



Smart Water in Fuel Sensor with Diagnostics (sWIFD)

Key Highlight

- Real-time water contamination detection with advanced diagnostics
- Automotive-grade protection with IP67 sealing and -40°C to 125°C operation
- Built-in self-test (POST) and configurable fault indication
- Electrical protection including short, reverse polarity, and overvoltage safeguards

Production Information

The Smart Water in Fuel Sensor (sWIFD) is a next-generation water contamination detection solution engineered for modern fuel systems in commercial vehicles and heavy-duty equipment. Applied for patent, this intelligent sensor provides accurate, real-time monitoring of water presence in fuel, helping prevent injector damage, corrosion, and engine failure.

Designed for 12V and 24V vehicle platforms with a wide operating supply range of 8 to 36 volts, the sensor supports both heavy commercial vehicles (HCV), light commercial vehicles (LCV), and off-highway machinery. The system features in situ self-diagnostics and Power On Self-Test (POST), ensuring continuous operational integrity.

Advanced protection mechanisms such as erosion and corrosion control, bubble-breaking probes, short-circuit protection, polarity reversal protection, and overvoltage protection make the sWIFD suitable for harsh automotive environments. Its IP67-rated enclosure ensures durability against dust and water ingress, even in extreme operating temperatures ranging from -

The sensor delivers fault alerts through configurable indication codes and open collector output, enabling seamless integration into vehicle ECUs and monitoring systems. Customization options include voltage configuration, mechanical form factor, and mating connector design. The Smart Water in Fuel Sensor series is available in multiple variants, including standard and temperature-enabled models with or without diagnostics, making it adaptable for diverse automotive and industrial applications

Technical Specifications

Function	Detects water contamination in fuel systems
Vehicle System Voltage	12V / 24V
Operating Supply Voltage	8 to 36 V
Supply Current	30 mA max @ 12V, 40 mA max @ 24V
Operating Temperature	-40°C to 125°C
Output Type	Open Collector
Fault Indication Codes	Customizable
Ingress Protection	IP67 or better
Diagnostics	In situ self-diagnostics & Power On Self-Test (POST)
Protection Features	Short circuit, polarity reversal, overvoltage protection
Recheck Duration	Configurable
Materials	Advanced water ingress resistant materials