



TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00001MN
Revision No:
4

This is to certify:

That the Programmable Electronic System

with type designation(s)
SIMATIC S7-1500 / ET 200MP

Issued to

Siemens AG SIMATIC Type Test
Amberg, Bayern, Germany

is found to comply with

DNV 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.

Location classes:

Temperature	B
Humidity	B
Vibration	A
EMC	A, B*
Enclosure	Required protection according to the Rules shall be provided upon installation on board

* see Application/Limitation

Issued at **Hamburg** on **2023-09-12**

for **DNV**

This Certificate is valid until **2028-09-11**.

DNV local station: **Augsburg**

Approval Engineer: **Heinz Scheffler**

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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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description
SIMATIC S7-1500

Type (Power supplies):

Article Number	Product Description
6ES7 505-0KA00-0AB0	PS 25W 24V DC
6ES7 505-0RA00-0AB0	PS 60W 24/48/60V DC
6ES7 505-0RB00-0AB0	PS 60W 24/48/60V DC HF
6ES7 507-0RA00-0AB0	PS 60W 120/230V AC/DC

Type (Central Processing Units):

Article Number	Product Description
6ES7 511-1AK02-0AB0	CPU 1511-1 PN
6ES7 511-1AL03-0AB0	CPU 1511-1 PN
6ES7 511-1CK01-0AB0	CPU 1511C-1 PN
6ES7 512-1CK01-0AB0	CPU 1512C-1 PN
6ES7 513-1AL02-0AB0	CPU 1513-1 PN
6ES7 513-1AM03-0AB0	CPU 1513-1 PN
6ES7 515-2AM02-0AB0	CPU 1515-2 PN
6ES7 515-2AN03-0AB0	CPU 1515-2 PN
6ES7 516-3AN02-0AB0	CPU 1516-3 PN/DP
6ES7 516-3AP03-0AB0	CPU 1516-3 PN/DP
6ES7 517-3AP00-0AB0	CPU 1517-3 PN/DP
6ES7 518-4AP00-0AB0	CPU 1518-4 PN/DP
6ES7 518-4AP00-3AB0	CPU 1518-4 PN/DP ODK
6ES7 518-4AX00-1AB0	CPU 1518-4 PN/DP MFP
6ES7 513-1RL00-0AB0	CPU 1513R-1 PN
6ES7 513-1RM03-0AB0	CPU 1513R-1 PN
6ES7 515-2RM00-0AB0	CPU 1515R-2 PN
6ES7 515-2RN03-0AB0	CPU 1515R-2 PN
6ES7 517-3HP00-0AB0	CPU 1517H-3 PN

Type (Digital Input Modules)

Article Number	Product Description
6ES7 521-1BH00-0AB0	DI 16x24VDC HF
6ES7 521-1BH10-0AA0	DI 16x24VDC BA
6ES7 521-1BH50-0AA0	DI 16x24VDC SRC BA
6ES7 521-1BL00-0AB0	DI 32x24VDC HF
6ES7 521-1BL10-0AA0	DI 32x24VDC BA
6ES7 521-1BP00-0AA0	DI 64x24VDC SNK/SRC BA
6ES7 521-1FH00-0AA0	DI 16x230VAC BA
6ES7 521-7BH00-0AB0	DI 16x24VDC HS
6ES7 521-7EH00-0AB0	DI 16x24...125V UC HF
6ES7 521-7TH00-0AB0	DI 16xNamur HF

Type (Digital Output Modules)

Article Number	Product Description
6ES7 522-1BF00-0AB0	DQ 8x24VDC/2A HF
6ES7 522-1BH01-0AB0	DQ 16x24VDC/0.5A HF
6ES7 522-1BH10-0AA0	DQ 16x24VDC/0.5A BA
6ES7 522-1BL01-0AB0	DQ 32x24VDC/0.5A HF
6ES7 522-1BL10-0AA0	DQ 32x24VDC/0.5A BA
6ES7 522-1BP00-0AA0	DQ 64x24VDC/0.3A BA
6ES7 522-1BP50-0AA0	DQ 64x24VDC/0.3A SNK BA
6ES7 522-5EH00-0AB0	DQ 16x24...48VUC/125VDC/0.5A ST
6ES7 522-5FF00-0AB0	DQ 8x230VAC/2A ST (Triac)
6ES7 522-5FH00-0AB0	DQ 16x230VAC/1A ST (Triac)
6ES7 522-5HF00-0AB0	DQ 8x230VAC/5A ST (Relay)
6ES7 522-5HH00-0AB0	DQ 16x230VAC/2A ST (Relay)

Type (Digital Input/Output Modules)

Article Number	Product Description
6ES7 523-1BL00-0AA0	DI 16x24VDC, DQ 16x24VDC/0.5A BA
6ES7 523-1BP50-0AA0	DI 32x24VDC, DQ 32x24VDC/0.3A BA

Type (Analog Input Modules)

Article Number	Product Description
6ES7 531-7KF00-0AB0	AI 8xU/I/RTD/TC ST
6ES7 531-7LH00-0AB0	AI 16xU BA
6ES7 531-7MH00-0AB0	AI 16xI BA
6ES7 531-7NF00-0AB0	AI 8xU/I HF
6ES7 531-7NF10-0AB0	AI 8xU/I HS
6ES7 531-7PF00-0AB0	AI 8xU/R/RTD/TC HF
6ES7 531-7QD00-0AB0	AI 4xU/I/RTD/TC ST
6ES7 531-7QF00-0AB0	AI 8xU/I/R/RTD BA
6ES7 531-7TF00-0AB0	AI 8xHART HF

Type (Analog Output Modules)

Article Number	Product Description
6ES7 532-5HD00-0AB0	AQ 4xU/I ST
6ES7 532-5HF00-0AB0	AQ 8xU/I HS
6ES7 532-5NB00-0AB0	AQ 2xU/I ST
6ES7 532-5ND00-0AB0	AQ 4xU/I HF

Type (Analog Input/Output Modules)

Article Number	Product Description
6ES7 534-7QE00-0AB0	AI 4xU/I/RTD/TC, AQ 2xU/I ST

Type (Communication Modules)

Article Number	Product Description
6ES7 540-1AB00-0AA0	CM PTP RS422/485 BA
6ES7 540-1AD00-0AA0	CM PTP RS232 BA
6ES7 547-1JF00-0AB0	CM 8xIO-Link
6ES7 541-1AB00-0AB0	CM PTP RS422/485 HF
6ES7 541-1AD00-0AB0	CM PTP RS232 HF

Type (Technology Modules)

Article Number	Product Description
6ES7 550-1AA00-0AB0	TM Count 2x24V
6ES7 550-1AA01-0AB0	TM Count 2x24V
6ES7 551-1AB00-0AB0	TM Posinput 2
6ES7 551-1AB01-0AB0	TM Posinput 2
6ES7 552-1AA00-0AB0	TM Timer DIDQ 16x24V
6ES7 558-1AA00-0AB0	TM MFP

Type (Memory Cards)

Article Number	Product Description
6ES7 954-8LC03-0AA0	4 MB
6ES7 954-8LE03-0AA0	12 MB
6ES7 954-8LF03-0AA0	24 MB
6ES7 954-8LL03-0AA0	256 MB
6ES7 954-8LP02-0AA0	2 GB
6ES7 954-8LP03-0AA0	2 GB
6ES7 954-8LT03-0AA0	32 GB

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Type (Active Backplane)

Article Number	Product Description
6ES7 590-0BD00-0AA0	4 slot
6ES7 590-0BH00-0AA0	8 slot
6ES7 590-0BL00-0AA0	12 slot

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Type (Interface Modules):

Article Number	Product Description
6ES7 155-5AA00-0AA0	IM 155-5 PN BA
6ES7 155-5AA00-0AC0	IM 155-5 PN HF
6ES7 155-5AA01-0AB0	IM 155-5 PN ST
6ES7 155-5BA00-0AB0	IM 155-5 DP ST

Application/Limitation

Location classes:

EMC class A: 6ES7 550/551

EMC class B: Only with filter type Epcos B84113C.

Surge Immunity: External Protective circuits required for DC systems. See the current System Manual.

Supply voltage for 6ES7 547-1JF00-0AB0 (CM 8xIO-Link) Ue min 20V DC (not allowed for Battery power voltage)

Approval conditions

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 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 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

Test reports: TAA00001MN List of Test Reports Rev04

Documents:

Equipment Manual

- Power supply module: A5E39450002-AC
- Digital Input Module: A5E50839840-AA; A5E48025116-AA; A5E50840058-AA
- Digital Output Module: A5E48024569-AA; A5E48024817-AA
- Digital Input/Output module: A5E48027024-AA
- Analog Input Module: A5E47052837-AA; A5E47052556-AA; A5E51346434-AA
- Analog Output Module: A5E32366632-AC; A5E36633205-AB
- Technology Module: A5E52603197-AA; A5E42009914-AD
- Communication Module IO-Link Master: A5E45488510-AA
- ET 200MP Interface Module: A5E32346748-AA; A5E03612323-AC
- Active backplane bus ST 1+12 slot, 1+8 slot, 1+4 slot: A5E46240468-AB
- S7-1500R/H: A5E42009333-AD

System Manual

- S7-1500, ET 200MP Automation system: A5E03461182-AJ
- S7-1500R/H redundant system: A5E41814787-AE

Internal Drawing

- No. A5E46063654A, Rev.002

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Place of manufacture

Siemens AG, Elektronikwerk Amberg

Siemens AG, Breslauer Strasse 5, 90766 Fürth

Siemens AG, Industrial Automation Products Ltd., Chengdu

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number

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