

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB0000BZ1
Revision no.:
0

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 AS under the authority of the Government of Norway.

This is to certify:

that the **Heading control system for high-speed craft**

with type designation(s)
NAVpilot-1000

issued to

Furuno Electric Co., Ltd.
Nishinomiya, Japan

is found to comply with the Implementing Regulation (EU) 2025/1533 for
Item no. **MED/4.40** (Row **1 of 2**)
according to the following requirements:

IMO Res. A.694(17), IMO Res. A.822(19), IMO Res. MSC.191(79), IMO Res. MSC.302(87), IMO MSC.1/Circ.1349, SOLAS 74 Reg. X/3, IMO Res. MSC.36(63)-(1994 HSC Code) 13, IMO Res. MSC.97(73)-(2000 HSC Code) 13

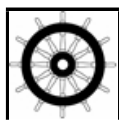
Further details of the equipment and conditions for certification are given overleaf.

Date of issue: **2026-02-05**

Expiry date: **2028-02-04**

DNV local unit:
Japan CMC

Approval Engineer:
Steinar Kristensen



for **DNV AS**

Notified Body
no.: **0575**

Christine Mydlak-Röder
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, and amended by Decision No 1/2023 dated August 21st, 2023.



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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Please see Appendix: Product Description

Application/Limitation

- NAVpilot HCS is to be installed in accordance with manufacturers documentation.
- NAVpilot HCS for power failure alert is to be installed interfaced to a secondary system on the bridge using Power Fail relay on Processor Unit FAP-10002. The interfaced system shall be capable of providing an alert message in accordance with ISO 11674, IEC 61162-1 and IEC 62923-1/-2 for HCS Power Failure. For presentation on own display and if installed onboard interfacing to a CAM
- NAVpilot HCS may be installed with 6 Control Unit FAP-10001.
- NAVpilot HCS may provide FU and NFU rudder steering. Steering control functions are to be covered by separate approval as applicable.
- NAVpilot HCS Advanced AUTO mode for GNSS based HCS drift compensations. The function is a additional function to this Module-B certification.

Type Examination documentation

Tests carried out

- | | |
|--------------------------|--|
| • Performance testing: | ISO 16329 (2003) |
| • Environmental testing: | IEC 60945 (2002) incl. Corr. 1 (2008) |
| • Interface testing: | IEC 61162-1 (2016), IEC 61162-2 (1998) and IEC 61162-450 ed.2 (2018) |
| • Presentation testing: | IEC 62288 (2021) |
| • Alert Management: | IEC 62923-1 (2018), IEC 62923-2 (2018) |

Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to at least one part of the product. In addition, the various equipment shall be marked with serial number. Safe distance to magnetic compass and power consumption and/or supply voltage may be stated in the individual installation manuals.

APPENDIX

Product Description

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NAVpilot-1000 Heading Control System (HCS) for High-speed craft (HSC) consists of the following components:

Name	Type	Note	Location
Standard installation:			
Control Unit	FAP-10001		Protected
Processor Unit	FAP-10002		Protected
Optional components:			
Junction Box FI-5002	Junction Box FI-5002		Protected
Switch	HUB-100		Protected
Follow-up Remote Controller	FAP-FU2000		Exposed
Cable assembly	FRU-LMT-18-Single		Protected
Software:			
Control Unit FAP-10001		APP: 6454041-02.xx BOOT: 6454042-01.xx	
Processor Unit FAP-10002		APP: 6454045-02.xx BOOT: 6454046-01.xx	
Follow-up Remote Controller		APP: 6454055-01.xx BOOT: 6454054-01.xx	



APPENDIX

Type Examination documentation

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Document No.	Rev.	Title
K64-17-618	2022-06-08	Report: Furuno, IEC 61162-1 B4.9.2 Protocol testing DNV type approval testing report, Model: Autopilot, Type: NAVpilot-1000
LIC 12-22-034	2022-03-31	Report: Labotech, Test Report IEC 62288 Model: AUTOPILOT, Type: NAVpilot-1000
LIC 01-22-012	2022-07-11	Report: Labotech, Reference document for IEC 61162-1/-2 tests performed by LIC (In relation to LIC test report No. LIC 12-22-005, Rev.1 for NAVpilot-1000)
LIC 01-22-013	2022-07-11	Report: Labotech, Reference document for IEC 61162-450 test performed by LIC (In relation to LIC test report No. LIC 12 22 006 , Rev.1 for NAVpilot 1000)
LIC 12-22-005	1	Report: Labotech, Test Report (IEC 61162-1/-2) for Trade name: Furuno, Model: AUTOPILOT, Type: NAVpilot-1000
LIC 12-22-006	1	Report: Labotech, Test Report (IEC 61162-450) for Trade name: Furuno, Model: AUTOPILOT, Type: NAVpilot-1000
LIC 12-22-076	1	Report: Labotech, Test Report IEC 60945 for Trade name: Furuno, Model: AUTOPILOT, Type: NAVpilot-1000
LIC 12-22-082	2022-07-11	Report: Labotech, Test Report IEC 60945 IACS UR E10 for Trade name: Furuno, Model: AUTOPILOT, Type: NAVpilot-1000
LIC 12-22-083	2022-07-11	Report: Labotech, Test Report IEC 60945 (vibration) for Trade name: Furuno, Model: AUTOPILOT, Type: NAVpilot-1000
LIC 12-22-084	2022-07-11	Report: Labotech, Test Report IEC 60945 (temperature) for Trade name: Furuno, Model: AUTOPILOT, Type: NAVpilot-1000
LIC 12-22-085	2022-07-11	Report: Labotech, Test Report IEC 60945 (operational checks, manuals, markings) for Trade name: Furuno, Model: AUTOPILOT, Type: NAVpilot-1000
LIC 12-22-086	2022-07-11	Report: Labotech, Test Report IEC 60945 (CSD) for Trade name: Furuno, Model: AUTOPILOT, Type: NAVpilot-1000
K64-17-619	2022-06-20	Report: Furuno, additional functions test, DNVGL type approval testing report, Model: Autopilot, Type: NAVpilot-1000
K64-17-598	2022-09-06	Report: Furuno, NAVpilot-1000 HCS DNV type approval testing report, Model: Autopilot, Type: NAVpilot-1000
K64-17-600	0.03	Report: Furuno; NAVpilot-1000 IEC62923 test procedure DNV type approval testing report, Model: Autopilot, Type: NAVpilot-1000
K64-17-627	1	Report: Furuno Reference document for P.19 P.23 P.39 ISO11674
K64-17-645	01.02	Report: Furuno, Additional IEC 61162-1 B4.9.2 mode Indicator testing, DNV type approval testing report, Model: Autopilot, Type: NAVpilot-1000
K64-17-617	2022-06-20	Report: Furuno IEC 62923-1/-2 HCS Autopilot NAVpilot-1000
LIC 12-22-215	2023-03-06	Report: Labotech, IEC 62288 (2021) test report for NAVpilot-1000 Autopilot
LIC 12-25-066	2025-10-31	Report: Labotech, Temperature test report for NAVpilot-1000 Autopilot with FAP-FU2000 Follow-up Remote Controller
LIC 12-25-067	2025-10-31	Report: Labotech, Excessive conditions, acoustic noise and emissions from VDU test report for NAVpilot-1000 Autopilot with FAP-FU2000 Follow-up Remote Controller
LIC 12-25-068	2025-10-31	Report: Labotech, Compass Safe Distance test report for NAVpilot-1000 Autopilot with FAP-FU2000 Follow-up Remote Controller
LIC 12-25-109	2025-12-23	Report: Labotech, Operational checks, Maintenance, Manuals and Markings test report for FAP-FU2000 Follow-up Remote Controller
LIC 12-25-110	2025-12-23	Report: Labotech, IEC 62288 (2021) test report for FAP-FU2000 Follow-up Remote Controller
LIC 12-25-036	2025-08-27	Report: Labotech, Vibration test report for FAP-FU2000 Follow-up Remote Controller
LIC 12-25-058	2025-10-08	Report: Labotech, Rain and spray test report for FAP-FU2000 Follow-up Remote Controller
LIC 12-25-065	2025-10-31	Report: Labotech, EMC test report for NAVpilot-1000 Autopilot with FAP-FU2000 Follow-up Remote Controller



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Document No.	Rev.	Title
A64-17-0005	0	Report: Furuno, Type Approval testing report for NAVpilot-1000 Autopilot with FAP-FU2000 Follow-up Remote Controller
C72-02501-A1	A1	Manual: Furuno, User Handbook for Follow-Up Remote Controller FAP-FU2000
IME-72890-B12	B12	Manual: Furuno, Installation Manual AUTOPILOT Model NAVpilot-1000
OME-72890-B12	B12	Manual: Furuno, Operator Manual AUTOPILOT Model NAVpilot-1000