AIR FUEL RATIO (A/F) SENSOR [SKYACTIV-G 2.0, SKYACTIV-G 2.5]
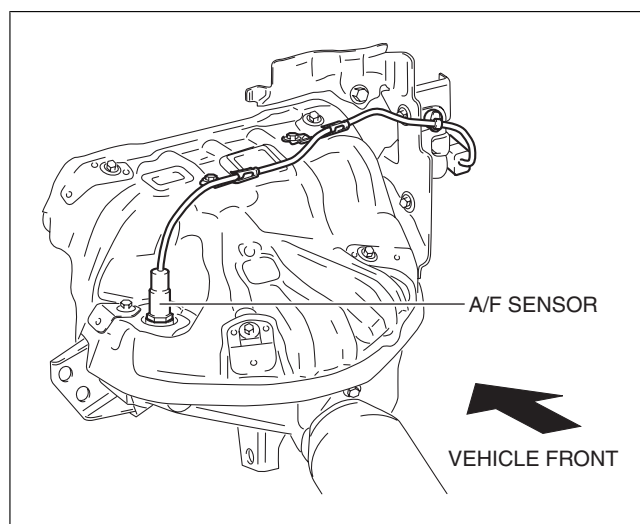
Purpose/Function
- Detects the oxygen concentration (all-range air/fuel ratio) in the exhaust gas as basic information for mainly determining the fuel injection amount.
- Detects the oxygen concentration (all-range air/fuel ratio) in the exhaust gas and sends it to the PCM as an oxygen concentration (all-range air/fuel ratio) signal.
- Because the A/F sensor has an output characteristics proportional to the actual air/fuel ratio, a detailed air/fuel ratio can be detected compared to using the HO2S which detects the rich/lean of the oxygen concentration in relation to the theoretical air/fuel ratio.
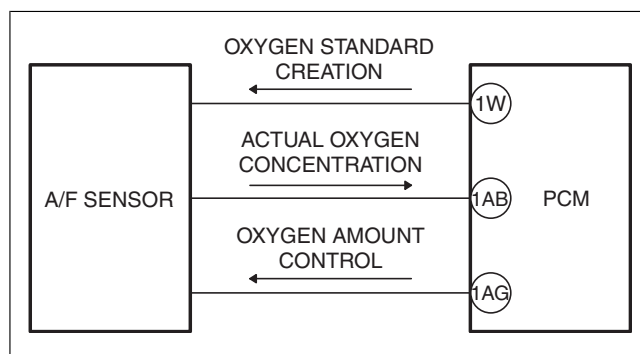
Construction
- Installed to the exhaust manifold.
- A zirconia element has been adopted as the detecting element for detecting the oxygen concentration (all-range air/fuel ratio).
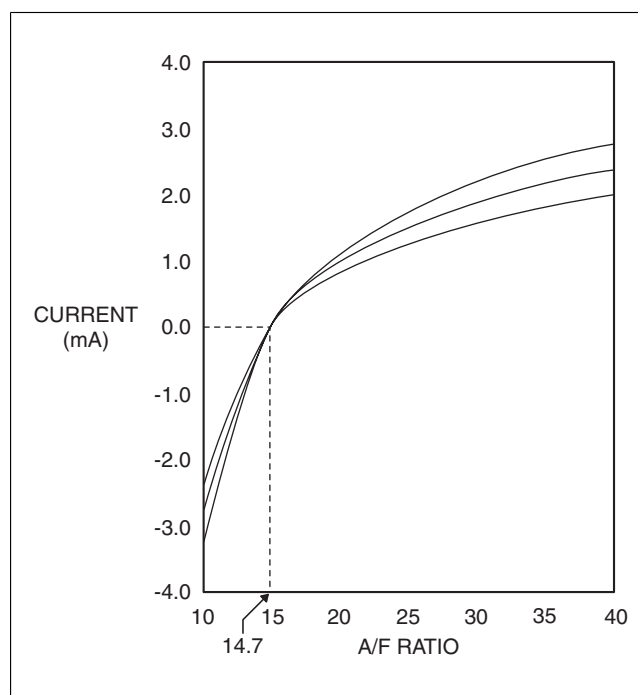

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Operation
- The A/F sensor has an oxygen standard chamber which is always kept at 100% of oxygen concentration and an oxygen concentration detection chamber where the oxygen concentration in the exhaust gas is detected.
- A zirconia element has the characteristic of moving oxygen when electrical current flows. The oxygen standard chamber is kept at 100% oxygen concentration using this characteristic, and by comparing it with the oxygen concentration inside the oxygen concentration detection chamber, the oxygen concentration in the exhaust gas can be detected.

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A/F sensor characteristic

am3uun00001717

Fail-safe

DTC No.	Fail-safe function
P0031:00	• Stops fuel feedback control
P0032:00	• Stops fuel feedback control
P0130:00	• Fixes duty value of A/F sensor heater • Stops fuel feedback control of A/F sensor
P0131:00	• Fixes duty value of A/F sensor heater • Stops fuel feedback control of A/F sensor
P0132:00	• Fixes duty value of A/F sensor heater • Stops fuel feedback control of A/F sensor
P0134:00	• Fixes duty value of A/F sensor heater • Stops fuel feedback control of A/F sensor
P2237:00	• Fixes duty value of A/F sensor heater • Stops fuel feedback control of A/F sensor
P2251:00	• Fixes duty value of A/F sensor heater • Stops fuel feedback control of A/F sensor