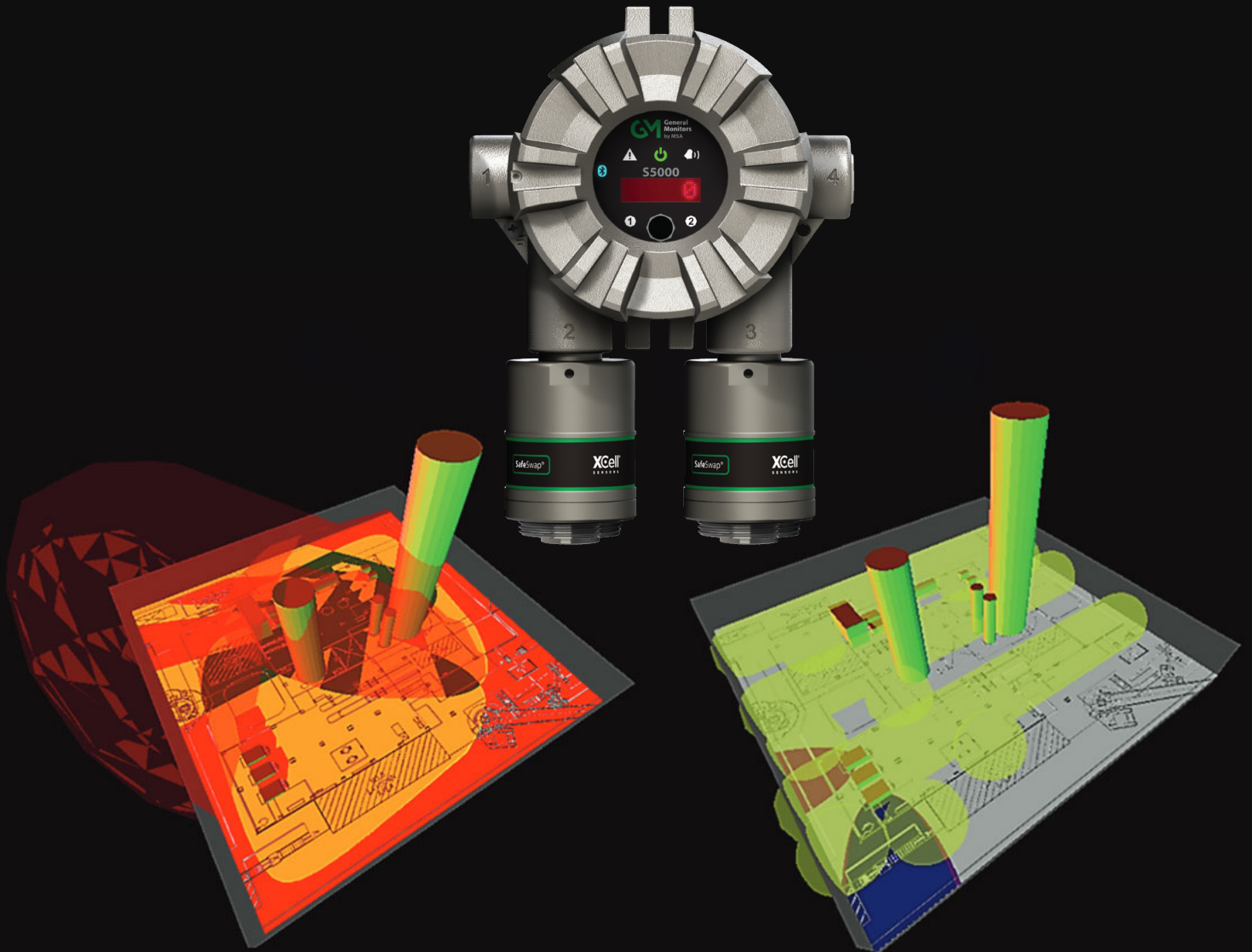


Fire & Gas Mapping Design Guide

Point Gas Detection with Dual Sensors



**How Fixed Gas and Flame Detectors
can improve mapping design**

WE KNOW WHAT'S AT STAKE.

How Fixed Gas and Flame Detectors can affect Fire & Gas Mapping design

This document is intended for Fire and Gas Mapping design engineers and highlights how the latest transmitter technology and the ability for two sensors to be fitted to a single transmitter can reduce the overall cost of a fire and gas system implementation.

This design guide covers Point Gas Detectors with Dual Sensor Technology.

Traditional Fire and Gas Mapping designs have been based on a single sensor being connected to the transmitter. But transmitter technology is now more advanced. The latest next generation technology, developed for the MSA ULTIMA® X5000 and General Monitors S5000 allows for two gas sensors to be connected to a single transmitter.

The ability for two sensors to be fitted to one transmitter, can offer the following benefits:-

- The 2 independent sensors can either be mounted directly on the transmitter housing or remotely, up to 100 metres (cable length) from the transmitter. Mounting sensors remotely, can allow for the sensors to be installed in the optimum location for gas detection, with the transmitter in an easily accessible location.
- For inaccessible sensors that need to be calibrated from a remote and safe location, MSA has a range of Remote Calibration Adaptors, that allow for these sensors to be accurately calibrated. Unlike a gassing adaptor, which only allow a bump test / functional check, which is designed to ensure that gas can reach the sensor i.e. the inlet is not blocked, and the sensor is still alive and capable of detecting a gas leak.
- For applications where the sensors are fitted directly to the transmitter, but are inaccessible, the MSA X/S Connect App and a Bluetooth® device can be used to remotely access the transmitter's menu. Access can be from up to 21 metres from the transmitter and provides the same functionality as being at the transmitter and using the menu.
- The sensors can either be the same type, should a single gas risk be present in the area or they can be different e.g. one H₂S sensor and the other a CH₄ sensor.
- Less cable runs, cable trays, sunshades, and other installation accessories will be required, as half the number of transmitters are being installed. **Note:** As each sensor requires its own independent signal, a 4-core cable to the transmitter is required instead of a 3-core cable.
- As less transmitters, cables, and accessories are required, this can significantly reduce the initial CAPEX costs, as well as lowering the overall cost of installing the gas detectors.
- Fewer spare PCBs should also be required. Should a PCB need replacing, then the plug and play design of both the X5000 and S5000, would allow the electronics unit to be pulled out and the new one quickly replaced. As the sensors retain all the data e.g. target gas, measuring range, alarm set points etc. once the detector is powered back up, no other configuration should be required.
- With less cables running back to the control room, the size of the control system can also be smaller and this in turn can reduce the footprint of the control system. By reducing the floor space required for a large system, it can also allow for the overall size of the control room to be reduced. This would offer a further cost saving for the project.
- For applications where weight constraints are an issue e.g. offshore platforms, reducing the number of transmitters, cabling, and installation accessories will also reduce the overall weight of the gas detection system.



Conclusion:

Transmitters that can be fitted with dual sensors can offer a wide range of advantages and a significant cost saving for the owner. It should be noted whether a single sensor or two sensors are fitted to a transmitter, the total number of sensors required will remain the same and therefore there is no difference to the detection coverage or the probability of detection.

To learn more about MSA's mapping capabilities and how our products can help in optimising your design, please contact us by [clicking here](#).

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Our Mission

MSA's mission is to see to it that men and women may work in safety and that they, their families and their communities may live in health throughout the world.

MSA: WE KNOW WHAT'S AT STAKE.

Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice.

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