AquaSensors DataStick Conductivity Resistivity Measurement System

For universal plug and play

Thermo Scientific AquaSensors DataStick Conductivity Resistivity Measurement System

The Thermo Scientific™ AquaSensors™ DataStick™ Conductivity Resistivity Sensor connects 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.

Product benefits

- High performance construction
- Pre-calibrated (no field calibration required)
- Plug and play sensor heads
- Two electrode measurement
- High accuracy temperature compensation
- Offered in a variety of materials
- Direct data reporting (24-bit)
- Plug and play industrial communications adapters

Markets and applications

- Food processing
- Pharmaceutical
- Water production
- Reverse osmosis filters

- Desalination
- Deionization
- Ultrafiltration
- Distilled water
- Semiconductor
- Power generation
  - Steam production
  - Condensate return
  - Boiler blowdown
  - Cooling towers
  - Leak detection in heat exchangers
  - Demineralizers

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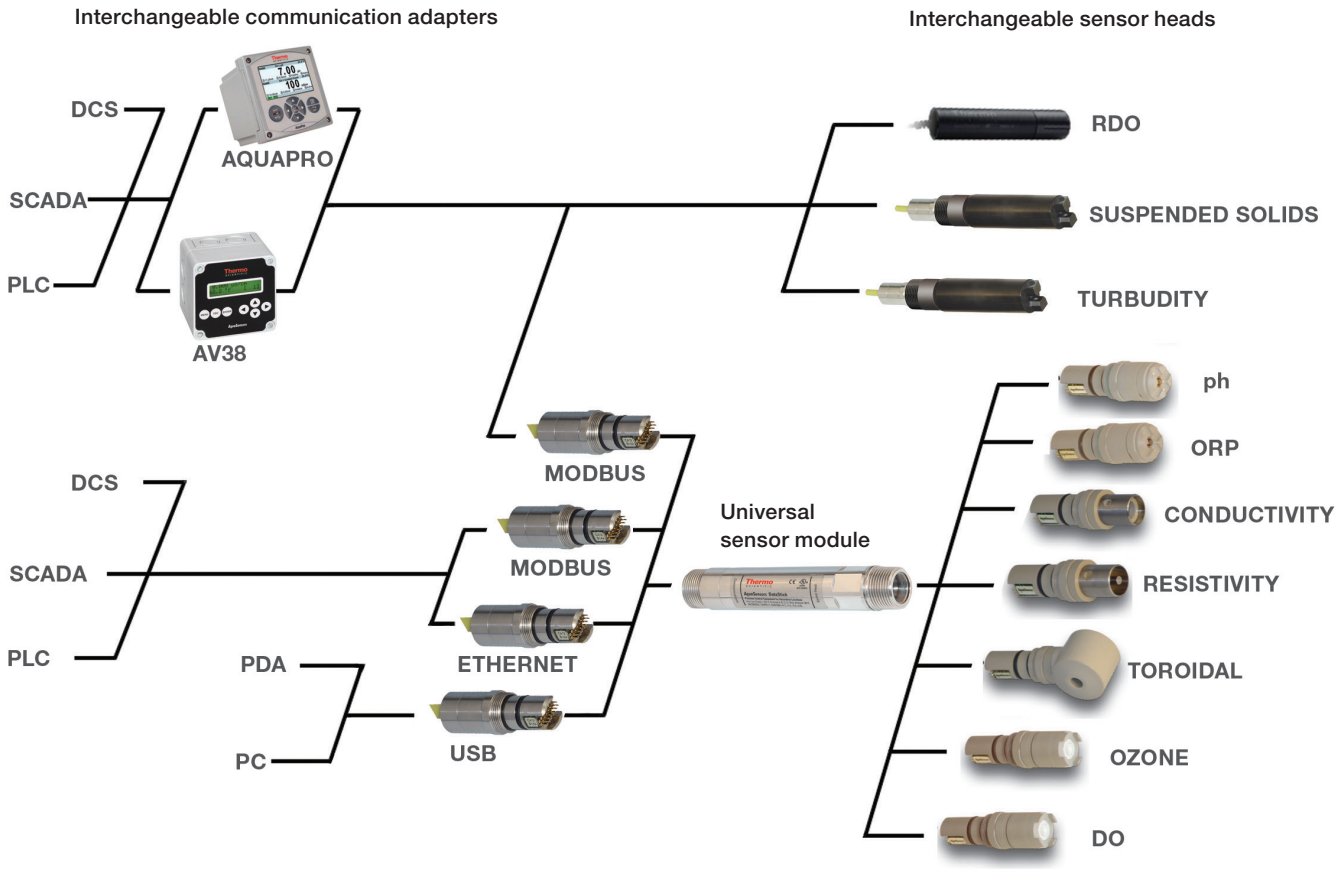
Engineering specifications

1. The conductivity sensor has two electrodes manufactured to exacting tolerances using durable metals.
2. Hex-shaped wrench flats help facilitate mounting, and are constructed of a material with exceptional chemical resistance and mechanical strength. This material enables 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 has interchangeable, pre-calibrated plug-in sensor heads and communications adapters that can be installed without powering down the system.
4. The sensor has 1 inch NPT threads on both ends to mount into a standard 1 inch pipe tee, a 1.5 inch union mounting, or immersion hardware assembly.
5. The built-in electronics of the sensor are completely encapsulated and O-ring sealed for protection from moisture and humidity.
6. The sensor has 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, Ethernet or USB.
7. An integral temperature sensor automatically compensates measured values for changes in process temperature.

Conductivity Resistivity Sensor Head

AquaSensors DataStick

AquaSensors DataStick Analytical System



AquaSensors DataStick Analytical System

Key components

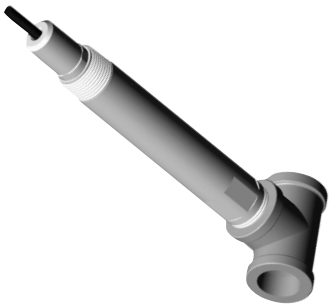
DataStick
Provides universal conversion of sensor signals and interactive communications for measurement, calibration, configuration and diagnostics.

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

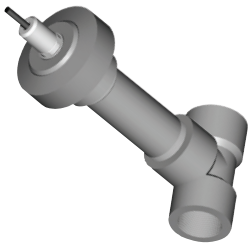
Toroidal conductivity sensor head
Pre-calibrated for conductivity and temperature. Can be plugged into any DataStick to yield accurate 24-bit data.

AV38 Local Digital Monitor and Controller
2 line display and 7 key navigation. Data reporting with up to 2 current outputs. 2 Form C relays. Digital communications.

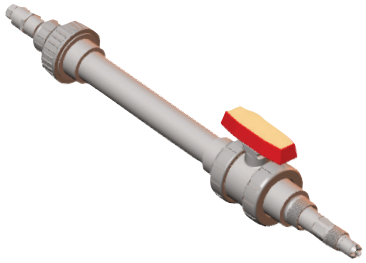
AquaSensors DataStick Toroidal Conductivity Accessories



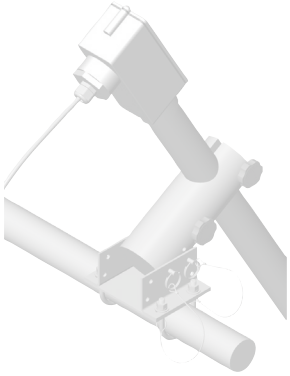
1 Inch Tee Mounting



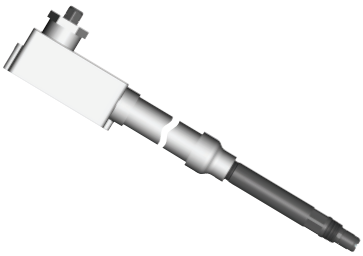
1.5 Inch Tee Mounting



1.5 Inch Ball Valve



Hand Rail Mounting Assembly



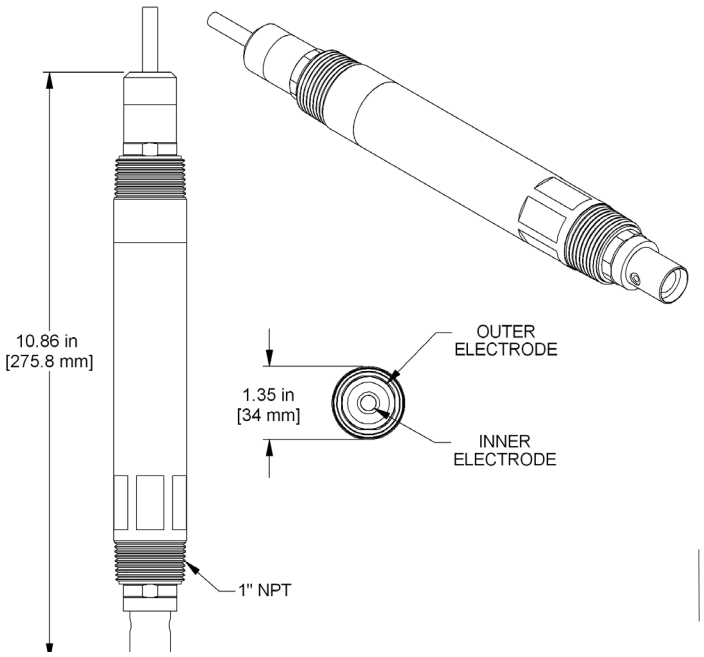
1 Inch Immersion Mounting with Junction Box
(7 foot extension is standard)

Specifications

AquaSensors DataStick Toroidal Conductivity Sensor	
Measurement system performance*	**Range**
	0.01 Cell: 18.2 MΩ/cm to 50 µS/cm
	0.1 Cell: 0 to 500 µS/cm
	1.0 Cell: 0 to 2000 µS/cm
	Resolution: 4 or 5 significant digits
	Accuracy: 0.1% of reading
	Step response time: 90% in 30 sec.
Operational equipment	**PEEK sensor head**
	Temperature range: -5°C to 95°C
	Maximum pressure: 150 psig @ 95°C
	Maximum flow rate: 10 ft/second
	CPVC sensor head
	Temperature range: -5°C to 75°C
	Maximum pressure: 150 psig @ 75°C
	Maximum fow rate: 10 ft/second
Power requirements**	Voltage range: 10 to 30 VDC
	Maximum power: 200 mW
	Typical power: 120 mW
Construction	Cell Constants: 0.01 for resistivity, 0.1 and 1.0 for conductivity
	Electrode Material: Titanium, 316 stainless steel
	O-rings: Viton™ (other materials available)
	Sensor head material: PEEK or CPVC
	Weight: 1.2 lbs. (PEEK, CPVC); 2.6 lbs (316 stainless steel)
Units of measure	Measurement units: µS/cm, TDS, %, MΩ/cm
	Temperature units: °C, °F
Calibration***	Zero: In dry point
	Span: 1 point
	Temperature: 1 point
Temperature compensation options****	Linear: % per °C

AquaSensors Datastick ORP Measurement System

Mounting adapters, junction boxes and recharge kits are available.



Engineering drawing

Other configuration options	Sensor filter: 0 to 100 seconds
	Temperature Filter: 0 to 100 seconds
	Concentration Table: user 10-point
Approvals and ratings	Immunity and emissions: CE certified 89/336/EEC: CISPER 11, EN61000 (-4-2, -4-3, -4-4, -4-6, 4-8)
	Safety: cULus listed; 367G E303570
	Hazardous locations: Haz Loc Class 1, Division 2, Groups A, B, C, D. Max ambient 80ºC

*Note: Typical at 25°C performance unaffected by cable length
**Note: Class II DC power supply required
***Note: Conductivity and temperature are pre-calibrated at the factory
****Temperature can be entered manually

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AquaSensors Datastick ORP Measurement System

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: **thermofisher.com/water**

Ordering information

AquaSensors DataStick Connectivity Resistivity

Description			Cat. No.
DataStick measurement system			**DS-b-t-WA**
Body material (b)	1	=	316 Stainless steel
	2	=	CPVC
	3	=	PEEK
Mounting (t)	1	=	NPT front/back
Conductivity sensor head			**CC-b-c-x-z**
Body material (b)	2	=	CPVC
	3	=	PEEK
Electrode type (c)	1	=	Titanium
Sensor (x)	A	=	0.1 Cell Constant (conductivity)
	B	=	1.0 Cell Constant (conductivity)
	D	=	0.01 Cell Constant (resistivity)

Ordering information

AquaSensors DataStick Connectivity Resistivity Communications Adapter

Description			Cat. No.
Communications adapter			**CA-b-nw-x-y**
Body material (b)	1	=	316 Stainless steel
	2	=	CPVC
	3	=	PEEK
Communications (nw)	2B	=	Modbus RTU
	7R	=	Ethernet
Cable length (x)	1	=	10 feet
	3	=	30 feet
Cable termination (y)	A	=	Stripped wires

*CA18R1A (316SS), CA28R1A (CPVC), CA38R1A (PEEK) keep available for USB option

Accessory ordering information

AquaSensors Accessories

Description	Cat. No.
Mounting hardware	
1 inch tee mounting, CPVC	MH3022
1 inch tee mounting, 316 SS	MH3011
1.5 inch union mounting, CPVC	MH1042-COND
1.5 inch union mounting, 316 SS	MH1041-COND
1.5 inch ball valve, CPVC, low pressure	MH1112
1.5 inch ball valve, 316 SS, low pressure	MH1111
1.5 inch ball valve, CPVC, high pressure	MH1122
1.5 inch ball valve, 316 SS, high pressure	MH1121
Hand rail mounting assembly, swivel/immersion, PVC	MH1242
1 inch immersion mounting with junction box, PVC (7 foot extension is standard)	MH3083

Consult factory for additional configurations and accessories

Australia: (613) 9757-4300 **In Australia:** (1300) 735-295 **China:** (86) 21-6865-4588
Germany: (49) 6184-90-6321 **India:** (91) 22-4157-8800 **Japan:** (81) 045-453-9175
North America: 1-978-232-6000 Toll Free: 1-800-225-1480 **Singapore:** (65) 6778-6876

Find out more at **thermofisher.com/water**

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