Pleiger Process Control (PPC)
for marine vessels and offshore installations

Valve Remote Control
Tank Measuring
Powerful Automation Functions
Graphical User Interface with Touch Operations
System Solutions

Pleiger provides system solutions designed to match the individual needs of different types of vessels and offshore rigs. Pleiger offers a wide range of components for valve remote control, tank measuring systems and monitoring, covering all specific requirements. Complete system solutions made by Pleiger provide easy installation to the Yards and reliability to the ship owners.
Pleiger Process Control (PPC) is a PC-based control system for operation, monitoring and automation in ship operations.

Several operator terminals are connected via Ethernet. According to application, one or more of these operator terminals can take over a PLC function. The connection of the process I/O and the connection to external systems are implemented using up to six independent Modbus RTU, or Modbus TCP interfaces.

- Standard interfaces - applicable in most marine systems
- Redundant interfaces
- Special interfaces - on demand
Hardware

rugged industrial PC – ship classified

An industrial PC (PPC-IPC-S3 and PLD7) specially adapted to ship applications provides integrated PLC and Supervisory Control And Data Acquisition (SCADA) functions.

**PPC-IPC-S3:**
- Compact design and construction – hat rail fitting for switching cabinet and in-desk installation
- Flash card memory – data memory resistant against vibrations
- Flexible standard interfaces – simple data accessibility to the peripherals
- Flexible interfaces to external systems - data exchange over standard or customer-specific adapted, data exchange protocols e.g. to the loading computer or alarm system
- Identical hardware for all stations – reduced spare parts storage and rapid aid on board
- Monitors for various installation methods (console or desktop mounting), with dimmer switch, touch screen operation

**PLD7:**
- 7-inch Touch Display
- Logic Controller PLC
- Backlight deactivation/dimming for use in wheelhouse
- Combination of a complete PLC and a touch screen operation level.
- The PLD allows autarkic control of subsystems including comfortable local operation.
Valve-/Pump Automation – Secure control, display and monitoring of the operational states of valves, pumps and further units.

Tank Measuring System – Collection and calculation of filling levels, volume calculation with trim correction, adjustable alarm limits, clear displays with all detailed information, bargraphs for the intuitive recording of the overall condition.

Bilge Automation – Automatic emptying of bilge wells, valve and pump control dependent on filling levels, avoidance of additional alarms, calmer ship operation through automatic system function.

Functions

well-proven standard functions – highest functionality

Powerful automatic system functions simplify operation and avoid operator errors. As a component part of the valve system, integrated functions reduce the number of interfaces, as well as interface problems between different manufacturers.

Source/Target Control – Partial automation of all pump processes in the ballast system, ease of operation – also through non-specialist personnel, assured monitoring and alarm of operational states: The operation is reduced to the simple selection of one source (e.g. sea), one target (e.g. tank) and the input acknowledgement. All of the actions associated with the pumping procedure, such as opening the valves, starting the pumps, monitoring the limit values, are implemented automatically.
Functions
well-proven standard functions – highest functionality

_Heeling Automation – Automatic heeling equilibrium in the loading operation, with operating range of +/-10°, input-capable alarm limits, monitoring of the tank capacities, valves, pumps, variable inclination setpoint for the optimization of the loading operation._

_Stability Test System – Assured verification of the ship’s stability – The In-Service Inclining Test System ISITS enables the rapid stipulation of the ship’s stability. In this case, the heeling of the ship is measured as reaction to a defined heeling moment with the aid of two high-precision inclinometers. The moment is generated through the transfer pumping of ballast water between the heeling tanks. In addition, the displacement of the ship is determined by a precise draught measurement. From these values, the GM stability measure is calculated. Graphic outputs of the measured values facilitate the checking of the correct progress of the measurement. For every measurement, a record can be printed or written into a PDF file._

_Ballast Water Exchange – Automated ballast water exchange for the release of operating personnel from burdensome duties and assured compliance with specifications; following the source/target control operating philosophy, the tanks are preselected and the operation released. The emptying and filling of the side tanks and the continuous replacement in the bottom tanks is implemented automatically, by signaling the respective status._

_Deflection and Flooding Detection Systems on request._
Overall System

single source effectiveness

The PPC system is adapted optimally to the Pleiger control components and extends it to a comprehensive overall system.

Highlights:

- Clear displays, intuitive operation
- Understandable and detailed system diagnostics
  - Simple fault troubleshooting: the system diagnostics, as well as aid functions, such as self-tests, offer clear indications of problem points
- Clear system structure – clear interconnections
- Coordinated system components – continuously compatible interfaces
- Continuity of all systems – from the actuator/sensor through to the control system to a homogeneous solution
- Simple system maintenance/diagnostics – detailed status and fault indications simplify operational startup, error location and maintenance
- Clear interfaces to external systems – standard protocols and detailed documentation guarantee secure function
- High performance functions – extending from the individual valve control, through to the overall automation
Tradition and Experience

More than 7,000 vessels equipped by Pleiger prove that Pleiger is the experienced and reliable partner that shipyards and ship owners can depend on, anytime and anywhere. Pleiger combines the innovative power of a German high-tech manufacturer with the down-to-earth character of a tradition-conscious family-owned company with long-term prospects and its own training and research centre. As a member of the Pleiger Group, with over 650 employees worldwide, Pleiger stands for stability and sustainable growth.