



DET NORSKE VERITAS

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 Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. **MED-B-9054**

This is to certify that the
Echo-sounding equipment

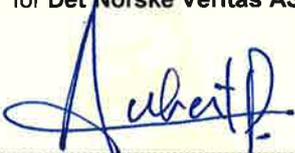
with type designation(s)
FE-800

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.1/4.6 and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation V/18, V/19 & X/3, IMO Resolution A.224 (VII) & A.694(17), IMO Resolution MSC. 74 (69) Annex 4 & 191 (79) and 2000 HSC Code 13

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

Høvik, 2014-06-10
for Det Norske Veritas AS


for **Marianne Strand Valderhaug**
Head of Department



Notified Body No.: **0575**

DNV local office:
Kobe



This Certificate is valid until
2019-06-10


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.



Certificate No.: MED-B-9054
Item No.: A.1/4.6
Job Id.: 344.1-004190-1

Product description

The FE-800 consists of the following units:

Component	Location
Display unit(s)	Protected
Transceiver unit	Protected
Matching unit	Protected
Transducer(s)	Submerged

For details, see Appendix.

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

Application/Limitation

- The FE-800 components shall be installed in compliance with the Installation manual Pub. No. IME-23840-Z4.

Note: The FE-800 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

- IEC 60945 (2002)
- IEC 61162-1 (2010)
- IEC 61162-450 (2011)
- IEC 62288 (2014)
- ISO 9875 (2000)

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.

USCG Approval

The product has been assigned a **U.S. Coast Guard Module B number**, USCG approval 165.107/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 FE-800 echo sounding equipment comprise the following components:

Unit	Model	Comment
Display unit	FE-8010	
Transceiver unit	FE-8020	with 6 serial ports and 1 LAN port
Matching box	MB-502 ¹⁾ and/or MB-504 ²⁾	¹⁾ 50B-6B ²⁾ 200B-8B
Transducer	50B-6B and/or 200B-8B	
Remote display *	RD-20 RD-50	
Interface unit*	IF-2503	*optional
HUB*	HUB-100 (switching HUB) HUB-3000 (intelligent HUB)	
Software versions	1251002-01.xx 1251003-01.xx	xx=01-99

Type Examination documentation

DNV No.	Document no.	Title
23	K02-17-069	Test Report for FE-700 -signal-to-noise
22	K02-17-49-00	Test Report for Furuno FE-700
21	FLI 12-99-036	Test Report for Furuno FE-700
20	KOB9921872/2	Transducer immersion test
19	OME-23840	Operator's Manual FE-800
18	IME-23840	Installation Manual FE-800
17	K12-17-036	Correction report
16	K12-17-016	DNV type approval testing report
14	FLI12-13-140	IEC62288 test report
13	FLI12-13-137	Compass safe distance test report
12	FLI12-13-136	IEC60945 test report
11	FLI12-13-135	IEC60945 test report
10	FLI12-13-132	IEC61162-1 test report
9	FLI12-13-133	IEC61162-450 test report
8	FLI12-13-134	EMC test report
7	OME-44540-C	Operator's Manual RD-20
6	OME-44530-C	Operator's Manual RD-50
5	FLI-12-09-053	FLI Test Report - IEC 60945 RD-20
4	FLI-12-09-068	FLI Test Report - IEC 60945 RD-50

Place and date
 HØVIK, 2014-06-10

Olaf Gundersrud



END OF CERTIFICATE