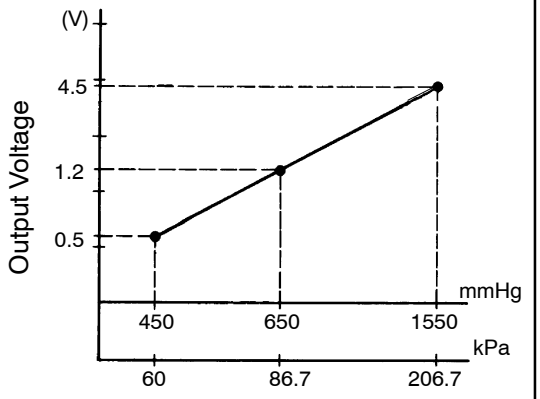
DI3WQ–02

DTC	31	Vacuum Sensor Circuit

CIRCUIT DESCRIPTION



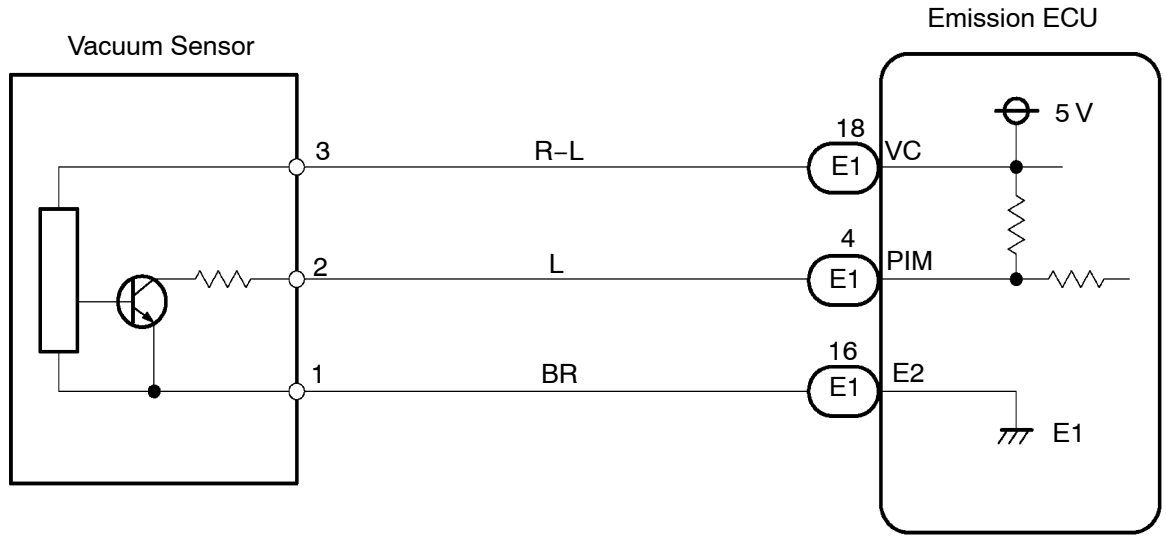
By a built–in sensor unit, the vacuum sensor detects the intake manifold pressure as a voltage. The emission ECU then determines the basic injection duration and basic ignition advance angle based on this voltage.
Since the vacuum sensor does not use the atmospheric pressure as a criterion, but senses the absolute pressure inside the intake manifold (the pressure in proportion to the preset absolute vacuum 0), it is not influenced by fluctuations in the atmospheric pressure due to high altitude and other factors. this permits it to control the air fuel ratio at the proper level under all conditions.

DTC No.	DTC Detecting Condition	Trouble Area
31	Open or short in vacuum sensor circuit for 0.2 sec. or more	• Open or short in vacuum sensor circuit • Vacuum sensor • Emission ECU

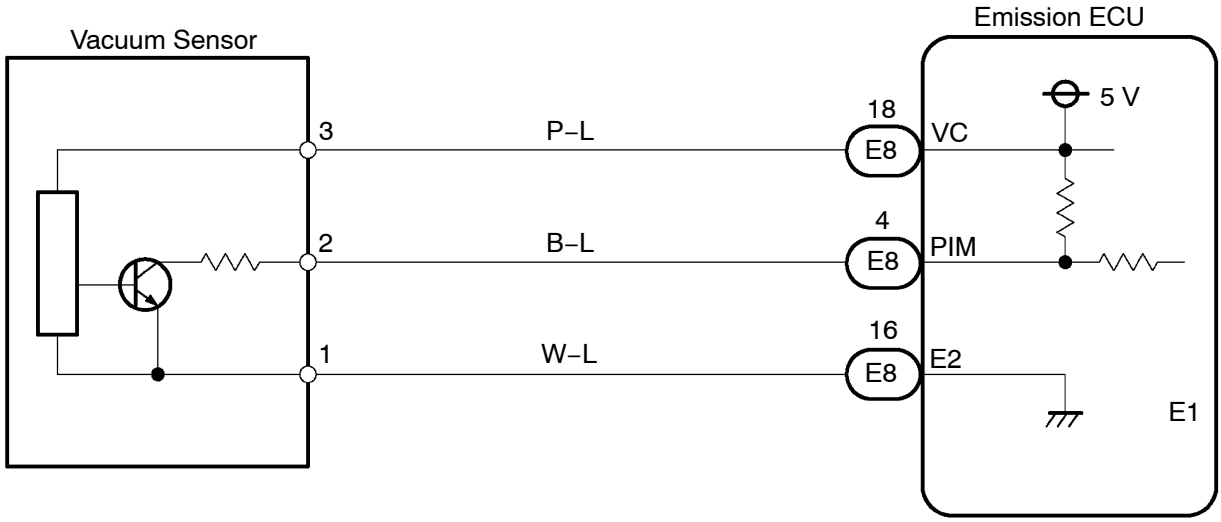
If the ECU detects diagnostic trouble code ”31”, it operates the fail safe function, keeping the ignition timing and fuel injection volume constant and making it possible to drive the vehicle.

WIRING DIAGRAM

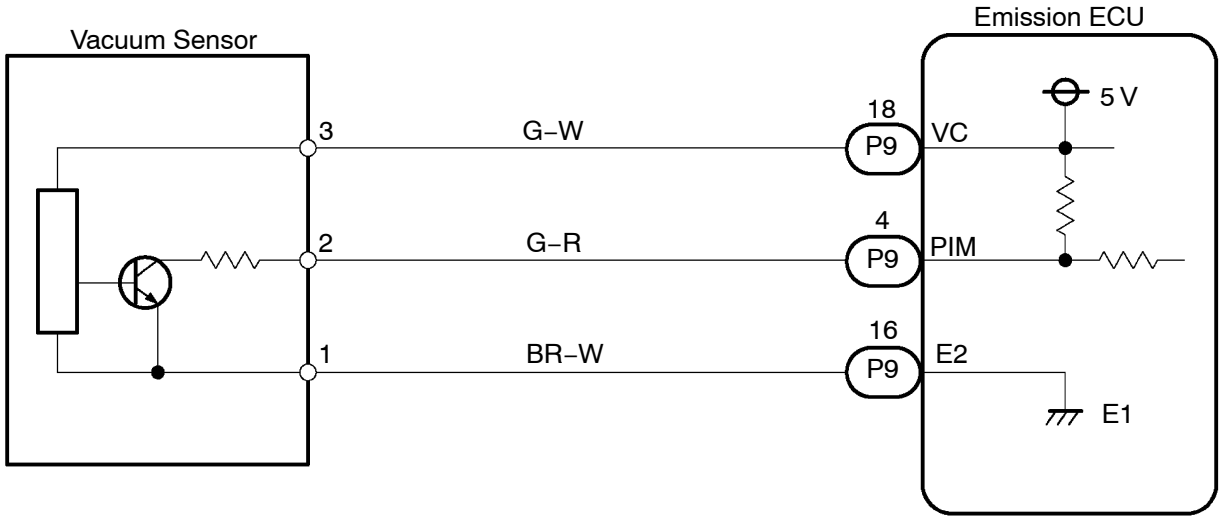
LXH Series



LN Series



LY Series

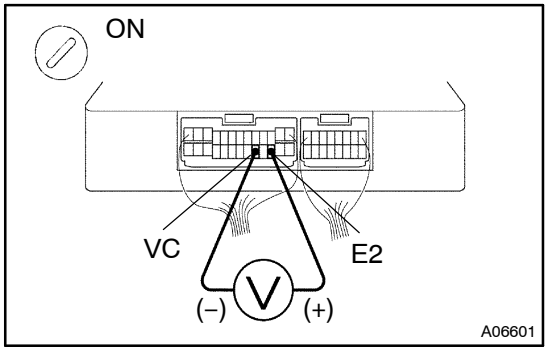


INSPECTION PROCEDURE

HINT:

If diagnostic trouble codes ”22” (water temperature sensor circuit), ”31” (vacuum sensor circuit) and ”41” (throttle position sensor circuit) are output simultaneously, E2 (sensor ground) may be open.

1	**Check voltage between terminals VC and E2 of emission ECU.**



PREPARATION:

(a) Disconnect the emission ECU from the body panel (See page EC–6).

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals VC and E2 of the emission ECU.

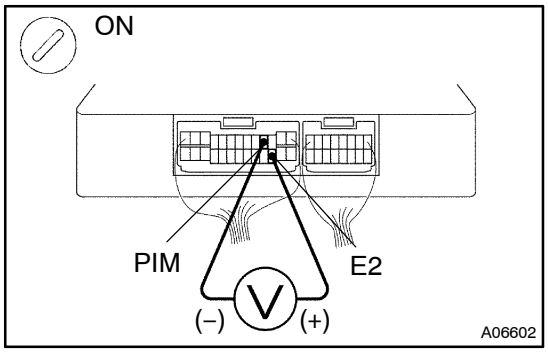
OK:

Voltage: 4.5 – 5.5 V

NG	**Check and replace emission ECU.**

OK

2	**Check voltage between terminals PIM and E2 of emission ECU.**



PREPARATION:

(a) Disconnect the emission ECU from the body panel (See page EC–6).

(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals PIM and E2 of the emission ECU.

OK:

Voltage: 3.3 – 3.9 V

OK	**When diagnostic trouble code 31 is displayed, check and replace emission ECU.**

NG

3	**Check for open and short in harness and connector between emission ECU and vacuum sensor (See page IN–19).**

NG → **Repair or replace harness or connector.**

OK

Replace vacuum sensor.