

# ProSafe-RS SIL2 Wireless Gas Detection System

–Offering total system support including both consulting and engineering–

Wireless communication offers various advantages including a substantial reduction of wiring costs, and is widely used for production facilities in plants. In addition, the technology is increasingly being used in safety facilities.

Since wireless systems can satisfy the following needs, they are strongly recommended for gas detection systems in plants.

- Gas detection systems are easily affected by various factors such as installation location and ambient conditions. Even after installation, it is necessary to optimize the configuration by adding detectors or changing their locations. It is also necessary to install detectors in inaccessible places for wiring.
- In floating production, storage and offloading systems (FPSO) and offshore platforms, priority is given to light weight and small footprint, and so cabling also needs to be reduced.

The ProSafe-RS SIL2 wireless gas detection system released in November 2017 consists of the ProSafe-RS R4.03.10 safety instrumented system to meet the safety integrity level (SIL) 3 requirements defined in the IEC61508 international standard, Yokogawa’s ISA100 Wireless-based system, and GasSecure AS<sup>1</sup> GS01 or GS01-EA wireless gas detectors. The GS01 and GS01-EA are the only wireless gas detectors in the industry that satisfy SIL2 requirements.

The safety control station (SCS) of ProSafe-RS receives gas concentration data from the GS01 and GS01-EA via safety communication, and these data can be treated as input data of safety application (safety loop).

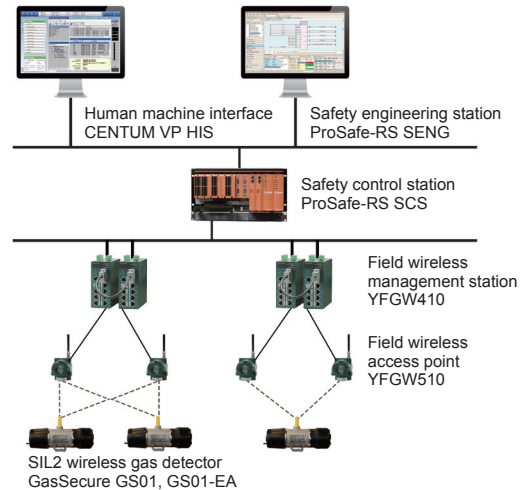
## MAJOR FEATURES

### ■ Total system support

The ProSafe-RS SIL2 wireless gas detection system is suitable for fire and gas systems or emergency shutdown systems thanks to its achievement of SIL2 requirements for risk reduction. Based on its knowledge of each component of this system and its expertise in production control, safety instrumentation, and field wireless engineering and consulting, Yokogawa is able to offer total system solutions, including customer support.

### ■ Enhanced operating and maintenance efficiency

The operation and monitoring screen of Yokogawa’s CENTUM VP integrated production control system shows the standard faceplate for all fire and gas sensors, including wireless/wired gas, flame, smoke and heat detectors, to maintain operating consistency and avoid mis-operation. In addition, information on the status of all network devices, the remaining charge level of gas detector batteries, and the status of wireless communication is easily monitored, enabling operators to quickly recognize and respond to any abnormality.



Example of system configuration

## MAJOR SPECIFICATIONS OF SAFETY COMMUNICATION FUNCTION

### • Fire and gas communication function

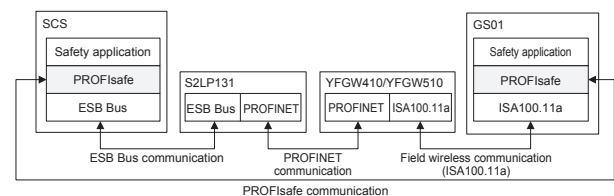
The fire and gas communication function acquires gas concentration data from wireless gas detectors via the S2LP131 Fire and Gas Communication Module mounted on the SCS, and the field wireless system complies with the ISA100.11a standards.

**Table 1** Basic specifications of fire & gas communication function

Item	Specifications
Number of S2LP131 units to be mounted	Max. 8 units/SCS
Number of field wireless management stations (YFGW410) to be connected	Max. 128 devices / S2LP131
Number of wireless field devices (GS01/GS01-EA) to be connected	Max. 60 devices / S2LP131 Max. 320 devices / SCS

### • Safety communication function

The SCS and GS01/GS01-EA use the PROFIsafe protocol, which complies with SIL3, for the safety layer of communication. This protocol enables secure transmission of safety data between these devices. The SIL2-compliant system including communication is built based on this mechanism.



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