



MARINE DIVISION

Certificate number: 22973/A0 BV

File number: AP4098

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

ABB STOTZ KONTAKT GmbH

Heidelberg - GERMANY

for the type of product

PROGRAMMABLE LOGIC CONTROL UNITS

AC500-eCo / S500-eCo series

Requirements:

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 mentioned above.

This certificate will expire on: 18 Feb 2016

For BUREAU VERITAS,

At BV HAMBURG, on 18 Feb 2011,

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. 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 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.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The AC500-eCo / S500-eCo series are scalable programmable logic controller and I/O system and may consist of following components:

Module type	Designation	Main characteristic	Software
Processor Modules	PM554-R-AC	128kB memory, 8xDI , 6xDO relay, Supply 100-240V AC	V1.3.x
	PM554-T	128kB memory, 8xDI , 6xDO transistor, Supply 24V DC	V1.3.x
	PM554-R	128kB memory, 8xDI , 6xDO relay, Supply 24V DC	V1.3.x
	PM554-T-ETH	128kB mem., 8xDI , 6xDO trans. , Supply 24V DC, 1xEthernet	V2.0.x
	PM564-R-AC	128kB mem., 6xDI , 6xDO relay, 2xAI ,1xAO, Supply 100-240V AC	V1.3.x
	PM564-T	128kB mem., 6xDI, 6xDO transistor, 2xAI, 1xAO, Supp. 24V DC	V1.3.x
	PM564-R	128kB mem., 6xDI, 6xDO relay, 2xAI, 1xAO, Supp. 24V DC	V1.3.x
	PM564-R-ETH-AC	128kB mem., 6xDI, 6xDO relay, 2xAI, 1xAO, Supply 100-240V AC, 1xEthernet	V2.0.x
	PM564-T-ETH	128kB mem., 6xDI, 6xDO transistor, 2xAI, 1xAO, Supply 24V DC, 1xEthernet	V2.0.x
	PM564-R-ETH	128kB mem., 6xDI, 6xDO relay, 2xAI, 1xAO, Supply 24V DC, 1xEthernet	V2.0.x
I/O Modules	DX561	8xDI, 8xDO transistor, isolated groups	V1.9
	DC561	16xDC inputs or outputs	V1.9
	DI561	8xDI isolated group	V1.9
	DI562	16xDI two isolated groups	V1.9
	DO561	8xDO transistor, isolated group	V1.9
	DX571	8xDI, 8xDO relay, isolated groups	V1.9
	DO571	8xDO relay, isolated groups	V1.9
	DI571	8xDI (120-240V AC), isolated groups	V1.9
	DO572	8xDO triac, isolated groups	V1.9
	AX561	4xAI configurable, 2xAO configurable, isolated groups	V1.7
	AI561	4xAI configurable, isolated group	V1.7
	AI562	2xAI RTD, isolated group	V1.7
	AO561	2xAO configurable, isolated group	V1.7
	AI563	4xAI TC, isolated group	V1.7
Accessories	MC503	SD Memory Card expansion module	n/a
	TA561-RTC	RTC expansion module	n/a
	TA562-RS-RTC	RTC adapter with battery	n/a
	TA562-RS	Serial RS485 expansion module	n/a
	TA566	Wall mounting accessory	n/a
	TK503	Programming cable	n/a
	TA560-BAT	Lithium battery for real-time clock	n/a

Power Supply: 24V DC

Protection Index: IP20

2. DOCUMENTS AND DRAWINGS:

- Main catalogue: Automation products 2CDC 120 142 C0206 dated: 05.2009
- Technical documentation according to CD "Ship approval 2009"
- Technical documentation of AC500-CPU's, revision V1.3.2 dated: 2010-06-17

3. TEST REPORTS:

- EMV Rhein-Neckar
3893-394f dated: 04.09.2009
- Paconsult
09-2475B dated: 06 July, 2009
- Xiamen Products Quality Supervision & Inspection Institute
2010H_W032 dated: 2010-09-25
- Shanghai Inspection and Testing Institute of Instruments and Automatic Systems
C10-133-WT dated: Jun. 1, 2010 and C10-134-WT dated: Jun. 1, 2010
- ABB
TT_6.2_climatic_2010-06-25 and V2010039 dated: 11.08.2010

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.**
- 4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.
- 4.5 - The equipment is to be installed in a metal cabinet. Power supply of PM564-R-ETH-AC with 47pF capacitor DC503 required.
- 4.6 - Each application and configuration is to be submitted to the Society's examination prior to fitting on board.
- 4.7 - Data processing system used for machinery protection is to be independent from the control and monitoring system.
- 4.8 - Only Hardware and Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.
- 4.9 - Automation systems associated with essential services based on PLC's, once installed on board ship, are to be tested in accordance with the above referred Regulations under the supervision of a Society's Surveyor.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The AC500-eCo / S500-eCo System is to be manufactured, examined and tested by **Delta Electronics (Jiang Su) LTD** and **Delta Electronics INC** 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 **ABB STOTZ-KONTAKT GmbH** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.
- 5.3 - **ABB STOTZ-KONTAKT GmbH** has declared to Bureau Veritas that the type of product described in this certificate may be manufactured at the following production sites:

Delta Electronics (Jiang Su) LTD.
215200, No. 1688, Jiangxing East Road,
Wujiang Economy Development Zone,
Wujiang City
CHINA

Delta Electronics, INC.
31-1 Xingbang Road
Guishan Industrial Zone
Taoyuan County 33370
TAIWAN

6. MARKING OF PRODUCT:

- Maker's name or trademark.
- Date of manufacture and serial number.
- Equipment type or model identification under which it was type-tested.
- The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment.
- When the marking and the title and version of the software are displayed only on the display, such information shall also be included in the equipment manual.

7. OTHERS:

This approval is given on the understanding that **ABB STOTZ-KONTAKT GmbH** 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.

*** END OF CERTIFICATE ***