

Level **TROLL**® 700

for  
absolute confidence  
in level monitoring

**NEW!**  
**Level TROLL**® 700



Introducing the **NEW Level TROLL**® 700... the next breakthrough for professional water level monitoring applications including single or multi-step aquifer testing, precision river gaging, tidal influence studies, wave characterization, geothermal research, storm-event monitoring and more!

The **Level TROLL**® 700 features a rugged, all-titanium construction that is TIG welded to eliminate o-ring seals, **Twist-Lock** connectors, an ultra-low power system that eliminates the need to change batteries, and it is only 18.3mm (0.72 in) in diameter making it perfect for 1-inch wells or observation tubing. The 700 series of the Level TROLL® offers new logging modes such as **Linear**, **Linear Average**, **Event**, **True Logarithmic**, **Step Linear**, and **Fast Linear** for complete customization. Additional benefits of the Level TROLL® 700 include “Pause” and “Re-Start” logging features, a larger memory (350,000+ data points), 0.25 sec sampling (4 samples per second), ability to store and manage up to 50 log files, user notes, advanced compensation settings, and more.

The **Level TROLL**® comes standard with **RS-485 Modbus**, **SDI-12**, and **4-20mA** communication options. It can be operated using a PC or a RuggedReader® handheld and it can easily be connected to a **SCADA** or other online systems.

**Product Details**

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**True Logarithmic sampling** is commonly used for aquifer testing (pumping and slug tests) to collect a large volume of early-time drawdown data while minimizing the amount of data collected later on. A convenient new “Re-Start” feature makes multi-step pumping tests easy. When changing the rate of the pump to the next step, simply press the “Re-Start” button and the logarithmic sampling rate will re-start at the beginning collecting a log cycle within the same file! A single log file can be restarted as many times as needed. Other modes such as “Step Log” and “Fast Linear” provide additional monitoring flexibility.

**Applications:**

- Multi-step aquifer testing
- Slug tests
- Pumping tests
- Tidal influence & wave characterization

- River, lake, stream gaging
- Landslide & flood prevention
- Stormwater monitoring
- Flow measurements
- Research, studies
- Marine buoys
- Water pumping management
- Estuaries and coastal monitoring

## Features & Benefits:

- **Ultra-rugged, all-titanium design** – Perfect for fresh and marine water monitoring. No more worries about corrosion. Excellent for marine, brackish and acidic sites.
- **Super accurate sensors** – record minute changes in water level and temperature.
- **TIG-welded seals** – Prevents flooding of instrument.
- **Ultra-low power system guarantees 5 years or 2-million readings** – Forget changing batteries or running out of power.
- **Uses external battery or line power** – no worries about running out of power.
- **RS-485 MODBUS, SDI-12, and 4-20mA** – provides for easy connections to existing and online systems
- **Twist-Lock connectors that “lock” tight** – 100% reliability
- **Halogen-free cables (LSZH rated)** – no worries of toxic fumes if submitted to fire
- **Sealed desiccant options** – allow for barometric compensation for maximum accuracy while preventing water & humidity intrusion
- **Extend cables by simply adding additional segments** – maximizes your investment and maintain flexibility with your unit.
- **-20 to 80°C temperature range** – useful for geothermal and hot spring research and monitoring
- **Easiest ever Win-Situ<sup>®</sup> software** – get the data you need fast! Large, sizable display that’s easy to see from a distance.
- **Linear logging** – perfect for long-term monitoring
- **Pause logging feature** – Pause logging when removing a unit. Reinstall and restart where you left off!
- **Specify start and stop times for logging** – collect the data you need up to the date you want and no more
- **Ability to “undelete” files from the unit** – no worries of accidentally deleting your data.
- **Data saved by sites not files** – collect and save information by site automatically. No need to transfer data later.
- **Easy-to-read memory and battery gauges** – know exactly how much is left
- **Friendly Wizards guide every step** – reduces complicated steps and the need for tedious manuals
- **Submersible ranges up to 351m / cable length up to 1200m** – measure to the depth you need.
- **FCC and CE emission tested** – prevents susceptibility to outside emission interference and transient electrical surges
- **Version, range, and manufacturing info printed on side of the unit** – know the details of the unit without opening the software. Reduces accidental over pressuring

## Level TROLL<sup>®</sup> 700 only features & benefits

- **Restart logarithmic sampling within the same file** – Perform multi-step aquifer tests with ease!
- **New logging modes** – Linear, Linear Average, Event, True Logarithmic, Step Log, Fast Linear. Log the way you want to!
- **Up to 50 logging files can be programmed in the Level TROLL<sup>®</sup>** – complete flexibility and new possibilities in logging
- **Takes samples as fast as 0.25 seconds (4 samples/sec)** – perfect for earthquake detection and wave modeling
- **Up to 350,000 data points of memory (4MB)** – reduces the interval between data collection

[Click here for more details on the Level TROLL<sup>®</sup>](#)

## Specifications

### General:

Operating temperature range	-20 to 80C
Dimensions	18.3 mm (0.72 in) OD, 21.6cm (8.5 in) long
Weight (includes hanger)	0.197 kg (0.43 lb)
Output options	Modbus (RS-485/232), SDI-12, 4-20mA
Housing material	Titanium
Nose cone material	Black Delrin®

### Power

Internal battery	3.6V Lithium
Typical life*	5 yrs or 2-million readings
External power	8-36VDC

\*Whichever comes first. See battery guide for details.

### Logging

Memory / data points**	4 MB / 350,000+
Logging Rate	User selectable from 0.25 sec -- 49 days
Modbus	0.5 sec
SDI-12	0.5 sec
Measurement Types	Linear, Linear Average, Event, True Logarithmic, Step Log, Fast Linear

\*\*data point = time and date plus one parameter logged

### Level Sensor

Type	Silicon strain gauge
Material	Vented
Accuracy, FS***	Titanium
FS = Full Scale	+/-0.05% (15C)
	+/-0.1% (-5 to 50C)
	+/-0.25% (-20 to -5C & 50 to 80C)
	*** Accuracy with 4-20mA output option: +/-0.25% typical
Resolution	0.005% FS or better
Range	Vented:

- 3.5 m, 11.5 ft (34.4 kPa, 5 psi)
- 11 m, 35 ft (103.4 kPa, 15 psi)
- 21 m, 69 ft (206.8 kPa, 30 psi)
- 70 m, 231 ft (689.5 kPa, 100 psi)
- 211 m, 692 ft (2068 kPa, 300 psi)
- 351 m, 1153 ft (3446 kPa, 500 psi)

#### Non-vented:

- 10.9 m, 35.8 ft (206.8 kPa, 30 psi)
- 60.1 m, 197.3 ft (689.5 kPa, 100 psi)
- 200.7 m, 658.7 ft (2068 kPa, 300 psi)
- 341.3 m, 1120 ft (3446 kPa, 500 psi)

### Temperature Sensor

Material	Silicon
Accuracy	+/-0.1C
Resolution	0.01C or better
Range	-20 to 80C

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### **RuggedCable<sup>®</sup> with Twist-Lock Connectors**

Connector*	Twist-Lock connector OR stripped & tinned wire
Number of conductors	6
Internal Conductor Material	Polypropylene
Diameter 6.7mm (0.265 in)	Break strength 127 kg (280 lbs)
Bend Radius	2X diameter of cable = 13.72mm / 0.54 in

### **Cable Types:**

Vented or Non-Vented Polyurethane  
Vented or Non-Vented Halogen-Free Polyurethane - LSZH rated  
Vented FEP (Generic Teflon<sup>®</sup>)