

Fuel Pump Control Circuit

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.

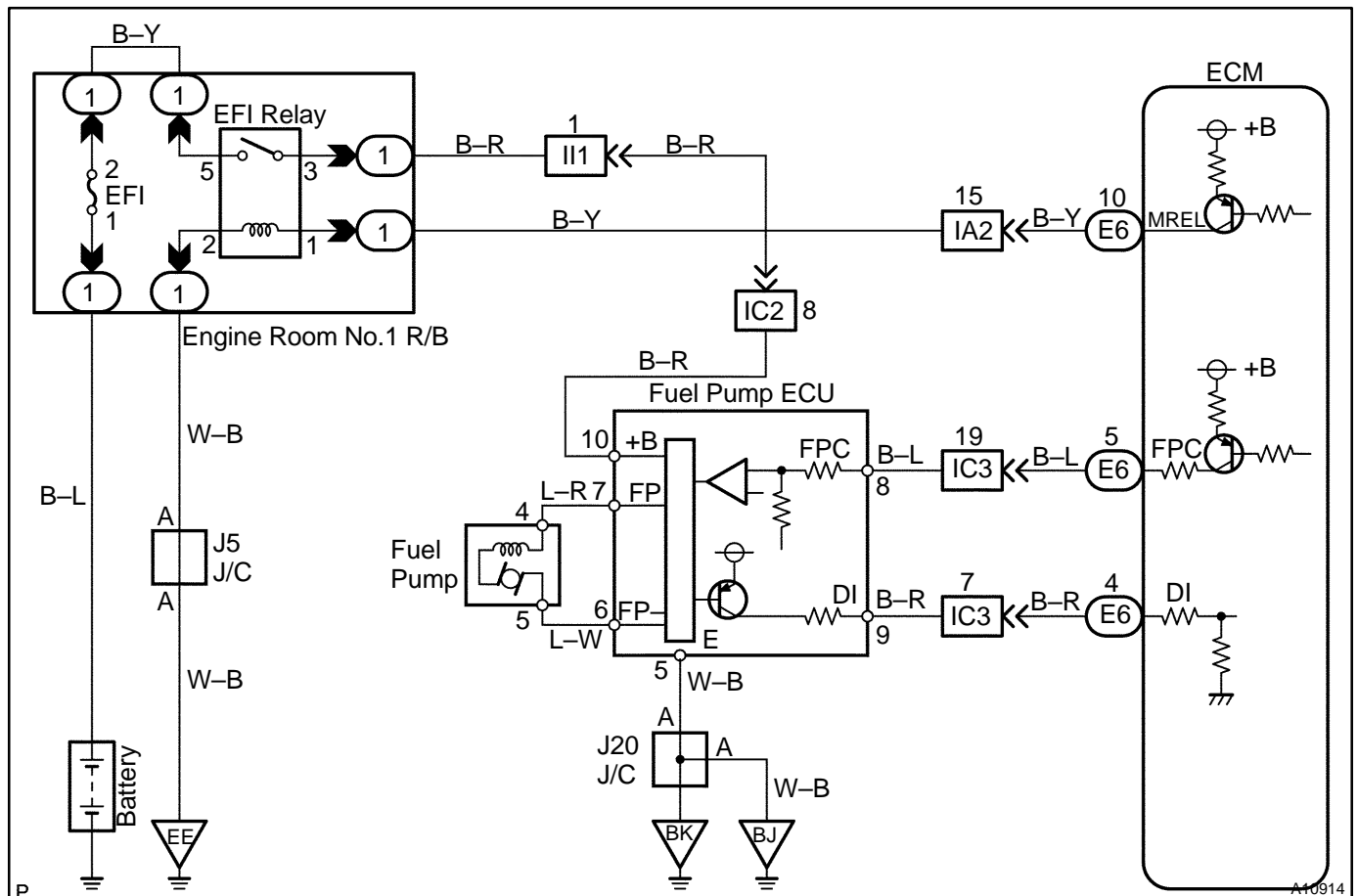
When the heavy loads with engine low speed, the ECM sends a Mid signal (about 2.5 V) to the fuel pump ECU (FPC terminal).

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.

WIRING DIAGRAM



INSPECTION PROCEDURE

1. Connect LEXUS hand-held tester, and check operation of fuel pump (See page SF-6).

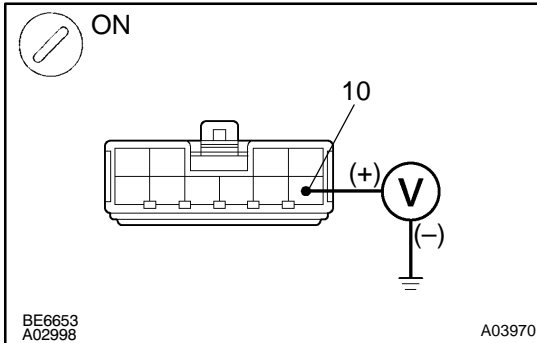
OK

Go to step 7.

NG

2

Check voltage of fuel pump ECU power source.

**PREPARATION:**

- (a) Remove the luggage compartment trim cover (See page SF-70).
- (b) Disconnect the fuel pump ECU connector.
- (c) Turn the ignition switch ON.

CHECK:

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

OK:

Voltage: 9 – 14 V

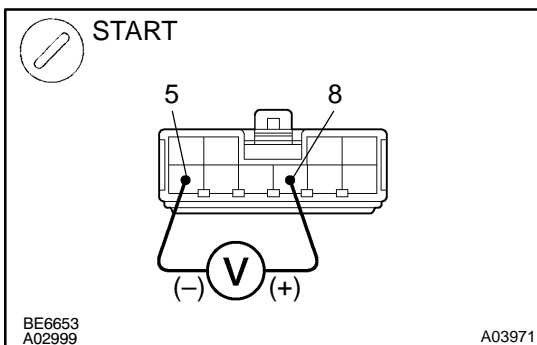
NG

Check for open and short in harness and connector between EFI main relay (Marking: EFI) and fuel pump ECU (See page IN-32).

OK

3

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

**PREPARATION:**

- (a) Remove the luggage compartment trim cover (See page SF-70).
- (b) Disconnect the fuel pump ECU connector.

CHECK:

Measure the 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.

NG

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 IN-32).

NG

Repair or replace harness or connector.

OKCheck and replace ECM (See page [IN-32](#)).**5**Check fuel pump (See page [SF-6](#)).**NG**

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 [IN-32](#)).**NG**

Repair or replace harness or connector.

OK

Replace fuel pump ECU.

7Check for open and short in harness and connector between terminal DI of ECM and terminal 9 of fuel pump ECU (See page [IN-32](#)).**NG**

Repair or replace harness or connector.

OKCheck and replace ECM (See page [IN-32](#)).