

GENERIC · POWERTRAIN

P017A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P017A

Cylinder Head Temperature Sensor A Circuit

P017A indicates that the powertrain control module has detected an abnormal signal from the cylinder head temperature sensor A circuit, which is used to monitor the metal temperature of the engine's cylinder head. The computer compares the sensor's voltage or resistance reading against expected values and sets this code when the signal falls outside the normal operating range.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Fuel and air metering

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms
- Rough idle or engine stumbling when the engine is cold or during warm-up
- Poor fuel economy or reduced engine performance
- Overheating warning or temperature gauge reading incorrectly
- Hard starting or stalling shortly after startup
- In rare cases, the engine may enter limp mode or limit power

Common causes, most likely first

- 1 Faulty cylinder head temperature sensor
- 2 Damaged or corroded wiring or connector at the sensor
- 3 Open or short circuit in the sensor signal or ground circuit
- 4 Failed thermostat causing abnormal temperature readings
- 5 Low coolant level or air pockets in the cooling system
- 6 Engine control module software issue or internal fault (less common)



How to diagnose and fix it

- 1 Use an OBD-II scanner to confirm the code and check live data for the cylinder head temperature sensor reading
- 2 Visually inspect the sensor, connector, and wiring for damage, corrosion, or loose connections
- 3 Measure the sensor's resistance or voltage with a multimeter and compare to manufacturer specifications
- 4 Check the cooling system for proper coolant level and bleed any air pockets
- 5 Test the thermostat for proper operation and replace if stuck open or closed
- 6 Repair or replace damaged wiring or connectors as needed
- 7 Replace the cylinder head temperature sensor if testing confirms it is faulty, then clear the code and verify repair

What most technicians overlook with P017A

- A stuck-open thermostat can cause the cylinder head temperature sensor to read lower than expected, triggering P017A even when the sensor itself is good.
Corroded or pinched wiring near the cylinder head is a frequent cause that is often missed during a quick visual inspection.
- Some vehicles use the cylinder head temperature sensor as a backup for the coolant temperature sensor, so a fault here can affect cooling fan operation and fuel enrichment.
- After replacing the sensor, the cooling system must be properly bled; trapped air can cause erratic readings and a repeat code.
- The code can set intermittently due to vibration or heat-related connector issues, so wiggle-testing the harness while monitoring live data is a valuable step.

Can I keep driving with P017A?

You can usually drive the vehicle short distances to a repair shop, but avoid sustained high-speed driving or heavy loads until the fault is repaired. If the engine overheats or runs poorly, stop driving and seek professional assistance immediately.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter
- Socket and ratchet set
- Wiring diagram for the specific vehicle
- Coolant refractometer or hydrometer



Reading P017A

- 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.
- 7A** The exact fault within that area.

Often seen with

P0117 Engine Coolant Temperature Circuit Low Input · **P0118** Engine Coolant Temperature Circuit High Input · **P017B** Cylinder Head Temperature Sensor A Range/Performance · **P017C** Cylinder Head Temperature Sensor A Circuit Low · **P017D** Cylinder Head Temperature Sensor A Circuit High

See it working

Watch the animated explainer [How a Fuel Injector Works: Pulse Width and Spray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p017a/>

