

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Programmable Controller

with type designation(s)
SIMATIC S7-1500 Technology CPU

Issued to

Siemens AG
Amberg Bayern, Germany

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.

Temperature	D
Humidity	B
Vibration	A
EMC	B (see remarks under Application/Limitation)
Enclosure	Required protection shall be provided upon installation on board.

This Certificate is valid until **2021-10-30**.

Issued at **Hamburg** on **2016-10-31**

DNV GL local station: **Augsburg**

for **DNV GL**

Approval Engineer: **Andrea Grün**

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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.

Job Id:
Certificate No: **TAA00000V3**

Product description

SIMATIC S7-1500 Technology CPU:

- CPU1511T: 6ES7 511...
- CPU1515T: 6ES7 515...
- CPU1517T: 6ES7 517...
- CPU1517TF: 6ES7 517...

Application/Limitation

The equipment fulfils the EMC requirements for installation on Bridge and Deck Zone with filter EPCOS 8814113C or equivalent.

Surge immunity: External protective circuits required for DC systems. See the current system manual (A5E03461486) for recommendations.

Installation of the units, as per manufacturer`s instructions.

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

Type Approval documentation

Test Reports: I IA AS RD ST Type Test – 2013-03 dated 10.12.2013
SIMATIC Type Test - 2015-02 dated 17.08.2015
SIMATIC Type Test - 2016-03 dated 29.07.2016

Manuals: SIMATIC S7-1500 Technology CPU A5E36270833 (engl. Version)
A5E36284845
A5E36285525

Tests carried out

Applicable tests according to Class Guideline DNVGL CG-0339, November 2015.

Marking of product

The products to be marked with

- model name
- manufacturer name
- serial number.

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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 at least every 2.5 year and at renewal of this certificate.

END OF CERTIFICATE