



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

19-1872371-1-PDA
30-Nov-2020
15-Jul-2024
Houston ESD - Electrical

CERTIFICATE OF Product Design Assessment

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

FACTS ENGINEERING LLC

located at

8049 PHOTONICS DRIVE, TRINITY, FL, United States, 34655

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 P2000

This Product Design Assessment (PDA) Certificate remains valid until 15/Jul/2024 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

Soheni Haque

Soheni Haque, 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)

Tier: 5 - Unit Certification Required

Product: Programmable Logic Controller

Model: P2000

Intended Service:

Marine and Offshore Application - Programmable Logic Controller and I/O Modules for Monitoring and Control Systems for ACC and ACCU Classed Vessels and Offshore and Industrial Controls.

Description:

Productivity 2000 System is a modular type system consisted of various types of module components as below listed. The system can be flexibly configured by selecting the required modules in accordance with the application.

Power Supply: P2-01AC, P2-01DCAC, and P2-01DC

Base: P2-04B, P2-07B, P2-11B, P2-15B

CPU Module PAC: P2-550

Remote Save Module: P2-RS

Discrete Input Modules: P2-8SIM, P2-08ND3, P2-16ND3, P2-08ND3-1, P2-16ND3-1, P2-32ND3-1, P2-08NE3, P2-16NE3, P2-32ND3, P2-32NE3 32, P2-08NAS, P2-16NA

Discrete Output Modules: P2-08TD1S, P2-08TD2S, P2-15TD1, P2-15TD2, P2-08TD1P, P2-08TD2P, P2-16TD1P, P2-16TD2P, P2-32TD1P, P2-32TD2P, P2-08TAS, P2-16TA, P2-08TRS, P2-16TR

Analog Input Modules: P2-04AD, P2-08AD-1, P2-08AD-2, P2-08ADL-1, P2-08ADL-2, P2-16AD-1, P2-16AD-2, P2-16ADL-1, P2-16ADL-2, P2-04AD-1, P2-04AD-2

Analog Output Modules: P2-04DA, P2-04DAL-1, P2-04DAL-2, P2-08DA-1, P2-08DA-2, P2-08DAL-1, P2-08DAL-2, P2-16DA-1, P2-16DA-2, P2-16DAL-1, P2-16DAL-2, P2-04DA-1, P2-04DA-2

Analog Input/Output Combo: P2-8AD4DA-1, P2-8AD4DA-2

Temperature Modules: P2-06RTD, P2-08THM, P2-08NTC

Serial Communications Module: P2-SCM

High-Speed Input Module: P2-HSI

High-Speed Output Module: P2-HSO

Pulse Width Modulation: P2-04PWM

High Speed Counter: P2-02HSC

Rating:

Power Supply: 100-240 VAC, 12-24VDC or 24VAC

Ambient Temperature: 0°C to 60°C

Service Restriction:

Unit Certification is required for this product. The tests in the presence of the Surveyor are required in accordance with 4-9-8/Table 2 of the Rules where it is used for control, monitoring and safety systems of propulsion machinery, propulsion boilers, vital auxiliary pumps and electrical generating plants. The performance tests are to be carried out at the assembly plant before installation onboard.

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:

- 1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- 2) This approval is for hardware only and each application of this product on an ABS classed vessel is to be reviewed for specific system requirements.
- 3) The following is applicable to the computer-based system in accordance with 4-9-3 of the Marine Vessels Rules:
 - a) The system is assigned Category II in accordance with the applicable services as indicated in 4-9-3.
 - b) The required tests and documentation for system category II are to be in accordance with 4-9-3.

Notes/Drawing/Documentation:

CE Declaration, Revision: -, Pages: 3

E139594, UL Safety Certification Report dated 13 Mar 2020, Revision: -, Pages: 199

FACTS ENGINEERING LLC

8049 PHOTONICS DRIVE

TRINITY FL

United States 34655

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Tier: 5 - Unit Certification Required

Supporting Documents

Test Report No. 14F120I dated 30 May 2014, Type Tests per Table 1 (Product Safety Engineering, Inc.)

Test Report No. 14F384I dated 02 April 2015, Type Tests per Table 1 (Product Safety Engineering, Inc.)

Test Report No. 15F192C dated 23 July 2015, Type Tests per Table 1 (Product Safety Engineering, Inc.)

Test Report No. 15F192I dated 29 July 2015, Type Tests per Table 1 (Product Safety Engineering, Inc.)

Test Report No. 15F317C dated 09 February 2016, Type Tests per Table 1 (Product Safety Engineering, Inc.)

Test Report No. 15F317I dated 09 February 2016, Type Tests per Table 1 (Product Safety Engineering, Inc.)

Test Report No. 72147312 dated 30 April 2019, Environmental Test Report (TUV America Inc.)

Test Report No. NC72147312 dated Test Report_High Voltage Test (TUV America Inc.)

Document No. 72147312-000, Test Data Sheets

Terms of Validity:

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STANDARDS

ABS Rules:

Rules for Conditions of Classification, Part 1 - 2020, 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:
2020 Marine Vessels 4-9-5/17, 4-9-6/23 & 4-9-9/1, 4-9-9/3, 4-9-9/7, 4-9-9/13

Rules for Conditions of Classification, Part 1 - 2020 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2020 Mobile Offshore Units 4-3-4/5

National:

UL 508 (2018)

UL 61010-1 (2012)

UL 61010-2-201 (2018)

International:

CSA C22.2 No. 142-M1987 (R2014)

CSA C22.2 No. 61010-1-12 (R2017)

Government:

NA

EUMED:

NA

OTHERS:

NA