P2804: TRANSMISSION RANGE SENSOR "B" CIRCUIT HIGH

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$35-$350**
Can I Still Drive?	:	No

What Does The P2804 Code Mean?

This is a generic powertrain diagnostic trouble code (DTC) in the transmission sub-group. It is a type “B” code meaning that the powertrain control module (PCM) or the transmission control module (TCM) will not turn on the check engine light unless the conditions to set the code are present for two consecutive key cycles. (key on-off, off-on)

The PCM/TCM uses the transmission range sensor, sometimes called the inhibitor switch, to identify which gear position the shift lever is in. The code definition itself explains the problem that is causing the code; the signal from the range sensor is not present all of the time, or it is intermittently missing.

What Are The Symptoms Of The P2804 Code?

After the second key cycle, the PCM/TCM will turn on the check engine light and force the transmission into “Limp-home” or “safe-mode”. There will be an obvious power loss, most noticeable when taking off from complete stops. When in this mode, the transmission starts off in third gear which is hard on the internal clutches in the transmission.

What Are The Potential Causes Of The P2804 Code?

Potential causes for this code to set are:

- Faulty transmission range sensor “B”
- Faulty wiring “B”
- (Rarely) Faulty PCM or TCM

How Can You Fix The P2804 Code?

The transmission range sensor receives a 12 volt signal from the ignition switch then it sends a 12 volt signal, on the appropriate circuit according gear position, to the PCM/TCM.

P2804 set when the signal is missing at the PCM/TCM. A scan tool that has the ability to read live data is the most accurate way to diagnose this DTC, but if one is not available here are a couple of things that can be checked with a digital volt ohm meter. (DVOM) In my experience the most common cause of intermittent signal issues are wiring related.

In this case, a close visual inspection of the range sensor wiring harness and the internal contacts of the range sensor connector should be performed first and thoroughly. If anything is found suspect during the inspection, repair the issue, clear the codes and test drive the vehicle. If the DTC returns, set the DVOM to volts and back probe the appropriate circuits at the PCM/TCM and “wiggle” the harness at and leading to the range sensor. If no intermittent voltage loss can be seen on the meter suspect a faulty range sensor.

Related Transmission Range Sensor codes: P2800, P2801, P2802, and P2803.

Severity Description

In my experience this can cause severe internal damage to the transmission so it should be corrected as soon as possible. Avoid using the vehicle until repairs can be made.

Reference Sources

P2804 Transmission Range Sensor B Circuit High, OBD-Codes.