Stoneridge, Inc., Control Devices Division

Particulate Matter Sensor

The Stoneridge Advantage

Stoneridge, Inc. is a publicly traded company (NYSE: SRI) which offers highly engineered sensors and controls for applications in the global transportation Industry. SRI has manufacturing operations in North America, Europe, South America, India and China. The Control Devices Division of SRI, with technical design centers located in Lexington, OH USA, Canton, MA USA and Suzhou, China, has been designing and manufacturing sensors and controls for vehicle applications for over 40 years.

Technology

The Stoneridge PM Sensor is designed for use in automotive exhaust systems to detect the presence of particulate matter. The sensor communicates with the vehicle ECU via CAN, and outputs a linearized value based on the measured resistance between two platinum sensing electrodes. The on-board software automatically regenerates the sensor and performs self-diagnostics, including checks for circuit faults and tampering.

Applications

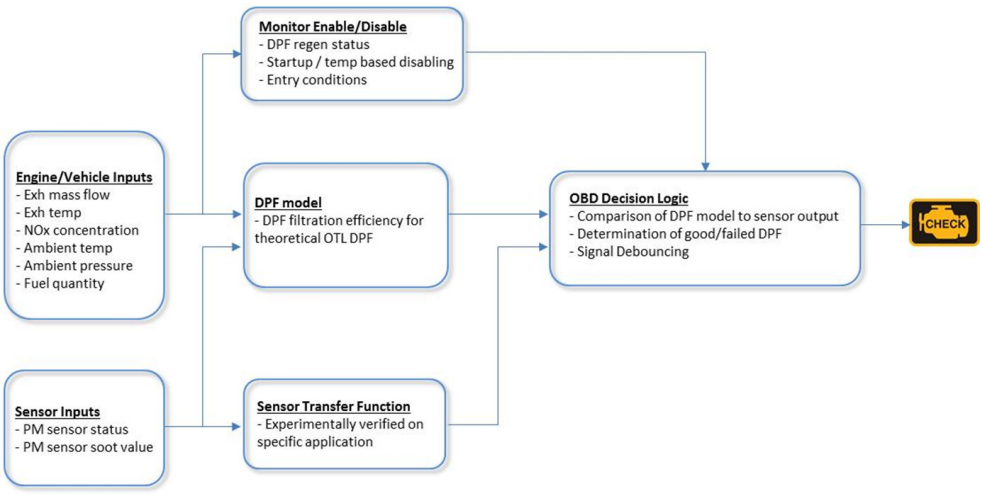
- Designed for use in both heavy and light-duty diesel automotive applications.
- Can be used in an existing DPF monitor, or as part of a Stoneridge DPF monitoring solution.

Advantages

- Single-layer alumina element for thermal shock resistance and excellent platinum adhesion.
- Laser-cut electrodes for consistent response, high sensitivity, and fast monitor completion.
- Integrated sensor-heater for efficient heating of the sensing surface during regeneration.

DPF Monitoring with the Stoneridge Sensor

The **Stoneridge DPF Monitor** is a model-based DPF diagnostic that compares the PM sensor output to a modeled sensor response for a diesel particulate filter leaking at the OBD threshold. The software is designed for integration into an existing powertrain control architecture.



Particulate Matter Sensor

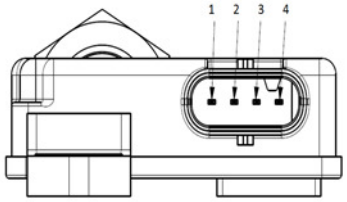
Specifications

Temperature characteristics		
Ambient	-40 C to 125 C	
Operational temperature range	Module	-40 C to 125 C
	Probe	-40 C to 850 C (excursions to 950 C)
Sensing temperature range	Module	-40 C to 125 C
	Probe	Dewpoint (~100 C) to 500 C

Physical characteristics	
Probe length	71.3 mm
Probe thread	M22 x 1.5
Internal length (protrusion into the exhaust)	25.4 mm
External length (height outside exhaust)	45.9 mm
Installation torque (nom.)	50 N-m

Voltage and current characteristics		
Undervoltage (CAN communication only)		6 to 9 VDC
Minimum operating voltage		9 VDC
Maximum operating voltage		16 VDC
Overvoltage (non-operational)		16 to 18 VDC
Jump start voltage (5 min.)		24 VDC
Reverse voltage		18 VDC
Current draw	In-rush, regeneration mode	7.5 A (peak)
	Normal operation regeneration mode	5.1 A (peak) 3.7 A (average)
	Normal operation sensing mode	< 75 mA

Connector
Tyco MCON 1.2 mm
Pin Connections
1-Ground 2-CAN low 3-CAN high 4-Power



Stoneridge *is an independent designer and manufacturer of highly engineered electrical and electronic components, modules and systems principally for the automotive, light/medium/heavy-duty truck, agricultural and off-highway vehicle markets. Our products provide engineered solutions that improve the efficiency and performance of electric and electronic systems.*

The ***Control Devices Group*** *focuses on products that sense, switch and control a specific function. Our key technologies include:*

- *Electromechanical Actuators*
- *Customer Actuated Switches*
- *Emissions Sensors*
- *Solenoid Coil Valves*
- *Powertrain Switches and Sensors*
- *Pressure Switches and Sensors*
- *Speed Sensors*
- *Temperature Sensors*
- *Position Sensors*
- *Emissions Sensors*

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