

<b>DTC</b>	<b>P1200</b>	<b>Fuel Pump Relay/ECU Circuit Malfunction</b>
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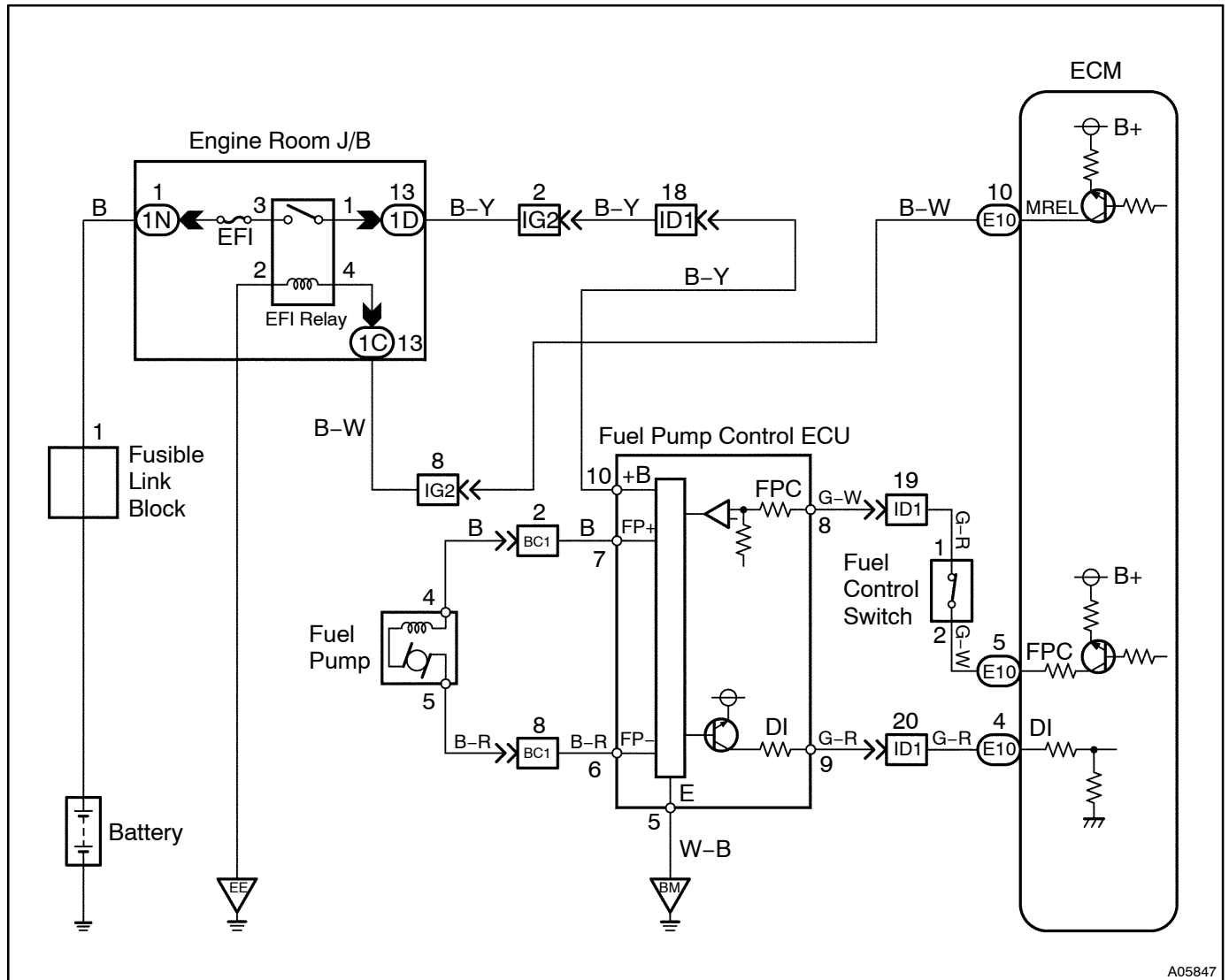
## CIRCUIT DESCRIPTION

The fuel pump speed is controlled at 3 steps (high speed, medium speed, low speed) by the condition of the engine (starting, idling, light load, heavy load), when the engine starts (STA ON) or heavy loads with engine high speed, the ECM sends a Hi signal (about 3.8 V) to the fuel pump ECU (FPC terminal). The fuel pump ECU then outputs Hi voltage (battery positive voltage) to the fuel pump so that the fuel pump operates at high speed. When the heavy loads with engine low speed, the ECM sends a Mid signal (about 2.5 V) to the fuel pump ECU (FPC terminal). The fuel pump ECU then outputs Mid voltage (about 10 V) to the fuel pump so that the fuel pump operates at medium speed.

When the idling or light loads, the ECM sends a Low signal (about 1.3 V) to the fuel pump ECU (FPC terminal). The fuel pump ECU then outputs Low voltage (about 8.5 V) to the fuel pump so that the fuel pump operates at low speed.

DTC No.	DTC Detecting Condition	Trouble Area
P1200	Open or short in fuel pump circuit for 1 sec. or more with engine speed 1,000 rpm or less (2 trip detection logic)	<ul style="list-style-type: none"> <li>• Open or short in fuel pump ECU circuit</li> <li>• Fuel pump ECU</li> <li>• ECM power source circuit</li> <li>• Fuel pump</li> <li>• ECM</li> </ul>
	Open in input circuit of fuel pump ECU (FPC) with engine speed 1,000 rpm or less (2 trip detection logic)	
	Open or short in diagnostic signal line (DI) of fuel pump ECU with engine speed 1,000 rpm or less (2 trip detection logic)	

## WIRING DIAGRAM



A05847

## INSPECTION PROCEDURE

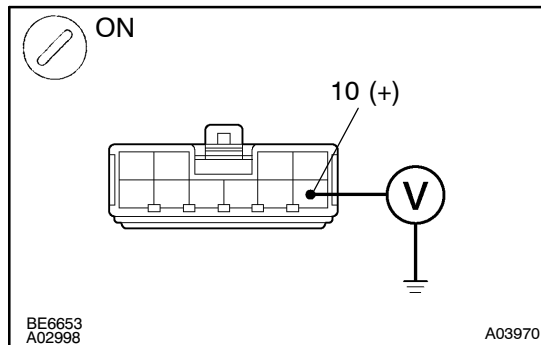
### HINT:

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 warmed up or not, the air-fuel ratio lean or rich, etc. at the time of the malfunction.

1	<b>Check operation of fuel pump (See page SF-7).</b>
OK	<b>Go to step 7.</b>

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## 2 Check voltage of fuel pump ECU power source.



### PREPARATION:

- Remove the LH quarter trim (See page [SF-59](#)).
- Disconnect the fuel pump ECU connector.
- Turn the ignition switch ON.

### CHECK:

Measure voltage between terminal 10 of the fuel pump ECU connector and body ground.

### OK:

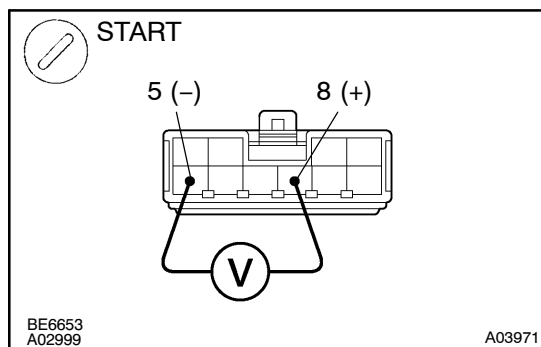
**Voltage: 9 ~ 14 V**

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Check for open and short in harness and connector between EFI main relay and fuel pump ECU (See page [IN-33](#)).

OK

## 3 Check voltage between terminals 5 and 8 of fuel pump ECU connector.



### PREPARATION:

- Remove the LH quarter trim (See page [SF-59](#)).
- Disconnect the fuel pump ECU connector.

### CHECK:

Measure voltage between terminals 5 and 8 of the fuel pump ECU connector when the ignition switch is turned to START.

### OK:

**Voltage: 3.3 ~ 4.3 V**

OK

Go to step 5.

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- |   |   |
|---|---|
| 4 | Check for open and short in harness and connector between terminal FPC of ECM and terminal 8 of fuel pump ECU, and terminal 5 of fuel pump ECU and body ground (See page <a href="#">IN-33</a> ). |
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Repair or replace harness or connector.

OK

Check and replace ECM (See page [IN-33](#)).

- |   |   |
|---|---|
| 5 | Check fuel pump (See page <a href="#">SF-7</a> ). |
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Repair or replace fuel pump.

OK

- |   |   |
|---|---|
| 6 | Check for open and short in harness and connector between terminal 7 of fuel pump ECU and fuel pump, and terminal 6 of fuel pump ECU and fuel pump (See page <a href="#">IN-33</a> ). |
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Repair or replace harness or connector.

OK

Replace fuel pump.

7	Check for open and short in harness and connector between terminal DI of ECM and terminal 9 of fuel pump ECU (See page <a href="#">IN-33</a> ).
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Repair or replace harness or connector.

OK

Check and replace ECM (See page [IN-33](#)).