



Bmw Battery Drain

As we know modern vehicles nowadays are not just the ignition switch shutting off power to all the car components. Many luxury cars (and mainstream models) now have complex battery management systems, sensors and control units controlling the vehicle power supply.

This brings us to a 2005 E60 BMW 523 that came into our workshop recently with a “ Battery discharge fault “ displayed in the dash board on the start up. A new battery had been fitted to the vehicle but the car still had the same fault the next day. The customer was obviously getting frustrated at this stage

E60 Battery Measurement Explained:

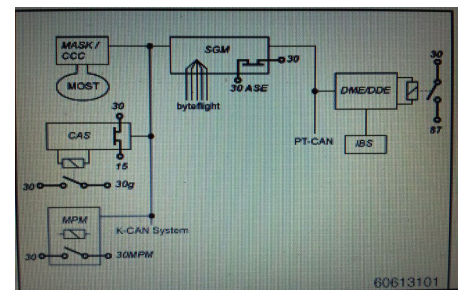
The wiring diagram to the right shows briefly the main modules controlling power supply on the car. When the car is switched off each module goes into

“sleep mode “ after a length of time that is programmed in the factory.

Generally all modules are asleep in 45 minutes after vehicle switch off.

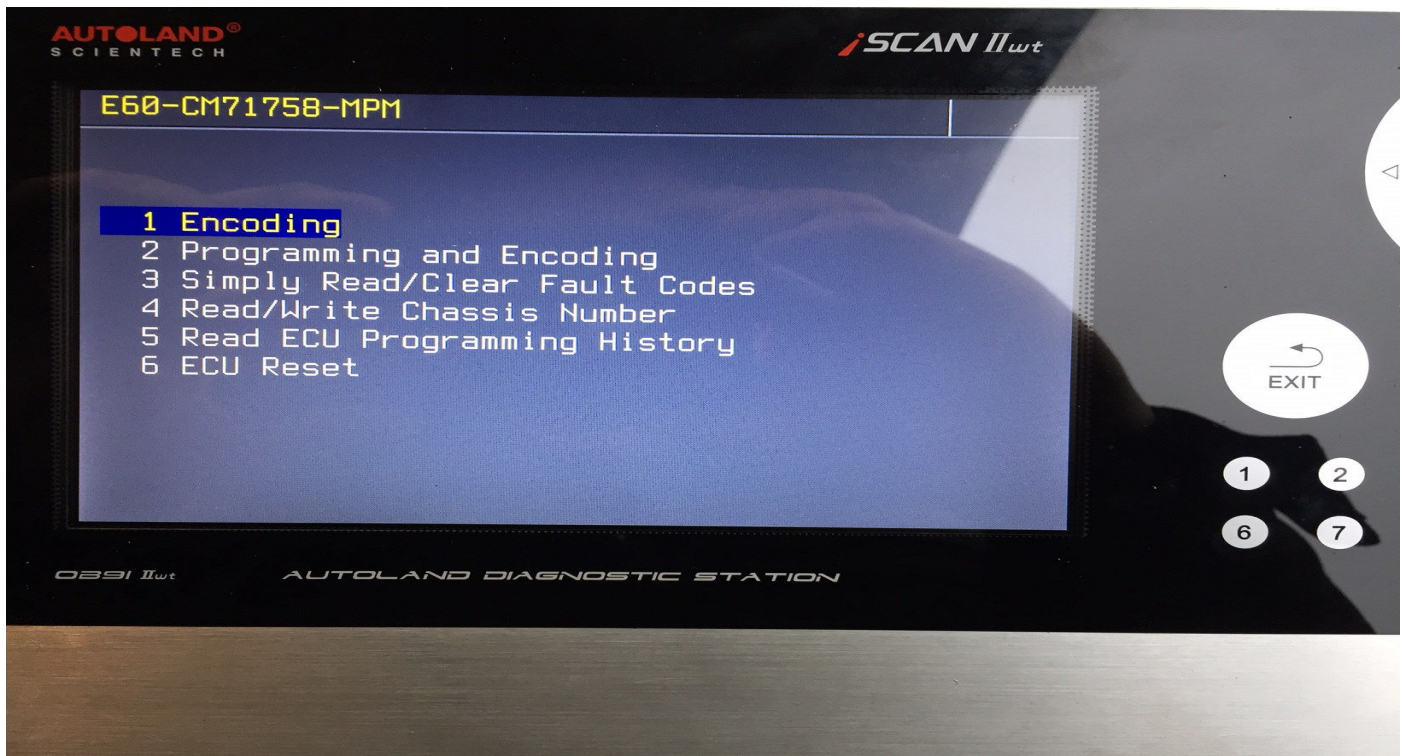
When this happens the battery state of health is then measured by the IBS

(Intelligent battery Sensor). This is a electronic component connected to the negative battery terminal. The IBS is programmed to “wake up” every 14 seconds so that it can update the measured values with the new measurements. The measuring time is approx. 50 milliseconds. When the engine is restarted the engine ECU DME then reads the stored data from the IBS sensor and compares the current consumption with the pre-programmed acceptable value. If consumption is out side the accepted range then a fault code is stored in the ECU/DME



Testing and Fault Finding:

To test this the only option is to use an amp meter connecting in series with the negative battery terminal. When this was done a drain of 250 milliamps after 1 hour(to allow the car to go to sleep mode) was found. The acceptable drain for this should be below 15milliamps. To narrow down where this drain was coming from we had to start removing fuses one by one. This is a time consuming procedure but unfortunately the only way to find the fault. When fuse number 57 Was removed we found that the drain dropped to approx 10 milliamps . On consulting the fuse function this fuse supplied the MPM (Micro Power Module). A small module in the boot floor under the spare wheel which controls the power supply to the audio and navigation systems. We then consulted the wiring diagram for this module and carefully checked all power supplies and outputs from the module and it was found the module wasn't “ shutting down” correctly



Repair:

Replacement of this part is easy job so all that was left was to program the new module. As with all modules in BMWs it needs to be encoded to the car to match the other control unit configuration. Also during the coding process the chassis number is read from the car and programmed to the module. This process was easily done using the Autoland I Scan II WT. Once this was completed we rechecked the drain with an amp meter and were getting just 10 milliamps after vehicle shut down