

G7000

# Multi Gas Monitoring System

Reliable continuous emissions monitoring system

Cost-effective emission for environmental compliance

Maritime

 Green  
Instruments

The G7000 Multi Gas Monitoring System is a simple and modular system designed for high ambient temperatures. It provides accurate and continuous real-time monitoring of different emission gases, helping to ensure that vessels comply with increasingly stringent emission regulations.



# Robust and cost-effective solution

## Key features

- Durable and robust design
- Designed for high ambient temperatures
- Simple installation and maintenance
- Measures SO<sub>2</sub> and CO<sub>2</sub> levels
- Optional: CO, CH<sub>4</sub>, NO<sub>2</sub>, and NO
- Well-proven extractive system
- Unique double-sample conditioning unit ensures fast response time
- Up to five sample points
- Automatic calibration using internal calibration cells
- Fully compliant with MEPC. 340(77)
- Long maintenance and service intervals
- Low cost of ownership
- Global service and support

The G7000 Multi Gas Monitoring System is a durable, robust, and cost-effective continuous emissions monitoring system (CEMS). The robust system is suitable for persistent vibrations, high temperatures, and humid processes which makes it reliable in harsh and tough marine environments. All materials are specially selected to resist wet and acidic exhaust gas from scrubbers. The modular design of the G7000 Multi Gas Monitoring System makes it possible to monitor different gases according to customer specifications. It provides real-time and accurate monitoring of SO<sub>2</sub> and

CO<sub>2</sub> concentrations in exhaust gas and is fully compliant with international emission restrictions and regulations.

## Simple operation

The G7000 Multi Gas Monitoring System comes with up to two multi gas analyzers. These gas analyzers use non-dispersive infrared measurement technology, which has been well-proven in many applications. Besides the multi gas analyzers, the system consists of a sampling board and a double sample conditioning unit. The unique double-sample conditioning unit prepares the next sample for measurement at

the same time as the current sample is being measured. In other words, the conditioning unit prepares the sample for analyzing. This allows the system to sample up to five different sample points per system via a multiplexing device, thus ensuring a fast response time.

## Automatic calibration

Calibration of the G7000 Multi Gas Monitoring System is simple and executed automatically using an integrated optical filter and instrument air and can be set to run at intervals that meet the requirements of the application. To avoid damage due to condensation, it is recommended the system is run continuously.

## Combined system

The G7000 Multi Gas Monitoring System is compliant with resolution MEPC. 340(77) and when combined with the G6200 Water Monitoring System on vessels, crews have installed a complete monitoring system that is fully compliant with MEPC. 340(77) provided by one supplier and hereby one point of contact.

## Service and support

The G7000 Multi Gas Monitoring System is simple to install and maintain due to the low gas flow design which ensures lower filter consumption and longer intervals between filter services. Generally, the system operates for long periods between service visits, ensuring low cost of ownership. The system has consumable parts that can easily be replaced by the crew or by Green Instruments service support. Should assistance be needed in terms of replacement of e.g. consumable parts or retrofit to a new system, Green Instruments provides full service and support to ensure optimal operation throughout the entire product lifetime.



## Certificates



# Specifications – G7000

## MONITORING CABINET

### Power supply and enclosure

Standard	230 VAC 50/60 Hz – 16 A dependent on system configuration
Ambient temperature	0 – 45 °C (tested to 55 °C)
Enclosure	Painted mild steel RAL 7035 / IP 55

### Measurement

Measurement range	SO <sub>2</sub> : 0 – 200 ppm CO <sub>2</sub> : 0 – 10 %
Optional	SO <sub>2</sub> : 0 – 1000 ppm CO <sub>2</sub> : 0 – 20 %
Measurement principle	NDIR
Linearity	≤ ±1 % of full scale above 100 ppm or ≤ ±2 % of full scale below 100 ppm
Calibration	<b>Zero calibration:</b> Automatic using compressed air <b>Span calibration:</b> Automatic using inbuilt optical filters (Possible annual on-site verification and calibration)
Sample flow	Approx. 1 l/min

### Dimensions/weight

Dimensions	1265 x 1005 x 540 mm
Weight	225 kg

### Communication

Bus	Modbus TCP/IP
Alarm outputs	4 x alarm relays (NO/NC): System warning System alarm Level warning Level alarm

## PROBES AND HEATED SAMPLE LINES

### Power supply

Standard	Supplied from monitoring cabinet
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### Material

Material	316TI (max 600 °C) or Hastelloy (max 400 °C) (To be specified upon order)
Flange dimension	JIS B2220 5K 65A (DN65 PN6)
Probe insert length	500 mm
Sample line length	4 – 25 m
Optional	Hose length > 25 m upon request
Exhaust gas pressure	-50 – 500 mm WC dependent on material
Exhaust gas temperature	0 – 600 °C

## OPTIONAL

CO, CH<sub>4</sub>, NO<sub>2</sub>, and NO

Monitors other gases upon request

Specifications subject to changes without notice

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