Delphi Switching Oxygen Sensors

Description

Delphi Switching Oxygen Sensors with planar element technology provide stoichiometric measurement of exhaust gases for gasoline engine and alternative fuel applications to help manufacturers meet current and future emissions standards.

Delphi Switching Oxygen Sensors include a pumped air reference feature to prevent air reference contamination. They can be used in the engine-out position and in a post-converter location for more accurate engine control and for better exhaust system diagnostics.

Delphi offers Switching Oxygen Sensors with both "breathable" and "non-breathable" membranes to suit a varietv of customer needs.

Benefits

- Fast light-off time with a low-wattage heater can help reduce system costs, help reduce cold-start emissions, and help eliminate the need for other emission devices.
- Pumped air reference prevents air reference contamination.
- Industry-leading poison-resistant coating helps improve sensor durability.
- High temperature resistance allows sensor location flexibility and consistent operation across a wide range of temperatures, including high engine temperatures. It also helps provide improved sensor reliability and durability.
- Low power consumption reduces the vehicle's electrical energy requirements.
- Robust construction resists thermal shock without cracking.
- Demonstrated production flex fuel capability.

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Typical Applications

Delphi's Switching Oxygen Sensors can be used for passenger vehicle and commercial vehicle gasoline and alternative fuel applications (including ethanol blends E0 - E100) to help vehicle manufacturers meet current and future emissions regulations. They can also be used for motorcycles and other small engine applications.

Performance Advantages

Delphi's Switching Oxygen Sensors offer cost and performance advantages versus conventional conical sensors including faster light-off time and low wattage heater. They can also help achieve lower cold-start emissions than conical sensors.

Delphi's Switching Oxygen Sensor (right) is designed for use with controllers that have a pumping current feature. Delphi also offers a sensor (left) with additional features that complement controllers without a pumping feature.

Compared to other switching sensors, Delphi's Switching Oxygen Sensors offer a pumped air reference feature and an isolated ground. They also feature industry-leading poison-resistant coatings, waterproofing, and a high-temperature internal seal to provide robust reliability versus other switching sensors.

Specifications (At 450° C engine dynamometer)

Rich voltage	≥720 mV
Lean voltage	<120 mV
Rich to lean response time	≤100 ms
Lean to rich response time	< 80 ms
Static lambda	1.005 (± 0.003)
Sensor light-off or time to activity	<10 seconds
Heater power at 13.5 V, 450° C exhaust	7.0 watts
Heater in-rush current at 21° C, 13.5 V	<1.7 amps max

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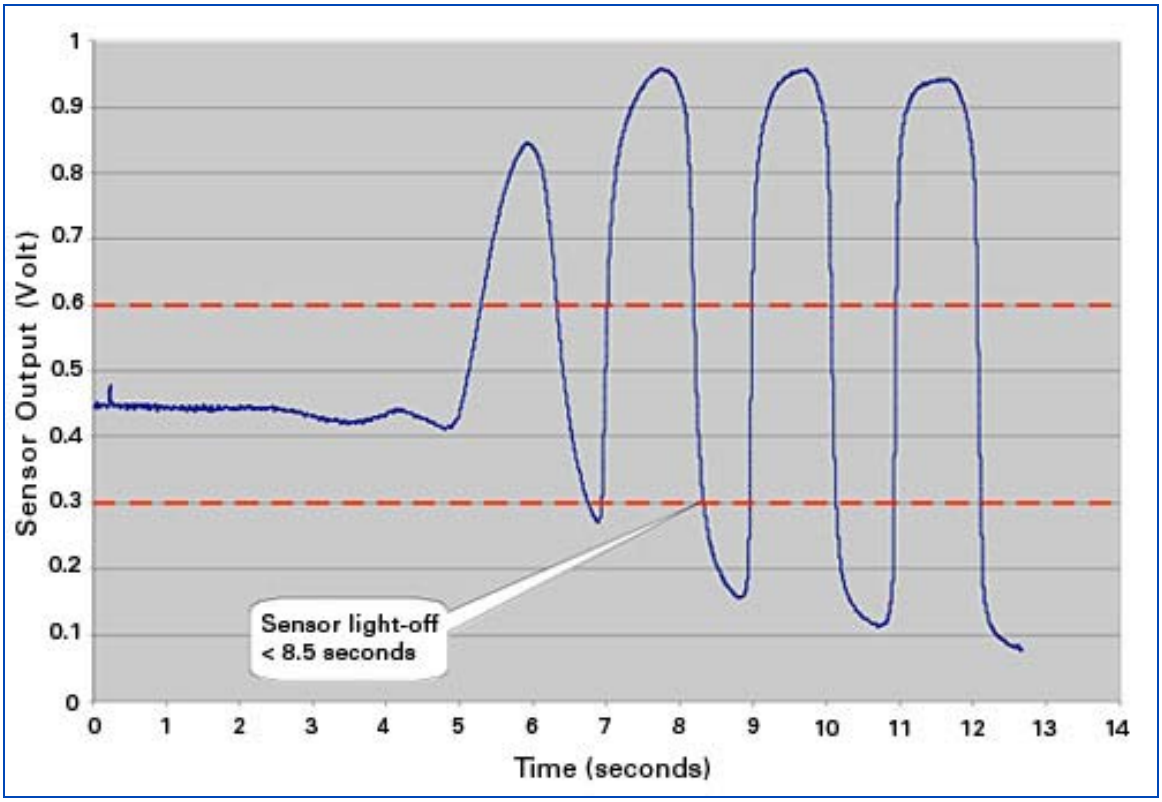

This chart shows the fast typical light-off signal of the Delphi Switching Oxygen Sensor.

The Delphi Advantage

Delphi has one of the industry's most complete portfolio of sensors and a thorough understanding of the entire engine management system. Delphi offers global manufacturing capabilities for sensors and an in-depth knowledge of regional market requirements. With more than 25 years of experience in exhaust sensors research and production, Delphi can provide products tailored to specific customer requirements.

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