DI2SK–02

DTC	P1200/78	Fuel Pump Relay/ECU Circuit Malfunction

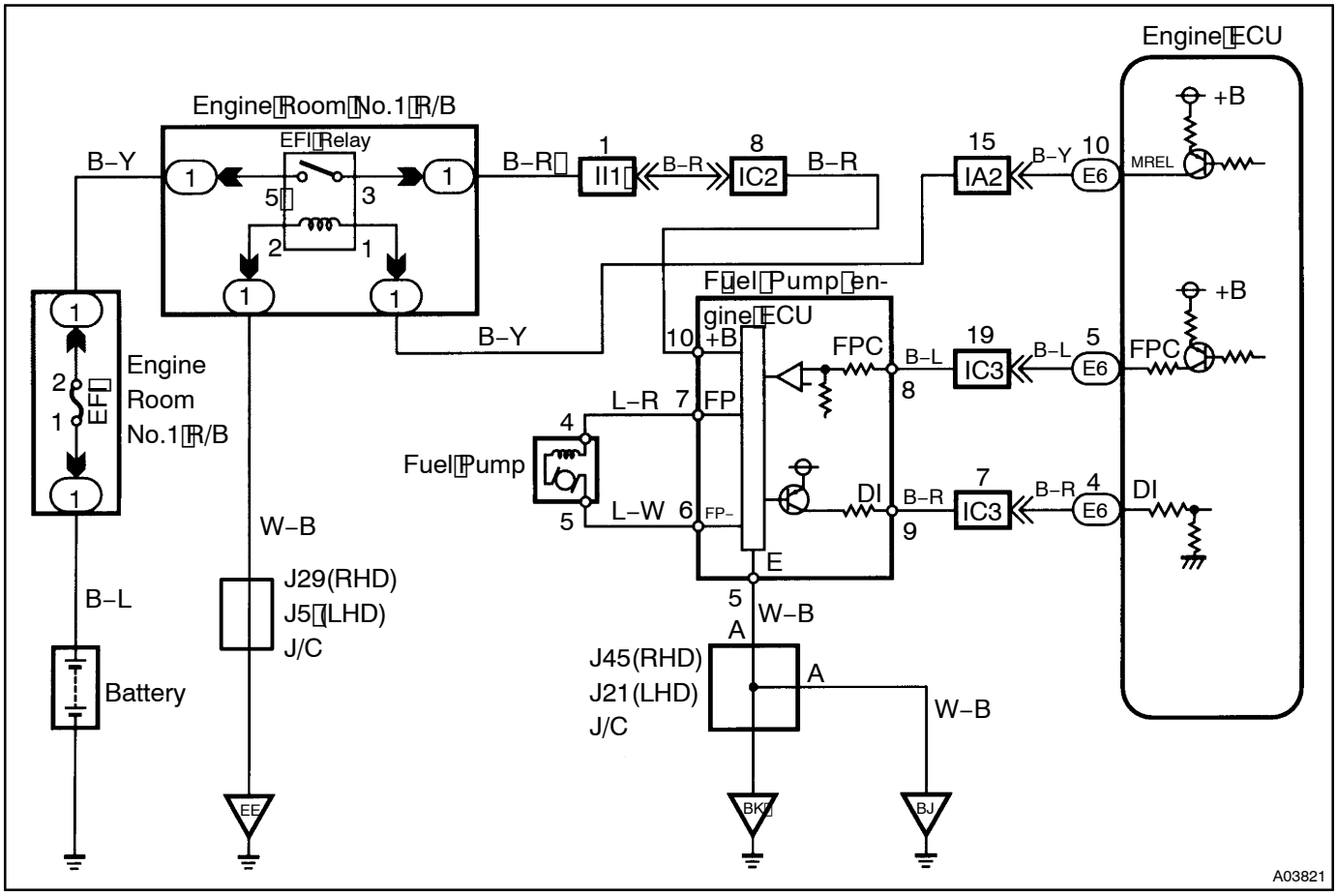
CIRCUIT DESCRIPTION

In the diagram below, when the engine is cranked, current flows from terminal ST of the ignition switch to the starter relay coil and also current flows to terminal STA of the engine ECU (STA signal).
When the STA signal and NE signal are input to the engine ECU, Tr1 is turned ON, current flows to coil of the circuit opening relay, the relay switches on, power is supplied to the fuel pump and the fuel pump operates.
While the NE signal is generated (engine running), the engine ECU keeps Tr1 ON (circuit opening relay ON) and the fuel pump also keeps operating.
The fuel pump speed is controlled at two levels (high speed or low speed) by the condition of the engine (starting, light load, heavy load). When the engine starts (STA ON), Tr2 in the engine ECU is OFF, so the fuel pump relay closes and battery voltage is applied directly to the fuel pump. Fuel pump operates at high speed.
After the engine starts during idling or light loads, since Tr2 goes ON, power is supplied to the fuel pump via the fuel pump resistor.
Fuel pump operates at low speed.

DTC No.	DTC Detecting Condition	Trouble Area
P1200/78	Open or short in fuel pump relay circuit	• Open or short in fuel pump relay circuit • Fuel pump relay • Engine ECU

HINT:
This diagnostic chart is based on premise that engine is started. If the engine is not started, proceed to problem symptoms table on DI–24.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

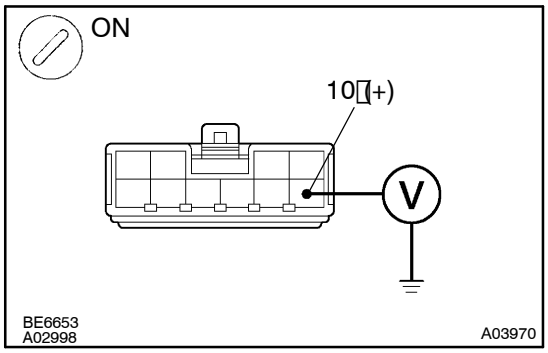
Read freeze frame data using hand–held tester. Because freeze frame records the engine conditions when the malfunction is detected, when troubleshooting it is useful for determining whether the vehicle was running or stopped, the engine warmed up or not, the air–fuel ratio lean or rich, etc. at the time of the malfunction.

1	**Connect hand–held tester and check operation of fuel pump (See page FI–6).**

OK → **Go to step 7.**

NG

2	Check voltage of fuel pump engine ECU power source.



PREPARATION:

(a) Remove the enigne room engine ECU hood and cover.

(b) Disconnect the fuel pump engine ECU connector.

(c) Turn the ignition switch ON.

CHECK:

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

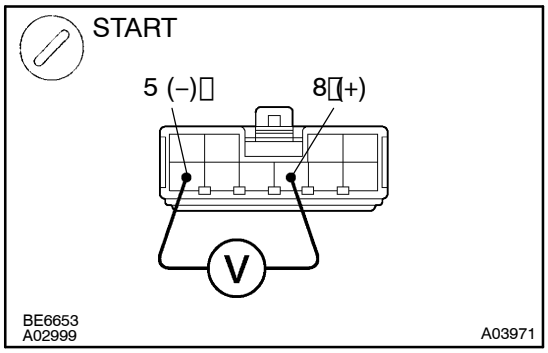
OK:

Voltage: 9 ~ 14 V

NG	Check for open and short in harness and connector between EFI main relay and fuel pump engine ECU (See page IN–29).

OK

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



PREPARATION:

(a) Remove the luggage compartment trim cover (See page FI–9).

(b) Disconnect the fuel pump engine ECU connector.

CHECK:

Measure voltage between terminals 5 and 8 of fuel pump engine ECU connector when 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 terminals FPC of engine ECU and 8 of fuel pump engine ECU, terminal 5 of fuel pump engine ECU and body ground (See page IN–29).

NG → Repair or replace harness or connector.

OK

Check and replace engine ECU (See page IN–29).

5	Check fuel pump (See page FI–6).

NG → Repair or replace fuel pump.

OK

6	Check for open and short in harness and connector between terminal 7 of fuel pump engine ECU and fuel pump and terminal 6 of fuel pump engine ECU and fuel pump (See page IN–29).

NG → Repair or replace harness or connector.

OK

7	Check for open and short in harness and connector between terminals DI of engine ECU and 9 of fuel pump engine ECU (See page IN–29).

NG → Repair or replace harness or connector.

OK

Check and replace engine ECU (See page IN–29).