EC TYPE EXAMINATION CERTIFICATE

Certificate No: **MED-B-9514** Item No: **A.1/3.54** Job Id: **344.1-004542-1**

DNV.GL

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2013/52/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Fixed oxygen analysis and gas detection equipment

with type designation(s) IR 400 & IR 4000S Combustible Gas Detector

Issued to General Monitors Inc Lake Forest, CA, United States

is found to comply with the requirements in the following Regulations/Standards: Annex A.1, item No. A.1/3.54 and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation II-2/4 & VI/3 and FSS Code 15

Further details of the equipment and conditions for certification are given overleaf.

Høvik, 2014-12-04 for DNV GL



This Certificate is valid until 2019-12-03

Notified Body No.: 0575

Marianne Strand Valderhaug Head of Department DNV GL local office: Long Beach Andrzej Gdaniec Surveyor



The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

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Product description

The Model IR400 infrared (IR) point detector is a microprocessor-based combustible gas detector that continuously monitors combustible gases in the lower explosive limit (LEL) range and provides a 4 to 20 mA analog signal proportional to the 0 to 100% LEL concentration. The detector also monitors other conditions such as supply voltage and optical path integrity.

The Model IR4000S is a Single-Point Monitor with LED display and user interface to the Model IR400 point IR gas detector. The monitor allows local calibration and displays gas concentration and is housed in an explosion-proof junction box enclosure that can be installed in hazardous locations adjacent to the detectors.

Application/Limitation

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

The equipment are found to comply with the following location/application dependent requirements (for definition of each of the location classes, see below the table):

IR400 &	Temp.	Vibration	EMC	Enclosure	Humidity
IR4000S	D	A	B	IP 66	B

Definition of the location classes with reference to relevant standards: Temperature D

Location (-25°C to +70°C) (*ref. IEC 60092-504 (2001) table 1 item 6-7*) Note: performance test carried out at -40°C Vibration A

(ref. IEC 60092-504 (2001) table 1 item 10)

EMC B

Bridge and open deck zone (*ref. IEC 60092-504 (2001) table 1 item 19-20*) Humidity B

(ref. IEC 60092-504 (2001) table 1 item 8)

Type Examination documentation



Tests carried out

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The relevant tests have been carried out according to the following standards:

- IEC 60092-504 (2001)
- IEC 60533 (1999)
- IEC 60945 (2002)
- EN 61779-1, EN 61779-4, EN 60079-29-1: 2007

Marking of product

For identification to this type examination certificate the products shall be marked with:

- Manufacturer's name or trade mark
- Type designation
- Mark of Conformity (see below)

Mark of Conformity

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

- Module D: The quality system for production and testing shall be approved by the Notified Body.
- Module E: The quality system for inspection and testing shall be approved by the Notified Body.
- Module F: Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity.