



# TYPE APPROVAL CERTIFICATE

Certificate no.:  
**TAA00001ZA**  
Revision No:  
**3**

**This is to certify:**  
**that the Gas Detector**

with type designation(s)  
**S5000 Gas Monitor**

issued to  
**General Monitors, Inc.**  
**Irvine, CA, USA**

is found to comply with  
**DNV rules for classification – Ships, offshore units, and high speed and light craft**

## Application:

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.**

### Location classes:

<b>Temperature</b>	<b>D; Tested to -55°C</b>
<b>Humidity</b>	<b>B</b>
<b>Vibration</b>	<b>A</b>
<b>EMC</b>	<b>B</b>
<b>Enclosure</b>	<b>C/IP66; B/IP65 for Digital Sensor</b>

Issued at **Hamburg** on **2024-03-15**

This Certificate is valid until **2028-08-16**.

for **DNV**

DNV local unit: **Long Beach**

Approval Engineer: **Torsten Dzillak**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.  
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



## Product description

S5000 Gas Monitor for detection of combustible gases.

S5000 Gas Monitor consisting of S5000 transmitter, S5000 Junction Box, IR400 gas sensor, catalytic point Digital Sensor for combustible gases or electrochemical point Digital Sensors for toxic gases (H<sub>2</sub>S, CO) and oxygen. Passive gas sensors with part numbers 11159-1, 11159-2, 11159-8, 11159-1L, 11159-2L, 11159-8L, 50448-1, 50448-5 and 50448-9 can also be connected.

The S5000 Gas Monitor supports two Digital Sensors installed either integral to the S5000 transmitter or remotely using the S5000 Junction Box, one IR400 point IR detector and one Digital Sensor installed either integral to the S5000 transmitter or remotely using the S5000 Junction Box, or one passive sensor, combustible catalytic type or toxic MOS type (H<sub>2</sub>S) either integral to the S5000 transmitter or remotely using the S5000 Junction Box.

The S5000 Gas Monitor generates two independent analog outputs; one for each sensor connected to the transmitter. The analog output associated with Sensor 1 also has the digital HART (Highway Addressable Remote Transducer) communication superimposed on the analog signal. If two sensors are connected, the digital HART communication carries information for both sensors. S5000 also has Modbus and Bluetooth communication options. Bluetooth is used for status inquiry and setup.

## Place of manufacture

### S5000 Transmitter and Junction Box:

General Monitors Ireland Ltd.  
Ballybrit Business Park  
Galway, Ireland

MSA – The Safety Company  
1000 Cranberry Woods Drive  
Cranberry Twp, PA. 16066 USA

### Passive Sensors:

General Monitors Ireland Ltd.  
Ballybrit Business Park  
Galway, Ireland

General Monitors Inc.  
372 Elizabeth Lane  
Corona CA. 92880

### IR400 Sensor:

General Monitors Ireland Ltd.  
Ballybrit Business Park  
Galway, Ireland

### Digital Sensors:

General Monitors Ireland Ltd.  
Ballybrit Business Park  
Galway, Ireland

MSA – The Safety Company  
1000 Cranberry Woods Drive  
Cranberry Twp, PA. 16066 USA

General Monitors Inc.  
372 Elizabeth Lane  
Corona CA. 92880

## Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

## Application/Limitation

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

## Type Approval documentation

### Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Applicable tests according to EN 60079-29-1:2016.

Applicable tests according to ISA 92.00.01:2010 and ISA 92.04.01:2007.

### Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

### Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE