



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

22-2201925-PDA
12-Jan-2022
11-Jan-2027
Houston ESD - Piping

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

ABB AG

located at

EPPELHEIMERSTR. 82, D-69123 HEIDELBERG, Germany

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Programmable Logic Controller
Model: AC500, AC500-eCo, AC500-S, AC500-XC
Endorsements:
Tier: 5 - Unit Certification Required

This Product Design Assessment (PDA) Certificate remains valid until 11/Jan/2027 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Yongjin Lee, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

ABB AG

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Tier: 5 - Unit Certification Required

Product: Programmable Logic Controller
Model: AC500, AC500-eCo, AC500-S, AC500-XC
Endorsements:

Intended Service:

Programmable Control System for control and monitoring functions on AMS, ACC, ACCU, ABCU Classed Vessels.

Description:

AC500 consisting of CPUs, S500 I/O modules, communication modules, communication interface modules, accessories, condition monitoring CMS.

AC500-eCo consisting of CPUs, S500-eCo I/O modules, accessories.

AC500-S consisting of CPUs, S500 I/O modules.

AC500-XC consisting of CPUs, S500 I/O modules, communication modules, communication interface modules, accessories.

Refer to attached document "Additional Product Details" for details.

Rating:

Power Supply: 100V / 240V AC, 24V DC.

Degree of Protection: IP20.

Operating Temperature:

0°C...+60°C

-40°C...+70°C (-XC)

Service Restriction:

Unit Certification is required for this product in accordance with section 4-1-1/Table 3 of the Marine Vessel Rules.

If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:

- Each particular application/ installation and the user operating software is to be specifically approved in conjunction with the relevant system in which the units are being used.

- System Category III. Manufacturer is to keep evidence of quality plan for software, inspection of hardware components from sub-suppliers and quality control in production. Performance integration, fault simulation, final system factory acceptance tests, on-board system and integration tests to be witnessed by the Surveyor.

- The manufacturer has provided a declaration about the control of, or the lack of asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. - EMC Reports (See below)

Test Report No.450318-009T, dated 26 Nov. 2021

Test Report No.3893-3132a, dated 19 Sep. 2019

Test Report No.3893-3136, dated 22 July 2019

Test Report No.3893-3137a, dated 19 Sep. 2019

Test Report No.3893-3138a, dated 19 Sep. 2019

Test Report No.3893-3139, dated 19 Sep. 2019

Test Report No.450318-007, dated 26 Nov. 2021

Test Report No.450318-010, dated 26 Nov. 2021

Test Report No.450318-011, dated 26 Nov. 2021

Test Report No.450318-012, dated 26 Nov. 2021

Test Report No.450318-008, dated 26 Nov. 2021

Test Report No.3893-3143, dated 23 Aug. 2021

Technical Report No. 713231440, Environmental Testing, Rev.-, dated 13 Dec. 2021

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Tier: 5 - Unit Certification Required

Test Report No. D2021001, AC Voltage Test, Rev. B dated 01 Nov. 2021

Test Report No. D2021002, AC Voltage Test, Rev. B dated 01 Nov. 2021

Drawing No. -, New Modules, Technical Data (See below)

Drawing No. - Module List

Drawing No. 3ADR010585, Processor Module Data Sheet, PM5012, PM5032, PM5052, PM5072

Drawing No. 3ADR010724, Option Board Data Sheet, TA5101-4DI

Drawing No. 3ADR010727, Option Board Data Sheet TA5105-4DOT

Drawing No. 3ADR010728, Option Board Data Sheet TA5110-2DI2DOT

Drawing No. 3ADR010729, Option Board Data Sheet TA5130-KNXBP

Drawing No. 3ADR010730, Option Board Data Sheet TA5131

Drawing No. 3ADR010732, Option Board Data Sheet TA5142-RS4851

Drawing No. 3ADR010733, Option Board Data Sheet TA5142-RS485

Terms of Validity:

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This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

STANDARDS**ABS Rules:**

The Rules for Conditions of Classification (2022), 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

ABS Rules for Building and Classing Marine Vessel Rules (2022): 4-9-3/1, 4-9-3/11, 4-9-3/Table 1, 4-9-9/7, 4-9-9/13.

The Rules for Conditions of Classification - Offshore Units and Structures (2022): 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

ABS Rules for Building and Classing Mobile Offshore Units (2022): 4-3-4/5

National:

NA

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA

Company Name: ABB AG
Model Number: AC500, AC500-eCo, AC500-S, AC500-XC
PDA Number: 22-2201925-PDA
Issuance date: 13 January 2022
Expiration date: 12 January 2027
Revision number: -

Additional Product Details
Programmable Logic Controller

Model Name: AC500, AC500-eCo, AC500-S, AC500-XC

Details:

	AC500 (-XC) * 1
CPUs	PM572, PM573-ETH, PM582, PM583-ETH, PM585-ETH, PM590-ETH, PM590-ARCNET, PM591-ETH, PM591-2ETH, PM592-ETH, PM595-4ETH-F, PM595-4ETH-M-XC, PM5630-2ETH, PM5650-2ETH, PM5670-2ETH, PM5675-2ETH
CPU Terminal Bases	TB511-ARCNET, TB511-ETH, TB521-ARCNET, TB521-ETH, TB523-2ETH, TB541-ETH, TB5600-2ETH, TB5610-2ETH, TB5620-2ETH
S500 I/O Modules	AC522, AI523, AI531, AO523, AX521, AX522, DA501, DA502, DC522, DC523, DC532, DC541-CM, DC551-CS31, DI524, DO524, DO526, DX522, DX531, PD501-4CH
S500 I/O Modules Terminal Units	TU507-ETH, TU508-ETH, TU509, TU510, TU515, TU516, TU517, TU518, TU520-ETH, TU531, TU532, TU541, TU542, TU551-CS31, TU552-CS31
Accessories	MC502, TA521, TA523, TA524, TA525, TA526, TK501, TK502
Communication Modules	CM574-RS, CM579-ETHCAT, CM579-PNIO, CM582-DP, CM588-CN, CM589-PNIO, CM589-PNIO-4, CM592-DP, CM597-ETH, CM598-CN
Function Module	CD522, FM502-CMS
Communication Interface Modules	CI501-PNIO, CI502-PNIO, CI504-PNIO, CI506-PNIO, CI511-ETHCAT, CI512-ETHCAT, CI521-MODTCP, CI522-MODTCP, CI541-DP, CI542-DP, CI581-CN, CI582-CN, CI590-CS31-HA, CI592-CS31
Terminal Function	TF501-CMS, TF521-CMS

* 1 All devices may be followed by -XC

	AC500-eCo
CPUs	PM554-TP, PM554-TP-ETH, PM554-RP, PM554-RP-AC, PM564-TP, PM564-TP-ETH, PM564-RP, PM564-RP-AC, PM564-RP-ETH, PM564-RP-ETH-AC, PM556-TP-ETH, PM566-TP-ETH, PM5012-T-ETH, PM5012-R-ETH, PM5032-T-ETH, PM5032-R-ETH, PM5052-T-ETH, PM5052-R-ETH, PM5052-R-ETHL, PM5072-T-2ETH, PM5072-T-2ETHW
S500eCo I/O Modules	AI561, AI562, AI563, AO561, AX561, DX561, DC561, DC562, DI561, DI562, DO561, DO562, DX571, DO571, DI571, DI572, DO572, DO573
Accessories	TA564-9, TA564-11, TA563-9, TA563-11, TA565-9, TA565-11, TK503, TK504, TK506, MC503, MC502, TA561-RTC, TA562-RS, TA562-RS-RTC, TA569-RS-ISO, TA566, TA5101-4DI, TA5105-4DOT, TA5110-2DI2DOT, TA5130-KNXPB, TA5131-RTC, TA5141-RS232I, TA5142-RS485I, TA5142-RS485, TA5300-CVR, TA5301-CFA, TA5211-TSCL-B, TA5211-TSPF-B, TA5212-TSCL, TA5212-TSPF, TA5220-SPF5/6/7/8/9, MC5102
Function Module	FM562

	AC500-S (-XC) ^{*1}
CPUs	SM560-S, SM560-S-FD-1, SM560-S-FD-4
S500 I/O Modules	AI581-S, DI581-S, DX581-S
S500 I/O Modules	TU582-S
Terminal Units	

^{*1} All devices may be followed by -XC