

DTC	P0125	Insufficient Coolant Temperature for Closed Loop Fuel Control
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CIRCUIT DESCRIPTION

Refer to DTC P0115 on page [DI-540](#).

DTC No.	DTC Detection Condition	Trouble Area
P0125	If THW or THA is less than -19.45°C (-3°F) at engine start and 20 min. or more after starting engine, engine coolant temp. sensor value is 20°C (68°F) or less (2 trip detection logic)	<ul style="list-style-type: none"> • Cooling system • Engine coolant temperature sensor • Thermostat
	If THW and THA is between -19.45°C (-3°F) and -8.34°C (17°F) at engine start, 129 sec. or more after starting engine and engine coolant temp. sensor value is 20°C (68°F) or less (2 trip detection logic)	
	If THW and THA greater than -8.34°C (17°F) at engine start and 77 sec. or more after starting engine, engine coolant temp. sensor value is 20°C (68°F) or less (2 trip detection logic)	

MONITOR DESCRIPTION

The ECT (Engine Coolant Temperature) sensor is used to monitor the temperature of the engine coolant. The resistance of the sensor varies with the actual coolant temperature. The ECM applies a voltage to the sensor and the varying resistance of the sensor cause the signal voltage to vary. The ECM monitors the ECT signal voltage after engine start-up. If, after sufficient time has passed, the sensor still reports that the engine is not warmed up enough for closed-loop fuel control after sufficient time has passed, the ECM interprets this as a fault in the sensor or cooling system and sets a DTC.

Example:

The engine coolant temperature was 0°C (32°F) at engine start. After 5 min. running time, the ECT sensor still indicates that the engine is not warmed up enough to begin air fuel ratio feedback control of the air-fuel ratio. The ECM interprets this as a fault in the sensor or cooling system and will set a DTC.

MONITOR STRATEGY

Related DTCs	P0125	Insufficient coolant temperature for closed loop fuel control
Required sensors/components	Main sensors/components	Engine coolant temperature sensor, Cooling system, Thermostat
	Related sensors/components	Mass air flow meter
Frequency of operation	Continuous	
Duration	77 sec. (at engine start, engine coolant or intake air temperature of -8.34°C (17°F) or more) 129 sec. (at engine start, engine coolant or intake air temperature of -19.45 to -8.34°C (-3 to 17°F)) 20 min. (at engine start, engine coolant or intake air temperature of less than -19.45°C (-3°F))	
MIL operation	2 driving cycles	
Sequence of operation	None	

TYPICAL ENABLING CONDITIONS

Item	Specification	
	Minimum	Maximum
The monitor will run whenever this DTC is not present	See page DI-437	
Fuel cut	OFF	
Engine	Running	

TYPICAL MALFUNCTION THRESHOLDS

Detection Criteria	Threshold
Time until "engine coolant temperature" detection temperature reaches feedback start temperature	
When the temperature at the time of engine starting is -8.34°C (17°F) or more	Engine coolant temperature is less than "closed-loop enable temperature" when 77 sec. or more after engine start
When the temperature at the time of engine starting is -19.45 to -8.34°C (-3 to 17°F)	Engine coolant temperature is less than "closed-loop enable temperature" when 129 sec. or more after engine start
When the temperature at the time of engine starting is -19.45°C (-3°F) or less	Engine coolant temperature is less than "closed-loop enable temperature" when 20 min. or more after engine start

INSPECTION PROCEDURE

HINT:

- If DTC P0115, P0116, P0117, P0118 and P0125 are output simultaneously, engine coolant temperature sensor circuit may be open or short. Perform the troubleshooting of DTC P0115, P0117 or P0118 first.
- Read freeze frame data using the hand-held tester. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, if the air-fuel ratio was lean or rich, as well as other data from the time when a malfunction occurred.

1	Are there any other codes (besides DTC P0125) being output?
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PREPARATION:

- Connect the hand-held tester to the DLC3.
- Turn the ignition switch ON and push the hand-held tester main switch ON.
- When using hand-held tester, enter the following menu: DIAGNOSIS / ENHANCED OBD II / DTC INFO / CURRENT CODES.

CHECK:

Read the DTCs using the hand-held tester.

RESULT:

Display (DTC output)	Proceed to
P0125	A
"P0125" and other DTCs	B

HINT:

If any other codes besides "P0125" are output, perform the troubleshooting for those DTCs first.

B

Go to relevant DTC chart (See page [DI-477](#)).

A

2	Inspect thermostat (See page CO-11).
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CHECK:

Check the valve opening temperature of the thermostat.

OK:

Valve opening temperature is 80 to 84°C (176 to 183°F)

HINT:

Also check that the valve is completely closed under opening temperature as above.

NG	Replace thermostat (See page CO-12).
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OK

3	Check cooling system.
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CHECK:

Check that there is detect in the cooling system which causes overcool, such as abnormal radiator fan operation, modified cooling system and so on.

NG	Repair or replace cooling system.
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OK

Replace engine coolant temperature sensor.
