

P00CE - Intake Air Temperature Measurement System - Multiple Sensor Correlation

Description: This DTC sets when the intake air temperature (IAT), charge air cooler temperature (CAC_T) and the intake air temperature 2 (IAT2) PIDs are each greater than 16.67°C (30°F) different from each other at start up or that each sensor is out of the calibrated range at engine start up after a soak period of at least 6 hours when a block heater is not used.			
Possible Causes: <ul style="list-style-type: none">• Damaged IAT, CACT or IAT2 sensors• Contaminated or blocked IAT, CACT or IAT2 sensors• Slow responding IAT, CACT or IAT2 sensors			
Diagnostic Aids: Compare all sensor readings to the ambient temperature to determine which sensor is reading correctly.			
Application	Key On Engine Off	Key On Engine Running	Continuous Memory
F-150 3.5L		GO to Pinpoint Test HN.	
All others		GO to Pinpoint Test EA.	

2014 PCED Gasoline Engines

SECTION 5: Pinpoint Tests
Procedure revision date: 10/10/2013

EA: Pressure and Temperature Sensor Correlation

← EA: Introduction

EA1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

Note: Diagnose and repair all circuit DTCs before diagnosing range or performance DTCs.

Are DTCs P007B, P0096, P0106, P0111, P0236, or P00CE present?

Yes	No
For KOEO and continuous memory DTCs P007B, P0096, P0111 or P00CE, GO to EA2. For KOER DTCs P007B, P0096 or P00CE, GO to EA4. For KOEO and continuous memory DTCs P0106 or P0236, GO to EA5. For KOER DTCs P0106 or P0236, GO to EA8.	RETURN to Section 3 , Symptom Charts for further direction.

EA2 CHECK FOR TEMPERATURE SENSOR CIRCUIT DTCS

Are DTCs P007B, P0096, P0111 or P00CE present along with other DTCs?

Yes	No
DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions.	GO to EA3.

EA3 CHECK FOR CAC_T, IAT, AND IAT2 VALUE CORRELATIONS

- Cold soak the vehicle at ambient temperature for at least 6 hours.

- Ignition ON, engine OFF.
- Access the PCM and monitor the CAC_T (TEMP), IAT (TEMP) and IAT2 (TEMP) PIDs.

Are the IAT, CACT and IAT2 temperature readings within 16.67°C (30°F) of each other?

Yes	No
<p>UNABLE to duplicate or identify the concern at this time. Cold soak the vehicle at ambient temperature for at least 6 hours. REPEAT the self-test.</p> <p>GO to EA4.</p> <p>If no concern is present, GO to EA9.</p>	<p>For IAT sensor, GO to Pinpoint Test DA.</p> <p>For TCBP/CACT or MAP/IAT2, GO to Pinpoint Test DN.</p>

EA4 CHECK THE KOER CAC_T, IAT, AND IAT2 VALUES

- Allow the engine to idle at the normal operating temperature.
- Access the PCM and monitor the CAC_T (TEMP), IAT (TEMP) and IAT2 (TEMP) PIDs.
- Drive the vehicle at a steady speed of 88 km/h (55 mph) for a minimum of 6 minutes.

Does the IAT temperature exceed 65.5°C (150°F), or does the CACT temperature exceed 104.4°C (220°F), or does the IAT2 temperature exceed 115.6°C (240°F)?

Yes	No
<p>CHECK the charge air cooler (CAC) for debris and obstructed air flow. REPAIR as necessary.</p> <p>If OK, INSTALL a new sensor for the sensor that exceeded the temperature limit. REFER to the Workshop Manual Section 303-14, Electronic Engine Controls.</p> <p>Clear the PCM DTCs. REPEAT the self-test.</p>	<p>GO to EA9.</p>

EA5 CHECK FOR PRESSURE SENSOR CIRCUIT DTCS

Are DTCs P0106 or P0236 present along with other DTCs?

Yes	No
<p>DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions.</p>	<p>GO to EA6.</p>

EA6 CHECK FOR KOEO BARO, MAP, TCBP VALUE CORRELATIONS

- Ignition ON, engine OFF.
- Access the PCM and monitor the BARO (PRESS), MAP (PRESS) and TCBP (PRESS) PIDs.

Are the BARO, MAP, and TCBP pressure readings within 10.35 kpa (1.5 psi) of each other?

Yes	No
<p>GO to EA7.</p>	<p>For TCBP/CACT or MAP/IAT2, GO to Pinpoint Test DN.</p> <p>For BARO, GO to Pinpoint Test DO.</p>

EA7 CHECK FOR PRESSURE SENSOR INLET RESTRICTIONS

- Remove the TCBP/CACT or MAP/IAT2 sensors. Refer to the Workshop Manual Section 303-14, Electronic Engine Controls.
- Carry out a visual inspection.
- Check the TCBP/CACT or MAP/IAT2 sensor port and inlet for:
 - contamination
 - restrictions
 - carbon build-up or deposits

Is a concern present?

Yes	No
CLEAN or INSTALL a new sensor as necessary. REFER to the Workshop Manual Section 303-14, Electronic Engine Controls. Clear the PCM DTCs. REPEAT the self-test.	GO to EA9.

EA8 CHECK THE BARO, MAP AND TCBP VALUE CORRELATIONS

- Allow the engine to idle at the normal operating temperature.
- Access the PCM and monitor the BARO (PRESS) and TCBP (PRESS) PIDs.

Are the BARO and the TCBP readings within 6.9 kpa (1 psi) of each other?

Yes	No
INSTALL a new TCBP/CACT sensor. REFER to the Workshop Manual Section 303-14, Electronic Engine Controls. Clear the PCM DTCs. REPEAT the self-test.	GO to EA9.

EA9 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Visually inspect for:
 - pushed out pins
 - corrosion
- Connect all the PCM connectors and make sure they seat correctly.
- Carry out the PCM self-test.
- Verify the concern is still present.

Is the concern still present?

Yes	No
INSTALL a new PCM. REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM) , Programming the VID Block for a Replacement PCM.	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.
