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## 2003 CHEVROLET Colorado Double Cab OEM Service and Repair Workshop Manual

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**NOTE**

**Note**

To minimize the effects of residual engine heat and sensor internal heating elements, perform Steps 1 and 2 of this verification procedure only if the ignition has been OFF for 8 hours or more.

1. Ignition ON.
2. Verify the following scan tool parameters are within 25°C (45°F) of each other.
   - Start-Up IAT Sensor 1
   - Start-Up IAT Sensor 2
   - Start-Up ECT
   - **If not within 25°C (45°F)**

     Refer to Circuit/System Testing.
   - **If within 25°C (45°F)**
3. Engine idling, verify the following scan tool parameters are between −38 to +149°C (−36 to +300°F).
   - IAT Sensor 1
   - IAT Sensor 2
   - ECT Sensor
   - **If not between −38 to +149°C (−36 to +300°F)**

     Refer to Circuit System Testing.
   - **If between −38 to +149°C (−36 to +300°F)**
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.
5. Verify the DTC does not set.
   - **If any DTC sets**

     Refer to Circuit/System Testing.
   - **If no DTC sets**
6. All OK

- If less than 2 Ω, repair the open/high resistance in the ground connection.

- **If less than 2 Ω**

5. Ignition ON.

6. Verify that a test lamp illuminates between the ignition circuit terminal 5 and ground.

- **If the test lamp does not illuminate and the circuit fuse is good**

1. Ignition OFF, remove the test lamp and remove the fuse for the ignition voltage circuit.

2. Test for less than 2 Ω in the ignition voltage 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. Ignition OFF, remove the test lamp and remove the fuse for the ignition voltage circuit.

2. Test for infinite resistance between the ignition voltage circuit and ground.

- If less than infinite resistance, repair the short to ground on the circuit.
- If infinite resistance

3. Test for greater than 2 Ω between the ignition voltage circuit terminal 5 and ground.

- If less than 2 Ω, repair the short to ground on the circuit.
- If greater than 2 Ω, test all the components connected to the circuit and repair or replace as necessary.

- **If a test lamp illuminates**

7. Ignition ON.

8. Verify the scan tool IAT Sensor 1 parameter is colder than −39°C (−38°F).

- **If warmer than −39°C (−38°F).**

1. Ignition OFF, disconnect the harness connector at the K20 Engine Control Module.

2. Test for infinite resistance between the signal circuit terminal 1 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 signal circuit end to end.

1. **NOTE**

   **Note**

   If the signal circuit is shorted to a voltage the engine control module or the sensor may be damaged.

   Ignition OFF, disconnect the harness connector at the K20 Engine Control Module, ignition ON.

2. Test for less than 1 V between the signal circuit and ground.
   - If 1 V or greater, repair the short to voltage on the circuit.
   - If less than 1 V, replace the K20 Engine Control Module.

- **If between 4.8–5.2 V**

13. Determine if **EL-38522-A** ***Variable Signal Generator*** or equivalent is available.

- **EL-38522-A, Variable Signal Generator; or equivalent is not available**

1. Test or replace the B75C Multifunction Intake Air Sensor.
2. 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.
3. Verify the DTC does not set.
   - **If the DTC sets**

     Replace the K20 Engine Control Module.
   - **If no DTCs set**
4. All OK.

- **EL-38522-A, Variable Signal Generator; or equivalent is available**

14. Ignition OFF, connect the leads of the **EL-38522-A** ***Variable Signal Generator*** as listed below:

- Red lead to the signal circuit terminal 8 at the harness connector
- Black leads to ground
- Battery voltage supply lead to B+

15. Set the **EL-38522-A** ***Variable Signal Generator*** to the specifications listed below:

- Signal switch to 5 V

- **If within 5%**

2. All OK.

**Repair Instructions**

Perform the Diagnostic Repair Verification after completing the repair.

- Mass Airflow Sensor with Intake Air Temperature Sensor Replacement for multifunction intake air sensor replacement.
- Control Module References for engine control module replacement, programming, and setup.