

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB000039F
Revision No:
2

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 AS under the authority of the Government of Norway.

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:

Regulation (EU) 2024/1975,

item No. MED/4.6. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.224(VII), IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.74(69), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87)

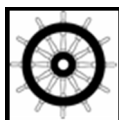
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2026-06-02**.

Issued at **Høvik** on **2024-10-28**

DNV local unit:
Japan CMC

Approval Engineer:
Steinar Kristensen



Notified Body
No.: **0575**

for **DNV AS**

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Mydlak-Röder, Christine
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, and amended by Decision No 1/2023 dated August 21st, 2023.



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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

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 FE-800 echo sounding equipment comprise the following components:

Unit	Model	Location	Comment
Display unit	FE-8010	Protected	
Transceiver unit	FE-8020	Protected	<i>with 8 serial ports and 1 LAN port</i>
Matching box	MB-502 ¹⁾ and/or MB-504 ²⁾	Protected	¹⁾ 50B-6B ²⁾ 200B-8B
Transducer	50B-6B and/or 200B-8B	Submerged	
Remote display*	RD-20 RD-50	Protected	<i>*optional</i>
Interface unit*	IF-2503 IF-2550	Protected	
HUB*	HUB-100 (switching HUB) HUB-3000 (intelligent HUB)	Protected	
Software versions	1251002-01.xx 1251008-01.xx	N/A	<i>xx= 01-99</i>

Application/Limitation

- The FE-800 components shall be installed in compliance with the Installation manual Pub. No. IME-23840-M10 or later.

Type Examination documentation

DNV No.	Document No.	Rev.	Description
59	LIC 01-24-045	2024-09-27	Report: Labotech, Photographs of the FE-800 Navigational Echo Sounder
58	LIC 12-24-091	2024-09-27	Report: Labotech, IEC 61162-450 test report for FE-800 Navigational Echo Sounder
57	LIC 12-24-090	2024-09-27	Report: Labotech, IEC 61162-1 test report for FE-800 Navigational Echo Sounder
56	LIC 12-24-089	2024-09-27	Report: Labotech, IEC 62288 (2021) test report for FE-800 Navigational Echo Sounder
55	LIC 12-24-088	2024-09-27	Report: Labotech, IEC 60945 vibration and excessive conditions test report for FE-800 Navigational Echo Sounder
54	LIC 12-24-087	2024-09-27	Report: Labotech, IEC 60945 temperature test report for FE-800 Navigational Echo Sounder
53	LIC 12-24-086	2024-09-27	Report: Labotech, IEC 60945 EMC test report for FE-800 Navigational Echo Sounder
47	LIC 12-21-009	8 February 2021	Report: LABOTECH - IEC 61162-450 - Furuno NAVIGATIONAL ECHO SOUNDER Model: FE-800 Type: FE-8020
46	LIC 01-20-048	8 February 2021	Report: LABOTECH - Reference document for IEC 61162-450 test performed by LIC (LIC test report no. LI C 12 21 009 for FE 800)
39	K12-17-061	Issue 03.06.2021	Report: Furuno - IEC62923-1/-2 BAM - DNVGL type approval testing report - Model: ECHO SOUNDER Type: FE-800
36	LIC 01-20-021	4 August 2020	Report: Labotech Reference document for IEC 61162-1 -2 - Furuno INTERFACE UNIT IF-2550
35	LIC 12-20-064	29 May 2020	Report: Labotech IEC 60945: 2002 (ed. 4), Clause 11.2, - Furuno INTERFACE UNIT IF-2550
34	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

DNV No.	Document No.	Rev.	Description
33	LIC 12-20-066	29 May 2020	Report: Labotech IEC 60945: 2002 (ed. 4), Clause 8.7, - Furuno INTERFACE UNIT IF-2550
32	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
31	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
30	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
29	LIC 12-20-098	29 May 2020	Report: Labotech IEC 61162-1 and IEC 61162-2 - Furuno INTERFACE UNIT IF-2550
28	C7202001Z20		Manual: Furuno - Installation Guide Interface Unit Model IF-2550
27	OME-23840-J10	2024-08-26	Manual: Furuno - Operator's Manual for Navigational Echo Sounder Model FE-800
26	IME-23840-M10	2024-08-26	Manual: Furuno - Installation Manual for Navigational Echo Sounder Model FE-800
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
17	K12-17-036	0	Correction report
16	K12-17-016	0	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-1209-053		FLI Test Report - IEC 60945 RD-20
4	FLI-1209-068		FLI Test Report - IEC 60945 RD-50

Tests carried out

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|---------------------------|---|
| • Environmental | IEC 60945 (2002) incl. Corr.1 (2008) |
| • Serial Interface | IEC 61162-1 (2016) |
| • LAN Interface | IEC 61162-450 (2018) |
| • Presentation | IEC 62288 (2021) |
| • Performance | ISO 9875 (2000) |
| • Bridge Alert Management | IEC 62923-1 (2018) and IEC 62923-2 (2018) |

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.