



Marine & Offshore

Certificate number: 59828/A0 BV

File number: AP 4859

Product code: 4206H

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

MARINELEC TECHNOLOGIES

Quimper - FRANCE

for the type of product

PUBLIC ADDRESS AND GENERAL ALARM SYSTEMS

AVAS (Audible & Visible Alarm Sequencer)

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships/Offshore Units/Naval Ships.

SOLAS 74, as amended, Regs. III/4, LSA Code, Chapter 7.2, IMO Res. MSC.97(73)-(2000 HSC Code), IMO MSC/Circ.808, IMO Res. A.1021(26), IEC 60092-504:2016

EC code : 31B

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: 31 Jan 2025

For Bureau Veritas Marine & Offshore,

At BV SAINT-NAZAIRE, on 31 Jan 2020,

Francois LOPINOT



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.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

AVAS system is an audible and visual alarm sequencer and can be used for whistle monitoring. It consists of following parts:

Item	Description	SW version
AVAS_CPU	Centralized processor insuring the processing of inputs and outputs	REV.0
AVAS_8DI	8 digital inputs	N.A.
AVAS_8DO	8 digital outputs	N.A.

- Main Power supply : 9-32 VDC
- Emergency Power : 9-32 VDC
- Operation temperature : +5°C to +55°C

2. DOCUMENTS AND DRAWINGS :

- AVAS Datasheet, No. AVAS_DS_GB_REV 0, dated 29-10-2019.
- AVAS Installation & User's Manual, No. AVAS_MANUAL_EN_REV0, dated 17-10-2019.
- AVAS Drawings. No. AVAS_ELEC_REV0, dated 16-10-2019.
- Software Quality Plan, No. AVAS_SW_QUALITY_PLAN_REV0, dated 21-10-2019.
- AVAS Procedure Test Fonctionnel BV Rev.01, dated 09-01-2020.
- HMI Schematic drawings No. ECO1A, dated 07-04-2016.
- HMI Tech-notes of eSMART07, No. ptn0522-2, dated 27-10-2015.
- HMI Installation guide No. MANESMARTxxU002, dated 06-07-2017.

3. TEST REPORTS :

KENTA:

- Test Report No. 204 154 Ed. 1.1, dated February 2019.

MARINELEC:

- AVAS Procedure Test Fonctionnel BV, witnessed by BV on 16-01-2020.

4. APPLICATION / LIMITATION :

- 4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships/Offshore Units/Naval 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 - The equipment fulfils the EMC requirements for installation on the Bridge and deck Zone.
- 4.4 - BUREAU VERITAS Environmental Category, **EC Code: 31B.**
- 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 Regulations and Rules stated on front page of the Certificate under the supervision of a Society's Surveyor.
- 4.7 - 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.
- 4.8 - The above products are to be considered as Category II Equipment.
- 4.9 - The above products comply with the requirements of IACS UR E10 Rev7.
- 4.10 - All cables for above system including their power supplies passing through high fire risk areas, and, in addition for passenger ships, through main vertical fire zones other than those which they serve, are to be arranged so that a fire in any of these areas or zones does not affect the operation of the service in any other area or zone. This may be achieved by either of the following measures:
- Cables of a fire resistant type complying with IEC 60331 are to be installed and run continuous to keep the fire integrity within the high fire risk area
 - At least two-loops/radial distributions run as widely apart as is practicable and so arranged that in the event of damage by fire at least one of the loops/radial distributions remains operational.
- 4.11 - AVAS may be used with AVAS_HMI, AVAS_HMI_HB or any other type approved touch screen that would satisfy functional test.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The AVAS are to be supplied by **MARINELEC TECHNOLOGIES** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **MARINELEC TECHNOLOGIES** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **MARINELEC TECHNOLOGIES** has declared to Bureau Veritas the following production site(s):

MARINELEC TECHNOLOGIES
13 Rue Alfred Le Bars
29000 Quimper
FRANCE

6. MARKING OF PRODUCT :

- Trade name.
- Date of manufacture and serial number.
- Equipment type or model identification under which it was type-tested

7. OTHERS :

It is **MARINELEC TECHNOLOGIES**'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.

*** END OF CERTIFICATE ***