

CASE STUDIES

Power Management System

Industry: Marine

Duration: 3 Week

Value: \$115,000

The Situation

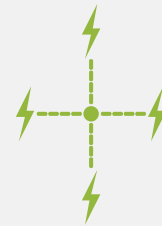
The Alma Doepel is one of Australia's oldest surviving tall ships, a 120-year-old three-masted topsail schooner currently undergoing full restoration in Melbourne's Docklands. As the last vessel of her kind, the stakes of her restoration are enormous. A critical electrical problem emerged when four independent power sources could not be synchronised. No single source could supply the entire vessel, equipment had been procured without specialist consultation, and a generator failure would leave critical sections of the ship without power and no safe fallback.

What We Delivered

- Developed full electrical schematics and obtained formal approval prior to any construction
- Engineered and built a purpose-built power management panel integrating PLC automation and HMI touchscreen control across all four sources: two generators, inverter, and shore power
- Programmed the HMI to display real-time voltage and current across all sources, giving crew immediate visibility of the vessel's complete power status
- Interlocked all four sources to their distribution boards via 4-pole contactors, preventing simultaneous energisation and backfeed
- Implemented dual-layer safety architecture using hardwired interlocks and PLC logic to eliminate fault conditions at the source
- Fully built, programmed, and commissioned the panel in our purpose-built workshop before mobilising to site and commissioning on board on time

The Result

The Alma Doepel now has a fully managed, monitored, and failsafe power distribution system supporting the safe continuation of her restoration. Crew have real-time visibility, automatic fault protection, and safe switching between inputs on demand. A technically complex problem, solved from design to delivery by a single contractor, helping keep this irreplaceable piece of Australian maritime heritage on track.



**Four Sources,
One Controlled System**



**Real-Time
HMI Monitoring**



**Dual-Layer
Safety Architecture**

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