

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000039C
Revision No:
1

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 Speed and distance measuring equipment (SDME)

with type designation(s)
GS-100

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

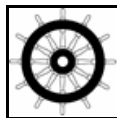
is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773**,
item No. MED/4.7. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.694(17), IMO Res. A.824(19), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87)

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

This Certificate is valid until **2023-09-19**.

Issued at **Høvik** on **2018-09-20**

DNV GL local station:
Kobe



for **DNV GL AS**

Approval Engineer:
Olaf Gundersrud

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.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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



Job Id: **344.1-004055-3**
 Certificate No: **MEDB000039C**
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Product description

The GS-100 SDME comprises the following components:

Unit	Model Name	Remark	Location
Antenna unit	GS-1001		Exposed
Display unit	GS-1002	<i>Incl. 4 serial ports and 1 LAN port</i>	Protected
Junction box	GS-1003		Protected
Interface unit*	IF-2503	<i>*option</i>	Protected

Application/Limitation

The GS-100 equipment shall be configured as SDME and installed in compliance with the instructions of Pub. No. OME-72790-H (or later version).

Type Examination documentation

NPS No.	Document No.	Rev.	Document Title
31	LIC12-17-116		GS-1001: EMC test report
30	LIC12-17-115		GS-1001: Environmental test report
29	LIC12-17-114		GS-1001: EMC test report
28	LIC12-17-113		GS-1001: CSD test report
27	K20-17-1502		DNV Type approval testing report for pending items
26	K20-17-1482		GS-100:IEC61023 Distance run
25	K20-17-1478	2018	Testing Report of Static Error Test (ISO22090-3 Clause 6.4)
24	K20-17-1477		GS-100: IEC61023 Speed $V_{xg}=V_g\cos 30\text{deg}$
23	K20-17-1466		GS-100: IEC61023 Speed reverse mode
22	K20-17-1442	2	GS-100: DNV type approval testing report
19	OME-72790-H		Operator's manual - satellite speed log
15	FLI12-13-124		Test report - IEC60945 emc
14	FLI12-13-125		Test report - IEC60945 tests other than emc
13	FLI12-13-138		Test report - IEC61162-1/2
12	FLI12-13-139		Test report - IEC61162-450
11	FLI12-13-143		Test report - IEC60945
10	FLI12-13-145		Test report - IEC62288 Ed.2 CDV
9	FLI12-13-146		Compass safe distance test report
8	K20-17-828		DNV type approval testing report
7	K20-17-977		Testing report of measurement data -ISO22090-3 & IEC61023
6	K20-17-973	2014	Testing Report of Static Error Test (ISO22090-3 Clause 6.4)
5	K20-17-975		Testing report of indication of distance run
4	K20-17-974		Testing report of indication of speed

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Tests carried out

- Performance - IEC61023(2007)
- Serial Interface - IEC61162-1(2016)
- Serial Interface - IEC61162-2(1998)
- LAN Interface - IEC61162-450(2011)
- Presentation - IEC62288(2014)
- Environmental - IEC60945(2002)

Marking of product

The designation of Manufacturer and Type to be fixed 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.