DI1LI–22

DTC	P0121/41	Throttle/Pedal Position Sensor/Switch "A" Circuit Range/Performance Problem

HINT:
This is the purpose of the "throttle position sensor".

CIRCUIT DESCRIPTION

Refer to DTC P0120 on page DI–63.

DTC No.	DTC Detecting Condition	Trouble Area
P0121/41	Condition (a) continues for 2.0 sec.: (a) Difference between VTA1 and VTA2 deviates from the threshold (1 trip detection logic)	Throttle control motor and sensor

MONITOR DESCRIPTION

The engine control ECU uses throttle position sensor to monitor the throttle valve opening angle.
This sensor including two signals, VTA1 and VTA2. VTA1 is used to detect the throttle opening angle and VTA2 is used to detect malfunctions in VTA1. There are several checks that the engine control ECU performs confirm proper operation of the throttle position sensor and VTA1.
There is a specific voltage difference expected between VTA1 and VTA2 for each throttle opening angle.
If the voltage output difference of the VTA1 and VTA2 deviates from the normal operating range, the engine control ECU interprets this as a malfunction of the throttle position sensor. The engine control ECU will turn on the MIL and a DTC is set.
This monitor runs for 2 seconds (the first 2 seconds of engine idle) after the engine is started.

FAIL SAFE

If the ETCS (Electronic Throttle Control System) has a malfunction, the engine control ECU cuts off current to the throttle control motor. The throttle control valve returns to a predetermined opening angle (approximately 16°) by the force of the return spring. The engine control ECU then adjusts the engine output by controlling the fuel infection (intermittent fuel–cut) and ignition timing in accordance with the accelerator pedal opening angle to enable the vehicle to continue at a minimum speed.
If the accelerator pedal is depressed firmly and slowly, the vehicle can be driven slowly.
If a "pass" condition is detected and then the ignition switch is turned OFF, the fail–safe operation will stop and the system will return to normal condition.

INSPECTION PROCEDURE

HINT:
Read freeze frame data using the hand–held tester. 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.

Replace throttle control motor and sensor (See Pub. No. RM630E, page FI–42).