Remote Data Acquisition
Historic analog, frequency or event data from sensors, meters and instruments operating from utility, solar or battery power.

Communication
Communicate via cellular, Ethernet, the Internet, radio, satellite, telephone, or hand-held PDA.

Information Management
Manage your data via a Windows host application with a powerful graphical user interface and embedded database manager for report presentation and data archiving.
Remote Monitoring

Telogers is a remote monitoring system created specifically for water utility distribution and collection systems. Telogers provides real-time information and alarms, as well as historical data, from remote sensors, instruments and analyzers. Using Telogers Enterprise software, you can see exactly what’s happening in the field within minutes of a change or an event—and you can make informed operational decisions, taking proactive steps to prevent problems.

Telogers single - supplier solution provides a universal compatibility that brings your data together like never before; you can gather, manage, archive, and share information throughout your organization because data from all remote sites reside on a common platform.

**Data Collection** - Telog's field Recording Telemetry Units (RTUs) interface smoothly with any manufacturer’s field sensors and instruments.

**Data Transfer** - Transferring data to the host computer takes place frequently and automatically.

**Manage Data** - Users can easily organize, view, generate reports and archive data.

**Data Sharing** - Share data over your intranet or the Internet; data recipients only need a web browser to view both tabular and graphical data.

Also you can share data with third party software applications including SCADA/HMI, billing, modeling, and GIS.

Water Distribution/Collection Measurements

- Flow
- Level
- Surcharge
- Tank Level
- Rainfall
- Water Quality
- Groundwater Level
- PRV Monitoring
- Pump Monitoring
- Water Hammer
- Pressure
- Metering

Communication Options

- Telephone
- Ethernet
- Satellite

Host Computer
**Ru-33 RTU**
Telog’s Ru-33 RTU, provides real-time monitoring and alarming of instruments and sensors found in the harsh environment of sewers and underground water vaults.

Using very little power, the RS-33 and 33u automatically monitor level, flow, pressure and water quality sensors.

These RTUs can interrogate meters, level, flow velocity, and battery voltage measurements. PLCs, flowmeters, Sondes, etc. are also supported using a generic MODBUS client.

**Multi-Channel Recorders**
The multi-channel recorders record output from a variety of sensors such as pressure, level, flow, temperature, and humidity. They accept analog and/or event inputs with a sample rate of 1 per sec up to 1 per 8 hours.

Alarm notification for critical point monitoring is available and backup battery packs ensure data integrity in the event of a power source failure.

Multi-channel recorders can work in a network or as solo dataloggers, indoors or outdoors, battery-operated or externally powered. Support software copies stored data for detailed analysis and professional presentations.

**RS-33/33u RTU**
Telog’s RS-33 or RS-33u provide real-time monitoring and alarming of instruments and sensors in a system package.

Using very little power, the RS-33 and 33u automatically monitor level, flow, pressure and water quality sensors.

These RTUs can interrogate meters, level, flow velocity, and battery voltage measurements. PLCs, flowmeters, Sondes, etc. are also supported using a generic MODBUS client.

**R-32 Wireless Recorders**

R-32 Series Recorders
All Telog 32 series recorders include an embedded, low power m2m cellular modem which employs 1xRTT communication protocol in North America on CDMA networks or HSPA communication protocol internationally on GSM networks. This permits deployment of Telog 32 series recorders wherever cellular coverage is available. Data automatically transfers to any designated host computer connected to the Internet or to Telog’s data hosting service.

R-32 series RTUs operate from a single ‘D’ cell lithium battery that can operate the recorder for more than 5 years while executing more than 3,800 cellular calls to its host computer. This would support, for example, 2 calls per day for 5 years or 10 calls per day for 1 year.

The RG-32 series includes the:
PR-32 Pressure Recorder
Ru-32 Recording Telemetry Unit (underground monitoring)
HPR-32 Hydrant Pressure Recorder
iLR-32 Current Loop Recorder
RG-32 Rain Gauge Recorder
Direct Connect R-31 Recorders at a Glance

Telog’s direct-connect recorders are ideal for monitoring less critical sites that do not require automatic remote communication. The 31 family can operate for up to 7 years between battery changes. Data transfer is accomplished using a hand-held data transfer unit (DTU) or your laptop running Telogers for Windows.

### HPR-31 Hydrant Pressure Recorder
This versatile recorder has many applications:
- Monitor water pressure within any water distribution system;
- Investigate customer complaints;
- Perform fire flow testing;
- Modeling, and more.

### HPR-31i Hydrant Pressure Impulse Recorder
The HPR-31i provides all the same features of the popular HPR-31 hydrant pressure recorder with the added benefit of impulse recording to capture negative pressure events.

### LPR-31 Line Pressure Recorder
This unit is intended for temporary or permanent installation on a water or gas utility distribution system line. The LPR-31 uses an internal strain gauge pressure sensor to monitor and record line pressure.

### LPR-31i Line Pressure Impulse Recorder
The LPR-31i is based on the LPR-31 design. The added feature of this unit is the ability to record impulse readings and capture negative pressure events.

### SSO-31 CSO/SSO Monitoring
A compact, rugged recorder packaged in a water-tight, 316 stainless steel enclosure that will monitor and document CSO/SSO events. Each event is recorded and time-stamped to show date, time, level, and duration.
For critical point monitoring, Telog also offers wireless CSO/SSO monitoring.

### WLS-31 Water Level Monitoring
Ideal for unattended in-well applications such as aquifer characterization, environmental remediation and well or tank level recording.

### 31 Series Recorders
The 31 series recorders (ATR-31 not pictured) monitor environmental and process signals and sensors such as analog voltage, current loop, ambient temperature, potentiometer position, etc. These rugged units are small, packaged for use in harsh environments, and use a single lithium 3V battery for power that lasts up to 5 years.

### Data Transfer Unit
Telog offers hand-held DTUs with software to permit on-site, direct-connect viewing of recorder inputs (user programmed engineering units) and the transfer of recorder data to the user’s host computer.
Telog provides users with a variety of communication technologies to move data from remote recorder sites to a host computer operating the Telogers data management application. Communication selection considerations include:

1. Amount and frequency of data to be transmitted.
2. Data accessibility frequency (e.g., hourly, daily, etc.).
3. Availability of communication infrastructure (e.g., cellular footprint, terrain, etc.).
4. Site power consumption.
5. Communication installation and operating costs.

The Telogers communication function operates automatically and permits call initiation from either the host computer or the remote site recorder. This permits, for example, the remote recorder sites to operate from battery power by switching radio power off between calls. The user may also employ a combination of communication methods such as some remote units on telephone; others on cellular or radio networks.

The more popular Telog communication methods are illustrated below. Telog can support additional communication methods. We encourage you to contact Telog or your local Telog representative to discuss the communication approach best suited to your application.
Telogers for Windows

Telogers for Windows is Telog’s high performance, automated communication and data management software. Use Telogers for Windows to manage a few or hundreds of remote recorders without user supervision. This is a Windows based program that incorporates an Access database that merges data transfers from remote recorders into a contiguous data file for each recorder channel.

Telogers Lite

Not everyone needs to configure and manage remote sites. The Telogers for Windows Lite version provides a cost effective information management tool for the direct-connect recorders (R-31/31i, SSO-31, WLS-31). Use a Telog data transfer unit or a laptop running Telogers for Windows Lite for quick access and on-the-spot data analysis. The reporting features in the Lite version remain the same as in the full version of Telogers for Windows.

The Benefit of Simplicity — Many recorders, one software package

All Telogers systems and direct connect recorders communicate with a single software package, Telogers for Windows. This software sets up your channels and schedules communication and data transfers. The user-friendly design of Telogers for Windows makes installation, setup and operation a breeze. Once the software is installed, you can set your parameters, communicate with recorders, and perform data analysis.

Setup in Telogers for Windows is easy and allows you to automate many tasks. In setup you may:
- Name recorders: By location, serial number, etc.
- Label channels: Flow, pressure, level, etc.
- Set parameters: Sample rates and intervals, statistics, alarm thresholds, etc.
- Automate scheduled call-in: Normal, event alarm, tamper, memory full, low battery, external power failure.

All communication tasks are automated according to what you programmed in setup. All remote site programming and data access is password protected to ensure all recorder access remains secure.

For any communication link, your data is protected during transit. Telogers uses a sophisticated error-checking and correction algorithm to ensure accuracy so you can focus on data analysis and information management.
3. Data Analysis — Reporting, Cut and Paste, Print and Present

**Reporting**

Superior data analysis and reporting are key benefits of Telogers for Windows. Your reporting will be faster, accurate, detailed and more comprehensive than ever before. With the totalizer/billing feature you can perform the following:

- Interchannel computations
- Peak demand on rolling intervals
- Totalizing flows over any time interval
- Multi-rate billing computation (peak, shoulder and off-peak daily periods).

The click of a button on the main menu toolbar transfers data to other software programs for analysis or incorporation into a report. If you would like historical, contiguous data files of each channel, Access can grab and place data during each data transfer session.

**Alarms**

Telogers automatically forwards alarms detected by remote R-33 series recorders. Alarms are called into the Telogers application then forwarded as text messages to system operators for field personnel via email or SMS cellular calls.

**Cut and Paste**

You can put your data into various formats. Print a graph or table directly and use it as a page in your report. Or, cut and paste it into the body text of your report. It is quick and easy, and the results are impressive.

**Print and Present**

When it is time to show the results of all your work, the various data presentation options will help you achieve professional looks without complicated maneuvers. You can work directly with the presentation options available in Telogers for Windows; you can also export your data to a third-party database management software for further manipulations before printing. Either way, you will save time with Telogers for Windows presentation options.
Typical Applications

**Open Channel Flow Monitoring**
- Wireless monitoring
- Monitor flow, pressure, level and water quality
- Alarm notification
- Submersible enclosure
- Web application software

**SSO/CSO Event Monitoring**
- Wireless communication or direct connect options
- Alarm notification
- Time stamped events
- Record level and duration of events

**Inflow & Infiltration Alarm Notification**
- Rainfall data and wastewater flow data are sent to the host computer via wireless communication. Data is correlated at the host computer to provide alarm notification.

**Wireless Rain Gauge Monitoring**
- Tipping bucket rain gauge monitor
- Cellular wireless
- Battery powered with single "D" cell lithium battery
- Five year battery life
- Small size

**Tank Monitoring**
- Chemical, fuel, or water level and transaction monitoring
- Inventory management
- Level alarm notification
- Refill scheduling
- Communication and power options

**Water Level Recording**
- Wireless communication or direct connect options
- Alarm notification
- Time stamped events
- Record level and duration of events

**Capture Transient Events**
- Capture negative pressure transient events
- Water hammer event recording
- Stores >450 transient waveforms
- Stores >3 hours of transient data
- Easy data collection
- Wireless communication

**Hydrant Pressure Recording**
- Pressure complaints
- Fire flow testing
- C-Factor testing
- Calibrating hydraulic models
- Hydrant capacity testing
- Wireless communication

**PRV Monitoring**
- PRV inlet/outlet pressure
- PRV differential pressure
- PRV valve position sensor
- Computed flow
- Wireless communication via buriable antenna

**Water or Gas Line Pressure Recording**
- Replace chart recorders on water or gas distribution lines
- Submersible enclosure suitable for underground vaults
- Capture negative pressure events
- 7 year battery life

**Facilities Energy Monitoring**
- Steam
- Gas
- Electricity
- Water
- Ethernet Network

**Environmental**
- Rainfall
- Windspeed
- Temperature
- Humidity

Specifications within this brochure are subject to change without notification.

Telog® is a registered trademark and Telogers™ is a trademark of Telog Instruments, Inc. Microsoft Windows® is the registered trademark of Microsoft Corporation.