



Preliminary Information

PIT5206F Unwanted Grade Braking, Low Power, and/or Transmission Busy Shifting / P057B, P057C, and/or P057D

Product Investigation Review Required

Models

| Brand: | Model: | Model Years: | VIN: | | Engine: | Transmissions: |
|-----------|-----------------|--------------|------|-----|---------|----------------|
| | | | from | to | | |
| Cadillac | Escalade Models | 2012 - 2018 | All | All | All | All |
| Chevrolet | Avalanche | 2012 - 2013 | All | All | All | All |
| Chevrolet | Express Van | 2012 - 2018 | All | All | All | All |
| Chevrolet | Silverado | 2012 - 2018 | All | All | All | All |
| Chevrolet | Suburban | 2012 - 2018 | All | All | All | All |
| Chevrolet | Tahoe | 2012 - 2018 | All | All | All | All |
| GMC | Savana Van | 2012 - 2018 | All | All | All | All |
| GMC | Sierra | 2012 - 2018 | All | All | All | All |
| GMC | Yukon Models | 2012 - 2018 | All | All | All | All |

Supersession Statement

This PI was superseded to update the Model Year. Please discard PIT5206E.

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

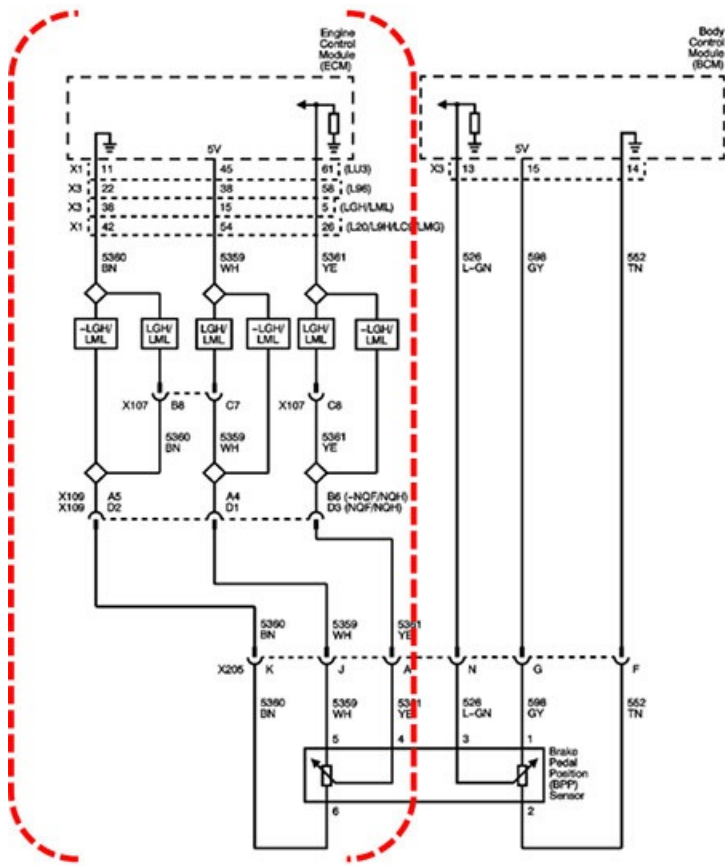
Condition / Concern

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

- Unwanted grade braking when NOT going down a grade
- Reduced/Low engine power with no DIC messages (Brake Pedal Override Feature)
- Transmission busy or frequent up and down shifts
- DTC's P057B, P057C, and/or P057D may or may not be set

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.

Note: The BPP sensor assembly has two completely separate internal sensors contained in one physical component. Each internal sensor can be compared to an old style Throttle Position Sensor (5v ref, Low ref, signal). The BPP sensor has 6 total circuits, three of the circuits (5v ref, Low ref, signal) connect to the BCM and the other three circuits (5v ref, Low ref, signal) connect to the ECM, see example wiring diagram below. The concerns outlined in this PI are with the three circuits that connect the BPP to the ECM.



Recommendations / Instructions

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

1. To view the BPP data in the ECM, use the scan tool and build the vehicle as follows:

Tech 2 (2013 and older models): Powertrain/ Select Engine Type/ Engine Control Module/ Data Display/ Auto. Transmission Data

GDS2 (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 parameters listed below. These parameters can help determine what value the ECM has learned for the brake pedal learned released voltage and what the actual BPP voltage is according to the ECM. With the brake pedal released, the actual "BPP Sensor" voltage should equal, or be very close to what the "BPP Sensor Learned Released Position" voltage is.

BPP Sensor (%) = 0% to 100% (should read "0%" with brake pedal released)

BPP Sensor (Voltage) = Voltage (typical voltage with pedal released is approximately 1 volt +/- .3 volt)

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. Once the ECM has learned the "BPP Sensor Learned Released Position" voltage there is no reason that this voltage should ever change. But 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 happens to be an intermittent wiring/connection issue which caused the BPP sensor voltage input to the ECM to drop below the previously learned voltage, the ECM will learn this new lower voltage. After the intermittent wiring/connection issue corrected itself, the "BPP sensor" voltage may NO LONGER equal the "BPP Sensor Learned Released Position" voltage when the brake pedal is released. Example, the new "BPP Sensor Learned Released Position" voltage may be .61 volts and the "BPP Sensor" voltage 1.02 volts with the brake pedal released. This would cause the ECM to think the brake pedal is applied, when in fact, it is not. This may cause the truck to go into an unwanted grade braking event, low engine power due to the brake pedal override feature, transmission busy shifting, etc.

If an ECM BPP sensor relearn is performed, the truck may be temporarily repaired until the intermittent wiring issue 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. Typically, if the ECM is intermittently learning a lower "BPP Sensor Learned Released Position" voltage it is cause by an issue with the BPP 5 volt reference circuit 5359 or the BPP signal return circuit 5361.

The most common areas for any of the BPP circuit issues on the Full Size trucks are:

New body style trucks (2014 and newer)

- Inline connector X115
- Inline connector X119/X315 (Connector number varies with vehicle build; refer to SI. This is a 16-way green connector mounted to the bottom of the X61A Junction Block - Instrument Panel.)

Old body style trucks (2014 and previous)

- Inline connector X205

4. 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, examples below. Also, in some cases when performing the ECM BPP relearn, the ECM may not learn the "BPP Sensor Learned Released Position" voltage or there is no relearn procedure listed. In these cases, make sure that with the brake pedal released, the BPP sensor voltage is a typical voltage reading of approximately 1 volt +/- .3 volt. If the voltage is typical and the ECM will not perform a relearn or there is no relearn procedure listed, try SPS programming the ECM. The ECM will then learn the actual BPP sensor voltage as the "BPP Sensor Learned Released Position" voltage.
Example SI Doc ID: 2655204 (old body style) and 2535744 (new body style).

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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