Certificate No:
TAA0000343

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Programmable Electronic System

with type designation(s)
NORISYS 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.

Temperature	**D**
Humidity	**B**
Vibration	**A (B*)**
EMC	**A (B*)**
Enclosure	**Required protection according to the DNV GL rules shall be provided upon installation on board**

Issued at **Hamburg** on **2022-01-13**

This Certificate is valid until **2026-10-20**.
DNV local station: **Hamburg – CMC North/East**

Approval Engineer: **Holger Jansen**

for **DNV**

Digitally Signed By: Papanuskas, Joannis
Location: DNV GL SE Hamburg, Germany

Joannis Papanuskas
Head of Section

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.

Product description

Supply voltage: 24Vdc
CPU Main Processor PPC 400MHz, Memory 64MB RAM, 32 MB Flash
with dedicated
- 4 DI (incl. 2 20kHz counter)
- 4 DO (relay)
- 1 RS-232/422/485
- 2 CANbus
- 2 Ethernet TCP/IP, MODBUS/TCP
- 1 USB Host
- 1 SDHC-card interface
- 1 RS-485 MODBUS -RTU (Extension Bus)

Base Units
- 24DIO 24 digital channels (configurable)
- UNIO 8PT100 PT100 inputs 8 channels (3-wire) with earth fault detection
- UNIO 4AI Analogue input 4 channels
- UNIO 8AI Analogue input 8 channels
- UNIO 4AO Analogue output 4 channels
- UNIO 8AO Analogue output 8 channels
- UNIO 4AI4AO Analogue input 4 channels, Analogue output 4 channels
- UNIO 2AI2AO Analogue input 2 channels, Analogue output 2 channels
- UNIO 2AI6AO Analogue input 2 channels, Analogue output 6 channels
- UNIO 6AI2AO Analogue input 6 channels, Analogue output 2 channels
- IOeco32DI Digital input 32 channels
- IOeco16DI8R Digital input 16 channels, Relay output 8 channels
- IOeco16DI4AI4AO Digitals input 16 channels, Analogue input 4 channels, Analogue output 4 channels, Relay output 2 channels
- IOeco16AI Analogue input 16 channels

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

B*: EMC category B with filter EATON XT-FIL-1 for CPU and 24DIO
Vibration category B with screw flange include only
For IOeco-Units Vibration Category A only

Type Approval documentation

Approval Renewal Request Overview NAR-PD-0100-21 V 1.03-DNV dated 2021-09-13
Type Approval Assessment Report 2021-10-13

Tests carried out

Applicable tests according to DNV Class Guideline CG0339, August 2021.

Marking of product

The products to be marked with:
- Model name
- Manufacturer name
- Serial number

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