



# Service Bulletin

## PRELIMINARY INFORMATION

**Subject:** Diagnostic Tip - Unwanted Grade Braking, Low Power, and/or Transmission Busy Shifting

**Models:** 2012-2015 Cadillac Escalade Models  
2012-2013 Chevrolet Avalanche  
2012-2015 Chevrolet Express, Silverado, Suburban, Tahoe  
2012-2015 GMC Savana, Sierra, Yukon Models

*This PI was superseded to update Recommendation/Instructions and Model Years. Please discard PIT5206B.*

The following diagnosis might be helpful if the vehicle exhibits the symptom(s) described in this PI.

### Condition/Concern

Some owners may comment of any/all of the following issues

- Unwanted grade braking when NOT going down a grade (when activated, the transmission will down shift and the engine RPM will increase)
- Reduced/Low engine power with no DIC messages or DTCs (Brake Pedal Override Feature)
- Transmission busy or frequent up and down shifts with no DTCs (when the transmission down shifts, the engine RPM will increase)

These issues may be caused by an incorrect Brake Pedal Position (BPP) sensor input to the ECM. If the ECM is reading the brake pedal as being applied, when it is not, these issues may occur.

### Recommendation/Instructions

The purpose of this bulletin is to help with finding the BPP data parameters in the scan tool, and to also provide some additional diagnostic help.

1. To view the BPP data in the ECM use the scan tool and build it as follows:  
Tech 2 (2013 and older models): Powertrain/ Select Engine Type/ Engine Control Module/ Data Display/ Auto. Transmission Data  
GDS (2014 and newer models) : Module Diagnostics/ Engine Control Module/ Data Display/ Automatic Transmission Data
2. Once the correct data list has been selected, scroll down and view the following parameters. Use these parameters to help determine if the ECM may be receiving an improper input from the BPP sensor  
BPP Signal = Applied or Released (should read "Released" with the brake pedal released)  
BPP Sensor = 0% to 100% (should read "0%" with brake pedal released)  
BPP Sensor = Varying Voltage (should read near 1 volt (+/- .3 volt approximately) with pedal released)  
BPP Sensor Learned Released Position = Voltage (should equal the BPP sensor voltage with pedal released)  
**Note:** NOT ALL ENGINE TYPES WILL HAVE ALL OF THE PARAMETERS LISTED ABOVE
3. If the parameter titled "BPP Sensor" is showing that the brake pedal is being applied (anything other than 0%), use the scan tool and monitor the voltage in the parameter titled "BPP Sensor Learned Released Position" and the voltage in the parameter titled "BPP Sensor" for being a non-typical voltage of volt (+/- .3 volt approximately).

A. If the "BPP Sensor Learned Released Position" voltage is a non-typical value, it may be caused by the following:

- The ECM learned an incorrect BPP sensor voltage because of a wiring/connection issue between the ECM and BPP sensor, typically with either circuit 5359 (5 volt reference) or circuit 5361 (Signal). The ECM is continuously monitoring the BPP sensor voltage for a value which is lower than the "BPP Sensor Learned Released Position" voltage. If there is an intermittent wiring/connection issue which caused the BPP Sensor voltage input to the ECM to drop below the learned voltage, the ECM will learn this new lower voltage. Once this intermittent wiring/connection issue corrects itself, the BPP

sensor voltage will return to its normal typical value, but the newly learned lower BPP voltage in the ECM will cause it to read it as if the brake pedal is actually being applied when it is released.

**Important:** If an ECM BPP sensor relearn is performed, the truck may be temporarily repaired until the intermittent wiring issues between the ECM and BPP sensor occurs again. If this happens, the ECM will once again learn the wrong "BPP Sensor Learned Released Position" voltage. A vehicle exhibiting this concern may lead a technician to believe the ECM is not retaining the "BPP Sensor Learned Released" value and cause him to unnecessarily replace the ECM.

Example of a known good, properly operating BPP sensor, with the pedal released. These values were taken after performing an ECM BPP sensor relearn.

"BPP Sensor Learned Released Position" voltage = 1.02 volts (typical value)

"BPP Sensor" voltage = 1.02 volts (typical value)

"BPP Sensor" % = 0%

Example of the BPP sensor values after an intermittent wiring/connection issue between the ECM and BPP sensor. The concern acted up, corrected itself, and the values below were taken afterwards with the pedal released. Notice the new lower voltage value of the parameter titled "BPP Sensor Learned Released Position"

"BPP Sensor Learned Released Position" voltage = .61 volts (non-typical value)

"BPP Sensor" voltage = 1.02 volts (typical value)

"BPP Sensor" % = 18%

- Another possible issue is that the ECM may have learned the BPP sensor voltage incorrectly and it will require a relearn.

**Important:** When looking up the ECM BPP relearn procedure in SI, there will be one relearn procedure for the BCM and another one for the ECM. Make sure you are using the ECM relearn procedure.

Example SI Doc ID's: 2655204 (old body style) and 2535744 (new body style).

Diagnostic Tip for the older body style trucks: If the ECM will not perform a BPP Sensor relearn, then SPS program the ECM. After the ECM SPS programming is complete, the BPP will relearn. Use the scan tool to verify the BPP Sensor is now showing 0% with the brake pedal released.

B. If the parameter titled "BPP Sensor" displays a voltage value that is a non-typical value, it may be caused by the following:

- A wiring/connection issue between the ECM and BPP, typically with circuit 5360 (Low Reference). This can cause the ECM to interpret the brake pedal as being applied when it is actually released.

Example:

"BPP Sensor Learned Released Position" voltage = 1.02 volts (typical value)

"BPP Sensor" voltage = 3.41 volts (non-typical value)

"BPP Sensor" % = 100%

Diagnostic Tip: Be sure to check for wiring / connector issues at inline connectors X115 or X119 on the new body style trucks and X205 on the old body style trucks.

## Warranty Information

The correction for this concern may be any one of several repairs described above. For vehicles repaired under warranty, please use the appropriate warranty labor operation based on the actual cause and repair.

Please follow this diagnostic or repair process thoroughly and complete each step. If the condition exhibited is resolved without completing every step, the remaining steps do not need to be performed.

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GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.



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