



Marine & Offshore

Certificate number: 22973/C0 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 AG**

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

EC Code: 31 / 41 (see item 4)

*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: 21 Aug 2028**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 21 Aug 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.

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

BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

## 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:

Type	Designation	Main characteristics	Software
CPU Modules	PM554-RP	128kB, 8xDI, 6xDO relay, Supply 24V DC	V2.x
	PM554-RP-AC	128kB, 8xDI, 6xDO relay, Supply 100-240V AC	V2.x
	PM554-TP	128kB, 8xDI, 6xDO trans., Supply 24V DC	V2.x
	PM554-TP-ETH	128kB, 8xDI, 6xDO trans., Supply 24V DC, 1xEthernet	V2.x
	PM556-TP-ETH	512kB, 8xDI, 6xDO trans., Supply 24V DC, 1xEthernet	V2.x
	PM564-RP	128kB, 6xDI, 6xDO relay, 2xAI, 1xAO, Supply 24V DC	V2.x
	PM564-RP-AC	128kB, 6xDI, 6xDO relay, 2xAI, 1xAO, Supply 100-240V AC	V2.x
	PM564-RP-ETH	128kB, 6xDI, 6xDO relay, 2xAI, 1xAO, Supply 24V DC, 1xEthernet	V2.x
	PM564-RP-ETH-AC	128kB, 6xDI, 6xDO relay, 2xAI, 1xAO, Supply 100-240V AC, 1xEthernet	V2.x
	PM564-TP	128kB, 6xDI, 6xDO trans., 2xAI, 1xAO, Supply 24V DC	V2.x
	PM564-TP-ETH	128kB, 6xDI, 6xDO trans., 2xAI, 1xAO, Supply 24V DC, 1xEthernet	V2.x
	PM566-TP-ETH	512kB, 6xDI, 6xDO trans., 2xAI, 1xAO, Supply 24V DC, 1xEthernet	V2.x
	PM5012-T-ETH	1MB, 6DI/4DO-Transistor, Ethernet, 24VDC, 1x Option Slot	V3.x
	PM5012-R-ETH	1MB, 6DI/4DO-Relay, Ethernet, 24VDC, 1x Option Slot	V3.x
	PM5032-T-ETH	2MB, 12DI/8DO-Transistor/2DC, Ethernet, 24VDC, 2x Option Slot	V3.x
	PM5032-R-ETH	2MB, 12DI/6DO-Relay/2DC, Ethernet, 24VDC, 2x Option Slot	V3.x
	PM5052-T-ETH	4MB, 12DI/8DO-Transistor/2DC, Ethernet, 24VDC, 3x Option Slot	V3.x
	PM5052-R-ETH	4MB, 12DI/6DO-Relay/2DC, Ethernet, 24VDC, 3x Option Slot	V3.x
	PM5052-R-ETHL	84MB, 12DI/6DO-Relay/2DC, Ethernet, 24VDC, 3x Option Slot	V3.x
	PM5072-T-2ETH	8MB, 12DI/8DO-Transistor/2DC, 2x Ethernet, 24VDC, 3x Option Slot	V3.x
PM5072-T-2ETHW	8MB, 12DI/8DO-Trans./2DC, 2x Ethernet, 24VDC, 3x Option Slot,wide	V3.x	
I/O Modules	DX561	8xDI, 8xDO transistor, isolated groups	V1.x
	DC561	16xDC inputs or outputs	V1.x
	DI561	8xDI isolated group	V1.x
	DI562	16xDI two isolated groups	V1.x
	DO561	8xDO transistor, isolated group	V1.x
	DX571	8xDI, 8xDO relay, isolated groups	V1.x
	DO571	8xDO relay, isolated groups	V1.x
	DI571	8xDI (120-240V AC), isolated groups	V1.x
	DO572	8xDO triac, isolated groups	V1.x
	AX561	4xAI configurable, 2xAO configurable, isolated groups	V1.x
	AI561	4xAI configurable, isolated group	V1.x
	AI562	2xAI RTD, isolated group	V1.x
	AO561	2xAO configurable, isolated group	V1.x
	AI563	4xAI TC, isolated group	V1.x
	Accessories	MC502	SD Memory Card
MC503		SD Memory Card adapter	n/a
TA524		Dummy Communication 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
TK504		Programming cable	n/a
TK506		RS-485 isolator COM 1	n/a
TA569-RS-ISO		Serial RS485 expansion module	n/a
TA5101-4DI		Digital input module option board, 4DI 24 V DC	n/a
TA5105-4DOT		Digital output module option board, 4DO-T 24 VDC	n/a
TA5110-2DI2DOT		Digital in/ output module option board, 2DI 24 VDC, 2DO-T 24 VDC	n/a
TA5130-KNXPB		KNX address switch option board, 1 push button	n/a
TA5131-RTC		Real-time clock without battery, option board for AC500-eCo V3 Basic CPU	n/a
TA5141-RS232I		RS-232 serial adapter isolated option board	n/a
TA5142-RS485I		RS-485 serial adapter isolated option board	n/a

	TA5142-RS485	RS-485 serial adapter non isolated option board	n/a
	MC5102	Micro memory card with micro memory card adapter	n/a
	TA5300-CVR	Option board cover, removable plastic part	n/a
	TA5301-CFA	Cable fixing part accessory	n/a
Terminals	TA563-9	Terminal blocks 9-pole, screw front, cable side	n/a
	TA563-11	Terminal blocks 11-pole, screw front, cable side	n/a
	TA564-9	Terminal blocks 9-pole, screw front, cable front	n/a
	TA564-11	Terminal blocks 11-pole, screw front, cable front	n/a
	TA565-9	Terminal blocks 9-pole, spring front, cable front	n/a
	TA565-11	Terminal blocks 11-pole, spring front, cable front	n/a
	TA5211-TSCL-B	Screw terminal block set for AC500-eCo V3 CPU Basic, screw front	n/a
	TA5211-TSPF-B	Screw terminal block set for AC500-eCo V3 CPU Basic, screw front	n/a
	TA5212-TSCL	Screw terminal block set for AC500-eCo V3 Std. and Pro CPU screw front	n/a
	TA5212-TSPF	Screw terminal block set for AC500-eCo V3 Std. and Pro CPU screw front	n/a
	TA5220-SPF5	Spring terminal block, removable, 5-pin, spring front, cable front	n/a
	TA5220-SPF6	Spring terminal block, removable, 6-pin, spring front, cable front	n/a
	TA5220-SPF7	Spring terminal block, removable, 7-pin, spring front, cable front	n/a
	TA5220-SPF8	Spring terminal block, removable, 8-pin, spring front, cable front	n/a
	TA5220-SPF9	Spring terminal block, removable, 9-pin, spring front, cable front	n/a

**Main characteristics:**

Degree of protection: IP20

**2. DOCUMENTS AND DRAWINGS:**

- Data sheets: PM554 and PM564 Rev. V2.1.0 dated 2011-07-28; TA524 Rev. V2.1.0 dated 2011-07-28;
- TA563-TA565 Rev. V2.1.0 dated 2011-07-28; TA566 Rev. V2.1.0 dated 2011-07-28; TK504 Rev. V2.1.0 dated 2011-07-28;
- TK506 Rev. V2.3.0 dated 2012-09-11; 1SAP120103F0001 Rev. V1.0 dated 2012-12-20;
- 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
- 1SAP120610F0001; 1SAP120610P0001; 1SAP120620F0001; 1SAP120620P0001; 1SAP120630F0001; 1SAP120630P0001;
- 1SAP120730F0001; 1SAP120730P0001; changes 1TNE968007P0307 Rev. 1.6 dated June 10, 2010

For B1 version:

- Installation instructions 3ADR010320, 1, 99
- 1SAP186412F9001 dated 2019-03-08

For B2 version:

- Manual: 3ADR010278, 2, en\_US dated 2021/05/14
- Data sheets: 3ADR010585, 1, en\_US; 3ADR010724, 1, en\_US; 3ADR010727, 1, en\_US; 3ADR010728, 1, en\_US;
- 3ADR010729, 1, en\_US; 3ADR010730, 1, en\_US; 3RDA010731, 1, en\_US; 3ADR010732, 1, en\_US;
- 3ADR010733, 1, en\_US all dated 2021/09/14
- Data sheet: PM5052-R-RTHL dated 2021/12/01
- DEAPR/ACD dated 07/2016; Release note dated 2021-07-28

**3. TEST REPORTS:**

- EMV Rhein-Neckar GmbH: 3893-394f dated: 04.09.2009
- Paconsult GmbH: 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 Automation Products GmbH: TT\_6.2\_climatic\_2010-06-25 and V2010039 dated 11.08.2010;
- TT-FuncReq002\_AC Rev. V02 dated 2013-01-06; D2012054 dated 23.12.2012
- China Electronics Standardization Institute CESI Laboratory: SEC12-0456WM-E-E1, SEC12-0456WM-E-E2 dated 2012-11-28

For B1 version:

- EMV Rhein-Neckar GmbH: 3893-3130 dated 03.04.2019
- Paconsult GmbH: 18-11059 Rev.1 dated Jan 23, 2019

For B2 version:

- TÜV SÜD: 713231440 dated 13.12.2021
- EMV Rhein-Neckar: 3893-3143 dated 23.09.2021
- Nemko: FS-2109-450318-008 dated 26.11.2021; FS-2109-450318-009 dated 26.11.2021

**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 - Bureau Veritas Environmental Category, **EC Code: 31/41** for PM5072-T-2ETH, TA5142-RS232I, TA5142-RS485I, TA5130-KNXPB, MC5102, TA5101-4DI, TA5105-4DOT, TA5110-2DIDOT

4.5 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.

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

4.7 - 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.

4.8 - 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.

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The above mentioned products are to be supplied by **ABB AG** 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 - **ABB AG** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

**Welco Wong's Technology (Shenzhen) Ltd.**  
**Wanfeng Industrial Estate,**  
**34 The East of Wanzhang Pu,**  
**Shajing, Baoan, Shenzhen, Guangdong**  
**CHINA**

**ABB STOTZ KONTAKT GmbH**  
**Hauptstraße 12**  
**78132 Hornberg**  
**GERMANY**

**6. MARKING OF PRODUCT:**

- Maker's name or trademark

- Equipment type or model identification

- Date of manufacture and/or serial number

- 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:**

7.1 - It is the responsibility of **ABB AG** 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° 22973/B2 BV issued on 16 Feb 2022 by the Society.

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