

MARINE DIVISION

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Certificate number: 18990/A0 BV

File number : AP 3766

Product code : 3793H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

TYPE APPROVAL CERTIFICATE

as per Bureau Veritas Classification Rules

This certificate is issued to

GENERAL MONITORS IRELAND LTD.
GALWAY - IRELAND

for the type of product

FIXED FLAMMABLE GAS DETECTORS

Hydrocarbon Smart Transmitter
Model: S4100C.

Regulations and standards :

BUREAU VERITAS Rules for the Classification of Steel Ships.
EN 61779-1, EN 61779-4.

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements of the Regulations and standards mentioned above.

This certificate is valid until : 07 Mar 2012

At Paris la Défense, on : 07 Mar 2007

For BUREAU VERITAS,
By order of the Secretary

Approval office

Local office : BV LONDON
Surveyor : S. Yule

L.COURREGELONGUE



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

The **Model S4100C** is a microprocessor based sensor. It is intended to measure and display concentrations of combustible gases.

Main Characteristics:

Operating voltage: 10-35 VDC
 Output: RS 485 Dual MODBUS and 4-20 mA
 Measuring Range: 0-100% LEL (up to 120%)
 Ingress Protection: IP 66/67
 Ex Certification: EEx em II T4 (Ta=-50°C to +70°C) or EEx em II T5 (Ta = -50°C to +55°C)

2. DOCUMENTS AND DRAWINGS :

GENERAL MONITORS:

Model S4100C, Combustible Gas, Publication No. DS-4100C-D0104-EU.
 Model S4100C, Hydrocarbon Smart Transmitter, Instruction Manual No. MANS4100C-EU Rev. K/08.05.

3. TEST REPORTS :

LCIE:

EMC tests according to BV Specification, Test Report No. 60037463-537249-A dated January 03, 2006.
 EMC tests according to BV Specification, Test Report No. 60046151-546269 dated July 28, 2006.
 Environmental Tests on Detectors series S4100C, Test Report No. 60037463-537249-B dated 2006-02-21.
 Environmental Tests on Detectors series S4100C, Test Report No. 60046151-546269 dated 2006-08-17.

SIRA:

Performance Tests on a GM Hydrocarbon Smart Transmitter, model S4100C, Test Report No. N0417 dated November 2002.
 EC-Type Examination Certificate No. SIRA 99ATEX 3180 dated 27 January 2000 and Variations 1 to 5.

4. APPLICATION / LIMITATION :

- 4.1 - According to Manufacturer's instructions and BUREAU VERITAS Rules for the Classification of Steel Ships.
 4.2 - BUREAU VERITAS Environmental Category: **41S**.
 4.3 - The equipment fulfils the EMC requirements for an installation on the Bridge and Deck Zone.
 4.4 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT** and **AUT-IMS**.

5 PRODUCTION SURVEY REQUIREMENTS :

- 5.1 - The S4100C is to be manufactured, examined and tested by **GENERAL MONITORS IRELAND LTD.**, in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.
 5.2 - Production sites are to be recognized by Bureau Veritas as per NR 320 for HBV products. To this end **GENERAL MONITORS IRELAND LTD.** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.
 5.3 - **GENERAL MONITORS IRELAND LTD.** has declared to Bureau Veritas that the type of product described in this certificate is manufactured at the following production site:

GENERAL MONITORS IRELAND LTD.
Ballybrit Business Park, GALWAY
IRELAND

- 5.4 - Each equipment is to be supplied with manual (s) for installation, use and maintenance.

6 MARKING OF PRODUCT :

- Maker's name or trade mark
- Serial number of the units
- Equipment type number or model identification under which it was type-tested
- Ex marking as relevant.

7 OTHERS :

This approval is given with the understanding that:

**GENERAL MONITORS IRELAND LTD.
Ballybrit Business Park, GALWAY
IRELAND**

will accept full responsibility for informing shipbuilders, ship-owners and/or their sub-contractors of the proper methods of fitting and general maintenance of the approved equipment and the conditions of this approval.

***** END OF CERTIFICATE *****