DNV·GL

Certificate No:
TAA00002X1

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Miscellaneous

with type designation(s)
RFB360-D

Issued to
Emri A/S
Herlev, Hovedstaden, Denmark

is found to comply with
DNV GL rules for classification – Ships

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	**B**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**B / IP56**

Issued at **Høvik** on **2020-12-01**
This Certificate is valid until **2025-11-30**.
DNV GL local station: **Denmark CMC**

Approval Engineer: **Frode Nygård**

for **DNV GL**

Marta Alonso Pontes
Head of Section

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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.

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Job Id: **262.1-034141-1**
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Product description

The RFB360-D is a digital dual channel SIN/COS output feedback sensor for rudder angle.

The sensor fully integrates into EMRI indication amplifier or an EMRI ASU servo.

Product	Version	System components	Firmware version
Azimuth feedback unit	RFB360-D	- RFD119 (Sensor PCB) - RFC360-D (Dual channel PCB)	1.0

Technical data

Supply voltage range	±10VDC - ±15VDC	From Servo or Indication amplifier.
Output voltage range	±10V - ±15V	SIN/COS vector length = Supply voltage
Temperature range	-25°C - +70°C	

Application/Limitation

The Type Approval covers hardware listed under Product description.
When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case.
Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Equipment is to be installed in accordance with manufacturers documentation.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, December 2019.
Applicable tests for protected equipment according to IEC 60945, 4th edition (2002).

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.dnvgl.com.

END OF CERTIFICATE