



Marine & Offshore

Certificate number: 22045/C0 BV

File number: AP 4013

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 - DF FA AS
 Amberg - GERMANY

for the type of product
PROGRAMMABLE LOGIC CONTROL UNITS
 SIMATIC S7 - safety related

Requirements:

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

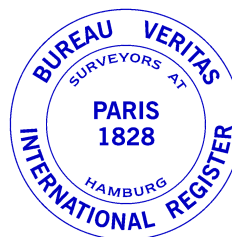
This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 28 Mar 2023

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 28 Mar 2018,

Dirk Hoepfner



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.

The electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=ifsrypesf3>

BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Safety-Related Programmable System - SIMATIC S7 distributed safety comprising the following modules:

S7-300 series

Module	Order No.	Module description
CPU 315F-2 PN/DP	6ES7 315-2F	Safety-related CPU using a fail-safe-application program
CPU 315F-2 DP	6ES7 315-6F	Safety-related CPU using a fail-safe-application program
CPU 317F-2 PN/DP	6ES7 317-2F	Safety-related CPU using a fail-safe-application program
CPU 317F-2 DP	6ES7 317-6F	Safety-related CPU using a fail-safe-application program
CPU 317TF-3PN/DP	6ES7 317-7UL	Safety-related CPU using a fail-safe-application program
CPU 319F-3 PN/DP	6ES7 318-3F	Safety-related CPU using a fail-safe-application program
SM 326 DI24	6ES7 326-1B	24x DI - 24V DC
SM 326 DI8 NAMUR	6ES7 326-1R	8x DI for IS sensors
SM 326 DO8/10	6ES7 326-2B	8/10x DO - 24V DC
SM 336 F-AI 6x0/4 HART	6ES7 336-4G	6x AI, HART(Signal Module S7-300) - Safety Integrated
Safety Protector	6ES7 195-7K	Safety Protector

S7-1200 series

Module	Order No.	Module description
CPU 1214FC DC/DC/DC	6ES7 214-1AF	Safety-related CPU using a fail-safe application program
CPU 1214FC DC/DC/RLY	6ES7 214-1HF	Safety-related CPU using a fail-safe application program
CPU 1215FC DC/DC/DC	6ES7 215-1AF	Safety-related CPU using a fail-safe application program
CPU 1215FC DC/DC/RLY	6ES7 215-1HF	Safety-related CPU using a fail-safe application program

S7-1500 series

Module	Order No.	Module description
CPU 1511F-1 PN	6ES7 511-1FK	Safety-related CPU using a fail-safe application program
CPU 1513F-1 PN	6ES7 513-1FL	Safety-related CPU using a fail-safe application program
CPU 1515F-2 PN	6ES7 515-2FM	Safety-related CPU using a fail-safe application program
CPU 1516F-3 PN/DP	6ES7 516-3FN	Safety-related CPU using a fail-safe application program
CPU 1517F-3 PN/DP	6ES7 517-3FP	Safety-related CPU using a fail-safe application program
CPU 1518F-4 PN/DP	6ES7 518-4FP	Safety-related CPU using a fail-safe application program
F-DI 16 24VDC	6ES7 526-1BH	16x Digital input 24V DC
F-DQ 8 24VDC 2A	6ES7 526-2BF	8x Digital output 24V DC 2A

ET200pro series

Module	Order No.	Module description
IM 154-8F PN/DP	6ES7 154-8F	Safety-related CPU using a fail-safe-application program
F-Switch	6ES7 148-4F	2x DI - 24V DC / 3 Digital P-/P-switch module 24V DC (combined)
8/16 F-DI	6ES7 148-4FA	8/16x DI - 24V DC
4/8 F-DI / 4 F-DO	6ES7 148-4FC	4/8x DI; 4x DO - 24V DC
CPU1516pro F	6ES7 516-2GN	Safety-related CPU

ET200S series

Module	Order No.	Module description
IM 151-7F-CPU	6ES7 151-7F	Safety-related CPU using a fail-safe-application program
IM 151-8F PN/DP	6ES7 151-8F	Safety-related CPU using a fail-safe-application program
PM-E F DC24V	6ES7 138-4C	PROFIsafe Power Module for Electronics modules
1F-RO	6ES7 138-4F	1x Relay Output 24V DC/5A, 24..230V AC/5A
4 F-DO	6ES7 138-4F	4x DO - 24V DC/2A
4/8 F-DI	6ES7 138-4F	4/8x DI - 24V DC
4F-DI / 3F-DO	6ES7 138-4F	4x DI; 3x DO - 24V DC/2A PROFIsafe digital electronic module
PM-D F DC24V	3RK1-903-3B	PROFIsafe Power module for fail safe motor starters

ET200eco series

Module	Order No.	Module description
4/8 F-DI	6ES7 148-3	4/8x DI - 24V DC

ET200SP series

Module	Order No.	Module description
CPU 1510SP F-1 PN	6ES7 510-1SJ	Safety-related CPU using a fail-safe application program
CPU 1512SP F-1 PN	6ES7 512-1SK	Safety-related CPU using a fail-safe application program
F-DI 8x24VDC HF	6ES7 136-6BA	8x DI - 24V DC
F-DQ 4x24VDC/2A PM HF	6ES7 136-6DB	4x DO - 24V DC
F-PM-E 24VDC/8A PPM ST	6ES7 136-6PA	Power Module 24V DC, P-/M-switch
F-RQ 1x24VDC/24...230VAC/5A	6ES7 136-6RA	1x Relay Output 24V DC/5A, 24..230V AC/5A

2. DOCUMENTS AND DRAWINGS:

- Data sheets: 6ES7517-3FP00-0AB0; 6ES7518-4FP00-0AB0; 6ES7 317-6TF14-0AB0;
- 6ES7 154-8FX00-0AB0; 6ES7 154-8FB01-0AB0 dated 07/12/2012;
- Catalogue: CA 01 Catalogue 10/2003
- Extract from Manual A5E00085586-08, Fail-Safe Signal Modules.
- A5E00203919-01 dated 06/2003; A5E02486680-AJ dated 06/2015; A5E03461486-AB dated 06/2014;
- Pages from SIEMENS Web Site: <http://support.automation.siemens.com>, dated 25.04.2006 and 23.01.2009.

Note: Documents filed in AP 4013 and AP 3040.

For C0 version:

- Manuals: A5E03858068-AA dated 01/2016; A5E03858037-AA dated 01/2016; A5E35873416-AA dated 09/2016
- Technical data: 6ES7516-2GN
- Certificates, TÜV SÜD Product Service GmbH:
Z10 16 02 67803 010, dated 2016-03-07
SN83929C, revision 1.8, dated 2017-12-18; SN83929C-A1, revision 2.7, dated 2017-12-18
Z10 17 05 67803 015, dated 2017-05-16
SN87345C, revision 2.1, dated 2017-05-16; SN87345C-A1, revision 2.5, dated 2018-02-02

3. TEST REPORTS:

SIEMENS: - E423-0102 dated 28.05.01; E423-0103 dated 28.05.01; Type Test - 0606, dated 23.06.2006

For C0 version:

SIEMENS: - Type Test - 2017-04 dated 03.03.2017; Type Test - 2017-03 dated 03.03.2017;

4. APPLICATION/LIMITATION:

- 4.1 - Bureau Veritas Rules and Regulations 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.**
- 4.4 - The S7-1200, S7-1500 and ET200SP system components fulfilling the EMC requirements for installation on the Bridge and Deck Zone by using a filter on power supply lines of type: B84113-C or equivalent with ratings $C=2x 0.47\mu F + 2x 4700pF$, $L=4x 4.7mH$ and when shielded cables are grounded on both sides.
- 4.5 - The devices require surge protection devices on the DC power supplies to withstand overvoltage transients from switching and lighting. Detailed guidance is found in document A5E03461486-AB dated 06/2015. Manufacturer's installation recommendation described in A5E02486680-AJ dated 06/2015 (for S7-1200 series), A5E03461486-AB dated 06/2014 (for S7-1500 and ET200SP series) and A5E00203919-01 dated 06/2003 (for S7-300, ET200eco, ET200pro and ET200S series) regarding surge protection is to be considered.
- 4.6 - Suppliers using the safety related products in safety related applications shall comply with the latest version of the safety parts of the equipment manuals, the latest programming and operating manual and shall follow the implementation conditions and restrictions as found in the latest report to the functional safety certificate.
- 4.7 - Suppliers using the programmable logic controllers are required to submit documentation for information or approval in dependance of the system category of the application.
- 4.8 - Factory acceptance, simulation, integration, final integration and on-board tests are to be performed for Category II or III systems in which the equipment is used to approved test programs.
- 4.9 - The installation of the other equipment shall comply with the Manufacturer's recommendation described in the documentation.
- 4.10 - Only Hardware and Firmware 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 - DF FA AS** 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 - DF FA AS** has to make the necessary arrangements to have its works recognized by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

Siemens AG - DF FA AS
Werner-von-Siemens-Str. 50
92224 Amberg
GERMANY

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

5.4 - Equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT:

- Maker's name or trademark.
- Equipment type or model identification.
- Date of manufacture and/or serial number.
- Information of installed firmware versions on the integrated displays or displayed on a panel on command.

7. OTHERS:

7.1 - It is the responsibility of **Siemens AG - DF FA AS - GERMANY** 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 cancels and replaces the Type Approval Certificate N° 22045/B1 BV issued on 14 Sep 2015 by the Society.

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