

TPMS PMS

Tire Pressure Monitor Systems (TPMS) are being used on more and more new vehicles. Underinflated tires are potentially dangerous, especially if a vehicle is heavily loaded and traveling at highway speeds in hot weather. An underinflated tire on a hot day is a blowout waiting to happen. The pressure in the tires should be checked regularly, but many motorists do not check their tires and that is why tire pressure monitor systems have been legislated into use.



Government regulations mandated that 20 percent or more of the vehicles produced between October 2005, and September 2006 be equipped with a TPMS. For vehicles manufactured between September 2006 and September 2007, 70 percent of the vehicles must have a system, and all light duty vehicles built after September 1, 2007 with a GVWR of 4536 kg must have a system.

There are essentially two basic ways to monitor tire pressure electronically.

Indirect systems use the antilock brake system wheel speed sensors to monitor differences in tire rotational speeds. A tire with low pressure has a smaller rolling radius and will rotate faster. Indirect systems can't monitor actual tire pressure. They only compare tire rotating speeds.

Direct systems use a small pressure sensor mounted on the inside base of the valve stem. The sensor has a built-in transponder that broadcasts a radio signal to an external module. The module identifies the signal from each wheel and keeps an eye on pressure and temperature. If, pressure falls 25% below the recommended pressure, the module turns on a light or displays a message to warn the driver. If your vehicle calls for 32 psi in your tires, your TPMS let you know if a tire falls to 24 psi, although we have seen the TPMS light set at 30 psi. Some systems will tell you exactly which tire is low.

While direct TPMS systems are more accurate in reading pressures we have seen many problems.

1. One is battery life. Each pressure sensor inside each wheel contains a long-life lithium battery, which may last 5 to 10 years. The battery cannot be replaced separately on most sensors so the sensor/transponder must be replaced as a unit. If a battery has died, it's probably a good idea to replace all the TPMS transponders if the vehicle is more than six years old (however be aware they can cost from \$60 to over \$200 each).
2. Another issue with direct TPMS systems is keeping track of which wheel is which. Rotating the tires obviously changes the location of each transponder. So the system must be reset so the control module can relearn the position of each transponder. Domestic manufacturers have used some intelligence and allow on board relearning to be done on the vehicle, while imports require a factory scan tool to reset positions or replacements which adds to the maintenance cost.
3. If you have the unfortunate situation of a flat tire, the monitor will likely be damaged by driving on the flat till you get stopped, requiring you to purchase new monitor to install in your tire. Note: If you have a flat tire on a vehicle with TPMS sensors in the wheels, do not attempt to fix the flat by using an aerosol tire inflator/sealer product. The sealer may gum up the TPMS sensor inside the wheel making it inoperative.
4. If you do have TPMS and you have a flat or require new tires, your fee will cost more since extra time and care has to be taken so not to damage the monitor.



If your vehicle has tire pressure monitors, we strongly recommend you have your tires inflated with nitrogen. Nitrogen is an inert gas which does not take on moisture (has -50F dewpoint), therefore preventing premature corroding of your tire monitors and alloy rims. Nitrogen also minimizes the tire oxidation, slowing down the deterioration of the rubber. February 2009.