Telog Ru-33

WIRELESS MULTI-CHANNEL RECORDING TELEMETRY UNIT FOR UNDERGROUND MONITORING

UNDERGROUND MONITORING IN HARSH ENVIRONMENTS

The Telog Ru-33 provides real-time monitoring and alarming of flow, pressure and water quality instruments and sensors found in the harsh environments of sewers and underground water vaults. When you combine the Telog Ru-33 RTU with a Trimble Telog software option, you have a powerful system of wireless water infrastructure monitoring that is consistently delivering real-time data from the field straight to your desktop. Imagine.....all your data on one platform straight to your computer screen.

Sensor Support
The Telog Ru-33 supports multiple sensor interface options including RS-232, RS-485, analog and digital inputs. For example, when connected to an open-channel flowmeter via RS-232, the RTU can interrogate the meter for it's most recent level, flow velocity and battery voltage measurements. Trimble Telog also provides optional sensors that may be directly attached to the Telog Ru-33 including ultrasonic and pressure level, water quality Sondes, temperature, level switches and a rain gauge.

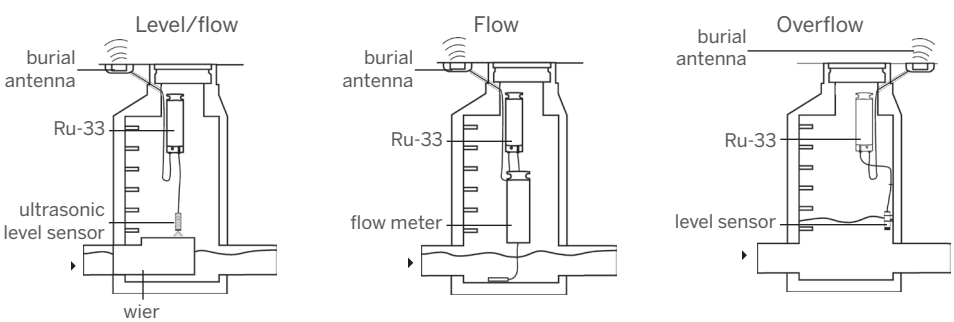
Wireless Communication
The Telog Ru-33 employs a Telog proprietary, low power m2m cellular modem certified for operation on the Sprint, Verizon Wireless and Bell Canada cellular networks.

Collecting Data
The Telog Ru-33 may be configured to call its host application on a schedule (e.g. once per day; every four hours, etc.) and/or in response to site alarm conditions (e.g. in response to a high level event). Data may be stored in the recorder at user defined intervals (e.g. five minutes, one minute, etc.) without concern for data loss because the recorder will store from 67,000 to 270,000 values, depending on input type, before overwriting the oldest data.

Packaging
The cellular modem, antenna, process signal conditioning, data recorder and battery are integrated into an IP67 rated, environmentally rugged package weighing seven pounds and measuring cylindrical 4.5 x 15.4 inches.

Battery Powered
This RTU is powered by a single user replaceable 6-volt lantern battery providing an operating life of six months to two years depending on the sensor interface and call schedules.

Software Support
Trimble Telog wireless recorders are compatible with all Telog software applications, including Telog Online (cloud), Telog Enterprise and Telogers for Windows application software. This ensures that utilities have a complete solution addressing all their remote monitoring requirements delivered in a manner that suits each individual utility's operations and IT needs.



Applications

- Monitoring of popular open-channel wastewater flow meters
- Pressure monitoring
- Level monitoring
- Water quality sensors and sondes monitoring

Benefits

- Improve asset performance, reduce leakage and pipeline failures
- Monitor and optimize water and site operations and compliance
- Real-time situational awareness of overflows and high/low level events
- Battery operated, no AC powered required

Features

- Wireless communication via cellular
- Alarm notification
- Time stamped events
- User programmable
- IP67 Rating

Telog Ru-33 WIRELESS MULTI-CHANNEL RECORDING TELEMETRY UNIT FOR UNDERGROUND MONITORING

RECORDER MODEL: Telog Ru-33

Type	Multi- channel underground RTU (Recording Telemetry Unit)
Recording	
Sample rate	Programmable from 1/sec up to 8 hours; each channel
Data interval	Programmable from 1/sec up to 8 hours; each channel
Memory	
Size:	512 Kbytes
Storage method	Wrap around (first-in; first-out),
Data capacity	Dynamically allocated to active channels, any combination of:
Analog input	270,000 values
Pulse input	200,000 values
Event input	67,000 values
ComSensor input	100,000 values
Communication	
Standard:	Standard: 5 pin circular connector rated IP67 Auto-selected baud rate to 19.2K
Optional	Land line telephone Telog M-324 2400 baud modem Auto-dial/Auto-answer FCC and CSA approved
Cellular	Internal Telog WM/C embedded 1xRTT modem certified on Sprint & Verizon in USA WM/H HSPA modem certified on Bell in Canada Dual band internal antenna
Inputs	Limited to one ComSensor + one analog + one digital
ComSensor/meter	Selectable RS-232 or RS-485 to 19.2 Kbaud. Protocol determined by meter or sensor
Analog	
Selectable ranges	0-1 VDC, 0-5 VDC, 4-20 ma
Excitation	Pulsed +5 or +12 VDC, (selectable duration)
Resolution	0.025%; 12 bits
Accuracy	±0.1% of full range at 70° F ±50 ppm
Digital (one channel)	
Type	Selectable pulse counter or event recorder
Input	Contact closure or logic driven input
Excitation	5 VDC at 20 µAmps (max)
Pulse width	10 mS minimum
Battery	
Factory installed	Single 6V alkaline lantern battery Eveready Energizer model 529 Optional extended life battery available
Battery Life Example:	
Input ComSensor	Sigma 900 series flow meter
Sample rate	Five minutes
Communication	Wireless 1xRTT
Call schedule	
5 minutes	Battery life=1 month
15 minutes	Battery life=3 months
2 hours	Battery life=1 year
24 hours	Battery life=2 years
External Power Input	9 to 15 VDC @ 1 amp max
Enclosure	
Size	Cylindrical 4.5" D x 15.4" L
Weight	7 lbs.
Material	PVC
Environmental	
Temperature	32 to 160°F -22 to +160°F powered externally
Submersible	IP67 (NEMA 6)
Support Software	
S-3PC	Telogers for Windows®
S-3EP	Telog® Enterprise
DHS-Service	Telog Online
TW-UNITY	Trimble Unity

TRIMBLE TELOG SUPPLIED SENSORS

Pressure Level Sensor

Model: Telog PT-3Vu submersible pressure sensor

Ranges	0-5 PSI thru 0-200 PSI
Accuracy	±0.25% of full scale
Construction	316 stainless steel
Vent	In-line dry box with user replaceable desiccant

Ultrasonic Level Sensor

Model: Telog UT-33u/95 ultrasonic transmitter (ComSensor)

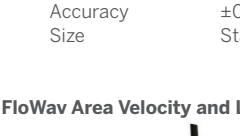
Frequency	95 KHz
Range	one foot to 13 feet
Beam Angle	8° conical
Accuracy	±0.25% over any range segment exceeding 12 inches (homogeneous environment)

Temperature Sensor

Model: AT-3u ambient temperature sensor

Range	-4 to +160° F
Accuracy	±0.3° F
Size	Stainless Steel probe (4" x ¼") with 10 feet of cable

FloWav Area Velocity and Level Sensor



Model: PSA-AV A/V Level sensor

Range	Velocity: -5 to 20 ft/s Depth : 0 to 15 feet
Accuracy	Velocity: +/-2% of reading Depth: +/-0.25% full scale +/-1% of reading from 32° F to 160° F
Size	0.9" H x 1.85" W x 6" L with 30 feet of cable

TRIMBLE TELOG SUPPORTED METERS AND SENSORS

Flow meters

Via RS-232 or RS-485:	ADS Flow Shark
Interface to meter:	Hach Sigma 900 Series
Serial interface port:	ISCO 2150 Marsh McBirney Flo-Dar & Flo-Tote3 Meters MGD ADFM & accQmin
Sensors:	Hydrolab Sondes Hach WMD Pipe Sonde
Water Quality:	Hach Hydrolab Multiparameter Sondes DataSonde 4a, MiniSonde 4a DS5X, DS5, MS5 Hach WDM Pipe Sonde

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