



WIRELESS SOLUTIONS FOR THE  
WATER DISTRIBUTION INDUSTRY

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# SIGNALFIRE WIRELESS SOLUTIONS FOR THE WATER INDUSTRY

The SignalFire RANGER coupled with the Cloud Platform is the premier wireless data monitoring solution for the Water Distribution Market. SignalFire enables you to monitor all your remote assets from the convenience of your mobile device from anywhere, anytime. This Sensor-to-Cloud system can be installed into your existing process with no interruptions. The plug-and-play device connectivity makes fast and easy work to connect all your existing sensors into one complete monitoring tool. RANGER nodes can be configured remotely, and firmware updates are deployed over the air to keep your system optimized at all times. Device status and GPS location can be viewed on a map.

## Place-Anywhere Technology

SignalFire's cellular solution integrates the latest in cellular wireless technology, allowing bi-directional connectivity to the secure SignalFire Cloud interface (or other interfaces). Built-in batteries or optional external solar panel eliminates costly power drops and network cables, making installation quick and easy. Transmitters quickly attach to your sensors and are immediately monitored in a secure Cloud account.

### Advantages:

- **Data When You Need It** – No need to wait for a datalogger to call in 2 or 3 times a day. SignalFire technology allows users to contact your device directly anytime, all year round!
- **24/7 Access to Your Sensor Data** – Connect securely from most web browsers on a phone, computer, or tablet to view the most recent measurements from your sensors. No more waiting for a datalogger to call-in to view data.
- **Alarm Acknowledgement** – Monitor and manage critical alerts from the webapp and/or receive text messages when in alarm.
- **Low Installation Cost** – With the elimination of local power or networking connections.
- **Data Security** – Built on LTE cellular technology with TLS technology and MQTT.

## RAISING THE BAR WITH ALARM ACKNOWLEDGEMENT:

Unlike traditional cellular dataloggers, the SignalFire RANGER allows the user to receive alarms and provides your team with Alarm Acknowledgement.

SignalFire built in Alarm Acknowledgement helps the operator manage active alarms and provides your team with clear and concise alarm management assistance saving time while potentially increasing overall team efficiencies

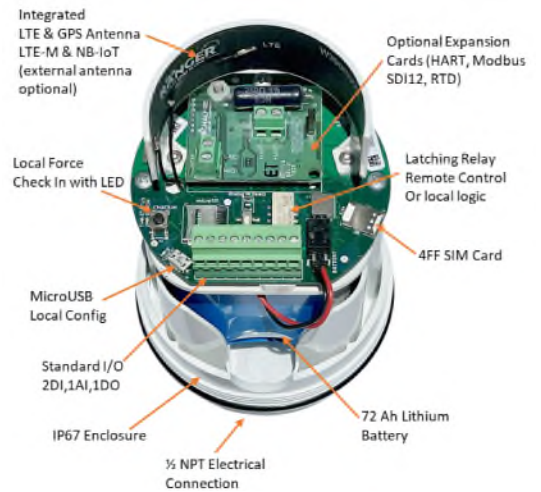
*Access real-time data from across your operation and see what immediate data insight can do for you!*





## SIGNALFIRE CELLULAR "RTU" RANGER

- Battery, solar, or DC powered
- LTE -M/NB-IoT Cellular enabled / MQTT capable to SCADA
- Environmentally rugged
- Intended to operate for years on-site without maintenance
- Sensor flexibility to power & measure most common signals (mA, HART, Pulse, Modbus, RTD, Volts, SDI-12)
- Easy to deploy, ready to use
- 1st year cloud service included!

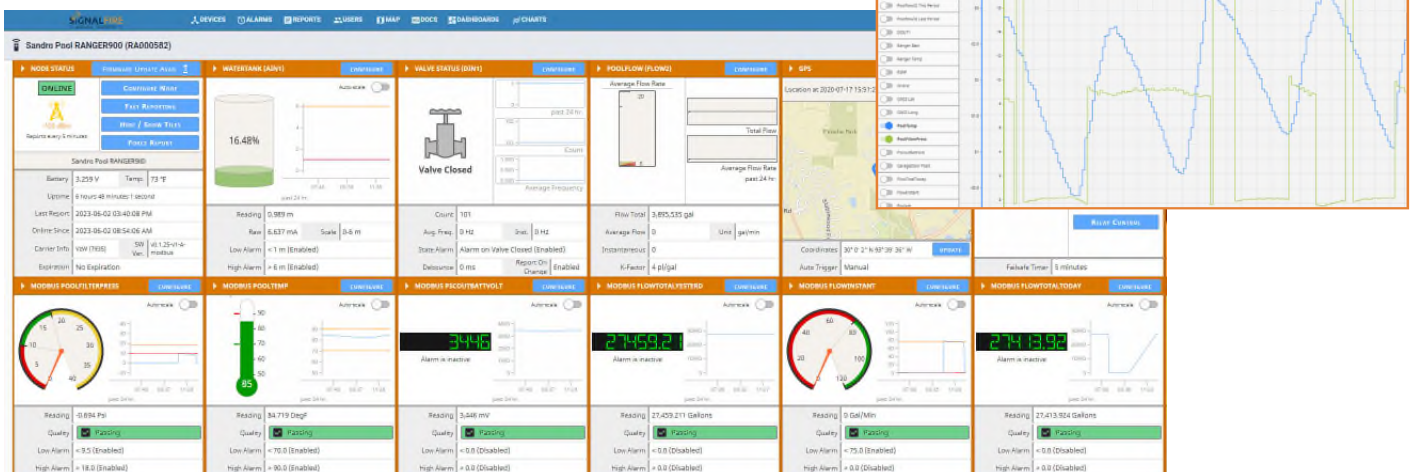
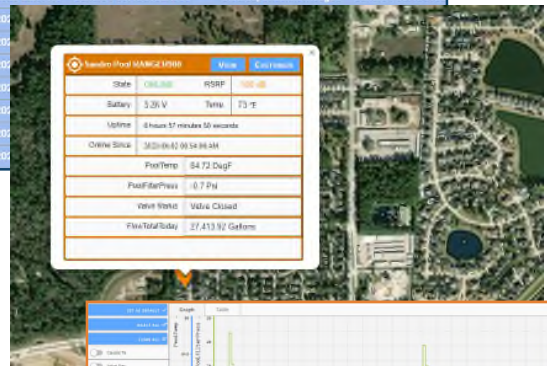
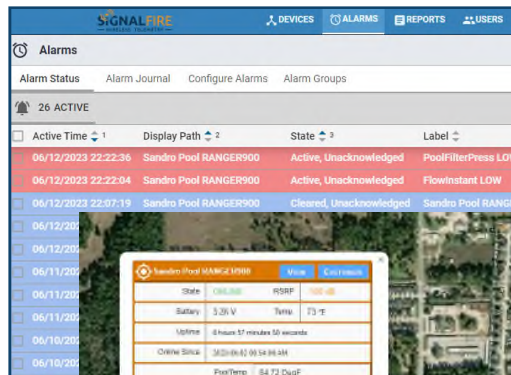


## SIGNALFIRE CLOUD

No software to purchase, install, or maintain! SignalFire Cloud is a secure, comprehensive, scalable data management system for remote distribution and collection systems. It provides real-time, alarm and historical data in user configurable reports and dashboards that display your data from all your remote sensors, instruments, and analyzers.

### Features:

- Easy to setup and use
- 1st year cloud service included!
- No software to install or maintain
- Secured TLS/SSL user authenticated sessions
- Unlimited users per account
- Flexible, client-customizable dashboards
- Daily/Weekly/Monthly reports automatically sent to client.
- Configurable user access privileges
- MQTT/SparkPlugB or API for data exchange/integration
- Configurable alarms reported by SMS (text), email & web app alerts



# WATER DISTRIBUTION SYSTEM APPLICATIONS

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SignalFire's solutions and technology for Water Distribution Systems vary in size and scope, but one thing remains constant: Our solutions are reliable, easy to deploy, user-friendly, versatile, and intuitive. Here are some applications where SignalFire Wireless Technology excels:



## TANK LEVEL MONITORING

SignalFire's RANGER Tank Monitoring Solution provides immediate water tower level readings with two installation approaches. Option 1: You can drop an existing or new submersible level sensor into the tank from above or Option 2: Attach a Pressure RANGER sensor to a fitting below the tank. Both methods provide accurate tank level readings and level data can be converted to volume if tank geometry is known. Because this system is truly wireless (battery or Solar powered), the installation is easy and inexpensive. Real-time data access, such as water pressure or level, can alert you of serious problems, such as a water main break.



## PUMP STATION MONITORING

SignalFire RANGER monitors one or two pumps for on/off duration, recording the time stamps of each pump cycle along with sensors for pump input and/or output pressure. The RANGER is battery-powered and wireless so it can be located virtually anywhere the pumps are located. The RANGER will send data & alarms and allow our clients to read real-time readings and historical data on demand.



## PRESSURE RELIEF & PRESSURE REDUCING VALVE MONITORING

The RANGER Wireless solution efficiently monitors the PRV system by tracking high- and low-pressure levels, as well as vault water levels. This reduces the need for confined entry space activity (Safety) and eliminates unnecessary pump truck rolls. The system provides historical and alarm data for continuous monitoring of proper system pressures throughout the distribution system. The SignalFire Cloud platform offers user-friendly dashboards and sends acknowledged alerts and alarms to field teams, maximizing efficiency. With bi-directional communication, clients can access data on demand and receive automatic alerts via SMS for alarm conditions.



## MAG METER MONITORING & PIT PUMP ALARMING

Protect yourself from pump failure by collecting inlet and outlet flow data from your existing flow meters (i.e. mag meters) to monitor pump health. SignalFire's RANGER attaches directly to the pulse output sensor of flow meters to send flow data and provide alarms of out of spec conditions. In addition, a third level sensor can be provided to alert the client when the meter-pit needs to be pumped of water from run-off or storm conditions, reducing truck rolls and confined space entry inspections.



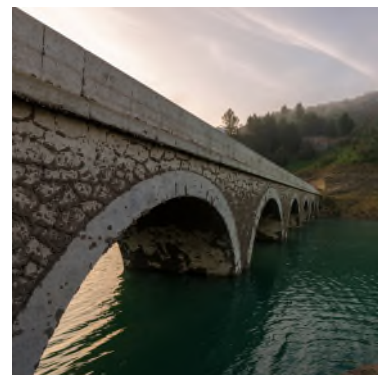
## RAINFALL MONITORING

The Wireless RANGER Rain Gauge Solution monitors the output of existing or new tipping bucket style rain gauges to provide rain totals for years without the need of grid-power or network wire. Simply connect the RANGER to all rain gauges through SignalFire Cloud access. A critical feature during storm and flood season is to monitor rain intensity. The RANGER ensures that the user always knows current total rainfall and can view intensity of rainfall live. Using the RANGER, Sewer Level Monitoring clients learn characteristics of the Collection system and can take actions to improve performance.



## WATER QUALITY MONITORING

The RANGER attached to most water quality analyzers can report data on chlorine residual, pH, turbidity, and more. The RANGER samples the data at a set interval and provides historical data while also alerting of site alarm conditions in real-time. Wireless and rugged, the battery or solar powered RANGER can be deployed virtually anywhere the analyzer is located.



## AQUIFER LEVEL MONITORING

Coupled with an existing or new submersible level sensor, the RANGER is capable monitoring the level of underground aquifers while reporting on exception. With the option of battery or solar panel, users can receive alerts with Alarm Acknowledgment, view historical level data, and receive reports automatically on a weekly or monthly schedule utilizing the SignalFire Cloud web app.



## WATER DISTRIBUTION SYSTEM APPLICATIONS

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### LIFT STATION MONITORING

Need description: Protect yourself from pump failure by collecting inlet and outlet flow data from your existing flow meters (i.e. mag meters) to monitor pump health. SignalFire's RANGER attaches directly to the pulse output sensor of flow meters to send flow data and provide alarms of out of spec conditions. In addition, a third level sensor can be provided to alert the client when the meter-pit needs to be pumped of water from run-off or storm conditions, reducing truck rolls and confined space entry inspections.



### CSO/SSO LEVEL MONITORING

SignalFire Cloud and RANGER provide a mobile platform for monitoring, alarming and reporting CSO/SSO and flood events. Because data can be viewed live on smartphones and laptops and with immediate alarm acknowledgement, management of field teams is easier and more efficient. Data is available on SignalFire Cloud or can be sent to MQTT capable SCADA systems if required. No more waiting for level data, the RANGER constantly sends data to the Cloud or SCADA, delivering advance warning of overflows and blockages to help manage CSOs, SSOs, and flooding incidents. The RANGER coupled with a Rain Gauge can monitor the environmental impact of a storm.



### RESERVOIR LEVEL MONITORING

The RANGER is ideally suited to monitor and report the level of reservoirs, lakes, rivers, and other surface water bodies. Being battery powered and wireless, submersible sensors or non-contact sensor elements can be utilized as the RANGER is compatible with a wide range of sensors.



### GENERATOR MONITORING

The RANGER is a great solution to monitor your generators across the city for status, uptime, fuel, and power. Essentially, the RANGER can interface with most generator interfaces or a simple on/off switch to determine if the generator is active when you need it the most.

## WIRELESS ASSET MONITORING MADE EASY

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RANGER simplifies remote asset monitoring by offering a user-friendly experience that makes the process effortless. Our team is dedicated to staying up-to-date with the latest wireless technologies and trends, ensuring that our sales engineers understand and cater to the specific needs of our customers.

**Plug-and-play ease of use.** Simply connect the RANGER to your sensor, power it up, and with just one click, you can locate your sensor in the SignalFire Cloud. From there, you can start accessing and analyzing your data immediately.

**Keeping your instruments up-to-date is crucial,** and RANGER makes firmware updates a breeze. Thanks to over-the-air capabilities, updating the firmware on our instruments is as easy as a push of a button. The update is seamlessly transmitted from the SignalFire Cloud to the RANGER, ensuring that your devices are always running the latest software.

**Bi-directional communications** are another powerful aspect of the RANGER. It enables real-time messaging between your sensor and the SignalFire Cloud. You can not only receive real-time sensor data but also send alerts and commands back to your asset. This allows you to remotely control actions such as turning on/off devices or closing valves, giving you greater flexibility and control.

**Data update rates** are configurable with the RANGER, allowing you to adapt to different situations. You can adjust the frequency at which data is updated based on your specific needs. Whether you require frequent updates or less frequent ones, the RANGER can be easily configured to meet your preferences.

**Universal compatibility.** Whether you need to monitor levels, pressure, temperature, pH levels, or flow rate, the RANGER can seamlessly integrate with your desired sensor. This compatibility ensures that you can leverage the RANGER's capabilities regardless of the type of sensor you are using.

***SignalFire provides a monitoring solution for nearly every sensor, meter, instrument, and application found throughout water and wastewater systems. Already have a sensor? No problem – most industrial sensors work with SignalFire.***

# **Pollardwater™**

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