



Marine & Offshore

Certificate number: 44136/B0 BV

File number: AP 4677 Product code: 38201

Product code: 38201

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

## **OPSIS AB**

**FURULUND - SWEDEN** 

for the type of product

## **GAS DETECTION AND ALARM SYSTEMS**

Gas Monitoring System M800

#### Requirements:

Bureau Veritas Rules for the Classification of Steel Ships. MEPC.184(59), Ch.6

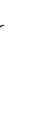
EC Code: 31/33

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: 06 Sep 2026

For Bureau Veritas Marine & Offshore,

At BV GOTHENBURG, on 06 Sep 2021, UIf MENTZER





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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# THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

- Product model or type designation :

#### M800

- Product description:

Gas Monitoring System measures SO2 and CO2 concentrations using UV and IR absorption.

The M800 gas analyser system comprises the following parts:

| Item Description    | Designation                                     | Technical Specifications  |
|---------------------|---|---|
| Cabinet             | AC180M<br>AC181M                                | Voltage supply: 400V(3 phases)/230/115V(single phase)   |
| Power Supply        | PS150-01M                                       | Voltage supply: 230V  |
| Analyser            | AR600M<br>AR620M (AR602Z/N)<br>AR650M (AR650/N) | One UV detector One IR detector and one UV detector One IR detector   |
| Optical Fibre Cable | OF60R<br>OF100B                                 | Used when monitoring gases such as NO and NH3 Optical fibres are used together with AR550 & AR650 analysers |
| Emitter/Receiver    | ER060M *)<br>ER062M *)                          | for Applications with One Analyser for Applications with Two Analysers                                      |

<sup>\*</sup>AR602Z/N and AR650/N are land based designation

### 2. DOCUMENTS AND DRAWINGS:

#### DNV.GL:

- Confirmation of Compiance Res. MEPC.184(59) Ch.6 Rev.0, dated 2014-10-10.

## Opsis AB:

- SO 2 Scrubber Control Ref.: A41, dated Apr 2015.
- Installation & User's Guide Release 1, dated Feb 2006.
- M800 System Quick Guide Vers. 1.01, dated Dec. 2003.
- Data Sheet AR600 Series Ref.: P2 2012 09, dated Sep 2012.
- Data Sheet OF060/OF100 Optic Cable Ref.: P9 2012 09, dated Sep 2012.
- Data Sheet ER060 Series Emitter and Receiver Sets Ref.: P3 2012 09, dated Sep 2012.
- Data Sheet PS150 Power Supply Unit Ref.: P8 2012 09, dated Sep 2012.
- Data Sheet AC180/AC181 Air-Conditioned Housing Ref.: P20 2012 09, dated Sep 2012.

## 3. TEST REPORTS:

#### bertrandt:

- Vibration test No.: 10146028, dated 11.11.2011.

#### serco GmbH:

- Electromagnetic Emission and Immunity test No.: 0048/11, dated 29.06.2011

#### TÜV:

- Report on the laboratory investigations for type approval testing No.: 936/21216959/Y, dated 07.02.2012.

#### **Opsis:**

-Report on NOx Monitoring Equivalence Tests Ref.: OPSIS M800 NOx test report, dated Sep 1, 2015.

#### For Modification B0 version:

#### RISE:

- EMC Test Report No. P110981, dated 09-07-2021.

## 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 (Control Cabinet) & EC Code: 33 (Light source/Detection)
- 4.4 The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.
- 4.5 Each application and configuration is to be submitted to the Society's examination prior to fitting on board.
- 4.6 The equipment, once installed on board ship, is to be tested in accordance with the above referred Regulations under the supervision of a Society's Surveyor.
- 4.7 Compliance with MARPOL Annex VI and/or NOx Technical Code 2008 has not been considered.
- 4.8 Fiber optic cable are used together with the Opsis AR550 and AR650 analysers.
- 4.9 Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev7

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## **5. PRODUCTION SURVEY REQUIREMENTS:**

- 5.1 The above products are to be supplied by OPSIS AB in compliance with the type and the requirements described in this
- 5.2 This type of product is within the category IBV of Bureau Veritas Rule Note NR320.
- 5.3 BV product certificate is required.

## **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.
- ♂ or ♥ conformity marking, as relevant.

- **7. OTHERS:** 7.1 It is **OPSIS AB**'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. 44136/A0 BV issued on 29 Apr 2016 by the Society

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