

GENERIC · CHASSIS

C05CE

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C05CE

Brake Master Cylinder Piston Position Sensor B Circuit Voltage Low

The anti-lock brake system (ABS) module has detected that the voltage signal from the brake master cylinder piston position sensor B circuit is lower than the expected range for the current operating conditions. This sensor reports the travel position of the master cylinder piston, and a low voltage reading means the module cannot reliably determine piston position, which can affect brake assist and stability control functions.

SYSTEM

Chassis

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Brakes, steering and suspension

Symptoms you may notice

- Illumination of the ABS, traction control, and/or brake warning lights on the dashboard
- Often no symptoms besides the warning light, with normal brake pedal feel and stopping performance
- Reduced or disabled ABS and traction control operation during hard braking or slippery conditions
- A soft or spongy brake pedal if the fault is accompanied by a hydraulic issue
- Intermittent warning light activation over bumps or during temperature changes
- Possible engagement of a limp-home mode that limits stability control features

Common causes, most likely first

- 1 Faulty brake master cylinder piston position sensor B
- 2 Damaged, chafed, or corroded wiring in the sensor B circuit
- 3 Loose or corroded electrical connector at the sensor or ABS module
- 4 High resistance or open circuit in the sensor ground or signal return path
- 5 Low system voltage or a weak battery affecting sensor reference voltage
- 6 Contaminated brake fluid or internal master cylinder wear affecting sensor movement
- 7 Failed ABS control module (less common)



How to diagnose and fix it

- 1 Connect a scan tool and record all stored codes, freeze-frame data, and live sensor voltage readings for the piston position sensor B circuit
- 2 Visually inspect the sensor, connector, and wiring harness for damage, corrosion, or loose pins, and repair as needed
- 3 Measure reference voltage and ground at the sensor connector with the key on, engine off, and compare to manufacturer specifications
- 4 Perform a voltage drop test on the signal and ground circuits to identify excessive resistance
- 5 Check battery voltage and charging system output to rule out low system voltage as the root cause
- 6 If wiring and voltage supply are correct, test the sensor with a multimeter or oscilloscope for a smooth voltage sweep through piston travel
- 7 Replace the brake master cylinder piston position sensor B if it fails testing, then clear codes and verify the repair with a road test

What the low voltage reading really tells you

- A low voltage code on this circuit frequently results from a poor ground connection rather than a failed sensor, so inspect and clean ground points before condemning parts.
- The piston position sensor B is often integrated into the master cylinder assembly on some vehicles, making replacement more involved than a simple bolt-on sensor swap.
- This code can be set by a weak battery or charging system fault because the sensor relies on a stable reference voltage from the ABS module.
- Intermittent low voltage readings that appear only over bumps usually point to a chafed wire or loose connector, not a sensor that has failed outright.
- Some vehicles will disable hill-start assist and other stability functions when this code is active, even though base braking remains functional.

Can I keep driving with C05CE?

The vehicle remains safe to drive under normal conditions because base hydraulic braking is unaffected, but you should avoid hard braking, slippery surfaces, and towing until the fault is repaired. Have the system diagnosed promptly to restore full ABS and stability control function.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Oscilloscope (optional for sensor waveform testing)
- Basic hand tools and socket set
- Electrical contact cleaner and dielectric grease
- Vehicle-specific service information for wiring diagrams and voltage specifications



Reading C05CE

- 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.
- CE** 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 · **C0110** ABS Pump Motor Circuit Malfunction · **C05CD** Brake Master Cylinder Piston Position Sensor B Circuit Volta · **C05CF** Brake Master Cylinder Piston Position Sensor B Circuit Range

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/c05ce/>

