



P1150 · Toyota

Air/Fuel Sensor Circuit Range Performance Bank 1 Sensor 2

P1150 on Toyota vehicles indicates that the engine control module has detected an out-of-range performance signal from the downstream air/fuel ratio sensor, which is located after the catalytic converter on bank 1. The sensor's voltage output is not responding as expected to the oxygen content in the exhaust, so the computer cannot reliably trim fuel or monitor catalyst efficiency.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Toyota specific	Medium	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- A slight decrease in fuel economy as the engine control module defaults to a richer fuel mixture.
- Occasional rough idle or hesitation during light acceleration.
- A faint sulfur or rotten egg smell from the exhaust if the mixture stays rich.
- Failed emissions inspection due to the stored trouble code.
- In rare cases, a surge or stumble when cruising at steady speed.

Common causes, most likely first

- 1 Faulty air/fuel ratio sensor (bank 1 sensor 2) due to contamination or age-related degradation.
- 2 Exhaust leak upstream of the sensor, allowing outside air to skew the reading.
- 3 Wiring damage or corroded connector pins at the sensor or along the harness.
- 4 Aging or poisoned catalytic converter affecting the downstream oxygen storage and sensor signal.
- 5 Engine oil or coolant consumption contaminating the sensor element.
- 6 A stuck or slow-responding sensor heater circuit causing intermittent performance.
- 7 Extreme rich or lean running conditions from other engine faults that push the sensor beyond its range.



How to diagnose and fix it

- 1 Connect a scan tool and record freeze-frame data to confirm when the code sets and check for pending or related codes.
- 2 Visually inspect the sensor, its wiring, and connector for damage, corrosion, or oil/coolant contamination.
- 3 Perform a propane enrichment test or use a scan tool to watch the downstream sensor voltage respond to changes in fuel mixture.
- 4 Check for exhaust leaks between the manifold and the sensor using a smoke machine or by listening for ticking noises.
- 5 Verify the sensor heater circuit resistance and supply voltage according to Toyota service information.
- 6 If the sensor signal is sluggish or stuck, replace the air/fuel ratio sensor with a Toyota-approved part and clear the code.
- 7 After repair, complete a drive cycle to confirm the monitor runs and the code does not return.

Downstream sensor diagnosis before replacement

- A P1150 is often set by a lazy sensor that still switches but too slowly, so a simple voltage check at idle can look normal while the ECM sees an out-of-range response during a drive cycle.
- Exhaust leaks upstream of the downstream sensor are a commonly missed cause because they introduce oxygen that mimics a lean condition and drive the sensor signal out of range.
- Replacing the sensor without checking the catalytic converter can lead to a repeat failure if the converter is already contaminated and passing unburned fuel or oil downstream.
- Toyota air/fuel ratio sensors are not the same as conventional oxygen sensors, and using a generic sensor can cause new performance codes because the ECM expects a specific current-pump response.
- A P1150 can appear alongside misfire or fuel trim codes, and those underlying faults must be repaired first or the new sensor will be damaged again.

Can I keep driving with P1150?

You can usually continue driving short distances at moderate speeds, but avoid heavy acceleration or towing until the fault is repaired. Prolonged driving with a faulty downstream sensor can damage the catalytic converter and increase emissions, so schedule diagnosis soon.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter for checking sensor heater resistance and wiring continuity
- Propane enrichment tool or smoke machine for exhaust leak testing
- Socket set and oxygen sensor wrench for sensor removal
- Toyota service information or wiring diagram for pinout and resistance specifications



Reading P1150

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

Often seen with

P0136 O2 Sensor Circuit Malfunction (Bank 1 Sensor 2) · **P0137** O2 Sensor Circuit Low Voltage (Bank 1 Sensor 2) · **P0138** O2 Sensor Circuit High Voltage (Bank 1 Sensor 2) · **P0171** System Too Lean (Bank 1) · **P0420** Catalyst System Efficiency Below Threshold (Bank 1)

See it working

Watch the animated explainer [How a MAF Sensor Works: Hot-Wire Airflow Explained](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/toyota-p1150/>

