



## Level TROLL® 400, 500 & 700 Data 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, you receive durable Level TROLL® Data Loggers that provide years of service, accurate results, intuitive software, and real-time functionality.

### Be Effective

- **Increase productivity:** Reduce training and installation time with In-Situ intuitive software platform and integrated components. Patented twist-lock connectors, included on Level TROLL Loggers and RuggedCable® Systems, ensure error-free deployments.
- **Streamline analysis and reporting:** Automate water level corrections and post-processing, graph data, and accelerate report generation with Win-Situ® Software. Easily export data to Excel®, a web-based management service, or data analysis software.
- **Set up real-time networks:** Access data 24/7 and receive event notifications when you connect data loggers to Tube and Cube systems, radios, or other third-party data collection platforms. Get decision quality data when, where, and how you need it with HydroVu Data Services. Control gates, pumps, alarms, and other equipment by using built-in Modbus/RS485, SDI-12, or 4-20 mA communication protocols.

### Be In-Situ

- Receive **free**, 24/7 technical support and online resources.
- Order data loggers and accessories from the In-Situ website.
- Get guaranteed 7-day service for maintenance (U.S.A. only).

### Be Reliable

- **Deploy in all environments:** Install loggers in fresh water, saltwater, and contaminated waters. Solid titanium and sealed construction outperforms and outlasts 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.

### Applications

- **Aquifer characterization:** slug tests & 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**

General	Level TROLL 400	Level TROLL 500	Level TROLL 700	Level BaroTROLL
<b>Temperature ranges<sup>1</sup></b>	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)
<b>Diameter</b>	1.83 cm (0.72 in.)	1.83 cm (0.72 in.)	1.83 cm (0.72 in.)	1.83 cm (0.72 in.)
<b>Length</b>	21.6 cm (8.5 in.)	21.6 cm (8.5 in.)	21.6 cm (8.5 in.)	21.6 cm (8.5 in.)
<b>Weight</b>	197 g (0.43 lb)	197 g (0.43 lb)	197 g (0.43 lb)	197 g (0.43 lb)
<b>Materials</b>	Titanium body; Delrin® nose cone	Titanium body; Delrin nose cone	Titanium body; Delrin nose cone	Titanium body; Delrin nose cone
<b>Output options</b>	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
<b>Battery type &amp; life<sup>2</sup></b>	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
<b>External power</b>	8-36 VDC	8-36 VDC	8-36 VDC	8-36 VDC
<b>Memory</b>	2.0 MB	2.0 MB	4.0 MB	1.0 MB
<b>Data records<sup>3</sup></b>	130,000	130,000	260,000	65,000
<b>Data logs</b>	50 logs	50 logs	50 logs	2 logs
<b>Fastest logging rate</b>	2 per second	2 per second	4 per second	1 per minute
<b>Fastest output rate</b>	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
<b>Log types</b>	Linear, Fast Linear, and Event	Linear, Fast Linear, and Event	Linear, Fast Linear, Linear Average, Event, Step Linear, True Logarithmic	Linear
<b>Sensor Type/Material</b>	<b>Piezoresistive; titanium</b>	<b>Piezoresistive; titanium</b>	<b>Piezoresistive; titanium</b>	<b>Piezoresistive; titanium</b>
<b>Range</b>	Absolute (non-vented) 30 psia: 11 m (35 ft) 100 psia: 60 m (197 ft) 300 psia: 200 m (658 ft) 500 psia: 341 m (1120 ft)	Gauged (vented) 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) <b>500 psig: 351 m (1153 ft)</b>	Absolute (non-vented) 30 psia: 11 m (35 ft) 100 psia: 60 m (197 ft) 300 psia: 200 m (658 ft) 500 psia: 341 m (1120 ft) <b>1000 psia: 693 m (2273 ft)</b>  Gauged (vented) 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) <b>500 psig: 351 m (1153 ft)</b>	30 psia (usable up to 16.5 psi; 1.14 bar)
<b>Accuracy<sup>4</sup></b>	±0.05% full scale (FS) ±0.1% FS	±0.05% FS ±0.1% FS	±0.05% FS ±0.1% FS	±0.05% FS ±0.1% FS
<b>Resolution</b>	±0.005% FS or better	±0.005% FS or better	±0.005% FS or better	±0.005% FS or better
<b>Units of measure</b>	Pressure: psi, kPa, bar, mbar, mmHg, inHg, cmH2O, inH2O Level: in., ft, mm, cm, m	Pressure: psi, kPa, bar, mbar, mmHg, inHg, cmH2O, inH2O Level: in., ft, mm, cm, m	Pressure: psi, kPa, bar, mbar, mmHg, inHg, cmH2O, inH2O Level: in., ft, mm, cm, m	Pressure: psi, kPa, bar, mbar, mmHg, inHg, cmH2O, inH2O
<b>Temperature Sensor</b>	<b>Silicon</b>	<b>Silicon</b>	<b>Silicon</b>	<b>Silicon</b>
<b>Accuracy</b>	±0.1° C	±0.1° C	±0.1° C	±0.1° C
<b>Resolution</b>	0.01° C or better	0.01° C or better	0.01° C or better	0.01° C or better
<b>Units of measure</b>	Celsius or Fahrenheit	Celsius or Fahrenheit	Celsius or Fahrenheit	Celsius or Fahrenheit
<b>Warranty</b>	<b>3 years</b>	<b>3 years</b>	<b>3 years</b>	<b>3 years</b>
<b>Notes</b>	<sup>1</sup> Temperature range for non-freezing liquids. <sup>2</sup> Typical battery life when used within the factory-calibrated temperature range. <sup>3</sup> 1 data record = date/time plus 2 parameters logged (no wrapping) from device within the factory-calibrated temperature range. <sup>4</sup> Across factory-calibrated pressure range. <sup>5</sup> Across factory-calibrated pressure and temperature ranges. <sup>6</sup> Up to 5-year (total) extended warranties are available for all sensors—call for details. Delrin is a registered trademark of E.I. du Pont de Nemours and Company. Specifications are subject to change without notice.			

## Every Application & Budget

Use maintenance-free, non-vented systems for long-term monitoring and at flood-prone or high-humidity sites. Pair with Tube and Cube Telemetry System and HydroVu for automatic barometric compensation.

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

Forgot 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

When using a non-vented system, collect barometric pressure and temperature data with a titanium BaroTROLL Data Logger in order to post correct data for barometric pressure fluctuations.

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