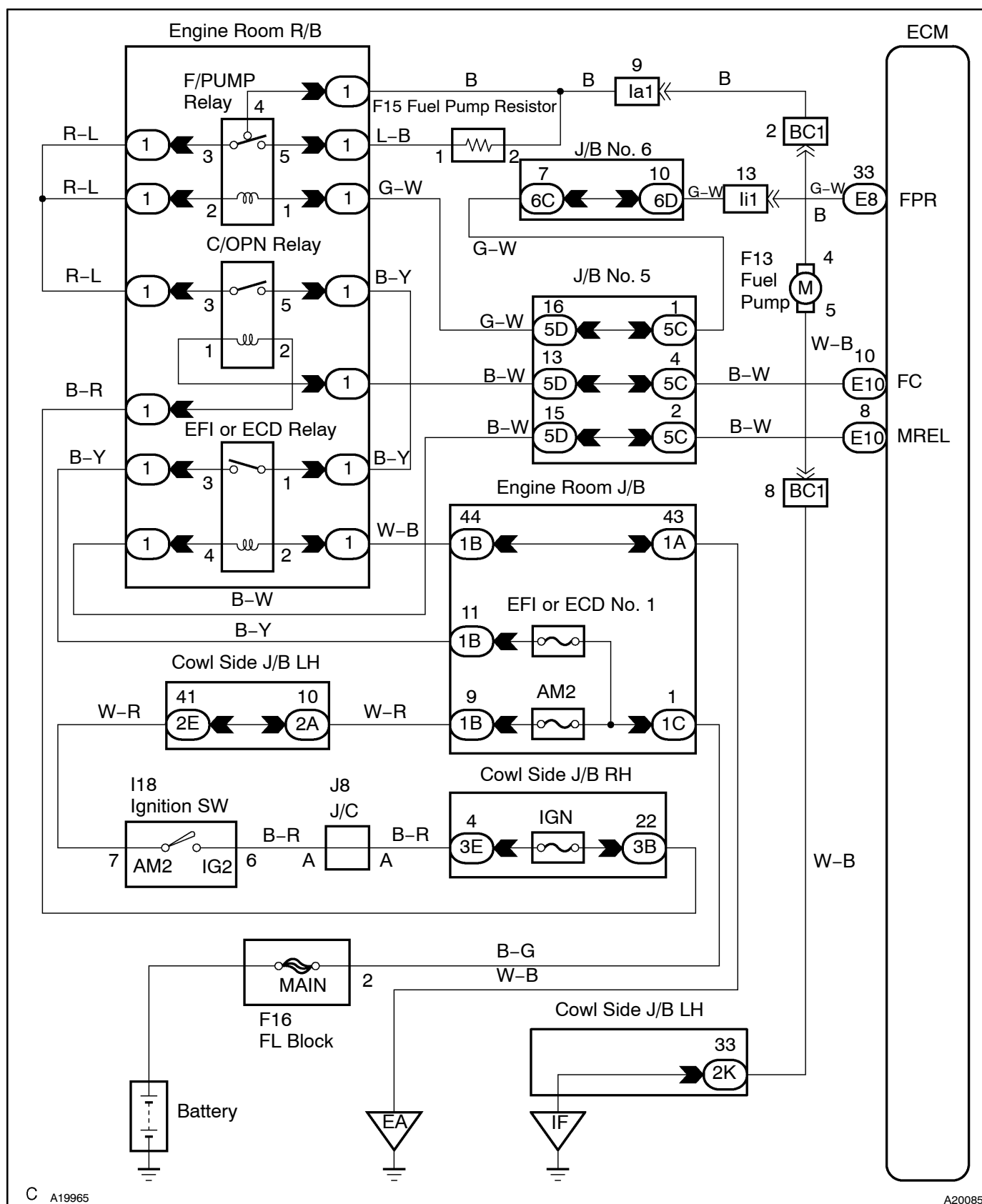


After the engine starts during idling or light loads, since the Tr2 goes ON, power is supplied to the fuel pump via the fuel pump resistor. The fuel pump operates at low speed.



DTC No.	DTC Detecting Condition	Trouble Area
P0230	Open or short in fuel pump relay circuit	• Open or short in fuel pump relay circuit • Fuel pump relay • Circuit opening relay • Fuel pump • ECM

WIRING DIAGRAM



HINT:

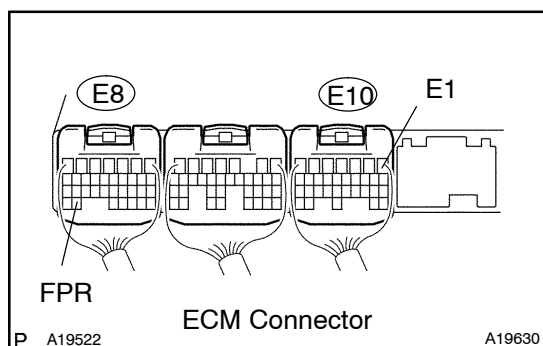
This diagnostic chart is based on premise that engine is started. If the engine is not started, proceed to problem symptoms table on [DI-40](#).

INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand-held tester or the OBD II scan tool. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, if the air-fuel ratio was lean or rich, as well as other data from the time when a malfunction occurred.

1 Check voltage between terminal FPR and E1 of ECM.



CHECK:

Measure the voltage between terminals of E8 and E10 ECM connectors.

OK:

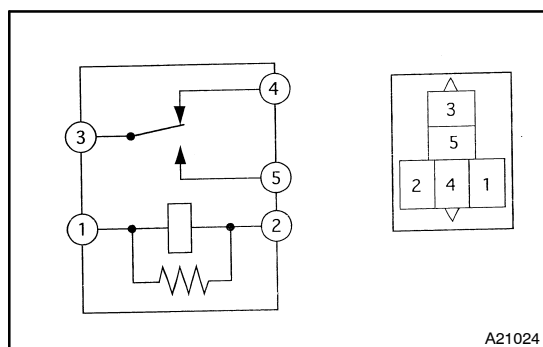
Tester Connection	Condition	Specified Condition
FPR (E8-33) – E1 (E10-1)	STA signal ON	9 to 14 V
FPR (E8-33) – E1 (E10-1)	STA signal OFF	0 to 3 V

OK

Replace ECM (See page [SF-60](#)).

NG

2 Check fuel pump relay.



PREPARATION:

Remove the fuel pump relay from the engine room R/B.

CHECK:

Inspect the fuel pump relay.

OK:

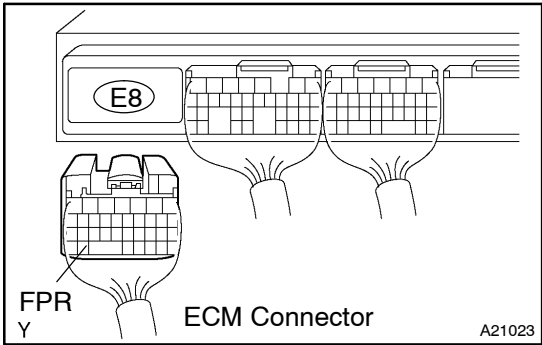
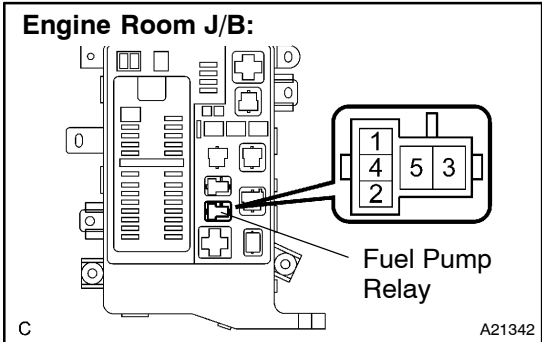
Tester Connection	Specified Condition
1 – 2	Continuity
3 – 4	Continuity
3 – 5	No continuity
3 – 5	Continuity (Apply battery voltage terminal 1 and 2)

NG

Replace fuel pump relay.

OK

3 Check for open and short in harness and connector between fuel pump relay and ECM.



PREPARATION:

- (a) Remove the fuel pump relay from the engine room J/B.
- (b) Disconnect the E8 ECM connector.

CHECK:

Measure the resistance between wire harness side connectors.

OK:

Tester Connection	Specified Condition
Engine Room J/B (Fuel pump relay terminal 1) – FPR (E8–33)	Below 1 Ω
Engine Room J/B (Fuel pump relay terminal 1) or FPR (E8–33) – Body ground	10 k Ω or higher

NG

Repair or replace harness or connector.

OK

Replace ECM (See page [SF-60](#)).