

Aqua TROLL® 100 and 200

Conductivity/Salinity, Temperature, Plus Water Level Logging

Conductivity measurements can be used to characterize water quality changes relative to a baseline or to estimate the concentration of contaminants. The In-Situ® Aqua TROLL 100 and Aqua TROLL 200 instruments measure and log conductivity and temperature. For added flexibility, the Aqua TROLL 200 also measures and records water level/pressure.

The In-Situ four-electrode conductivity cell is less subject to fouling and resists electrical field effects from pumps and well casings. The cell design allows for a wide measurement range with a narrow diameter instrument (0.72 in; 18.3 mm).

Rugged design

- Durable titanium housing resists fouling and safeguards against corrosion, even in the harshest conditions.
- Completely sealed—Withstands pressures up to 500 psi

Extended deployments

- Internal batteries guaranteed to last for 5 years when reading every 15 minutes. External batteries, solar power, or external 8-36 VDC options are also available.
- Reference electrode compensates for light fouling.
- Use with the TROLL® Shield antifouling system to reduce biofouling and significantly increase deployment time.

Accurate results

- Dynamic density compensation delivers superior water level accuracy in estuarine and coastal environments where salinity values may vary due to rainfall or tides.
- Instruments are factory-calibrated and validated with NIST®-traceable standards.

Flexible communications

- SCADA and telemetry-ready units include built-in Modbus/RS485, SDI-12, and 4-20 mA output communications.
- The In-Situ RuggedCable® system includes titanium Twist-Lock connectors for quick, reliable connections.
- Easily connects to a RuggedReader® handheld PC, laptop, or TROLL® Link telemetry system.

Simplified setup and data acquisition

- Win-Situ® software simplifies instrument setup, automates site management, displays graphical data, and provides real-time data and instrument status.



Aqua TROLL® 100 and 200 SPECIFICATIONS

GENERAL	
Operational temp. range	-20° to 65°C (-4° to 149°F)
Storage temperature	-40° to 65°C (-40° to 149°F)
Diameter, OD	0.72 in (18.3 mm)
Length	12.4 in (31.5 cm)
Weight	1.0 lb (0.5 kg)
Output options	Modbus RS485, SDI-12, 4-20mA
Housing	Titanium
Pressure range of operation	0 psi to 500 psi (0-1153 ft)
POWER	
Internal battery	3.6 V Lithium
Battery life	5 years or 200,000 readings ¹
External power	8-36 VDC
LOGGING	
Memory	4MB; 380,000 data points ²
Log types	Linear, linear average ³ , event ³
Fastest logging rate	
Linear	1 per minute
Linear average	1 per 2 seconds
Event	1 per second
Maximum number of logs	50
Fastest polling rate— Modbus, SDI-12, 4-20 mA	1 per second
TEMPERATURE	
Range	EPA Method 170.1 -20° to 65°C (-4° to 149°F)
Unit of measure	Celsius or Fahrenheit
Accuracy	±0.1°C
Resolution	0.1°C
CONDUCTIVITY	
Sensor type	Std. Method 2510, EPA Method 120.1 PVC/titanium balanced 4-electrode cell
Range	5 µS/cm to 100,000 µS/cm
Accuracy	< 80,000 µS/cm ±0.5% of reading +1 µS/cm Above 80,000 µS/cm ±1.0% of reading
Resolution	0.1 µS/cm
PARAMETERS SUPPORTED ⁴	
Actual conductivity	Units Range µS/cm, mS/cm 5-100,000 µS/cm
Specific conductivity ⁵	µS/cm, mS/cm 5-100,000 µS/cm
Salinity ⁶	PSU 0-42 PSU
Total dissolved solids	ppm, ppt 0-82 ppt
Resistivity	Ohms-cm 10-200,000 Ohms-cm
Density (water salinity)	g/cm ³ 0.98-1.14 g/cm ³
PRESSURE/LEVEL ⁷ (Aqua TROLL 200 only)	
Sensor type	Silicon strain gauge
Material	Titanium
Range, non-vented 30; 100; 300; 500 psia	0-35 ft (10.5 m); 0-200 ft (60 m); 0-650 ft (200 m); 0-1100 ft (340 m)
Range, vented 5; 15; 30; 100; 300; 500 psig	0-11.5 ft (3.5 m); 0-35 ft (11m); 0-70 ft (21 m); 0-230 ft (70 m); 0-700 ft (210 m) 0-1150 ft (350 m)
Units of measure	psi, kPa, bar, mbar, mmHg, inHg, cmH ₂ O, and in H ₂ O, m, mm, cm, in, and ft
Accuracy ⁸ @15°C	±0.05% full scale (FS)
0 to 50°C	±0.1% FS
-20 to -1 and 51 to 65°C	±0.25% FS
Resolution	±0.005% FS or better
Max. pressure/burst pressure	2X range/3X range

¹ 1 reading = time and date plus all available parameters polled or logged from device
² 1 data point = time and date plus one parameter logged
³ External power or battery pack recommended when using Linear Average or Event Testing
⁴ Parameters derived from temperature at 25°C and actual conductivity range of 5 µS/cm to 100,000 µS/cm with a ±0.5% plus 1 µS/cm accuracy
⁵ Derived from Standard Methods 2510B
⁶ Defined by the Practical Salinity Scale 1978 Standard Methods 2520B
⁷ Real-time level compensation based on water density
⁸ Accuracy with 4-20 mA output option: ±0.25% FS

Warranty
 The Aqua TROLL 100 and 200 instruments come with a one-year warranty. Warranty on RuggedCable® systems is 2 years. Extended warranties available, call for details.




Applications

- Aquifer storage and recovery
- Deep saline aquifer studies
- Discharge monitoring
- Estuary studies
- Irrigation return flows
- Mine water quality analysis
- Remediation projects
- Road salt runoff studies
- Saltwater intrusion monitoring
- Storm surge analysis
- Surface water testing
- Tide gage monitoring
- Tracer studies
- Wetlands restoration projects

TROLL® Shield antifouling system

When used in coastal environments and high-fouling sites, the TROLL Shield antifouling system combats biofouling of the Aqua TROLL instrument and its conductivity cell. Reduced sensor fouling extends instrument deployment by up to 8 weeks and improves instrument accuracy and performance. The TROLL Shield antifouling system includes a copper nose cone and coiled copper guard.



CALL TO PURCHASE OR RENT

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