GS01 (wireless)
Detection of flammable gases and vapours

The GS01 is a wireless infrared gas transmitter for continuous monitoring of flammable hydrocarbon gases and vapours in the oil and gas industry. The intrinsically safe and SIL-rated transmitter features completely wireless signal transmission and power supply. This makes the GS01 a flexible and cost efficient solution for plant expansions, upgrades, and new greenfield projects.

Infrared sensor with MEMS technology, ultrasound sensor to support the low-power operation

Radio antenna with a range of up to 500 m

Rugged stainless steel case with bracket for simple 2-bolt installation

Battery operating time up to 24 months

Benefits

Installations in demanding conditions

On offshore platforms or FPSOs, at tank farms and refineries - safety-related measuring points are everywhere in the oil and gas industry. Some of these measuring points are extremely difficult if not impossible to monitor using wired gas detection devices. In contrast, the GS01 wireless transmitter requires no cable installation, either for signal transmission or for its power supply. As such, installation is easy and uncomplicated and the transmitter sends its signal to the access point up to 500 metres away.

No cable conduits are required for the power supply or for signal transmission. Plus, the GS01-EA product variant with separate antenna can be installed inside machines or buildings where signal transmission is impossible due to shielding.

For temporary applications, such as maintenance work on petrochemical plants or exploratory drilling, the GS01 offers you maximum flexibility. It can be seamlessly integrated into your existing safety features. Even technically complex installations, such as on the rotating tower of an FPSO, can now be carried out without hassle.

Saving time and money throughout the project

The project costs with GS01 can be significantly lower than those for wired installations; as example the installation cost is typically reduced with 60 to 80%. Wireless communications and battery power decrease the need for cables, junction boxes, and control cabinets. Site installation work is significantly reduced with the ability to pre-configure all devices in advance. Additionally, planning, configuration and documentation of the system is minimised.
This is made possible by the intelligent design of the GS01. The transmitter draws less than 5 milliwatts of power. That means that depending on the ambient conditions, it can run for up to 2 years without the batteries needing to be replaced. The intrinsically safe design allows the battery pack to be replaced easily, even in the hazard area.

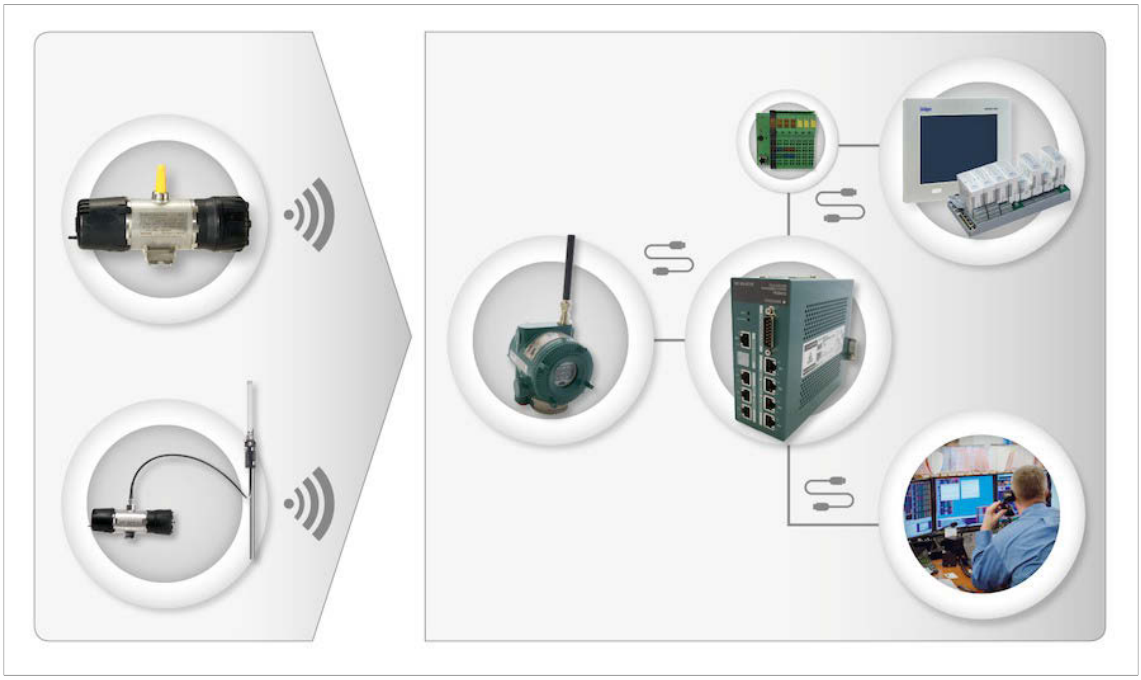
Saving time and money during operation

Infrared sensor technology is taken to the next level using patented MEMS (Micro Electromechanical System) optical filters. MEMS is very long-term stable and eliminates the need for re-calibration, which directly reduces the maintenance costs. The infrared detection with MEMS operates at three different wavelength and includes heated optics to prevent condensation in the sensor.

Safe, wireless communication

The SIL2-capable GS01 uses the ISA100.11a wireless standard for wireless communication. A great benefit of this object-based standard is the possible embedding of foreign protocols, including the SIL3-certified safety protocol PROFIsafe. In combination with GasSecure's patented SafeWireless™ communication concept for fast and secure transfer of measurement data, this enables easy integration of the GS01 into safety instrumented systems (SIS) with a fully SIL2-capable signal chain. Furthermore, the open ISA100.11a standard supports easy integration of other field devices into the wireless network.

Presenting a GS01 System



The GS01 transmits its detection signal wirelessly to the access point. From there, the signal is transferred to the gateway. This feeds the control unit directly via Modbus or with the PROFINET® protocol. For analogue analyser units, a D/A converter can alternatively be used.

System Components

D-11979-2017

Yokogawa Access Point

The Yokogawa access point enables the user to access the wireless ISA100.11a network.

This product is manufactured by the company of Yokogawa.

System Components

D-11978-2017

Yokogawa Gateway

The Yokogawa gateway manages the wireless ISA100.11a network.

This product is manufactured by the company of Yokogawa.

D-11980-2017

Phoenix Contact 4-20 mA Converter

The Phoenix Contact 4-20 mA converter is a digital-analogue converter for connecting to control units with convential 4-20 mA input channels.

This product is manufactured by the company of Phoenix Contact.

Accessories

D-996-2016

External antenna

The external antenna allows the GS01-EA to be used even if radio transmission is restricted, e.g. by a Faraday cage.

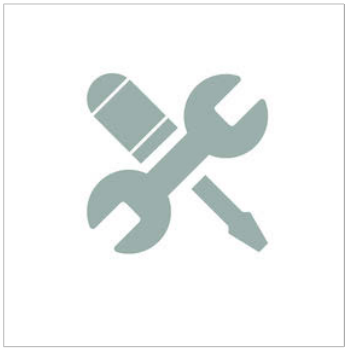
Accessories

D-11973-2017

Sun and weather shield

The sun and weather shield protects the GS01 from direct sunlight and adverse weather conditions.

Services



D-2331-2016

Product Service

Our product service department supports you with a range of service packages – in our shops or on site in your plant. Care, servicing and maintenance are key factors when it comes to safety. Diligent maintenance and care is also absolutely necessary from an economics perspective. Preventive checks, service procedures and original replacement parts make your investment last longer.

D-2335-2016

Training

The Dräger Academy has imparted well-founded and practical knowledge for over 40 years. With over 110 authorized trainers and more than 600 available topics, we conduct more than 2,400 training sessions per year. We equip your employees with the knowledge required for real-life situations and ensure that the learned material can be recalled and applied reliably – in their everyday work and especially in stressful situations. To meet your needs, we are also happy to develop a customized training program specifically for you.

Related Products

D-14983-2010

Dräger Polytron® 8700 IR

The Dräger Polytron® 8700 IR is an advanced explosion proof transmitter for the detection of combustible gases in the lower explosion limit (LEL). It uses a high performance infrared Dräger PIR 7000 sensor, which will quickly detect most common hydrocarbon gases. Besides a 3 wire 4 to 20 mA analogue output with relays, it also offers Modbus and Fieldbus making it compatible with most control systems.

ST-11659-2007

Dräger PIR 7000

The Dräger PIR 7000 is an explosion proof point infrared gas detector for continuous monitoring of flammable gases and vapours. With its stainless steel SS 316L enclosure and drift-free optics this detector is built for the harshest industrial environments, e.g. offshore installations.

Technical Data

General	Measuring principle	Infrared single beam, triple wavelength	
	Detectable gases	ATEX / IECEx:	0 to 100 % LEL (Methane, Propane)
		FM:	0 to 100 % LEL (Methane)
			0 to 80 % LEL (Propane)
	Calibration	Factory-set, no field calibration	
Performance	Response time	≤5 seconds	
	Accuracy	±3 % LEL or ±10 % of measured value, each the higher value (refers to Methane)	
	Zero-point stability	±3 % LEL (lifelong)	
Electrical Data	Battery type	Lithium-Thionyl Chloride	
	Average power	5 mW	
	Battery lifetime	Up to 2 years (depending on the environmental conditions)	
	RF power	GS01: <12 dBm EIRP GS01-EA: <16 dBm EIRP	
Communication	Type	IEEE802.15.4 in 2.4 GHz ISM Band	
	Protocol	ISA100 Wireless™	
	Gateway output	Standard: Modbus TCP/RTU, OPC	
		Optional: PROFINET® (SIL2)	
Environmental Conditions	Operating temperature	-30 °C to +55 °C (if higher temperature ranges up to +65 °C are required please contact Dräger)	
	Storage temperature	-40 °C to +65 °C	
	Humidity	0 to 100 % RH	
	Protection Class	IP66 and IP67	
Housing	Dimensions	300 x 110 x 170 mm	
	Weight	2.8 kg (incl. Battery)	
	Mounting	With bracket for 8 mm or 5/16" bolts	
Approvals	ATEX / IECEx	II 2G Ex ib IIC T4 Gb (-30 °C to +55 °C)	
	FM	Class I, Zone 1 AEx ib IIC T4 Gb (-30 °C to 55 °C)	
		Class I, Div 2 Group A, B, C, D (-30 °C to 55 °C)	
	Performance Approval	Compliant with EN 60079-29-1	
	Safety Integrity Level	SIL2 IEC 61508, Ed.2.0	

PROFINET® is a registered trademark of PROFIBUS and PROFINET International (PI).

The ISA100 Wireless™ is a trademark of ISA100 Wireless Compliance Institute.

Ordering Information

GS01 wireless IR Gas Detector	AL20700
GS01 wireless IR Gas Detector FM	AL20735
GS01-EA wireless IR Gas Detector-5m	AL20715
GS01-EA wireless IR Gas Detector-5m FM	AL20737
GS01-EA wireless IR Gas Detector-10m	AL20716
GS01-EA wireless IR Gas Detector-10m FM	AL20738
GS01-EA wireless IR Gas Detector-20m	AL20717
GS01-EA wireless IR Gas Detector-20m FM	AL20739
GS01 Battery pack (without cells)	AL20712

Ordering Information

GS01 Battery pack FM (without cells)	AL20713
GS01 Battery cell type SL-2780/S	AL20706
GS01 Battery cover	AL20708
GS01 Weather cap	AL20709
GS01 Serial adapter	AL20710
GS01 Sunshade / weather protection	AL20711

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