



Certificate number: 27807/C0 BV

File number: MPA0511906

Product code: 4472I

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

PRAXIS AUTOMATION TECHNOLOGY B.V.
LEIDERDORP - NETHERLANDS

for the type of product

DYNAMIC POSITIONING CONTROL UNITS
Mega-Guard DPX

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

NR659 Bureau Veritas Rules on cyber security for the classification of marine units.

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: 11 Dec 2030

For Bureau Veritas Marine & Offshore,

At BV GRONINGEN, on 11 Dec 2025,

Olaf RUITER

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: <https://www.veristarp.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=u3qdqgupfm>

BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Type **Mega-Guard DPX dynamic positioning control system:**

	Technical Data / Application Range
OWS	<ul style="list-style-type: none"> - Operator Work Station (also named 'All in one' Work Station) for Dynamic Positioning System The OWS comprises the following components: - Model 6001 Marine Personal Computer ; including redundant network interface (type 98.6.001.8xx) - TFT colour Graphic screen (type 98.6.02x.6xx) - Panel PC 10" (type 98.6.022.84x.x) - Panel PC 15.6"(type 98.6.0022.86x.x) - Panel PC 17" (type 98.6.022.87x.x) - Panel PC 19" (type 98.6.022.82x.x) - Panel PC 22" (type 98.6.022.88x.x) - Panel PC 24" (type 98.6.022.885.x) - Panel PC 26" (type 98.6.022.89x.x) - Panel PC 21.5" (type 98.6.022.884.x) - Panel PC 27" (type 98.6.022.893.x) - Operator Keyboard (type 93.6.02x.00x) - Engineering Keyboard (type 76.0.200) - Keyboard/Tracker ball (type 93.6.02x.x0x) - Trackerball Controller (type 93.6.022.632) - Joystick Controller (type 93.6.022.631) - Ethernet switches 8-port(98.6.040.802) - Ethernet switches 18-port (98.6.040.803) - DIN module media converter RJ45/Fiber ST (98.6.040.806)
PCU	<ul style="list-style-type: none"> - Process Control Units Maxi-Guard/Mega-Guard DIN Rail Model (also called DPU or SAU) for processing of inputs, outputs, alarms and control loops, consisting of: - Model 6030, 18 x Digital input / 18 x Digital output executed as Din rail model (Type 98.6.030.8xx) - Model 6032, 36 x Digital Input unit executed as Din rail model (type 98.6.032.8xx). - Model 6034, 24 x Analog input /mixed input output executed as Din rail model (type 98.6.034.8xx) - Model 6049, Control Processor executed as Din rail model with redundant network interface(type 98.6.049.8xx) - Display Panel (type 98.6.02x.6xx) - Serial Interface Converter (type 91.6.040.40x, 91.6.040.80x) - Thruster Controller Processor(type 98.6.049.801)
DP	<ul style="list-style-type: none"> Dynamic Positioning system comprising of: - All Models under OWS - All models under PCU - TFT 5.7" Touch Operator Panel (type 93.0.98x.x) - TFT 8.4" (type 98.6.02x.6xx) - Joystick and Rate Of Turn Panel (type 98.6.02x.6xx) - MRU (98.0.231.x)
UPS	<ul style="list-style-type: none"> 230VAC & 24VDC Uninterruptible Power Supply comprising of: - Praxis Earth Fault Detection Module (type 91.6.040.20x) - UPS input module (type 93.4.504/505) - UPS distribution module (type 93.4.503) - Power supply (type 76.7.13x.x) (implemented as one of following PULS CP10.241, PULS CPS20.241, PULS QS40.241, PHOENIX QUINT-PS 1AC/24DC/xx series)

2. DOCUMENTS AND DRAWINGS:

- 2.1 - Mega-Guard Product Technical Description N°PTD_Mega-Guard_Engineering_Guide, Rev. 6.01, dated 13/04/2011.
- 2.2 - FMEA Document N°PTD_Mega-Guard-FMEA, Rev. 1.4, dated 29/06/2011.
- 2.3 - Mega-Guard Software Description, Rev.001, dated 04/01/2012.
- 2.4 - Software Logic, N°LOGIC LADDER DP SOFTWARE, Rev.1.0, dated 13/02/2012.
- 2.5 - Mega-Guard Operator Guide N°PTD_Mega-Guard-DP-Manual, Rev. 1.3, dated 18/02/2011.
- 2.6 - Drawing N°NYY.XX00-F02, Rev. A, dated 01/02/2011.
- 2.7 - Drawing N°NYY.XX00-F03, Rev. B, dated 05/12/2011.
- 2.8 - Drawing N°NYY.XX00-F01, Rev. A, dated 01/02/2011.
- 2.9 - Drawing Package N° NP11-112, Rev. 1.2, dated 16/11/2011.
- 2.10 - Drawings N°N11.3021-F11, N11.3021-CO2 and Part List related to UPS.
- 2.11 - Drawing N°98.0.231.x-M01 Rev.F, dated 18/07/2024.
- 2.12- Documents filed AP 1913.

3. TEST REPORTS:

- 3.1 - Test report issued by Kema (Arnhem, Netherlands), dated 02/09/99 and referenced 93130-KRQ/EMC 99-4334b.
- 3.2 - Praxis Automation Technology environmental test report rev.1.0 dated 12/Jun./2009
- 3.3 - DARE Consultancy test report N° 09C00180RPT01 dated 07/May/2009
- 3.4 - TNO Test report N° TNO-034-DTM-2009-00269 dated 16/Feb./2009
- 3.5 - Praxis Automation Technology environmental test report rev.1.0 dated 15/Apr./2009
- 3.6 - Praxis Automation Technology environmental test report rev.1.0 dated 09/Apr./2009
- 3.7 - Praxis Automation Technology environmental test report rev.1.0 dated 14/Apr./2009
- 3.8 - Praxis Automation Technology environmental test report rev.1.0 dated 17/Jun./2009 (Part one)
- 3.9 - Praxis Automation Technology environmental test reports rev.1.0 dated 17/Jun./2009 (Part two).
- 3.10 - Praxis Automation Technology EMC test report rev.1.1 dated 27/02/2012
- 3.11 - Praxis Automation Technology environmental test reports rev.1.0 dated 30/01/2008
- 3.12 - TNO Test report N°06090102 rev.01 dated 19/07/2007
- 3.13 - TNO Test report N°2008-D-R0047 dated 01/2008
- 3.14 - Praxis Automation Technology environmental test reports rev.1.0 dated 28/01/2008
- 3.15 - Praxis Automation Technology environmental test reports dated 01/10/2003
- 3.16 - TNO Test report N°2005-CMC-R048 dated 22/08/2005
- 3.17 - TNO Test report N°06061303 rev.02 dated 20/07/2006
- 3.18 - TNO Test report N°06061303 rev.04 dated 11/10/2006
- 3.19 - Praxis Environmental Test Report dated: 28/04/2016
- 3.20 - Praxis Environmental Test Report dated: 04/12/2015
- 3.21 - BICON Test Report No. PRA-20230725-X2, dated 03/10/2023
- 3.22 - BICON Test Report No. PRA-20230725-X2-SE, dated 05/10/2023
- 3.23 - BICON Test Report No. PRA-20230725-X3-ANS, dated 16/10/2023
- 3.24 - BICON Test Report No. PRA-20230725-X3-CSD, dated 16/10/2023
- 3.25 - ista Test report N°M23.003-P23.003, dated 01/09/2023.
- 3.26 - Praxis Environmental Test Reports -2023 - R1.10.
- 3.27 - BICON Test Report No. PRA-20210930-X1_01, dated 17-11-2021.
- 3.28 - BICON Test Report No. PRA-20210930-X1_02_SE, dated 28-10-2021.
- 3.29 - BICON Test Report No. PRA-20210930-X1_03, dated 28-01-2021.
- 3.30 - BICON Test Report No. PRA-20210930-X1_04, dated 17-11-2021.
- 3.31 - BICON Test Report No. PRA-2025-0116-X1, dated 29-02-2025.
- 3.32 - ista Test report N°M24.002-P24.002, dated 13-12-2024.
- 3.33 - Praxis Environmental Damp heat Test Report - 2024-R1.20, dated 10-10-2025.
- 3.34 - Praxis Environmental Dry heat Test Report -2024 - R1.20, dated 07-10-2025.
- 3.35 - Praxis Environmental EMC Test Report -2024 - R1.30, dated 21-08-2025.
- 3.36 - Praxis Environmental Inclination Test Report -2024 - R1.10, dated 11-06-2025.
- 3.37 - Praxis Environmental Low Temperature Test Report -2024 - R1.01, dated 02-06-2025.
- 3.38 - Praxis Environmental Visual and Performance test report R1.00, dated 05-11-2024.
- 3.39 - Type Approval Power Failure and Variation Test Report - 2024 R1.00, dated 11-11-2024.

4. APPLICATION / LIMITATION:

- 4.1 - Every application (user's program and configuration) is to be submitted to the Society's Approval.
- 4.2 - Approval valid for ships intended to be granted with the following additional class notations: **DYNAPOS SAM or AM/AT, AM/AT R, AM/AT RS.**
- 4.3 - The equipment, once installed on board ship, is to be tested in accordance with the above referred Rules under the supervision of a Society's Surveyor.
- 4.4 - Only Hardware and Firmware / Software successfully tested together in compliance with the rules as referred to in cover page, according to the declaration of the manufacturer are covered by this certificate.
- 4.5 - Any modification of the hardware, firmware or software having an impact on the product performance or functionality has to be validated with type testing.
- 4.6 - The machinery protection based on data processing techniques is to be duplicated by another and different system.
- 4.7 - In accordance with IACS UR E22 and as applicable to programmable devices for computer based systems of Category 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 - For each project with additional class notation DYNAPOS, the documentation required on BV NR467, Pt F, Ch.11,Sec.5, table 1 shall be submitted for approval
- 4.9 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev 9.
- 4.10 - Equipment covered by this Type Approval Certificate has been assessed in compliance with IACS UR E27 as described in Annex

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above products are to be supplied by **Praxis Automation Technology B.V.** in compliance with the type and the requirements described in this certificate.
- 5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.
- 5.3 - BV product certificate is required.
- 5.4 - For information, **Praxis Automation Technology B.V.** has declared to Bureau Veritas the following production site(s):
ZIJLDIJK 24A 2352 AB LEIDERDORP
NETHERLANDS

6. MARKING OF PRODUCT:

- Maker's name or trade mark,
- Serial number of the units,
- Equipment type number or model identification under which it was type-tested,
- Bureau Veritas' Marks.

7. OTHERS:

- 7.1 - It is **Praxis Automation Technology B.V.**'s responsibility 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 EC Type Examination Certificate N° 27807/B0 BV, issued by the Society.

*** END OF CERTIFICATE ***



Marine & Offshore



Attestation number: 78286/A0 BV

File number: TCE07_123

Product code: RA-CYBER

This attestation is not valid when presented without the full attached schedule composed of 7 sections

REVIEW ATTESTATION

This attestation is issued to

PRAXIS AUTOMATION TECHNOLOGY B.V.
LEIDERDORP - NETHERLANDS

for

CYBERSECURITY REVIEW

Mega-Guard DPX

Requirements:

NR659 Bureau Veritas Rules on cyber security for the classification of marine units.
IACS UR E27 Rev.1 Sep 2023 Cyber resilience of on-board systems and equipment.

This document is issued to attest that BUREAU VERITAS Marine & Offshore reviewed the technical documentation submitted for the equipment identified above. Details of this review are to be found in the "Schedule of Review" in the subsequent pages of this attestation.

For Bureau Veritas Marine & Offshore,

At BV GRONINGEN, on 19 Mar 2025,

Olaf RUITER

This attestation was created electronically and is valid without signature



This attestation will not be valid if the applicant makes any changes or modifications to the product which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. This attestation is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division 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 for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgment, 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.

SCHEDULE OF REVIEW

1. PRODUCT DESCRIPTION :

Mega-Guard DPX dynamic positioning control system is described in the Type Approval Certificate 27807.

2. DOCUMENTS AND DRAWINGS :

Filename	Reference
01_NP23-147 Drawing Package_REV_C.pdf	rev. C
02_NP23-147 Equipment List.pdf	rev. 1.4
NetworkSecurityEquipment_Rev1.0.pdf	rev. 1.0
PTD_Fleet_Management_System_Rev6.04.pdf	rev. 6.04
PTD_Mega-Guard_Engineering_Guide_Rev6.33.pdf	rev. 6.33
PTD_Mega-Guard_E-Series_OWS_Rev1.39.pdf	rev. 1.39
RecoveryPlan_Rev1.2_Draft.pdf	rev. 1.2
UR-E27_DP_FAT_Protocol_Rev02 - Signed BV.pdf	rev. 02
UR-E27_DP_FAT_Protocol_Rev02.pdf	rev. 02
WI - PI - 02 - Development Guidelines_Rev12_Draft.pdf	rev.12

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS :

Test report described in 'UR-E27_DP_FAT_Protocol_Rev02 - Signed BV' dated 27/02/2025 has been witnessed by a BVN surveyor, reviewed and accepted for this attestation.

The following subjects were investigated :

B1 - Workstation Operating System

- IEC 62443-3-3/SR 2.1: Authorization enforcement
- IEC 62443-3-3/SR 2.3: Use of control for portable and mobile devices
- IEC 62443-3-3/SR 2.4: Mobile code
- IEC 62443-3-3/SR 3.2: Malicious code protection
- IEC 62443-3-3/SR 7.2: Resource Management
- IEC 62443-3-3/SR 7.7: Least Functionality

B2 - Mega-Guard Software

- IEC 62443-3-3/SR 2.8: Auditable events
- IEC 62443-3-3/SR 2.11: Timestamps
- IEC 62443-3-3/SR 4.3: Audit log accessibility
- IEC 62443-3-3/SR 1.1: Human user identification and authentication
- IEC 62443-3-3/SR 1.4: Identifier management

B3 - Mega-Guard Network

- IEC 62443-3-3/SR 7.5: Network and security configuration settings

5.2.5.3 Network Storm Test DPS1 & 5.2.5.4 Network Storm Test DPS2

- IEC 62443-3-3/SR 6.1: Denial of Service protection

5.2.6 System Failure

- IEC 62443-3-3/SR 3.3: Security functionality verification
- IEC 62443-3-3/SR 3.5: Deterministic output
- IEC 62443-3-3/SR 7.4: Emergency power

4. APPLICATION / LIMITATION :

4.1 This attestation does not constitute by itself a BV type approval certificate. This attestation is limited to a cyber resilience as per UR E27 Rev. 1 dated Sept. 2023.

4.2 This attestation is only valid attached to the valid Type Approval Certificate 27807.

4.3 This attestation has been issued based on the review of documentation provided for the Type Approval Certificate 27807/C0 BV and it is manufacturer's responsibility to inform the Society of any modification or changes which could impact the validity of this attestation.

4.4 Only Hardware and Firmware / Software successfully tested together in compliance with the Rules as referred to in page one, according to the declaration of the manufacturer are covered by this attestation.

4.5 The installation shall comply with the Manufacturer's recommendation described in the above-referenced documentation.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 For information, PRAXIS AUTOMATION TECHNOLOGY B.V., has declared to Bureau Veritas the following production sites:

**ZIJLDIJK 24A
2352 AB LEIDERDORP
NETHERLANDS**

6. MARKING OF PRODUCT :

N/A - Software.

7. OTHERS :

7.1 It is PRAXIS AUTOMATION TECHNOLOGY B.V. responsibility 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.

***** END OF ATTESTATION *****