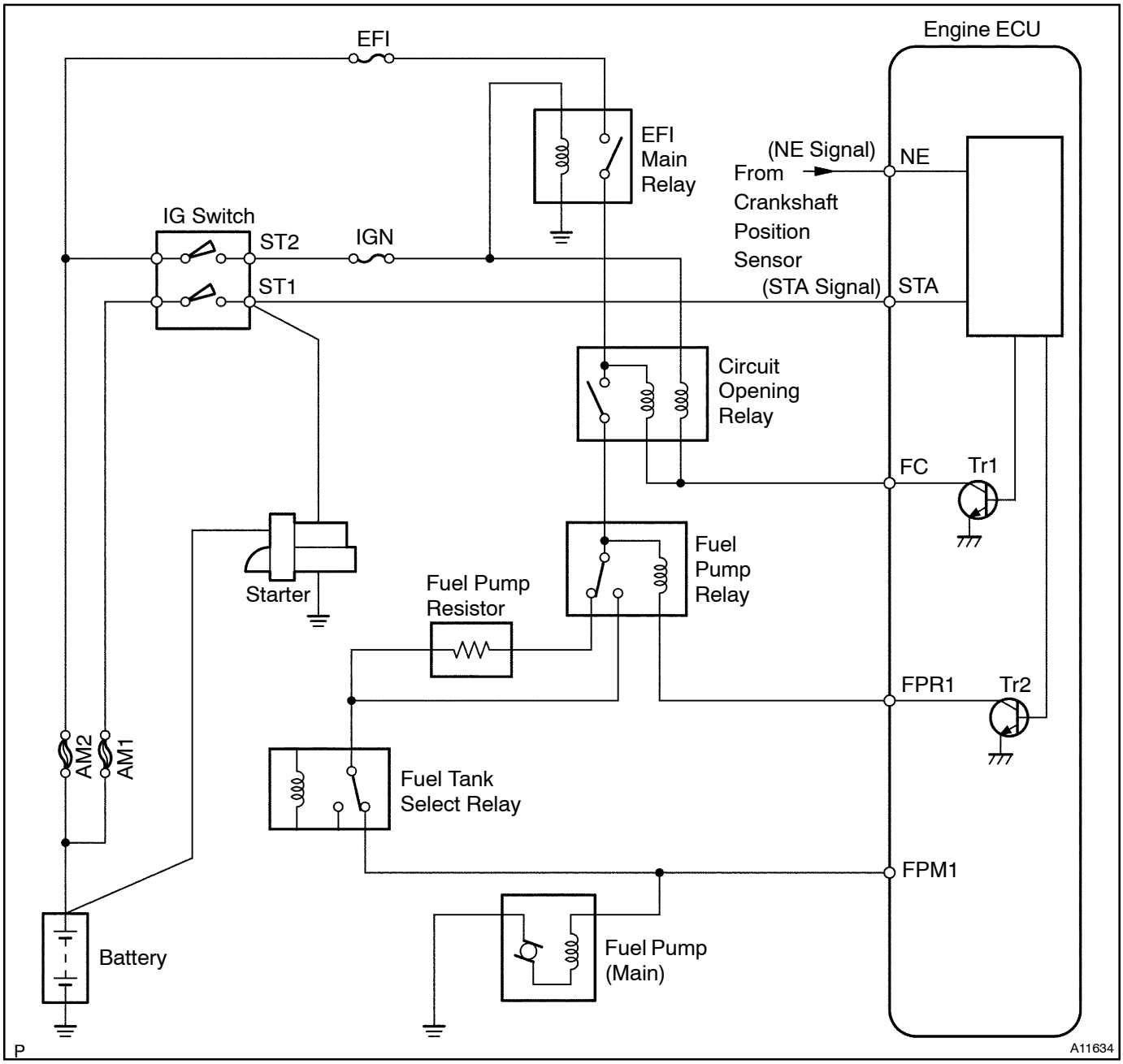
DI3M6–03

DTC	P1200/78	Fuel Pump Relay/ECU Circuit Malfunction

CIRCUIT DESCRIPTION

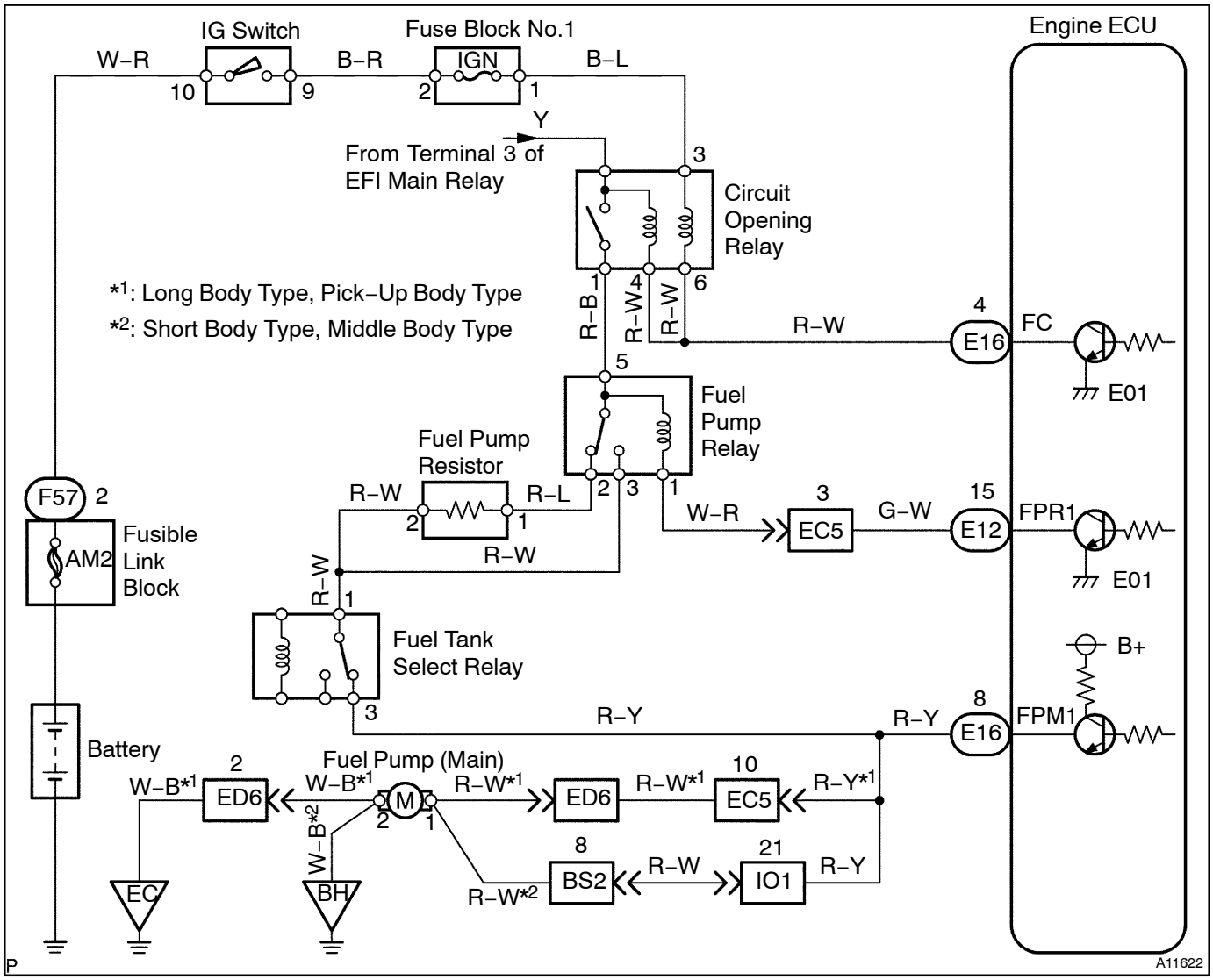
In the diagram below, when the engine is cranked, current flows from terminal ST of the ignition switch to terminal STA of the engine ECU (STA signal).

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 Detection 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

WIRING DIAGRAM

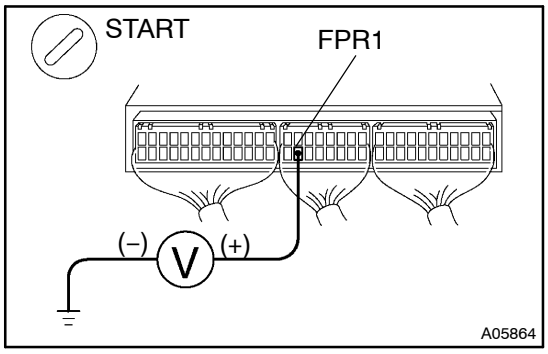


INSPECTION PROCEDURE

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 was warmed up or not, the air–fuel ratio was lean or rich, etc. at the time of the malfunction.
- This diagnostic chart is based on premise that engine is started. If the engine is not started, proceed to problem symptoms table on DI–19.

1	**Check voltage between terminal FPR1 of engine ECU and body ground.**



PREPARATION:

(a) Remove the glove compartment (See page IN–19).

(b) Start the engine.

CHECK:

Measure the voltage between terminal FPR1 of the engine ECU connector and body ground while racing the engine.

OK:

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

OK → **Check and replace engine ECU (See page IN–19).**

NG

2	**Check operation of fuel pump relay (See page FI–44).**

NG → **Replace fuel pump relay.**

OK

Repair or replace harness or connector between fuel pump relay and engine ECU.