

**MARINE DIVISION**

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**Certificate number:** 07414/C0 BV

**File number :** AP 3040 & AP 3043

**Product code :** 4501H

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

**TYPE APPROVAL CERTIFICATE**

*as per Bureau Veritas Classification Rules*

*This certificate is issued to*

**SIEMENS AG - A&D AS RD**

Amberg - GERMANY

*for the type of product*

**PROGRAMMABLE LOGIC CONTROL UNITS**

Modular Logic LOGO!

**Regulations and standards :**

BUREAU VERITAS Rules for the Classification of Steel Ships.

*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 of the Regulations and standards mentioned above.*

**This certificate is valid until : 28 Jun 2012**

At Paris la Défense, on : 28 Jun 2007

**For BUREAU VERITAS,**  
*By order of the Secretary*

Approval office

Local office : BV HAMBURG  
Surveyor : D. Hoepfner

**L.COURREGELONGUE**



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 Division. 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.

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

Modular Logic LOGO! comprising the following modules:

#### **Basic modules:**

LOGO! 24  
 LOGO! 24o  
 LOGO! 24R  
 LOGO! 230R  
 LOGO! 230RC  
 LOGO! 12/24RC  
 LOGO! 12/24RCo  
 LOGO! 24RC  
 LOGO! 24RCo  
 LOGO! 230RCo  
 LOGO! 12RCL  
 LOGO! 24L  
 LOGO! 24RCL  
 LOGO! 230RCL  
 LOGO! 24RCLB11  
 LOGO! 230RCLB11

#### **Inputs:**

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

#### **Outputs:**

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

#### **Expansion modules:**

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

#### **Inputs:**

4 DI connected to power supply for LOGO! DM8 24, DM8 24R, DM8 12/24R, 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 (-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.

#### **Power supply voltages for Basic modules and Expansion modules:**

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

Internet [http://www.ad.siemens.de/simatic/index\\_76.htm](http://www.ad.siemens.de/simatic/index_76.htm)

LOGO! Manual - A5E00380835-01 Edition 02/2005

Note: Documents filed in AP 3043 and AP 3040.

## **3. TEST REPORTS :**

**SIEMENS,**

A&D AS E423-0108 dated 28.05.2001

A&D AS RD 423 - 0301 dated 11.03.03 & 10.04.03

Specification for type tests and test report on LOGO! A&D AS RD ST Type Test-01/05 dated 18.01.2005.

Note: EMC and vibration test reports filed in AP 3043 and AP 3040.

## **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 - The equipment fulfills the EMC requirements for installation in General power Distribution Zones only.

4.4 - BUREAU VERITAS Environmental Category, **EC Code: 31.**

4.5 - Each application and configuration is to be submitted to the Society's examination prior to fitting on board.

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

5.1 - The Modular Logic **LOGO!** modules are to be manufactured, examined and tested by **SIEMENS AG A&D AS RD** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **SIEMENS AG A&D AS RD** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **SIEMENS AG A&D AS RD** has declared to Bureau Veritas that the type of product described in this certificate are manufactured at the following production site:

**SIEMENS AG A&D AS RD**  
**Werner-Von-Siemens-Strasse-50**  
**92224 Amberg**  
**GERMANY**

## **6. MARKING OF PRODUCT :**

Manufacturer's name and Trademark,

Type and model number,

Date of manufacture and serial number,

Equipment type or model identification under which it was type-tested.

## **7. OTHERS :**

7.1 - This approval is given with the understanding that:

**SIEMENS AG A&D AS RD**  
**Werner-Von-Siemens-Strasse-50**  
**92224 Amberg**  
**GERMANY**

will accept full responsibility for informing shipbuilders, ship-owners and/or their sub-contractors of the proper methods of fitting and general maintenance of the approved equipments and the conditions of this approval.

7.2 - This Certificate supersedes the Type Approval Certificate N° 07414/B2 BV issued on 01/02/2006 by the Society.

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