



Marine Propulsion Controls

WHY HPI?

Our team has extensive experience with over 70 turbine models from more than 23 manufacturers in multiple markets: Power (Peak and Prime), Oil & Gas Processing and Transmission, Power Plant EPC. We provide open control systems based on commercially available, off-the-shelf technology, reducing life-cycle costs.

ABOUT HPI

HPI remains a technological leader in providing full service turbine solutions. HPI's range of products and services include turbine and plant control packages, mechanical inspection/overhaul services, as well as full turnkey Engineering, Procurement, and Construction (EPC) of power plants. HPI provides custom solutions to meet each specific project requirement by utilizing in-house talent experienced in project management, engineering, and design which improves overall plant reliability and safety.

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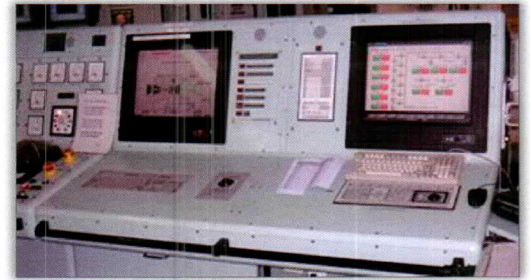
HPI's Experience in the Marine Industry

HPI retains a thorough understanding of the unique challenges created by harsh marine environments. HPI possesses an extensive and successful track record of providing shipboard control systems and maintenance services for marine rotating machinery and their auxiliary systems. The core of HPI's marine services team was formed in 2002 when Vosper Thornycroft Controls (VTC), a UK based shipbuilding company, withdrew from the US market to focus on the shipbuilding industry in the UK. This deep background in marine systems enables HPI to supply digital control systems that are designed for easy retrofit onto existing units and certified for shipboard service.



Benefits of HPI Supplied Turbine Control Systems:

- Standard off the shelf PLC or TMR solutions with inherent reliability and easy to obtain and low cost spares.
- High performance based on state of the art high-speed processors
- Improved diagnostics capabilities
- Use of field-proven algorithm and software methods
- User-friendly Human Machine Interface (HMI)
- Easy for user to modify or reconfigure controller set points and functionality
- The control system checks for dormant failures by continually monitoring field devices even when the system is not being utilized and provides a warning to the operator of the impending failure(s) so early preventive actions can be taken



HPI Shipboard Control, Alarm, & Monitoring Solutions

- Commercial, off-the-shelf technology as used in industrial control Systems
 - High 99.999% Reliability
 - Readily Available Spare Parts on a World-Wide Basis
- Common Hardware Platform across Propulsion and Steering Systems
- Elimination of Setpoint Drift and Periodic System Calibration Requirements
- Remote Control Capabilities
- Multiple Ship Interfacing
- Installed designs operating worldwide

Marine Control Application Project Note: SDTS

- Ex-USS Paul F Foster, Self Defense Test Ship
- 4 x GE LM2500 Marine Propulsion Modules
- 4 x Allison 501 Marine Generators.
- Steering Control in Manual and Automatic
- 2 x Controllable Reversible Pitch Propellers
- Integrated HPI Throttle Functionality Programming Within PLC
 - Automatic Shaft Control
 - Shaft Torque Limiting
 - Automatic Shaft Speed/Propeller Pitch Scheduling
- Multiple Control and Monitoring HMI's Distributed Throughout Ship.
- Full Remote Controlled, Unmanned Operations.