

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000039D
Revision No:
3

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 DGPS Equipment

with type designation(s)
GP-170

Issued to

Furuno Electric Co., Ltd.
Nishinomiya, Hyogo Pref, Japan

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2019/1397,**

item No. MED/4.14. 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.112(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87)

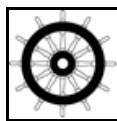
item No. MED/4.50. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.112(73), IMO Res. MSC.114(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87)

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

This Certificate is valid until **2025-05-07.**

Issued at **Høvik** on **2020-07-02**

DNV GL local station:
Kobe



for **DNV GL AS**

Approval Engineer:
Steinar Kristensen

Notified Body
No.: **0575**

Roald Vårheim
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 1/2019 dated February 22nd, 2019.

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.



LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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 300,000 USD.



Job Id: **344.1-003834-10**
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Product description

The GPS/DGPS Navigator GP-170 comprises the following units and components:

Unit	Model Name	Remark	Location
Antenna unit	GPA-017S ¹⁾ or GPA-020S ¹⁾ or GPA-022S ²⁾ or GPA-021S ³⁾ or GPA-023S ⁴⁾	¹⁾ GPS ²⁾ GPS (& optional GLONASS) ³⁾ DGPS ⁴⁾ DGPS (& optional DGLONASS)	Exposed
Display unit	GP-170-EN or GP-170-EA ²⁾	²⁾ w/beacon Rx (DGPS)	Protected
Antenna cable	3D-2V or 8D-FB	Coaxial cable	
Built-in interfaces	DATA Port 1,2,3,4	IEC61162-1	Protected
	DATA Port 4	IEC61162-2	
	Ethernet	IEC61162-450	
Interface unit	IF-2503	Optional	Protected
Multi distributor	MD-550	Optional; -4 outputs from two GPS inputs or 8 outputs from one GPS input	Protected
Interface unit	IF-2500	Optional; -6 serial outputs from two GPS and 3 relay contact alarm outputs	Protected

Application/Limitation

- The GP-170 may be installed as GPS receiver or DGPS receiver.
- The GP-170 may optionally process GLONASS signals for improved performance.
- The GP-170 shall be installed in accordance with the Installation manual Pub. No. IME-44820-E10 (or later version).

Type Examination documentation

NPS No.	Document No.	Document Title
2	OME-44820-E10	Operator Manual GP-170
3	IME-44820-E10	Installation Manual GP-170
6	FLI12-13-045	IEC 61162-1/2 test report for GPS NAVIGATOR GP-170
7	FLI12-13-044	IEC 60945 test report for GPS NAVIGATOR GP-170
8	FLI12-13-046	IEC 61162-450 test report for GPS NAVIGATOR GP-170
9	FLI12-13-047	IEC 62288 test report for GPS NAVIGATOR GP-170
10	FLI12-13-061 and K20-17-832	IEC 60945 EMC test reports for GPS NAVIGATOR GP-170
11	K20-10-022	Technical information GP-170
12	K20-17-815	Performance type testing report GP-170
13	K20-17-831	Test report GPA-021S
14	K20-17-833	Testing Report of Static Accuracy
15	K20-17-834	Testing Report of angular antenna movement GPS/DGPS
16	K20-17-836	Testing Report of Interfering Signal -L band/S band
17	K20-17-874	Testing Report of RAIM unsafe status indication

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NPS No.	Document No.	Document Title
19	99383230	Telefication test report (D)GPS receiver equipment - Furuno GP-90
20	FLI12-04-049	IEC60945 test report for Furuno U-AIS FA-150 (GPA-017S)
21	K20-17-1002	Testing report MSC.302(87)
22	K20-17-965	DNV type approval testing report GP-170
27	FLI12-13-124	EMC test report IF-2503
28	FLI12-13-125	IEC60945 test report IF-2503
29	OMC-44411-A2	Interface unit IF-2503 - operators manual
30	TZ747	Interface unit IF-2503 - circuit diagram
31	OME-44080-B3	Multi-distributor MD-550 - manual
32	14-070-001-1	MD-550 multi distributor - interconnection diagrams
33	FLI12-10-014	MD-550 multi distributor - IEC61162-1 tests
34	FLI12-10-005	MD-550 multi distributor - IEC60945 tests
35	FLI12-03-065	IEC 60945 test report: IF-2500 INTERFACE UNIT
36	LIC12-15-088	IEC 61162-1 test report: IF-2500 INTERFACE UNIT
40	LIC 12-15-124	Compass safe distance (CSD) - Test Report IEC 60945
41	LIC 12-15-125	Safety Precautions Test Report IEC 60945
42	FLI 01-03-025	Photographs of GPS Navigator GP-90-Dual
43	OMC43421A6	Operator's Manual Interface Unit IF-2500
48	K20-17-1570	Type approval testing report – GPS/GLONASS Receiver

Tests carried out

- Performance: IEC 61108-1 (2003)
- Performance: IEC 61108-2 (1998)
- Performance: IEC 61108-4 (2004)
- Serial Interface: IEC 61162-1 (2016)
- Serial Interface: IEC 61162-2 (1998)
- Network Interface: IEC 61162-450 (2018)
- Presentation: IEC 62288 (2014)
- Environmental: IEC 60945 (2002)
- Alert management: IEC 62923-1/-2 (2018)
- Combined GPS/GLONASS IMO Res. MSC.115 (73)

Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to the product. In addition the product shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.