



P1112 · Ford

Intake Air Temperature Sensor Intermittent

P1112 on Ford vehicles means the powertrain control module has detected an intermittent fault in the intake air temperature sensor circuit, where the signal momentarily drops out or jumps erratically rather than failing completely. The computer sets this code when the sensor voltage goes outside the expected range for a calibrated period or changes too abruptly for the current engine conditions.

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

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the intermittent fault is brief and the sensor recovers quickly.
- Rough idle or stumbling shortly after a cold start when the intake air temperature reading is used for fuel enrichment.
- A momentary stumble or hesitation during acceleration when the signal drops out.
- Slightly higher or lower fuel consumption than normal over time as the computer substitutes a default intake air temperature value.
- In rare cases, a brief misfire or lean/rich condition if the intermittent signal coincides with a cold-start fuel calculation.
- Intermittent operation of the outside temperature display on vehicles that share the intake air temperature sensor signal with the climate control system.

Common causes, most likely first

- 1 A loose, corroded, or partially backed-out connector terminal at the intake air temperature sensor, which is the most common cause of an intermittent signal on Ford vehicles.
- 2 A chafed or broken wire in the intake air temperature sensor harness, often near the sensor pigtail or where the harness bends around the air cleaner housing.
- 3 A failing intake air temperature sensor that tests fine when cold but opens or shorts internally when hot or vibrating.
- 4 Water or oil intrusion into the sensor connector causing intermittent resistance changes.
- 5 A poor ground or splice in the sensor return circuit shared with other sensors, which can make the intake air temperature signal intermittent.
- 6 A faulty powertrain control module, which is rare but possible after all wiring and sensor checks pass.



How to diagnose and fix it

- 1 Inspect the intake air temperature sensor connector for corrosion, loose terminals, or pushed-back pins, and clean or repair as needed.
- 2 Wiggle-test the sensor harness and connector while watching live intake air temperature data on a scan tool to reproduce the intermittent dropout.
- 3 Measure the sensor resistance with a multimeter at the connector and compare it to the expected value for the current temperature, then heat and cool the sensor to check for an internal break.
- 4 Check the sensor signal and return circuits for continuity and resistance to ground, looking for chafed wires or high-resistance splices.
- 5 If the wiring and connector are sound, replace the intake air temperature sensor with a quality part and clear the code.
- 6 After repair, road-test the vehicle and monitor live data to confirm the intake air temperature signal stays steady and the code does not return.
- 7 If the code persists after all sensor and wiring checks, perform a pinpoint test on the powertrain control module circuits before condemning the module.

Why intermittent IAT codes fool good technicians

- A sensor that passes a resistance test at room temperature can still set P1112 because the internal element opens only when hot or when the engine vibrates, so always test the sensor while heating it and wiggling the harness.
- On many Ford vehicles the intake air temperature sensor shares a return circuit with the mass airflow sensor, so a poor connection at the mass airflow sensor can make the intake air temperature signal intermittent and set P1112.
- P1112 does not always mean the sensor is bad; a loose connector latch or a terminal that is not fully seated in the housing is a far more common cause than a failed sensor.
- Aftermarket air intake kits and poorly routed replacement air cleaner housings often stress the intake air temperature sensor harness and cause this code to return after repair.
- A brief P1112 that sets only on very cold mornings may be caused by condensation freezing in the sensor connector, which clears as the engine bay warms up.

Can I keep driving with P1112?

P1112 is safe to drive with in most cases because the computer substitutes a default intake air temperature value and the engine continues to run normally. Avoid long periods of heavy load or towing until the fault is repaired, and address the code promptly if you notice rough running or increased fuel consumption.



Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wire terminal pick and connector cleaning tools
- Heat gun or hairdryer for testing the sensor while hot
- Ford service information or wiring diagram for the specific model

Reading P1112

P Powertrain: engine, transmission and emissions.

1 Manufacturer-specific code (Ford): its meaning depends on the make.

1 Fuel and air metering.

12 The exact fault within that area.

Often seen with

P0102 Mass/Volume Air Flow Circuit Low Input · **P0111** Intake Air Temperature Circuit Range/Performance · **P0112** Intake Air Temperature Circuit Low Input · **P0113** Intake Air Temperature Circuit High Input · **P0116** Engine Coolant Temperature Circuit Range/Performance

See it working

Watch the animated explainer [Helicopter Simulator: Take Off, Hover and Land](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/ford-p1112/>

