

Comprehensive Component Monitor (CCM)

The CCM is an on board strategy designed to monitor a concern in any electronic component or circuit that provides an input or output signal to the PCM and is not exclusively monitored by another monitor system. Inputs and outputs are considered inoperative when a concern exists due to a lack of circuit continuity, out of range value or rationality checks.

The CCM covers many components and the related circuits. The tests vary depending on the hardware, function, and type of signal. For example, analog inputs are typically checked for opens, shorts, and out of range values or rationality. This type of monitoring is carried out continuously. These tests may require the monitoring of several components and may only be carried out under the appropriate test conditions. Some outputs are also monitored for the correct function by observing the reaction of the control system to a given change in the output command. An example of this is the turbocharger control system.

In general, the CCM covers a broad range of individual component and circuit checks, and testing is carried out under various conditions. The CCM is enabled after the ignition switch is turned on. If a concern is detected that impacts emissions, the malfunction indicator lamp (MIL) is illuminated after 2 drive cycles.

The following are examples of some of the input and output components monitored by the CCM. The components monitored may belong to the engine, transmission, or any other PCM supported subsystem.

- The input components monitored include the engine oil temperature (EOT), accelerator pedal position (APP), and camshaft position (CMP) sensors.
 - The output components monitored include the fuel pump.
 - The MIL is activated after a concern is detected if the concern impacts emissions.
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