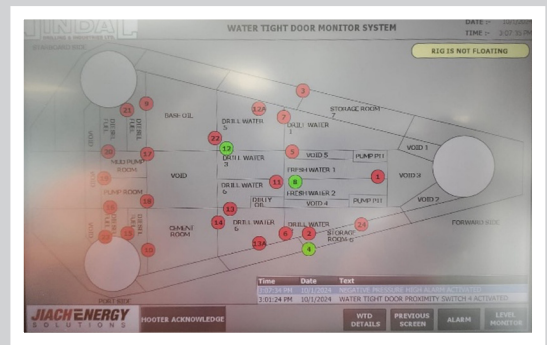
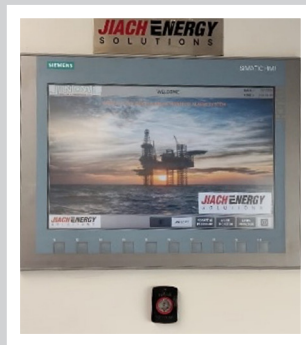


## MARINE-PRO Monitoring System

The **Jiach Energy Solution's MARINE-PRO Monitoring System**, is an advanced, high-reliability solution designed for marine vessels and offshore rigs. It provides operators with accurate, real-time data to ensure safe, efficient, and optimized operational control.



### "Key Applications"

- Ballast Control and Tank Gauging Systems
- Bulk Tank Monitoring
- Silo Tanks (Cement & Barite)
- Engine and Machinery Alarm Monitoring
- Talkback & PA/GA Systems
- Bilge Monitoring and Control
- Watertight Door Monitoring and Control
- Pre-load Tank Monitoring
- Jacking Systems
- Hull Draft and Air Gap Measurement

### System Overview

The system is engineered to meet specific user requirements, featuring **hot redundancy** for continuous and reliable operation. It enables precise control of valves and pumps while providing comprehensive monitoring of tank systems.

Operators interact with the system through an intuitive graphical interface, where parameters are displayed both visually and numerically. Integrated **audio-visual alarms** ensure immediate attention to critical events via alarm banners and dedicated alarm screens.

A built-in **Uninterruptible Power Supply (UPS)**, powered by both main and emergency sources, ensures uninterrupted operation with up to **30 minutes of battery backup**.

The system can be delivered as a complete package or integrated with existing onboard equipment such as valves, actuators, and tank sensors.

### System Details

#### General Features

The system is engineered to

- UPS protection with 30-minute autonomy
- High availability through redundant PLC architecture
- Dual dedicated process CPUs with high-speed synchronization
- Fibre optic, fault-tolerant communication between synchronization modules
- Tank gauging data integration via Modbus network links

#### Proven Hardware & Software

- Rugged 6-inch stainless steel HMI displays
- Powered by **Siemens S7-400H redundant PLC system**
- Distributed or local I/O via **Siemens ET200M**
- Comprehensive alarm and event logging
- 19-inch industrial touchscreen operator panels
- Dedicated 15-inch maintenance HMI touchscreen

#### System Integration

- Compatible with existing valves, actuators, and pumps
- Seamless integration into current control room setups
- Interoperable with third-party equipment

#### Control & Reporting Features

- Real-time graphical and numerical tank level monitoring
- Visual control of valves and pumps
- Integrated audio-visual alarm system
- Calibration and configuration via maintenance interface