

# Wireless Gas Detectors Find Application in Off-Shore Platforms

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**W**ireless instrumentation has been around for some time. When a technology is brought to the forefront, it goes in search of applications. Some applications are better fits than other.

Wireless gas detection is now finding a solid niche in off-shore oil and gas platforms.

GasSecure, a Norwegian company, just completed installation of the GS01, a wireless infrared gas detector on the Gullfaks C platform in the North Sea off the Norwegian coast.

Twenty detectors were installed on the Statoil-operated platform by a team from Statoil, ABB and GasSecure. Knut Sandven, Founder and CEO of GasSecure, explains, "ABB is the vendor of the fire and gas control system at the Gullfaks platform. ABB has integrated signals from the wireless gas detection system to the ABB AC800 controller to display status messages and alarms in the control room interface. This installation is the last step to qualify GS01 to be used at all Statoil facilities."



Figure 1. Gullfaks C platform

The advantages of a wireless vs. wired system are quickly apparent. The time needed for installation, integration and commissioning of the system was a fraction of what has been the norm for wired systems and

shows one of the many advantages of implementing wireless detection. Response time and accuracy are comparable to wired systems. Wireless gas detection offers further advantages compared to wired solutions:

- Easier and more flexible installation (no cables, no junction boxes, no barriers, no cross wiring)
- Simplified engineering and documentation
- Minimum overall 70% cost reduction
- Easy expansion using more detectors without pulling new cables

The GS01 on Gullfaks is calibrated for methane and detects all hydrocarbon gases. "The technology is based on the infrared absorption principle, which is typical for hydrocarbon gas detection in the North Sea, and regulated by NORSOK who sets standards developed by the Norwegian petroleum industry to ensure safety," says Sandven.

The detectors are battery operated with a battery lifetime of two years.

They have been set up in a mesh network and communicate wirelessly using the ISA100a protocol with a ProfISAFE layer to achieve communication according to the required safety standards (SIL 2). An obvious question is, with all the complex electrical and metal piping and the size of the platform, are the signals compromised at times? Sandven explains, "Radio coverage varies across the platform depending on the environment. However, distances in meters are not relevant; what is impressive is that the signals can penetrate several decks with massive steel structures in between. The offshore tests at Gullfaks has shown radio coverage and stability of communication to be well inside the requirements."

The goal of the installation was to compare the wireless solution with similar wired networks. This was achieved via side-by-side testing with wired detectors together with the installation in problem areas during harsh weather and in areas where the operator has experienced special challenges.

Statoil announced that after two to three weeks of testing the GS01 on the Gullfaks C platform, they were very pleased with the results.

For more information visit [www.gassecure.com](http://www.gassecure.com) or contact CEO Knut Sandven at +47 97 78 74 65.