

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Programmable Electronic System**with type designation(s)
ControlEdge 2020 Platform

Issued to

HONEYWELL INTEGRATED TECHNOLOGY (CHINA) CO., LTD
Shanghai, Chinais 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 A****Humidity B****Vibration A****EMC A****Enclosure Required protection according to DNV GL Rules shall be provided upon installation on board**Issued at **Hamburg** on **2020-01-20**This Certificate is valid until **2025-01-19**.for **DNV GL**DNV GL local station: **Shanghai**Approval Engineer: **Didier Girardin****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

The ControlEdge 2020 Platform for modular hardware design with processor modules that plug onto IOTAs that contain only passive devices such as cable connectors and an expansion I/O connector allowing expansion I/O modules to connect without any further infrastructure.

SC-UCMX01 ¹	Non-redundant controller with 28 mixed onboard I/O, 128 MB DRAM
SC-UCMX02 ¹	Non-redundant controller with 28 mixed onboard I/O, 256 MB DRAM
SC-UCNN11 ²	Redundant controller
SC-UMIX01 ³	Mixed I/O module with 28 I/O
SC-TEPR01	Expansion I/O right end plate
SC-TEPL01	Expansion I/O left end plate

Note 1 – Includes a complete Controller: CPM and IOTA

Note 2 – Includes a complete Controller: 2 x CPM and 1 x IOTA

Note 3 – Includes a complete IOM: IOM and IOTA

Application/Limitation

- External shielded cable for power source and ethernet connections to be provided
- Temperature location class A: If installed Inside cubicles, desks, consoles, etc. then Special precautions are to be taken to avoid temperature rise of 5°C or more inside the housing.
- Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Excertificate issued by a notified/recognized Certification Body.

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.

Type Approval documentation

Hidden

Place of Production

WELCO TECHNOLOGY SUZHOU LTD
198 Xing Long Street
Suzhou Industrial Park
Suzhou, CHINA

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016

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