



P1113 · Mazda

Intake Air Temperature Sensor Signal Dynamic Chamber Circuit

P1113 on Mazda vehicles indicates that the powertrain control module (PCM) has detected an abnormal signal from the intake air temperature (IAT) sensor that is mounted in the dynamic chamber, which is the intake manifold resonance chamber. The PCM monitors the sensor's voltage and flags this code when the signal falls outside the expected range for the current engine operating conditions, typically indicating an open circuit, short circuit, or sensor failure.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Mazda specific	Low	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or stumbling immediately after a cold start
- Poor fuel economy or rich-running condition
- Hesitation or lack of power during acceleration
- In rare cases, a no-start condition in extremely cold weather
- Sometimes a slight increase in emissions due to incorrect air-fuel mixture

Common causes, most likely first

- 1 Faulty intake air temperature sensor located in the dynamic chamber
- 2 Damaged or corroded wiring harness or connector at the IAT sensor
- 3 Open or short circuit in the signal or ground circuit between the sensor and PCM
- 4 Intake manifold vacuum leak causing incorrect temperature readings
- 5 Contamination or oil buildup on the sensor element
- 6 PCM internal fault (rare)



How to diagnose and fix it

- 1 Connect a scan tool and verify the IAT sensor reading in live data; compare it to ambient temperature after a cold soak.
- 2 Visually inspect the sensor, connector, and wiring for damage, corrosion, or loose pins.
- 3 Measure the resistance of the IAT sensor with a multimeter and compare to the manufacturer's temperature-resistance chart.
- 4 Check for continuity and short circuits in the signal and ground wires between the sensor and PCM.
- 5 If the sensor is contaminated, clean it gently with electrical contact cleaner and recheck.
- 6 Replace the IAT sensor if resistance is out of specification or the signal circuit tests faulty.
- 7 Clear the diagnostic trouble code (DTC) and perform a road test to confirm the repair.

Dynamic Chamber IAT Sensor Quirks

- The dynamic chamber IAT sensor is often integrated into the mass airflow (MAF) sensor on some Mazda models, so a P1113 may actually indicate a failing MAF sensor rather than a standalone IAT sensor.
A dirty or oil-soaked air filter can contaminate the IAT sensor element, causing skewed readings that set P1113 without any visible wiring damage.
- Technicians sometimes overlook a poor ground connection at the intake manifold, which can mimic a faulty sensor signal and lead to unnecessary sensor replacement.
- The PCM may set P1113 intermittently if the sensor connector is loose, so always wiggle-test the harness while watching live data.
This code does not always mean the sensor itself has failed; a vacuum leak at the dynamic chamber can alter the temperature reading enough to trigger the code.

Can I keep driving with P1113?

You can generally continue driving with P1113, but avoid aggressive acceleration or heavy loads until the fault is repaired, as the engine may run richer than normal and reduce fuel economy. If you notice rough running or stalling, have the vehicle inspected promptly.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Electrical contact cleaner
- Socket set and screwdrivers
- Manufacturer's service information for resistance specifications



Reading P1113

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (Mazda): its meaning depends on the make.
- 1** Fuel and air metering.
- 13** The exact fault within that area.

Often seen with

P0101 Mass/Volume Air Flow Circuit Range/Performance · **P0110** Intake Air Temperature Circuit Malfunction · **P0111** Intake Air Temperature Circuit Range/Performance · **P0112** Intake Air Temperature Circuit Low Input · **P0113** Intake Air Temperature Circuit High Input

See it working

Watch the animated explainer [How Crank and Cam Position Sensors Work](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/mazda-p1113/>

