



Marine & Offshore
Division

Certificate number: 07414/D1 BV

File number: AP 3040

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

Modular Logic: LOGO!

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

EC Code: 31.

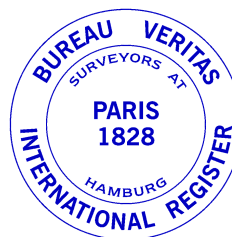
This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 10 Dec 2017

For BUREAU VERITAS,

At BV HAMBURG, on 23 Jul 2015,

Sandro Schmidt



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. 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 Division 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 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 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The logic modules of LOGO! system for automation tasks or control systems comprise of the following units:

1.1 - Basic modules:

LOGO! 12/24RC	LOGO! 24CEo	LOGO! 230R
LOGO! 12/24RCo	LOGO! 24L	LOGO! 230RC
LOGO! 12/24RCE	LOGO! 24R	LOGO! 230RCo
LOGO! 12/24RCEo	LOGO! 24RC	LOGO! 230RCE
LOGO! 24	LOGO! 24RCo	LOGO! 230RCEo
LOGO! 24o	LOGO! 24RCE	LOGO! 230RCL
LOGO! 24C	LOGO! 24RCEo	LOGO! 230RCLB11
LOGO! 24Co	LOGO! 24RCL	
LOGO! 24CE	LOGO! 24RCLB11	

Inputs:

8 DI connected to power supply or 6 DI+2 AI (0-10V) for LOGO! 12/24RC, 12/24RCo, 12/24RCE, 24, 24C, 24o, 24Co
 8 DI connected to power supply for LOGO! 12/24RCEo, 24CE, 24CEo, 24R, 24RC, 24RCE, 24RCEo, 24RCo, 230R, 230RC, 230RCo, 230RCE, 230RCEo
 12 DI connected to power supply for LOGO! 24L, 24RCL, 24RCLB11, 230RCL, 230RCLB11

Outputs:

4 transistor type (0.3A) for LOGO! 24, 24o
 4 relay type (10A) for LOGO! 12/24RC, 12/24RCo, 12/24RCE, 12/24RCEo, 24CE, 24CEo, 24R, 24RC, 24RCo, 24RCE, 24RCEo, 230R, 230RC, 230RCo, 230RCE, 230RCEo
 8 transistor type (0.3A) for LOGO! 24L
 8 relay type (10A) for LOGO! 24RCL, 24RCLB11, 230RCL, 230RCLB11

1.2 - Expansion modules:

LOGO! DM8 24	LOGO! DM16 24	LOGO! AM2 PT100
LOGO! DM8 24R	LOGO! DM16 24R	LOGO! AM2 RTD
LOGO! DM8 12/24R	LOGO! DM16 230R	LOGO! AM2 AQ
LOGO! DM8 230R	LOGO! AM2	LOGO! TD

Inputs:

4 DI connected to power supply for LOGO! DM8 12/24R, DM8 24, DM8 24R, DM8 230R
 8 DI connected to power supply for LOGO! DM16 24, DM16 24R, DM16 230R
 2 AI (0-10V or 0-20 mA) for LOGO! AM2,
 2xPt 100 or PT1000 (-50°C/+200°C) for LOGO! AM2 RTD.
 2xPt 100 (-50°C/+200°C) for LOGO! AM2 PT100

Outputs:

4 transistor type (0.3A) for LOGO! DM8 24
 4 relay type (5A) for LOGO! DM8 24R, DM8 12/24R, DM8 230R
 8 transistor type (0.3A) for LOGO! DM16 24
 8 relay type (5A) for LOGO! DM16 24R, DM16 230R
 2 AO (0-10V) for LOGO! AM2 AQ.

1.3 - Display modules:

LOGO! TDE: FSTN Text display with 10 keys and Ethernet connection: IP65(front), IP20(rear)

1.4 - Main characteristics:

Power supply voltages for Basic modules and Expansion modules:

12/24V DC for LOGO! 12/24RC, 12/24RCo, 12/24RCE, DM8 12/24R, AM2, AM2 PT100
 24V DC for LOGO! 24, 24o, 24R, 24L, 24RCL, 24RCLB11, DM8 24, DM16 24, DM16 24R, AM2 AQ, TD
 24V AC for LOGO! 24RC and 24RCo
 24V AC/DC DM8 24R
 115/230V AC for LOGO! 230R, 230RC, 230RCo, 230RCE, 230RCL, 230RCLB11
 115/230V AC/DC for LOGO! DM8 230R, DM16 230R.

Including 6 integrated basic logic functions:

Circuit AND, 3 normally open contacts in series
 Circuit OR, 3 normally open contacts in parallel, circuit NOT inverter
 Circuit NAND, 3 normally close contacts in parallel
 Circuit NOR, 3 normally close contacts in series
 Circuit XOR (exclusive OR) double change over.

2. DOCUMENTS AND DRAWINGS:

- LOGO! Manual: - A5E33039675 dated 06/2014; A5E03556174-01 dated 04/2011; A5E01248535-04 dated 11/2009;
- A5E01248535-01 dated 04/2008; A5E00380835-01 dated 02/2005

Note: Documents filed in AP 3043 and AP 3040.

3. TEST REPORTS:**SIEMENS AG:**

- SIMATIC Type Test - 2014-01 dated 06.03.2015; I IA AS RD ST Type Test - 2012-01 dated 28.Sep.2012;
- I IA AS RD ST Type Test - 04/2010 dated 03.05.10; I IA AS RD ST Type Test 3/09 dated 13.03.09;
- A&D AS RD ST Type Test-01/05 dated 18.01.2005; A&D AS RD 423 - 0301 dated 11.03.03 & 10.04.03;
- A&D AS E423-0108 dated 28.05.2001

Note: Documents filed in AP 3043 and AP 3040.

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 24V DC power supply lines of LOGO! modules are to be equipped by surge protection element (Dehn Blitzductor, Type No. 918402 or 918422 or equivalent).

4.5 - LOGO! 12/24xxx modules are to be used with 24V DC power supply unit.

4.6 - The LOGO! -0BA8 series with DC power supply fulfils the EMC requirements for installation on the Bridge and Deck Zone if filter of type: B84113-C or equivalent with ratings $C=2x\ 0.47\mu F + 2x\ 4700pF$, $L=4x\ 4.7mH$ is used.

4.7 - The LOGO! -0BA8 series with AC power supply fulfils the EMC requirements for installation on the Bridge and Deck Zone.

4.8 - The other equipment fulfils the EMC requirements for installation in General Power Distribution zone only.

4.9 - Documents relating to each application are to be submitted to the Society's examination prior fitting on board.

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.

4.11 - Depending on the Application, Factory Acceptance and On-board Tests are to be performed in accordance with requirements for Category II or III Equipment.

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.

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-Straße 50
92224 Amberg
GERMANY

Siemens Electrical Apparatus Ltd.
Suzhou Chengdu Branch
No. 99, TianYuan Road,
HighTech Zone West
Chengdu City, Sichuan Province 611731
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.

7. OTHERS:

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **SIEMENS AG - DF FA AS - GERMANY**, will accept full responsibility for informing shipbuilders, ship owners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate cancels and replaces the previous one issued by the Society on 10 Dec 2012, under ref. N° 07414/D0 BV.

*** END OF CERTIFICATE ***