

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00000EU
Revision No:
3

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2014/93/EU, 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 Rudder angle indicator

with type designation(s)
RAIS100

Issued to

Yokogawa Denshikiki Co., Ltd., Morioka Branch
Morioka City Iwate, Japan

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

Annex A.1, item No. A.1/4.20 and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res A.526(13) & A.694(17), IMO Res. MSC. 191(79) and 2000 HSC Code 13

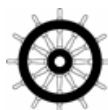
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2021-01-31**.

Issued at **Høvik** on **2016-02-01**

DNV GL local station:
Yokohama

Approval Engineer:
Rolf Heger



Notified Body
No.: **0575**

for **DNV GL AS**

Vidar Dolonen
Head of Notified Body

Job Id: **344.1-002530-6**
Certificate No: **MEDB000000EU**
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Product Description

RAIS100 is consisting of following components:

Component	Model	Location	Software
Transmitter	MRT115	Protected	-
Indicators (Receivers)	MRR117 (3-Face Type)	Protected	-
	MRR118 or MRR118/LP	Exposed	-
	MRR119 or MRR119/LP	Protected	-
	MRR120 or MRR120/LP	Protected	-
Dimmer	MRD011	Protected	-
	MRD010	Exposed	-
Signal Converter	MRT500	Protected	V8503ZA, Axx

Coverage of indications are 40 degree, 50 degree and 80 degree both port and starboard direction.

Application/Limitation

- RAIS100 is implemented only transmitting function (talker) in serial communication required on IEC61162.
- RAIS100 shall be installed and tested onboard in accordance with user's manual.
- MRR118/LP, MRR119/LP and MRR120/LP are found to comply with DNV Rules for Ships Pt.6 Ch.8 (2014-01)

Type Examination documentation

DNV GL No.	Doc. ref.	Rev.	Description
2	YDK-D02-AA-09-072	0	Test Procedure and result
3	193940		EMC TEST REPORT
12	YDK-D02-AA-10-075		Test Reports with stamp
13	110050		EMC Test Report with stamp
16	YDK-D02-AA-13-015	0	Application for Type Approval
18	IM80B901-01E	4th	Rudder Angle Indicator User's Manual
19	YDK-D02-AA-13-017	2	Test Report (Final)
21	YDK-D02-AA-15-039	-	Test Report:Yokogawa, IEC 62288 tests for RAIS100 Rudder Angle Indicator system

Tests carried out

- Performance testing: ISO20673 (2007)
- Environmental testing: IEC60945 (2002)
- Presentation testing: IEC62288 (2014)
- Interface testing: IEC61162-1(2010) and IEC61162-2(1998)

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.