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2001 CHEVROLET Tracker OEM Service and Repair Workshop Manual

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The Engine Control Module (ECM) uses the generator turn on control circuit to control the load of the generator on the engine. A high side driver in the ECM applies a duty cycled voltage to the voltage regulator. The duty cycle controls the voltage regulator to turn the field circuit on and off. The ECM monitors the state of the generator turn on control circuit. The ECM should detect low voltage on the generator turn on control circuit when the ignition is ON and the engine is off, or when the charging system malfunctions. With the engine running, the ECM should detect on the generator turn on control circuit, a high voltage when the duty cycle voltage is commanded high, and a low voltage when the duty cycle voltage is commanded low.

Conditions for Running the DTC

- Ignition ON, engine OFF (Prior to Ignition ON, the ignition must have been OFF for at least 5 s).
- The engine is running for the run test.

Conditions for Setting the DTC

- Ignition ON, engine OFF – The ECM detects greater than 3.5 V on the generator control circuit for 5 s.
- Engine running – The ECM detects a low voltage for 15 s on the generator control circuit when the duty cycle voltage is commanded high.
- Engine running – The ECM detects a high voltage for 15 s on the generator control circuit when the duty cycle voltage is commanded low.

Action Taken When the DTC Sets

DTC P0621 is a type C DTC.

Conditions for Clearing the DTC

- Ignition ON, engine OFF– Low voltage.
- Engine running – A control signal duty cycle is detected.

Reference Information

Schematic Reference

Starting and Charging Schematics

Connector End View Reference

Master Electrical Component List

Note

Use the Schematics to identify the appropriate circuits and/or terminals for testing.

1. Verify a test lamp illuminates between the G13 Generator B+ circuit terminal A X2 or 1 X2 and ground.
    - **If the test lamp does not illuminate and the circuit fuse is good**
    1. Remove the test lamp and disconnect the B+ cable at the G13 Generator
    2. Test for less than 2 Ω in the B+ circuit end to end.
        - If 2 Ω or greater, repair the open/high resistance in the circuit.
        - If less than 2 Ω, verify the fuse is not open and there is voltage at the fuse.
    - **If the test lamp does not illuminate and the circuit fuse is open**
    1. Remove the test lamp, disconnect the battery negative cable, and disconnect the G13 Generator B+ cable.
    2. Test for infinite resistance between the B+ circuit and ground.
        - If less than infinite resistance, repair the short to ground on the circuit.
        - If infinite resistance, replace G13 Generator.
    - **If the test lamp illuminates**
2. Disconnect the X1 harness connector at the G13 Generator, engine running.
3. Test for 1 V or greater between the control circuit terminal 1 X1 and ground.
    - **If less than 1 V**
    1. Ignition OFF, disconnect the harness connectors at the K20 Engine Control Module.
    2. Test for infinite resistance between the control circuit and ground.
        - If less than infinite resistance, repair the short to ground on the circuit.
        - If infinite resistance
    3. Test for less than 2 Ω in the control circuit end to end.
        - If greater than 2 Ω, repair the open/high resistance in the circuit.
        - If less than 2 Ω, replace the K20 Engine Control Module.
    - **If 1 V or greater**

YOUR CURRENT VEHICLE

DTC P0622

DTC P0622

Diagnostic Instructions

- Perform the Diagnostic System Check - Vehicle prior to using this diagnostic procedure.
- Review Strategy Based Diagnosis for an overview of the diagnostic approach.
- Diagnostic Procedure Instructions provides an overview of each diagnostic category.

DTC Descriptor

DTC P0622	Generator F-Terminal Circuit

For symptom byte information refer to Symptom Byte List.

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
B+	—	P0621	—	—
Control – L Terminal	P0621	P0621	P0621	—
Signal – F Terminal	P0622	P0622	P0622	P0622

Circuit/System Description

Description and Operation

Charging System Description and Operation

Electrical Information Reference

- Circuit Testing
- Connector Repairs
- Testing for Intermittent Conditions and Poor Connections
- Wiring Repairs

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

NOTE

Note

Do not have a battery charger connected during the generator testing.

1. Engine running.
2. Verify the scan tool Engine Control Module Generator F-Terminal Signal parameter is between 5–90%.
   - **If not between 5–90%**

     Refer to Circuit/System Testing.
   - **If between 5–90%**
3. Verify the scan tool Engine Control Module Generator F-Terminal Signal parameter changes when commanding the headlamps ON and OFF.
   - **If the parameter does not change**

     Refer to Circuit/System Testing.
   - **If the parameter changes**
4. Operate the vehicle within the Conditions for Running the DTC. You may also operate the vehicle within the conditions that you observed from the Freeze Frame/Failure Records data.