



Marine & Offshore

Certificate number: 22543/B0 BV

File number: AP 4065

Product code: 3820I

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

AUTRONICA FIRE AND SECURITY AS, div Tønsberg
Nøtterøy - NORWAY

for the type of product

GAS DETECTION AND ALARM SYSTEMS

Gas Sampling Systems, OGS3.1 and OGS3.11

Gas Alarm System, OGS2.1

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.

IEC 60079-29-1:2007, EN 50104:2010

MSC.1/Circ. 1370, MSC.292(87) (FSS Code Ch. 16)

This certificate is issued to attest that Bureau Veritas Marine & Offshore 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: 09 Mar 2023

For Bureau Veritas Marine & Offshore,

At BV OSLO, on 09 Mar 2018,

Rune MARSTEIN

Rune Marstein



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 Marine & Offshore. 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 & Offshore 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 Marine & Offshore 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.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

OGS3.1/OGS3.11 are Gas Sampling Systems intended for permanent installation and are especially suitable for monitoring void spaces and tanks that normally should be explosive gas free.

OGS2.1 is a Gas Alarm System intended to detect potential toxic / explosive gases in pump room or other locations. It can be used on its own or combined with the OGS3.1/OGS3.11 Alarm / Control Cabinet.

1.1 - Hardware:

1.1.1 - OGS3.1/OGS3.11 consisting of the following parts:

Detector Cabinet	Contains all functions for detection and transport of the test samples (48 sampling lines max.). Gas detectors (Up to 3), Solenoid valves, Sampling and transport pump, Flame Arresters, Flow meter. Detector PCB 110-230 VAC Power Supply Unit
Alarm / Control Cabinet	Alarm and Control Cabinet (High/Low Gas Alarms, Power/Detector Failures) Alarm & Display PCB RS 422 Communication Line with Detector Cabinet Gas in Cabinet Line (Cut Power) External Alarms Outputs (Power/System Failures, Gas Alarms) 110-230 VAC / 24 VDC Power Supply Unit and Filter (OGS3.1)* 110-230 VAC / 24 VDC Power Supply Unit, Filter and a Power Box IP65 (OGS3.11)**
Remote Unit	High/Low Gas Alarms, Power/Detector Failures Located in the Wheel House

* **OGS3.1:** A combined version has all the components within one cabinet with Operator Panel mounted on the door. This requires an External Power Control and Interface Cabinet to ensure a complete shut-off of the cabinet in case of gas leakage inside the Cabinet.

** **OGS3.11:** The internal IP65 powerbox is intended to shut-off the power in case of gas leakage inside the Detector Cabinet.

1.1.2 - OGS2.1 consisting of the following parts:

Alarm Cabinet*	Alarm Unit (Gas Alarms, System Failures) Alarm PCB External Alarms Outputs (Power/System Failures, Gas Alarms) Inputs for field Gas Detectors 110-230 VAC / 24 VDC Power Supply Unit
Remote Alarm Unit	High/Low Gas Alarms, Power/Detector Failures Located in the Wheel House.

* OGS2.1 can be combined with OGS3.1/OGS3.11 (OGS2.1 components installed within OGS3.1/OGS3.11 Alarm/ Control Cabinet).

1.2 - Software Versions:

1.2.1 - Systems Software:

OGS System	Alarm PCB	Detector PCB
OGS3.1	PCB rev. 1.01, SW Ver. 2.xx	PCB rev. 1.02, SW Ver. 1.xx
OGS3.11	PCB rev. 1.01, SW Ver. 3.xx	PCB rev. 1.02, SW Ver. 3.xx
OGS2.1	PCB rev. AU2.1, SW Ver. 2.xx	N/A

1.2.2 - Sensors Software

Sensor	SW Version
Honeywell Optima Plus IR	4V0
Honeywell XCD	1.10

2. DOCUMENTS AND DRAWINGS:

Autronica Fire & Security:

General Documentation, OMICRON Drawings, Data Sheets, Ex Certificates filed in AP 4065

Software Versions, Doc. No. 841-JE 178 010 last updated on 13 Nov. 2009, No. 841-JE 178 020 last updated on 19 May 2011, No. 841-JE 185 010, last update on 8 Dec. 2010, No. 842-JE 178 010 last updated on 19 May 2011

Performance Test Reports OGS2.1/3.1/3.11 - Gas Sampling System dated 2/03/2012 and Witnessed by BV's Surveyor

OMICRON Documents for OGS2.1: No. OGT-001-XCD and No. OGT-001-2plus, OGS3.1: No. AGT-001G-3 and No. AGT-001G-7, OGS3.11: No. AGT-101-2 and No. AGT-101-7, all undated

Main Drawings: No. AGS-412A, AGM-612 Rev. 0, OGE-251D Rev. 2, OGE-212 Rev. 0, OGT-011 Rev. 1, AGM-355 Rev. 1, AGP-401 Rev. 1, AGE-400 Rev. 2, AGE-311C Rev. 0, AGT-003 Rev. 7, AGT-006 Rev. 6, AGT-011A Rev. 0, AGT-012 Rev. 1, AGT-013 Rev. 0, AGT-121 Rev. 1 and AGS-380 Rev. 3 (MSC.292(87)).

3. TEST REPORTS:**Nemko:**

EMC - Test Report No. 15994 dated 2003-12-17

EC Type-Examination Certificate No. Ex 98E127X, issued on 1998-04-28 and its three Variations, last update issued on 2010-05-26 (Flame Arresters OFA 1 and OFA 2).

DNV:

Mechanical and Climatic Tests of 4 various Alarm Systems, Test Report No: 2008-3542 rev. 01 issued on 2008.11.06
EC Type-Examination Certificate No. MED-B-6360, issued on 2010-08-05 (Honeywell Sensepoint XCD)

Hursley EMC services:

EMC Test Report for Honeywell Optima+ No. 09A205 CR, issued on 19th January 2010.

DEKRA:

Measuring Function of Gas Detection Apparatus - Optima Plus (EN 60079-29-1), PFG-no. 41300406P NV issued on 06 July 2011.

TUV SUD:

Test House Certificate No. SJ614977/01 Issue 1, dated 8th September 2006 (Searchpoint Optima Plus).

4. APPLICATION / LIMITATION:

4.1 - BUREAU VERITAS Rules and Regulations for the Classification of Steel Ships.

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31**

4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones. Remote / Repeater Unit can be installed on bridge or deck zones.

4.5 - Approval also valid for ships having to comply with SOLAS 74 Convention, as amended, and for units having to comply with IMO Resolution A649 (The "MODU Code").

4.6 - Only Hardware and 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.

4.7 - Each application and configuration is to be submitted to the Society's examination prior to fitting on board.

4.8 - Factory Acceptance and On-board Tests are to be performed in accordance with requirements for Category II Equipment.

4.9 - Sensors for Integrated Gas Detection and Field Gas Detection are to have a valid BV type approval certificate and to have update safety certificates.

4.10 - Each application of gas detection system is to be tested with its sensors

4.11 - Detection and Measurement of H2S gas is not covered by the current BV Certificate.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **AUTRONICA FIRE AND SECURITY AS** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - **AUTRONICA FIRE AND SECURITY AS** has declared to Bureau Veritas the following production site(s):

AUTRONICA FIRE AND SECURITY AS
Stalsbergvn. 9
3128 Nøtterøy
NORWAY

6. MARKING OF PRODUCT:

According to EN 60079-29-1 and EN 50104.

7. OTHERS:

7.1 - It is **AUTRONICA FIRE AND SECURITY AS** 's responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate No. 22543/A0 BV issued on 15 Nov 2012 by the Society.

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