Certificate No: LR2132002TA-02
Issue Date: 24/09/2025
Expiry Date: 23/09/2030

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	**Praxis Automation Technology B.V.**
Address	Zijldijk 24 A, Leiderdorp, 2352 AB, Netherlands
Type	Integrated Automation System
Description	See Appendix
Trade Name	G-Data, Maxi/Mega Guard Pro-Series and Maxi/Mega Guard E-Series, consisting of:
Application	Marine and Offshore application for use in environmental categories ENV 1, ENV 2, ENV 3 and ENV 4 for Model 6034 EM only as defined in Lloyd's Register Type Approval Scheme, Test Specification Number 1, 2024
Specified Standard	Manufacturer's Specification Lloyd's Register Type Approval System Test Specification Number 1, July 2024 IACS UR E27 - Cyber resilience of on-board systems and equipment, Rev.1 Sept 2023
Ratings	Nominal Power Supply at 24 V dc input DC/DC converter
Additional Tests	Low Temperature Test at - 25°C for TFT Monitor, Marine PC, Keyboard and BMS Handle Unit

Ashwinikumar Mhamal

Electrical & Control Technical Manager - Africa, Middle East & India to Lloyd's Register Marine and Offshore India LLP

Units 1702-1704, 17th Floor (Level-13), Building Q2, Aurum Q Parc; Gen 4/1 TTC, Thane-Belapur Road, Ghansoli, Navi Mumbai, 400710, India

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Other Conditions

Limits: Navigation lighting panel to be mounted that it is accessible without the need of tools. Fire detection panel to be used with type approved detector heads.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations

If the specified standards are amended during the validity of this certificate, the product is to be re- approved prior to it being supplied to vessels to which the amended standards apply.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Marine and Offshore India LLP of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: This certificate supersedes certificate number LR2132002TA issued on 30.12.2020 which is hereby cancelled.

The Design Appraisal Document TSO-25-28030-E-01 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Units 1702-1704, 17th Floor (Level-13), Building Q2, Aurum Q Parc; Gen 4/1 TTC, Thane-Belapur Road, Ghansoli, Navi Mumbai, 400710, India

Appendix

1. **OWS - Operator Work Station (also named 'All in one' Work Station) for the following typical processes:**

- Alarm/Control and Monitoring
- Pump- and Valve Control
- Duty Alarm System
- Patrol Alarm System
- Electrical Power Management
- Main Engine Control
- PID Control
- Graphic presentation of ship's data
- Dynamic Positioning

- The OWS comprises the following components:
- Model 6001 Marine Personal Computer; including redundant network interface (type 98.6.001.7xx)
- Model 6001 Marine Personal Computer; including redundant network interface (type 98.6.001.8xx)
- TFT colour Graphic screen (type 98.6.02x.6xx.x)
- 17" widescreen TFT LCD monitor (type 98.6.02x.6xx)
- 26" widescreen TFT LCD monitor (type 98.6.02x.6xx)
- 5,7" TFT Touch Operator Panel (type 93.0.98x)
- Panel PC 10"(type 98.6.022.84x.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 26"(type 98.6.022.89x.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 98.6.022.632)
- Joystick Controller (98.6.022.631)
- Ethernet HUB/Router (type 76.0.81x)
- Ethernet switch 8 ports 24VDC (type 76.0.85x)
- Ethernet switch 8 ports 24VDC (type 98.6.040.802)
- Ethernet switch 18 ports 24VDC (type 98.6.040.803)
- Ethernet switch 24 ports 24VDC (type 76.0.84x)
- 6010 Fieldbus Driver Board (type 98.6.010.7x0)
- DIN module Media converter RJ45 <-> Fiber ST
- (type 98.6.040.806)
- 8-port NMEA Interface (98.6.040.804)

2. EAS – Extension Alarm System for the remote alarm indication, consisting of:

- 5,7" TFT Touch Operator Panel (type 93.0.98x)
- Local Operator Panel (type 98.6.02x.6xx)
- Local Operator Panel (type 93.0.96x.x)
- 3 / 8 Channel LED Panel (type 93.0.31x)
- Fire Alarm Panel (type 98.6.021.60x)
- Watch Entrance Unit (type 93.0.35x, 93.0.36x and 93.0.37x)
- Reset Box (type 93.0.35x)
- Bedroom Buzzer (type 93.0.35x and 93.0.36x)

3. PCU - 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, 12 x Digital input / 8/12 x Digital output executed as Din rail model (Type 98.6.030.7xx).
- Model 6030, 18 x Digital input 18 x Digital output executed as Din rail model (Type 98.6.030.8xx)
- Model 6032, 24 x Digital Input unit executed as Din rail model (type 98.6.032.7xx).
- Model 6032, 36 x Digital Input unit executed as Din rail model (type 98.6.032.8xx).
- Model 6034, 16 x Analog input /mixed input output executed as Din rail model (type 98.6.034.7xx)
- Model 6034, 24 x Analog input executed as Din rail model (type 98.6.034.8xx)
- Model 6034, 24 x Analog mixed input/output executed as Din rail model (type 98.6.034.8xx)
- Model 6034, Addressable fire alarm input output executed as Din rail model (type 98.6.034.8.xx)
- Model 6049, Control Processor with redundant network interface executed as Din rail model (type 98.6.049.7xx).
- Model 6049, Control Processor with redundant network interface executed as Din rail model (type 98.6.049.8xx).
- Display Panel (type 98.6.02x.6xx)
- Serial Interface Converter (type 91.6.040.40x)
- Serial Interface Converter (type 98.6.040.80x)
- USB to NMEA Interface (type 98.6.040.80x)
- Sensor Supply Module (type 98.6.010.7xx)
- Alarm Panel 16 Channel (type 93.0.92x)
- Navigation Lights Panel (type 93.0.93x)
- Nav. Lights I/O-module (type 98.6.030.8xx)
- Fire Alarm Panel (type 93.0.94x)
- Window Wiper Panel (type 93.0.95x)
- Window Wiper I/O-module (type 98.6.030.8xx)
- LCD Operator Panel (type 93.0.96x.x)
- HCS Operator Control Panel (type 93.0.99x)
- DP Thruster Controller (type 98.6.049.801)
- 5,7" TFT Touch Operator Panel (type 93.0.98x)

4. BMS – Bridge Manoeuvring system (also called PCS) consisting of:

- All models mentioned under PCU
- Bridge/Control Room control Lever and Telegraph Panel (type 98.6.02x.62x)
- Emergency Stop DIN Module (type 98.6.034.7xx)
- Bridge/Engine Room Telegraph Panel (type 98.6.02x.6xx)
- Electronic Drive Unit (type 98.6.010.7xx)
- Electronic Actuator (type 98.0.3xx)
- 7" TFT Operator Panel (type 98.6.02x.6xx)
- 8" TFT Operator Panel (type 98.6.02x.6xx)
- BMS Indication Panel (type 98.6.02x.64x)
- BMS Indication Module (type 98.6.034.7xx)
- PCS Control lever (type 98.6.022.621x)
- PCS Azimuth control lever (type 98.6.022.622x)
- Control lever (type 98.6.022.623x)
- Azimuth lever (type 98.6.022.624x.x)
- Joystick Controller (98.6.022.631)

5. PMS - Power Management System consisting of:

- All models mentioned under PCU
- PMS input/output Din module (type 98.6.034.7xx)
- PMS input/output Din module (type 98.6.034.8xx)
- Local Operator Panel (type 98.6.02x.6xx)
- 7" TFT Operator Panel (type 98.6.02x.6xx)
- 8" TFT Operator Panel (type 98.6.02x.64x)
- Display and Operating module (type 98.6.02x.6xx)
- Overload trip, Reverse Power Trip, Low-/High Frequency trip, Low-/High Voltage trip, Standby Start, Synchronising, Preferential Trip, Load Sharing, Low Load Stop, Manual Start/Stop, Safety System.
- Application software version 1.x (up to 3 DG's), version 2.x (up to 5 DG's), version 3.x (up to 9 DG's)

6. ARPA Radar system comprising of:

- Model 6001 Marine Personal Computer; including redundant network interface (type 98.6.001.7xx.x)
- 19" or 23" TFT colour Graphic screen (type 98.6.02x.6xx)
- Operator Keyboard (type 93.6.02x.00x)
- Keyboard/Tracker ball (93.6.02x.x0x)

7. ECDIS system comprising of:

- Model 6001 Marine Personal Computer; including redundant network interface (type 98.6.001.7xx.x)
- 19" or 23" TFT colour Graphic screen (type 98.6.02x.6xx)
- Operator Keyboard (type 93.6.02x.00x)
- Keyboard/Tracker ball (93.6.02x.x0x)

8. Bridge Navigational Warning & Alarm System comprising of:

- Local Operator Panel (type 98.6.02x.6xx and 93.0.96x)
- 5,7" TFT Touch Operator Panel (type 93.0.98x)
- DIN IO-Module BNWAS 98.6.030.805

9. Dynamic Positioning system comprising of:
- All models under PCU
- All models under OWS
- 7” TFT Operator Panel (type 98.6.02x.6xx)
- 8” TFT Operator Panel (type 98.6.02x.6xx)
- Joystick and Rate of Turn Panel (type 98.6.02x.6xx)
- DP Thruster Controller (type 98.6.049.801)

10. AHS – Components for Anti Heeling System comprising of:
- Inclinometer (type 98.0.23x)
- All models under PCU
- All models under OWS

11. Uninterruptable Power Supply comprising of:
- 230VAC Series UPS
- 24VDC Series UPS
- UPS Input Module (93.4.504)
- UPS Distribution board (93.4.501)