



Marine & Offshore

Certificate number: 29148/C0 BV

File number: AP4368

Product code: 4501H

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

PROGRAMMABLE LOGIC CONTROL UNITS

NORISYS 4

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

EC-Code: 31B or 33 (see item 4.x)

This certificate is issued to attest that Bureau Veritas Marine & Offshore 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: 17 Aug 2028

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 17 Aug 2023,

Dirk Hoepfner

This certificate was created electronically and is valid without signature



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 Marine & Offshore. 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 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 Marine & Offshore 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 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The **NORISYS 4** platform is a programmable logic controller with process interface units.

1.1 - NORISYS 4 series:

Main characteristics:

Power Supply: 24V DC
 Degree of protection: IP30
 Mounting: DIN-Rail or flange mounting

NORISYS 4 CPU

Connections: 2x Ethernet, 2x CAN-Bus, 1x RS232, RS422, RS485, 1x MODBUS to RS485, 1x USB, 1x SDcard memory
 Inputs: 4x digital inputs 24V DC
 Outputs: 4x relay outputs 30V DC, 2A
 Processor: 32Bit, 400MHz, 64MB RAM, 32MB Flash
 Hardware version: CPU-Board: H06, IO-Board: H10
 Firmware version: RTS: V120i; RTOS: V1.91

NORISYS 4 24DIO-Extension module

Inputs / Outputs: 24x digital inputs 24V DC or outputs 24V DC/ 0.5A
 Processor: ARM7, LPC2364, 32Bit, 72MHz
 Hardware version: Rev. g
 Firmware version: Rev. 1.06.00

NORISYS 4 UNIO-Extension module for Signal boards

Number of signal boards: up to 2 signal boards
 Processor: ARM7, LPC2364, 32Bit, 72MHz
 Hardware version: Rev. d
 Firmware version: Rev. 1.10.00

Signal boards for NORISYS 4 UNIO

	Inputs	Outputs	Hardware version
N4E-UNIO-4AI:	4x analogue, 1x digital	1x relay	Rev. d
N4E-UNIO-4AO:	1x digital	4x analogue, 1x relay	Rev. d
N4E-UNIO-2AI2AO:	2x analogue, 1x digital	2x analogue, 1x relay	Rev. a
N4E-UNIO-8PT100:	8x PT100		Rev. a

1.2 - NORISYS 4 IOeco Extension modules:

Main characteristics:

Power Supply: 24V DC
 Degree of protection: IP20
 Mounting: DIN-Rail

NORISYS 4 32DI-Extension module

Inputs: 32x digital inputs 24V DC
 Hardware version: Rev. a
 Firmware version: Rev. 1.1.x

NORISYS 4 16DI8R-Extension module

Inputs / Outputs: 16x digital inputs 24V DC
 8x relay outputs (CO) 250V AC/ 6A
 Hardware version: Rev. a
 Firmware version: Rev. 1.1.x

NORISYS 4 16DI4AI4AO-Extension module

Inputs / Outputs: 16x digital inputs 24V DC;
 4x analogue inputs 0/4..20mA; -10..10V DC; 0..10kOhm; Pt100; Pt1000; Thermocouple K;
 4x analogue outputs 0..22mA; -11..11V DC; galvanic isolated by pairs
 2x relay output 24V DC/ 2A
 Hardware version: Rev. d_1A1
 Firmware version: Rev. 1.1.x

NORISYS 4 16AI-Extension module

Inputs: 16x analogue inputs 0/4..20mA; -10..10V DC; 0..10kOhm; Pt100; Pt1000; Thermocouple K
 Hardware version: Rev. b
 Firmware version: Rev. 1.1.x

2. DOCUMENTS AND DRAWINGS:

- NAR-PD-0139-1-de V 1.00 dated 19.01.2015; PR-NORISYS4 en V01.00 dated 08/2010

For C0 version:

- NAR-KD-0100-1-en V 1.72 dated 08/03/21; NAR-PD-0100-2-en V. 1.00 dated 04/12/20
- Revisions: NAR-PD-0100-4-en V. 1.04 dated 05/09/18; NAR-PD-0100-5-en V. 1.02 dated 08/01/14; NAR-PD-0100-6-en V. 1.04 dated 10/01/20; NAR-PD-0100-52-en V. 1.02 dated 15/07/21; NAR-PD-0100-53-en V. 1.02 dated 15/07/21; NAR-PD-0139-50-en V 1.03 dated 17/01/19; NAR-PD-0139-51-en, V1.08 dated 02/12/20
- Drawings: 091.001.03.xxx; 091.002.03.xxx; 091.003.03.xxx; HG-N4-16AI-1 Rev. c; HG-N4-16DI4AI4AO-1 Rev. e; HG-N4-16DI8R-1 Rev. d; HG-N4-32DI-1 Rev. c
- Schematics: 00748365 Rev. H06; 00748392 Rev. H10; 81028622 Rev. 06; SA746-1 Rev. a; SA747-1 Rev. a; SA748-1-1 Rev. a; SAR40-d; SAR41-d; SAR42-d; SAR43-a; SAR108-a; SAR155-d
- Part Lists: 00748365 V08; 00748392 V11; 81028622 i07; SL40-d V104; SL41-d V1A3; SL42-d V109; SL43-a V103; SL108-a V1A2; SL155-d V1A1; SL1346-1 Rev. C; SL1347-1 Rev. C; SL1348-1 Rev. C

3. TEST REPORTS:

- NORIS Automation: NAR-PB-0139-1-en V. 1.30 dated 2015-09-24; TTBMP12-001_NAR Ver. 01 dated 24.01.2012; NAR-PB-0100-3-en V. 1.01 dated 2012-01-26; NAR-PB-0100-4-en V. 1.01 dated 2012-01-24; NAR-PB-0100-5-en V. 1.01 dated 2012-01-24; NAR-PB-0100-6-en V. 1.01 dated 2012-01-24
- Teseq: D/14/4290/02 EN dated 2015-08-04; D/14/4290/03 EN dated 2015-08-04; D/11/3863/01 dated 2011-12-08; D/11/3863/02 dated 2011-10-27; D/11/3863/03 dated 2011-10-27; D/11/3863/04 dated 2011-11-03; D/11/3863/08 dated 2012-05-11
- TÜV Rheinland: E5.664 Part A dated Dec.13, 2011; E5.664 Part B dated Dec.13, 2011
- TREO: 045-15 V2U Rev. 2 dated 13-Apr-15

For C0 version:

- Ametek: D/19/4706/01 dated 2019-06-18; D/20/4785/01 dated 2021-03-30; D/20/4785/02 dated 2021-03-30; D/20/4785/03 dated 2021-03-30; D/20/4785/04 dated 2021-03-30; D/20/4786/01 dated 2021-06-23; D/20/4791/03 dated 2021-07-28
- Teseq now Ametek: D/13/4085/09 dated 2013-11-22; D/13/4085/10 dated 2013-11-22; D/13/4085/12 dated 2014-05-22
- TREO: 014-19 Issue: 1 dated 2019-04-02

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** (for DIN rail mounting) or **33** (for flange mounting).
- 4.4 - The **NORISYS 4 CPU** and **NORISYS 4 24DIO Extension module** fulfils the EMC requirements for installation on Bridge and Deck Zone by using a filter on power supply lines, order no.: XT-FIL-1.
- 4.5 - The other equipment fulfils the EMC requirements for installation in Bridge and Deck Zone.
- 4.6 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev8.
- 4.7 - In accordance with IACS UR E22 and as applicable to programmable devices for computer based systems of Category II or III, for each ship application:
 - Ship specific documentation is to be submitted including software documentation and categorization of the computer based system.
 - Inspection and testing before installation onboard is to be performed under the surveillance of the Society.
- 4.8 - 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.
- 4.9 - The installation shall comply with the Manufacturer's recommendation described in the above-referenced documentation.

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.
- 5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **NORIS Automation GmbH** has to make the necessary arrangements to have its works recognized by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

NORIS Automation GmbH
Friedrich-Barnewitz-Str. 10
18119 Rostock
GERMANY

6. MARKING OF PRODUCT:

- Maker's name or trademark
- Date of manufacture and/or serial number
- Equipment type or model identification
- The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment.

7. OTHERS:

7.1 - It is the responsibility of **NORIS Automation GmbH** to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 29148/B0 BV issued on 21 Jun 2018 by the Society.

*** END OF CERTIFICATE ***