

<b>DTC</b>	<b>P0116</b>	<b>ENGINE COOLANT TEMP. CIRCUIT RANGE/PERFORMANCE PROBLEM</b>
------------	--------------	---

## CIRCUIT DESCRIPTION

Refer to DTC P0115 on page [05-186](#).

DTC No.	DTC Detecting Condition	Trouble Area
P0116	When engine starts, water temp. is $-7^{\circ}\text{C}$ ( $20^{\circ}\text{F}$ ) or less. And, 20 min. or more after engine starts, engine coolant temp. sensor value is $20^{\circ}\text{C}$ ( $68^{\circ}\text{F}$ ) or less (2 trip detection logic)	<ul style="list-style-type: none"> <li>• Cooling system</li> <li>• Engine coolant temp. sensor</li> <li>• Thermostat</li> </ul>
	When the engine starts, water temp. is between $-7^{\circ}\text{C}$ ( $20^{\circ}\text{F}$ ) and $10^{\circ}\text{C}$ ( $50^{\circ}\text{F}$ ). And, 5 min. or more after the engine starts, the engine coolant temp. sensor value is $20^{\circ}\text{C}$ ( $68^{\circ}\text{F}$ ) or less (2 trip detection logic)	

## INSPECTION PROCEDURE

### HINT:

- If DTCs P0110, P0115, P0116, P0120 and P0121 are output simultaneously, engine coolant temperature sensor circuit may be open. Perform the troubleshooting of DTC P0115 first.
- Read freeze frame data using the hand-held tester or OBD scan tool, as freeze frame data records the engine conditions when the malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air-fuel ratio was lean or rich, etc. at the time of the malfunction.

<b>1</b>	<b>READ OUTPUT DTC(BESIDES P0116)</b>
----------	---------------------------------------

### Result:

	A	B
RESULT	Only P0116 is output.	P0116 and other codes are output.

<b>B</b>	<b>GO TO RELEVANT DTC CHART</b>
----------	---------------------------------

<b>A</b>
----------

<b>2</b>	<b>INSPECT THERMOSTAT</b>
----------	---------------------------

<b>NG</b>	<b>REPLACE THERMOSTAT</b>
-----------	---------------------------

<b>OK</b>
-----------

<b>REPLACE E.F.I. ENGINE COOLANT TEMPERATURE SENSOR</b>
---