

# TROLL® Link Telemetry Systems

## Real-Time Data Access

In-Situ® TROLL Link Telemetry Systems offer reliable, secure access to remote site data 24 hours a day. Use these systems for a variety of applications—long-term aquifer monitoring, stream and tide gaging, flood warning, storm surge monitoring, and water monitoring networks.

- **Save time and money**—Quickly access data while reducing site visits, labor costs, and travel expenditures.
- **Access real-time data from any location**—Choose from satellite, cellular, or radio options to ensure communication with your sites. Event-driven sampling and real-time alarm notifications alert you to changing conditions. View and analyze data from anywhere by using Win-Situ® Plus Software or by using the secure In-Situ Data Center web site.
- **Network multiple wells or sites**—Build wireless monitoring networks with Banner MultiHop Radios, lower data service fees, and reduce the need for a telemetry system at each site.
- **Reduce power consumption**—Eliminate the need for on-site line power by combining low-power telemetry systems with energy-saving In-Situ instruments. Solar power preserves probe battery life.

## Remote Site Control

View data when you need to and configure equipment without site visits.

## TROLL Link 100 System for Direct Access

This system operates on GSM/GPRS networks and offers direct connection via TCP/IP and dial-up to many In-Situ probes. Use the TROLL Link 100 System and Win-Situ Plus Software to:

- Remotely configure instruments and the telemetry system.
- Remotely extract data from instruments.
- Set up alarms and receive notifications of user-defined events via SMS or email (single user/single parameter).
- Provide external power to attached instruments.



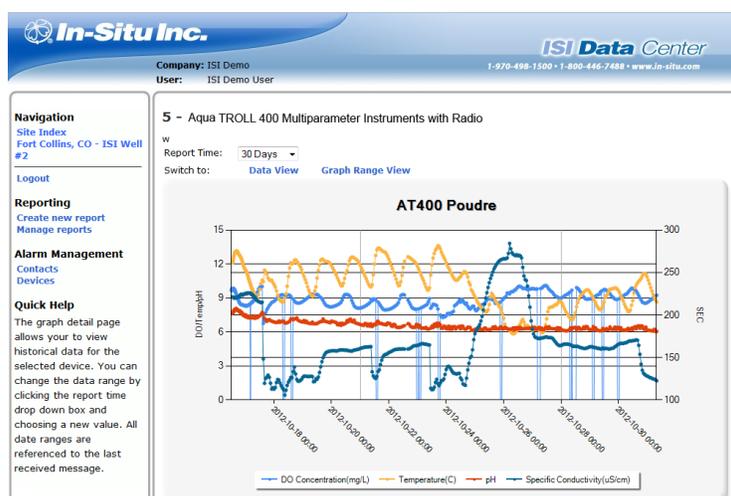
## TROLL Link 101 & 201 Systems for Web-Based Access

These systems offer access to many In-Situ probes with the In-Situ Data Center. The TROLL Link 101 System transmits data via GSM/GPRS networks. The TROLL Link 201 System transmits data via the Iridium Satellite Network. Use these systems to:

- Remotely configure the telemetry system.
- Provide access to real-time data for large user groups.
- Set up alarms and receive notifications of events via SMS, email, or phone call (multiple users/multiple parameters).
- Conduct event sampling and automatically increase data transmission during an event.
- Provide external power to attached instruments.

## MultiHop Radios Lower Operating Costs

With Banner Engineering MultiHop Data Radios, you can build wireless water monitoring networks that use In-Situ instruments, provide real-time data, improve project efficiency, and reduce expenses. Radios can be networked with In-Situ instruments into a TROLL Link Telemetry System. Call for details or visit [www.in-situ.com](http://www.in-situ.com).



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## Selection Guide & Specifications

Communications	TROLL Link 100*	TROLL Link 101**	TROLL Link 201**
Technology	Cellular—GSM/GPRS	Cellular—GSM/GPRS	Iridium Satellite Network
Frequency Range	Quad-Band 850, 900, 1800, 1900 MHz	Quad-Band 850, 900, 1800, 1900 MHz	1616 to 1626.5 MHz
Integrates with Radio	No	Yes	Yes
<b>Data Access Mode</b>			
TCP/IP; Dial-Up/CSD; SMS Data	Yes	No	No
In-Situ Data Center	No	Yes	Yes
<b>Alarm Notifications</b>			
SMS and Email	Yes	Yes	Yes
Phone	No	Yes	Yes
Single Contact; Single Parameter	Yes	Yes	Yes
Multiple Contacts; Multiple Parameters	No	Yes	Yes
<b>Probe Options</b>			
	Aqua TROLL® 100 & 200 BaroTROLL® & Rugged BaroTROLL Level TROLL® 300, 500, & 700 Rugged TROLL® 200	Aqua TROLL 100, 200, & 400 BaroTROLL & Rugged BaroTROLL Level TROLL 300, 500, & 700 RDO® PRO Probe Rugged TROLL 200 TROLL 9500	Aqua TROLL 100, 200, & 400 BaroTROLL & Rugged BaroTROLL Level TROLL 300, 500, & 700 RDO PRO Probe Rugged TROLL 200 TROLL 9500

TROLL Link Telemetry Specifications	
Enclosure	NEMA 4X/IP67
Operational Temp. Range	Cellular: -20° to 60° C (-4° to 140° F) Satellite: -40° to 70° C (-40° to 158° F)
Dimensions (WxHxD)	25.4 x 30.5 x 12.7 cm (10 x 12 x 5 in.)
Weight	6.8 kg (15 lbs) — Includes battery
Communication Options	Satellite; Cellular (GSM/GPRS)
Power Supply Options	<ul style="list-style-type: none"> <li>1-W solar panel (direct to system)</li> <li>10-W solar panel (into External Battery Kit with charge controller)</li> <li>20-W solar panel (into External Battery Kit with charge controller)</li> <li>12 V, 7 Ah sealed lead-acid battery kit with charge controller</li> </ul>
Warranty	1 year

### TROLL® Net Hub Networks Multiple Probes

- Networks up to eight devices into one telemetry system
- Maximum cable length of 1,219 m (4,000 ft) per Modbus/RS485 protocol
- Uses 9-36 VDC power source
- Passes power to attached probes when connected to external power

TROLL Net Hub Specifications	
Models	4-port bulkhead; 8-port bulkhead; 4-port strain relief; 8-port strain relief. Models with strain relief are used with stripped-and-tinned cables.
Enclosure	NEMA 4X/IP67
Operational Temp. Range	-40° to 60° C (-40° to 140° F); 95% relative humidity
Storage Temp. Range	-40° to 85° C (-40° to 185° F); 95% relative humidity, non-condensing
Dimensions (WxHxD)	16 x 16 x 9.04 cm (6.3 x 6.3 x 3.56 in.)
Weight	<ul style="list-style-type: none"> <li>4-port bulkhead: 694 g (1.53 lbs)</li> <li>8-port bulkhead: 838 g (1.85 lbs)</li> <li>4- and 8-port strain relief: 632 g (1.39 lbs)</li> </ul>
Power Requirements	9-36 VDC (refer to instrument documentation for cable length and voltage limitations)
Current Draw	<ul style="list-style-type: none"> <li>20 µA sleep mode (without instrument load)</li> <li>60 mA wake mode (without instrument load)</li> </ul>
Warranty	1 year



\* Discrete Input/Counter included. \*\*Optional Discrete Input/Counter available. Specifications are subject to change without notice.



**Call to purchase—[www.in-situ.com](http://www.in-situ.com)**

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