



Innovative Fixed Gas Detection Implemented Over Modern Wireless Networks

The growing need for environmental monitoring is fueled by the need for an industrial site to control its own emissions for safety and process related reasons, to provide accurate data to local regulation bodies. As such, Continuous Emission Monitoring is becoming a key issue for operations in every type of industry. In manufacturing, processing and control, the advent and proliferation of wireless technology has enabled greater usability of detector networks because the systems are no longer limited only to locations wired for power and signal.

“Banner’s experience and reliable, robust RF wireless technology combined with Oldham’s long history of expertise in gas detection brings an enhanced technology to environmental sectors for field monitoring and measurement.”

Regularly confronted with existing customer challenges, Oldham is committed to making workplaces safer around the world with innovative and efficient customer solutions. As wireless technology expands gas detection coverage over large remote locations in a cost efficient and accessible manner, Oldham’s Integrated and Engineered Solutions (iES) team worked to develop an innovative OLCT 80 field transmitter with wireless connectivity that can be used in ATEX 1 zones.

In order to implement a proven wireless system, Oldham partnered with Banner Engineering to increase the technical functionality, performance and cost effectiveness of Oldham’s OLCT 80.

Based on the standard SureCross MultiHop product range, Banner’s embedded board devices were specially designed for the needs of industrial users to provide connectivity where traditional wired connections are not possible or are cost prohibitive.

Extremely compact in size to facilitate embedding in existing products, each module has built-in discrete and analogue I/O, as well as serial communication on a Modbus platform. The self-healing and auto-routing RF network extends the networks range with multiple signal hops, each up to 3 km (line of sight), providing an easily integrated and robust wireless solution.

Every module is identical. The operational mode is selected with DIP switches between master, repeater or slave, greatly simplifying product order and integration in the sensing device.

“The Dataradio Wireless technology very quickly convinced us because of its simplicity of implementation, its integrity, power of communication and mesh capability”, stated Sebastien Martel, an iES Project Leader.

These existing technologies came together to give customers a highly-reliable, cable-free solution with overall cost reductions attributable to less cabling and less installation time. This integrated wireless solution is a resilient technology, scalable with its growing complexity. The wireless technology is agnostic to various sensor types and is available with multiple platforms or architectures, making it easy to integrate with established sensor systems. Bidirectional communication also allows for remote alarms to be integrated into a detector network, adding visibility and safety to the network status.

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In a recent application, a major UK company recently installed NH₃ gas detectors at some of its sites due to the large quantities of ammonia present in this environment. The goal of this project was to allow the customer to ensure employee safety around the plant, and limit the environmental impact of a potential gas leak. The large size of the facility meant that gas detectors must be relatively far removed from the company’s control center. A wired detector network in and around the plant, where it is nearly impossible to run electrical lines,

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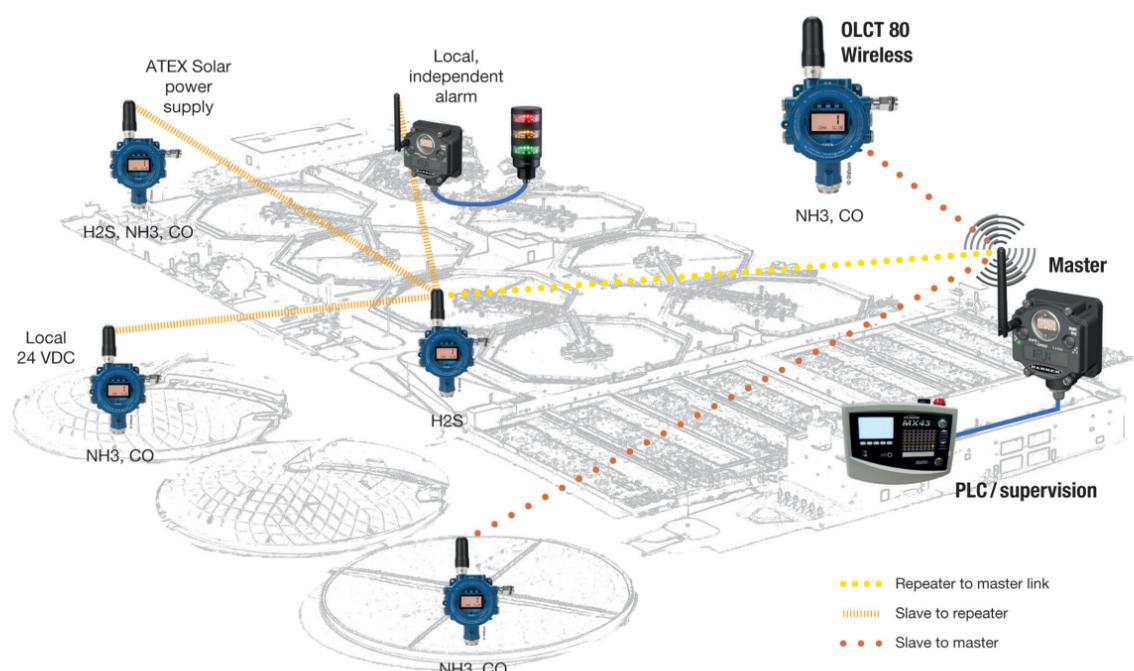
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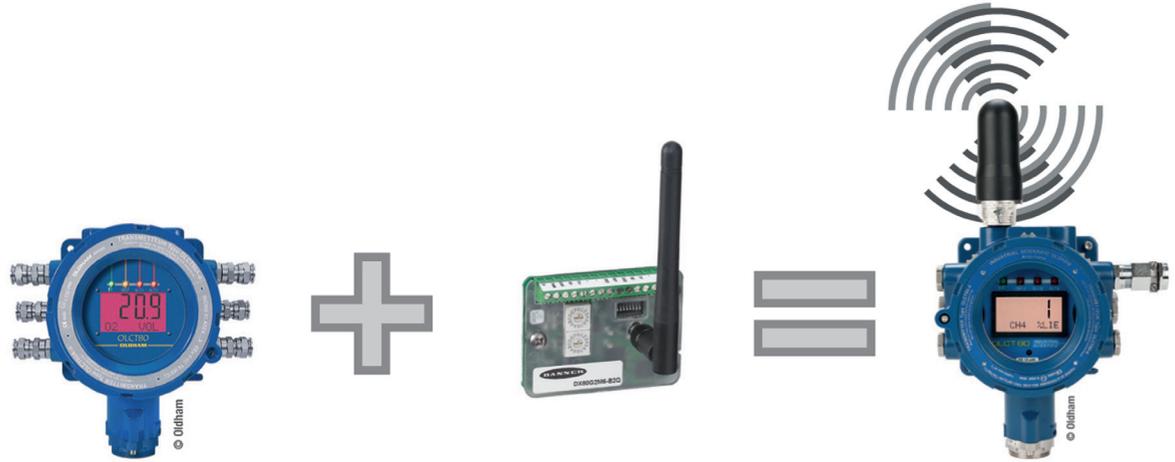
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would have been far more complex and expensive to install. The client appreciated Oldham's competitive advantage over other gas detection manufacturers with its latest innovative model of the OLCT 80 Wireless: "We could install a OLCT 80 Wireless in locations without direct line of sight view that still connected to the master. One installation is actually behind a building with high voltage transformers and the signal is still getting through".

Following an on-site demonstration given by Oldham's iES team, the device's powerful signal and mesh network topology were quick to gain the support of the facility's safety manager by offering a convenient, efficient and economical gas detection solution. As a result, a dozen wireless detectors were installed in remote areas. An MX 43 controller was also installed in the customer's control room, and which is in constant wireless communication with all the OLCT 80 Wireless devices in the field, displaying the alarm status of each OLCT 80 Wireless.

Another application for which wireless capability (combined with Oldham's gas detection expertise) was a key success factor involved monitoring areas at risk for anoxia within the chamber of a submarine that was under construction. Since personnel within the vessel are frequently on the move, the safety manager was seeking anoxia detection equipment that could be easily transported by operators from one area to another. In addition, the customer noted that any cables throughout the vessels would be highly prone to damage.

With the OLCT 80 Wireless option, Oldham was able to meet the customer's requirements and make it possible to transmit alarms



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via a secure radio signal. With the support of Oldham's iES team, a network of 15 OLCT 80 Wireless devices was proposed throughout the submarine and was designed in conjunction with an MX 43 Wireless Controller installed in the control room.

These two studies illustrate how the need for innovation, the desire to keep costs low, and the availability of technology come together to provide outstanding customer solutions where none existed previously. Mr. Martel points out, "Thanks to the dataradio, we have launched the OLCT 80 Wireless, Oldham's first wireless detector. This new transmitter allows us to expand our range and offer new solutions to our customers. With this

breakthrough, we have equipped major sites and achieved outstanding success. The worldwide market for wireless technology is getting more important every day and thus propels us to the forefront of technological innovation while providing security in the workplace."

The OLCT 80 Wireless is a perfect example of how this is achieved through the expertise and ingenuity of engineers with many years of experience in gas detection, combined with a leading provider of wireless sensing technologies for remote industrial applications.