

# EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:  
**MEDB00000FC**  
Revision No:  
**5**

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive (EU) 2015/559, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

## This is to certify:

**That the Radar equipment CAT 2**

with type designation(s)  
**FAR-1518(-BB)/FAR-1528(-BB)**

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.1/4.35 and Annex B, Module B in the Directive; SOLAS 74 as amended, Regulation V/18 & V/19, IMO Res A.278(VIII) & A.694(17), IMO Res MSC. 191(79) & 192(79), ITU-R M.1177-4 (04/11)**

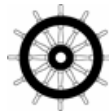
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2021-08-17**.

Issued at **Høvik** on **2016-09-15**

DNV GL local station:  
**Kobe**

Approval Engineer:  
**Olaf Gundersrud**



Notified Body  
No.: **0575**

for **DNV GL AS**

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**Vidar Dolonen**  
**Head of Notified Body**

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## Product description

The Radar FAR-1518/1518-BB, FAR-1528/1528-BB consist of the following units:

| Unit                             | Location  |
|----------------------------------|-----------|
| Main processing unit             | Protected |
| Display unit                     | Protected |
| Operation Panel /control unit(s) | Protected |
| Antenna unit                     | Exposed   |

For details, see Appendix.

## Application/Limitation

- The FAR-radar shall be installed and tested onboard in accordance with the Installation Manual IME-36380-Z10 (or later version)

## Type Examination documentation

- See Appendix.

## Tests carried out

- IEC62388(2013)
- IEC61162-1(2010)
- IEC61162-2(1998)
- IEC62288(2014)
- IEC60945(2002) as amended

## Marking of product

The manufacturer and Type Designation to be applied to the equipment in a clearly visible location and 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(ATA)

The TT-part (ATA) of this product has been assigned a **U.S. Coast Guard Module B number** 165.116/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. The RADAR equipment used with ATA must have a separate U.S. certification.

## APPENDIX

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**Product description:**

The Radar FAR-1518/FAR-1518-BB/FAR-1528/FAR-1528-BB comprises combinations of the following units:

| Unit   | Model Name   | Components                      | Remark                                       |
|--|--|---------------------------------|--|
| Processing Unit                                      | RPU-024  |                                 |  |
| Data Interfaces                                      | (embedded)   | 2 ports                         | IEC61162-2/IEC61162-1                        |
|  | (embedded)   | 4 ports                         | IEC61162-1                                   |
|  | RGB output   | 1 port                          | To VDR                                       |
| Display Unit (VDU)                                   | MU-190 or<br>JH 19T14 FUD-AA1-AOAA or<br>JH 19T14 FUD-MA1-AOAA or<br>JH 19T14 FUD-AA1-AAAA or<br>JH 19T14 MMD-MA1-AABA or<br>JH 20T17 FUD-AA1-AOAA or<br>JH 20T17 FUD-DA1-AOAA |                                 | DVI connection                               |
| Control unit<br>Trackball control unit <sup>1)</sup> | RCU-028<br>RCU-030 <sup>1)</sup>   |                                 | <sup>1)</sup> Option                         |
| Antenna unit   | 12 kW<br>XN12AF-RSB-120-100<br>XN12AF-RSB-121-100 <sup>2)</sup><br>XN20AF-RSB-120-100<br>XN20AF-RSB-121-100 <sup>2)</sup>  | (Scanner/Gear/<br>-Transceiver) | <sup>2)</sup> applicable for HSC<br>(48 rpm) |
|  | 25 kW<br>XN20AF-RSB-120-101<br>XN20AF-RSB-121-101 <sup>2)</sup><br>XN24AF-RSB-120-101<br>XN24AF-RSB-121-101 <sup>2)</sup>  |                                 |  |
| Performance monitor                                  | PM-32A   |                                 |  |
| Switching HUB  | HUB-100  |                                 | Option                                       |
| <i>Software versions</i>                             | 0359296-01.xx(PM)  | Antenna unit                    |  |
|  | 0359344-01.xx(SPU)   | Processor unit                  |  |
|  | 0359348-01.xx(KEY)   | Control unit                    |  |
|  | 1.xx   | Display unit                    |  |

**Type Examination documentation:**

| DNV No. | Document No.           | Rev. | Document Title   |
|---------|------------------------|------|--|
| 57      | DELTA-L102798-4751/2/3 |      | Test of flicker from 17,19,20 inch monitor for use as ECDIS monitor  |
| 56      | DOC101909-1            | 04   | Keypad P004511-1 Minimum brightness measurement                      |
| 53      | DOC102116-2            |      | IEC62288: JH 20T17 MMD-AA1-AABA-HW06                                 |
| 52      | DOC102116-3            |      | IEC62288: JH 19T14 MMD-MA1-SABA-HW09                                 |
| 51      | DOC101909-1            | 3    | Hatteland Displays: KeyPad P004511-1: minimum brightness measurement |
| 50      | DNV 2008-3511          | 2    | IEC60945: JH 20T17 MMD-AA1-AABA                                      |
| 49      | DNV 2013-3038          |      | IEC60945: JH 19T14 MMD-MA1-AAAA                                      |

**APPENDIX**

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**Type Examination documentation (cont.):**

| <b>DNV No.</b> | <b>Document No.</b>   | <b>Rev.</b> | <b>Document Title</b>  |
|----------------|-----------------------|-------------|--|
| 48             | DNV 2008-3528         |             | IEC60945: JH 19T14 MMD-AA1-AOAA  |
| 47             | DNV 2009-3442         | 2           | IEC60945: JH 19T14 MMC-AA1-AABR  |
| 43             | K03-17-1877           |             | FAR-3xx0; DNV type approval testing report for Pending items                           |
| 42             | K03-17-1538           |             | FCR-2xx9: DNV type approval testing report for Pending items                           |
| 41             | FLI 12-10-039         | 3           | Test report(IEC62288 and IEC62388) MU-190  |
| 40             | FLI-12-10-068         | 1           | Test report(IEC60945) Monitor unit MU-190  |
| 31             | K03-17-2100           | 1           | IEC62388; - Result of TT and Association Scenario test                                 |
| 30             | FLI12-15-044          | 1           | IEC62288 ed.2.0 test of MU-150HD   |
| 29             | BSH/6522/1114-8/2004  |             | Conformance test of FAR-2xx7 RADAR series  |
| 27             | K03-17-2263           |             | FAR-15x8 Radar Antenna Pattern Data  |
| 25             | 3 August 2015         |             | Test report IMO RADAR; STCW FAR-15x8 function test report.                             |
| 24             | K03-17-2162           |             | Performance in sea and rain clutter  |
| 23             | K03-17-2130           |             | Software correction report   |
| 22             | MLG-36380-Z7          |             | Operator's guide   |
| 21             | IME-36380-Z10         |             | Installation manual  |
| 20             | OME-36380-Z12         |             | Operator's manual  |
| 19             | Applica 20587         | 0           | Performance testing of two radar systems   |
| 18             | BSH.4543.4342577.13-1 | 1.0         | Test report FURUNO FAR-2xx7 (IEC 62388 Ed.2)   |
| 17             | K03-17-2129           |             | Detection performance of a navigation buoy   |
| 15             | K03-17-2099           | 1.02        | Radar TA Test procedure  |
| 11             | FLI12-15-042          |             | Electromagnetic radiofrequency radiation test report                                   |
| 10             | FLI12-15-027          |             | Test report IEC61162-1/-2  |
| 9              | FLI12-15-026          |             | Test report IEC60945   |
| 8              | FLI12-15-025          |             | EMC test report  |
| 7              | FLI12-15-024          |             | Compass Safe Distance  |
| 4              | QinetiQ/15/00826      | V1.1        | Unwanted emission measurements of Furuno radar systems FUR(X)207, FUR(X)208, FUR(X)209 |