DTC	P0116	Water Temp. Circuit Range/Performance Problem

CIRCUIT DESCRIPTION

Refer to DTC P0115 on page DI–37.

DTC No.	DTC Detection Condition	Trouble Area
P0116	If THW < –6.7°C(19.4°F) or THA < –6.7°C(19.4°F) for 20 min. or more after starting engine, water temperature sensor value is 15°C(59°F) or less (2 trip detection logic)	• Cooling system • Water temperature sensor
	If THW ≧ –6.7°C(19.4°F) and THA ≧ –6.7°C(19.4°F) and 10°C(50°F) at engine start, in 5 min. or more after starting engine, water temperature sensor value is 30°C(86°F) or less (2 trip detection logic)	
	If THW ≧ 10°C(50°F) and THA ≧ 10°C(50°F) at engine start, in 2 min. or more after starting engine, water temperature sensor value is 20°C(68°F) or less (2 trip detection logic)	
	When THW ≧ 35°C(95°F) and 60°C(140°F), THA ≧ –6.7°C(19.4°F) when starting engine, conditions (a) and (b) continue (2 trip detection logic) (a) Vehicle speed is changing (Not stable) (b) Water temperature change is lower than 3°C(5.4°F) from water temperature since when starting engine	
	If reading value of water temperature sensor will not change by more than 1°C(1.8°F) even after repeating 6 trips (detection logic) of adjusting speed pattern with THW more than 60°C (140°F) when starting engine	

INSPECTION PROCEDURE

HINT:

- If DTCs P0115 and P0116 are output simultaneously, the water temperature sensor circuit may be open. Perform troubleshooting of DTC P0115 first.
- Read freeze frame data using the hand–held tester. bacase freeze frame data, records the engine conditions when a 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?

YES → Go to relevant DTC chart (See page DI–13).

NO

2	**Check thermostat (See Pub. No. RM521E).**

NG → **Replace thermostat.**

OK

Replace water temperature sensor.