No.: 16 TS-17
August 17, 2016

TO: Service Locations

FROM: Service Systems Development

SUBJECT: **GHG17 DD Platform Ambient Air Temperature Sensor and Fault Codes SPN 1636/FMI 16 - Charge Air Cooler Efficiency Low and/or SPN 171/FMI 20 - Ambient Temperature Sensor Signal Not Plausible**

ISSUE

The GHG17 DD platform engine uses an actual Ambient Air Temperature Sensor. It is **NOT** backwards compatible to EPA10 and GHG14 trucks. The sensor is also used for optional features such as Idle Shutdown and Optimized Idle®. The sensor is hardwired to the Common Powertrain Controller (CPC) as follows:

- Ambient Air Temp Sensor = Pin 3/15
- Ambient Air Temp Sensor Return = Pin 3/2.

Some trucks are logging fault codes SPN 1636/FMI 16 - Charge Air Cooler Efficiency Low and/or SPN 171/FMI 20 - Ambient Temperature Sensor Signal Not Plausible.

CAUSE

The cause of the fault codes is due to an incorrect Ambient Air Temperature Sensor installed by the vehicle OEM.

REQUIRED ACTION

Check the Ambient Air Temperature Sensor reading in DiagnosticLink®. It can be viewed in the chart function under the CPC module by viewing “ASL: Ambient Air Temperature”. Note that there are other Ambient Air Temperature Sensor readings from other modules that may not be correct - do not use them. The incorrect sensor will typically read about 17°C (30°F) colder than the actual ambient air temperature. See Figure 1 where the log file shows the Ambient Air Temperature Sensor was reading -4°C (25°F) but the actual temperature at the repair shop was over 16°C (60°F).

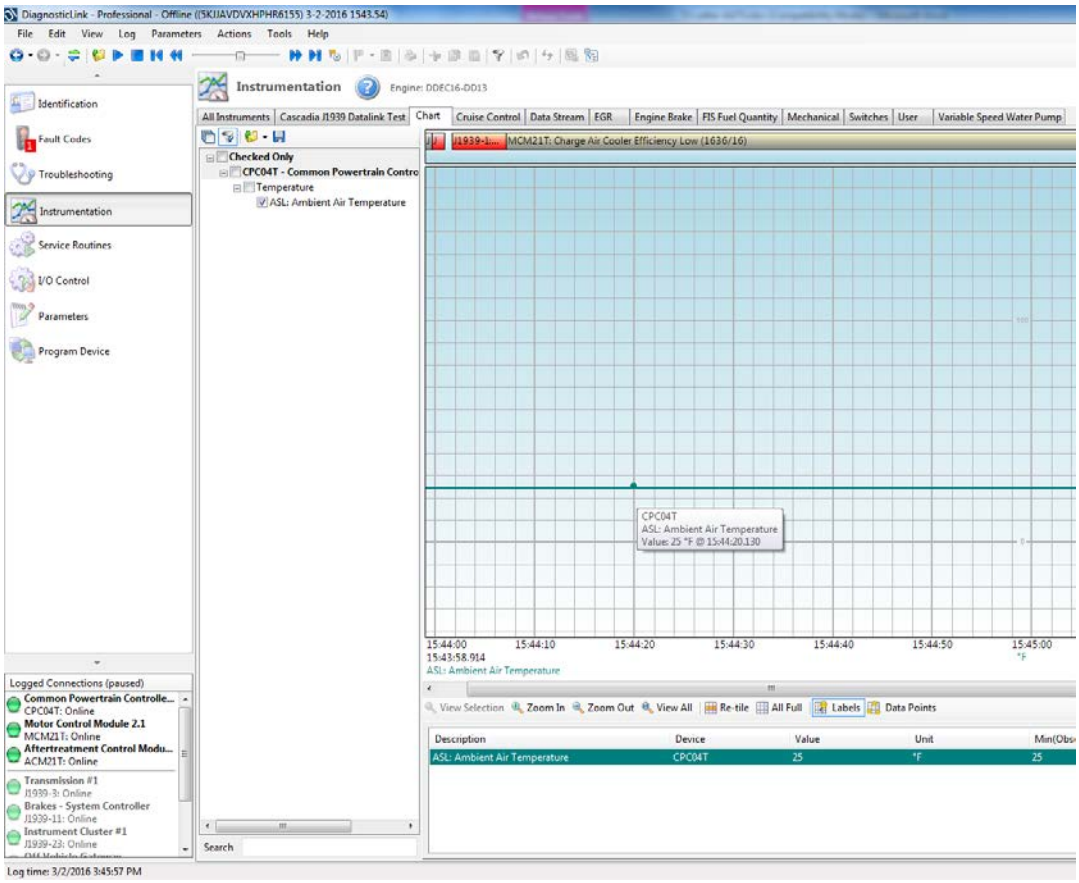

Figure 1 – DiagnosticLink Log File with Incorrect Ambient Air Temperature Sensor

If the Ambient Air Temperature Sensor reading is incorrect, inspect the sensor. The correct sensor is P/N: 23518328. The part number is noted on the sensor itself for easy identification. If the sensor is incorrect, replace it. See Figure 2 for an example of the correct sensor.

Figure 2 – Correct Ambient Air Temperature Sensor P/N: 23518328

Freightliner Cascadia and Coronado chassis have the sensor installed in the driver side mirror. See Figure 3. Western Star 5700XE chassis have the sensor installed inside the passenger side mirror. See Figure 4. Western Star 4700/4900 chassis have the sensor installed above the passenger side mirror in a small metal junction box. See Figure 4.

Figure 3 – Sensor Location in Cascadia and Coronado Chassis

Western Star 5700XE Chassis

Western Star 4700/4900 Chassis

Figure 4 – Sensor Location in Western Star Chassis

REPAIR PROCEDURE

Follow the applicable repair procedure in the chassis OEM service manual for replacing the sensor.

CLAIM PROCESS

Normal vehicle OEM in-warranty procedures apply. Do **NOT** file any claim for this issue in the Detroit engine warranty system.

CONTACT INFORMATION

Please contact the Detroit™ Customer Support Center at 800-445-1980 or email csc@daimler.com if you have any questions.