

Ozone Sensors



THORNTON

Leading Pure Water Analytics

3X8-210 Dissolved Ozone Sensors

High reliability and accuracy

Multi-channel/parameter instruments

Simple, infrequent maintenance



Accurate Measurements
for Reliable Sanitization

METTLER TOLEDO

Reliable, accurate ozone measurement

Thornton's highly reliable dissolved ozone measurement capability uses a proven sensor design with rapid and accurate response to ozone concentrations. At the low end, its excellent sensitivity gives positive detection of zero ozone after destruction by UV light.

The polarographic probe uses a gas-permeable membrane through which ozone passes to produce an electrochemical reaction and current flow in direct proportion. The membrane is reinforced silicone for exceptional durability. Behind the membrane is the platinum cathode where ozone reacts to produce the measurement signal. The electrochemical reaction is completed at the silver anode. Full temperature compensation accounts for effects of both membrane permeability and solubility of ozone in water.

The probe design includes a membrane cartridge which allows exceptionally easy replacement of electrolyte and membrane when necessary. The probe uses a VP electrical connector and an o-ring seal to the flow-through housing for easy installation and removal.

Features

- Rapid, accurate response
- Positive zero detection
- Low maintenance with drop-in modular membrane
- Additional parameters available with either Thornton 770MAX or 2000 Instruments

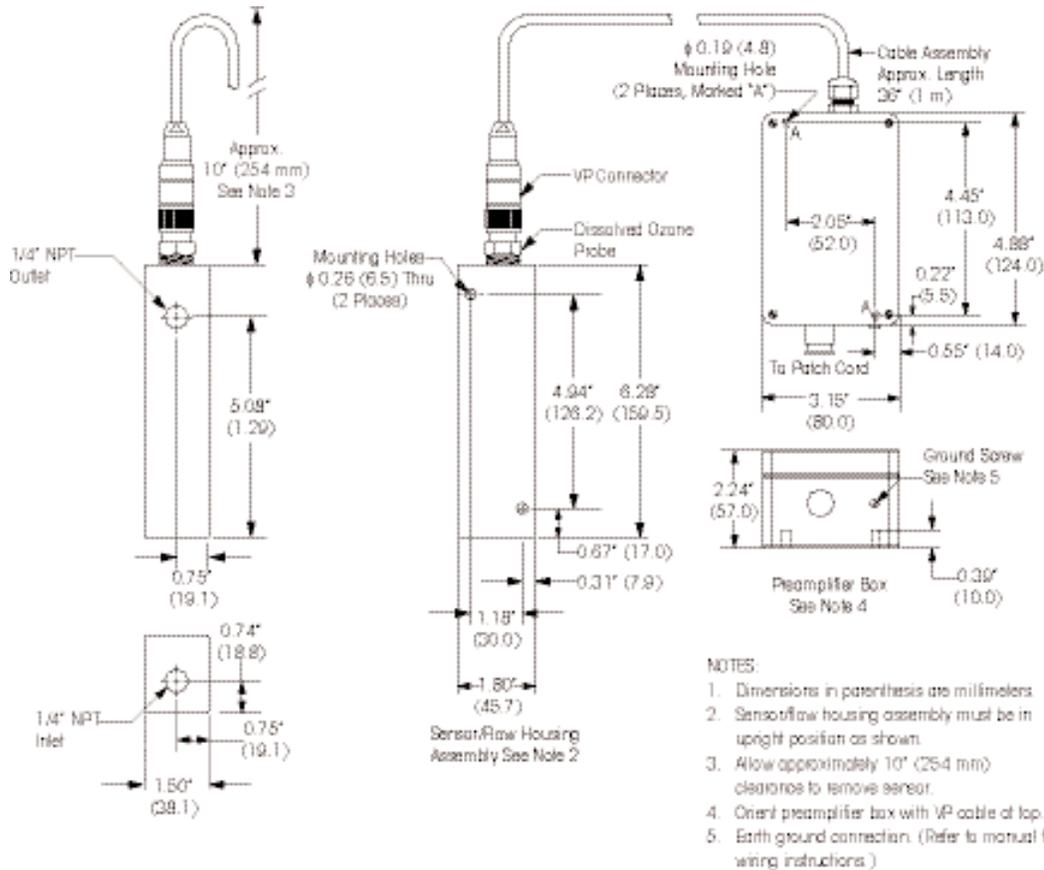
Applications

Pharmaceutical water systems can assure complete sanitization by controlling ozonation based on an ozone measurement downstream of the storage tank. To guarantee removal of all ozone downstream of UV destruction (and satisfy the 'no added substances' requirement), a second ozone measurement can confirm a zero level. When the entire distribution system is ozonated with the UV lights off, a third measurement at the return of the distribution piping can show when an adequate ozone level has been achieved throughout the loop. Thornton multiparameter instrumentation can monitor multiple points for ozone plus conductivity and TOC, with the same instrument.

Semiconductor ultrapure water ozone sanitization can be controlled by monitoring the ozone concentration downstream of the ozonator and UPW storage tank. To be sure all ozone has been decomposed after UV lights, a second ozone measurement can confirm a zero level. Thornton multiparameter capability can provide solid ppb-level ozone measurements plus simultaneous resistivity and TOC measurements in the same instrument.

Bottled Water Systems monitor ozonation levels to be sure of proper sanitization of the water, which in turn sanitizes the bottle and seal. Continuous measurement and control to proper ozone levels is a key quality practice that promotes consistent good taste and long shelf life. Thornton equipment can provide this measurement continuously at minimal cost.

Beverage Systems frequently use ozonated water in place of chemicals for the clean-in-place (CIP) operations when changing between flavors. Instead of using acids, caustic or chlorine, ozone can provide the cleaning and disinfection without risk of objectionable residuals or byproducts. Ozone monitoring and control are essential to enable repeatable CIP operations. Thornton instrumentation meets these requirements cost effectively.



Specifications

Sample Flowrate:	100 - 500 mL/min
Sample Temperature:	5-50 °C (41-122 °F) for measurement, probe can withstand 100 °C (212 °F)
Sample Pressure:	Normal operation, atmospheric; can withstand 3 bar (45 psig)
Sample Connections:	1/4" NPT
Wetted Materials:	Polycarbonate flow housing, 316 stainless steel probe, silicone rubber membrane
Cable Lengths:	Probe to preamp, 3 ft (1 m); preamp to instrument, 5 to 200 ft (1.6 to 61 m) with the 2000 instrument, 5 to 300 ft (1.6 to 91 m) with the 770MAX; patch cord ordered separately
Sensor Compatibility:	Ozone and 4-electrode conductivity sensors on the same instrument must be in processes that are electrically isolated from each other
Weight:	1.5 kg (3 lb) with flow chamber
Response Time:	60 seconds for 90% response
Operating Range:	0-5,000 ppb (µg/L); 0-5.00 ppm (mg/L)
System Accuracy:	± 2% reading or 3 ppb, whichever is greater; ± 0.5 °C
Included Parts:	52 201 178 probe with spare electrolyte, 3X8-201 preamp and 17743 flow housing
Instrument Firmware:	770MAX, 5.0 or higher; 2000, 4.0 or higher

Description	Part No.
Dissolved Ozone Sensor for 770MAX	358-210
Dissolved Ozone Sensor for 2000	368-210
Maintenance Kit (4 membranes & electrolyte)	52 201 179

770MAX CE Patch Cords

Ozone sensors used with 770MAX in Europe must use this alternate series of patch cord to meet CE electromagnetic compatibility requirements. All other installations may use standard patch cords.

Patch Cord Length ft (m)	Part No.	Patch Cord Length ft (m)	Part No.
5 (1.6)	1005-70	100 (30.5)	1100-70
10 (3)	1010-70	150 (45.7)	1115-70
15 (4.5)	1015-70	200 (61)	1120-70
25 (7.6)	1025-70	300 (91)	1130-70
50 (15.2)	1050-70		

770MAX Multiparameter Analyzer/Transmitter

Measures from 4 sensors in any combination of:

- Conductivity/resistivity/temperature
- pH
- ORP
- Dissolved oxygen
- Ozone
- TOC
- Flow
- Pressure
- Tank Level
- Plus 2 additional flow sensors



2000 Two-Channel Transmitter

Measures from 2 sensors selected from:

- Conductivity/resistivity/temperature
- pH
- ORP
- Dissolved oxygen
- Ozone



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Visit for more information

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