

**Thermo Scientific AquaSensors  
DataStick measurement system  
for universal plug & play**

## Thermo Scientific AquaSensors DataStick

### Dissolved Ozone Measurement System



#### Markets/Applications

- Drinking water treatment
- Wastewater treatment
- Food and beverage sanitization
- Bottled water production
- Packaged water systems
- Pulp & paper bleaching
- Pharmaceutical
- Cooling water
- Semiconductor wash water

#### AquaSensors Ozone DataStick™

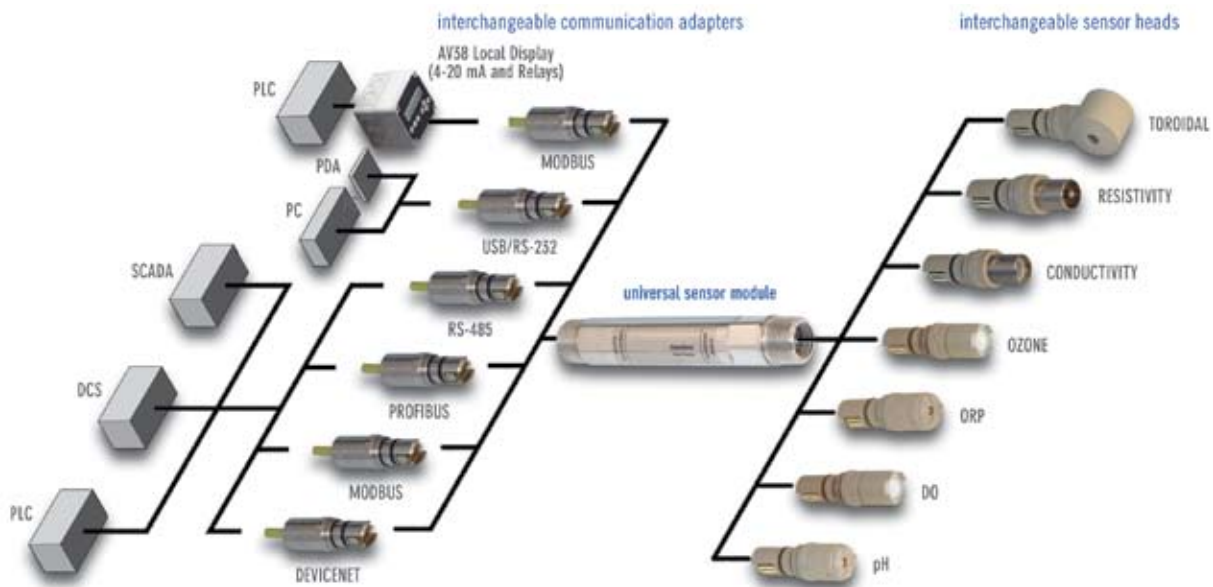
- Clark cell technology
- Pre-calibrated (no field calibration required)
- Plug & play sensor heads
- Rugged, foul resistant membrane
- Electrode protection options
- Simple membrane cap replacement
- Direct data reporting (24-bit)
- Plug & play industrial communications adapters

Connect this ozone sensor directly to a PLC (Programmable Logic Controller) for seamless integration with industrial control systems. Use any computer to display data, calibrate and customize the measurement without an intermediate analyzer electronics box. Sensor heads are pre-calibrated and can be replaced or exchanged with any other type of sensor without taking the system down. Save space, time and money.

Engineering Specifications

1. The ozone sensor shall use three-electrode polarographic Clark Cell technology consisting of a silver reference electrode, a silver anode and a gold cathode.
2. The sensor shall have hex-shaped wrench flats to facilitate mounting, and shall be constructed of a material with exceptional chemical resistance and mechanical strength. This material shall enable the sensor to be installed in metal fittings without leakage usually caused by heating and cooling cycles when dissimilar materials are threaded together.
3. The sensor shall have interchangeable, pre-calibrated plug-in sensor heads and communications adapters that can be installed without powering down the system.
4. The sensor shall have 1 inch NPT threads on both ends to mount into a standard 1 inch pipe tee, a 1.5 inch union mounting, or low flow chamber assembly.
5. The built-in electronics of the sensor shall be completely encapsulated and O-ring sealed for protection from moisture and humidity.
6. The sensor shall have a built-in pre-amplifier, universal signal conditioning electronics, universal engineering units conversion, and interactive communications with a host computer or display interface using one of several protocols including Modbus® RTU, DeviceNet, Profibus, USB, CANopen or Ethernet.
7. The sensor shall have an integral temperature sensor to measure temperature independently.
8. Replaceable membranes caps shall have a pre-installed 50 micron thick gas permeable membrane.
9. The sensor shall be Thermo Scientific AquaSensors Dissolved Ozone DataStick.

Thermo Scientific DataStick Analytical System



Key Components

DataStick

Provides universal conversion of sensor signals and interactive communications for measurement, calibration, configuration and diagnostics.



Ozone Sensor Head

Pre-calibrated for ozone and temperature. Can be plugged into any DataStick to yield accurate 24-bit data.



Communications Adapter

Plugs into the DataStick to provide power and direct interactive communications with control systems.

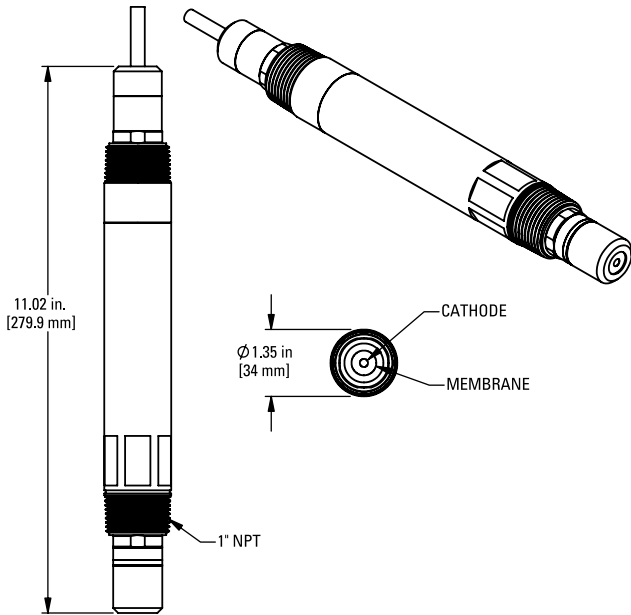


AV38 Local Display/Controller

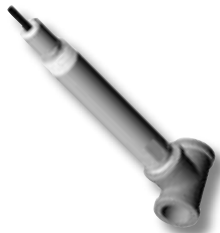
2 line display and 7 key navigation. Data reporting with up to 2 current outputs. 2 Form C relays. Digital communications.



Thermo Scientific AquaSensors Ozone DataStick Data Sheet



Provides universal conversion of sensor signals and interactive communications for measurement, calibration, configuration and diagnostics. Mounting adapters, junction boxes and recharge kits are available.



1 Inch Tee Mounting



1.5 Inch Union Mounting



Low Flow Chamber



Sanitary Mount

Specifications

<b>Measurement System Performance<sup>†</sup></b>	<b>Range:</b> 0 to 10 ppm <b>Resolution:</b> 0.01 ppm <b>Accuracy:</b> 2% of reading <b>Step Response Time:</b> 90% in < 90 seconds
<b>Operational Environment</b>	<b>Temperature Range:</b> -5 °C to 50 °C <b>Maximum Pressure:</b> 65 psig @ 50 °C <b>Maximum Flow Rate:</b> 10 ft/second
<b>Power Requirements<sup>‡</sup></b>	<b>Voltage Range:</b> 10 to 30 VDC <b>Maximum Power:</b> 200 mW <b>Typical Power:</b> 120 mW
<b>Construction</b>	<b>Process Electrodes:</b> Gold cathode, silver anode, silver reference (3 electrode polarographic clark cell) <b>Guard:</b> Platinum <b>Membrane:</b> PFA Teflon® <b>O-rings:</b> Viton® (other materials available) <b>Sensor Head Material:</b> PEEK <b>DataStick Material:</b> 316 stainless steel, PEEK or CPVC <b>Weight:</b> 1.2 lbs (PEEK or CPVC) 2.6 lbs (316 stainless steel)
<b>Units of Measure</b>	<b>Measurement Units:</b> ppm <b>Temperature Units:</b> °C, °F
<b>Calibration<sup>††</sup></b>	<b>Sample:</b> 1 point <b>Zero:</b> 1 point <b>Temperature:</b> 1 point
<b>Compensation Options</b>	<b>Temperature:</b> Automatic from -5 °C to 50 °C
<b>Other Configuration Options</b>	<b>Sensor Filter:</b> 0 to 100 seconds <b>Temperature Filter:</b> 0 to 100 seconds
<b>Approvals and Ratings</b>	<b>Immunity &amp; Emissions:</b> CE Certified 89/336/EEC: CISPER 11, EN61000 (-4-2,-4-3,-4-4,-4-6, 4-8) <b>Safety:</b> cULus Listed: 367G E303570 <b>Hazardous Locations:</b> Haz Loc Class 1, Division 2, Groups A, B, C, D. Max Ambient 50 °C

† Note: Typical at 25 °C Performance unaffected by cable length  
 ‡ Note: Class II DC power supply required  
 †† Note: Ozone and Temperature are precalibrated at the factory

### Thermo Scientific AquaSensors Ozone DataStick

- Global support — with experience that comes from supporting our customers for over 35 years throughout the world, our water quality specialists and customer support teams offer a quick, thorough and professional response to any problem encountered.
- Focus on user benefits — we work closely with you to define your needs, and ensure you are using the monitor in a way that improves your bottom line. For more information, contact your local water quality specialists or visit [www.thermo.com/processwater](http://www.thermo.com/processwater).

### Ozone DataStick Information

Part No.	Description
<b>DS-b-t</b>	<b>DataStick</b>
<b>Body Material (b)</b>	1 = 316 Stainless Steel 2 = CPVC 3 = PEEK
<b>Mounting (t)</b>	1 = 1 inch NPT front/back 2 = Flow Chamber Snap-ring
<b>CA-b-nw-x-y</b>	<b>Communications Adapter</b>
<b>Body Material (b)</b>	1 = 316 Stainless Steel 2 = CPVC 3 = PEEK
<b>Communications (nw)</b>	<b>1A</b> = RS232 ASCII <b>7R</b> = Ethernet <b>2B</b> = Modbus® RTU <b>5R</b> = DeviceNet <b>2A</b> = Modbus RS232 <b>6R</b> = Profibus DP <b>4B</b> = CANopen <b>8R</b> = USB
<b>Cable Length (x)</b>	1 = 10 feet 2 = 20 feet 3 = 30 feet
<b>Cable Termination (y)</b>	<b>A</b> = Stripped Wires
<b>OZ-b-t-x</b>	<b>Ozone Sensor Head</b>
<b>Body Material (b)</b>	3 = PEEK
<b>Electrode Type (t)</b>	1 = Gold/Silver
<b>Sensor Tip (x)</b>	<b>B</b> = Process Flat <b>C</b> = Face Seal for Flow Chamber

### Accessories Ordering Information

Part No.	Description
<b>Local Display/Controller Interface</b>	
<b>AV38</b>	1/4 DIN, Outputs, Relays, Digital Communications Options
<b>Ozone Membrane Replacements</b>	
<b>DMR08-Z</b>	PEEK Process Flat
<b>DMR04-Z</b>	PEEK Flat Face Seal
<b>SBC01</b>	Storage Cap With Sponge
<b>Ozone Solutions - 60- mL bottle</b>	
<b>RD0K2</b>	Ozone Electrolyte
<b>Mounting Hardware</b>	
<b>MH3011</b>	1 Inch Tee Mounting, 316 Stainless Steel
<b>MH1041</b>	1.5 Inch Tee Mounting, 316 Stainless Steel
<b>MH1111</b>	1.5 Inch Ball Valve, 316 SS, Low Pressure
<b>MH1121</b>	1.5 Inch Ball Valve, 316 SS, High Pressure
<b>FC001</b>	Flow Chamber with Mounting Plate and PVDF Fitting
<b>FC002</b>	Flow Chamber with Mounting Plate and 316 SS Fitting

Consult factory for other sensor mounting options.

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