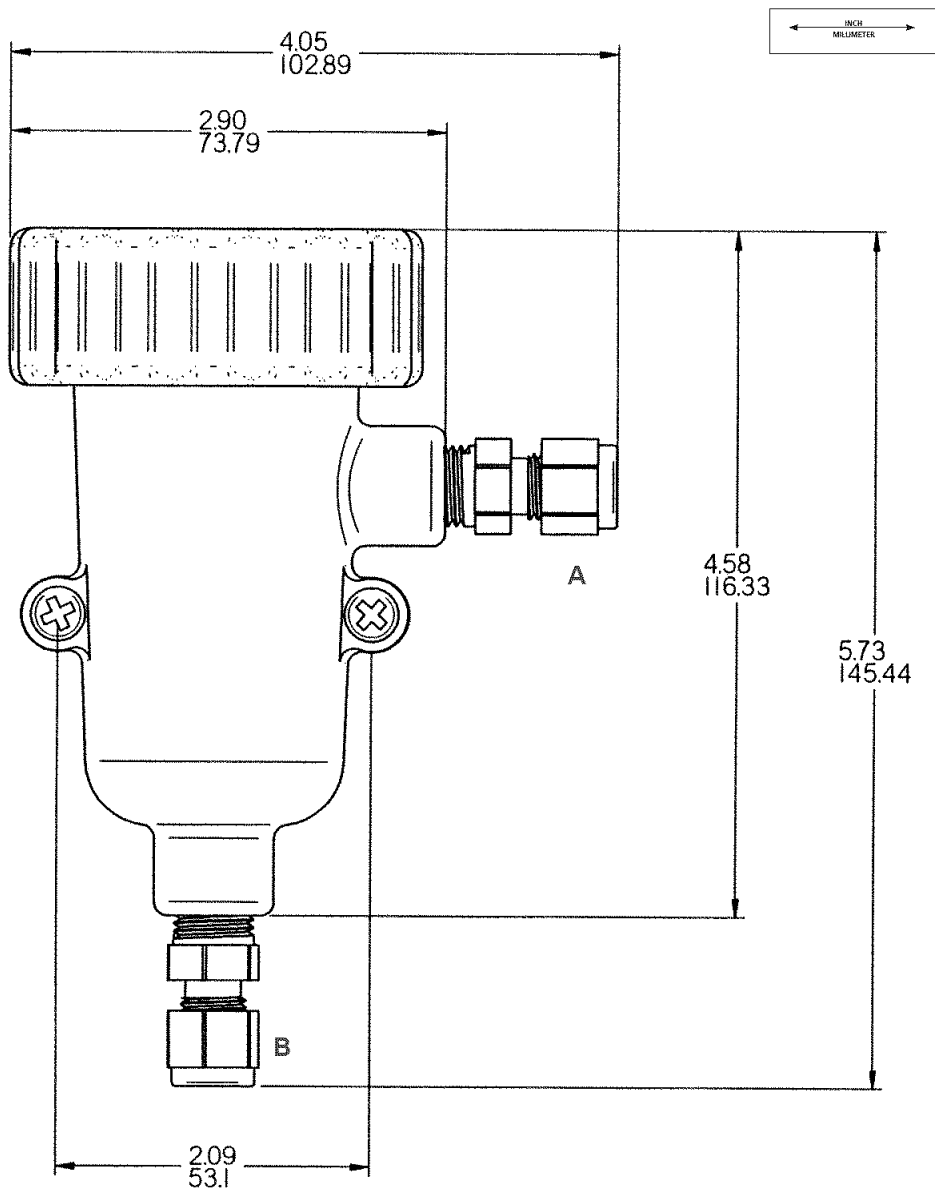
- A. Sensor cable
- B. 1-in. national pipe thread (NPT), two places
- C. 1-3/16-in.-wrench opening
- D. Pressure equalizing port, two places
- E. 1/8-in. NPT, electrolyte fill plug
- F. Membrane retainer

**Figure 2: Sensor with Variopol Cable Connector**



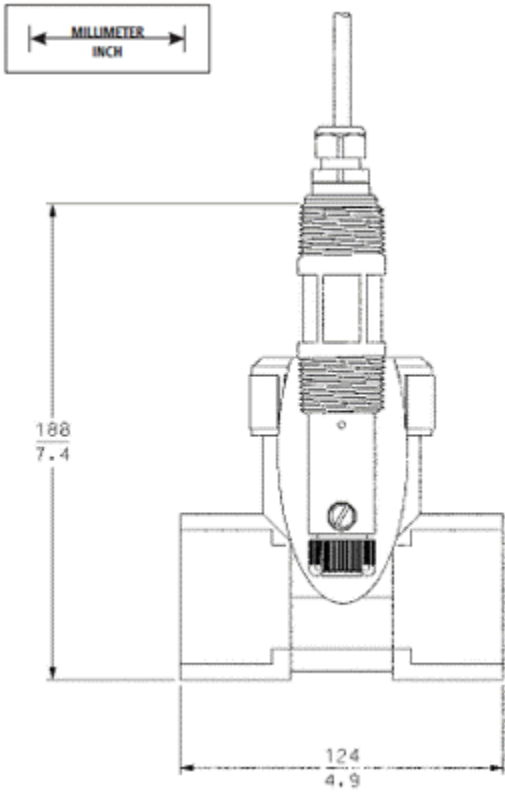
- A. Variopol receptacle (female connector)
- B. Variopol plug (male connector)
- C. 1-in. NPT, two places
- D. 1-3/16-in. wrench opening
- E. Pressure equalizing port, two places
- F. 1/8-in. NPT electrolyte fill plug
- G. Membrane retainer

Figure 3: Low Flow Cell (PN 24091-00)



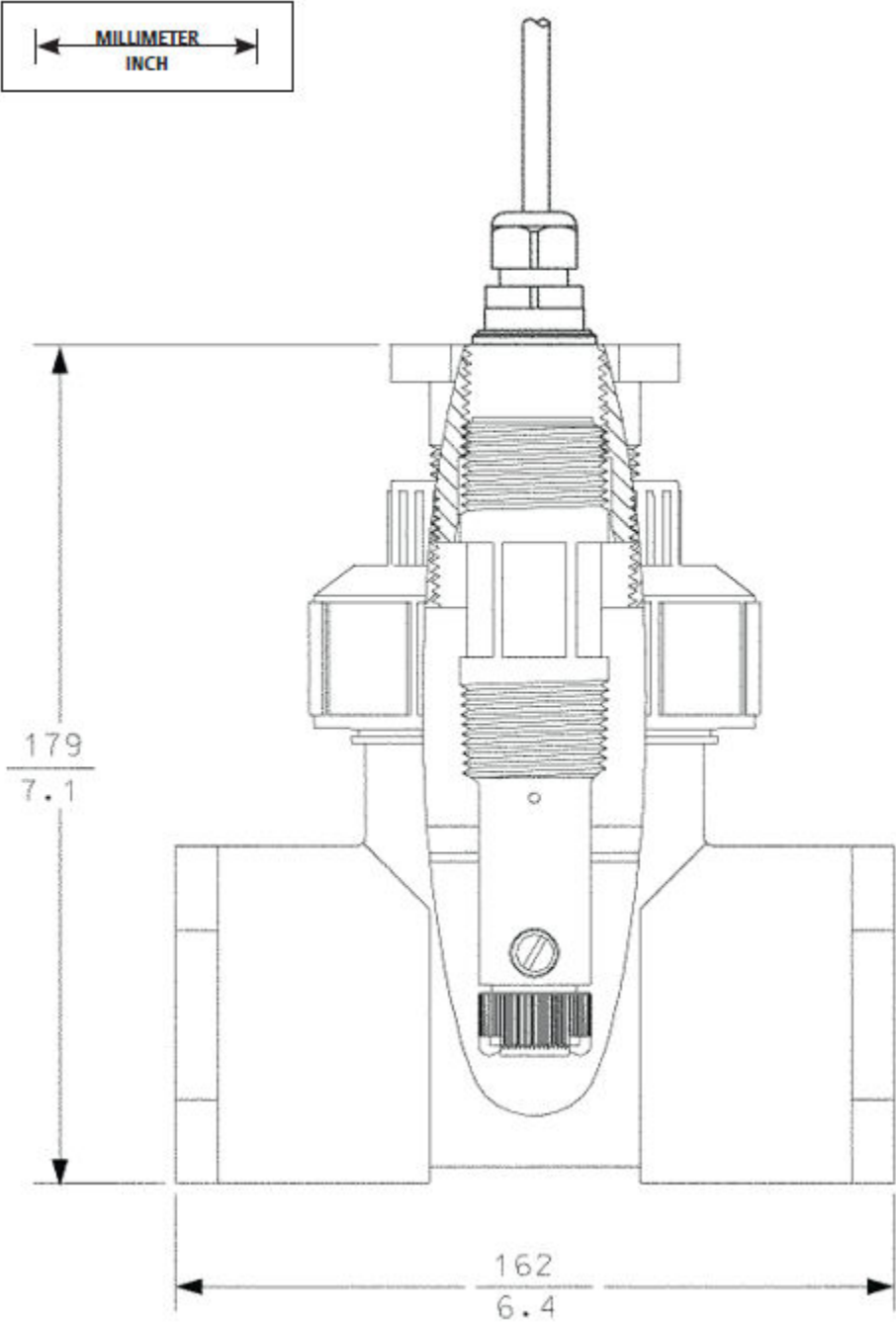
- A. Outlet
- B. Inlet

Figure 4: Flow-Through Tee (1½-in.) (PN 23567-00)



Allow at least 3.5 in. (90 mm) head room for sensor removal.

Figure 5: Flow-Through Tee (2 in.) (PN 915240-03, -04, -05)



Allow at least 6 in. (150 mm) head room for sensor removal.

## Accessories

**Table 4: Connector Cable (Required for All First Time Installations)**

Part number	Description
23747-02	Cable, VP 6, conductivity/amperometric, 10-ft. (3.0 m)
23747-03	Cable, VP 6, conductivity/amperometric, 50-ft. (15.2 m)
23747-04	Cable, VP 6, conductivity/amperometric, 4-ft. (1.2 m)
23747-05	Cable, VP 6, conductivity/amperometric, 2.25-ft. (0.7 m)
23747-06	Cable, VP 6, conductivity/amperometric, 2.5-ft. (0.8 m)
23747-07	Cable, VP 6, conductivity/amperometric, 15-ft. (4.6 m)
23747-08	Cable, VP 6, conductivity/amperometric, 20-ft. (6.1 m)
23747-09	Cable, VP 6, conductivity/amperometric, 25-ft. (7.6 m)
23747-10	Cable, VP 6, conductivity/amperometric, 30-ft. (9.1 m)
23747-11	Cable, VP 6, conductivity/amperometric, 100-ft. (30.5 m)

**Table 5: Other Accessories**

Part number	Description
23747-00	Interconnect cable, prepped, specify length, per foot
23567-00	Tee, flow-through, 1½-in.
914240-03	Tee, flow-through, 2-in. PVC, ¾-in. national pipe thread (NPT)
914240-04	Tee, flow-through, 2-in. PVC, 1-in. NPT
915240-05	Tee, flow-through, 2-in. PVC, 1½-in. NPT
24091-00	Cell, low flow, ¼-in. inlet and outlet
33211-00	Retrofit adapter PN 91524-xx tees
33521-01	Smooth membrane retainer (for fouling and dirty applications)
9390004	Rotameter: 0.5 - 5.0 gph
9200266-LQD	Cable, 5 conductors 2/22 GA 3/24 GA OD JKT PVC
9200275	Extension cable, shielded 9-cond, unprepped, specify length, per foot

**Table 6: Spare Parts**

Part number	Description
23501-11	Membrane assembly with O-ring, ozone, quantity-1
23502-11	Membrane assembly with O-ring, ozone, quantity-3
33521-02	Membrane retainer
33523-02	Fill plug
9210299	Amperometric sensor fill solution #3, 4 oz. (125 mL)
9550094	O-ring, Viton® 2-014

#### GLOBAL HEADQUARTERS

Emerson Automation Solutions  
6021 Innovation Blvd  
Shakopee, MN 55379, USA

📞 +1 800 999 9307 or +1 952 906 8888

📠 F +1 952 949 7001

✉️ liquid.csc@emerson.com

#### NORTH AMERICA

Emerson Automation Solutions  
8200 Market Blvd  
Chanhassen, MN 55317

📞 Toll Free +1 800 999 9307

📠 F +1 952 949 7001

✉️ liquid.csc@emerson.com

#### EUROPE

Emerson Automation Solutions  
Neuhofstrasse 19a P.O. Box 1046  
CH-6340 Baar  
Switzerland

📞 T + 41 (0) 41 768 6111

📠 F + 41 (0) 41 768 6300

✉️ liquid.csc@emerson.com

#### MIDDLE EAST AND AFRICA

Emerson Automation Solutions  
Emerson FZE  
Jebel Ali Free Zone  
Dubai, United Arab Emirates, P.O. Box 17033

📞 T +971 4 811 8100

📠 F +971 4 886 5465

✉️ liquid.csc@emerson.com

#### ASIA-PACIFIC


Emerson Automation Solutions  
1 Pandan Crescent  
Singapore 128461  
Singapore

📞 T +65 777 8211

📠 F +65 777 0947

✉️ liquid.csc@emerson.com

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

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