

# Pipeline Company Eliminates Risk of Environmental Fines with Smart Wireless

## RESULTS

- Eliminated risk of environmental fines
- Avoided risk of shutdown
- Minimized capital costs

## APPLICATION

Engine Exhaust Temperature and Pressure Monitoring

## APPLICATION CHARACTERISTICS

800-1000 °F (430 – 540 °C)

## CUSTOMER

Gas transmission customer in the United States

## CHALLENGE

This customer was not compliant with local state environmental emission regulations for some of their existing natural gas compressors. These regulations were set in place to control the amount of carbon dioxide and nitrogen oxide released into the atmosphere from natural gas fired reciprocating internal combustion engines (RICE).

The customer did not have the necessary measurements to be compliant with the state regulation. The customer was required to record the exhaust temperature and the differential pressure across the exhaust catalyst to ensure it remained within the operating limits. Signal wiring between the compressor station and the control room was not available. Conduit would need to be run 500 ft. (152 m) and trenching would need to be done under a road to connect the compressor stations to the control room. Lastly, there was a shortage of qualified electricians in the area to implement a wired solution.

This customer faced several negative business impacts by not having the necessary measurements. These included fines and ultimately a risk of compressors being shut down if they did not demonstrate compliance with the regulation. To become compliant, their automation staff faced high capital costs associated with instrument installation such as trenching, conduit, cable trays, and labor.



*Smart Wireless transmitters eliminated long wire runs back to the control room and enabled the customer to quickly comply with regulations.*



Figure 1. Rosemount 848T Wireless High Density Temperature Transmitter

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**SOLUTION**

This customer’s challenge of being non-compliant with local environmental regulations was solved with Rosemount 848T Wireless High Density Temperature Transmitter and the Rosemount 3051S Wireless Pressure Transmitter. The 848T measured exhaust temperatures from multiple compressors and the 3051S measured the differential pressure of the catalyst. The Smart Wireless transmitters and a single Smart Wireless Gateway communicated between three gas treating and compression facilities separated by 500 ft. (152 m). Wireless communication eliminated trenching under a road and wiring conduit back to a centrally located control room. IEC 62591(WirelessHART® Protocol) self-organizing network enabled easy and seamless integration for quick regulatory compliance.

This customer experienced several positive business results by implementing Smart Wireless instruments at their gas treating and compression station. They eliminated the risk of environmental fines by complying with local RICE regulations. Operations personnel avoided the risk of shutting down natural gas compressors and not meeting projected gas transmission volumes. Finally, capital costs were greatly reduced by eliminating the trenching, conduit, cable trays, and labor associated with wired instruments.



Figure 2. Rosemount 3051S Wireless Pressure Transmitter

**RESOURCES**

**Emerson Process Management Oil & Gas Industry**

<http://www.emersonprocess.com/solutions/oilgas/index.asp>

**Rosemount 848T Wireless Temperature Transmitter**

<http://www2.emersonprocess.com/en-US/brands/rosemount/Temperature/High-Density-Measurement/848T-Wireless/Pages/index.aspx>

**Rosemount 3051S Wireless Series of Instrumentation**

<http://www2.emersonprocess.com/en-US/brands/rosemount/Pressure/Pressure-Transmitters/3051S-Wireless/Pages/index.aspx>

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