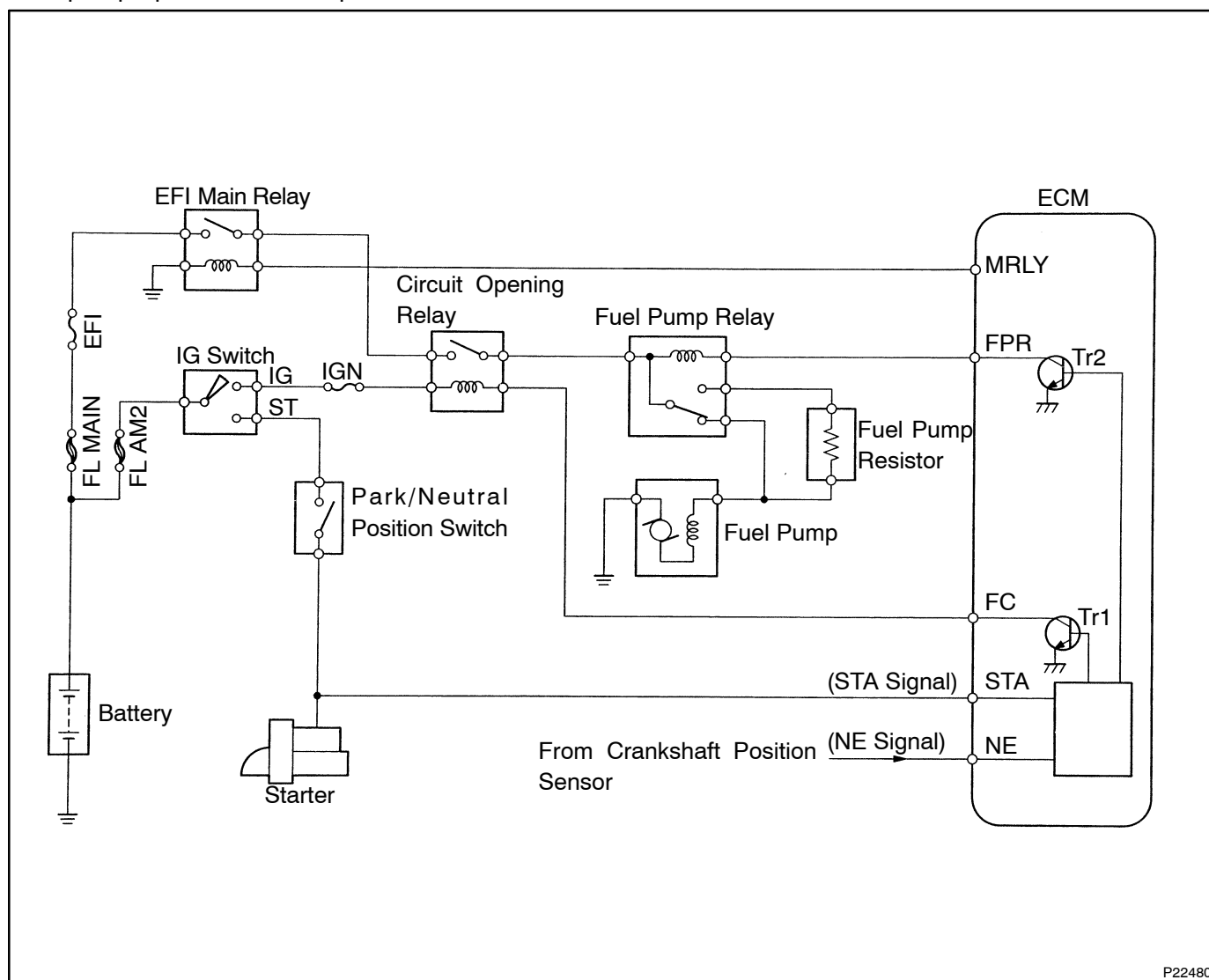
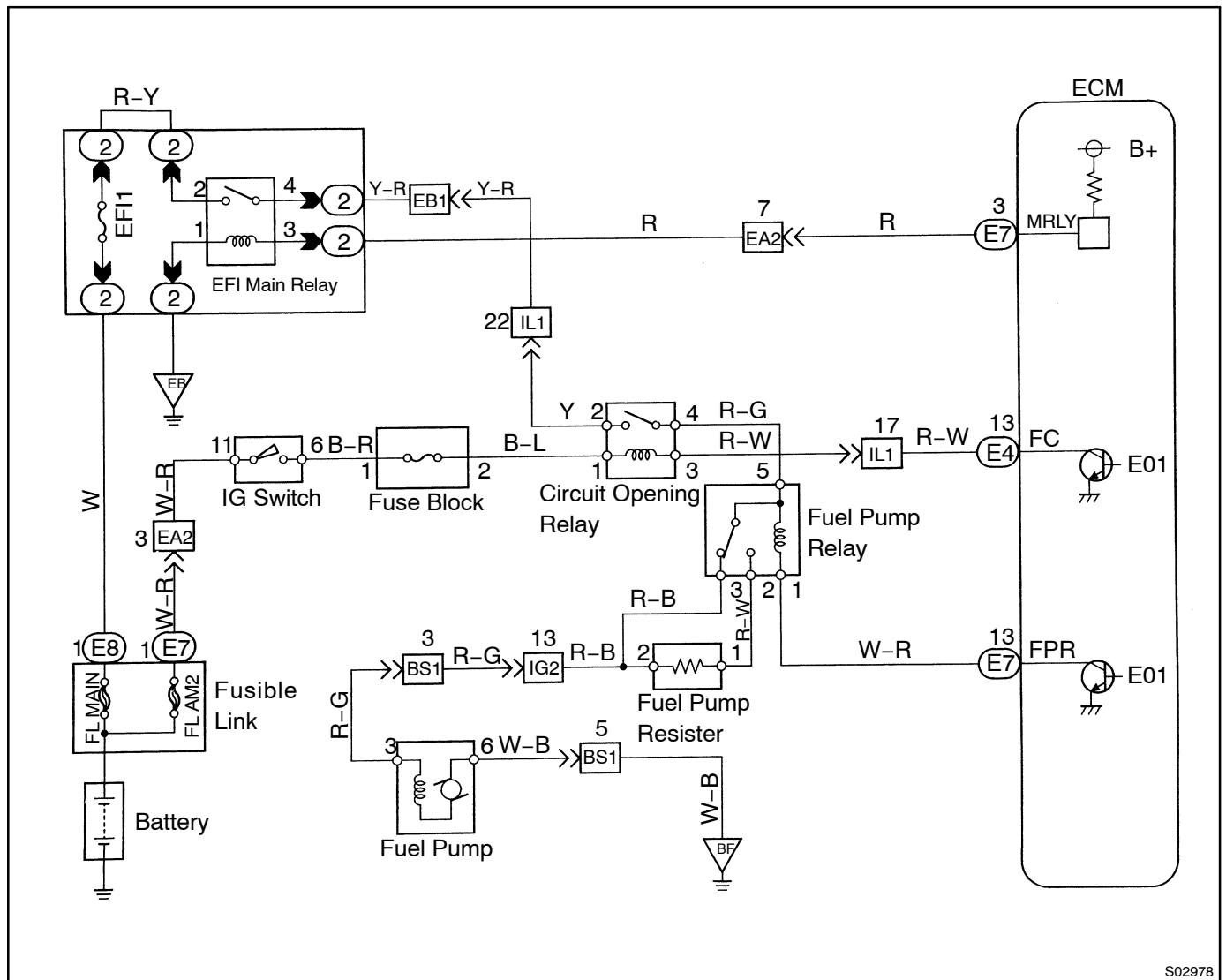


CIRCUIT DESCRIPTION

Fuel pump operates at low speed.



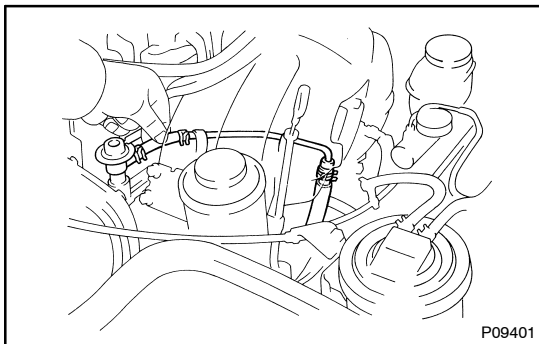
WIRING DIAGRAM



INSPECTION PROCEDURE

LEXUS hand-held tester:

1	Connect LEXUS hand-held tester and check operation of the fuel pump.
---	--



PREPARATION:

- (a) Remove the fuse cover on the instrument panel.
- (b) Connect the LEXUS hand-held tester to the DLC3.
- (c) Turn the ignition switch ON and push the LEXUS hand-held tester main switch ON.
- (d) Use the ACTIVE TEST mode to operate the fuel pump.

CHECK:

Check for fuel pressure in the fuel return hose when it is pinched off.

OK:

There is pressure in the fuel return hose.

HINT:

At this time, you will hear a fuel flowing noise.

OK

Go to step 4.

NG

2

Check circuit opening relay (See page [SF-51](#)).

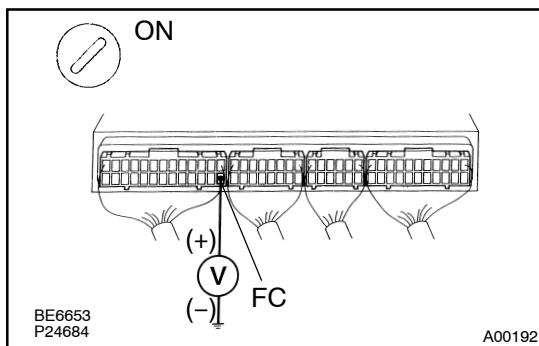
NG

Replace circuit opening relay.

OK

3

Check voltage between terminal FC of ECM connector and body ground.

**PREPARATION:**

- (a) Remove instrument panel speaker No.1 panel (See page [SF-63](#)).
- (b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminal FC of ECM and body ground.

OK:

Voltage: 9 – 14 V

OK

Go to step 5.

NG

Check for open and short in harness and connector between terminal FC of ECM and circuit opening relay and fuse block (See page [IN-27](#)).

4

Connect LEXUS hand-held tester and check operation of fuel pump relay.

PREPARATION:

- (a) Connect the LEXUS hand-held tester to the DLC3.
- (b) Start the engine.
- (c) Turn the LEXUS hand-held tester main switch ON.
- (d) Select the ACTIVE TEST mode on the LEXUS hand-held tester.

CHECK:

Check operation of the fuel pump relay when it is switched ON and OFF by the LEXUS hand-held tester.

OK:

Operating noise can be heard from the relay.

OK

Go to step 8.

NG

5

Check operation of fuel pump relay (See page [SF-53](#)).

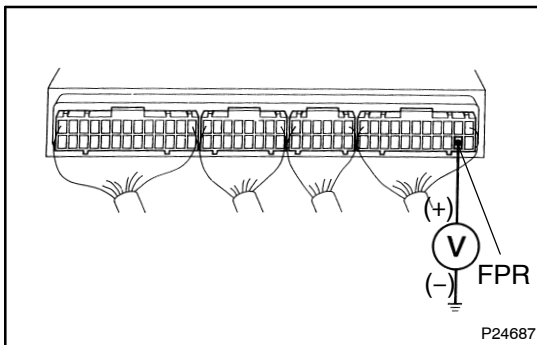
NG

Replace fuel pump relay.

OK

6

Check voltage between terminal FPR of ECM connector and body ground.

**PREPARATION:**

- (a) Remove instrument panel speaker No.1 panel (See page [SF-63](#)).
- (b) Start the engine.

CHECK:

Measure the voltage between terminal FPR of ECM and body ground while racing the engine.

OK:

Time after engine started	Voltage
60 seconds or more	0 – 3 V
Less than 60 seconds	9 – 14 V

OK

Check and replace ECM (See page [IN-27](#)).

NG

7

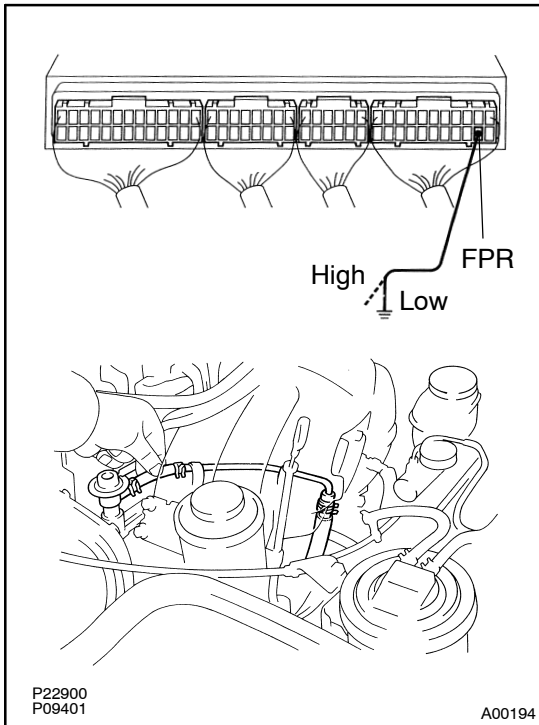
Check for open and short in harness and connector between terminal FPR of ECM connector and fuel pump relay (See page [IN-27](#)).

NG

Repair or replace harness or connector.

OK

8 Check operation of fuel pump.



PREPARATION:

- Remove instrument panel speaker No.1 panel (See page [DI-47](#)).
- Connect the LEXUS hand – held tester to the DLC3.
- Turn ignition switch ON.
- LEXUS hand – held tester main switch ON.
- Use the ACTIVE TEST mode to operate the fuel pump.

CHECK:

Check the operation of fuel pump, when it is operated by the LEXUS hand-held tester and terminal FPR of ECM is grounded and is not grounded.

OK:

There is pressure in the inlet hose.

HINT:

At this time, you will hear a fuel flowing noise.

FPR is grounded (Low speed)	FPR is not grounded	
NG	NG	Go to step 9
NG	OK	Go to step 10
OK	NG	Repair or replace harness or connector between fuel pump relay and fuel pump.

9 Check fuel pump (See page [SF-6](#)).

NG

Repair or replace fuel pump.

OK

Check for open or short in harness and connector between EFI main relay (Marking: EFI) and circuit opening relay and fuel pump relay and fuel pump, fuel pump and body ground (See page [IN-27](#)).

10 Check fuel pump resistor. (See page [SF-54](#)).

NG

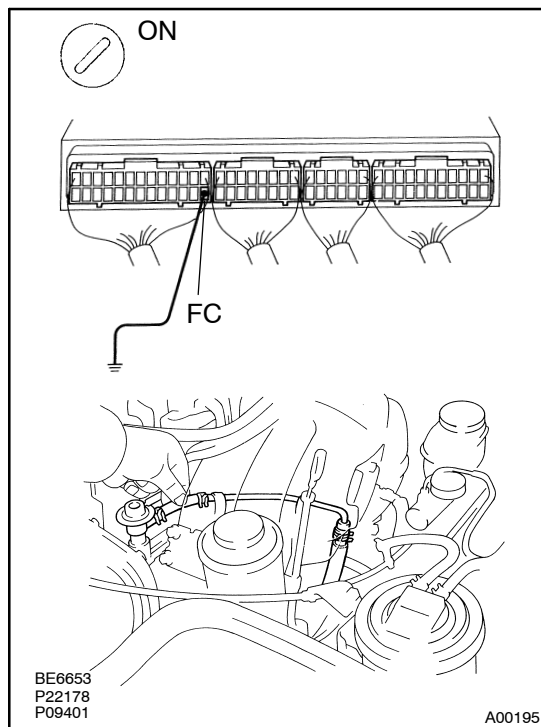
Replace fuel pump resistor.

OK

Check for open and short in harness and connector between fuel pump relay and fuel pump resistor and fuel pump (See page [IN-27](#)).

OBD II scan tool (excluding LEXUS hand-held tester):

1 Check operation of fuel pump.



PREPARATION:

- (a) Remove instrument panel speaker No.1 panel (See page [SF-63](#)).
- (b) Turn ignition switch ON.

CHECK:

- (a) Connect between terminal FC of ECM and body ground.
- (b) Check for fuel pressure in the fuel inlet hose when it is pinched off.

OK:

There is pressure in the fuel inlet hose.

HINT:

At this time, you will hear a fuel flowing noise.

OK

Go to step 4.

OK

2 Check circuit opening relay (See page [DI-35](#)).

NG

Repair or replace.

OK

3 Check voltage between terminal FC of ECM connector and body ground (See page [DI-102](#), step 3).

NG

Check for open and short in harness and connector between terminal FC of ECM and circuit opening relay and fuse block.

OK

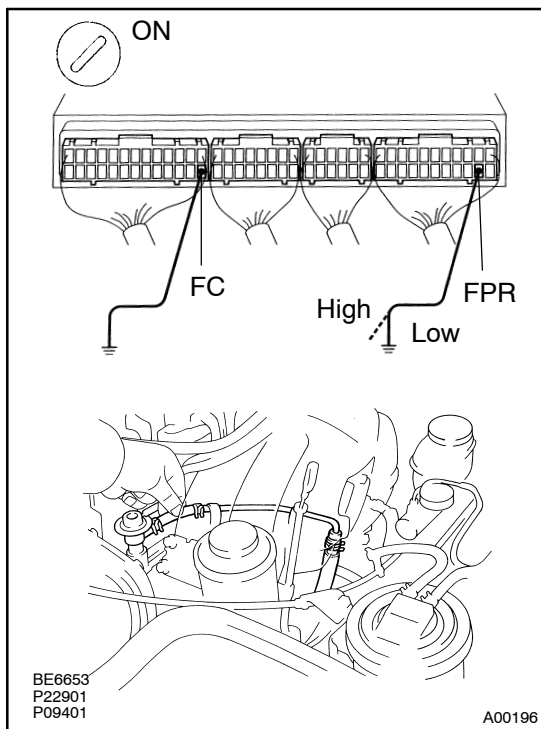
4 Check operation of fuel pump relay (See page [DI-102](#), step 5).

NG

Replace fuel pump relay.

OK

5 Check operation of fuel pump.

**PREPARATION:**

- (a) Remove instrument panel speaker No.1 panel (See page [SF-63](#)).
- (b) Turn the ignition switch ON.

CHECK:

- (a) Connect terminal FC of ECM and body ground.
- (b) Check the operation of fuel pump when terminal FPR of ECM is grounded and is not grounded.

OK:

There is pressure in the fuel inlet return hose.

HINT:

At this time, you will hear a fuel flowing noise.

FPR is grounded (Low speed)	FPR is not grounded (High speed)	
NG	NG	Go to step 6
NG	OK	Go to step 9
OK	NG	Repair or replace harness or connector between fuel pump relay and fuel pump.

GO

6 Check fuel pump (See page [SF-6](#)).

NG

Repair or replace fuel pump.

OK

7	Check voltage between terminal FPR of ECM connector and body ground (See page DI-102 , step 6).
---	---

NG

Check and replace ECM (See page [IN-27](#)).

8	Check for open and short in harness and connector between terminal FC of ECM Connector and fuel pump relay (See page IN-27).
---	---

NG

Check and replace harness or connector.

OK

Check for open or short in harness and connector between EFI main relay (Marking: EFI) and circuit opening relay and fuel pump relay and fuel pump and body ground (See page [IN-27](#)).

9	Check fuel pump resistor (See page SF-54).
---	---

NG

Replace fuel pump resistor.

OK

Check for open and short in harness and connector between fuel pump relay and fuel pump resistor and fuel pump (See page [IN-27](#)).