DNV·GL

Certificate No:
MEDB00003B5

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 Norway.

This is to certify:

That the Heading control system (HCS) and Heading control system for high speed craft

with type designation(s)
Navis AP3000-C, Navis NavAP

Issued to
Navis Engineering Oy
VANTAA, Finland

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773,**

item No. MED/4.16. SOLAS 74 as amended, Regulations V/18 & V/19, IMO Res. A.342(IX), IMO Res. A.694(17), IMO Res. MSC.191(79), IMO Res. MSC.64(67) Annex 3, IMO Res. MSC.302(87)

item No. MED/4.40. SOLAS 74 as amended, Regulation X/3, IMO Res. A.694(17), IMO Res. A.822(19), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87), IMO MSC.1/Circ.1349

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

This Certificate is valid until **2023-07-10**.
Issued at **Høvik** on **2018-07-11**

DNV GL local station:
Helsinki

Approval Engineer:
Roger Lauritsen

Notified Body
No.: **0575**

for **DNV GL AS**
Digitally Signed By: Grimsrud, Jan Tore
Location: DNV GL Høvik, Norway
on behalf of

Roald Vårheim
Head of Notified Body

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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 AP3000-C consist of

Description	Unit Type Designation	SW ver.
Control Panel 1)	APH-5 or APH-7	06.02.xx.yy 06.02.xx.yy
Control Unit	CU-M, including: - APM3000 PCB CU-MPR, including: - APP3001 PCB	 05.07.xx.yy 07.07.xx.yy
Interface Box Type 2 (Optional)	IB-FFU-2 (FFU/ROT Tiller I/O) including - APC3002 PCB IB-TCS-2 (TCS Backup I/O) including - APC3002 PCB PU-P-2 (Propulsion I/O) including - APC30002	05.06.xx.yy 06.06.xx.yy 04.07.xx.yy
Steering Mode Selector (Optional)	SMS-B Type 1 or SMS-B Type 2 or SMS-B Type 3	N/A
Lever (Optional)	LVR-F	N/A
Rudder feedback unit (Optional)	NavRFU	N/A

Navis NavAP consist of

Description	Unit Type Designation	SW ver.
Control Panel	APH-5 or APH-7	06.02.xx.yy 06.02.xx.yy
Control Unit	MCU including - Main MC - Rudder MC - Thruster MC ACU including (optioal) including APMPP PCB with - Rudder MC - Thruster MC	 05.07.xx.yy 07.07.xx.yy 04.07.xx.yy 07.07.xx.yy 04.07.xx.yy
Interface Box Type 2 (Optional)	IB-FFU-2 (FFU/ROT Tiller I/O) including - APC3002 PCB IB-TCS-2 (TCS Backup I/O) including - APC3002 PCB PU-P-2 (Propulsion I/O) including - APC30002	05.06.xx.yy 06.06.xx.yy 04.07.xx.yy
Steering Mode Selector (Optional)	SMS-B Type 1 or SMS-B Type 2 or SMS-B Type 3	N/A
Lever (Optional)	LVR-F	N/A
Rudder feedback unit (Optional)	NavRFU	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.
- Navis AP3000-C and Navis NavAP including interface Box IB-TCS-2 is tested to comply with DNVGL rules Pt.6.Ch.3.Sec.3 6.2.3
- The TRACK control mode shall only be available when the HCS is part of an approved Track Control System

Type Examination documentation

DNV No.	Doc. Ref.	Rev.	Description
16	AP-10310-DLE	A01 (Feb.2017)	Drawing: Set of Drawings AP3000-C
17	AP-10510-DLE	A03 (Oct. 2017)	Drawing: Set of Drawings NavAP
25	AP_JP3000-C-NavAP_JP-10000-IGE	A (July 2018)	Manual: Navis AP/JP3000-C, Navis AP/JP4000, Navis NavAP/NavJP Installation Guide
26	AP3000-C-NavAP-10000-UGE	A (July 2018)	Manual: Navis NavAP/AP3000-C Heading control system, User guide
32	PTP-AP5000-TE	C (Feb.2017)	Report: Navis AP3000-C, performence test program and report
29	FMEA-AP3000C/AP5000-TE	C	Report: Navis AP3000-C/NavAP Failure Mode and Effects Analysis
23	Flicker analytic test APH-5 APH-7		Report: Navis AP3000-C/NavAP, Flicker analytic test APH-5 APH-7
31	PTP-NavAP-TE	D (June 2018)	Report: Navis NavAP Performance test program and report
22	240607-1	A1	Report: SGS, Electromagnetic Compatibility EMC test report Navis AP3000
21	288184-1		Report: SGS, Electromagnetic Compatibility EMC test report Navis AP5000 / AP3000C
18	242461-1		Report: SGS, Environmental tests AP3000
34	266602-1		Report: SGS, STCS4000 Climatic Test Report
35	266553-1		Report: SGS, STCS4000 EMC Test Report
33	266602-3		Report: SGS, STCS4000 Test report IP44 IP56
36	266602-2		Report: SGS, STCS4000 Vibration Test report
19	VTT-S-02004-17		Report: VTT, Environmental tests Navis AP5000 / AP3000C
30	VTT-S-06678-17		Report: VTT, Environmental tests Navis AP5000 / AP3000C Heading Control System
24	VTT-S-07107-17		Report: VTT, Salt mist test Navis AP5000 / AP3000C

Tests carried out

- Environmental tests, IEC 60945 (2002)
- Performance tests, ISO 11674 (2006)
- Performance tests for High Speed Crafts, ISO 16329 (2003)
- Performance tests, DNVGL Rules pt. 6. Ch.3 Sec.3. 6.2.3 (July 2018)
- Serial Interface tests, IEC 61162-1 (2016) and IEC 61162-2 (1998)
- Presentation tests, IEC 62288 (2014)

Marking of product

The name and contact address of the manufacturer and type designation of the product is to be affixed to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.