

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
I/O System XN-300

Issued to

Eaton Industries GmbH
Bonn, Germany

is found to comply with

DNV GL 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 GL.

Temperature B

Humidity B

Vibration A

EMC A

Enclosure Required protection according to the Rules to be provided upon installation on board

Issued at **Hamburg** on **2017-12-01**

This Certificate is valid until **2022-11-30**.

for **DNV GL**

DNV GL local station: **Essen**

Approval Engineer: **Jens Dietrich**

.....
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

Gateways

Gateway CANopen, **XN-312-GW-CAN**

Digital-Inputs

8 Inputs, P, 24VDC, 5,0ms **XN-322-8DI-PD**

16 Inputs, P, 24VDC, 5,0ms **XN-322-16DI-PD**

20 Inputs, P, 24VDC, 5,0ms **XN-322-20DI-PD**

20 Inputs, P, 24VDC, 0,5ms **XN-322-20DI-PF**

20 Inputs, P, 24VDC, 2/4 CNT, 25kHz **XN-322-20DI-PCNT**

20 Inputs, N, 24VDC, 5,0ms **XN-322-20DI-ND**

Digital-Outputs

4 Outputs, Relais, NO-contact **XN-322-4DO-RNO**

8 Outputs, P, 24VDC, 0,5A, kf **XN-322-8DO-P05**

12 Outputs, P, 24VDC, 1,7A, kf **XN-322-12DO-P17**

16 Outputs, P, 24VDC, 0,5A, kf **XN-322-16DO-P05**

Digital-Input/-Output

4 Inputs, 4 Outputs, P, 24VDC **XN-322-8DIO-PD05**

8 Inputs, 8 Outputs, P, 24VDC **XN-322-16DIO-PD05**

8 Inputs, 8 Outputs, P, 24VDC, CNT **XN-322-16DIO-PC05**

Analog-Eingang

4 Inputs, PT/NI/KTY/R, 2/3 Ltg **XN-322-4AI-PTNI**

6 Inputs, +/-10V, 1 PT/KTY, Uref **XN-322-7AI-U2PT**

8 Inputs, 0/4-20mA **XN-322-8AI-I**

Analog-Output

8 Outputs, +/-10V **XN-322-8AO-U2**

Analog-Input/-Output

2 Inputs, 2 Outputs, +/-10V, Uref **XN-322-4AIO-U2**

4 Inputs, 4 Outputs, +/-10V, Uref **XN-322-8AIO-U2**

2 Inputs, 2 Outputs, 0/4-20mA **XN-322-4AIO-I**

4 Inputs, 4 Outputs, 0/4-20mA **XN-322-8AIO-I**

Technology modules

Weighing module, 2DMS, 24Bit **XN-322-2DMS-WM**

Counter, 1 CNT, 125kHz, 16Bit, 4 DO, 4 DI **XN-322-1CNT-8DIO**

Serial Interface, 2 SSI, RS422, 32Bit **XN-322-2SSI**

Supply Modules

Power supply, 4 x 24VDC/2A, kf **XN-322-4PS-20**

Passive Distributors

Power distributor, 18 channels, GND **XN-322-18PD-M**

Power distributor, 18 channels, VCC **XN-322-18PD-P**

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

- All devices mentioned under product description shall be used in self-contained closed steel enclosures only.
- Suitable filters with regards to EMC are to be used for connection to power supply as referenced in the user manual.

Job Id: **262.1-024107-1**
Certificate No: **TAA00001E9**

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After the certification the clause for 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 GL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Tests carried out

Applicable tests according to Class Guideline DNV GL CG-0339, Nov. 2016.

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, after 3.5 years and at renewal of this certificate.

END OF CERTIFICATE