DNV·GL

Certificate No:
TAA00001EV

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Fire Detector

with type designation(s)
Multi-Spectrum Infrared Flame Detector FL4000H

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**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**C / IP66/67**

Issued at **Høvik** on **2017-10-18**
This Certificate is valid until **2018-12-31**.
DNV GL local station: **Long Beach**

Approval Engineer: **Frode Nygård**

for **DNV GL**

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.

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Product description

The FL4000H is designed to detect typical fires such as those produced by alcohol, n-heptane, gasoline, jet fuels and hydrocarbons. In addition, the FL4000H can see through dense smoke produced by diesel, rubber, plastics, lube oil, and crude oil fires.
The Model FL4000H is an advanced multi-spectrum flame detector designed to provide superior false alarm immunity with the widest field of view.
The FL4000H's electronics are housed in a stainless steel explosion-proof enclosure.

Place of manufacture

General Monitors
26776 Simpatica Cir
Lake Forest, CA 92630

General Monitors Ireland Ltd.
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, 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 installations 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.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV GL.

Information on Ex-Certification received from manufacturer – Not verified by DNV GL		
Equipment	Certified	Certificate No.
FL4000H	Ex db IIC T5 Gb (Ta -40°C to +80°C)	Sira 09ATEX1270X Issue 4

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.
- EN 54-10:2002 including A1:2005

Marking of product

For identification to this type approval certificate the products shall be marked with:
- manufacturer's name or trade mark
- type designation/model name
- serial number

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