

Certificate No:

MED-B-9151

Item No:

A.1/4.7

Job Id:

344.1-004055-1

EC TYPE EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2012/32/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 Speed and distance measuring equipment (SDME)

with type designation(s)

GS-100

Issued to

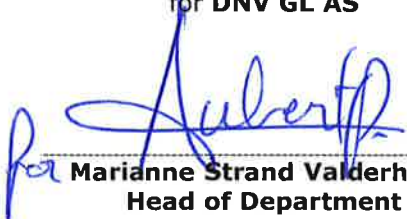
**Furuno Electric Co., Ltd.
Nishinomiya Hyogo Pref, Japan**

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

Annex A.1, item No. A.1/4.7 and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation V/18, V/19 & X/3, IMO Resolution A.694(17) & A.824(19), IMO Resolution MSC. 96 (72) & 191 (79) and 2000 HSC Code 13

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

**Høvik, 2014-07-09
for DNV GL AS**


**Marianne Strand Valderhaug
Head of Department**



Notified Body No.: **0575**

DNV GL local office:
Kobe

This Certificate is valid until
2019-07-09


**Olaf Gundersrud
Surveyor**







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 GS-100 SDME consists of the following units:

Component	Location
Antenna unit	Exposed
Display unit	Protected
Junction box	Protected

For details, see Appendix.

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

Application/Limitation

The GS-100 equipment shall be installed in compliance with the installation instructions of Pub. No. OME-72790-Z2 (see appendix).

Note: The GS-100 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

- See Appendix.

Tests carried out

- IEC61023(2007)
- IEC61162-1(2010)
- IEC61162-2(1998)
- IEC61162-450(2011)
- IEC62288(2014)
- 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.

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.



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USCG Approval

The product has been assigned a **U.S. Coast Guard Module B number**, USCG approvals 165.105/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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APPENDIX REV. NO. 1 (PAGE 1 OF 1)

Product description:

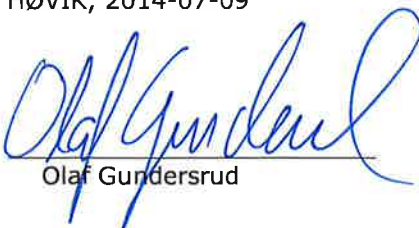
The GS-100 SDME comprises the following components:

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

Type Examination documentation

DNV No.	Document No.	Document Title
19	OME-72790-Z6	Operator's manual - satellite speed log
16	CW-041	waver of the corrosion test
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
6	K20-17-973	Testing report of static error test
5	K20-17-975	Testing report of indication of distance run
4	K20-17-974	Testing report of indication of speed

Place and date
HØVIK, 2014-07-09


Olaf Gundersrud



End of Certificate