

A/F Sensor Heater

As001-01

A/F Sensor Heater Monitor Description

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MONITOR SUMMARY

The ECM uses the A/F sensor information to regulate the air/fuel ratio close to a stoichiometric ratio. This maximizes the catalytic converter's ability to purify the exhaust gases. The sensor detects oxygen levels in the exhaust gas and sends this signal to the ECM.

The inner surface of the sensor element is exposed to outside air. The outer surface of the sensor element is exposed to exhaust gas. The sensor element is made of platinum coated zirconia and includes an integrated heating element. The zirconia element generates a small voltage when there is a large difference in the oxygen concentrations of the exhaust and the outside air. The platinum coating amplifies the voltage generation. When heated, the sensor becomes very efficient. If the temperature of the exhaust is low, the sensor will not generate useful voltage signals without supplemental heating. The ECM regulates the supplemental heating using a duty-cycle approach to regulate the average current in the heater element. If the heater current is out of the normal range, the sensor's output signals will be inaccurate and the ECM cannot regulate the A/F ratio properly. When the heater current is out of the normal operating range, the ECM interprets this as a malfunction and sets a DTC.

RELATED DTC

Previous code:

Related DTCs	P1135 (Bank1)	Heater circuit is open/shorted (Heater current is low/high)
	P1155 (Bank 2)	

Extended code (2003 MY 1MZ-FE [Avalon, Highlander, RX300, Sienna, Solara], 2RZ-FE and 3RZ-FE):

Related DTCs	P0135 (Bank1)	Heater circuit is open/shorted (Heater current is low/high)
	P0155 (Bank 2)	

Extended code (2003 MY 2AZ-FE [Camry, Solara], 1MZ-FE [Camry and ES300]):

Related DTCs	P0031 (Bank 1)	Heater current is low
	P0051 (Bank 2)	
	P0032 (Bank 1)	Heater circuit is high
	P0052 (Bank 2)	

MODEL YEAR CHART

Model Year	See Page
Camry CNG	As-6
1997 to 1999	As-7
2000	As-8
2001	As-9
2002	As-10
2003 and 2004	As-11