



Lloyd's
Register

Type Approval Certificate

This is to certify that the undernoted products have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER	NORIS Automation GmbH Friedrich-Barnewitz-Strasse 10 18119 Rostock Germany
DESCRIPTION	Remote Control System for Main Propulsion and Lateral Propeller Application
TYPES	NORISTAR 4

With the following Type Arrangements:

NORISTAR 4 F:	Fixed Pitch Propeller Control with Reverse Gear Control
NORISTAR 4 C:	Controllable Pitch Propeller Control
NORISTAR 4 A:	Azimuth, Podded Propulsion or Rudder Propeller Control
NORISTAR 4 J:	Water Jet or Pump Jet Control (drive control as sub type of Type A)
NORISTAR 4 T:	Thruster Control (auxiliary drive control as sub type of Type F or Type C)

Software Versions at Performance Tests:

Main PLC:	PLC_PRG Vb2.0
Base Library Main PLC:	1.13
Function Library Main PLC:	5.01

Certificate No.	15/20135
Issue Date	04 December 2015
Expiry Date	03 December 2020
Sheet	1 of 3



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REMARKS

This Certificate is based on Lloyd's Register Type Approval Certificates for the following components issued to NORIS Automation GmbH:

- Programmable Logic Controller System - Type NORISYS 4: 12/20012 (E1)
- Control Lever System - Type NORISYS LS4: 15/20137
- Control Lever System Azimuth - Type NORISYS LA4: 15/20136
- Remote Control Panel System - Type NORISYS 4 MP: 15/20138
- Remote Control Panel System - Type NORISYS 4 SP: 15/20138
- Measurement Transducer for Converting Potentiometer Signal into Electrical Norm Signal - Type SA502-3G: 12/20013 (E1)
- Multifunction Device for Speed Measurement and Signal Processing, Direction of Rotation Detection, Slip Measurement or Offset Measurement - Type NORISPEED FMN6-1-11-K: 12/20014 (E1)
- Signal Processing Electronic Card for the Control of Lever and Joystick Applications - Type SAR45 Kit: 14/20014 (E1)
- Servo Controller - Type SG 2000

APPLICATION

Marine applications for use in environmental categories ENV1, ENV2, ENV3 and ENV5 for:

- NORISYS LS4
- NORISYS LA4
- NORISYS 4 MP
- NORISYS 4 SP

Marine applications for use in environmental categories ENV1, ENV2, ENV3 and ENV4 for:

- NORISYS 4
- SA502-3G
- NORISPEED FMN6-1-11-K

Marine applications for use in environmental categories ENV1, ENV2, and ENV3 for:

- SAR45 Kit
- SG 2000

as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 - 2002.

ADDITIONAL TESTS

Referring to Lloyd's Register Type Approval Certificates for the individual Components as listed under Remarks.

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DESIGN CODE	Manufacturer's specification
OTHER CONDITIONS	Final functional arrangements are to comply with appropriate Lloyd's Register Rules and will be subject of the project related Plan Approval Process.

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The Design Appraisal Document No. HTS/ETS 32802-15 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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