

## WHITE PAPER - WIF – Water In Fuel sensors

### What is a WIF sensor and why do I need one?

---

**WHAT** - A Water In Fuel or WIF sensor detects the presence of water in diesel fuel and gasoline typically using the difference of electric conductivity between two electrodes through water and fuel. Detection of water in fuel can prevent or at least reduce any damage water could cause to fuel injectors should water bypass the filter media. Water in the engine fuel system can cause injection system damage, hard starting, loss of power, misfiring, surging or stalling.

**WHERE** - WIF sensors are usually placed in the bottom of a fuel filter water separator. A fuel filter separator provides a space in the bottom of the separators dirty side for collection of water. The signal generated is then sent to the ECU or a dashboard indicator light, alerting the operator that the filter needs servicing.

**WHY** – Water can get carried into fuel tanks from other storage tanks and can also form in fuel from condensation, alcohol in fuel, high humidity, contaminated fuel, old fuel, periods of no activity.

**WHAT** - WIF sensors are used on most trucks, heavy equipment and other diesel engine powered devices.

WIF sensors have seen limited use in the marine environment due to special regulations. WIF sensors on marine filter separators must pass UL 1105, ABYC and US Coast Guard fuel system requirements. Within these regulations is a fire test that current WIF sensor technology will not pass. Because of these stringent tests suppliers of WIF sensors are even more hesitant to place WIF sensors in gasoline filter applications due to increased liability.

