



Cellular Network Telemetry Systems

Quickly connect to remote monitoring stations by using cellular network technology. Economical, secure telemetry systems reduce data collection costs by providing real-time access to data, event notifications, and system status updates. Superior power supply management ensures long-lasting, independent operation at remote sites.

- **Tube Systems:** For in-well deployments and low-profile installations, choose the battery-powered Tube 300R. For high-frequency sampling, choose the solar-powered Tube 300S. Connect up to five instruments to a Tube System using a TROLL® Net Hub.
- **Cube Systems:** For sites that require multiple sensors, choose the battery-powered Cube 300R or the solar-powered Cube 300S. Connect up to five instruments to one Cube.

Both the Tube and Cube Systems offer data logging and transmission; remote configuration control; and alarm notifications for parameter thresholds, instrument malfunction, and tampering detection.

Real-Time Data

- Receive automatic data log uploads to your email or FTP site at customized intervals.
- Easily integrate systems into your current data management platform for real-time evaluation of site data and conditions.
- Never miss a data point. The system recognizes missed data and sends that data on the next transmission.

Real-Time Decisions

- Quickly respond to user-defined field events or to tampering. Automatic alarm notifications are sent to your email or phone via text message.
- Significantly reduce site visits. Receive system status updates, diagnose problems, and perform preventative and corrective maintenance from your office.

Real-Time Support

- Receive free, 24/7 technical support and online resources.
- Order instruments and accessories from the In-Situ e-store.
- Troubleshoot deployment issues by using an external modem.
- Duplicate logs on the data logger and the telemetry system for confidence in the most remote locations.

Applications

- Long-term groundwater and surface-water monitoring
- Event notification—crest stage gages, flood warning system, storm surge, slope stability
- Mine dewatering and acid mine drainage
- Stormwater management
- Tide gaging

Cellular Network Telemetry Systems

General	Tube 300R	Tube 300S	Cube 300R	Cube 300S
Operating ranges	Temp: -20-70° C (-4-158° F) Humidity: 95% max. n.c.	Temp: -20-70° C (-4-158° F) Humidity: 95% max. n.c.	Temp: -20-70° C (-4-158° F) Humidity: 95% max. n.c.	Temp: -20-70° C (-4-158° F) Humidity: 95% max. n.c.
Diameter, maximum	Tube: 5 cm (1.97 in.) Top cap: 5.2 cm (2.05 in.)	Tube: 7 cm (2.75 in.) Top cap: 7.5 cm (2.95 in.) (with solar panel)	NA	NA
Dimensions	Length: 48 cm (18.9 in.)	Length: 48 cm (18.9 in.)	20 x 18 x 8.5 cm (7.87 x 7.1 x 3.35 in.)	36 x 24 x 13 cm (14.2 x 9.4 x 5.1 in.)
Weight with battery	1730 g (3.81 lbs)	1670 g (3.68 lbs)	1345 g (2.965 lbs)	3100 g (6.83 lbs)
Materials	Stainless steel	Methacrylate, 5 mm thick	GW PLAST 75	GW PLAST 75
Ratings	IP68 (cannot operate submerged)	IP65	IP65	IP65
Power Internal battery	Battery Lithium 10.8V / 19000 mAh	Solar panels integrated NiCd 7.2V / 1400 mAh	Battery Lithium 10.8V / 19000 mAh	Solar panels integrated NiCd 7.2V / 1400 mAh
Connectors	1 twist-lock connector or 1 Rugged TROLL connector	1 twist-lock connector or 1 Rugged TROLL connector	5 twist-lock connectors or 5 Rugged TROLL connectors	5 twist-lock connectors or 5 Rugged TROLL connectors
Operation time	Up to 5 years when logging every 10 min. and uploading data 1/day	Solar panel power: Unlimited, depending on sunlight exposure and programmed activities	Up to 5 years when logging every 10 min. and uploading data 1/day	Solar panel power: Unlimited, depending on sunlight exposure and programmed activities
Common Specs				
Instrument compatibility	Aqua TROLL® 100/200 Data Loggers; Aqua TROLL 400 Multiparameter Instrument; BaroTROLL® Data Logger; Level TROLL 400/500/700/700H Data Loggers; RDO PRO-X Probe; Rugged BaroTROLL Data Logger; Rugged TROLL 200 Data Logger; TROLL 9500 Multiparameter Instrument			
Communication Antenna	GSM four band—850, 900, 1800, 1900 MHz (capable of GPRS, SMS, email, and FTP); 2G or 3G available SMA connector with stud antenna or optional external antenna for Tube 300R			
Data access / storage Data access Data storage Data format	Via email or FTP; via cable; and real-time via GSM/GPRS direct call SD Flash memory, 512 MB (not replaceable) CSV file			
Programming Programming mode Operation mode	Through ANT tool communication software, via cable, or remotely via landline or GSM modem Through communication software tool via direct connection to a PC or remotely through GSM modem or landline modem. 1. Up to 8 programmable events/day; data transmission; or SMS transmission 2. Automatic data logging (reading interval: 1 minute to 24 hours) 3. Alarm transmission (SMS) 4. Data logging and batch transmission of stored data. Connect up to 5 probes and log all available (includes data from internal barometric pressure sensor).			
Interfaces Serial interfaces	RS232 or RS485 software selectable (with automatic RS232 switching when a PC connection is detected)			
Alarm capability Capacity Sources* SMS limits	The unit can generate an alarm if tilted or disconnected; if exceeds critical temperature values or parameters threshold values; or if battery levels reach critical. Via SMS; 2 recipients Up to 8 alarm sources Can be programmed			
Real-time clock / calendar	Built in			
Sensors	Built-in barometric pressure sensor included with non-vented systems, which automates barometric pressure compensation for non-vented water level sensors. Built-in temperature sensor			
Warranty	1 year			
Notes	* Refer to Alarms section in manual. Alarm sources: reset, temperature, tilt sensor, data send failure, low battery, probe reading out of range, tamper, log memory full or error, and probe reading error Specifications subject to change without notice			



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