

# EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

## This is to certify:

### That the Heading control system (HCS)

with type designation(s)  
**Navis AP4000**

Issued to  
**Navis Engineering Oy**  
**VANTAA, Finland**

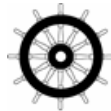
is found to comply with the requirements in the following Regulations/Standards:  
Regulation **(EU) 2015/559**,  
**Annex A.1, item No. A.1/4.16 and Annex B, Module B in the Directive; SOLAS 74 as amended, Regulation V/18 & V/19, IMO Resolution A.342 (IX) & A.694(17) and IMO Resolution MSC. 64(67) Annex 3 & 191(79)**

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

This Certificate is valid until **2021-09-22**.

Issued at **Høvik** on **2016-09-23**

DNV GL local station:  
**Helsinki**



for **DNV GL AS**

Approval Engineer:  
**Roger Lauritsen**

Notified Body  
No.: **0575**

**Vidar Dolonen**  
**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 United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005.

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 AS 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



## Product description

Navis AP4000 consist of

Description	Unit Type Designation	SW ver.
Control Panel	APH4000	0600xxyy
Control Unit	CU-M, including: - APM3000 PCB CU-MPR, including: - APP3000 PCB	0506xxyy 0706xxyy
Interface Box Type 2	IB-AVN-2 (Alarm Panel I/O) including - APP3000 PCB IB-FFU-2 (FFU/ROT Tiller I/O) including - APP3000 PCB IB-TCS-2 (TCS Backup I/O) including - APP3000 PCB PU-P-2 (Thruster I/O), including - APP3000 PCB (for the Low Speed Thruster Mode)	0906xxyy 0506xxyy 0606xxyy 0406xxyy
Steering Mode Selector	SMS-B	N/A

## Application/Limitation

- A change-over control from automatic to manual steering shall be provided and located easily accessible to the officer of the watch.
- The AUTONAV and TRACK control modes was tested according to relevant parts of IEC62065 (2002). However, these modes of operation are not compliant to the SOLAS convention before approved as part of a Track Control System.

## Type Examination documentation

DNV GL No	Doc. Ref.	Rev.	Description
30	PTP-AP4000-TE	B	Report: Navis AP4000, Performance Test Program and report
29	AP-14101-BCD	rev-A	Drawing: AP4000 connections diagram
28	FMEA-AP3000_AP4000-TE	rev.B	Doc: Navis AP3000/AP4000 Failure Mode and Effects Analysis
25	AP-15101-DLE		Drawing: AP4000 List of Drawings
24	No. 729		Certificate: BSH, Navis AP4000 Compass safe distance
23	9505 330 768 002		Report: Thales, Navis APH4000/MCP4000/MCP4000-2, EMC tests
22	9505 330 998XX 001		Report: Thales, Navis APH4000/MCP4000/MCP4000-2, climatic tests
21	AP-15101-BDE	A	Drawing: Navis AP4000 Block diagram
20	AP-15101-CDE	A	Drawing: Navis AP4000 Cabling diagram
19	AP-20000-ICE	A01	Manual: Navis AP4000 Installation Check list
18	AP-20000-IGE	A07	Manual: Navis AP4000 / JP4000 , Installation Guide
17	AP-20000-QRE		Manual: AP4000 Heading Control System. Quick reference guide

Job Id: **344.1-003260-2**  
Certificate No: **MEDB0000182**

<b>DNV GL No</b>	<b>Doc. Ref.</b>	<b>Rev.</b>	<b>Description</b>
16	AP-20000-SME	007	Manual: Product Line AP/JP3000, AP/JP4000 Service Manual
15	AP-20000-UJE	A05	Manual: Navis AP4000, Heading Control System, User Guide
12	9505 330 609XX 001		Report: Navis APH4000/MCP4000/MCP4000-2 Control Panels, Environmental tests
7	PTP-AP4000-TE	A	Report: Navis AP4000/AP3000 Performance test program and report
4	9505 330 768 001		Report: Thales, EMC Tests for APH4000/MCP400/MCP4000-2 Control panels
3	VVT-S-05244-11		Report: VTT, Sine Vibration Test for CU-MPR and IB-Type 2
2	264474-2		Report: SGS, Environmental Tests for CU-MPR and IB-Type 2
1	264474-1		Report: SGS, EMC Tests for CU-MPR and IB-Type 2

### Tests carried out

- Environmental tests, IEC 60945 (2002)
- Presentation tests, IEC 62288 (2014)
- Performance tests, ISO 11674 (2006)
- Performance tests for High Speed Crafts, ISO 16329 (2003)
- Serial Interface tests, IEC 61162-1 (2010) and IEC 61162-2 (1998)

### Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location and in addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.