DI20K-03

DTC

P0110

Intake Air Temp. Circuit Malfunction

CIRCUIT DESCRIPTION



The intake air temperature sensor is built into the mass air flow meter and senses the intake air temperature.

A thermistor built in the sensor changes the resistance value according to the intake air temperature.

The lower the intake air temperature, the greater the thermistor resistance value, and the higher the intake air temperature, the lower the thermistor resistance value (See Fig. 1).

The intake air temperature sensor is connected to the ECM (See below). The 5 V power source voltage in the ECM is applied to the intake air temperature sensor from terminal THA via resistor R.

That is, resistor R and the intake air temperature sensor are connected in series. When the resistance value of the intake air temp. sensor changes in accordance with changes in the intake air temperature, the potential at terminal THA also changes. Based on this signal, the ECM increases the fuel injection volume to improve driveability during cold engine operation.

DTC No.	DTC Detecting Condition	Trouble Area
P0110	Open or short in intake air temp. sensor circuit	 Open or short in intake air temp. sensor circuit Intake air temp. sensor (built into mass air flow meter) ECM

HINT:

After confirming DTC P0110, use the OBD II scan tool or LEXUS hand-held tester to confirm the intake air temperature from the CURRENT DATA.

Temperature Displayed	Malfunction
-40°C (-40°F)	Open circuit
140°C (284°F) or more	Short circuit

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- If DTCs P0110, P0115, P0120, P0450 and P1120 are output simultaneously, E2 (sensor ground) may be open.
- Read freeze frame data using LEXUS hand-held tester or OBD II scan tool. Because freeze frame
 records the engine conditions when the malfunction is detected. When troubleshooting, it is useful for
 determining whether the vehicle was running or stopped, the engine was warmed up or not, the air-fuel
 ratio was lean or rich, etc. at the time of the malfunction.

1 Connect OBD II scan tool or LEXUS hand-held tester, and read value of intake air temperature.

PREPARATION:

- (a) Connect the OBD II scan tool or LEXUS hand-held tester to the DLC3.
- (b) Turn the ignition switch ON and push the OBD II scan tool or LEXUS hand-held tester main switch ON.

CHECK:

Read the temperature value on the OBD II scan tool or LEXUS hand-held tester.

<u> 0K:</u>

Same as actual intake air temperature.

HINT:

- If there is open circuit, OBD II scan tool or LEXUS hand-held tester indicates -40°C (-40°F).
- If there is short circuit, OBD II scan tool or LEXUS hand-held tester indicates 140°C (284°F) or more.



-40°C (-40°F) ... Go to step 2. 140°C (284°F) or more ... Go to step 4.

OK

Check for intermittent problems (See page DI-164).

²⁰⁰⁰ LEXUS SC300/SC400 (RM715U)



DI-194

