



MARINE DIVISION

Certificate number: 21999/A0 BV

File number: AP 4011

Product code: 3793H

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

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

GENERAL MONITORS IRELAND LTD.
GALWAY - IRELAND

for the type of product

FIXED FLAMMABLE GAS DETECTORS

Hydrogen Sulphide Smart Transmitter
Model: S4100T.

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.
EN 61779-1/4, EN 45544-1/2.

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 mentioned above.

This certificate will expire on: 08 Oct 2014

For BUREAU VERITAS,

At BV LONDON, on 08 Oct 2009,

Spencer Yule



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 available on the internet site www.veristar.com. 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 S4100T** is a microprocessor based sensor. It is intended to measure and display concentrations of H₂S.

Main Characteristics:

Operating voltage: 10-35 VDC
 Output: RS 485 Dual MODBUS and 4-20 mA
 Measuring Range: 0-20 ppm, 0-50 ppm and 0-100 ppm (up to 120% FSD)
 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)
 Firmware: 10951-1 Rev. E

2. DOCUMENTS AND DRAWINGS :

GENERAL MONITORS:

Model S4100T, Combustible Gas, Publication No. DS-4100T-D0104-EU.
 Model S4100T, Hydrogen Sulphide Smart Transmitter, Instruction Manual No. MANS4100T-EU Rev. K/11.04.

3. TEST REPORTS :

LCIE (S4100C Model):

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 (S4100C/T Models):

S4100T: Performance Tests according to EN 45544-1/2, Test Report No. N0495 dated July 2004.
 S4100C/T: EC-Type Examination Certificate No. SIRA 99ATEX 3180 dated 27 January 2000 and Variations 1 to 5 (26/05/06).

ANECTO (S4100T Model): Climatic and Mechanical Test Report No. A-0004658-1 dated 4th June 2009.

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: **31S / 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**.

4.5 - Only Hardware and Firmware / Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.

5 PRODUCTION SURVEY REQUIREMENTS :

5.1 - The S4100T 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 on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and 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 *****