

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
Transmitter compatibility	
54	Rosemount 1056, 1066-DO, 56, and 5081-A compatible
Cable options	
–	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
Special	
–	No selection
99	Special (consult factory)
Calibration and conformance certificates - optional level	
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 ₃
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 Table 1 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 ⁽¹⁾	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		

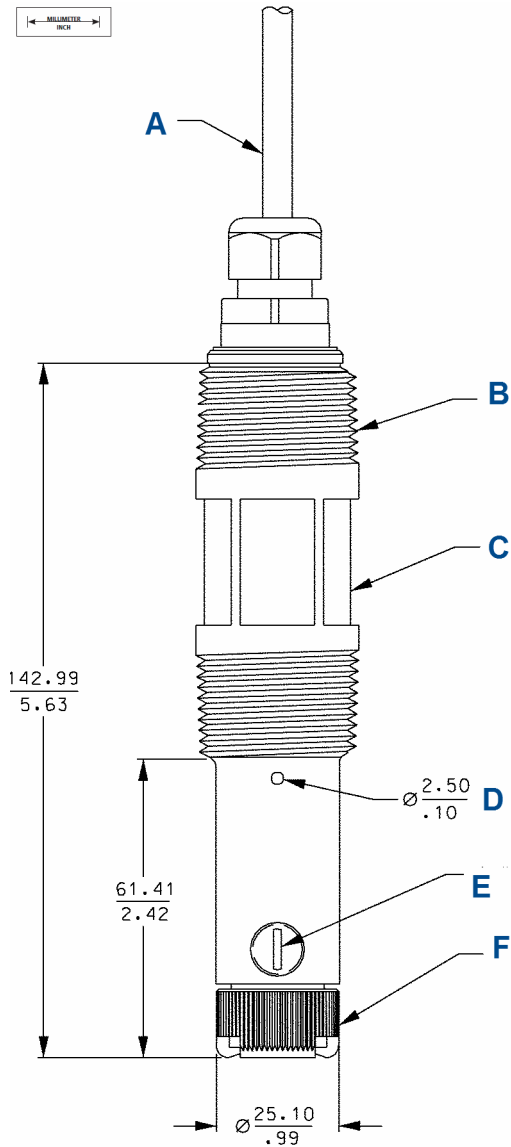
Table 3: Other Specifications (continued)

Type	PN	Wetted materials	Process connection	Maximum temperature	Maximum pressure
Low flow cell ⁽¹⁾	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.

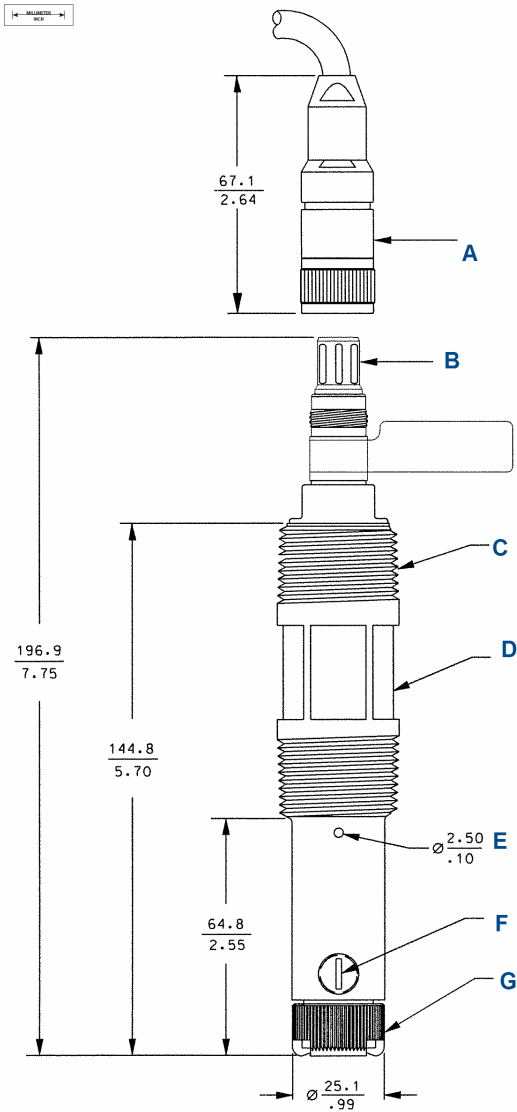
Dimensional drawings

Figure 1: Standard Sensor with Integral Cable



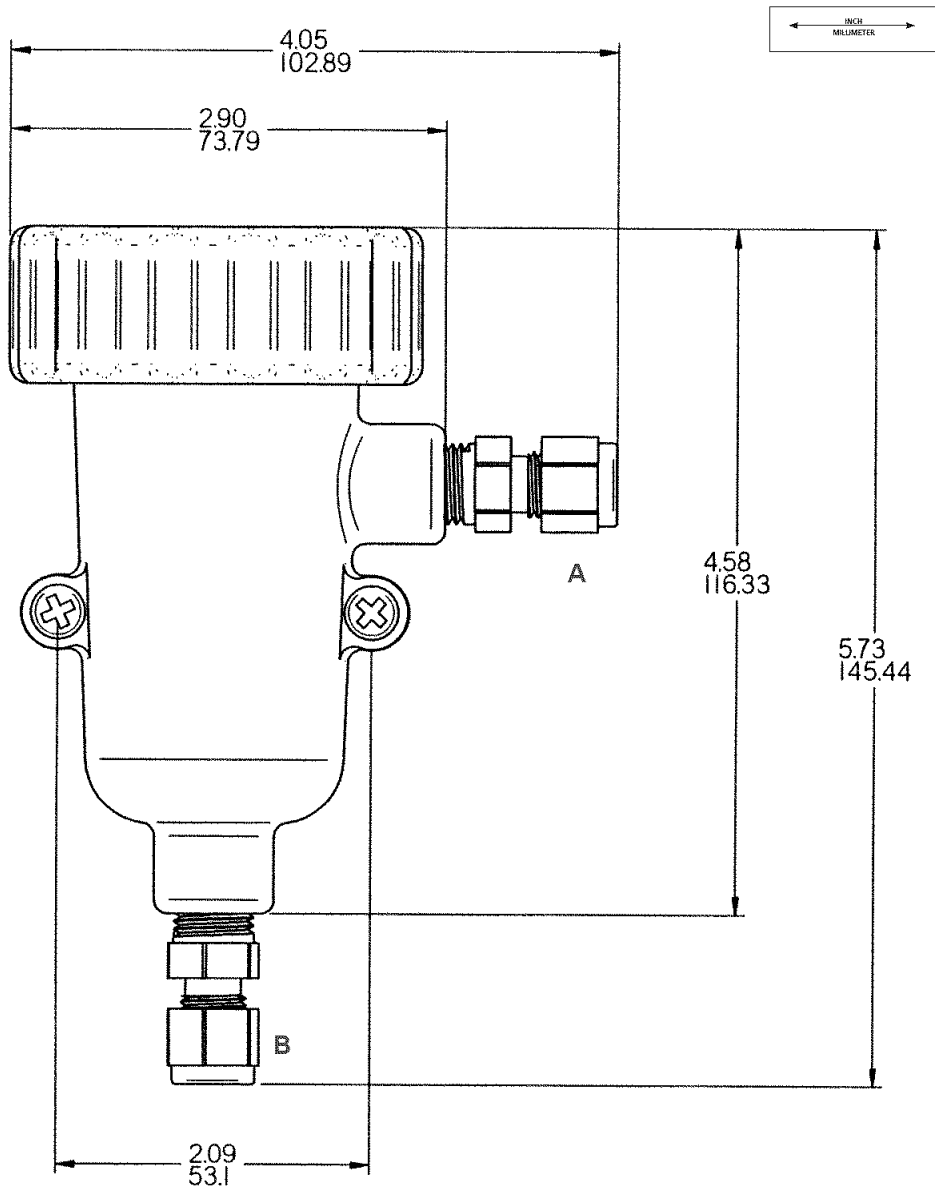
- A. Sensor cable
- B. 1-in. national pipe thread (NPT), two places
- C. 1-3/16-in.-wrench opening
- D. Pressure equalizing port, two places
- E. 1/8-in. NPT, electrolyte fill plug
- F. Membrane retainer

Figure 2: Sensor with Variopol Cable Connector



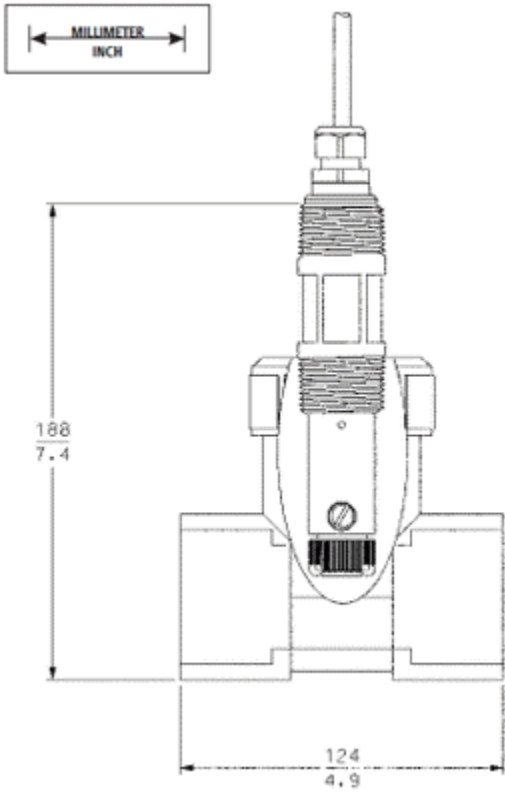
- A. Variopol receptacle (female connector)
- B. Variopol plug (male connector)
- C. 1-in. NPT, two places
- D. 1-3/16-in. wrench opening
- E. Pressure equalizing port, two places
- F. 1/8-in. NPT electrolyte fill plug
- G. Membrane retainer

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



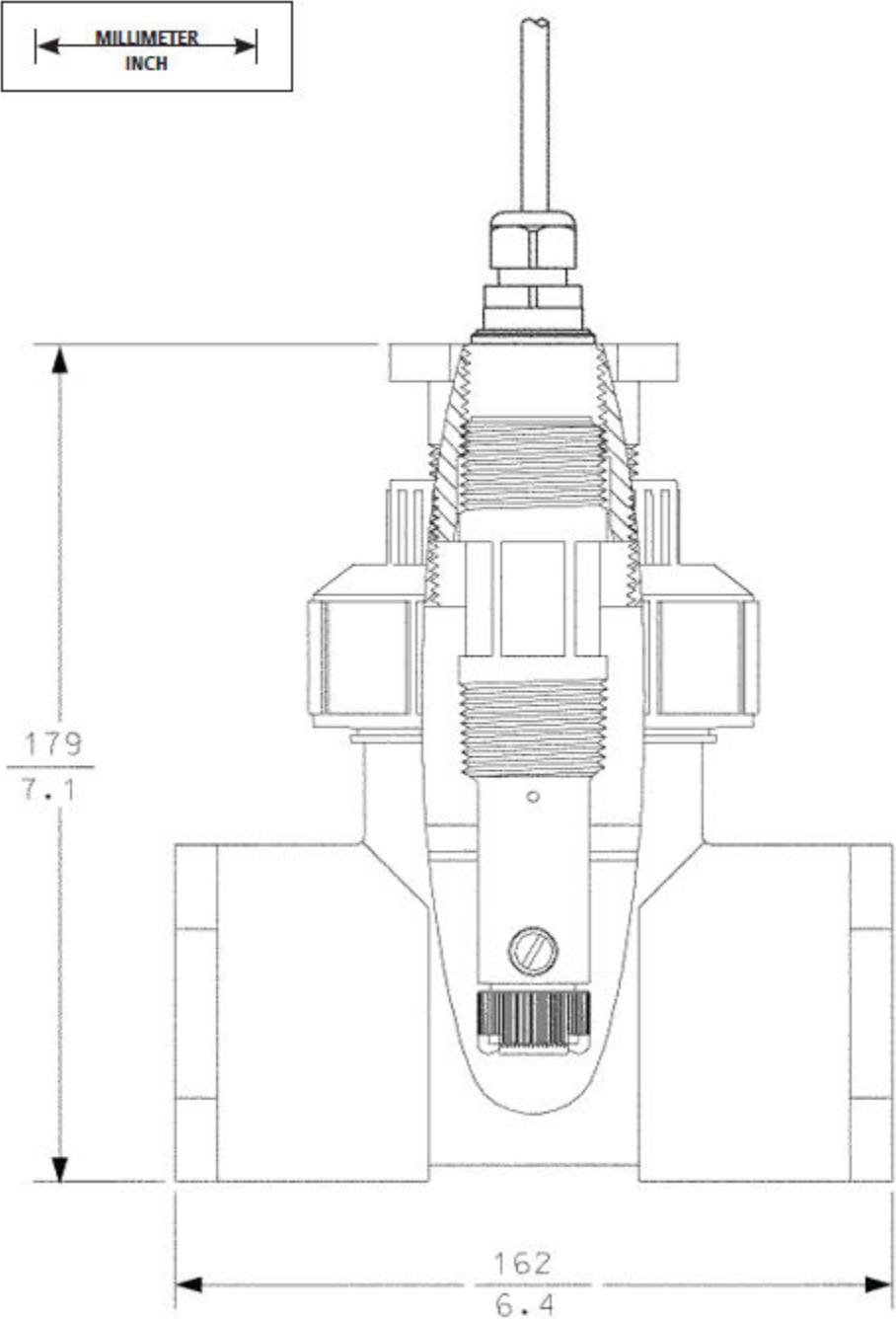
- A. Outlet
- B. Inlet

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

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