



Marine & Offshore
Division

Certificate number: 16553/C0 BV

File number: AP 3731

Product code: 3992H

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

SUB-ALARM SYSTEMS

Marine Alarm Annunciator - Type: ALTOR 16.

Requirements:

BV Rules for the Classification of Steel Ships.

IEC 60092-504(2001) - IEC 60945(2002) - IEC 61162(2016).

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: 01 Jun 2021

For BUREAU VERITAS,

At BV NANTES, on 01 Jun 2016,

Joel Gaurin



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 & Offshore 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:

- Product model or type designation :
ALTOR 16

- Product description:
Marine Alarm Annunciator

1.1 - Main specifications:

Housing

Material	aluminium
Enclosure	IP 44
Front face film	Polycarbonate silk-sink printed in 3 languages (French, English, Spanish)
Wiring	2 pluggable connectors (18 terminals)

Power supply

Voltage range	24 VDC, -25% +30%
Alarms	low voltage + high voltage
Protections	automatic rearming fuse + diode

Input Channels Specifications

Capacity	16 channels
Input type	normally open/closed dry contacts
Temporisation	programmable from 0 to 99 seconds
Input Inhibition	possible by other input channel, programmable with PC software only
Line Monitoring	open line and short-circuit detection for each channel
Max. Cable Length	200 m
Cable to be used	marine shielded pair or multi-wire cables, 0.5 mm ² min.
Max. consumption per channel	20 mA max. I8VCC
Audible Signalisation	Intemal buzzer, 3,5 kHz, 80dB@ 1m

Inputs/Outputs

"External Ack." input	remote acknowledgement of audible signals
"External Buzzer." output	dry contacts (3A max, to be protected), copy of the internal buzzer state
"RG1" to "RG4" outputs	dry contacts (3A max, to be protected), with following options: NO/NC, ACKNOWLEDGE/NOT ACKNOWLEDGE, 1 GROUP OF 16 / 4 GROUPS of 4
Port RS 485	NMEA type output to connect other systems (V .D.R, monitoring...)
Port RS 232	PC configuration software connection

1.2 - Software Version: V1.1 (20/04/2016)

2. DOCUMENTS AND DRAWINGS:

MARINELEC Technologies:

- Manual for installation and use indice V0.
- ALTOR16_Versions_Soft, Document Version 0.

For modification C0 version:

Marinelec:

- Gap Analysis Ref.: ALTOR16 - GAP ANALYSIS 01- IEC 61162 ENG, dated Apr 24, 2016
- ALTOR16 MANUAL GB_REV2, dated Apr 2016
- ALTOR16_Versions_Soft, Document Version 1.1, dated Apr 20, 2016

3. TEST REPORTS:**KENTA:**

- Test report N° 203871 dated Oct. 2005.

EMITECH:

- Test report N° RQ-05-61046/A dated 11/Jul./2005.
- Test report N° RQ-05-61046/1/A dated 11/Jul./2005.

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 - One detailed alarm list per zone shall be posted in the close proximity of the panel.
- 4.4 - This sub-alarm system shall be used for alarm monitoring only.
- 4.5 - 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.
- 4.6 - 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.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above products 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 - **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:

- 6.1 - Trade name
Date of manufacture and serial number,
Equipment type or model identification under which it was type-tested.
- 6.2 - The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment.

7. OTHERS:

- 7.1 - It is **MARINELEC TECHNOLOGIES - FRANCE**'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. 16553/B0 BV issued on 3 Mar 2011 by the Society.

*** END OF CERTIFICATE ***