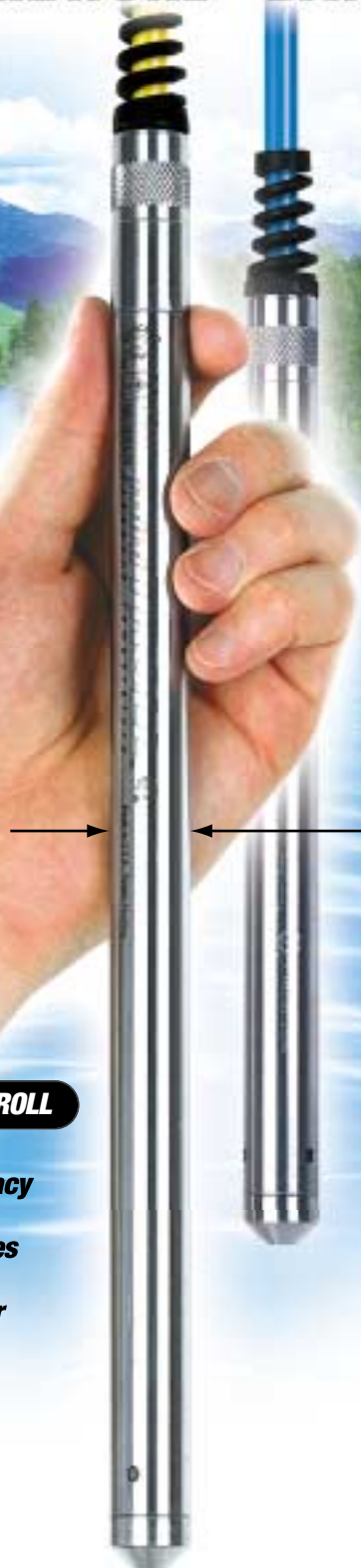




miniTROLL

LEVEL · TEMPERATURE · DATA LOGGING



0.72" 18.3mm OD
Smallest diameter on the planet

See why water professionals choose the miniTROLL

Extreme accuracy

User replaceable batteries

Field-rugged Pocket PC reader

Simple to use and very powerful

Automatic barometric compensation

Quick-Connect™ cables or wire suspension

GSA Listed: GS-24F-0045M

NIST-Traceable Accuracy Certified

Introducing the leading instrument for water monitoring—the **miniTROLL**. Powerful, dependable, versatile, easy-to-use and small. The **miniTROLL** has become the instrument of choice for water professionals who need accurate, reliable data for water level and temperature monitoring applications.

The Professional Standard

Get connected with the world's most advanced submersible cable. Quick-Connect™ cables available in Polyethylene, Polyurethane or FEP. Or, suspend it with Teflon-coated wire using a sealed backshell.

2 AA batteries provide long-term operation. And they are user replaceable—slide them in, no tools required.

SIMPLY

An internal data logger with 1MB of onboard memory can store more than 1-million data points. Think of all the possibilities!

Our pressure sensors set the standard for high-accuracy. NIST-traceable calibrations compensated across the ENTIRE temperature meet the most rigorous government standards.

SMALLEST DIAMETER AT ONLY 0.72" (18.3MM)

Now, 1-inch wells (25mm) can be monitored with room to spare! The miniTROLL packs a pressure/level sensor, temperature sensor, data logger, up to 1MB of memory (220,000 data points), real-time crystal clock, and internal power all into an industrial stainless steel housing with a diameter of only 0.72" (18.3mm). Sound extreme? We think so.

SIMPLE TO USE AND VERY POWERFUL

Since the miniTROLL houses everything needed to monitor, installation is easy. Just place it in water and have it collect data. Our intuitive Win-Situ software walks you through all the steps so you can start getting data fast and it's included with every purchase.

AUTOMATIC BAROMETRIC COMPENSATION

Why make things complicated and introduce inaccuracy into your test by using a separate barometer for compensation? With vented cable, the miniTROLL automatically compensates for barometric pressure so you don't have to. We also offer a low-cost 'BaroTROLL' unit to measure barometric pressure when using the units without cable.

THE MOST POWERFUL

ROBUST QUICK-CONNECT™ CABLE OR WIRE SUSPENSION

Our Quick-Connect cables are fully detachable and are available in FEP (Teflon equivalent), Polyurethane, or Polyethylene. Or you can use the miniTROLL without cable. For this application, we offer low-cost Teflon®-coated stainless steel wire for suspension without cable as well as Direct-Read cables for programming.

FIELD-RUGGED POCKET PC READER

Why take an expensive and hard to handle laptop to the field when you can take the Pocket PC in your pocket? Our rugged **ProfilerPlus™** system adds a hard case with watertight connections to make it extremely simple and reliable to use and with all of the power of a PDA. Only from In-Situ.

EXTREME ACCURACY

miniTROLLs are calibrated using NIST-traceable standards and compensated for temperature across the entire range. A calibration report is shipped with every unit offering extra assurance that your equipment meets or exceeds the rigid accuracy requirements specified by many agencies.

USER REPLACEABLE BATTERIES

Insert two AA batteries. It's that simple. Replace your batteries virtually anywhere on earth. No need to send the instrument back to the factory or worse yet, no need to throw it away.



USE IT FOR:

- surface water monitoring at gauging/meteorological stations
- stormwater, flood and combined sewer outfall (CSO)
- water resource & management district monitoring
- long- and short-term groundwater monitoring
- aquifer testing: step, slug and pump tests
- mine and construction site de-watering
- desert water runoff and wadi recharge
- tidal influence & open channel flow
- artesian well pressure observation
- river, stream and lake monitoring
- dams and lock level monitoring

for
Accurate
Data

Water Level Monitoring

Surface and Ground Water Monitoring

The miniTROLL can be found monitoring water levels in thousands of rivers, lakes and wells around the world and is counted on by professionals and governmental agencies to provide highly accurate data. With up to 1MB of non-volatile memory (220,000 readings) and the smallest diameter in the industry, the miniTROLL is ideal for both long and short-term groundwater monitoring applications. Check out these options:



(Enhanced Telemetry System) with solar power and cellphone options

Telemetry

An **Enhanced Telemetry System (ETS)** pays for itself in as little as six months by reducing labor and travel costs. View data in the comfort of your office. Modern, cellphone/modem, radio and satellite telemetry options are available with solar or line power. Automatically retrieve readings and download data based on your schedule.



Quad-Box and T-Box

Networks

Monitor up to 32 devices simultaneously using **T-Boxes/Quad-Boxes** and Interconnect Cable system. Monitor the whole network on-site with a laptop or Pocket PC or transmit the data to your office with an **ETS Telemetry** system. High-humidity is no problem for long-term installations with the **MAXUM** high-capacity desiccant option!

Software

Win-Situ

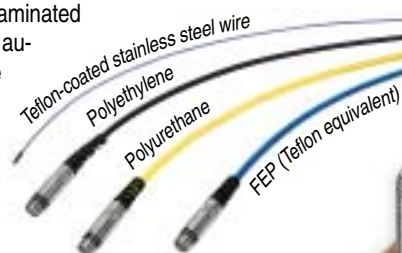
Easy-to-use Win-Situ software is your key to harnessing the power of the miniTROLL. Win-Situ's wizard-based interface making monitoring easy.

- Define logging operations
- View real-time data in meter or graph format
- Supports linear, linear average, event, and logarithmic logging modes
- Displays remaining battery and memory capacity
- Powerful graphing features
- Instant transfer of data to Excel
- and more!



Quick-Connect Cables

Vented Quick-Connect cables are available in Polyurethane or FEP for contaminated sites. Vented cable allows for automatic atmospheric pressure correction without user intervention! A Polyethylene non-vented (direct read) cable is also available.



AND

Sealed backends with wire suspension

Since the miniTROLL contains everything needed to monitor, it can also be suspended using low-cost Teflon-coated wire and sealed using a backshell. An external 'BaroTROLL' can be used to record barometric pressure for easy correction.



Real-Time Data Display

View water level and temperature data real-time using Win-Situ or Pocket-Situ software. A handy feature that is useful for installing the miniTROLL at a certain depth or for viewing drawdown levels during pumping tests!

SDI-12

SDI-12 Communications

The miniTROLL can be connected to popular 3rd-party samplers and data loggers using SDI-12. Now you can create power control and sampling systems with the miniTROLL!

RuggedReader™ System

Say goodbye to that expensive and heavy handheld unit and say hello to the new, ultra-Rugged **RuggedReader™** running **Pocket-Situ!** View and download data real-time, start and stop logging operations, manage your schedule, save contacts, and more. **Pocket PC handheld option also available!**

NEW!



RuggedReader™

miniTROLL

Sensor Specifications

		VERSIONS:					
			Standard T	BaroTROLL	Low-Cost Std A	Standard P	Advanced Professional
Depth, Level, Pressure, Barometric	Principle	Integrated silicon strain-gauge pressure sensor					
	Sensor Type / Range						
	Depth / Pressure	3.5, 11, 21, 70, 210, 351m (11.5, 35, 69, 231, 692, 1153 ft / 5, 15, 30, 100, 300, 500 psi)	○	○	●	●	●
	Barometric	30 psia (usable range is 16.5 psi)	○	●	○	○	○
	Sensor venting options						
Temperature	Vented (gauged)		○	○	○	○	○
	Non-vented (absolute)**		○	●	●	●	●
Accuracy		±0.05 at 15°C / ±0.1% across entire pressure and temperature range (3.5m / 11.5 ft / 5 psi sensor provides ±3mm (0.01 ft) accuracy)					
Resolution		16-bit A-D converter: 1mm (0.00531% FS) for a 21m (30 psi) sensor					
Pressure rating		2x range/3x burst (11 m = 3x range/5x burst)					
Temperature	Principle	Silicon temperature sensor	●	○*	○*	○*	○*
	Range	-5°C to 50°C (23°F to 122°F)* (pressure readings are temperature compensated)					
	Accuracy	±0.25°C					
	Resolution	±0.001°C					

Hardware Specifications

Data Logging	Number of programmable tests	1	16	1	1	2	16
	Logging Modes: linear (0.5 sec. minimum), linear average, <i>true</i> logarithmic or event						
Memory	Up to 1MB / Data points:	30K	220K	30K	30K	80K	220K
Power	Internal: 2 internal user-replaceable AA batteries						
	Estimated battery life: 990K data points at a 1-sec interval or 1.5 years at a 20-min interval						
External: 6VDC							
SDI-12 communications (optional with SDI-12 Adapter)							
Dimensions	Internal Power: 18.3 mm (0.72 in) OD, 295.9 mm (11.65 in) long						
	External Power: 18.3 mm (0.72 in) OD, 197.4 mm (7.77 in) long						
Weight	Internal Power: 0.31 kg (0.68 lb) with batteries (includes backshell)						
	External Power: 0.22 kg (0.48 lb) (includes backshell)						
Wetted materials	316 stainless steel, Viton®, FEP**, polyurethane or polyethylene (cable), both models						

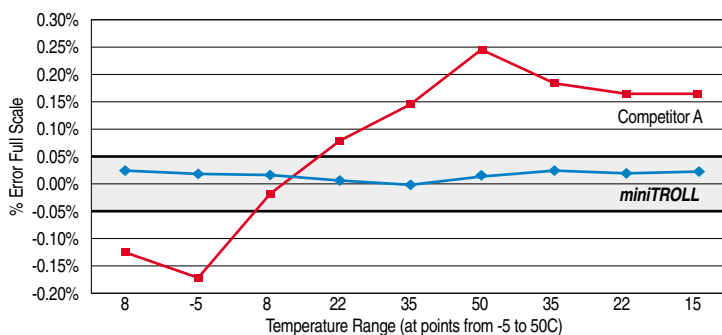
*The temperature sensor is used to compensate pressure, but its readings are not displayed

**5 & 15 psia (absolute) sensors not available

Extreme Accuracy—Our customers demand it!

Our Customers demand accuracy and precision. The miniTROLL has been extensively tested against competing units in every operating environment known. The result? The miniTROLL is considerably more accurate. You decide—have a look at a graph below that shows unbiased data from an environmental test between the miniTROLL and a competitor.

- **Automatic Barometric Compensation**
with psig sensor and vented cable
- **Automatic Temperature Compensation—**
(across the entire temperature range from -5 to 50°C)
- **Fluid Density Correction**
- **Gravitational Acceleration Correction**
- **Liquid Density Correction**
- **NIST-Traceable Calibration**



Purchase · Rent · Lease the miniTROLL Today!



The Standard for Water Quality & Level

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**FEP (fluorinated ethylene propylene) is the generic equivalent of DuPont Teflon.

9/2004



Accessories

Networking

Multiple unit installations are a snap using T-Boxes or Quad-Boxes. Create networks of up to 32 miniTROLLs. Saves money!



External power

Need more power? Simply attach an external power supply. Solar power can also be used.

SDI-12

Now available with optional SDI-12 output. Connects to popular 3rd-party data loggers.



Reels, Well Docks and caps

Reels are available in three sizes in steel or ABS plastic. Well Docks make well installations a snap. A real asset!



Non-vented backshell

Use the miniTROLL without vented cable by attaching a stainless steel backshell.



Snap ring kit

Snap ring kit for non-vented miniTROLLs and BaroTROLL. Handy when changing batteries



Desiccants

High humidity? Try a MAXUM high-capacity desiccant. Screws right onto the cable!



Cables

Vented or non-vented Quick-Connect™ cables. Available in polyethylene, polyurethane or FEP (Teflon®).



Patented design