

GENERIC · POWERTRAIN

P0187

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0187

Fuel Temperature Sensor B Circuit Low

P0187 means the engine control module has detected a low voltage signal on the fuel temperature sensor B circuit, which is typically a thermistor whose resistance drops as fuel temperature rises. The computer expects a voltage within a calibrated range, and a sustained low reading indicates a short to ground, an open circuit, or a sensor that has failed in a way that pulls the signal low.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	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 hesitation when the engine is cold, because fuel temperature affects the PCM's fueling strategy
- Poor fuel economy or a rich-running condition as the computer substitutes a default temperature value
- Hard starting or extended cranking in cold weather
- In rare cases, a no-start condition if the PCM misinterprets fuel temperature as extremely cold
- Intermittent warning light that comes and goes with vibration or temperature changes

Common causes, most likely first

- 1 Fuel temperature sensor B internally shorted, pulling the signal voltage to ground
- 2 Chafed or grounded wiring between the sensor and the PCM, often where the harness rubs against a bracket or passes near the fuel tank
- 3 Corroded or loose electrical connector at the sensor, allowing the signal circuit to contact ground
- 4 Open ground circuit or poor chassis ground shared with the sensor, skewing the voltage reading
- 5 Failed PCM driver or internal fault on the sensor signal circuit, though this is uncommon
- 6 Aftermarket fuel system modifications or a replacement sensor with the wrong resistance curve



How to diagnose and fix it

- 1 Connect a scan tool and record the fuel temperature sensor B voltage and the freeze-frame data to confirm the low signal is present and not intermittent
- 2 Visually inspect the sensor connector and harness for corrosion, chafing, or contact with ground, repairing any damage found
- 3 Disconnect the sensor and measure reference voltage on the signal circuit with the key on, engine off, to verify the PCM is supplying the expected voltage
- 4 Measure the sensor's resistance with a multimeter and compare it to the manufacturer's temperature-resistance chart, replacing the sensor if it is out of specification
- 5 Perform a voltage drop test on the sensor ground circuit to rule out a poor ground that is biasing the signal low
- 6 If the wiring and sensor test good, check for a short to ground on the signal circuit between the sensor and the PCM, repairing the harness as needed
- 7 Clear the codes and verify the fuel temperature reading on the scan tool tracks ambient and operating temperature correctly during a road test

What a low fuel temp signal really means

- A low voltage on a thermistor circuit usually means the sensor resistance has dropped or the signal wire is shorted to ground, not that the fuel is actually cold, so replacing the sensor without checking the harness often wastes money.
- Many vehicles use fuel temperature as part of the cold-start enrichment and injection timing strategy, so a failed sensor can cause drivability complaints that seem unrelated to fuel temperature.
- The sensor is frequently located inside or on the fuel tank, and a chafed harness near the tank or a corroded connector at the tank module is a common cause that technicians miss when they only test at the sensor.
- A shared ground with other sensors can pull the fuel temperature signal low, so a fault in an unrelated circuit on the same ground point can set P0187.
- Some vehicles will not set this code until the fault is present for two consecutive drive cycles, so an intermittent connector problem can produce a warning light that appears only after specific driving patterns.

Can I keep driving with P0187?

The vehicle is generally safe to drive with P0187 because the PCM substitutes a default fuel temperature value, but you may notice rough running or reduced fuel economy. Avoid towing heavy loads or extended idling until the fault is repaired, and address it promptly if the engine begins to hesitate or stall.



Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with resistance and voltage measurement
- Back probe pins or breakout leads for connector testing
- Manufacturer's temperature-resistance chart for the fuel temperature sensor
- Basic hand tools for connector and harness access

Reading P0187

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 1** Fuel and air metering.
- 87** The exact fault within that area.

Often seen with

P0185 Fuel Temperature Sensor B Circuit · **P0186** Fuel Temperature Sensor B Circuit Range/Performance · **P0188** Fuel Temperature Sensor B Circuit High · **P0189** Fuel Temperature Sensor B Circuit Intermittent · **P0190** Fuel Rail Pressure Sensor Circuit Malfunction

See it working

Watch the animated explainer [Excavator Simulator: Hydraulics You Can Operate](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0187/>

