P0112: INTAKE AIR TEMPERATURE SENSOR 1 CIRCUIT LOW INPUT

OVERVIEW

Severity	:	Medium
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$90-$1000**
Can I Still Drive?	:	**Yes** (Short-term only)

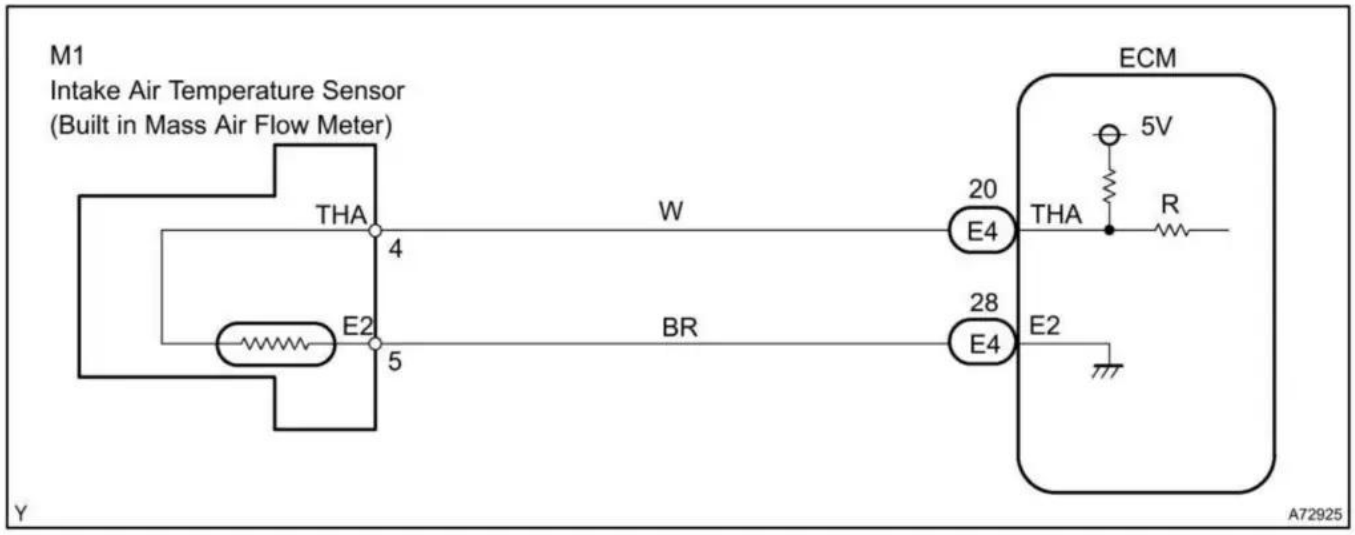
What Does The P0112 Code Mean?

The IAT (intake air temperature) sensor simply measures the temperature of air that is entering the engine. Intake air temperature is important because the higher the intake air, the higher the combustion temperatures. High combustion temperatures result in increased Nox (Nitrogen oxides) emissions.

To keep these higher temps from causing increased combustion temps, the intake air tubing should be intact, allowing the engine to “breathe” air that isn’t sampled from the engine compartment. The IAT measures air temp by using a thermistor, or a thermometer of sorts. The thermistor is supplied 5 volts reference voltage from the PCM (powertrain control module) and a ground.

Usually, when the air temperature is cold the resistance in the thermistor is high and when the air temperature is warmer, the resistance decreases. This change in resistance changes the 5 V reference from the PCM, thereby informing the PCM of the temperature of incoming air.

If the PCM notices that the incoming air temp is unusually high, say, 300 degrees, when the engine temp is still relatively low, it will set a P0112.



P0112 wiring diagram

What Are The Symptoms Of The P0112 Code?

There may be no noticeable symptoms of a P0112 code other than an MIL (Malfunction Indicator Lamp). However, a emissions test may reveal higher Nox readings depending on the type of IAT failure. Or the engine may ping under load, depending on the type of IAT failure.

What Are The Potential Causes Of The P0112 Code?

Usually the P0112 is caused by a bad IAT (internally shorted or open or otherwise damaged), but it could also be:

- No reference voltage to the IAT sensor due to an open wire
- Excessively high intake air temperatures
- Short to ground on signal circuit
- Damaged IAT connector
- Bad PCM

How Can You Fix The P0112 Code?

Hook up your scan tool or code reader and read the IAT reading. With a cold engine, the IAT should roughly match the coolant reading, since both will read ambient temperature. If the IAT is reading excessively high, check the IAT connector for damage.

If you find none, unplug the IAT sensor and recheck the reading. It should now read the minimum, around -20 deg. If it does, then replace the IAT sensor. But, if the reading is still high, unplug the sensor and check for resistance across the two wiring harness terminals.

If there is infinite resistance, then the PCM itself is bad. If the resistance isn't infinite, then check and repair the short to ground on the signal circuit.

Other IAT sensor and circuit related DTCs: P0095, P0096, P0097, P0098, P0099, P0110, P0111, P0113, P0114, P0127

Reference Sources

- Diagnostic Trouble Code (DTC) Charts and Descriptions for P0112 - Page 23.
- DIAGNOSTIC TROUBLE CODE DIAGNOSIS - page 1F-55.