DNV·GL

EC-TYPE EXAMINATION CERTIFICATE

Certificate No:
MED-B-9507
Item No:
A.1/4.14
Job Id:
344.1-003834-2

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2013/52/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the GPS 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:
Annex A.1, item No. A.1/4.14 and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation V/18, V/19 & X/3, IMO Resolution A.694(17), IMO Resolution MSC. 112(73) & 191(79) and 2000 HSC Code 13

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

Høvik, 2014-12-15
for **DNV GL**

Marianne Strand Valderhaug
Head of Department

Notified Body No.: **0575**

DNV GL local office:
Helsinki

This Certificate is valid until
2018-12-05

Olaf Gundersrud
Surveyor

DET NORSKE VERITAS * 1864 *

NORWEGIAN ACCREDITATION PROD 019

The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

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Product description

The GP-170 consists of the following units:

Component	Location
Antenna unit	Exposed
Display unit	Protected

For details, see Appendix.

For latest revision of the Appendix, see ***http://exchange.dnv.com/tari***

Application/Limitation

The GPS equipment shall be installed in compliance with the Installation manual Pub. No. IME-44820-Z3.

Note: The GP-170 is examined and found to comply with the standards for interconnection with a Bridge Alarm Management System; IMO resolution MSC.302(87) "Bridge Alarm Management" and IEC 61924-2 "Modular structure for INS", Annex K and Annex M.

Type Examination documentation

- For details, see Appendix.

Tests carried out

- IEC61108-1(2003)
- IEC61108-4(2004)
- IEC61162-1(2010)
- IEC61162-2(1998)
- IEC61162-450(2011)
- IEC62288(2014)
- IEC60945(2002)

Marking of product

The Manufacturer and Type Designation to be identified on 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.

Mark of Conformity

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

Module D: The quality system for production and testing shall be approved by the Notified Body.

Module E: The quality system for inspection and testing shall be approved by the Notified Body.

Module F: Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity.

USCG Approval

The product has been assigned a **U.S. Coast Guard Module B number**, USCG approval 165.130/EC0575, to note type approval to Module B only as it pertains to obtaining US Coast Guard approval 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.

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Product description

The GPS Navigator GP-170 comprises the following components:

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

Type Examination documentation

DNV No.	Document No.	Document Title
2	OME-44820-Z3	Operator Manual GP-170
3	IME-44820-Z3	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 Interferring Signal -L band/S band
17	K20-17-874	Testing Report of RAIM unsafe status indication
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

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DNV No.	Document No.	Document Title
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	Report: Compass safe distance (CSD) - Test Report IEC 60945
41	LIC 12-15-125	Report: Safety Precautions Test Report IEC 60945
42	FLI 01-03-025	Report: Photographs of GPS Navigator GP-90-Dual
43	OMC43421A6	Manual: OPERATOR'S MANUAL INTERFACE UNIT IF-2500

Place and date
HØVIK, 2015-12-09

Frederik Tore Elter

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End of Certificate