DNV·GL

Certificate No:
TAA000003K

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Programmable Electronic System

with type designation(s)
SYSMAC CS1 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.

Temperature	**B**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**Required protection according to the Rules to be provided upon installation onboard**

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

Issued at **Busan** on **2015-10-05**

for **DNV GL**

DNV GL local station: **Kobe**

Approval Engineer: **Byoung So Lee**

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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Product description

Programmable electronic system SYSMAC CS1 Series, consisting of:

ITEM	TYPE
CPU units	CS1D-CPU65H/67H/65P/67P CS1G-CPU42H/43H/44H/45H CS1H-CPU63-67 CS1H-CPU63H/64H/65H/66H/67H
CPU Racks (Base Units)	CS1D-BC052
Duplex Units	CS1D-DPL01
Expansion I/O Racks	CS1D-BI092
Analog I/O Units	CS1W-MAD44 CS1W-AD041/81 CS1W-DA041/8V/8C
	CS1W-ID291/11/31/61
AC Input Units	CS1W-IA111/211
Transistor Output Units	
DC Input Transistor Output Units	
Interrupt DC Input Unit	CS1W-INT01
High-Speed DC Input Unit	CS1W-IDP01
Contact Output Units	
Triac Output Units	CS1W-OA201/211
Mix I/O Unit	CS1W-MD561
Serial Communication Boards	
Serial Communication Unit	
Counter Units	CS1W-CT021/041
Interface Unit	CS1W-II102
Ethernet Units	CS1W-ETN01/11
Device Net Unit	CS1W-DRM21
Control Unit	CS1W-IC102
Controller Link Units	
Loop Control Unit	CS1W-LC001
NC Units	CS1W-NC113/133/213/233/413/433
Cables	
Power supplies	C200HW-PA204/204S/209R C200HW-PD024/025, CS1D-PA207R, SC1D-PD025
Memory cards	HMC-EF/372/672/183/282/283/582/583 (flash memory)
Battery set	CS1W-BAT01 (for CS1 series only)
Temperature sensor unit	CS1W-PTS55/56

Notes:
1) Type name may be followed by additional letter(s) and/or number(s) for trade reason.
2) CS1W-CN114/118/131/133/133-B2/221/223/224/225/226/227/311/313/321/323/521/523/624/625/627/711/713
3) CS1W-SCB21-V1/CS1W-SCB41-V1/CS1W-SCU21-V1/CS1W-SCU31-V1

Locations of production factories
Japan:
2-1, 2-chome, Nishikusatsu, Kusatsu, Shiga 525-0035 Japan

Netherland:
OMRON Manufacturing of Netherlands B.V., Zilverenberg 2, 5234GM's Hertogenbosch, Netherland

China:

OMRON(Shanghai) Co., Ltd. No.789 Jinji Road, Jinqiao Export Processing District, Pudong New Area, Shanghai, China

Application/Limitation

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.

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

Type Approval documentation

Tests carried out

Applicable tests according to Standard for Certification No. 2.4.

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

Retention survey is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE