



TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB000039D
Revision No:
0

This Certificate is issued by DNV UK Limited based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016 as amended.

This is to certify:

That the GNSS Equipment

with type designation(s)
GP-170

Issued to

Furuno Electric Co., Ltd.
Nishinomiya, Japan

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

Regulation **MSN 1874 Amendment 6,**

item No. UK/4.63. 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.113(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 **London** on **2022-12-28**

DNV local unit:
Kobe



for **DNV UK Ltd.**

Approval Engineer:
Frederik Tore Elter

Approved Body No.: **0097**

Christine Mydlak-Röder
MER Service Responsible



**Maritime &
Coastguard
Agency**

UK Approved Body Authorised
by the MCA

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-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body. The product liability rests with the manufacturer or his representative in accordance with the Merchant Shipping (Marine Equipment) Regulations 2016.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV UK Ltd. of any changes to the approved equipment. 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. This certificate remains valid unless suspended, withdrawn, re-called, or cancelled.

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 300,000 USD.



Product description

The GNSS 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/ GLONASS ³⁾ DGPS ⁴⁾ DGPS/ DGLONASS	Exposed
Display unit	GP-170-EN or GP-170-EA ²⁾	²⁾ w/beacon Rx (DGPS/ DGLONASS)	Protected
Antenna cable	3D-2V or 8D-FB	Coaxial cable	
Built-in interfaces	DATA Port 1,2,3,4	IEC 61162-1	Protected
	DATA Port 4	IEC 61162-2	
	Ethernet	IEC 61162-450	
Interface units	IF-2503	Optional	Protected
	IF-2550	Optional; - depending on the settings, the IF-2550 functions in the same manner as the IF-2503 or IF-2500	
	IF-2500	Optional; -6 serial outputs from two GPS and 3 relay contact alarm outputs	
Multi distributor	MD-550	Optional; -4 outputs from two GPS inputs or 8 outputs from one GPS input	Protected

Application/Limitation

- The GP-170 may be installed as GPS receiver, DGPS receiver, GLONASS receiver or DGLONASS receiver.
- The GP-170 may optionally process GLONASS or GPS signals for improved performance, depending on the mode of operation as GPS or GLONASS receiver.
- The GP-170 shall be installed in accordance with the Installation manual Pub. No. IME-44820-F10 (or later version).

Type Examination documentation

DNV No	Document Id	Rev	Description
77	LIC 12-21-071	17 June 2021	Report: LABOTECH IEC 60945 CSD, Model: GNSS NAVIGATOR Type: GP-170
76	LIC 12-21-070	17 June 2021	Report: LABOTECH IEC 60945 EMC, Model: GNSS NAVIGATOR Type: GP-170
75	LIC 01-21-040	17 June 2021	Report: LABOTECH GP-170 Reference document for IEC 61162-1/-2
74	LIC 12-21-073	17 June 2021	Report: LABOTECH, IEC 61162-1/-2, Model: GNSS NAVIGATOR Type: GP-170
73	LIC 12-21-072	17 June 2021	Report: LABOTECH IEC60945 Temperature and Vibration, Model: GNSS NAVIGATOR, Type: GP-170
72	OME-44820-F10	F10: MAY. 25, 2021	Manual: Furuno, OPERATOR'S MANUAL GNSS NAVIGATOR, Model GP-170
71	IME-44820-F10	F10: APR. 21, 2021	Manual: Furuno, Installation Manual GNSS NAVIGATOR Model GP-170
64	C7202001Z20		Manual: Installation Guide Interface Unit Model IF-2550
62	LIC 12-20-098	29 May 2020	Report: Labotech IEC 61162-1 and IEC 61162-2 - Furuno INTERFACE UNIT IF-2550
61	LIC 12-20-097	4 August 2020	Report: Labotech IEC 60945: 2002 (ed. 4), Clause 6, 13, 14 and 15, - Furuno INTERFACE UNIT IF-2550

DNV No	Document Id	Rev	Description
60	LIC 12-20-096	4 August 2020	Report: Labotech IEC 60945: 2002 (ed. 4), Clause 7.1, 8.2, 8.3 and 8.4 - Furuno INTERFACE UNIT IF-2550
59	LIC 12-20-095	7 July 2020	Report: Labotech IEC 60945: 2002 (ed. 4), Clause 9.2, 9.3, 10.3, 10.4, 10.5, 10.8 and 10.9, - Furuno INTERFACE UNIT IF-2550
58	LIC 12-20-066	29 May 2020	Report: Labotech IEC 60945: 2002 (ed. 4), Clause 8.7, - Furuno INTERFACE UNIT IF-2550
57	LIC 12-20-065	29 May 2020	Report: Labotech IEC 60945: 2002 (ed. 4), Clause 7.2,11.1 and 12.2, - Furuno INTERFACE UNIT IF-2550
56	LIC 12-20-064	29 May 2020	Report: Labotech IEC 60945: 2002 (ed. 4), Clause 11.2, - Furuno INTERFACE UNIT IF-2550
50	K20-17-1604		GP-170 pending items
49	K20-17-1613		Report for fixed pending items
48	K20-17-1570		Type approval testing report: GPS/GLONASS Receiver GP-170
43	OMC43421A6		Manual: OPERATOR'S MANUAL INTERFACE UNIT IF-2500
42	FLI 01-03-025	7 aug. 2003	Report: Photographs of GPS Navigator GP-90-Dual
41	LIC 12-15-125	25 nov. 2015	Report: Safety Precautions Test Report IEC 60945
40	LIC 12-15-124	25 nov. 2015	Report: Compass safe distance (CSD) - Test Report IEC 60945
36	LIC12-15-088		IEC 61162-1 test report: IF-2500 INTERFACE UNIT
35	FLI12-03-065		IEC 60945 test report: IF-2500 INTERFACE UNIT
34	FLI12-10-005		MD-550 multi distributor - IEC60945 tests
33	FLI12-10-014		MD-550 multi distributor - IEC61162-1 tests
32	14-070-001-1		MD-550 multi distributor - interconnection diagrams
31	OME-44080-B3		Multi-distributor MD-550 - manual
30	TZ747		Interface unit IF-2503 - circuit diagram
29	OMC-44411-A2		Interface unit IF-2503 - operators manual
28	FLI 12-13-125		IEC60945 test report (IF-2503)
27	FLI 12-13-124		EMC test report (IF-2503)
22	K20-17-965		DNV type approval testing report GP-170 (BAM)
21	K20-17-1002		testing report MSC.302(87)
20	FLI-12-04-049		IEC60945 test report - FA-150 UAIS
19	99383230		telefication test report GP-90 (GPA-17S)
17	K20-17-874		Testing Report of RAIM unsafe status indication
16	K20-17-836		Testing Report of Interfering Signal -L band/S band
15	K20-17-834		Testing Report of angular antenna movement GPS/DGPS
14	K20-17-833		Testing Report of Static Accuracy
13	K20-17-831		Test report GPA-021S
12	K20-17-815		Performance type testing report GP-170
11	K20-10-022		Technical information GP-170
10	FLI12-13-061 and K20-17-832		IEC 60945 EMC test reports for GPS NAVIGATOR GP-170
9	FLI12-13-047		IEC 62288 test report for GPS NAVIGATOR GP-170
8	FLI12-13-046		IEC 61162-450 test report for GPS NAVIGATOR GP-170
7	FLI12-13-044		IEC 60945 test report for GPS NAVIGATOR GP-170
6	FLI12-13-045		IEC 61162-1/2 test report for GPS NAVIGATOR GP-170
26 ⁾	C7202001Z20		Manual: Furuno - Installation Guide Interface Unit Model IF-2550
24 ⁾	LIC 12-20-025	2020-03-06	Report: Labotech, Temperature/Vibration/Rain&Spray test report for GP-170 with GPA-022S/023S antenna unit

DNV No	Document Id	Rev	Description
23 ^{*)}	LIC 12-20-019	2020-03-06	Report: Labotech, EMC test report for GP-170 with GPA-022S/023S antenna unit
22 ^{*)}	LIC 12-20-018	2020-03-06	Report: Labotech, Compass safe distance test report for GP-170 with GPA-022S/023S antenna unit
19 ^{*)}	LIC 12-20-020	2020-03-06	Report: Labotech, IEC 61162-450 test report for GP-170 with GPA-023S antenna unit
15 ^{*)}	K20-17-1602	2020-03-10	Report: Furuno, Testing report of Acquisition- Signal interruption 24h (combine:GPS+GLONASS)
14 ^{*)}	K20-17-1601-0	2020-03-10	Report: Furuno, Testing report of Acquisition- power outage (combine:GPS+GLONASS)
13 ^{*)}	K20-17-1600-0	2020-03-10	Report: Furuno, Testing report of Acquisition- Interruption of GLONASS signals
12 ^{*)}	K20-17-1599-0	2020-03-10	Report: Furuno, Testing report of Acquisition-power outage (GLONASS)
11 ^{*)}	K20-17-1595-0	2020-03-10	Report: Furuno, Testing report Interfering Signal L-band GLONASS
10 ^{*)}	K20-17-1593-0	2020-03-10	Report: Furuno, Testing report Angular movement Differential GLONASS
9 ^{*)}	K20-17-1597-0	2020-03-10	Report: Furuno, Testing report interfering signal - S-band GLONASS
8 ^{*)}	K20-17-1591-0	2020-03-10	Report: Furuno, Testing report of Angular antenna movement GLONASS
7 ^{*)}	K20-17-1590-0	2020-03-10	Report: Furuno, Testing report of Differential Combine (GPS+GLONASS) Static Accuracy
6 ^{*)}	K20-17-1589-0	2020-03-10	Report: Furuno, Testing report of Differential GLONASS Static Accuracy
5 ^{*)}	K20-17-1588-0	2020-03-10	Report: Furuno, Testing report of Combine(GPS+GLONASS) Static Accuracy
4 ^{*)}	K20-17-1587-0	2020-03-10	Report: Furuno, Testing report of GLONASS Static Accuracy

^{*)} Documentation is registered in DNV NPS folder 344.1-010153

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) incl. Corr.1 (2008)
- 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.