P0562, P0563, or P2534 System Voltage

Diagnostic Instructions

- Perform the Diagnostic System Check – Vehicle on page 6-60 prior to using this diagnostic procedure.
- Review Strategy Based Diagnosis on page 6-57 for an overview of the diagnostic approach.
- Diagnostic Procedure Instructions on page 6-58 provides an overview of each diagnostic category.

DTC Descriptors

DTC P0562: System Voltage Low
DTC P0563: System Voltage High
DTC P2534: Ignition 1 Switch Circuit Low Voltage

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
IGN	P0562, P2534	P0562, P2534	P0563	—
Ground	—	P0562, P2534	—	—

Circuit/System Description
The transmission control module (TCM) within the control solenoid (w/body and TCM) valve assembly continuously monitors the system voltage on the ignition voltage circuit.

Conditions for Running the DTC

P0562

- Ignition voltage is between 8.6 volts and 19.0 volts.
- Engine speed is 1200 RPM or greater.

P0563

Ignition voltage is between 8.6 volts and 19.0 volts.

P2534

- The engine is running.
- Ignition voltage is between 8.6 volts and 19.0 volts.

Conditions for Setting the DTC

P0562

The TCM detects system voltage is 11 volts or less for 10 seconds.

P0563

The TCM detects system voltage is 18 volts or greater for 10 seconds.

P2534

The TCM detects 2 volts or less on the ignition 1 voltage circuit at the TCM for 10 seconds or more.

Action Taken When the DTC Sets

P0562 and P0563

DTCs P0562 and P0563 are Type C DTCs.

P2534

- DTC P2534 is a Type A DTC.
- The TCM turns OFF all high side drivers.
- The TCM turns OFF all solenoids.
- The TCM commands maximum line pressure.
- The TCM freezes transmission adaptive functions.
- The TCM commands the TCC OFF.
- The TCM allows the vehicle to operate in transmission protection mode.

Conditions for Clearing the DTC

- DTCs P0562 and P0563 are Type C DTCs.
- DTC P2534 is a Type A DTC.

Diagnostic Aids

Inspect for the following conditions:

- Loose or damaged terminals at the generator

- Loose or worn generator drive belt

Reference Information

Schematic Reference
Automatic Transmission Controls Schematics on page 17-8

Connector End View Reference
Component Connector End Views on page 11-211

Description and Operation
Transmission General Description on page 17-278

Electrical Information Reference
- Circuit Testing on page 11-456
- Connector Repairs on page 11-478
- Testing for Intermittent Conditions and Poor Connections on page 11-460
- Wiring Repairs on page 11-465

DTC Type Reference
Powertrain Diagnostic Trouble Code (DTC) Type Definitions on page 6-61

Scan Tool Reference
Control Module References on page 6-1 for scan tool information

Special Tools

DT-47825-20 Adapter Harness

Circuit/System Verification

- Engine running, accessories OFF, measure and record the battery voltage at the battery terminals.The voltage should be between 12.6–15.0 volts.
- If not within the specified range, refer to Charging System Test (Acadia or Enclave) on page 9-39 or Charging System Test (OUTLOOK) on page 9-40.
- Observe the scan tool TCM Ignition Voltage parameter. The reading should be between 12.6–15.0 volts.
- Operate the vehicle within the Conditions for Running the DTC to verify the DTC does not reset. You may also operate the vehicle within the conditions that you observed from the Freeze Frame/Failure Records data.

Circuit/System Testing

1). Ignition OFF, disconnect the 20-way harness connector at the transmission.
2). Connect the DT-47825-20 to the 20-way transmission harness connector.
3). Test for less than 10 ohms between the ground circuit terminals listed below and ground.
- Terminal 1
- Terminal 18

f greater than the specified range, test the ground circuit for an open/high resistance.

4). Ignition ON, verify that a test lamp illuminates between the ignition circuit terminals listed below and ground.
- Terminal 13
- Terminal 15

If the test lamp does not illuminate, test the ignition circuit for a short to ground or an open/high resistance.

5). If all circuits test normal, replace the control solenoid (w/body and TCM) valve assembly.

Repair Instructions

Important:

- Perform the Service Fast Learn Adapts on page 17-102 following all transmission related repairs.
- Before replacing the TCM, perform the Control Solenoid Valve and Transmission Control Module Assembly Inspection on page 17-98. Perform the Diagnostic Repair Verification on page 6-86 after completing the diagnostic procedure. Control Module References on page 6-1 for control solenoid (w/body and TCM) valve assembly replacement, setup, and programming