

Your Vehicle: **2008 Chevy Truck Silverado 2500 2WD V8-6.6L DSL Turbo**

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C1112

DTC C0870, C1112, C1113, C1114, or C1119

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 Descriptors

- DTC C0870 00: Device Voltage Reference Output 1 Circuit.
- DTC C1112 00: Trailer Brake Control Relay Low Control Circuit.
- DTC C1113 01: Trailer Brake Control Relay High Control Circuit Short to Battery.
- DTC C1114 00: Trailer Brake Control Solenoids Control Circuit.
- DTC C1119 00: Trailer Brake Control Relay Feedback Circuit.

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
B+	C1112 00	C1112 00	--	--
Relay Feedback Signal	C1119 00	C1119 00	C1119 00	--
Solid State Relay Enable Control	C1112 00	C1112 00	C1113 01	--
Trailer Brake Output Supply Voltage Control	C1114 00	C1114 00	C1113 01,C1114 00	--
Intergrated Trailer Brake Relay Control Active Low Control	C1112 00	C1112 00	C1112 00	--
Ground	--	C1112 00	--	--

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Circuit System Description

The trailer brake control relay receives inputs from the trailer brake control module (TBCM), these inputs are used to determine the amount of voltage the relay will supply to the trailer brakes.

Conditions for Running the DTC

- Ignition ON.
- Battery voltage is 9.5-17 volts.
- The module is powered up and completes initialization.

Conditions for Setting the DTC

C0870 00

- The TBCM circuit reference voltage for the trailer brake control relay is below 4.8 volts or above 5.2 volts.

C1112 00

- The TBCM detects a short to ground, open or a short to voltage on the integrated trailer brake relay control active low circuit.
- The TBCM detects an open in the battery positive voltage circuit to the trailer brake control relay.

- The TBCM detects an open in the ground circuit to the trailer brake control relay.
- The TBCM detects a short to ground or open in the solid state relay enable circuit.

C1113 01

- The TBCM detects a short to voltage in the solid state relay enable circuit.
- The TBCM detects a short to voltage in the trailer brake output supply voltage control circuit.

C1114 00

- The TBCM detects a short to ground, open or a short to voltage on the solid state relay output circuit.

C1119 00

- The TBCM detects a short to ground, open or a short to voltage on the relay feedback circuit.

Action Taken When the DTC Sets

- The trailer brake control will be disabled for the remainder of the ignition cycle.
- The driver information center will display Service Trailer Brake System.

Conditions for Clearing the DTC

- The condition for the DTC is no longer present.
- The TBCM clears the history DTC when a current DTC is not detected in 40 consecutive drive cycles.

Circuit/System Verification

Important: These diagnostics are based on having no trailer connected.

Ignition ON, observe the scan tool trailer brake controls user gain parameter. The reading should be between 0-100 percent, and change with operating the gain switch up or gain switch down.

Circuit/System Testing

Important: These diagnostics are based on having no trailer connected.

1. Ignition OFF, disconnect the harness connector at the solid state relay.
2. Test for less than 5 Ω of resistance between the ground circuit terminal B and ground.
 - If greater than the specified range, test the ground circuit for an open/high resistance.
3. Ignition OFF, verify that a test lamp illuminates between the B+ circuit terminal F and ground.
 - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance. If the circuit tests normal and the STUD 2 fuse is open, replace the trailer brake control relay.
4. Ignition ON, verify that a test lamp does not illuminate between control circuit terminal E and ground.
 - If test lamp illuminates, test the control circuit for a short to voltage. If the circuit tests normal, replace the TBCM.
5. Ignition ON, verify that a test lamp does not illuminate between control circuit terminal E and B+.
 - If test lamp illuminates, test the control circuit for a short to ground. If the circuit tests normal, replace the TBCM.
6. Ignition ON, test for 3.2-4.1 V between the control circuit terminal C and ground.
 - If less than the specified range, test the control circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the TBCM.
 - If greater than the specified range, test the control circuit for a short to voltage. If the circuit tests normal, replace the TBCM.
7. Ignition ON, test for 3.2-4.1 V between the control circuit terminal A and ground.
 - If less than the specified range, test the control circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the TBCM.
 - If greater than the specified range, test the control circuit for a short to voltage. If the circuit tests normal, replace the TBCM.
8. Ignition ON, test for less than 1 V between the control circuit terminal D and ground.
 - If greater than the specified range, test the control circuit for a short to voltage. If the circuit tests normal, replace the TBCM.
9. If all circuits test normal, replace the trailer brake solid state relay.

