Telog Ru-35

Trimble water

WIRELESS MULTI-CHANNEL RECORDING TELEMETRY UNIT FOR UNDERGROUND MONITORING

UNDERGROUND MONITORING IN HARSH ENVIRONMENTS

The Telog Ru-35 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-35 RTU with a Trimble Telog software option, you have a powerful system of wireless wastewater infrastructure monitoring that is consistently delivering real-time data and alarms from the field, straight to your desktop or browser. This enables Situational Awareness of the performance of the collection system, improves regulatory compliance and enables network modeling calibration.

Sensor Support

The Telog Ru-35 supports multiple sensor interface options including RS-232, RS-485, analog and digital inputs with MODBUS, SDI-12 and I2C protocol support. 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 provide optional sensors that may be directly attached to the Telog Ru-35 including ultrasonic and pressure level, water quality Sondes, temperature, level switches and rain gauges.

Wireless Communication

Using cellular technology enables unmanned monitoring of remote sites as well as instant updates and alarm notifications. The Ru-35 uses a low power, 4G LTE/Cat 1 cellular communication modem certified on multiple cellular systems. This ensures maximum coverage, reliability of service and alignment with cellular carriers technology roadmaps. Additional communication options are also available on request.

Collecting Data

The Telog Ru-35 may be configured to call its host server 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 150,000 to 670,000 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 IP68 rated, environmentally rugged package weighing nine pounds (four kg) and measuring cuboid 7.3" (185 mm) L x 4.2" (107 mm) W x 11.5" (292 mm) H.

Battery Powered

This RTU is powered by dual user replaceable 6-volt lantern batteries 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), Trimble Unity, 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.
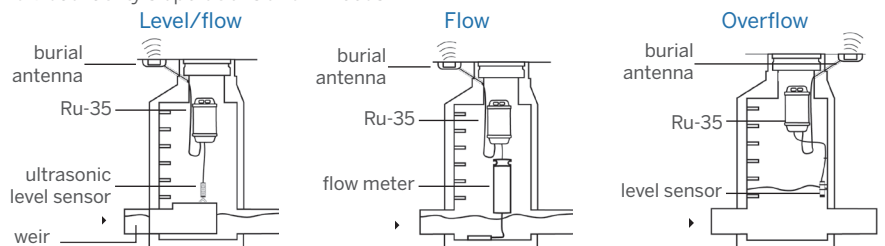
Applications

► Monitoring of popular open-channel wastewater flow meters

► Level monitoring

► Water quality sensors and sondes monitoring

Benefits

► Real-time situational awareness of overflows and high/low level events

► Model asset performance, reduce overflows and pollution

► Increased regulatory compliance

► Reduced confined space entries with wireless configuration

Features

► Wireless communication via 4G LTE cellular and Bluetooth Low Energy

► Alarm notification

► Time stamped events

► User programmable

► IP68 Rating

Level/flow — burial antenna, Ru-35, ultrasonic level sensor, weir

Flow — burial antenna, Ru-35, flow meter

Overflow — burial antenna, Ru-35, level sensor

Telog Ru-35 WIRELESS MULTI-CHANNEL RECORDING TELEMETRY UNIT FOR UNDERGROUND MONITORING

RECORDER MODEL: Telog Ru-35

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:	1 MB
Storage method	Wrap around (first-in; first-out),
Data capacity	Dynamically allocated to active channels, any combination of:
Analog input	670,000 values
Pulse input	500,000 values
Event input	150,000 values
ComSensor input	250,000 values
	(Values above represent maximum.)

Communication

Standard:	Bluetooth Low Energy (BLE) for local connection with computer
Backup:	Wired local RS-232 via sensor port, auto-selected baud rate to 115 Kbps
Cellular	Internal Telog WM2/L embedded LTE category 1 modem certified on Sprint & Verizon in USA WM2/H HSPA modem certified on Bell in Canada FirstNet available in USA.
Antenna:	TNC connector

Inputs	Limited to two ComSensors + two analog + two digital
ComSensor/meter	Selectable RS-232 or RS-485 to 115 Kbps Modbus SDI-12 I2C Protocol determined by meter or sensor

Analog (Two channels)

Selectable ranges	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 (Two channels)

Type	Selectable pulse counter or event recorder
Input	Contact closure or logic driven input
Excitation	3 VDC at 10 µAmps (max)
Pulse width	10 mS minimum

Battery

Factory installed	Dual 6 V alkaline lantern battery Rayovac 6-Volt Spring Terminals Alkaline F Cell | 808

Battery Life Example:

Input ComSensor	Modbus
Sample rate	Five minutes
Communication	Wireless LTE/1
Call schedule	
15 minutes	Battery life=6 months
60 minutes	Battery life=20 months
2 hours	Battery life=30 months
24 hours	Battery life=48 months
External Power Input	9 to 15 VDC @ 1 amp max

Enclosure

Cuboid	7.3"L x 4.2"W x 11.5"H [185mmL x 107mmW x 292mmH]
Two Chambers	Battery and sealed electronics
Weight	9 lbs. [4 kg]
Material	Injection molded polycarbonate

Environmental

Temperature	32 °F to 160 °F [0 °C to 70 °C] -22 °F to +160 °F powered externally
Submersible	Meets IP68 (NEMA 6P) standards

-22 °F to +160 °F [-30 °C to 70 °C] powered externally

Support Software	
S-3PC	Telogers for Windows® version 6.60 or later
S-3EP	Telog® Enterprise version 6.60 or later
DHS-Service	Telog Online
TW-UNITY	Trimble Unity

TRIMBLE TELOG SUPPLIED SENSORS

Pressure Level Sensor
Model: Telog PT-DSu

Type	Strain gauge pressure sensor
Range Selectable	5, 10, 30, 100, 300, 1000 PSIG
Accuracy over the calibrated temperature range including zero and span setting and the effects of non-linearity, hysteresis and repeatability:	0.25% FS
Cable:	Vented Polyurethane 0.225" diameter [5.715 mm]

Ultrasonic Level Sensor
Model: Telog UT-35u/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)

FloWav Area Velocity and Level Sensor
Model: PSA-35-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, ADS Triton, ADS Triton+ Hach FL900 Flow Meter
Interface to meter:	Hach Sigma 900 Series
Serial interface port:	ISCO 2100 Series Hach Flo-Dar & Flo-Tote3 Sensors/Meters ISCO ADFM & accQmin
Level Sensors	Via RS-232 or RS-485: FloWav Stingray (Level)
Sensors:	Hydrolab Sondes Hach Pipe Sonde
Water Quality:	Hach Hydrolab Multiparameter Sondes DataSonde 4a, MiniSonde 4a DS5X, DS5, MS5 Hach Pipe Sonde Ponsel C4E & CZTN (Conductivity)

DESIGNED & ASSEMBLED IN THE USA

Trimble.

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