## **BMW ABS issue**

Tech Bits

With Tim Stock

## BMW 1 Series E87 Case Study

This vehicle was reported to have an ABS DSC light on and was diagnosed as a Left Rear Sensor Signal Missing.

The sensor was resistance tested and compared to the opposite sensor. The resistance was not the same, so a new sensor was fitted, and the code deleted from the DSC system. A road test waa performed, and the ABS system was working correctly.

Around 4 weeks later, the vehicle returned with the same error code in the DSC system. This time, the signal was checked with a Picoscope and compared with the opposite side. Both sensors showed the same resistance values, but the Left Rear sensor signal was a flat line, no activity at all was showing.

The near side loom was jumped to the offside sensor to confirm the circuit was not the issue. The signal was correct, and the data was being received by the DSC controller. So once again, a new sensor was fitted and all was good, but only for the first test drive. The sensor



triggered a fault message again.

Technic

Drilling down deeper into the fault, the reluctor was inspected very closely. Two of the teeth on the ring looked much cleaner than the rest. On close inspection of the failed sensor, very slight scratch marks were visible on the tip

Tim Stock

of the sensor.

Call to join

The reluctor was measured and all teeth where compared to each other in height. It was found that 2 teeth were raised very slightly, and had been contacting the tip of the sensor.

The reluctor had been subject to corrosion between the reluctor and the driveshaft, altering the air gap very slightly. The contact between the raised teeth and the sensor had damaged the sensing element.

After repairing the drive shaft and reluctor, the fault was cleared and did not occur again.

**Note:** This problem has also been found on some 3 Series models with failing Left Rear Wheel Speed sensors.



## Nissan Micra K12 Case Study

This vehicle was delivered from another workshop with the engine running issues of poor idle quality and high emissions.

The 2005 Micra 1.4 fitted with a CR14DE engine had previously had the upstream Lambda sensor replaced, due to a fault code for O2 sensor signal P2274.

## MIL on and emissions failed

After the first workshop could not identify the root cause of this reoccurring fault, it was sent to a second garage for more investigation.

And after some further testing, they concluded the O2 sensor was still the issue and was replaced a second time. The fault remained.

It was then the Helpline was called to assist with the diagnosis and repair. We asked for the lambda sensor signal to be tested with a scope. In doing this, we found that the signal was switching in the low range 0.1 volts to 0.45 volts.

The heater circuit was checked, and had a healthy battery supply. The ground for the heater was also working correctly.

Then we asked for the sensor ground to be scoped, and this is when we found 0.25 volts present on the O2 sensor earth. Testing the sensor earth at the ECM multiplug still showed the high voltage drop on the earth return line.

This is a known problem for the Nissan K12 Micra and an internal issue within the ECM is the root cause.

However, a fix has been found. Externally grounding the Lambda sensor loom rectifies the issue, and allows the Lambda signal to return to the correct level. With this fix, the emissions settles back to the correct levels and the idle improves.