

# Wise Telemetry

## Making cylinder distribution more efficient



There is a new system for monitoring gas consumption in cylinders, microbulk, and bulk tanks. Founded by Eric Wise, a Pittsburgh, PA, engineer and entrepreneur, Wise Telemetry offers gas producers and distributors an efficient means of monitoring gas levels.

### It takes a village

Wise explains how this exciting new company came to be. “The idea for a more efficient and easier way to monitor gas levels in cylinders came from watching my grandparents’ user experience with medical oxygen cylinders. I saw firsthand how difficult it was for gas users to predict when their cylinders would run empty. As a Carnegie Mellon University (CMU) mechanical and biomedical engineering student, I decided to develop a device that would determine exactly when a cylinder would be empty.”

Wise received a Small Undergraduate Research Grant from CMU, with which he developed a prototype of his gas monitoring system. With further funding from the National Science Foundation’s I-Corps Program, Wise refined the technology for pilot testing. In 2015, he launched BreatheWise, a telemetry system which Wise says was the first to provide complete insight into a customer’s gas supply at an affordable price. The Pittsburgh accelerator called AlphaLab Gear, which provides investment and mentoring to startups, helped Wise get the new company off to a strong start.

In 2016, Wise received a patent for his cylinder telemetry sensor and this year relaunched the company as Wise Telemetry. The new name better reflects the range of applications – from medical to industrial – that are the company’s target markets.

**Monitoring real-time supply and usage**  
Historically, cylinder telemetry has been

limited due to the prohibitive costs of connecting a sensor to every cylinder. Wise Telemetry’s patented sensors are the first to eliminate this restriction by requiring only one sensor per gas regulator, instead of one sensor per cylinder. This dramatically reduces the number of devices needed and their related costs.

For most sites, a single sensor can monitor its entire cylinder supply. With the sensor’s patented ability to automatically determine which cylinder is in use and recall previous cylinder usage data from stored memory, the sensor provides a complete report of a user’s cylinder inventory, along with estimates of when those cylinders will become empty. This data improves delivery route planning, usage tracking, and future demand prediction, enabling gas distributors to offer better service to their customers.

The system is straightforward. A sensor attaches to the gas regulator on a cylinder or tank, automatically determines the size and fill level, and sends this data to Wise Telemetry’s cloud computing system via Wi-Fi or cellular communication. Wise says, “This is software and equipment as a service. Our customers pay a monthly subscription, and we supply data from our sensors. This model allows us to keep hardware costs low so that gas distributors of all sizes can afford our system.”

### Markets

Wise Telemetry began with its system for the gas cylinder market and recently expanded into the microbulk, bulk, and propane markets.

In the cylinder market, Wise Telemetry’s patented device can be used with nitrogen, argon, helium, and various specialty gases. Oxygen compatibility will be added later this year. The company also has devices that can monitor liquid


cylinders, such as carbon dioxide. Data is accessed online via the company’s secure web portal, or a customer can also set up Wise Telemetry’s system to interact with its own asset management, route planning, and purchasing systems.

Wise microbulk systems operate on the principles of differential pressure or capacitance level monitoring. The device attaches either to the tank’s high and low pressure ports or directly on a capacitance probe that is installed in the tank. For a fleet of microbulk tanks, Wise says, “the data from our telemetry units can be fed into industrial routing software to ensure optimal delivery routes and eliminate emergency deliveries.”

Wise Telemetry’s bulk system application determines fill level by measuring differential pressure and can be retrofitted onto most tanks. As with microbulk, data can be used to create optimal routes and delivery schedules.

Propane is Wise’s latest application. Its patent-pending system operates by detecting the pressure in a propane cylinder and providing notifications when the liquid propane phase has completely evaporated.

### What’s ahead

Wise Technology is a privately held company led by Eric Wise, CEO. The company plans to double its staff by the end of 2017. Wise says, “It’s very exciting to see how data and digitalization are reshaping the gas distribution industry. Wise Telemetry unlocks new value and services for both gas distributors and their customers.” 

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