DTC	P0405/96	EXHAUST GAS RECIRCULATION SENSOR ”A” CIRCUIT LOW

DTC	P0406/96	EXHAUST GAS RECIRCULATION SENSOR ”A” CIRCUIT HIGH

CIRCUIT DESCRIPTION

The EGR valve position sensor is mounted on the EGR valve and used for detecting the lift amount of the valve. The lift amount detected by the sensor is provided to the ECM as feedback, the ECM then regulates the lift amount of the valve in accordance with engine running condition.

DTC No.	DTC Detection Condition	Trouble Area
P0405/96	EGR valve position sensor output voltage is less than 0.1 V for more than 0.5 seconds (1 trip detection logic)	• Open or short in EGR valve position sensor circuit • EGR valve position sensor • ECM
P0406/96	EGR valve position sensor output voltage is more than 4.9 V for more than 0.5 seconds (1 trip detection logic)	• Open or short in EGR valve position sensor circuit • EGR valve position sensor • ECM

HINT:

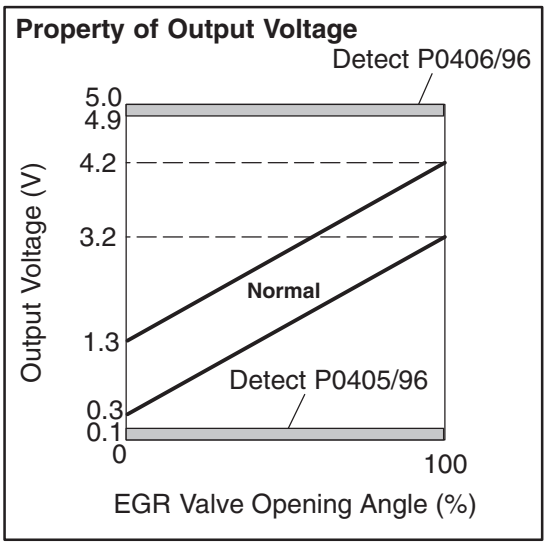
After confirming DTCs P0405/96 and P0406/96, check the EGR valve opening angle condition.

Result	Condition
Changes between 2.1 V and 4.0 V	Normal
Less than 0.1 V	P0405 (Low input voltage)
More than 4.9 V	P0406 (High input voltage)

HINT:

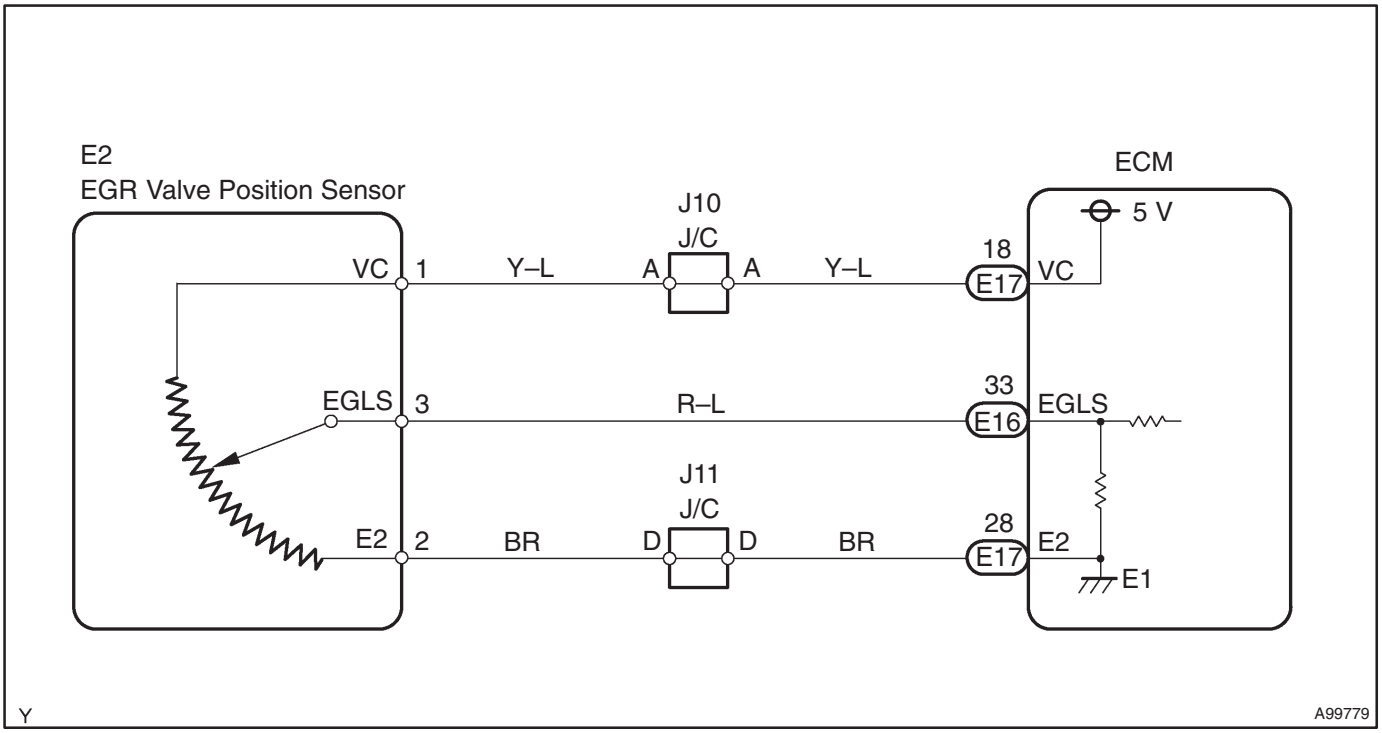
The result values are for when the ignition switch is ON (engine is stopped), or when a fully warmed up engine is idling.

MONITOR DESCRIPTION



When output voltage of the EGR valve position sensor deviates from the normal operating range (between 0.1 V and 4.9 V) for more than 0.5 seconds, the ECM interprets this as malfunction of the sensor circuit, and illuminates the MIL.

WIRING DIAGRAM

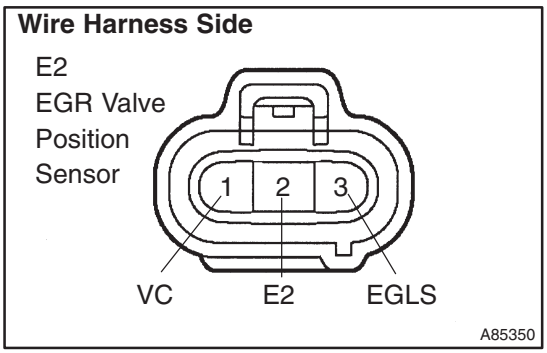


INSPECTION PROCEDURE

HINT:

Read freeze frame data using the intelligent tester II. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, and other data from the time the malfunction occurred.

1	CHECK EGR VALVE POSITION SENSOR (SENSOR VOLTAGE)



(a) Disconnect the E2 EGR valve position sensor connector.

(b) Measure the voltage of the wire harness side connector.

Standard:

Tester Connection	Specified Condition
E2–1 (VC) – E2–2 (E2)	4.5 to 5.5 V

NG → **Go to step 3**

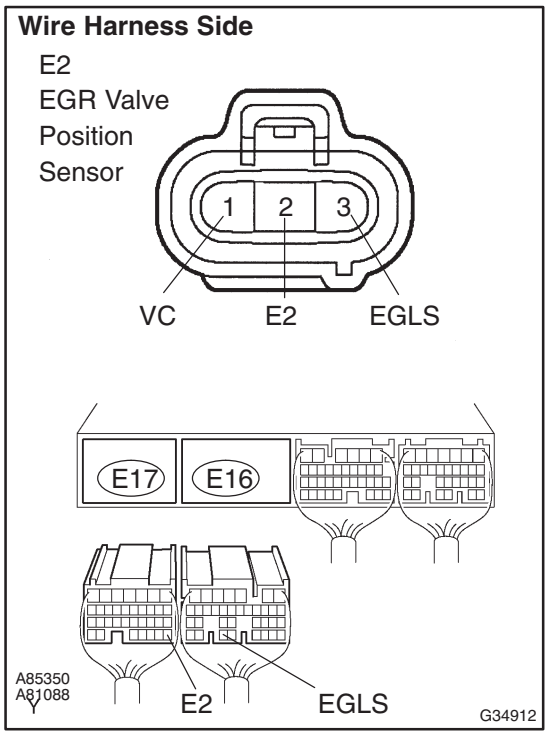
OK

2	INSPECT EGR VALVE POSITION SENSOR (RESISTANCE) (See page 12–20)

NG → **REPLACE EGR VALVE POSITION SENSOR (See page 10–20)**

OK

3 CHECK WIRE HARNESS (EGR VALVE POSITION SENSOR – ECM)



(a) Disconnect the E2 sensor connector.
(b) Disconnect the E16 and E17 ECM connectors.
(c) Measure the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
E2–3 (EGLS) – E16–33 (EGLS)	Below 1 Ω
E2–2 (E2) – E17–28 (E2)	Below 1 Ω
E2–3 (EGLS) or E16–33 (EGLS) – Body ground	10 kΩ or higher
E2–2 (E2) or E17–28 (E2) – Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE ECM (See Pub. No. RM990E, page 10–34)

NOTICE:
After replacing the ECM, allow for ECM learning start the engine and idle it until it is fully warmed up.