



NIPPON KAIJI KYOKAI

**TYPE APPROVAL CERTIFICATE  
FOR AUTOMATIC DEVICES AND EQUIPMENT**

Certificate No. TA18120M

**This is to certify** that the undernoted product(s) has/have been approved in accordance with the requirements specified in Chapter 1, Part 7 of "Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use" and the relevant Society's Rules.

This certificate is issued to

Manufacturer:	<b>Praxis Automation Technology B. V.</b>
Place of Manufacturing:	<b>Zijldijk 24a, 2352AB Leiderdorp, The Netherlands</b>
Product description:	<b>Alarm, monitoring and control system</b>
Model:	<b>G-DATA/ MEGA-Guard / Maxi-Guard</b>

Approval No.:	<b>11A009</b>
Valid until:	<b>27 December 2021</b>

This certificate is subject to the conditions specified in the attached sheet(s).

Issued at Tokyo on 9 April 2018.



**T. Shimada**  
General Manager  
Machinery Department

Note: The manufacturer, if desired, is requested to apply to the Society for renewal prior to the expiration date.

# NIPPON KAIJI KYOKAI

Attached sheet -1/8 to the Certificate No. TA18120M

## Specification & documents:

1. Particulars: Power supply: 230V AC, 24V DC

2. Components and reference drawings:

### OWS

Operator Work Station (also named 'All in one' Work Station) Application Range 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

- To be continued -



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 wide screen 17" (type 98.6.02x.6xx)
- TFT colour Graphic wide screen 26" (type 98.6.02x.6xx)
- TFT colour Graphic screen (type 98.6.02x.6xx.x)
- 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)
- Ethernet HUB/Router (type 76.0.81x)
- Switch 24-Ports (type 76.0.84x)
- Switch 8-Ports (type 76.0.85x)
- Ethernet switch 8-port (type 98.6.040.802)
- Ethernet switch 18-port (type 98.6.040.803)
- DIN module media converter RJ45/Fiber ST (type 98.6.040.806)
- 8-port NMEA interface (type 98.6.040.80x)
- 6010 Fieldbus Driver Board (type 98.6.010.7x0)

#### EAS

Extension Alarm System for the remote alarm indication consisting of:

- Local Operator Panel (type 98.6.02x.6xx)
- 3 / 8 Channel LED Panel (type 93.0.31x)
- Watch Entrance Unit (type 93.0.359)
- Reset Box (type 93.0.351)
- Bedroom Buzzer (type 93.0.363)
- Local Operator Panel (type 93.0.96x)

- To be continued -

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 / 18x 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 6034, 16 x Analog input /mixed input output executed as Din rail model (type 98.6.034.7xx)
- Model 6049, Control Processor with redundant network interface executed as Din rail model (type 98.6.049.7xx).
- Model 6032, 36 x Digital input executed as Din rail model (type 98.6.032.8xx)
- Model 6030, 18 x Digital input / 18 x Digital output executed as Din rail model (type 98.6.030.8xx)
- Model 6034, 24 x Analog input / mixed input output executed as Din rail model (type 98.6.034.8xx)
- 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)
- Sensor Supply Module (type 98.6.010.7xx)
- Alarm Panel 16 Channel (type 93.0.92x)
- Window Wiper Panel (type 93.0.95x)
- Window Wiper I/O-module (type 98.6.030.80x)
- LCD Operator Panel (type 93.0.96x.x)
- DP Thruster Controller (type 98.6.049.801)
- 8-port NMEA interface (type 98.6.040.80x)

- To be continued -



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)
- 5,7" TFT Operator Panel (type 93.0.98x)
- 8,4" TFT Operator Panel (type 98.6.02x.64x)
- BMS Indication Panel (type 98.6.02x.6xx)
- BMS Indication Module (type 98.6.034.7xx)
- PCS Control lever (type 98.6.022.621x)
- Control lever (type 98.6.022.623x)
- Tracker ball controller (type 98.6.022.632)
- Joystick controller (type 98.6.022.631)
- PCS Azimuth control lever (type 98.6.022.622x)
- Azimuth control lever (type 98.6.022.624x)

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 98.6.034.80x)
- PMS input/output DIN module executed as Din rail model (type 98.6.034.8xx)
- Local Operator Panel (type 98.6.02x.6xx)
- 7" TFT Operator Panel (type 98.6.02x.6xx)
- 8,4" TFT Operator Panel (type 98.6.02x.64x)
- Display and Operating module (type 98.6.02x.6xx)

- To be continued -

DP

Dynamic Positioning system comprising of:

- All models under PCU/OWS
- Model 6001 Marine Personal Computer; including redundant network interface (type 98.6.001.7xx)
- TFT colour Graphic screen (type 98.6.02x.6xx)
- Operator Keyboard (type 93.6.02x.00x)
- Keyboard/Tracker ball (93.6.02x.x0x)
- 7" TFT Operator Panel (type 98.6.02x.6xx)
- 8,4" TFT Operator Panel (type 98.6.02x.64x)
- Joystick and Rate Of Turn Panel (type 98.6.02x.6xx)
- DP Thruster Controller (type 98.6.049.801)

AHS

Anti-Heeling System (AHS) comprising of:

- All models mentioned under OWS
- All modules referenced under PCU
- Inclinator (type 98.0.23x)

UPS

Uninterruptible Power Supply comprising of:

- 230VAC Series UPS
- 24VDC Series UPS
- UPS input module (type 93.4.504/505)
- UPS distribution module (type 93.4.503)

- To be continued -



## Basic software/firmware:

Device	Pro-series	E-series	Description
MPC, Panel PC	CAMMAN.EXE (rev.4.xx, 5.xx) MEGA-GUARD.EXE (rev.6.xx)	MEGA-GUARD (rev.6.xx)	Marine Personal Computer, data collection, central visualization and HMI
XP, TCP	60XX_XXX.HEX (rev.1.xx, 2.xx, 3.xx, 4.xx)	app-xxx; loader-xxx (rev2.x)	Data processing
Local Operator Panel /LCD Panel	LOP_XXX.HEX (rev. 1.xx)	app-xxx; loader-xxx (rev2.x)	Data processing, Local data visualization and local HMI
Functional keyboard	Functional keyboard (rev. 2.xx, 3.xx)	Functional keyboard (rev. 2.xx, 3.xx)	Dedicated (limited) operator keyboard
I/O Modules (DIN, DIN/DOUT, AIN, MIXED)	-	IO Module (rev. 2.x)	Data acquisition
Stand-alone Panels		PANEL (rev.1.x)	Stand-alone panels (Alarm Panel and Window Wiper) data processing and visualization

## 3. Technical Description

- Operator Guides
- MEGA-GUARD OPERATOR WORKSTATION and Extension Alarm System (File PTD\_Mega-Guard-OWS\_Rev6.9 )
- MAXI-GUARD OPERATOR WORKSTATION and Extension Alarm System (File PTD\_Maxi-Guard-OWS\_Rev6.6 )
- MEGA-GUARD PROCESS CONTROL UNIT (File PTD\_Mega-Guard-PCU\_Rev5.30)
- MAXI-GUARD PROCESS CONTROL UNIT (File PTD\_Maxi-Guard-PCU\_Rev5.30)
- MEGA-GUARD POWER MANAGEMENT SYSTEM (Files PTD\_Mega-Guard-PMS-LOP-Rev.6.46; PTD\_Mega-Guard-PMS-LED Rev.6.37 and PTD\_Mega-Guard\_E-series\_PMS\_Rev1.10.doc)
- MEGA-GUARD BRIDGE MANOUEVRING SYSTEM (File PCM\_Mega-Guard\_BMS-TFT\_MBD\_Rev3.11)
- MEGA-GUARD DYNAMIC POSITIONING SYSTEM (Files PTD\_Mega-Guard-DP0-Rev0.2, PTD\_Mega-Guard-DP1-Rev0.1 and PTD\_Mega-Guard-DP2-Rev0.2.doc)
- MEGA-GUARD WINDOW WIPER SYSTEM (File PTD-Wiper-Control-System-R1.02)
- MEGA-GUARD ALARM PANEL (File PTD-Alarm-Panel-Manned-Engine-Room-R1.04)
- Software Revision List (Software Revision List\_Rev1.229)

- To be continued -

4. Test Reports

- Test reports issued by Kema (Arnhem, Netherlands, dated 02/09/99 and referenced 93130-KRQ/EMC 99-4334b.
- TNO 2003-CMC-B01/WSS (2003-02-05)
- TNO 2003-CMC-B02/WSS (2003-03-03)
- TNO 2003-CMC-M0291/WSS (2003-12-08)
- TNO Test report N° TNO-034DTM-2009-00269 dated 16/Feb./2009
- DARE Consultancy test report N° 09C00180RPT01 dated 07/May/2009
- 1 Mega-Guard-Type Approval August 2006 Rev 1.0
- 2 Mega-Guard Type Approval 2008\_2 Rev 1.0
- 3 Mega-Guard-Type Approval 2008\_3 Rev 1.0
- 4 Mega-Guard-Type Approval 2008\_4 Rev 1.1
- 5 Mega-Guard-Type Approval 2008\_5 Rev 1.0
- Type Approval Flammability test report June 2009 Rev 1.1 signed
- Mega-Guard-Type Approval test document November 2008 all parts
- Mega-Guard-Type Approval EMC Bridge equipment all parts
- Mega-Guard-Type Approval test document February 2009 Rev 1.0
- Type Approval test document December 2009 Rev 1.3. Total
- Environmental Test Report Ship Automation System Rev. 1.2, Date: 21 January 2011
- Environmental Test Report Ship Automation System Rev.1.2, Date: 19 August 2013
- Environmental Test Report Ship Automation System Rev 1.2, Date: 4 December 2015 (for Set1)
- Environmental Test Report Ship Automation System Rev 1.2, Date: 28 April 2016 (for Set2)

- To be continued -



**Test items & approval conditions:**

## 1. Test items:

(Applied testing items are marked with X.)

ENVIRONMENTAL TESTS		Mark
External examination		X
Operation test and performance test		X
Electric power supply failure test		X
Power supply fluctuation test	Electric	X
	Pneumatic and Hydraulic	--
Insulation resistance test		X
High voltage test		X
Pressure test (Pneumatic and Hydraulic)		--
Dry heat test (Temperature 70°C × 16 hours)		X
Damp heat test		X
Vibration test (Acceleration BMS electric actuator: ±4.0g, Others ±0.7g)		X
Inclination test		X
Cold test (Temperature -25°C × 16 hours)		X
Salt mist test		--
Electrostatic discharge immunity test		X
Radiated radio frequency immunity test		X
Conducted low frequency immunity test		X
Conducted high frequency immunity test		X
Burst / Fast transient immunity test		X
Surge immunity test		X
Radiated emission test		X
Conducted emission test		X
Flame retardant test		X

## 2. Approval conditions:

The product is not allowed to be installed on open decks.