



# Telog Ru-32imA

## WIRELESS MULTI-CHANNEL RECORDING TELEMETRY UNIT FOR UNDERGROUND PRESSURE, FLOW AND IMPULSE MONITORING



### UNDERGROUND MONITORING IN HARSH ENVIRONMENTS

The Telog Ru-32imA provides real-time monitoring and alarming of pressure, flow sensors, valves, and meters found in harsh environments typical of water distribution and wastewater collection systems such as underground water vaults. When you combine the Telog Ru-32imA 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.

In addition to monitoring the pressure on the two pressure channels, the impulse recording option feature of the Trimble Telog Ru-32imA unit stores the waveform of captured pressure transient (impulse) waves detected on the monitored network. The Trimble Telog Ru-32imA can store up to 125 events of variable duration that may occur over many months of on-site monitoring, recording up to a maximum of 20 minutes of pressure transient data at 30 samples/second. Impulse monitoring can be enabled on both pressure channels simultaneously, providing insight into impact and origins of such transient events.

#### Sensor Support

The Ru-32imA is a versatile eight channel RTU that can be supplied with one or two pressure sensors and can interface up to two digital inputs (pulse and/or event), one 4-20 mA current loop from a process instrument, one analog voltage or potentiometer input, and two additional inputs to capture the encoded register reading of single or dual water meters such as master meters and compound meters.

#### Wireless Communication

Using cellular technology enables unmanned monitoring of remote sites as well as instant updates and alarm notifications. The Ru-32imA uses a low power, 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.

#### Collecting Data

The Telog Ru-32imA may be configured to call its server application on a schedule (e.g. once per day; every four hours, etc.) and/or in response to site alarm conditions (e.g. transient event, high or low pressure or level exceedance). The recorder can sample the sensor up to four times/second and store the data statistics (minimum, average, maximum or totals) at user defined intervals. Additionally, the Telog Ru-32imA recorder can sample the pressure sensors up to 30 times/second for transient detection on both channels.

#### Packaging

The cellular modem, data recorder and battery are integrated into an IP68 rated, environmentally rugged enclosure weighing three pounds and measuring 8 x 8 x 4 inches (L x W x H). The unit is provided with a panel mount TNC coax connector and will support a variety of certified antennas. All connectors and fittings are watertight and the product is environmentally rated IP68 to 9.8 feet (three meters) of depth.

#### Battery Powered

The Telog Ru-32imA can be powered with internal battery or external DC power with internal battery backup. This is user selectable and the battery is a single, user replaceable battery pack, Telog BP-4, providing an operating life of up to five years depending on the user-defined call schedule. A five year battery life example would be sampling two pressure sensors every 10 seconds and water meter registers hourly and transferring data to a host server on a daily schedule.

#### Software Support

Trimble Telog wireless recorders are compatible with all Trimble software applications, including 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

- ▶ Water system pressure transient detection
- ▶ Water system pressure monitoring
- ▶ Underground water level monitoring
- ▶ Mag meter monitoring
- ▶ Pressure reducing valve (flow and pressure) monitoring
- ▶ Single or dual water meter monitoring
- ▶ Meter register input monitoring

### Benefits

- ▶ Detection of potentially damaging pressure transients
- ▶ Insight into consumption for non-revenue water
- ▶ Optimized water and site operations and compliance
- ▶ Real-time situational awareness on pressure or bursts

### Features

- ▶ Wireless communication via cellular (LTE)
- ▶ Alarm notification
- ▶ Time stamped events
- ▶ User programmable
- ▶ IP68 Rating

# Telog Ru-32imA SPECIFICATIONS

**RECORDER MODEL: Telog Ru-32imA**

<b>Type</b>	Eight channel, underground RTU with embedded cellular modem	
(Channels 1-2: 30 samples per second max - 33 ms, 1 second interval max):		
(Channels 3-4: 4 samples per second max - 250 ms, 1 second interval max):		
(Channels 5-6: 1 sample per second max - 1 s, 1 second interval max):		
(Channels 7-8: 1 sample per minute max - 1 min., 1 minute interval max):		
<b>I2C Pressure Sensors</b>	Channels 1 & 2	
Resolution	12 bits (0.025%)	
Accuracy	±0.075% of full scale at 73 °F [23 °C] ±40 ppm/°F	
Temperature range:	40 °F to 149 °F [4 °C to 65 °C]	
For applications below this operating range please contact your Trimble Telog support team.		
<b>Current Loop (Channel 3)</b>	(4-20 mA) Input	
Resolution	12 bits (0.025%)	
Accuracy	±0.075% of full scale at 70 °F [21 °C] ±40 ppm/°F	
<b>Analog Input (Channel 4)</b>	0-5 VDC	
Resolution	12 bits (0.025%)	
Accuracy	±0.075% of full scale at 70 °F [21 °C] ±40 ppm/°F	
<b>Digital Input</b>	2 channels (5 and 6)	
Type	Selectable pulse counter or event recorder	
Input	Contact closure or logic driven	
Excitation	3 volts at 20 µAmps maximum	
Pulse Width	10 ms minimum	
<b>Meter Register Inputs (Channels 7 and 8)</b>	Reads absolute encoded register values; 4 thru 9 digits in length 3-wire synchronous interface, ASCII coded E.g. Sensus ECR, Neptune ProRead (3-wire), Badger ADE & HR-E, etc.	

<b>Recording</b>		
Sample rate	4 per second to 1 per 8 hours; programmable	
Clock accuracy	0.01%	
Memory size	128 kbytes; 80,000 data values	
Storage method	Wrap around (first-in; first-out)	

<b>Communication</b>		
Local RS-232	5 pin circular connector rated IP68 Auto-selected baud rate to 19.2 K	
Cellular	IWM2/L1 cellular modem LTE Category 1 certified Verizon Wireless	
Bluetooth	Local Bluetooth BLE 4.1	

<b>Power</b>		
Battery	Factory installed, field replaceable Telog BP-4 lithium battery pack	
Battery Life	Up to 2800 data calls to host computer	
Examples:	Call Frequency	Battery Life
	1/day	5 second
	1/day	4/second
	1/day	30/second
		5 years
		2 years
		3.5 months
External Power	(2 sensors @ medium to excellent signal strength) 9-30 VDC @ 1 A optional via customer supplied DC or solar. Battery becomes backup if external power is lost.	

<b>Enclosure</b>		
Size	8" L x 8" W x 4" H [204 mm x 102 mm x 204 mm]	
Weight	3 lbs. [1.4 kg]	
Material	Polycarbonate	

<b>Environmental</b>		
Temperature	-40 °F to 158 °F [-40 °C to 70 °C]	
Rating	NEMA 6 (IP68)	

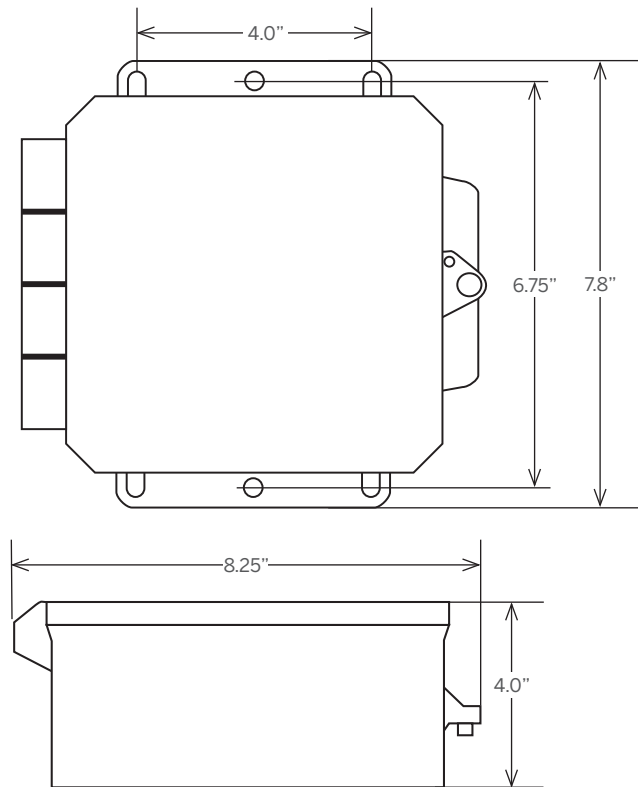
**Support Software**

S-3PC	Telogers for Windows®6.5 or later
S-3EP	Telog® Enterprise 6.5 or later
TW-UNITY	Trimble Unity

**SENSOR MODEL: TELOG PT-DS SERIES**

<b>Type</b>	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]	
Pressure Over Range	2x full scale with negligible calibration change 4x containment pressure up to 2900 psi max	
<b>Physical</b>		
Pressure fitting	1/4" NPT female	
Environmental	Submersible to NEMA 6P (IP68)	
Sensor Length	4.5" [114 mm]	
Sensor Diameter (max)	1.0" [25.5 mm]	
Sensor Body Material	316 stainless steel	
Cable Weight	0.027 lbs./ft	

**ENCLOSURE DIMENSIONS**



Specifications within this brochure are subject to change without notification. This product covered by U.S. Pat. No. 7,219,553 and 7,357,034.

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