DNV·GL

Certificate No:
TAA000027X

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Programmable Electronic System

with type designation(s)
PROFINET I/O Controller Unit and SmartSlice GRT1 Series

Issued to
Omron Europe B.V.
S-HERTOGENBOSCH, Netherlands

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	**B**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**Required protection according to relevant rules shall be applied upon installation on board.**

Issued at **Høvik** on **2019-03-01**
This Certificate is valid until **2023-06-30**.
DNV GL local station: **Rotterdam**

Approval Engineer: **Ståle Sneen**

for **DNV GL**

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.

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Job Id: **262.1-004295-4**
Certificate No: **TAA000027X**

Product description

PROFINET I/O Controller Unit and SmartSlice GRT1 Series, comprising the following:

Product	Functional description
CJ1W-PNT21	PROFINET I/O Controller Unit
GRT1-CP1-L	Counter/Positioner Slice Unit for GRT1-series
GRT1-CT1	Counter Slice Unit for GRT1-series (Sinking output)
GRT1-CT1-1	Counter Slice Unit for GRT1-series (Sourcing output)
GRT1-END-M	Memory End Unit for GRT1-series
GRT1-OD4G-1	Output Slice Unit for GRT1-series (4 points sourcing SCP output)
GRT1-OD8	Output Slice Unit for GRT1-series (8 points sinking output)
GRT1-OD8-1	Output Slice Unit for GRT1-series (8 points sourcing output)
GRT1-OD8G-1	Output Slice Unit for GRT1-series (8 points sourcing SCP output)
GRT1-ID8	Input Slice Unit for GRT1-series (8 points sinking input)
GRT1-ID8-1	Input Slice Unit for GRT1-series (8 points sourcing input)
GRT1-PC8	Power Distribution Slice Unit for GRT1-series (8 points for sinking outputs)
GRT1-PC8-1	Power Distribution Slice Unit for GRT1-series (8 points for sourcing outputs)
GRT1-PD8	Power Feed Slice Unit for GRT1-series (8 points for sinking outputs)
GRT1-PD8-1	Power Feed Slice Unit for GRT1-series (8 points for sourcing outputs)
GRT1-PNT	PROFINET I/O Coupler Unit for GRT1-series
GRT1-PRT	Profibus DP Slave Coupler unit for GRT1 Slice I/O

Power rating: 24 Vdc

Place of manufacture

Omron Manufacturing of the Netherlands B.V.
Zilverenberg 2
's-Hertogenbosch
The Netherlands

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

DC mains power shall be supplied by a Type Approved 24 Vdc instrument power supply.

Type Approval documentation

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