

AquaSensors DataStick Dissolved Oxygen Measurement System

For universal plug and play

Thermo Scientific AquaSensors DataStick Dissolved Oxygen Measurement System (ppo and ppm)

The Thermo Scientific™ AquaSensors™ DataStick™ DO 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 resolution measurement
- Pre-calibrate (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 and play industrial communications adapters



Markets and applications

- Municipal and industrial wastewater
 - Aeration tanks
 - Aerobic digesters
 - Plant effluent monitoring (NPDES permit holders)
 - Anaerobic digesters
- Aquaculture
- Brewing
- Fermentation
- Bio-processing
- Many applications also exist in chemical process, food and dairy, pulp and paper, and other process industries
- Boiler feed water (ppb)
- Pharmaceutical (ppb)
- Semiconductor manufacturing (ppb)
- Ultrapure water (ppb)
- Power plants (ppb)

Engineering specifications

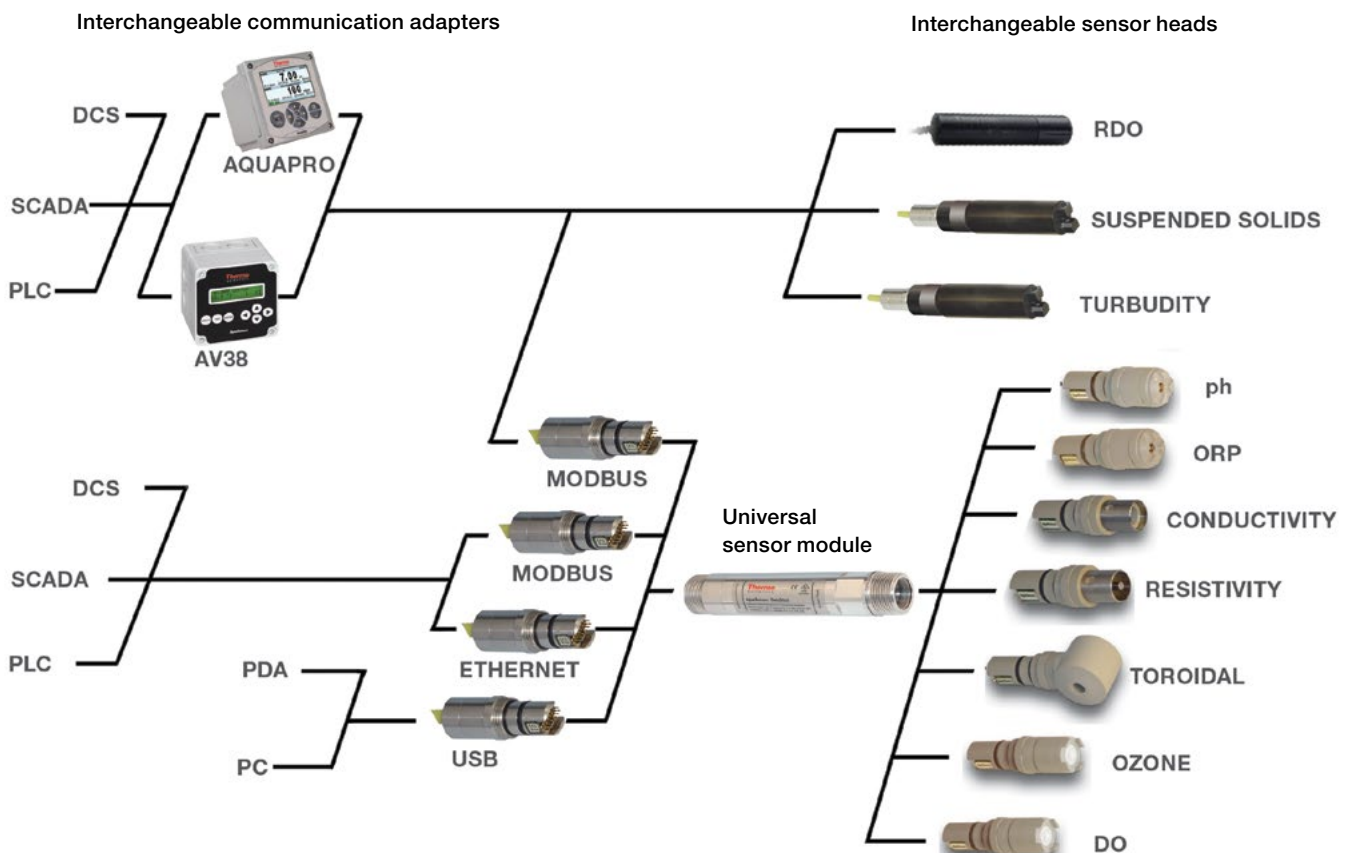
1. The DO sensor uses three-electrode polarographic Clark Cell technology consisting of a silver reference electrode, a silver anode and a gold cathode.
2. Hex-shaped wrench flats help to facilitate mounting, and are constructed of a material with exceptional chemical resistance and mechanical strength, which 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 mounting hardware and ball-float assemblies.
5. The built-in electronics of the sensor are 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, Ethernet or USB.
7. The sensor has an integral temperature sensor to measure temperature independently.
8. The sensor is the Thermo Scientific AquaSensors Dissolved Oxygen DataStick.



Dissolved Oxygen Sensor Head

AquaSensor 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.



Dissolved oxygen sensor head

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



AquaSensors 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 DO Accessories



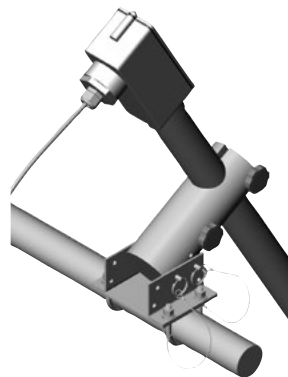
Low Flow Chamber



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



Ball Float Assembly



Hand Rail Mounting Assembly

Specifications

AquaSensors DataStick DO Sensor

Measurement system performance*	Range: -0 to 40 ppm, 0 to 200% saturation
	Resolution: 0.01 ppm
	Accuracy: 1% of reading
	Step response time: 90% in 90 sec.
Operational environment	Temperature range: -5°C to 50°C
	Maximum pressure: 65 psig @ 50°C
	Maximum flow rate: 10 ft/second
Power requirements**	Voltage range: 10 to 30 VDC
	Maximum power: 200 mW
	Typical power: 120 mW
Construction	Process Electrodes: Gold cathode, silver anode, silver reference (3 electrode polarographic clark cell)
	Membrane: FEP Teflon™
	O-rings: Viton™ (other materials available)
	Sensor head material: PEEK™ or CPVC
	DataStick Material: 316 stainless steel, PEEK or CPVC
	Weight: 1.2 lbs. (PEEK, CPVC or PVDF); 2.6 lbs (316 stainless steel)
Units of measure	Measurement units: ppm, %
	Temperature units: °C, °F
Calibration***	Air: Automatically adjusts for set pressure
	Sample: 1 point
	Zero: 1 point
Compensation options	Temperature: 1 point
	Salinity: 0 mS/cm to 999.9 mS/cm
	Pressure: 539.2 mm Hg to 792.4 mm Hg
Other configuration options	Temperature: Automatic from -5 °C to 50 °C
	Sensor filter: 0 to 100 seconds
Approvals and ratings	Temperature Filter: 0 to 100 seconds
	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 50°C

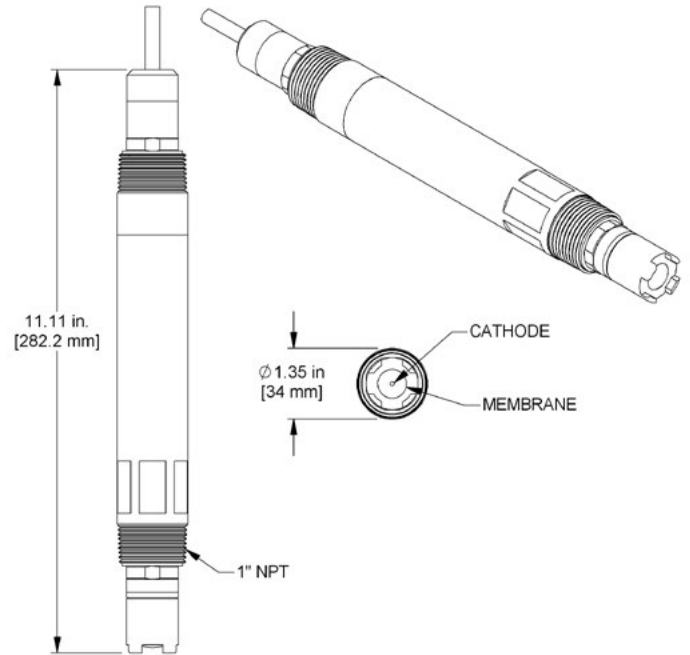
*Note: Typical at 25°C performance unaffected by cable length

**Note: Class II DC power supply required

***Note: DO and temperature are pre-calibrated at the factory

AquaSensors DataStick DO Sensor

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



Engineering drawing

AquaSensors DataStick DO Sensor

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 Dissolved Oxygen

Description	Cat. No.		
DataStick measurement system	DS-b-t-WA		
Body material (b)	2 =	CPVC	
	3 =	PEEK	
Mounting (t)	1 =	NPT front/back	
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

Ordering information

AquaSensors Dissolved Oxygen Sensor Head

Description	Cat. No.		
DataStick measurement system	DO-b-t-x-y-z		
Body material (b)	1 =	316 stainless steel	
	2 =	CPVC	
	3 =	PEEK™	
Electrode type (t)	1 =	Gold/silver	
Sensor tip (x)	A =	Protected	
Fill solution (y)	1 =	Standard	
Membrane (z)	A =	FEP Teflon™	

Ordering information

AquaSensors DataStick Dissolved Oxygen Accessories

Description	Cat. No.
DO membrane caps	
PEEK protected (ppm)	DMR03
Storage cap with sponge	SBC01
DO solutions	
ppm electrolyte, 60 mL bottle	RD0K1
ppb electrolyte, 60 mL bottle	RD0K3
Wash adapter	
Air purge, CPVC	MH1142
Mounting hardware	
Hand rail mounting assembly, swivel/immersion, PVC	MH1242
Hand rail mounting assembly, swivel/immersion, PVC	MH1252
1 inch tee mounting, CPVC	MH3022
1 inch tee mounting, 316 SS	MH3011
1.5 inch union mounting, CPVC	MH1042
1.5 inch union mounting, 316 SS	MH1041
Flow chamber with mounting plate and PVDF fitting	FC001
Flow chamber with mounting plate and 316 SS fitting	FC002
1 inch immersion mounting with junction box, PVC (7 foot extension is standard)	MH3083

Consult factory for additional configurations and accessories

Find out more at thermofisher.com/water