

DTC	P0116	Engine Coolant Temp. Circuit Range/Performance Problem
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CIRCUIT DESCRIPTION

Refer to DTC P0115 on page [DI-30](#).

DTC No.	DTC Detecting Condition	Trouble Area
P0116	If THW $\leq -7^{\circ}\text{C}$ (19.4°F) at engine start, 20 min. or more after starting engine, engine coolant temp. sensor value is 15°C (59°F) or less (2 trip detection logic)	<ul style="list-style-type: none"> Cooling system Engine coolant temp. sensor
	If THW $\leq -7^{\circ}\text{C}$ (19.4°F) and $\leq 10^{\circ}\text{C}$ (50°F) at engine start, 5 min. or more after starting engine, engine coolant temp. sensor value is 17°C (62.6°F) or less (2 trip detection logic)	
	If THW $\geq 10^{\circ}\text{C}$ (50°F) at engine start, 2 min. or more after starting engine, engine coolant temp. sensor value is 35°C (95°F) or less. (2 trip detection logic)	
	When THW $\geq 35^{\circ}\text{C}$ (95°F) and $< 60^{\circ}\text{C}$ (140°F), and THA $\geq -6.7^{\circ}\text{C}$ (19.9°F), and when starting engine, conditions (a) and (b) continue: (2 trip detection logic) (a) Vehicle speed is changing (Not stable) (b) THW change is lower than 3°C (5.4°F) from THW since when starting engine	

INSPECTION PROCEDURE

HINT:

- If DTCs P0115 and P0116 are output simultaneously, engine coolant temp. sensor circuit may be open. Perform troubleshooting of DTC P0115 first.
- Read freeze frame data using TOYOTA hand-held tester or OBD II scan tool. Because freeze frame 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.

1	Are there any other codes (besides DTC P0116) being output?
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YES

Go to relevant DTC chart (See page [DI-13](#)).

NO

2	Check thermostat (See page CO-11).
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NG	Replace thermostat.
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OK

Replace engine coolant temperature sensor.