



CERTIFICATE NUMBER
17-LD1644980-PDA

DATE
19 Jul 2017

ABS TECHNICAL OFFICE
London Engineering Department

CERTIFICATE OF DESIGN ASSESSMENT

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

PRAXIS AUTOMATION TECHNOLOGY B.V.

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**

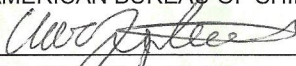
This Product Design Assessment (PDA) Certificate 17-LD1644980-PDA, dated 19/Jul/2017 remains valid until 18/Jul/2022 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING


Theodoros Chatzidakas
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 the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

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Tier: 5 - Unit Certification Required

TC

Product: Automation and Controls System

Model: Mega-Guard / Maxi-Guard

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 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, 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.

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.

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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 Steel vessels rules (2017) 4-1-1/table 3 items 28, 29, 30, 31, 34 & 35. 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 Steel Vessels (2017) 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 Steel Vessels (2017).

Comments:

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.

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

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: -

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Terms of Validity:

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STANDARDS**ABS Rules:**

- Steel Vessel Rules (2017): 1-1-4/7.7, 1-1-A3&A4, 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, 4-9-8/1, 4-9-8/3, 4-9-8/7, 4-9-8/13, 4-9-8/Table 1 and Table 2
- Steel Vessels Under 90 Meters (295 Feet) in Length (2017): 1-1-4/7.7, 1-1-A3&A4, 4-7-2/9, 4-7-2/ table 1.
- Facilities on Offshore Installations (2017): 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.
- Offshore Support Vessels (2017): 1-1-4/7.7, 1-1-A3&A4, 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, 4-9-8/1, 4-9-8/3, 4-9-8/7, 4-9-8/13, 4-9-8/Table 1 and Table 2
- Mobile Offshore Drilling Units (2017): 1-1-4/9.7, 1-1-A2&A3, 4-3-4/5.
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2017): 1-1-4/7.7, 1-1-A3&A4.
- High Speed Crafts (2017): 1-1-4/11.9, 1-1-A2&A3, 4-7-8/3, 4-7-3/5.
- Steel Barge Rules (2017): 1-1-4/7.7, 1-1-A3&A4.

National:

NA

International:

IACS UR E10, Rev.6 2014, E22 (CAT II)

Government:

NA

EUMED:

NA

OTHERS:

NA

TC