DNV·GL

Certificate No:
TAA000003M

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Programmable Electronic System

with type designation(s)
SYSMAC CV/C500/C1000 Series

Issued to
OMRON CORPORATION IAB COMPANY
Kusatsu-City Shiga Pref, Japan

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	**C1000H-APS01: A, Others: B**
Humidity	**C1000H-APS01: A, Others: B**
Vibration	**A**
EMC	**A**
Enclosure	**Required protection according to the Rules to be provided upon installation on board**

This Certificate is valid until **2018-12-31**.

Issued at **Busan** on **2015-09-11**

for **DNV GL**

DNV GL local station: **Kobe**

Approval Engineer: **Sang Bum Park**

Baeg Soon Choi
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.

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Job Id: **262.1-006593-3**
Certificate No: **TAA000003M**

Place of manufacture

1. Omron Japan
   2-1, 2-Chome, Nishikusatsu, Kusatsu-City, Shiga 525-0035, Japan
2. Omron Shanghai factory(See Note.3 under Product description)
   No.789, Jinji Road, Jinqiao Export Processing District, 201206 Shanghai, China

Product description

Programmable electronic system SYSMAC CV/C500/C1000 Series, consisting of:

ITEM	**TYPE**
CPU unit	CVM1D-CPU21
Duplex Unit	CVM1D-DPL01
Power supply Units	CVM1D-PA208, CVM1D-PA212, CV500-PS221, CVM1-PA208
CPU Rack	CVM1D-BC051
I/O Rack	CVM1D-BI102, CV500-BI112
I/O Control Unit	CV500-IC201
I/O Interface Unit	CV500-II201
Input Unit	C500-ID218
Output Unit	C500-OC224
A/D Unit	C500-AD101
D/A Unit	C500-DA101
Memory Card	HMC-EE151, HMC-EE641
ASCII Unit	C500-ASC04
BASIC Unit	CV500-BSC21
Host Link Unit	CV500-LK201
Remote I/O Unit	CV500-RM221, CV500-RT221
Programming Console	CVM1-PRS21
Controller Link Unit	CVM1-CLK12, CVM1-CLK21
Terminator	CV500-TER01
I/O Cables*3	CV500-CN322, CV500-CN522,CV500-CN232, CV500-CN432
Programming Console Cables*3	CV500-CN224, CV500-CN424, CV500-CN624
Cover Unit	3G2A5-SP002
Programmable Terminal	NT31-ST121B
Power Supply Adapter	C1000H-APS01

Notes:

1. Type name may be followed by additional numbers and/or letters for version identification and/or sales purposes.
2. The type designation "3G2A5" may appear on units and is the same as "C500".
3. Products marked with *3 are manufactured in Omron Shanghai factory.

Application/Limitation

Type C1000H-APS01 has been verified only for use in temperature class A and humidity class A locations.

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.

Product certificate

Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system according to an approved test program before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Type Approval documentation

Tests carried out

Applicable tests according to Standard for Certification No.2.4, 2006, originally carried out for other classification societies.

Periodical assessment

The scope of the retention/renewal survey 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 survey 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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE