



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00002KU
Revision No:
2

This is to certify:

that the **Remote Control System, Propulsion, Thruster and Steering**

with type designation(s)
NORISTAR 4

issued to

Noris Automation GmbH
Rostock, Germany

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

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

Location classes:

Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection according to DNV Rules shall be provided upon

Issued at **Hamburg** on **2025-02-24**

This Certificate is valid until **2030-01-15**.

DNV local unit: **Hamburg – CMC North/East**

Approval Engineer: **Holger Jansen**



for **DNV**

Digitally signed by: **Dariusz Lesniewski**
Location: **DNV SE, Germany**

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 USD 300 000.

Product description

Remote Control System for Main Propulsion and Lateral Thrust Propeller Application:

- Type-C for Controllable Pitch Propeller Control (CPP)
with engine start/stop, clutch control, engine load control
- Type-F for Fixed Pitch Propeller Control (FPP)
with reverse gear control and engine speed setting
- Type-A for Azimuth/POD/Rudder-Propeller Control
with additional FPP or CPP functionality
- Type-J for Waterjet/Pumpjet Control
drive control as sub type of Type-A
- Type-T for Thruster Control
auxiliary drive control as sub type of Type-F or Type-C

Software Version: PLC_PRG Vb2.0 / date
Base Library: 1.16
Function Library: 5.04

Power Supply 24Vdc

The system may consist of the following components:

- PLC system components NORISYS 4
- Signal Converter SA502-3G
- Speed Measuring and Signal Processing NORISPEED FMN6
- Control Lever System NORISYS LS4
- Control Lever System Azimuth NORISYS LA4
- Remote Control Panels NORISYS 4 MP, NORISYS 4 SP
- Resistive Angular Positioning Sensor: DWA, DWA-Q
- DC-Isolation Amplifier VariTrans B 130 X Y1* or MINI MCR-2-UI-UI*
- Indicator NIQ3
- Speed Proximity Senos FA1J-4A-70
- Speed sensor FAJ1
- HMI/PLC XV-112, XV-303, XV-313*
- HMI/PLC ex7xx / exWare7xx*
- Servo Controller: SG2000**

Components are type approved separately.

Components marked with "*" are 3rd party equipment and are type approved separately.

Components marked with "****" are type approved within this certificate.

Application/Limitation

The following documentation of the actual application is to be submitted for approval in each case:

- Functional description
- Reference to this type approval certificate and to type approval certificate of listed components
- System block diagram
- Power supply arrangement
- Equipment list
- List of control and monitored points
- Test program for product certification

Product certificate

Each delivery of the application system is to be certified according to DNV Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. After the certification the clause for the application software control will be put into force.

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval.

Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

FL-NORISTAR4 en, Ver. 1.02, 2013-08

Noristar 4 Remote Control System Description Ver. 1.27, No. NAR-KD-0104-10-en, 2024-12-20

Programm structure NORISTAR 4 Ver. 1.01, No. NAR-I-0084-en, 2023-03-03

List of actual subroutines (FB) for NORISTAR 4 Ver. 1.10, No. NAR-I-0083-en, 2024-12-12

NORISTAR 4 Remote Control System Test Procedure Ver.1.02, No. NAR-KD-0104-12-en, 2015-12-17

NORISTAR 4 Technical Description Ver. 2.00, No. 472.050A.00, 2014-03-10

NORISTAR 4 Technical Description Ver. 2.00, No. 472.050B.00, 2014-03-10

NORISTAR 4 Technical Description Ver. 2.00, No. 472.050C.00, 2014-03-10

RCS NORISTAR 4 (CPP) No 472.050A.00 Rev.A, 2014-03-10

RCS NORISTAR 4 (FPP) No 472.050B.00 Rev.A, 2014-03-10

RCS NORISTAR 4 (Azimuth) No 472.050C.00 Rev.A, 2014-03-10

Test Reports:

Test_Schedule_CPP_System_DrawingNo_472.050A.00, Ver. 1.01, 2013-10-30

Test_Schedule_FPP_System_DrawingNo_472.050B.00, Ver. 1.01, 2013-10-30

Test_Schedule_AZIMUTH_System_DrawingNo_472.050A.00, Ver. 1.01, 2013-10-30

AMETEK EMC – test report no. D/20/4792/02 dated 2021-09-28

Type Approval Assessment Report issued at Hamburg – CMC Hamburg North/East on 2025-01-27

Tests carried out

Applicable tests according to Class Guideline DNV-CG-0339, August 2021.

Marking of product

Components are marked with the company name and product number as listed in the tables above.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

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.

END OF CERTIFICATE