

Case Study:

North American Utilization of TPMS

OEMs Choose Direct TPMS

As mandated by U.S. legislation, North American car manufacturers have fully adopted TPMS as an integral safety system. Although the TREAD Act, passed in 2000, required 100 percent of all new cars to come equipped TPMS by the time 2008 models arrived at American dealerships, automakers still have choices about TPMS. The biggest choice they must make: direct or indirect technology.

Most all U.S.-based manufacturers, including those pictured here, have chosen direct TPMS technology. Direct TPMS technology employ wheel-mounted sensors that collect accurate pressure data directly from the tire. The sensors then communicate via radio frequency (RF) with the electronic control unit (ECU), which interprets the pressure data. If the data indicates that a tire is underinflated by 25 percent or more, the ECU delivers alerts that warn drivers of a potential tire pressure issue. Once the tire pressure is properly adjusted, the TPMS alert automatically turns off.

Indirect TPMS approximates tire pressure by using data gathered by the antilock brake system (ABS), sending it to the electronic stability program (ESP) ECU for calculation and interpretation. Once an indirect TPMS system alerts the driver, all tires must be checked to discover which tire or tires are at risk. Then the system must be manually reset—but new tire pressure data will not be available until the car has been driven long enough to generate new data for calculations. When it comes time to replace tires on a car with indirect TPMS, the choices for tires are limited, because indirect TPMS functions properly only if certain tires are installed. The technology and performance limitations of indirect systems make Direct TPMS an easy choice for OEM's.



“OEM customers have technology choices for their TPMS systems, and our customers choose Direct TPMS systems for good reasons. Direct TPMS technology ensures the safety of their customers and provides flexibility across their product range.”

—Carl Wacker, Vice President, Sales & Marketing, Schrader