



Marine & Offshore
Division

Certificate number: 42619/A0 EC

File number: NAV 05/1356/03

Annex A1 Item number: A.1/4.7

This certificate is not valid when presented without the full
attached schedule composed of 7 sections
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Notified Body 0062 - MARINE EQUIPMENT DIRECTIVE 96/98/EC

EC TYPE EXAMINATION CERTIFICATE

as per Module B of European Union Council Directive 96/98/EC on marine equipment
as amended by Commission Directive 2013/52/EU

This certificate is issued to

AMESYS

AIX EN PROVENCE - FRANCE

for the type of product

SPEED AND DISTANCE MEASURING EQUIPMENT (SDME)

Ship Speed Log LMN5 & LMN5 DUO

Requirements:

SOLAS 74 Convention as amended, Regulations V/18, V/19 & X/3
IMO Res.MSC.97(73) (2000 HSC Code) 13
IMO Res.A.694(17)
IMO Res.A.824(19)
IMO Res.MSC.96(72)
IMO Res.MSC.191(79)
IEC 60945 (2002) incl. /Corr. 1 (2008)
IEC 61023 (2007)
IEC 62288 Ed.2 (2014)
IEC 61162-1 Ed. 4.0 (2010) including IEC 61162-1 Corrigendum 1 (2013)

This certificate is issued on behalf of the French Maritime Authorities to attest that BUREAU VERITAS did undertake the relevant type-examination procedures for the product identified above which was found to comply with the relevant requirements of the Council Directive 96/98/EC of 20 December 1996 as amended.


This certificate will expire on: 27 Jul 2020

For BUREAU VERITAS Notified Body 0062,

At BV MARSEILLE, on 27 Jul 2015,

Stéphane LEROY



This certificate does not allow to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark ) to the products corresponding to this type. To this end, the production-control phase module (D, E or F) of Annex B of the Directive is to be complied with and controlled by a written inspection agreement with a notified body.

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. BUREAU VERITAS is designated by the French Maritime Authority as a "notified body" under the terms of the French Regulations Division 140 Chapter 140-2. 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:

E/M SPEED LOG

Single or dual axis speed measurement
type: LMN5 & LMN5 DUO

1.1 - Standard Configuration

Name	Unit Name	Remarks
Processing Unit	PVBEN198	LMN5 DUO comprises Two sensors and Two log modules
Electromagnetic sensor	130 EB 130 FIMN 65 RVB LENS	PVBEN184 PVBEN188 PVBEN056 (1) PVBEN306 (1)
Repeater	PVBEN352 PVBEN295	Analog -5/+50 Kts Digital -10/+60 Kts
Programming console	PVBEN226	

1.2 - Specifications/Performance data

Item	Remarks
Measurement scale	Analogical -5/+50 Kts Digital -10/+60 Kts
Speed	- Speed indicators resolution: 0,1 Knots - Damping time constant: 4, 6 , 32 seconds - Sampling period: 8,33 Hz - Electronics linearity: instrument accuracy 0,1% at full scale reading - zero stability: 0,04 Knots
Distance	- Scale: 0 to 99 999,9 NM - Accuracy better than 0,1 miles/hour regardless of speed
Power Supply	- 28 V DC (Main) - 110/230V AC 50 / 60 Hz (Option)
I/O Interface	- 28 V Power supply or other - Inductor electrode sensor data - 2x1/200 mile potential-free contact output (2) - 2x1/10 mile potential-free contact output (2) - 2 programmable 1/200 or 1/100 or 1/10 mile inputs (2) - 1 potential-free contact alarm output (2) - 1 optional current output, 0-500 μ A or 4-20 mA (full scale programmable) - 1 optional programmable synchro output (5VA-400 or 60 Hz) - 1 RS422 output according to IEC 61162-1 - 5 RS422 outputs (optional) - 2 RS422 output to dialog with the combined repeater.

1.3 - Software versions:

As per software release document which is referenced under BV N° 13386/C0 EC

Notes:

- (1) Electromagnetic sensors are type approved under BV certificates n°s 08293/B0 EC & 08296/B0 EC.
(2) Breaking capacity 24V-250 mA.

2. DOCUMENTS AND DRAWINGS:

2.1 - In accordance with the manufacturer's drawings and documents:

- User's Technical Manual ref.: 03MU008 (LMN5) and 08MU008 ind A (LMN5 DUO).
- Drawings for electromagnetic sensors reviewed and filed in NAV5/1356/3.

2.2 - Manufacturing documentation: to be approved by Bureau Veritas e.g. Manufacturing, test and inspection plan.

Nb: Before changes can be implemented, new drawings must be provided to Bureau Veritas for review and acceptance.
The new drawing list will be stamped and endorsed accordingly.

3. TEST REPORTS:

- 3.1 - Test report N°: 10095/59
 - Dated:01/04/1994
 - Issued by: DGA. - France
- 3.2 - Test report N°: DO1312- CLE/1
 - Dated:19/08/2003
 - Issued by: LNE - France
- 3.3 - Test report N°: D060100- CLE/1
 - Dated:04/08/2003
 - Issued by: LNE - France
- 3.4 - Test report N°: file : D080127 - doc. CQPE/2
 - Dated:02/09/2003
 - Issued by: LNE - France
- 3.5 - Test report N°: RG-03-91090-1A
 - Dated:25/09/2003
 - Issued by: EMITECH - France
- 3.6 - Test report N°: RG-03-91090-A
 - Dated:25/09/2003
 - Issued by: EMITECH - France
- 3.7 - Test report N°: 04-777 vers. 00
 - Dated:21/09/2004
 - Issued by: GERAC - France
- 3.8 - Test report N°: 08-CR002 vers. 00
 - Dated:25/06/2008
 - Issued by: AMESYS Int. - The tests were witnessed by a Society's Surveyor.
- 3.9 - Test report N°:R041-08-101677-1A - TP/CHB
 - Dated:23/05/2008
 - Issued by: EMITECH - France
- 3.10 - Meeting Report ref : 14CR014 Ind 0 dated 31/07/2014

4. APPLICATION / LIMITATION:

As per requirements of regulations stated on the front page of the certificate and according to the manufacturer's specifications.

5. PRODUCTION SURVEY REQUIREMENTS:

This certificate alone does not allow the applicant to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark) to the products corresponding to this type. To this end, the production-control phase module D "Production Quality Assurance" or E "Product Quality Assurance" or F "Product Verification" of Annex B of the Directive is to be complied with and controlled by a written inspection agreement with a Notified Body.

6. MARKING OF PRODUCT:

- 6.1 - Maker's name or trade mark,
- Serial number of the units,
- Equipment type number or model identification under which it was type-tested,
- Compass minimum safe distance according to IEC 60945.

6.2 - Markings as per MED 96/98/EC when authorized by a Notified Body:

Ⓢ YYYY/XX where YYYY is the number of the Notified Body undertaking surveillance module (when BV, 0062) and where XX are the last two digits of year mark affixed.

7. OTHERS:

7.1 -This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the electromagnetic log at any time, and that **AMESYS (AIX EN PROVENCE CEDEX 3 - FRANCE)** will accept the responsibility for informing shipbuilders or their sub-contractors of the proper methods of use and general maintenance of the electromagnetic log and the conditions of this approval.

7.2 - This Certificate supersedes EC Type Examination Certificate N° 13386/D0 EC issued on 13/10/2014 by the Society.

*** END OF CERTIFICATE ***