



Tim Stock

Park Distance Control testing procedures

A recent Autobiz Helpline call, regarding Park Distance Control (PDC) errors on a Volkswagen Polo, prompted us to pass on some simple test procedures to the technician.

The proper test procedures for the parking system are a bit of a mystery to many technicians. Most will “listen” to the sensors with a stethoscope, to identify if they are transmitting after the initial code scan. But the actual testing process requires an oscilloscope to identify the signal integrity of the sensor and the power and ground supply, from the park distance control module.

The sensor signal can only be analysed with an oscilloscope, as the sensor produces a signal around the 40 kHz range. The amplitude of the signal increases as the distance between an obstacle and the sensor decreases. The Picoscope TA329 Ultrasonic detector, will display the high frequency sound signal coming from the sensor, and display the waveform as shown (Fig.1). The signal sent back to the PDC module on later vehicles can be a LIN bus signal.

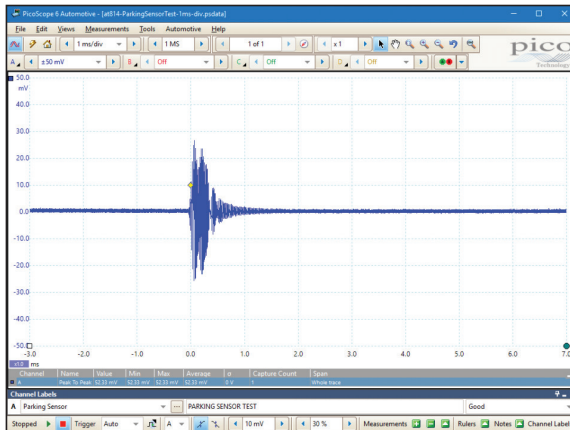
The failure of an individual sensor would indicate the sensor itself may have a power supply, ground or signal line issue, which must

be investigated first.

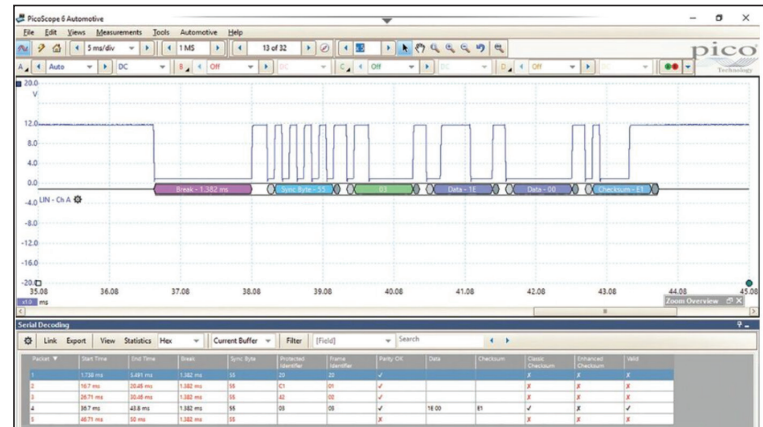
Multiple sensors offline indicate a possible module issue, and the reference voltage and ground lines from the module need to be checked.

If communication to the PDC module is not available, the Controller Area Network signals and the CAN physical layer must be confirmed.

Finally, the module power supplies, and earth connections, must be tested before condemning the PDC module as the issue.



An example parking sensor analog waveform



An example parking sensor digital waveform