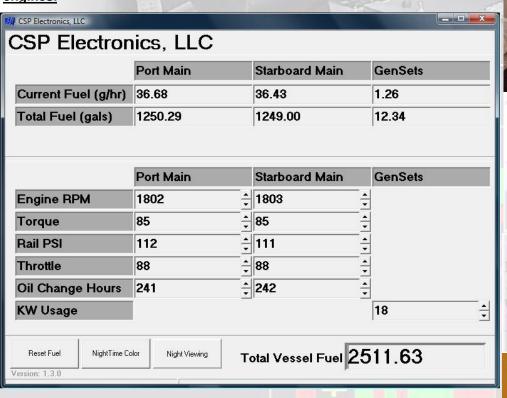


## CSP Electronics Fuel Monitor

<u>Product Description:</u> CSP's Fuel Monitor System allows the operator to maximize fuel economy and monitor fuel consumption of the vessel through digital indicators. The operation of the vessel can also be monitored by land based operations to determine trends, make fueling predictions and to determine the vessel's efficiency of operation with fuel useage indicated for each run. When the vessel starts a run, the captain can reset the fuel monitor and allow it to keep trace of total vessel fuel useage, including generator fuel useage. Fuel consumption for each engine is indicated on the display, which shows the instantaneous consumption rate, and the total consumption for each engine.

<u>System Components:</u> The basic components of the system include a fuel pressure sensor, engine speed sensor, CSP customized processor module, wiring harness, CAN communication card and PC with CSP Fuel Tracking Software installed. The system will work whether the engine has a mechanical or electronic governor.

No need for flow meters that can fail and restrict fuel flow to the engines.



<u>Communication:</u> A key to any business endeavor is proper communication. CSP's Fuel Monitor ties into your existing e-mail system to communicate vessel fuel useage to your onshore maintenance group. It also logs all the data it has monitored for later retrieval.

<u>Additional Engine Monitoring:</u> With the addition of the CSP Electronics datalink monitoring, important engine data can be displayed on the Fuel Monitoring display to allow real-time monitoring for both the captain and shore based personnel, on their personel computer or smart phones.

<u>Oil Change Timer System:</u> The CSP Oil Change Timer is based on the work the engine is doing, by measuring the fuel flow through the engine. The time is then accumulated and the resultant "Oil Change Hours" indicates the time that the lube system has been working, based on rated engine parameters, not just the engine hour meter. An alert will notify the captain and also an email can be sent to shore based personnel. The system will automatically reset when it has detected that the oil has been changed.









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