

DTC P0130 Heated Oxygen Sensor Circuit Malfunction (Bank 1 Sensor 1)

CIRCUIT DESCRIPTION

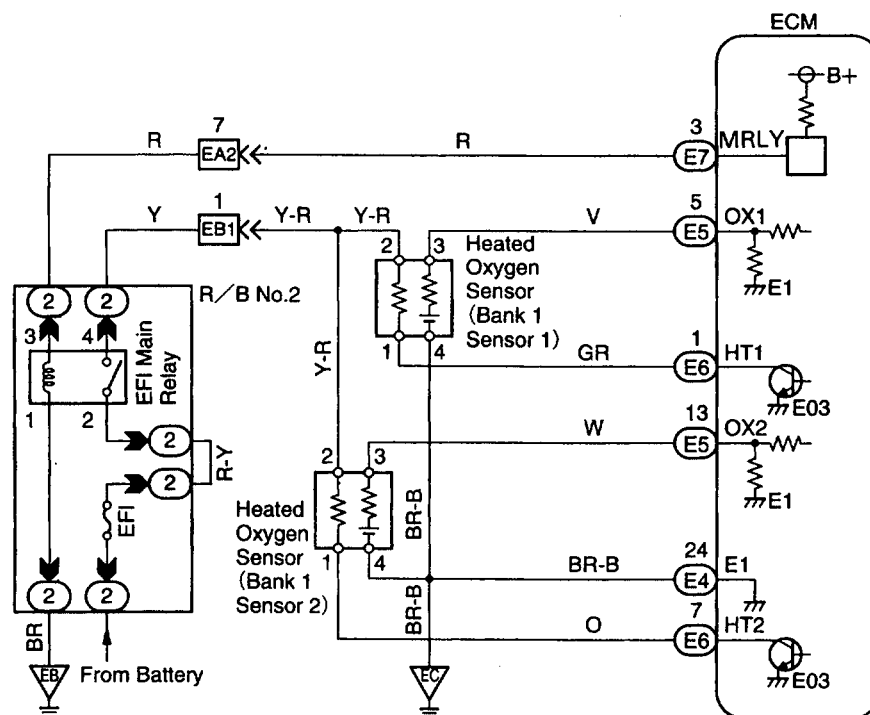
Refer to "Insufficient Coolant Temp. for Closed Loop Fuel Control" on page [EG-263](#).

DTC No.	Diagnostic Trouble Code Detecting Condition	Trouble Area
P0130	Voltage output of heated oxygen sensor remains at 0.4 V or more, or 0.55 V or less, during idling after the engine is warmed up (2 trip detection logic)	- Heated oxygen sensor - Fuel trim malfunction

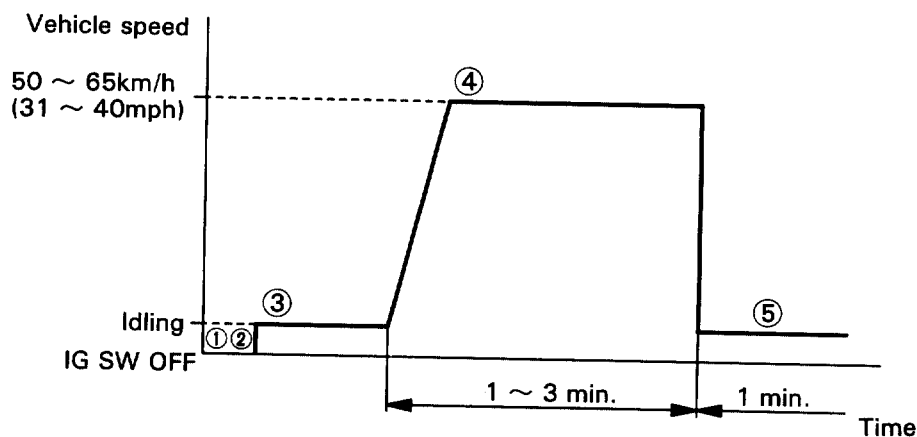
HINT: Sensor 1 refers to the sensor closer to the engine body.

The heated oxygen sensor's output voltage and the short-term fuel trim value can be read using the OBDII scan tool or TOYOTA hand-held tester.

WIRING DIAGRAM



CONFIRMATION DRIVING PATTERN



- (1) Connect the TOYOTA hand-held tester to the DLC 3.
- (2) Switch the TOYOTA hand-held tester from normal mode to check mode (See page [EG-219](#)).
- (3) Start the engine and warm it up with all accessory switches OFF.
- (4) Drive the vehicle at 50 ~ 65 km/h (31 ~ 40 mph) for 1 ~ 3 minutes to warm up the heated oxygen sensor.
- (5) Let the engine idle for 1 minute.

HINT: If a malfunction exists, the MIL will light up during step (5).

NOTICE: If the conditions in this test are not strictly followed, detection of the malfunction will not be possible.
If you do not have a TOYOTA hand-held tester, turn the ignition switch OFF after performing steps (3) to (5), then perform steps (3) to (5) again.

INSPECTION PROCEDURE

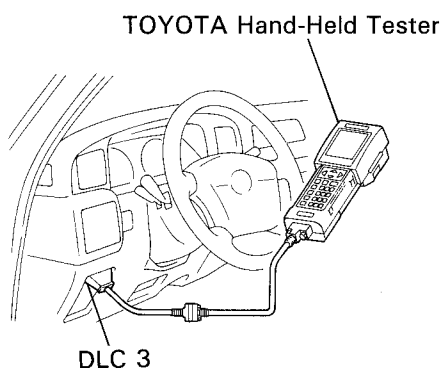
- 1** Check for open and short in harness and connector between ECM and heated oxygen sensor (See page [IN-26](#)).

OK

NG

Repair or replace harness or connector.

- 2** Check for heated oxygen sensor.



- P**
- (1) Remove the fuse cover on the instrument panel.
 - (2) Connect the OBDII scan tool or TOYOTA hand-held tester to the DLC3.
 - (3) Warm up engine to normal operating temperature.

- C** Read the heated oxygen sensor output voltage and short-term fuel trim.

Result

Pattern	Heated oxygen sensor output voltage	Short-term fuel trim
①	Lean condition (Changes at 0.55 V or less)	Changes at about +20%
②	Rich condition (Changes at 0.4 V or more)	Changes at about -20%
③	Except ① and ②	

P22892

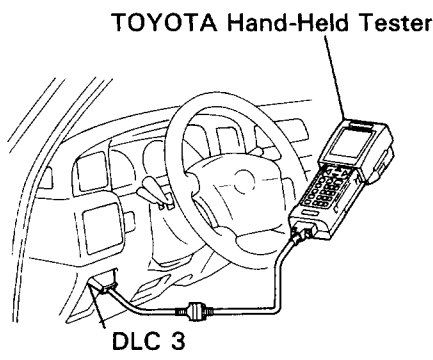
③

①, ②

Check fuel trim system.
(See page [EG-273](#))

3

Check the output voltage of heated oxygen sensor during idling.



P22892

- P** Warm up the heated oxygen sensor with the engine at 2,500 rpm for approx. 90 sec.
- C** Use the OBDII scan tool or TOYOTA hand-held tester read the output voltage of the heated oxygen sensor during idling.
- OK** Heated oxygen sensor output voltage:
Alternates repeatedly between less than 0.4 V and more than 0.55 V (See the following table).

	OK	NG	NG	NG
1 V —				
0.55 V - - -				
0.4 V - - -				
0 V —				

P18349

NG

OK

Perform confirmation driving pattern.
(See page [EG-266](#))

Replace heated oxygen sensor.