

Delphi Ammonia Sensor

The Delphi Ammonia Sensor uses a unique Delphi technology to directly measure ammonia levels in the exhaust of diesel vehicles equipped with a selective catalytic reduction (SCR) aftertreatment system. The sensor output can be used to provide feedback to the SCR system helping provide optimal reduction of NO_x emissions.

In a diesel engine SCR system, the ammonia sensor is typically situated behind the SCR catalyst. The SCR system helps reduce NO_x emissions in diesel powertrain systems through a chemical reaction in which ammonia reacts with NO_x to produce nitrogen and water. Ammonia is typically introduced into the exhaust stream upstream from the SCR in the form of liquid urea. The ammonia sensor detects excess ammonia in the exhaust gas allowing for more precise dosing of urea. This added precision allows for optimal SCR system efficiency and prevents the release of excess ammonia into the atmosphere.

The Delphi Ammonia Sensor can detect ammonia within a range of 0 to 100 ppm. If the sensor detects too much ammonia, it signals the system to reduce the amount of the urea injection. The planar alumina substrate in the Delphi Ammonia Sensor combines an integral temperature sensor with a thick-film heater for optimum performance. The Delphi Ammonia Sensor provides measurement of ammonia without interference from carbon monoxide and NO_x.



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► Benefits

- Provides optimized performance of an SCR converter
- Enables the use of an optimally sized SCR converter
- Provides diagnostics for the urea solution in the solution tank (Alerts the system if the tank is empty or contains another substance)
- Helps provide SCR system diagnostics
- Enables optimal aftertreatment architecture (Eliminates requirement for a post oxidation catalyst)

► Typical Applications

The Delphi Ammonia Sensor is intended for use in vehicles equipped with an SCR converter system including light-duty, medium-duty and heavy-duty diesel vehicles to help manufacturers meet increasingly stringent NO_x emissions regulations.

► Availability

The Delphi Ammonia Sensor is currently in development and targeted for production in 2010. Engineering samples are available upon request. Contact Delphi for further information.

▶ **Performance Advantages**

The Delphi Ammonia Sensor helps the SCR converter operate at high efficiencies allowing for the most cost-effective means of meeting stringent NO_x emissions regulations. The sensor provides required diagnostic feedback for urea quality/tampering and for proper operation of the aftertreatment system.

▶ **The Delphi Advantage**

Exhaust sensors are increasingly important elements in today's engine management systems, helping to provide accurate engine control and system diagnostics. Delphi offers a wide range of exhaust sensors to help vehicle manufacturers meet current and future emission regulations.

Delphi has one of the industry's most complete portfolios 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. Delphi has more than 30 years' experience and has produced more than 275 million exhaust sensors. Delphi can provide manufacturers with the necessary support and high-quality, high-value products tailored to specific customer requirements.