

# TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:  
**MERB000039F**  
Revision No:  
**1**

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 Echo-sounding equipment**

with type designation(s)  
**FE-800**

Issued to

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

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

Regulation **MSN 1874 Amendment 9**,

**item No. UK/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 **London** on **2024-11-06**

DNV local unit:  
**Japan CMC**



for **DNV UK Ltd.**

Approval Engineer:  
**Steinar Kristensen**

Approved Body No.: **0097**

**Christine Mydlak-Röder**  
**MER Service Responsible**



**Maritime &  
Coastguard  
Agency**

UK Approved Body Authorised  
by the MCA

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.

During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.

"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. In case limitations of use apply, these should be indicated in the Annex.

**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 <sup>1)</sup> and/or<br>MB-504 <sup>2)</sup>   | Protected | <sup>1)</sup> 50B-6B<br><sup>2)</sup> 200B-8B |
| Transducer        | 50B-6B and/or<br>200B-8B                              | Submerged |                                               |
| Remote display*   | RD-20<br>RD-50                                        | Protected | *optional                                     |
| Interface unit*   | IF-2503<br>IF-2550                                    | Protected |                                               |
| HUB*              | HUB-100 (switching HUB)<br>HUB-3000 (intelligent HUB) | Protected |                                               |
| Software versions | 1251002-01.xx<br>1251008-01.xx                        | N/A       | xx= 01-99                                     |

## 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

- 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.