

TIPS Technical Service Bulletin #2006-001

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Summary

TSB Topic:	Using the TIPS with TPMS sensors that cannot be triggered (Gen I Beru, Siemens, Pacific Industries).
Description of Issue:	Certain older generation TPMS sensors (Siemens/Beru), as well as current generation sensors (Pacific Industries), do not contain electronics which allow them to be triggered. Since these sensors transmit based on time duration, it is possible that the tool can indicate random triggering modes, depending on what mode the tool is in when the TPMS sensor “wakes up” and communicates. It is possible to address this issue by placing the tool into “Mode 14” and using the tool as an RF listening device.
Vehicles Affected:	Older Mercedes-Benz, BMW vehicles (pre-2003). Most current (MY05 and later) Toyota/Lexus models
Current Software Version at time of TSB release	1.3.1
TPMS Sensors Affected:	Generation I Beru, Siemens, current Pacific Industries sensors
Summary:	It is possible to use your tool as a diagnostic aid, by placing it into “Mode 14”, with older generation Siemens/Beru, and current model Pacific Industries sensors. This will allow the tool to be used for Toyota and Lexus vehicles, as well as older generation Mercedes vehicles.

Body of TSB:

Question:

Why doesn't the TIPS tool have a trigger mode for the Pacific Sensors used on the Toyota and Lexus vehicles, and for first generation Beru/Siemens sensors (used on older generation Mercedes-Benz vehicles)?

Answer: The TIPS tool is able to test the correct operation of these sensors, but is not able to “trigger” them.

The TIPS tool is able to trigger most of the sensors available in the market today and in the future. The technology in the tool does this by sending a strong wireless command signal to the TPMS sensor in the wheel. The sensor then responds to the wireless command with a response which is detected by one of several receivers in the tool.

A few Tire Pressure Sensors available in the market do not have the ability to be triggered by any source, RF or magnetic. This means the electronic circuitry to receive the trigger command from the TIPS tool is just not present in these sensors.

The lack of direct trigger capability does not mean the tool is unable to test the Pacific Industries sensors! An activated Pacific Industries TPMS sensor will continuously transmit a Radio Frequency (RF) response every 30 to 70 seconds. The tool is able to detect this transmission and respond when the correct response is seen.

The tool reads the response, checks the frequency (315MHz or 434MHz), and verifies that the response is valid. These sensors can transmit the signal at any time. This type of transmission is called asynchronous, because it does not synchronize to the trigger transmission.

Since the sensor can send it's response at any time, the tool will get a response from the sensor at any time. If you are using the hunt/scan mode, the sensor may respond when the tool is transmitting mode 1, mode 2, or any other time. This means the tool may show a different mode for each tire, because it received the response at some random time from each of the tires.

The tool has a special mode for testing these sensors which does not even attempt to send the trigger signal. This mode is mode 14 (3 right most yellow LEDs on). Manually select mode 14 for these sensors and wait 1 minute for each tire to detect the Radio Frequency response from each sensor. Some vehicles may have to be driven to "wake up" the sensors and read their response.

This mode of operation has been tested with Toyota and Lexus vehicles with excellent success. Pacific Industries sensors on some vehicles, such as the Lexus SC430, may have to have the sensors mounted in the tire and driven before the sensor will begin to transmit. Most will operate correctly right out of the box.

So, to test sensors on Toyota and Lexus vehicles equipped with Direct Tire Pressure Monitoring:

- 1) Make sure the vehicle is equipped with the direct tire pressure monitoring system which has in-tire sensors. (Not the ABS based indirect TPMS system)
- 2) Use the Selection key to place the tool in mode 14 (Right 3 yellow LEDs on).
- 3) Press the Activate key to turn on the tool receivers.
- 4) Place the tool near the valve stem similar to when triggering a sensor normally.
- 5) Wait 1 minute for the sensor to respond.



Please note that some Pacific Industries sensors are color coded for correct placement on the vehicle. Please consult your vehicle manual for special instructions on how to handle these sensors during replacement and/or tire rotation.