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Service Bulletin

PRELIMINARY INFORMATION

Subject: **Diagnostic Tip - Outside Air Temperature (OAT) Sensor Operating Characteristics**

Models: **2013-2015 Cadillac ATS**
2014-2015 Cadillac CTS Sedan (VIN A)

The following information reflects normal operating characteristics with the Outside Air Temperature (OAT) Sensor.

OAT Routine:

The OAT uses a filter routine to minimize false updates due to engine heat or road heat.

Vehicle parked more than 2 hours: The OAT updates to the current sensor reading

Vehicle parked less than 2 hours AND the new reading is LESS than the vehicle shutdown reading: The OAT updates to the current reading.

Vehicle parked less than 2 hours AND the new reading is MORE than the vehicle shutdown reading: The vehicle will startup with the shutdown reading. As the vehicle is driven at speeds over 19 mph the filter counter start to count up, under 19 mph the filter counter counts down. Once the counter reaches it max counter, the OLD OAT is updated to the Current OAT reading.

Example1: Vehicle is shutoff for 1hr, OAT is 70degF. The outside temperature has increased during the shut down to 74degF. The vehicle is started, OAT will still be clamped at 70degF, the driver drives at a stable speed over 19 mph for a minimum of 3 to 8 minutes with no stops, OAT updates to current temp of 74degF

Example2: Same as above: Vehicle is shutoff for 1hr, OAT is 70degF. The outside temperature has increased during the shut down to 74degF. The vehicle is started, OAT will still be clamped at 70degF. However, this time the driver does heavy city traffic driving for 10 minutes (i.e. much stop-n-go driving), then gets on the highway for a minimum of 2 to 6 minutes, the OAT update to the current temp of 74degF. This time it took longer to update because of all the stop and go driving.

Since the OAT sensors in the front grill, the values must be filtered to prevent them from updating to false readings when there is engine heat or road heat.

Warm Garage, Colder Outside Temperature:

If the vehicle is started in a garage that is warmer than the outside temperature, it may take some time to update to the new cooler ambient temperature. It may take up to 10 minutes to reach the new ambient temperature.

Example1: Vehicle is shutoff for short time, or for overnight. Heated garage temp is 70degF. The outside temperature has decreased during the shut down to 60degF. The vehicle is started, OAT will register 70degF (heated garage temp). When driven outside the OAT will start to update lower to 60degF as the sensor cools off, should take less than 8 minutes.

Example2: Same as above: Vehicle is shutoff for short time, or for overnight. Heated garage temp is 70degF. The outside temperature has decreased during the shut down to 60degF. The vehicle is started, OAT will register 70degF (heated garage temp). However, this time, the driver does heavy city traffic driving for 10 minutes (i.e. much stop-n-go driving) then gets on the highway for at least 2 minutes. When driven outside, the OAT will start to update lower to 60degF as the sensor cools off. This should take less than 10 minutes to reach 60degF.

Please follow this diagnostic or repair process thoroughly and complete each step. If the condition exhibited is resolved without completing every step, the remaining steps do not need to be performed.
