
Energy Efficiency Solutions S.W. Cooling Pumps & Engine Room Ventilation Fans

Speed Control with Variable Frequency Drives



Today, together with safety and availability, energy efficiency ranks at the top of the marine community agenda.

Onboard a vessel, there are a lot of different kinds of pump and fan applications which are very often oversized when compared to actual needs.

This is because the design criteria are set to meet the extreme conditions the vessel may operate in. For example the assumed sea water temperature used for design sizing is generally set above normal operating conditions.

Processes that are sized for extreme conditions the vessel may be operating in, are the ones that benefit the most from installing a Variable Frequency Drive (VFD).

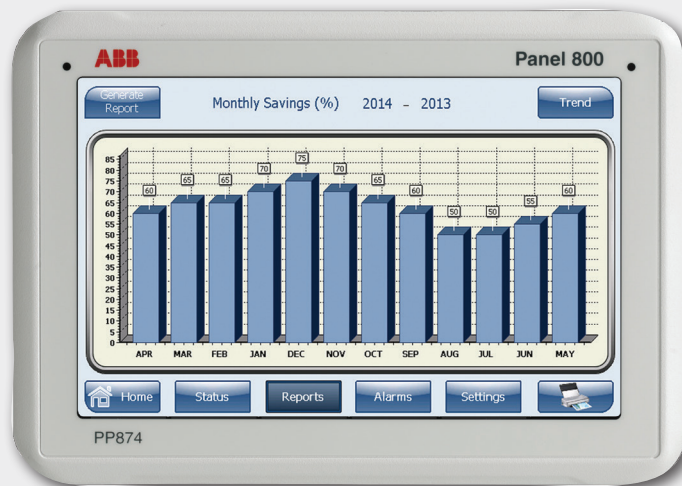
These are sea water cooling pumps and engine room ventilation fans, where savings between 40% - 80% are typical.



ABS Product Design
Assessment (PDA)



ABS Product Design Assessment (PDA)



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01 Touch panel, monthly saving analysis

Features:

- Fail Safe Function
- Forward, Reverse Fans Operation
- Soft Motor Start-Stop
- By Pass Function
- Communication with 3rd Party Systems
- Web Interface for Data Access from Office
- Energy Savings Reporting
- Alarms, Events Reporting
- 7" Multicolor Touch Panel
- Excel Data Export
- Print Screen Export
- Email Reporting
- Anti-jam (Back Flush) Function for pumps
- Motor Windings Temperature Monitoring
- Motor Bearings Temperature monitoring
- S.W. Differential Temperature Monitoring on coolers
- S.W. Differential Pressure Monitoring on coolers
- F.W. Differential Temperature Monitoring on coolers

Sea water cooling pumps

In ABB's sea water cooling pump solution, the cooling water flow to LT coolers is controlled by pump speed. Moreover, the pump motor speed is controlled by VFD based on the temperature in the LT cooling system. The pressure in the sea water pipeline is measured to monitor the flow and to protect both the pump and the cooler. Optionally, other temperature & pressure measurements can be monitored for further system improvement.

Benefits:

- Energy savings up to 80%
- Typical payback of 6-9 months
- Greenhouse gas emissions reduction
- No need for 3-way valve control
- Worldwide service support in more than 100 countries
- All components manufactured by ABB
- Superior technology with a history of more than 100 years
- One contact point for all the components services
- Mitigation of cavitation risk
- Extended reliability and extended lifetime of the system
- Marine Certified Components from all major Classification Societies
- Maintenance-friendly cabinet design
- Standardized, compact cabinet design
- ABS Product Design Assessment (PDA)

Engine room ventilation fans

In the ABB engine room ventilation fan solution, the air flow of supply, combustion and exhaust fans is controlled by motor speed. The motor speed is controlled by VFD based on the fan speed reference, a function of the engine room temperature and the pressure difference between the engine room and a reference room.

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