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. Use the VuSitu™ Mobile App to manage your data on your smartphone or tablet.

Be Effective

- **Increase productivity:** Reduce training and installation time with In-Situ's intuitive software platform and integrated components. Patented twist-lock connectors, included on Level TROLL Data Loggers and RuggedCable® Systems, ensure error-free deployments.
- **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 or power pack, launch the mobile app, and start reading results. The mobile app guides you through instrument and log setup, and data management. Log data to your smartphone and download results in a standard .csv file format.
- **Set up real-time networks:** Access data 24/7 and receive event notifications when you connect data loggers to Tube and Cube Telemetry Systems, HydroVu Data Services, or other third-party data collection platforms.

Be Reliable

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

Be In-Situ

- **Receive 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).**

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
Temperature ranges [1]	Operational: -20 to 80° C (-4 to 176° F) Storage: -40 to 80° C (-40 to 176° F) Calibrated: -5 to 50° C (23 to 122° F)	Operational: -20 to 80° C (-4 to 176° F) Storage: -40 to 80° C (-40 to 176° F) Calibrated: -5 to 50° C (23 to 122° F)	Operational: -20 to 80° C (-4 to 176° F) Storage: -40 to 80° C (-40 to 176° F) Calibrated: -5 to 50° C (23 to 122° F)	Operational: -20 to 80° C (-4- to 176° F) Storage: -40 to 80° C (-40 to 176° F) Calibrated: -5 to 50° C (23 to 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 to 20 mA	Modbus/RS485, SDI-12, 4 to 20 mA	Modbus/RS485, SDI-12, 4 to 20 mA	Modbus/RS485, SDI-12, 4 to 20 mA
Battery type & life [2]	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 to 36 VDC	8 to 36 VDC	8 to 36 VDC	8 to 36 VDC
Memory *Data records* [3] *Data logs*	2.0 MB 120,000 50 logs	2.0 MB 120,000 50 logs	4.0 MB 250,000 50 logs	1.0 MB 60,000 2 logs
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 to 20 mA: 1 per second	Modbus: 2 per second SDI-12 & 4 to 20 mA: 1 per second	Modbus: 2 per second SDI-12 & 4 to 20 mA: 1 per second	Modbus: 2 per second SDI-12 & 4 to 20 mA: 1 per second
Log types	Linear, Fast Linear, and Event	Linear, Fast Linear, and Event	Linear, Fast Linear, Linear Average, Event, Step Linear, True Logarithmic	Linear
Sensor Type/Material	**Piezoresistive; titanium**	**Piezoresistive; titanium**	**Piezoresistive; titanium**	**Piezoresistive; titanium**
Range	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) 500 psig: 351 m (1153 ft)	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) 1000 psia: 693 m (2273 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) 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 (FS) [4]	±0.05%	±0.05%	±0.05%	±0.05%
Long-Term Stability [5]	<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, 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
Temperature Sensor	**Silicon**	**Silicon**	**Silicon**	**Silicon**
Accuracy	±0.1° C	±0.1° C	±0.1° C	±0.1° C
Resolution	0.01° C or better	0.01° C or better	0.01° C or better	0.01° C or better
Units of measure	Celsius or Fahrenheit	Celsius or Fahrenheit	Celsius or Fahrenheit	Celsius or Fahrenheit
Warranty [6]	**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] Across factory-calibrated pressure and temperature ranges. [5] Includes linearity and hysteresis over 1 year. [6] 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.			

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 Telemtry Systems and HydroVu Data Services for automtatic barometric compensation.

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

Get real-time, decision-quality data on your remote monitoring sites anytime, anwhere with cloud-based HydroVu Data Services. Easy setup, viewing, and analysis of your data means you get more from your instruments for less time and money.

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.