



CERTIFICATE NUMBER	22-2271667-PDA
EFFECTIVE DATE	22-Aug-2022
EXPIRY DATE	21-Aug-2027
ABS TECHNICAL OFFICE	Houston ESD - Electrical

## CERTIFICATE OF

# Product Design Assessment

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

## **PRAXIS AUTOMATION TECHNOLOGY B.V.**

located at

**ZIJLDIJK 24A, , LEIDERDORP, Netherlands, 2352 AB**

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:** Automation and Controls System

**Model:** Mega-Guard / Maxi-Guard

**Endorsements:**

**Tier:** 5 - Unit Certification Required

This Product Design Assessment (PDA) Certificate remains valid until 21/Aug/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

*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)

**PRAXIS AUTOMATION TECHNOLOGY B.V.**

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**Tier: 5 - Unit Certification Required**

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**Product:** Automation and Controls System

**Model:** Mega-Guard / Maxi-Guard

**Endorsements:**

**Intended Service:**

Use on ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International Standards.

**Description:**

The Mega-Guard / Maxi-Guard Common Control Platform can be used in different Praxis Automation controller systems, e.g. main engine remote and safety control system, alarm monitoring and control system, power management system, DPS-1 & DPS-2 dynamic positioning systems on vessels with AMS, ACC & ACCU notations and offshore units.

OWS-Operator Work Station for control and graphic presentation, comprising Model 6001 including redundant network interface, TFT colour Graphic screen, Operator Keyboard, Engineering Keyboard, Keyboard/Tracker ball, Ethernet HUB/Router, Ethernet switches 8-port / 24-port , 8-Ports Ethernet Switch, 18-ports Ethernet Switch, 6010 Fieldbus Driver Board .

Panel PC 10"

Panel PC 17"

Panel PC 19"

Panel PC 22"

Panel PC 26"

DIN module Media Converter RJ45 <-> Fiber ST

Trackerball Controller

Joystick Controller

EAS-Extension Alarm System for the remote alarm indication, Comprising Local Operator Panel, 5.7" TFT Operator Panel, 3 / 8 Channel LED Panel, Watch Entrance Unit, Reset Box, Bedroom Buzzer.

**PCU/DPU**

- Process Control Units / Distributed Processing Unit for processing of inputs, outputs, alarms and control loops, comprising:

-Model 6030, 12 x Digital input, 8/12 x Digital output executed as Din rail model.

-Model 6030, 18 x Digital input, 18 x Digital output executed as Din rail model.

-Model 6032, 24 x Digital Input unit executed as Din rail model.

-Model 6032, 36 x Digital Input unit executed as Din rail model.

-Model 6034, 16 x Analog input /mixed input output executed as Din rail model.

-Model 6034, 24 x Analog input /mixed input output executed as Din rail model.

-Model 6034, Addressable fire alarm input output executed as Din rail model.

-HCS Operator Control Panel

-5.7" TFT Touch Operator Panel

-Model 6049, Control Processor executed as Din rail model with redundant network interface executed as Din rail model.

- Display Panel,

Serial Interface Converter,

Sensor Supply Module,

Alarm Panel 16 Ch.,

Window Wiper Panel,

Window Wiper I/O Module,

Navigation Lights Panel,

Nav. Lights I/O-module,

Fire Alarm Panel,

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LCD Operator Panel,  
-8-port NMEA Interface  
-DP Thruster Controller

**PCS/BMS -**

Propulsion Control System / Bridge Manoeuvring System comprising All models mentioned under PCU,  
Bridge/Control Room control Lever and Telegraph Panel,  
BMS Telegraph Panel,  
Bridge Order Printer Panel,  
Telegraph and Safety Panel,  
Governor Panel,  
Emergency Stop DIN Module,  
Electronic Drive Unit,  
Electronic Actuator,  
7" TFT Operator Panel,  
5.7" TFT Operator Panel,  
BMS Indication/Command Panel,  
BMS Command Panel,  
BMS Indication Module,  
Control Lever, Azimuth Lever.  
Joystick controller

DPS-1 & DPS-2 Dynamic Positioning System comprising All Modules under OWS & PCU,  
7" TFT Operator Panel,  
5.7" TFT Operator Panel,  
Joystick and Rate of Turn Panel,  
MRU.

PMS - Power Management System comprising all models as mentioned under PCU,  
PMS input/output Din module,  
Local Operator Panel,  
7" TFT Operator Panel,  
5.7" TFT Operator Panel,  
Display and Operating module.

BNWAS - Bridge Navigational Warning and Alarm System comprising Local Operator Panel & All models under PCU.

UPS - 230VAC/24VDC Series UPS comprising Distribution Panel, Praxis Earth Fault Detection Module, Phoenix Contact Power Supplies, UPS Input Module, UPS Distribution board.

**Rating:**

Power Supply: 230 VAC and 24 VDC

**Service Restriction:**

Unit Certification is required for this product as indicated on ABS Marine Vessels Rules (2022) 4-1-1/table 3 items 28, 29, 30, 31 & 34. Assessment is for hardware only. Each installation and individual configuration is to be specifically approved. Mega-Guard / Maxi-Guard can be categorized as either Computer Based Systems category II or III as indicated on ABS Rules for Building and Classing Marine Vessels Rules (2022) 4-9-3/ table 1. Relevant documentation must be available to ABS upon request as this is mentioned in 4-9-3/Table 2 of the ABS Rules for Building and Classing Marine Vessel Rules (2022).

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.

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### **Tier: 5 - Unit Certification Required**

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#### **Comments:**

1. The Common Control Platform (CCP) can be used in different Praxis Automation applications. When the equipment is for a specific project such as main propulsion or DP controls, a failure mode and effect analysis of the control system is specifically required. Tests and approval are for hardware and firmware only. Each configuration and external connection is to be specifically approved.
2. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
3. Test report titled "Type Approval Power Failure and Variation Test Report - 2022 - R1.00" is witnessed by an ABS Surveyor. (Task No.: T2288052)

#### **Notes/Drawing/Documentation:**

Type Approval Power Failure and Variation Test Report (07-25-2022) - R1.00

06 - Type Approval Power Failure and Variation Test Report, Test Reports (08-16-2018), Revision: 1, Pages: 06

07 - Type Approval Damp Heat Test Report, Test Reports (02-27-2019), Revision: 1, Pages: 07

08 - Type Approval Dry Heat Test Report, Test Reports (08-16-2018), Revision: 1, Pages: 08

09 - Type Approval Low Temp Test Report, Test Reports (08-16-2018), Revision: 1, Pages: 09

10 - Type Approval EMC Test Report, Test Reports (02-11-2019), Revision: 1, Pages: 10

11 - M18.001-P18.001 Praxis Automation Report, Test Reports (05-10-2018), Revision: 1, Pages: 11

12 - BICON Report PRA-20180824-X1-EMC, Test Reports (11-15-2018), Revision: 1, Pages: 12

13 - BICON Report PRA-20180824-X1-01-ANS, Test Reports (11-15-2018), Revision: 1, Pages: 13

14 - BICON Report PRA-20180824-X1-01-CSD, Test Reports (11-15-2018), Revision: 1, Pages: 14

15 - BICON Report PRA-20180824-X1-02-ANS, Test Reports (11-15-2018), Revision: 1, Pages: 15

16 - BICON Report PRA-20180824-X1-02-CSD, Test Reports (11-15-2018), Revision: 1, Pages: 16

17 - BICON Report PRA-20180824-X1-03-CSD, Test Report (11-15-2018), Revision: 1, Pages: 17

18 - BICON Report PRA-20180824-X1-04-CSD, Test Reports (11-15-2018), Revision: 1, Pages: 18

19 - BICON Report PRA-20180824-X1-05-CSD, Test Reports (11-15-2018), Revision: 1, Pages: 19

91.6.010.8003, Schematics/DIN IO-Module 24ssdo (nav.lights bulb-LED) (98.6.030.804), Revision: B, Pages: 1

91.6.010.811, Schematics/Control Processor E-series 4xLAN (98.6.049.802), Revision: C, Pages: 1

91.6.049.310, Schematics/Marine PC (98.6.001.830), Revision: K, Pages: 1

91.9.009, Schematics/HCS Operator Control Panel (93.0.990), Revision: A2, Pages: 1

91.9.012, Schematics/TFT 5.7 Touch Operator Panel (93.0.98x), Revision: A, Pages: 1

93.0.982-F01, Drawing TFT 5.7 Touch Operator Panel (93.0.98x), Revision: C, Pages: 1

93.0.982-M01, Drawing TFT 5.7 Touch Operator Panel (93.0.98x), Revision: D, Pages: 1

93.0.982-M11, Drawing TFT 5.7 Touch Operator Panel (93.0.98x), Revision: B, Pages: 1

93.0.990-F01, Drawing HCS Operator Control Panel (93.0.990), Revision: A, Pages: 1

93.0.990-M01-Model, Drawing HCS Operator Control Panel (93.0.990), Revision: A, Pages: 1

98.6.001.830, Drawing Marine PC (98.6.001.83X), Revision: B, Pages: 1

98.6.030.804-F01, Drawing DIN IO-Module 24ssdo (nav.lights bulb-LED) (98.6.030.804), Revision: A, Pages: 1

98.6.030.804-M01, Drawing DIN IO-Module 24ssdo (nav.lights bulb-LED) (98.6.030.804), Revision: A, Pages: 1

98.6.049.802-F01-Model, Drawing Control Processor E-series 4xLAN (98.6.049.802), Revision: B, Pages: 1

98.6.049.802-M01, Drawing Control Processor E-series 4xLAN (98.6.049.802), Revision: C, Pages: 10

BICON Report PRA-20210930-X1\_01 v2021102901, IACS E10 rev. 7 - EMC 6GHz test reports (11-17-2021), Revision: 1, Pages: 1

BICON Report PRA-20210930-X1\_02\_SE v2021102901, IACS E10 rev. 7 - EMC 6GHz test reports (10-28-2021), Revision: 1, Pages: 1

BICON Report PRA-20210930-X1\_03 v2021102901, IACS E10 rev. 7 - EMC 6GHz test reports (10-28-2021), Revision: 1, Pages: 1

BICON Report PRA-20210930-X1\_04 v2021102901, IACS E10 rev. 7 - EMC 6GHz test reports (11-17-2021), Revision: 1, Pages: 1

Declaration of Conformity (DoC), Declaration of Conformity (DoC), Revision: 1, Pages: 1

NI18-1100-F01, Test Setup Drawing, Revision: 1, Pages: 1

Type approval certificate products list, Overview Product list, Revision: 2, Pages: 1

Previous Documents:

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Drawing No. 91.6.010.810 - A01, THRUSTER CONTROL PROCESSOR Schematic Diagram, Revision: B, Pages: 10

Drawing No. 91.6.020.676-01, Joystick USB Controller Schematic Diagram, Revision: C, Pages: 3

Drawing No. 91.6.020.677-A01, 91.6.020.677 Schematic Diagram, Revision: F, Pages: 1

Drawing No. 91.6.040.804-A01, 4 x NMEA Input - USB Interface, Revision: B, Pages: 5

Drawing No. 91.6.040.806-A01, FDDI Converter Schematic Diagram, Revision: A, Pages: 2

Drawing No. 91.6.049.310 - A01, TFT Power Supply Schematic Diagram, Revision: D, Pages: 6

Drawing No. 98.6.022.631-M01, Joystick and operator panel Mounting and Dimensions, Revision: E, Pages: 1

Drawing No. 98.6.022.632-M01, Trackball & Keyboard Operator Panel Mounting and Dimensions, Revision: B, Pages: 1

Drawing No. 98.6.022.8xx-F01, Panel Marine PC Connection and Operation Diagram, Revision: C, Pages: 1

Drawing No. 98.6.040.804-M01, 8 Channel NMEA to USB I/O Module Mounting and Dimensions, Revision: A, Pages: 1

Drawing No. 98.6.040.806-M01, Ethernet Media Converter RJ45/Fiber ST 100Mb Mounting and Dimensions, Revision: A, Pages: 1

Drawing No. 98.6.049.801-M01, Thruster Control Module Mounting and Dimensions, Revision: B, Pages: 1

Drawing No. ABS 01-LD206404-6-PDA, CERTIFICATE DESIGN ASSESSMENT, Revision: 0, Pages: 1

Drawing No. ABS - 01-LD206404-6-PDA-DUP, CERTIFICATE OF DESIGN ASSESSMENT, Revision: 0, Pages: 1

Drawing No. ASBESTOS FREE, ASBESTOS DECLARATION, Revision: 0, Pages: 1

Drawing No. Correspondence, INCOMING EMAIL - PRAXIS - DATED 1-2-2017, Revision: 0, Pages: 1

Drawing No. ENV Test Report, Environmental Test Report, 2017-01-14 Revision: 1, Pages: 512

Drawing No. PDA REQUEST, PDA REQUEST, Revision: 0, Pages: 1

Drawing No. PI 113, MEGA-GUARD ES software release PI 113 Date 2017-01-14, Revision: -, Pages: -

Drawing No. PTD\_Mega-Guard-DP2-FMEA, DP2 FMEA, Revision: -, Pages: -

Drawing No. PTD\_Mega-Guard-PCS-BMS-FMEA, PCS-BMS FMEA, Revision: 1, Pages: -

**Terms of Validity:**

This Product Design Assessment (PDA) Certificate remains valid until 21/Aug/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).

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**STANDARDS****ABS Rules:**

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

Marine Vessel Rules (2022): 4-9-1/7.3.3, 4-9-1/7.3.5, 4-9-2/3.1.1, 4-9-2/3.1.2, 4-9-2/3.1.3, 4-9-2/3.1.4, 4-9-2/3.1.5, 4-9-2/3.5, 4-9-2/3.7, 4-9-2/7.1, 4-9-2/7.5, 4-9-2/7.7, 4-9-2/7.9, 4-9-2/7.11, 4-9-2/7.13, 4-9-3/5, 4-9-3/7, 4-9-3/11, 4-9-3/13.1, 4-9-9/1, 4-9-9/7, 4-9-9/13, 4-9-9/Table 1 and Table 2.

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

Mobile Offshore Units (2022): 4-3-4/5.

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- Facilities on Offshore Installations (2022): 1-1-4/9.7, 1-1-A2 & A3, 3-6/13.1, 3-6/13.3, 3-6/13.5, 3-6/13.7, 3-6/13.9.

**National:**

NA

**International:**

- IACS UR E10 Rev 8, (2021)

- E22 Rev 2, (2016)

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA