

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Personal Computer**with type designation(s)
BCO-1030-2L-CAN

Issued to

Autic System AS
TØNSBERG, Norway

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, Tested at -30°C
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection according to relevant rules shall be provided upon installation on board

Issued at **Høvik** on **2021-01-07**for **DNV GL**This Certificate is valid until **2026-01-06**.DNV GL local station: **Sandefjord**Approval Engineer: **Nils Jarem**

Marta Alonso Pontes
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Job Id: **262.1-033989-1**
Certificate No: **TAA00002XK**

Product description

BCO-1030-2L-CAN

Basic Fanless Embedded System with Intel Celeron J1900 Processor, 1x DVI-I, 1x DP, 2x COM, 4x LAN, 1x CAN

- Intel® Celeron® processor J1900, up to 2.0GHz
- 1x 204-pin DDR3L SODIMM, default 2GB max up to 8GB
- Dual independent display supported by 1x DVI-I and 1x DisplayPort
- 4x Intel® GbE supporting Wake-on-LAN and PXE
- 1x 2.5" SATA 64GB SSD BAY
- 2x RS-232/422/485, 1x DB9 for 2-Chanel CAN, 1x USB 3.0, 3x USB 2.0
- 4x DI + 4x DO with isolation
- 24 VDC Power input supporting AT/ATX mode
- -20°C to 50°C extended operating temperature

Compass safe distances: Steering: 25 cm, Standard: 50 cm.

Place of manufacture

C&T Solution Inc.

17F-2, No. 700, Zhongzheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C)

Approval conditions

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.

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 certification the clause for software control will be put into force.

Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV GL for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Application/Limitation

Type approved isolated power supply corresponding to the Rules for Classification of Ships required environmental class to be used. Wall mount installation is certified for marine application.

Type Approval documentation

Datasheet DS_BCO-1030-2L-CAN-DIN

User's manual Basic Fanless Embedded System, UM_BCO-1030-2L-CAN-DIN rev. 1
power diagram, RCO-1000 power rev. 16

block diagram, RCO-1000 block rev. 15

AUTIC LABEL artwork, BCO-1030_Autic label dated 20201208

Technical Report Compass Safe Distance measurement of PC and PS, 30491 rev. 0

Vibration report, VT-201030-5 dated 2020-10-29

EMC Report-(BCO-1030-2L-CAN-DIN), 2070222R-E3012100075 rev. V1.0/2020-08-17

Test report DNVGL-CG-0339: 2019; IEC 60945: 2002 + COR1: 2008, UT109051R1 dated 2020-11-20

Type approval initial assessment report, DNV GL Kaohsiung 2020-11-27.

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Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, December 2019.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

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