



Marine & Offshore

Certificate number: 37481/C0 BV

File number: AP 4516

Product code: 4501H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**SIEMENS AG - DI FA SIMATIC Type Test**  
Amberg - GERMANY

*for the type of product*

**PROGRAMMABLE LOGIC CONTROL UNITS**  
SIMATIC S7-1500 and ET200MP

### Requirements:

Bureau Veritas Rules for the Classification of Steel Ships  
EC Code: 31 or 31B

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 03 Jul 2028**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 03 Jul 2023,

Dirk Hoepfner

***This certificate was created electronically and is valid without signature***



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

The **S7-1500** and **ET200MP** series are modular Programmable Logic Controllers.

<b>Power supplies</b>			
6ES7 505-0KA00-0AB0	PS 25W 24V DC	6ES7 505-0RB00-0AB0	PS 60W 24/48/60V DC HF
6ES7 505-0RA00-0AB0	PS 60W 24/48/60V DC	6ES7 507-0RA00-0AB0	PS 60W 120/230V AC/DC
<b>Central Processing Units</b>			
6ES7 511-1AK02-0AB0	CPU 1511-1 PN	6ES7 516-3AN02-0AB0	CPU 1516-3 PN/DP
6ES7 511-1AL03-0AB0	CPU 1511-1 PN	6ES7 516-3AP03-0AB0	CPU 1516-3 PN/DP
6ES7 511-1CK01-0AB0	CPU 1511C-1 PN	6ES7 517-3AP00-0AB0	CPU 1517-3 PN/DP
6ES7 512-1CK01-0AB0	CPU 1512C-1 PN	6ES7 518-4AP00-0AB0	CPU 1518-4 PN/DP
6ES7 513-1AL02-0AB0	CPU 1513-1 PN	6ES7 518-4AP00-3AB0	CPU 1518-4 PN/DP ODK
6ES7 513-1AM03-0AB0	CPU 1513-1 PN	6ES7 518-4AX00-1AB0	CPU 1518-4 PN/DP MFP
6ES7 513-1RM03-0AB0	CPU 1513R-1 PN	6ES7 513-1RL00-0AB0	CPU 1513R-1 PN
6ES7 515-2AM02-0AB0	CPU 1515-2 PN	6ES7 515-2RM00-0AB0	CPU 1515R-2 PN
6ES7 515-2AN03-0AB0	CPU 1515-2 PN	6ES7 517-3HP00-0AB0	CPU 1517H-3 PN
6ES7 515-2RN03-0AB0	CPU 1515R-2 PN		
<b>Interface Modules</b>			
6ES7 155-5AA00-0AA0	IM 155-5 PN BA	6ES7 155-5AA01-0AB0	IM 155-5 PN ST
6ES7 155-5AA00-0AC0	IM 155-5 PN HF	6ES7 155-5BA00-0AB0	IM 155-5 DP ST
<b>Digital Input Modules</b>			
6ES7 521-1BH00-0AB0	DI 16x24VDC HF	6ES7 521-1BP00-0AA0	DI 64x24VDC SNK/SRC BA
6ES7 521-1BH10-0AA0	DI 16x24VDC BA	6ES7 521-1FH00-0AA0	DI 16x230VAC BA
6ES7 521-1BH50-0AA0	DI 16x24VDC SRC BA	6ES7 521-7EH00-0AB0	DI 16x24...125V UC HF
6ES7 521-1BL00-0AB0	DI 32x24VDC HF	6ES7 521-7TH00-0AB0	DI 16xNamur HF
6ES7 521-1BL10-0AA0	DI 32x24VDC BA	6ES7 521-7BH00-0AB0	DI 16x24VDC HS
<b>Digital Output Modules</b>			
6ES7 522-1BF00-0AB0	DQ 8x24VDC/2A HF	6ES7 522-1BP50-0AA0	DQ 64x24VDC/0.3A SNK BA
6ES7 522-1BH01-0AB0	DQ 16x24VDC/0.5A HF	6ES7 522-5EH00-0AB0	DQ 16x24-48VUC/125VDC/0.5A ST
6ES7 522-1BH10-0AA0	DQ 16x24VDC/0.5A BA	6ES7 522-5FF00-0AB0	DQ 8x230VAC/2A ST (Triac)
6ES7 522-1BL01-0AB0	DQ 32x24VDC/0.5A HF	6ES7 522-5FH00-0AB0	DQ 16x230VAC/1A ST (Triac)
6ES7 522-1BL10-0AA0	DQ 32x24VDC/0.5A BA	6ES7 522-5HF00-0AB0	DQ 8x230VAC/5A ST (Relay)
6ES7 522-1BP00-0AA0	DQ 64x24VDC/0.3A BA	6ES7 522-5HH00-0AB0	DQ 16x230VAC/2A ST (Relay)
<b>Digital Input/Output Modules</b>			
6ES7 523-1BL00-0AA0	DI 16x24VDC, DQ 16x24VDC /0.5A BA	6ES7 523-1BP50-0AA0	DI 32x24VDC, DQ 32x24VDC /0.3A BA
<b>Analog Input Modules</b>			
6ES7 531-7KF00-0AB0	AI 8xU/I/RTD/TC ST	6ES7 531-7NF10-0AB0	AI 8xU/I HS
6ES7 531-7LH00-0AB0	AI 16xU BA	6ES7 531-7PF00-0AB0	AI 8xU/R/RTD/TC HF
6ES7 531-7MH00-0AB0	AI 16xI BA	6ES7 531-7QD00-0AB0	AI 4xU/I/RTD/TC ST
6ES7 531-7NF00-0AB0	AI 8xU/I HF	6ES7 531-7QF00-0AB0	AI 8xU/I/R/RTD BA
6ES7 531-7TF00-0AB0	AI 8xHART HF		
<b>Analog Output Modules</b>			
6ES7 532-5HD00-0AB0	AQ 4xU/I ST	6ES7 532-5NB00-0AB0	AQ 2xU/I ST
6ES7 532-5HF00-0AB0	AQ 8xU/I HS	6ES7 532-5ND00-0AB0	AQ 4xU/I HF
<b>Analog Input/Output Module</b>			
6ES7 534-7QE00-0AB0	AI 4xU/I/RTD/TC, AQ 2xU/I ST		
<b>Communication Modules</b>			
6ES7 540-1AB00-0AA0	CM PTP RS422/485 BA	6ES7 541-1AB00-0AB0	CM PTP RS422/485 HF
6ES7 540-1AD00-0AA0	CM PTP RS232 BA	6ES7 541-1AD00-0AB0	CM PTP RS232 H
6ES7 547-1JF00-0AB0	CM 8xIO-Link		
<b>Technology Modules</b>			
6ES7 550-1AA00-0AB0	TM Count 2x24V	6ES7 551-1AB01-0AB0	TM Posinput 2
6ES7 550-1AA01-0AB0	TM Count 2x24V	6ES7 552-1AA00-0AB0	TM Timer DIDQ 16x24V
6ES7 551-1AB00-0AB0	TM Posinput 2	6ES7 558-1AA00-0AB0	TM MFP
<b>Active Backplane</b>			
6ES7 590-0BD00-0AA0	4 slot	6ES7 590-0BL00-0AA0	12 slot
6ES7 590-0BH00-0AA0	8 slot		

Memory Cards			
6ES7 954-8LC03-0AA0	4 MB	6ES7 954-8LP02-0AA0	2 GB
6ES7 954-8LE03-0AA0	12 MB	6ES7 954-8LP03-0AA0	2 GB
6ES7 954-8LF03-0AA0	24 MB	6ES7 954-8LT03-0AA0	32 GB
6ES7 954-8LL03-0AA0	256 MB		

Main characteristics:

Power supply: 24V DC or 230V AC

Degree of protection: IP20

## **2. DOCUMENTS AND DRAWINGS:**

- A5E03461182-AC dated 12/2014; A5E03612323-02 dated 08/2013; A5E32346748-AA dated 08/2013

- A5E03461486-AB dated 06/2014

For B0 version:

- System manual: A5E03461182-AE dated 12/2017; A5E44792324-AA dated 03/2019

For B1 version:

- A5E03461182-AG dated 05/2021; A5E47052837-AA dated 09/2020; A5E47052556-AA dated 09/2020;

A5E32366632-AC dated 09/2016; A5E36633205-AB dated 09/2016; A5E45488510-AA dated 03/2019;

A5E50839840-AA dated 07/2021; A5E48027024-AA dated 07/2020; A5E48025116-AA dated 07/2020;

A5E48024569-AA dated 07/2020; A5E48024817-AA dated 07/2020; A5E46240468-AB dated 07/2020;

A5E39450002-AC dated 11/2020

For C0 version:

- A5E03461182-AJ dated 11/2022; A5E41814787-AE dated 01/2023; A5E42009333-AD dated 11/2022;

A5E42009914-AD dated 11/2022; A5E50840058-AA dated 11/2021; A5E51346434-AA dated 05/2023;

A5E52603197-AA dated 04/2023

## **3. TEST REPORTS:**

- SIMATIC Type Test - 2015-02 dated 17.08.2015; I IA AS RD ST Type Test 2013-03 dated 10.12.2013

For B0 version:

- SIMATIC Type Test - 2016-05 Rev. 01 dated 2019-07-02; SIMATIC Type Test - 2018-04 dated 2019-04-04

For B1 version:

- SIMATIC Type Test - 2021-06\_BV dated 2022-03-03; SIMATIC Type Test - 2021-05 dated 2021-10-15

For C0 version:

- SIMATIC Type Test - 2023-02 dated 31.05.2023

## **4. APPLICATION/LIMITATION:**

4.1 - Bureau Veritas Rules for the Classification of Steel Ships

4.2 - Approval valid for ships intended to be granted with the following additional class notations: AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.

4.3 - Bureau Veritas Environmental Category, EC Code: 31 or 31B (see item 4.4, 4.5 and 4.6).

4.4 - The equipment fulfils the EMC requirements for installation on Bridge and Deck Zone by using a filter on power supply lines, order no.: B84113-C-B30 or equivalent with ratings  $C=2x\ 0.47\mu F + 2x\ 4700pF$ ,  $L=4x\ 4.7mH$  is used.

4.5 - The Manufacturer's installation recommendation described in A5E03461486-AB dated 06/2014 regarding surge protection is to be considered.

4.6 - The modules: TM-Count, TM-PosInput fulfil the EMC requirements for installation in General Power Distribution Zones only.

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

4.8 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev8.

4.9 - In accordance with IACS UR E22 and as applicable to programmable devices for computer based systems of Category II or III, for each ship application:

- Ship specific documentation is to be submitted including software documentation and categorization of the computer based system.

- Inspection and testing before installation onboard is to be performed under the surveillance of the Society.

4.10 - Only Hardware and Firmware / Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer is covered by this certificate.

## **5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The above mentioned products are to be supplied by **SIEMENS AG- DI FA SIMATIC Type Test** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **SIEMENS AG- DI FA SIMATIC Type Test** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

**SIEMENS AG - EWA**  
**Werner-von-Siemens-Str. 50**  
**92224 Amberg**  
**GERMANY**

**SIEMENS AG**  
**Breslauer Str. 5**  
**90766 Fürth**  
**GERMANY**

**Siemens Industrial Automation Products Ltd.**  
**Chengdu , No. 99, Tian Yuan Road**  
**Sichuan Province**  
**611731 Chengdu City**  
**CHINA**

**6. MARKING OF PRODUCT:**

- Maker's name or trademark
- Equipment type or model identification
- Date of manufacture and/or serial number

**7. OTHERS:**

7.1 - It is the responsibility of **SIEMENS AG- DI FA SIMATIC Type Test** to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 37481/B1 BV issued on 09 Mar 2022 by the Society.

**\*\*\* END OF CERTIFICATE \*\*\***