



Marine & Offshore
Division

Certificate number: 33523/A0 BV

File number: AP4502

Product code: 44511

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

NORIS Automation GmbH

Rostock - GERMANY

for the type of product

PROPULSION REMOTE CONTROL SYSTEMS

NORISTAR 4 RCS

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

EC Code: 31B and 41BS (for panels and control lever only)

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 24 Feb 2020

For BUREAU VERITAS,

At BV HAMBURG, on 24 Feb 2015,

Dirk Hoefner



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The **NORISTAR 4** is a propulsion remote control system for cabinet mounting based on NORISYS 4 PLC with configurable master and slave control panels.

1.1 - Variants:

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

1.2 - The system can be comprised of following components:

Type	Device	Features
PLC	NORISYS 4 CPU	Central processing unit
	NORISYS 4 24DIO	Extension unit with 24x DI/DO channels
	NORISYS 4 UNIO	Extension unit with 4x AI, 8x AI, 4x AO, 8x AO, 4x AI/4x AO or 8x PT100
Display	XV112-DB-70TWRC-70	Alarm and monitoring display
Master panel	MP-TU-23L9B	23 indications, 9 pushbuttons
	MP-12L12B	12 indications, 12 pushbuttons
Slave panel	SP-12L12B-LA4	12 indications, 12 pushbuttons with control lever NORISYS LA4
	SP-12L12B-LS4	12 indications, 12 pushbuttons with control lever NORISYS LS4
	SP-12L12B-LT4	12 indications, 12 pushbuttons with control lever NORISYS LT4
	SP-TU-7L2B	7 indications, 2 pushbuttons
	SP-6L6B	6 indications, 6 pushbuttons
	SP-6L	6 indications
	SP-4B	4 pushbuttons
	SP-3L3B	3 indications, 3 pushbuttons
Control lever	LS4	Single shaft lever (with optional ESS)
	LSN4	Single shaft lever for 2 demands (with optional ESS)
	LSD4	Twin shaft lever (with optional ESS)
	LT4	Single thruster lever (with optional ESS)
	LTD4	Twin thruster lever (with optional ESS)
	LA4	Azimuth control lever type (with optional ESS)
Sensors	FAJ11	Speed sensor of FAJ-series
	NORISPEED	Signal transducer for speed sensors
	DWA	Pitch sensor of DWA-series
	SA502-3G	Signal transducer for pitch sensors
	NIQ2-072	Indicator for pitch / speed (on each control stand)
Servo controller	SG2000	Servo controller SG2000
Amplifier	SA677	Amplifier relay for solenoid valves with wire break monitor

These components are subject of individual Bureau Veritas Type Approval Certification.

1.3 - Main characteristics:

Power supply: 24V DC (redundant)
Degree of protection: IP56 (front); IP30 (rear)
Software version: Software Main PLC: PLC_PRG Vb2.0
Software VMP70 V2.0 (for XV112-DB-70TWRC-70)

2. DOCUMENTS AND DRAWINGS:

- 472.050A Rev. 2.00 dated 10/03/14; 472.050A.00 Rev. A dated 10.03.2014; 472.050B Rev. 2.00 dated 10/03/14;
- 472.050B.00 Rev. A dated 10.03.2014; 472.050C Rev. 2.00 dated 10/03/14; 472.050C.00 Rev. A dated 10.03.2014;
- NAR-KD-0104-1-en Rev. 1.35 dated 06.03.2014; NAR-KD-0104-10-en Rev. 1.17 dated 06.03.2014

3. TEST REPORTS:

Noris Automation GmbH:

- 472.050A.00 dated 30.10.2013; 472.050B.00 dated 30.10.2013; 472.050C.00 dated 30.10.2013



4. APPLICATION/LIMITATION:

- 4.1 - Bureau Veritas Rules and Regulations for the Classification of Steel Ships.
- 4.2 - Approval valid for ships intended to be granted with the following additional class notations: AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.
- 4.3 - Bureau Veritas Environmental Category, EC Code: 31B and 41BS (for panels and control lever only).
- 4.4 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.
- 4.5 - Documents relating to each application are to be submitted to the Society's examination prior fitting on board.
- 4.6 - Only Hardware and Firmware / Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer is covered by this certificate.
- 4.7 - Factory Acceptance and On-board Tests are to be performed in accordance with requirements for Category III Equipment.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above mentioned products are to be supplied by **Noris Automation GmbH** in compliance with the type described in this certificate and in compliance with the requirements of Bureau Veritas Rules for the Classification of Steel Ships.
- 5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.
- 5.3 - Bureau Veritas product certificate is required.
- 5.4 - Equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT:

- Maker's name or trademark.
- Equipment type or model identification.
- Date of manufacture and/or serial number.
-  or  conformity marking, as relevant.

7. OTHERS:

This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **Noris Automation GmbH - GERMANY**, will accept full responsibility for informing shipbuilders, ship owners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

*** END OF CERTIFICATE ***