

GENERIC · CHASSIS

C0507

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C0507

Right Front Wheel Speed Sensor A Range/Performance

C0507 means the anti-lock brake system (ABS) module has detected an erratic or out-of-range signal from the right front wheel speed sensor circuit. The computer compares that signal against the other three wheel sensors and flags a performance fault when the right front reading is missing, noisy, or implausible during driving.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Chassis	Generic (all makes)	Medium	Intermediate	Brakes, steering and suspension

Symptoms you may notice

- ABS warning light illuminated on the dashboard, often accompanied by the traction control and stability control lights
- ABS and traction control systems disabled, which may be felt as a lack of pedal pulsation during hard braking
- Speedometer fluctuation or inaccuracy on vehicles that derive vehicle speed from the wheel sensors
- Intermittent warning light that comes and goes over bumps or during turns
- Often no symptoms besides the warning light, with normal braking performance in everyday driving

Common causes, most likely first

- 1 Damaged or corroded right front wheel speed sensor connector or wiring harness
- 2 Debris, metal shavings, or rust buildup on the sensor tip or tone ring
- 3 Cracked or missing teeth on the right front tone ring or encoder ring
- 4 Excessive wheel bearing play or a failing hub assembly altering the sensor air gap
- 5 Right front wheel speed sensor internally failing or shorting when hot
- 6 Water intrusion or road salt corrosion inside the sensor pigtail
- 7 ABS module internal fault on the right front input channel, though this is less common



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for C0507, then clear the code and test-drive to confirm it returns
- 2 Visually inspect the right front sensor, connector, and harness for damage, corrosion, or loose mounting
- 3 Remove the sensor and check the tone ring for cracks, missing teeth, or heavy debris, cleaning as needed
- 4 Measure sensor resistance and check for an erratic AC voltage signal while spinning the wheel by hand
- 5 Check wheel bearing play and hub runout, since a loose bearing can cause a range/performance fault
- 6 Back-probe the sensor circuit at the ABS module and compare the right front signal to the left front on a scope
- 7 If wiring and sensor test good, perform a continuity and short-to-ground test on the harness before condemning the ABS module

Why C0507 is often a wiring fault

- A loose or corroded connector at the right front wheel is far more common than a failed sensor, especially on vehicles driven in salt-belt states.
Metal debris stuck to a magnetic tone ring can mimic a failing sensor and set C0507 without any visible damage to the sensor itself.
- A worn wheel bearing that changes the sensor air gap often sets a range/performance code before it makes any audible noise.
- C0507 can be stored intermittently by a harness that rubs through on the strut or inner fender during suspension travel, so a static test may pass.

Do not replace the ABS module based on C0507 alone; verify the right front signal at the module connector first, because a shorted harness will damage a new module.

Can I keep driving with C0507?

You can usually drive the vehicle with C0507 because normal hydraulic braking remains, but ABS and traction control are disabled, so avoid hard braking, slippery surfaces, and towing until the fault is repaired.

Tools that help

- OBD-II scan tool with ABS capability and live data
- Digital multimeter
- Oscilloscope for waveform comparison
- Jack and jack stands
- Basic hand tools and wire probe kit



Reading C0507

- C** Chassis: brakes, steering and suspension.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Brakes, steering and suspension.
- 07** The exact fault within that area.

Often seen with

C0035 Left Front Wheel Speed Sensor Circuit Range/Performance · **C0040** Left Rear Wheel Speed Sensor Circuit · **C0506** Right Front Wheel Speed Sensor A Circuit/Open · **C0508** Right Front Wheel Speed Sensor A Circuit Low · **P0501** Vehicle Speed Sensor Range/Performance

See it working

Watch the animated explainer [How ABS Works: Anti-Lock Brakes in X-Ray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/c0507/>

