



## Aqua TROLL® CTD Data Loggers

CONDUCTIVITY, TEMPERATURE,  
PLUS WATER LEVEL LOGGING

**MEASURE AND RECORD WATER LEVEL, WATER PRESSURE, CONDUCTIVITY, AND TEMPERATURE WITH THE AQUA TROLL 200, OR ONLY CONDUCTIVITY AND TEMPERATURE WITH THE AQUA TROLL 100. UNIQUE CONDUCTIVITY CELL ALLOWS FOR A WIDE, ACCURATE MEASUREMENT RANGE IN A NARROW DIAMETER INSTRUMENT (SUB-1 INCH).**

### ACCURATE RESULTS

- Use **dynamic density compensation** to collect accurate water level data in environments where salinity values may vary.
- Receive **3D factory calibrated instruments** that are validated with NIST®-traceable standards.
- **Deploy for long-term monitoring.** Instruments operate with very low drift.

### FLEXIBLE COMMUNICATIONS

- **Streamline data management:** Use the VuSitu® Mobile App to consolidate all site information on your smartphone, and tag data with site photos and GPS coordinates. Simply connect the instrument to a Wireless TROLL® Com, launch the mobile app, and start reading results. Simplify instrument setup, reduce log errors and get the most out of your data with Log Setup Assistant and Panoramic Live Data. Log data to your smartphone and download results in a Universal Data File.

- Integrate into telemetry and SCADA systems and HydroVu® Data Services for real-time data and automatic event alerts. Outputs include standard Modbus/RS485, SDI-12, and 4-20 mA.
- **Streamline data collection and analysis.** Simplify instrument setup, automate site management, and generate reports with user-friendly VuSitu Mobile and HydroVu Software.

### RUGGED, COMPACT DESIGN

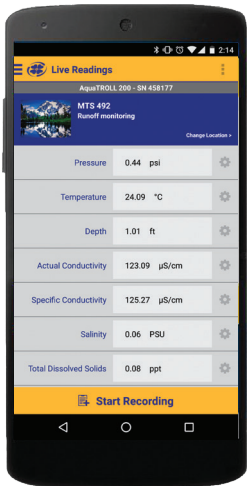
- **Use in harsh environments** such as coastal, remediation and mine water monitoring projects. Titanium construction resists fouling and is chemical- and corrosion-resistant.
- **Sub-1 inch design** fits narrow diameter, 1-inch wells.
- **Use RuggedCable® Systems** with titanium twist-lock connectors for quick, reliable connections. Integrate with the Rugged Cable Splitter to attach multiple In-Situ Shared Ecosystem instruments in a single water column with a single connector, allowing you to measure multiple parameters at various depths and simultaneously.

### TOTAL FIELD SUPPORT

- **One-stop shop for purchasing and support.**
- **Technical support is just a phone call away.**
- **Guaranteed 7-day service for maintenance (U.S. only).**

### Applications:

- **AQUIFER STORAGE AND RECOVERY SYSTEMS**
- **COASTAL DEPLOYMENTS—SALTWATER INTRUSION MONITORING, STORM SURGE ANALYSIS, AND ESTUARY/WETLAND RESEARCH**
- **REMEDIATION SITE AND MINE WATER MONITORING**
- **STORMWATER MONITORING PROGRAMS**



## VUSITU MOBILE APP

Use the VuSitu Mobile App to access and manage data on your smartphone or tablet. Intuitive, free mobile app is an all-in-one software package that provides auto-configuration, simplified calibration, guided log setup, directed data analysis, automated report creation, Panoramic Live Data, Calibration Assistant and Log Setup Assistant. Tag data with site photos and GPS coordinates. View results in the field and email data on the spot. Download through the Google Play Store or the Apple App Store.

## HYDROVU DATA SERVICES

Get decision-quality data anywhere, anytime, with cloud-based HydroVu Data Services. Integrate with In-Situ instruments and telemetry systems for real-time feedback on all your remote water monitoring sites.



- <sup>1</sup> Temperature range for non-freezing liquids
  - <sup>2</sup> Typical battery life when used within the factory-calibrated temperature range, dependent on site conditions
  - <sup>3</sup> 1 reading = date/time plus all available parameters polled or logged from device
  - <sup>4</sup> 1 data record = date/time plus 3 parameters logged (no wrapping) from device
  - <sup>5</sup> External power or battery pack is recommended when using Linear Average or Event logging modes.
  - <sup>6</sup> Parameters derived from temperature at 25° C and actual conductivity range of 0 to 100,000 µS/cm with a ±0.5% + 1 µS/cm accuracy
  - <sup>7</sup> Derived from Standard Methods 2510B
  - <sup>8</sup> Defined by the Practical Salinity Scale 1978; Standard Methods 2520B
  - <sup>9</sup> Real-time level compensation based on water density
  - <sup>10</sup> Accuracy with 4-20 mA output option: ±0.25% FS
  - <sup>11</sup> Includes linearity and hysteresis over 1 year.
  - <sup>12</sup> Temperature response varies by temperature change and environmental conditions. Under typical field conditions, T95 < 5 min.
- Specifications are subject to change without notice. Delrin is a registered trademark of E.I. du Pont de Nemours and Company. NIST is a registered trademark of the National Institute of Standards and Technology. Android is a trademark of Google Inc.



## AQUA TROLL 100 AND 200 INSTRUMENTS

TEMPERATURE RANGES <sup>1</sup>	Operational: -5 to 50° C (23 to 122° F) Storage: -40 to 65° C (-40 to 149° F) Calibrated: 0 to 50° C (32 to 122° F)
DIMENSIONS & WEIGHT	Diameter (OD): 1.83 cm (0.72 in.) Length: 31.5 cm (12.4 in.) Weight: 188 g (0.41 lb)
MATERIALS	Titanium, PVC, FKM Fluoroelastomer, EPDM, Acetal
OUTPUT OPTIONS	Modbus/RS485, SDI-12, and 4-20 mA
BATTERY TYPE & LIFE <sup>2</sup>	3.6V lithium. 5 years or 200,000 readings <sup>3</sup>
EXTERNAL POWER	8-36 VDC; Measurement current: 15 mA; Sleep current: 40 µA
MEMORY Data records <sup>4</sup> Data logs	4.0 MB 190,000 50
LOG TYPES <sup>5</sup>	Linear, Linear Average, and Event
FASTEST LOGGING RATE	Linear: 1 per minute. Linear Average: 1 per minute. Event: 1 per second
FASTEST OUTPUT RATE	1 per second
ENVIRONMENTAL RATING	IP 68 with cable attached IP 67 without cable attached

## CONDUCTIVITY SENSOR - TYPE: Balanced 4-electrode cell

METHODS	EPA Method 120.1; Standard Methods 2510	
RANGE, ACCURACY, & RESOLUTION	Range: 0 to 100,000 µS/cm Accuracy: ± 0.5% of reading + 1 µS/cm when reading less than 80,000 µS/cm ± 1.0% of reading when reading above 80,000 µS/cm Resolution: 0.1 µS/cm)	
PARAMETERS SUPPORTED <sup>6</sup>	Range	Units
Actual conductivity	0 to 100,000 µS/cm	µS/cm, mS/cm
Specific conductivity <sup>7</sup>	0 to 100,000 µS/cm	µS/cm, mS/cm
Salinity <sup>8</sup>	0 to 42 PSU	PSU
Total dissolved solids	0 to 82 ppt	ppt, ppm
Resistivity	10 to 200,000 Ohms-cm	Ohms-cm
Density (water salinity)	0.98 to 1.14 g/cm <sup>3</sup>	g/cm <sup>3</sup>

## PRESSURE/LEVEL/SENSOR<sup>9</sup> - TYPE: Piezoresistive. Pressure/level are available only on the Aqua TROLL 200 Instrument.

RANGE	Absolute (non-vented)	Gauged (vented)
	30 psia: 11 m (35 ft) 100 psia: 60 m (197 ft) 300 psia: 200 m (658 ft)	5 psig: 3.5 m (11.5 ft) 15 psig: 11 m (35 ft) 30 psig: 21 m (69 ft) 100 psig: 70 m (231 ft) 300 psig: 210 m (692 ft)
BURST PRESSURE	Maximum 2x range; burst > 3x range	
MAX PRESSURE FOR AQUATROLL 100	300 psi (692 ft)	
ACCURACY & RESOLUTION <sup>10</sup>	Accuracy: ±0.05%FS or better; Resolution: ±0.01%FS or better	
LONG-TERM STABILITY <sup>12</sup>	<0.1% FS	
UNITS OF MEASURE	Pressure: psi, kPa, bar, mbar, mmHg, inHg, cmH2O, inH2O. Level: in, ft, mm, cm, m	

## TEMPERATURE SENSOR<sup>13</sup>

METHOD	EPA Method 170.1
ACCURACY & RESOLUTION	Accuracy: ±0.1° C. Resolution: 0.01° C or better
UNITS OF MEASURE	Celsius or Fahrenheit
WARRANTY	2 years. Up to 5-year (total) extended warranties available.