

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Universal automatic identification system (AIS)

with type designation(s)
PROTEC AIS

Issued to
L3 Henschel
Sarasota FL, USA

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306**,
item No. MED/4.32. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), ITU-RM-1371-5 (02-2014)

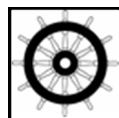
Manufacturers authorised representative
L3 Marine Systems UK
Bristol, United Kingdom

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2022-12-27**.

Issued at **Hamburg** on **2017-12-28**

DNV GL local station:
New Orleans



for **DNV GL SE**

Approval Engineer:
Jörg Rebel

Notified Body
No.: **0098**

.....
Sven Dudszus
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment", signed February 27th, 2004.

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU. This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled. Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.



Job Id: **344.1-007652-1**
Certificate No: **MEDB00003G7**

Product description

The universal automatic identification system PROTEC AIS (Class A) consists of:

- AIS transponder Part no.: AISA6-XXX-XX Hardware version no.: RevE
Software version no.: MDM_RevE_5_xx
BF_AISC_7_xx
- Integrated minimum keyboard and display (MKD)
- DC power supply: 12 to 24 VDC (absolute min. 10V, absolute max. 31V)
- Data I/O connections:
 - Front panel Pilot Port: Bi-directional RS422 PI port
 - IEC port: 3 x RS422 sensor ports (only receiving)
3 x RS422 PI ports
 - Auxiliary port: 2 x general purpose RS232 ports
1 x EMCON external control
 - GPS 1 pulse/sec: 1 x 1PPS programmable input/output BNC
 - VHF antenna: 1 x SO-259, 50 Ohms, with grounding lug
 - GPS antenna: 1 x TNC, 5V active, 50 Ohms
- Internal GPS: 50 channels, L1 band, Galileo capable, SBAS: WAAS, EGNOS, MSAS
- Optional: Pilot port cable

Application/Limitation

In order to comply with IMO regulations, the AIS system must be connected to following ship's sensor data:

- Speed over ground
- Course over ground
- Heading
- Rate-of-turn
- Position information sources

Type Examination documentation

DNV GL No	Document ID	Rev.	Description
1	BSH/4543/001/4323074/17-1	2017-09-27	Report: Conformance test report, IEC 61993-2 Sec.14 and 16 to 20
2	GM217027E	2017-09-19	Report: Environmental Test, IEC 61993-2 Sec.12, IEC 60945 Sec.8.2 to 8.4
3	GM217024x	2017-08-22	Report: Vibration Test, IEC 61993-2 Sec.12, IEC 60945 Sec.8.7
4	NR1917-1	2017-07-18	Report: Vibration Test, Annex A, IEC 61993-2 Sec.12, IEC 60945 Sec.8.7
5	GM217022c	2017-09-26	Report: EMC Test, IEC 61993-2 Sec.13, IEC 60945 Sec.9 and 10
6	GM217026x	2017-10-05	Report: Power Supply, Special Purpose and Safety Test, IEC 61993-2 Sec.11 and 14.1.1, IEC 60945 Sec.7, 11 and 12
7	GM217025x	2017-09-07	Report: Physical Test, IEC 61993-2 Sec.15
8	GM217105x	2017-10-06	Report: DSC Test, IEC 61993-2 Sec.D.2
9	GM217023fr2	2017-09-21	Report: FCC Test, CFR Title 47, Pt.1, 2, 15 and 80
10	165M2040-10	E	Manual: Installation and Operation
13	BSH/4542/001/4323074/17-3	2017-11-22	Report: Display Test, IEC 62288 (2014)
14	983	2017-11-27	Certificate: Compass Safe Distance

Job Id: **344.1-007652-1**
Certificate No: **MEDB00003G7**

Tests carried out

- Performance testing: IEC 61993-2 (2012)
- Environmental testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)
- Serial interface testing: IEC 61162-1 (2010 and 2016), IEC 61162-2 (1998)
- Presentation of navigational information: IEC 62288 (2014)

Marking of product

According to Article 10 of the Council Directive (MED):

- The wheel mark shall be affixed visibly, legibly and indelibly to the product or to its data plate and, where relevant, embedded in its software. Where that is not possible or not warranted on account of the nature of the product, it shall be affixed to the packaging and to the accompanying documents.
- The wheel mark shall be affixed at the end of the production phase.
- The wheel mark shall be followed by the identification number of the notified body, where that body is involved in the production control phase, and by the year in which the mark is affixed.
- The identification number of the notified body shall be affixed by the body itself or, under its instructions, by the manufacturer or the manufacturer's authorised representative.

For specific products, manufacturers may use an appropriate and reliable form of electronic tag instead of, or in addition to, the wheel mark.

END OF CERTIFICATE