

TYPE APPROVAL CERTIFICATE

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

with type designation(s)

Acoustic Gas Leak detector Observer-i

Issued to

General Monitors Inc**Lake Forest, CA, United States**

is found to comply with

DNV GL 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 GL.****Location classes:****Temperature D (tested at -40°C)****Humidity B****Vibration A****EMC B****Enclosure C / IP66**Issued at **Høvik** on **2017-10-18**This Certificate is valid until **2018-12-31**.DNV GL local station: **Long Beach**for **DNV GL**Approval Engineer: **Frode Nygård****Odd Magne Nesvåg**
Head of Section

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.



Product description

The Observer-i detects leaks from pressurized gas systems by sensing the airborne ultrasound produced by gas escaping from the leak. This detection method is omni-directional, functional in extreme weather conditions and used for fast monitoring leaks from valves and flanges in complex pipeline systems, both onshore and offshore.

The main advantage using ultrasonic gas leak detectors is that the detector does not need to wait for gas accumulation, instead it responds instantly, in distances up to 28 meters, when a gas leak occurs. The Observer-i is suitable in all pressurized gas installations, from 2 bar or more, where the escaping gas is in a gaseous state when it leaks.

Place of manufacture

General Monitors Ireland
Ballybrit Business Park
Galway, Ireland

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to DNV 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 DNVGL-CG-0339, November 2016.

Marking of product

Type designation	Observer-i
Manufacturer	General Monitors
Unique serial no.	xxx-xxxx
Power supply rating	24 VDC, range: 15 to 36 VDC

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.



Job Id: **262.1-018436-2**
Certificate No: **TAA00001G0**

END OF CERTIFICATE