

## 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, Adressable 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)

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