



Accusolve Diesel Particulate Filter (DPF) Soot Sensor



The Accusolve Diesel Particulate Filter (DPF) Soot Sensor utilizes radio frequency technology to enable accurate measurement of accumulated soot in the DPF, providing real-time soot loading data and real time closed loop control of the DPF regeneration process. Accurate measurement of the soot load allows for the optimization and reduction of regeneration cycles of the DPF. This in turn allows for improved fuel economy and improved filter life for active and passive regeneration systems.

The DPF sensor assembly consists of an enclosed electronics control device, connecting coaxial cables, and transmit and receive antennas. The antennas are installed on either side of a DPF filter, and connected to the enclosed electronics by means of two high temperature coaxial cables. In conjunction with an application-specific algorithm, the DPF soot sensor measures the soot volume in a DPF filter.

Applications

- Provide closed loop control of any filter system where pollutants absorb RF energy
- On-and Off-road Diesel Particulate Filter (DPF) Soot Sensing
- Industrial heavy-duty stationary diesel DPF applications
- Marine diesel DPF
- Rail diesel DPF
- LD truck and Passenger Car diesel engines DPF

Features

- Accurately and continuously measures soot loading (g/L) within a diesel particulate filter (DPF) and through filter specific algorithms providing a (g/L) reading so the OEM can maintain closed loop control of the DPF regeneration process
- System cost reductions available due to reduced DPF size and type of materials used
- Allows multiple regeneration strategies
- Enables accurate reading of partial regeneration
- Factory calibration of the sensor via CAN prior to shipment
- The sensor electronics enclosure dimension is 100 mm x 150 mm x 30 mm.
- 4 sensor configurations available include coaxial cable lengths of 1.0 m, 1.5 m, 2.5 m and 3.0 m.

Specifications

Operating Voltage

12VDC or 24VDC

Power Consumption

Max 20W

Communication Protocol

CAN. Serial, RS-232 communication of measured data is also available as an output along with CAN messages

Operating Frequency Range

2.1 – 2.2 GHz

Accuracy

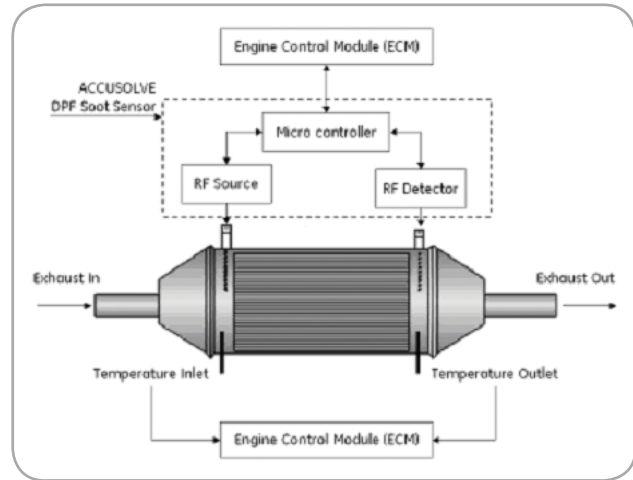
± 0.5 g/L as currently configured for DPF Soot Loading, depending on algorithm accuracy

Sensor Output

Standard J1939-71

Temperature Capability

Component	Minimum	Typical	Maximum
Soot sensor storage temperature	-50 °C	30°C	125°C
Soot sensor enclosure operating temperature	-40°C		85°C
Antenna element operating temperature	-40°C	600°C	900°C
Antenna connector operating temperature	-40°C		200°C
Coaxial cable temperature	-40°C		200°C



Typical antennae placement

Start-Up Time

10 seconds of power up

Response Time

Max 10 seconds

Connector

Tyco 6-pin Ampseal 16 style

Weight

900 grams (the sensor enclosure and coaxial cable assembly)

Connector

Ampseal 16 - various keyways available

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