

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Peripheral Equipment**with type designation(s)
Embedded PC, CX9020-011T

Issued to

**Beckhoff Automation GmbH & Co. KG
Verl, 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.****Location classes:****Temperature D**
Humidity B
Vibration B
EMC A
Enclosure AIssued at **Hamburg** on **2021-01-12**for **DNV GL**This Certificate is valid until **2026-01-11**.DNV GL local station: **Magdeburg**Approval Engineer: **Heinz Scheffler**

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.



Job Id: **262.1-025466-2**
Certificate No: **TAA000018N**
Revision No: **1**

Product description

The CX9020 is a compact, DIN rail-mountable Ethernet control system.
The connection for the Beckhoff I/O systems is directly integrated into the CPU module.

Order code CX9020 - 011T

[T]: 0 = without TwinCAT
1 = TwinCAT -2-PLC-Runtime
2 = TwinCAT -2-PLC/NC-Runtime
5 = TwinCAT - 3 Runtime (XAR)

Power Supply	24V DC
CPU	ARM CORTEX-A8, 1 GHz
Flash memory	2 x slot for microSD card, 512 MB included (expandable)
Main memory	1 GB DDR3 RAM (not expandable)
Interfaces	2 x RJ45 10/100 Mbit/s (internal switch) 1 x DVI-D 4 x USB 2.0 1 x optional interface
Optional interface	CX9020-N030 = RS232, D-sub plug CX9020-N031 = RS422/RS485, D-sub socket CX9020-M310 = Profibus master, D-sub socket 9-pin CX9020-B310 = Profibus slave, D-sub socket 9-pin CX9020-M510 = CANopen-Master, D-sub plug 9-pin CX9020-B510 = CANopen-Slave, D-sub plug 9-pin CX9020-M930 = Profinet RT, controller, Ethernet (2 x RJ45 switch) CX9020-B930 = Profinet RT, device, Ethernet (2 x RJ45 switch) CX9020-B950 = Ethernet/IP-Slave, Ethernet (2 x RJ45 switch) CX9020-B110 = EtherCAT-Slave, EtherCAT In and OUT (2 x RJ45 switch)
Operating system	Microsoft Windows Embedded Compact 7

Application/Limitation

„Observed the current documentation "Beckhoff Products in the Marine Sector" regarding the required Surge filter.“

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNVGL, 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 DNVGL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

If the control system is intended for remote software maintenance the functionality shall be part of the system documentation as required in DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

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.

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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 DNVGL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

Documents: TAA000018N-List of Documents_Rev. 1.0
Test Reports: TAA000018N-List of Test Reports_Rev. 1.0

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Edition December 2019.

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