



Marine & Offshore

Certificate number: 57546/A0 BV

File number: AP 4859

Product code: 4440H

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

ALARM, MONITORING AND CONTROL SYSTEMS

MACCS system

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

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: 26 Jul 2024

For Bureau Veritas Marine & Offshore,

At BV SAINT-NAZAIRE, on 26 Jul 2019,

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 :

- Product model or type designation:

MACCS

- Product description:

MACCS is a safety device used for monitoring digital inputs and analog inputs, as well as the controlling of various equipment.

1.1 - Approval range:

Item	Description
MACCS_CPU	Centralized processor insuring the processing of inputs and outputs
MACCS_8AI	8 analog inputs
MACCS_8DO	8 digital outputs
MACCS_8DI	8 digital inputs

- Power supply : 9-32VDC

- Operation temperature : +5°C to +55°C

- Ingress protection : IP20

1.2 - Software Version:

MACCS_CPU : REV 1.5

2. DOCUMENTS AND DRAWINGS :

Marinelec Technologies:

- MACCS Datasheet No. MACCS_DS_FR_REV.3, dated 28-09-2018.

- Alarm Panel MACCS Drawings No. MACCS_CAB_REV0, dated 15-08-2018.

- Manuel D'installation & D'utilisation No. MACCS_MANUEL_FR_REV2, dated 15-02-2019.

- Software Design Documentation No. MACCS_SOFTWARE_DESIGN_DOCUMENTATION_REV0, dated 27-03-2019.

- Procedure Test Fontionnel BV Rev. 1, dated 02-07-2019.

3. TEST REPORTS :

KENTA:

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

Marinelec Technologies:

- Test Fontionnel witnessed by BV surveyor on 04-07-2019.

4. APPLICATION / LIMITATION :

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

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

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

4.4 - The equipment fulfils the EMC requirements for installation in the bridge and deck zone.

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 - 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.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The MACCS 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 *****