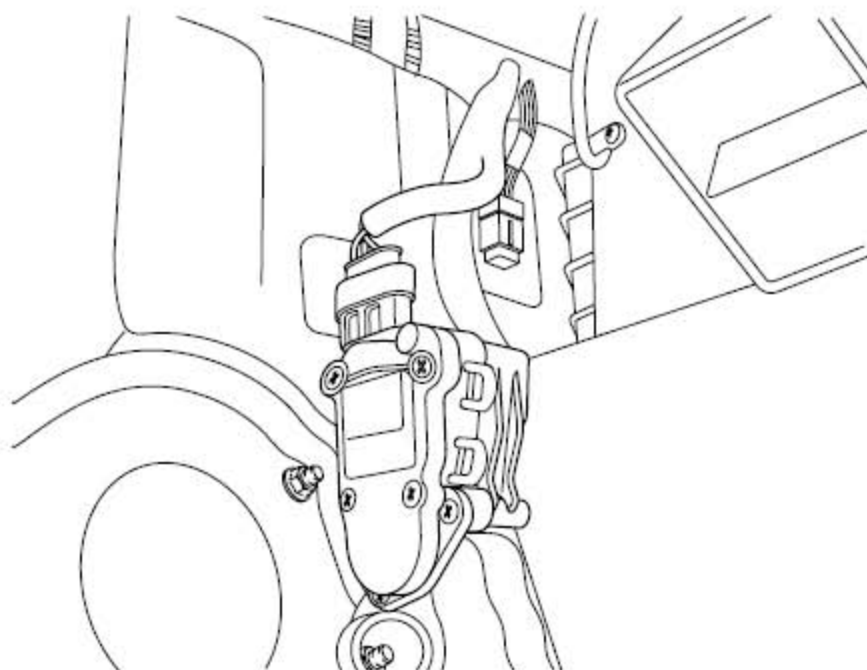


P0120 POSITION SENSOR

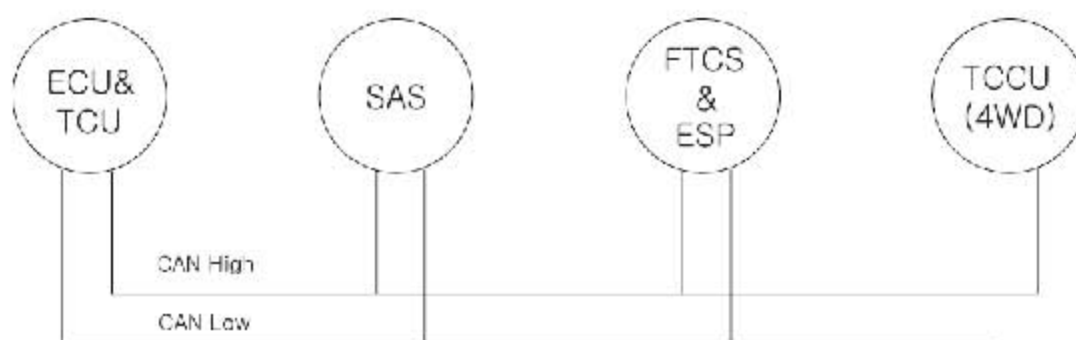
COMPONENT LOCATION



GENERAL DESCRIPTION

TPS(or APS) signal which is used for judging driver's intention is received from engine ECU through CAN line. This signal is a criteria signal to determine amount of torque distribution at front/rear wheel with steering angle sensor, wheel speed sensor, brake signal.

DTC	FAULT DESCRIPTION
P0120	THROTTLE/PEDAL POSITION SENSOR/SWITCH "A" CIRCUIT(GASOLINE) / ACCELERATOR POSITION SENSOR 1-GENERAL ERROR(DIESEL)



DTC DESCRIPTION

This code related to communication line between ECU and TCCU is set when CAN signal from ECU can't received formore than 1sec or ECU internal error occur. If failure is detected TCCU prohibits the ITM control and cuts the current to control coil.

DTC DETECTING CONDITION

Item	Detecting Condition	Possible Cause
DTC Strategy	Loss of signal out of range	<ul style="list-style-type: none"> • ECM, TCCU connector looseness and poor terminal to wire connection • CAN HIGH/LOW circuit open/short • APS (TPS) faulty • Faulty ECM • Faulty TCCU
Enable Conditions	Message present 1.0 sec self clearing	
Threshold Value	A fault code of FFH from the C.A.N. Bus, Signal lost for 1 sec. Fault code stored in memory	
Diagnostic Time	1 sec	
MIL on condition	0.5 Sec	
Fail Safe	TPS=0 ITM Controller will not re-act to pre-empt. Pre-empt=0. The ECU will not send current to the clutch coil	

SIGNAL WAVEFORM & DATA

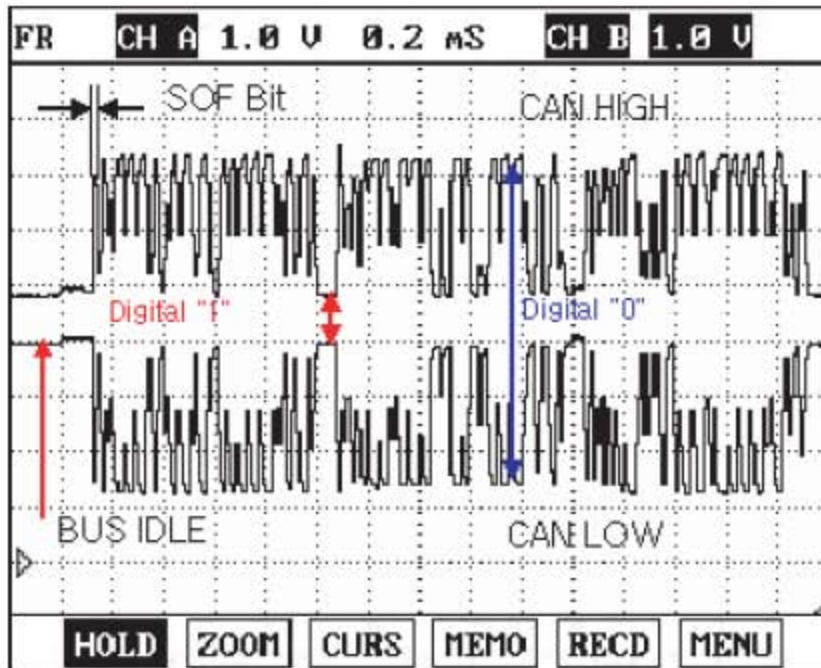


FIG.1)

FIG.1) CAN Signal : high & low

TERMINAL AND CONNECTOR INSPECTION

- 1). Many malfunctions in the electrical system are caused by poor harness and terminals. Faults can also be caused by interference from other electrical systems, and mechanical or chemical damage.
- 2). Thoroughly check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration, or damage.
- 3). Has a problem been found?

YES

- ▶ Repair as necessary and go to "Verification of Vehicle Repair" procedure.

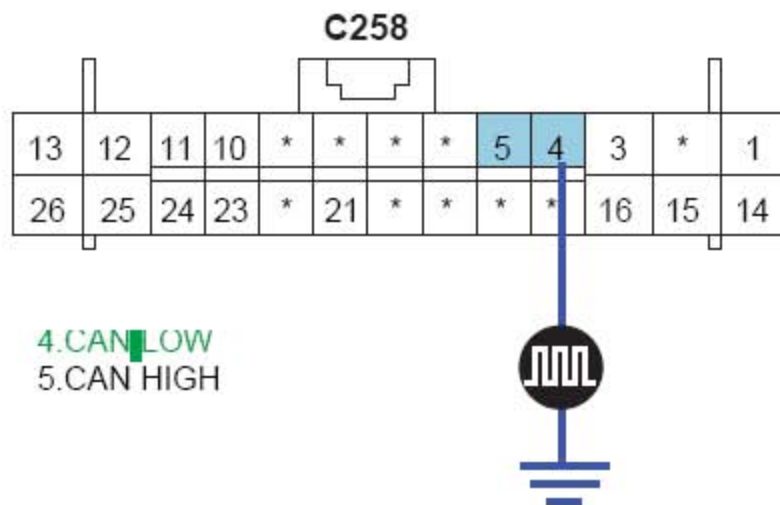
NO

- ▶ Go to "CAN Signal Inspection" procedure.

CAN SIGNAL INSPECTION

- 1). Ignition ON, Engine : ON.
- 2). TCCU connector : Connect.
- 3). Monitor signal waveform between terminal 4, 5 of TCCU harness connector
- 4). Shift to N Range.

Specification : Signal Waveform & Data



CAUTION

The above value is only for reference.
The actual value may differ from it according to various engine condition.

5). Is CAN Signal display near the specified value?

YES

▶ Fault is intermittent caused by poor contact in the sensor's and/or TCCU's connector or was repaired and TCCU memory was not cleared. Thoroughly check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration, or damage. Repair or replace as necessary and then go to "Verification of Vehicle Repair" procedure.

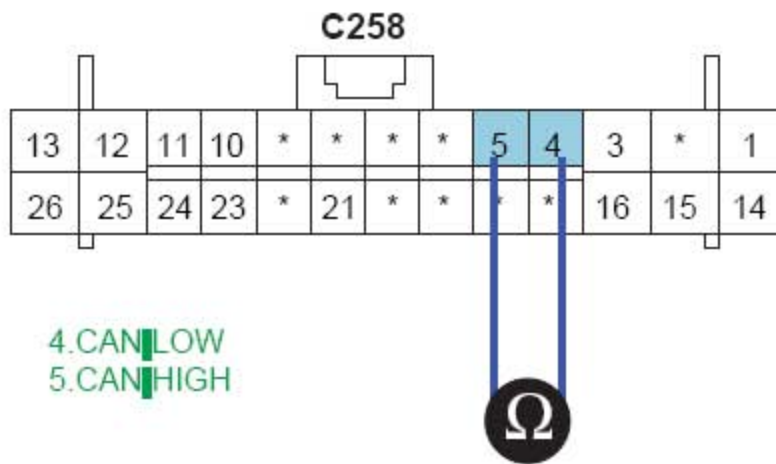
NO

▶ Go to "CAN comm. Line Inspection" procedure.

CAN COMM. LINE INSPECTION

- 1). IG "OFF" & ENG "OFF"
- 2). TCCU connector : Disconnect.
- 3). Measure resistance between terminal "4" of the TCCU harness connector and terminal "5" of the TCCU harnessconnector .

Specification : Approx. 60Ω



CAUTION

The above value is only for reference.

The actual value may differ from it according to various engine condition.

- 4). Is resistance display near the specified value?

YES

- ▶ Fault is intermittent caused by open or short in CAN signal harness or was repaired and TCCU memory was not cleared. Go to the applicable troubleshooting procedure.

NO

- ▶ Check for open/short in CAN communication line of TCCU circuit.
- ▶ Check for the signal or component of Engine control module.
- ▶ Repair as necessary and then go to "Verification of Vehicle Repair" procedure.

VERIFICATION OF VEHICLE REPAIR

- 1). Connect scan tool and select "Diagnostic Trouble Codes(DTCs)" mode.
- 2). Using scantool, Clear DTC.
- 3). Operate the vehicle within DTC Enable conditions in General information.
- 4). Are any DTCs present ?

YES

- ▶ Go to the applicable troubleshooting procedure.

NO

- ▶ System is performing to specification at this time.