

# B1S1 O2 Sensor Circuit Testing Guide

## Vehicle: 2013 Dodge Caravan 3.6L

Wire Functions (from factory diagram):

Pin 1 - RD: Heater Power (+12V from TIPM)

Pin 2 - DB/DG: Heater Ground (PWM Controlled by PCM)

Pin 3 - WT/LB: O2 Signal (0-1V to PCM)

Pin 4 - WT/BK: Bias Return (~2.5V from PCM)

### 1. Heater Power Wire (RD)

Test Type: Sensor unplugged

Tool: DVOM or Test Light

How To: DVOM: Red to RD, Black to ground. Test Light: Clip to ground, probe RD.

Key ON, Engine OFF. Expect ~12V or bright light.

### 2. Heater Ground Control (DB/DG)

Test Type: Sensor plugged in

Tool: DVOM or Test Light

How To: DVOM: Black to battery positive, Red to DB/DG backprobe. Test Light: Clip to battery positive, probe DB/DG.

Start engine. Expect pulsing voltage or dim/blinking light.

### 3. Heater Resistance

Test Type: Sensor unplugged

Tool: DVOM (Ohmmeter)

How To: Measure ohms across RD and DB/DG on sensor side. Expect 3-15 ohms.

0 = short, OL = open heater.

### 4. Signal Voltage (WT/LB)

Test Type: Sensor plugged in

Tool: DVOM

How To: Red to WT/LB, Black to ground. KOEO. Expect ~0.45V bias.

>0.9V = short or bleed-through.

### 5. Bias Return (WT/BK)

Test Type: Sensor plugged in

Tool: DVOM

How To: Red to WT/BK, Black to ground. KOEO. Expect ~2.5V.

0V = open or PCM fault.

## 6. Wiggle Test

Test Type: Sensor plugged in

Tool: DVOM or Scope

How To: Gently wiggle harness while monitoring signal, ground, and bias lines.

Look for spikes or dropouts.

## Summary Table - Good vs Bad Readings

Wire	Test Type	Tool	Normal Value	Fault Indication
RD	Unplugged	DVOM	12V KOEO	0V = Fuse/Relay open
DB/DG	Plugged in	Test Light	Dimming/blinking	No activity = PCM fault
RD-DB/DG	Unplugged	Ohmmeter	3-15 Ohms	0 or OL = short/open heater
WT/LB	Plugged in	DVOM	~0.45V KOEO	>0.9V KOEO = false rich
WT/BK	Plugged in	DVOM	~2.5V KOEO	0V = open/floating return