

Thermostat Monitor

Overview

The thermostat monitors identify a thermostat concern.

Thermostat Monitor

During a cold start, when the thermostat should be closed, the thermostat monitor uses intake air temperature, engine speed, and engine load to predict the engine coolant temperature. Once the predicted temperature has exceeded a target temperature for a length of time, the actual engine coolant temperature is compared to its required threshold. This threshold is 11°C (20°F) below the thermostat regulating temperature. If the engine coolant temperature exceeds this threshold, the thermostat is functioning correctly. If the engine coolant temperature is too low, the thermostat may be stuck open and a DTC sets. This monitor is executed once per drive cycle during a cold start and has a run duration of 300 seconds.

Heavy Duty Thermostat Monitor

During a cold start, when the thermostat should be closed, the heavy duty thermostat monitor uses intake air temperature, engine speed, and engine load to predict the engine coolant temperature. Once the predicted temperature has exceeded a target temperature for a length of time, the actual engine coolant temperature is compared to its required threshold. This threshold is 11°C (20°F) below the thermostat regulating temperature. If the engine coolant temperature exceeds this threshold, the thermostat is functioning correctly. If the engine coolant temperature is too low, the thermostat may be stuck open and a DTC sets. This monitor is executed during a cold start. After passing the cold start monitor conditions the actual engine coolant temperature is continuously compared to the thermostat regulating temperature threshold. If measured engine coolant temperature drops below the thermostat regulating temperature threshold the cold start monitor is enabled again and the timer resets. If the engine coolant temperature is too low, the thermostat may be stuck open and a DTC sets.
