TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00002KN
Revision No:
2

This is to certify:

that the Fire Detector

with type designation(s)
FL500 UV/IR and FL500-H2 UV/IR Flame Detectors

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:

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**C, IP66/67**

Issued at **Høvik** on **2024-04-12**

This Certificate is valid until **2025-01-22**.

for **DNV**

DNV local unit: **Certification & Inspection Services**

Approval Engineer: **Ståle Sneen**

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

Model FL500 and FL500-H2 are ultraviolet/infrared (UV/IR) flame detectors. They detect the ultraviolet and infrared spectral regions of flame to produce a system which is highly immune to false alarms caused by lightning, arc-welding, hot objects, and other sources of radiation.

The FL500 and FL500-H2 use a UV radiation-sensitive phototube and an IR detector to identify fires. The FL500 and FL500-H2 are available with the following outputs: 4 to 20 mA signal, Immediate Alarm Low (relay), Time-delayed Alarm High (relay), RS-485 Modbus RTU, and HART 7 communication.

The FL500-H2 is designed specifically to detect hydrogen (H_2) fires.

FL500 Firmware: Version 1
FL500-H2 Firmware: Version 2.00.0011

Place of manufacture

General Monitors Ireland Ltd.
Ballybrit Business Park
Galway, Ireland

MSA Innovation, LLC
1000 Cranberry Woods Drive,
Cranberry Township, PA 16066
United States

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 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.

Information on Ex-Certification received from manufacturer – Not verified by DNV		
Equipment	Marking	Certificate No.
FL500 UV/IR, FL500-H2 UV/IR	Ex db IIC T5 Gb Ex tb IIIC T100°C Db Ta: -55°C to +85°C IP66/IP67	IECEx CML 23.0013X

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.
Functional testing according to EN 54-10:2002 + A1:2005 (FL500 UV/IR).
Functional testing according to FM 3260:2018 (FL500-H2 UV/IR).

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