

In-Situ Level TROLL® Water Level Monitors and Loggers

Get water level data the way you want it, when you want it with industry-leading water level/pressure and temperature data loggers. By partnering with In-Situ® Inc., you receive durable Level TROLL® Data Loggers that provide years of service, accurate results, intuitive software, and real-time functionality.

FEATURES

- Increase productivity:**
 Reduce training and installation time with In-Situ Inc.'s intuitive software platform and integrated components. Patented twist-lock connectors, included on Level TROLL Loggers and RuggedCable® Systems, ensure error-free deployments.
- Set up real-time networks:**
 Access data 24/7 and receive event notifications when you connect data loggers to telemetry systems, radios, or other third-party data collection platforms. Control gates, pumps, alarms, and other equipment by using built-in Modbus/RS485, SDI-12, or 4-20 mA communication protocols.
- Streamline analysis and reporting:**
 Automate water level corrections and post-processing, graph data, and accelerate report generation with Win-Situ® software or VuSitu Mobile App available for iOS and Android.
- Deploy in all environments:**
 Install loggers in fresh water, saltwater, and contaminated waters. Solid titanium, sealed construction outperforms and outlasts specially-coated data loggers.
- Log accurate data:**
 Get optimal accuracy under all operating conditions. Sensors undergo NIST®-traceable factory calibration across the full pressure and temperature range. For applications requiring the highest levels of accuracy, use a vented (gauged) system.
- Get long-lasting operation:**
 Reduce trips to the field with low-power loggers that typically operate for 10 years.



CALL GEOTECH TODAY (800) 833-7958

Geotech Environmental Equipment, Inc.
 2650 East 40th Avenue • Denver, Colorado 80205
 (303) 320-4764 • FAX (303) 322-7242
 email: sales@geotechenv.com • website: www.geotechenv.com

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APPLICATIONS

- **Aquifer characterization:**
Slug tests and pumping tests
- **Coastal:**
Tide/harbor levels & wetland/estuary research
- **Hydrologic events:**
Crest stage gages, storm surge monitoring, & flood control systems
- **Long-term, real-time groundwater & surface water monitoring**
- **Mining & remediation**

EVERY APPLICATION & BUDGET

Use maintenance-free, non-vented systems for long-term monitoring and at flood-prone or high-humidity sites.

Use high-accuracy, vented systems to conduct aquifer tests and to view barometrically compensated water level data in real time.

Forget to set a level reference at the beginning of a deployment? Automate level corrections by using Win-Situ Software's post-level correction Wizard.

BAROTROLL® DATA LOGGER

Using a non-vented system? Collect barometric pressure and temperature data with a titanium BaroTROLL Data Logger in order to compensate data for barometric pressure fluctuations.

Calculating barometric efficiency? Use the BaroTROLL Logger with vented systems.

Win-Situ® Baro Merge® Software automates post correction of water level data.



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SPECIFICATIONS

GENERAL	Level TROLL 400	Level TROLL 500	Level TROLL 700	BaroTROLL
Temperature Ranges¹	Operational: -20-80°C (-4-176°F) Storage: -40-80°C (-40-176°F) Calibrated: -5-50°C (23-122°F)	Operational: -20-80°C (-4-176°F) Storage: -40-80°C (-40-176°F) Calibrated: -5-50°C (23-122°F)	Operational: -20-80°C (-4-176°F) Storage: -40-80°C (-40-176°F) Calibrated: -5-50°C (23-122°F)	Operational: -20-80°C (-4-176°F) Storage: -40-80°C (-40-176°F) Calibrated: -5-50°C (23-122°F)
Diameter	1.83 cm (0.72 in.)	1.83 cm (0.72 in.)	1.83 cm (0.72 in.)	1.83 cm (0.72 in.)
Length	21.6 cm (8.5 in.)	21.6 cm (8.5 in.)	21.6 cm (8.5 in.)	21.6 cm (8.5 in.)
Weight	124 g (0.27 lb.)	124 g (0.27 lb.)	124 g (0.27 lb.)	124 g (0.27 lb.)
Materials	Titanium body; Delrin® nose cone	Titanium body; Delrin nose cone	Titanium body; Delrin nose cone	Titanium body; Delrin nose cone
Output Options	Modbus/RS485, SDI-12, 4-20 mA	Modbus/RS485, SDI-12, 4-20 mA	Modbus/RS485, SDI-12, 4-20 mA	Modbus/RS485, SDI-12, 4-20 mA
Battery Type & Life²	3.6V lithium; 10 years or 2M readings	3.6V lithium; 10 years or 2M readings	3.6V lithium; 10 years or 2M readings	3.6V lithium; 10 years or 2M readings
External Power	8-36 VDC	8-36 VDC	8-36 VDC	8-36 VDC
Memory <i>Data Records³</i> <i>Data Logs</i>	2.0 MB 120,000 50	2.0 MB 120,000 50	4.0 MB 250,000 50	1.0 MB 60,000 2
Log Types	Linear, Fast Linear, and Event	Linear, Fast Linear, and Event	Linear, Fast Linear, Linear Average, Event, Step Linear, True Logarithmic	Linear
Fastest Logging Rate	2 per second	2 per second	4 per second	1 per minute
Fastest Output Rate	Modbus: 2 per second SDI-12 & 4-20 mA: 1 per second	Modbus: 2 per second SDI-12 & 4-20 mA: 1 per second	Modbus: 2 per second SDI-12 & 4-20 mA: 1 per second	Modbus: 2 per second SDI-12 & 4-20 mA: 1 per second
Real-time Clock	Accurate to 1 second/24-hr period	Accurate to 1 second/24-hr period	Accurate to 1 second/24-hr period	Accurate to 1 second/24-hr period
SENSOR TYPE/ MATERIAL	Piezoresistive/titanium	Piezoresistive/titanium	Piezoresistive/titanium	Piezoresistive/titanium
Range	<i>Absolute (non-vented)</i> 30 psia: 11 m (35 ft.) 100 psia: 60 m (197 ft.) 300 psia: 200 m (658 ft.) 500 psia: 341 m (1120 ft.)	<i>Gauged (vented)</i> 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.) 500 psig: 351 m (1153 ft.)	<i>Absolute (non-vented)</i> 30 psia: 11 m (35 ft.) 100 psia: 60 m (197 ft.) 300 psia: 200 m (658 ft.) 500 psia: 341 m (1120 ft.) 1000 psia: 693 m (2273 ft.) <i>Gauged (vented)</i> 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.) 500 psig: 351 m (1153 ft.)	30 psia (usable up to 16.5 psi; 1.14 bar)
Burst Pressure	Max. 2x range; burst > 3x range	Max. 2x range; burst > 3x range	Max. 2x range; burst > 3x range	Vacuum/over-pressure above 16.5 psi damages sensor
Accuracy	±0.05% FS from -5 to 50°C	±0.05% FS from -5 to 50°C	±0.05% FS from -5 to 50°C	±0.05% FS from -5 to 50°C
Long-Term Stability⁴	±0.1% FS	±0.1% FS	±0.1% FS	±0.1% FS
Resolution	±0.005% FS or better	±0.005% FS or better	±0.005% FS or better	±0.005% FS or better
Units of Measure	Pressure: psi, kPa, bar, mbar, mmHg, inHg, cmH ₂ O, inH ₂ O Level: in., ft., mm, cm, m	Pressure: psi, kPa, bar, mbar, mmHg, inHg, cmH ₂ O, inH ₂ O Level: in., ft., mm, cm, m	Pressure: psi, kPa, bar, mbar, mmHg, inHg, cmH ₂ O, inH ₂ O Level: in., ft., mm, cm, m	Pressure: psi, kPa, bar, mbar, mmHg, inHg, cmH ₂ O, inH ₂ O
TEMPERATURE SENSOR	Silicon	Silicon	Silicon	Silicon
Accuracy & Resolution	±0.1°C; 0.01°C or better	±0.1°C; 0.01°C or better	±0.1°C; 0.01°C or better	±0.1°C; 0.01°C or better
Units of Measure	Celsius or Fahrenheit	Celsius or Fahrenheit	Celsius or Fahrenheit	Celsius or Fahrenheit
WARRANTY⁵	3 years	3 years	3 years	3 years

NOTES:

¹ Temperature range for non-freezing liquids. ² Typical battery life when used within the factory-calibrated temperature range. ³ 1 data record = date/time plus 2 parameters logged for a total of 360,000, 750,000, and 180,000 data points. (No wrapping) ⁴ Includes linearity and hysteresis over 1 year. ⁵ Up to 5-year (total) extended warranties are available for all sensors. Delrin is a registered trademark of E.I. du Pont de Nemours and Company.



Specifications are subject to change without notice.