

# TYPE APPROVAL CERTIFICATE

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**This is to certify:**

**That the Digital Repeaters**

with type designation(s)  
**RD-20, RD-50**

Issued to

**FURUNO NORGE AS**  
**ÅLESUND, Norway**

is found to comply with

**IEC 60945 Ed. 4 (2002-08) Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results**

**IEC 61162-1 Ed. 5.0 (2016-08) Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 1: Single talker and multiple listeners**

**IEC 62288 Ed. 2.0 (2014-07) Maritime navigation and radiocommunication equipment and systems – Presentation of navigation-related information on shipborne navigational displays – General requirements, methods of testing and required test results**

**Application :**

**See page 2.**

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Issued at **Høvik** on **2022-01-06**

for **DNV**

This Certificate is valid until **2027-01-05** .

DNV local unit: **Norway CMC, Mid-North**

Approval Engineer: **Frederik Tore Elter**

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**Trond Sjøvåg**  
**Head of Section**

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This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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

Furuno Remote Display RD-20 and RD-50. Repeater for multiple operator-controlled presentations of navigational information based on external serial NMEA input.

## Application/Limitation

- RD-20 and RD-50 are to be installed in accordance to manufacturers documentation on presentation and interface NMEA.
- Installation in accordance to IEC 60945 protected environment.
- RD-20 and RD-50 may present information as indicator in accordance with tested NMEA, tested presentation and manufacturers documentation, for: Position, Heading, Depth, Wind, Speed, Water Temperature, Rudder Angle, RPM and Pitch.
- RD-20 and RD-50 do not fulfil carriage requirements for RPM, Pitch, Gyro/Heading and Rudder indication. For presentation of RPM, Pitch, Gyro/Heading and Rudder; RD-20 and RD-50 may be installed on ships bridge as repeaters, in addition to indicators fulfilling carriage requirements.

## Type Approval documentation

DNV No.	Document No.	Rev	Title
20		R04	RD-50 RD-20 Type Approval Test Report - Furuno
19	FLI 12-09-068		Report: LABOTECH IEC60945 - Remote Display RD-50
18	FLI 12-09-053		Report: LABOTECH IEC60945 - Remote Display RD-20
17	BSH/46162/0121508/09		Report: BSH IEC62288 - Universal Digital Display
10			OPERATOR'S MANUAL REMOTE DISPLAY RD-20
9			OPERATOR'S MANUAL REMOTE DISPLAY RD-50
8	BSH/46162/0121508/09-1		Report: BSH IEC 61162-1 (2007) RD-20
7	BSH/46162/0121509/09		Report: BSH IEC 61162-1 (2007) RD-50

## Tests carried out

- Environmental testing: IEC 60945 (2002) (inc. corr. 2008)
- Presentation testing: IEC 62288 (2014)
- Interface testing: IEC 61162-1 (2016)

## Marking of product

The Manufacturer and Type Designation to be applied to the equipment 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.

## Periodical assessment

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>