



APPLICATION NOTE

FUEL MANAGEMENT STORAGE AND DISPENSING

The fuel distribution industry faces many challenges when it comes to storage and dispense.



Accounting for variations in fuel inventory as the liquid expands and contracts with temperature changes, resulting in volume errors.



Preventing mistakes during delivery leading to fuel being loaded into the wrong storage tanks.



Detecting water contamination of ethanol containing gasoline caused by condensation, tank leakage or from the fuel supplier.



Converting volume into mass measurement for mass based commercial transactions.



DEVIL®
SOLUTION

This innovative, patented, sensor provides a high performance, cost-effective method for in-line or in-tank density and viscosity measurement.

Thanks to its small footprint and intrinsically safe design, DEVIL® is easily integrated into a fuel delivery system during transportation and from the loading terminal to the dispense point to monitor fuel density, viscosity and temperature. With its excellent dynamic behavior and the temperature compensated density, the DEVIL® sensor is able to detect and report any changes in your products, including fuel crossover, water contamination and adulteration.

By actively monitoring fuel quality, fuel suppliers can spot changes in fuel quality sooner to protect the brand image, maintain customer loyalty and reduce financial risk.

Added value and customer benefits

- ✓High quality monitoring : continuous measurement
- ✓High response time : < 3s
- ✓Rugged design : wetted parts in 316L stainless steel
- ✓Cost effective solution
- ✓Compact design : < 10 cm



Quality Control / Volume to mass

The biggest concern in fuel supply is the adulteration. Monitoring density and viscosity prevents contamination such as water or dilution. The Devil sensor provides alert when the fuel is outside the defined specifications. Devil can be installed on refueling vehicles (figure 1). Combined with a flowmeter, Devil can deliver weight and volume of fuel for sales transaction :
 (Mass Flow = Density × Volume Flow)

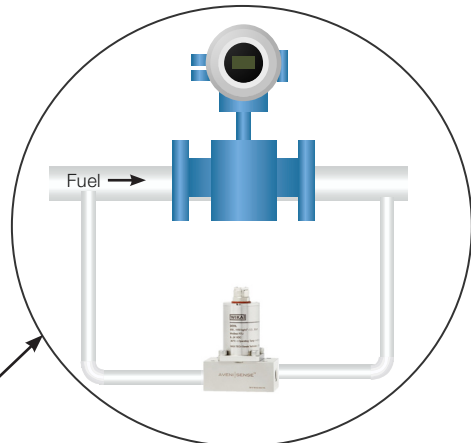


Figure 1 : Devil coupling with flow meter to deliver mass

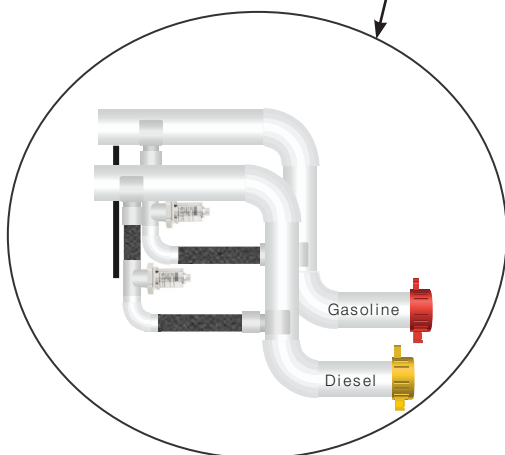
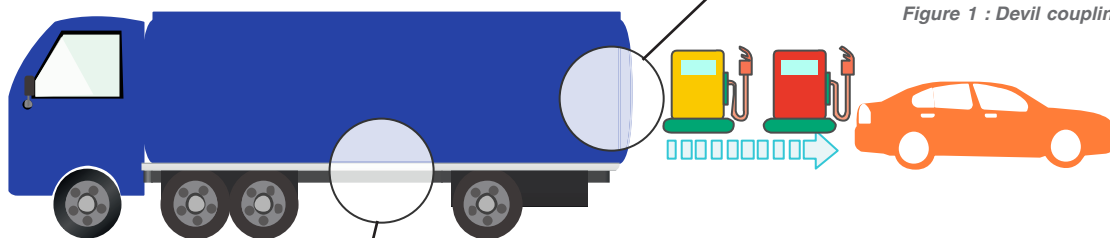


Figure 2 : DEVIL sensor installed on loading pipe for fuel identification

How to avoid misfueling with the DEVIL solution

Misfuelling is the act of putting the wrong fuel in a tank or vehicle.

Fuel identification can be easily managed by Devil density sensor. Diesel density is around 830 kg/m³ (Figure 3), compares to gasoline (720 kg/m³). Devil is preventing mistakes during delivery leading to fuel being loading into the wrong storage tanks or vehicles, and can be directly combined with pumps, valves and flow meters.

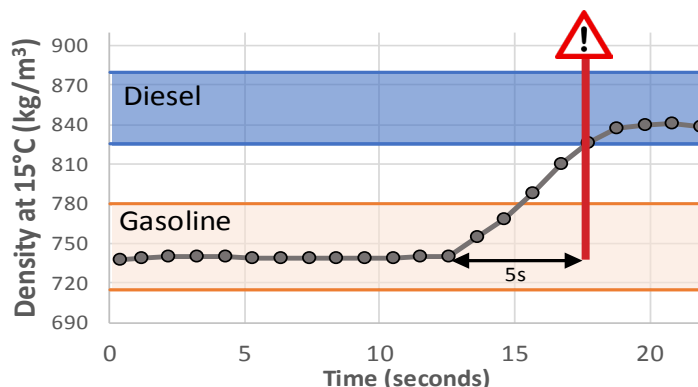


Figure 3 : Devil Gasoline monitoring to detect misfueling

Don't wait any longer to optimize your fuel sales, contact us at sales.wikatech@wika.com