

GENERIC · CHASSIS

# C05CB

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

## C05CB

### Brake Master Cylinder Piston Position Sensor A Circuit Voltage Low

This code means the brake control module has detected an abnormally low voltage on the signal circuit from the brake master cylinder piston position sensor, which is used to monitor the travel of the master cylinder piston. The computer sets the code when the sensor's output voltage stays below the expected range for a calibrated time, indicating a short to ground, an open circuit, or a faulty sensor.

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

#### Symptoms you may notice

- Illumination of the brake system warning light, often accompanied by the traction control or stability control warning light.
- Reduced or disabled ABS and traction control functions, as the system may enter a fail-safe mode.
- A soft or low brake pedal if the piston position sensor is part of a failed master cylinder assembly.
- No symptoms besides the warning light in many cases, especially when the fault is intermittent or only affects the sensor signal.
- Possible activation of the hill-start assist or electronic parking brake warning on vehicles equipped with those features.
- Unexpected stability control intervention or a message indicating that the brake assist system is unavailable.

#### Common causes, most likely first

- 1 A short to ground in the sensor signal wire, often caused by chafed insulation or a pinched harness near the master cylinder.
- 2 An open circuit in the sensor signal or reference voltage circuit, such as a broken wire or a loose connector terminal.
- 3 A faulty brake master cylinder piston position sensor that has internally failed and is outputting a low voltage.
- 4 Corrosion or water intrusion at the sensor connector, leading to high resistance and a low signal voltage.
- 5 A defective brake control module that is misreading the sensor signal, although this is less common.
- 6 Low system voltage or a poor ground connection affecting the sensor's reference voltage, which can mimic a sensor circuit fault.



## How to diagnose and fix it

- 1 Verify the battery voltage and charging system are within specification, then clear the code and test-drive to see if it returns.
- 2 Visually inspect the sensor connector and harness for damage, corrosion, or loose pins, and repair any obvious wiring faults.
- 3 Measure the sensor's reference voltage and ground at the connector with a multimeter to confirm the module is supplying the correct voltage.
- 4 Back-probe the signal wire and compare the sensor output voltage to the manufacturer's specification while slowly applying the brake pedal.
- 5 If the signal voltage is low and the wiring is good, replace the brake master cylinder piston position sensor or the master cylinder assembly if the sensor is not serviceable separately.
- 6 After repair, clear the codes and perform a road test to verify the ABS and stability control systems operate correctly and the warning lights stay off.

## What a low piston position signal really means

- A low voltage on the piston position sensor circuit often results from a short to ground in the harness where it rubs against the master cylinder or nearby brackets, so a thorough wiggle test of the harness is essential.
- The sensor may be integrated into the master cylinder on some vehicles, making it necessary to replace the entire assembly rather than just the sensor, which can significantly affect repair cost.
- A weak battery or poor ground connection can cause the brake control module to set this code falsely, so always check the charging system and grounds before condemning the sensor.
- This code can be set by a faulty brake pedal position switch or a misadjusted pushrod that changes the piston's rest position, so verify the pedal free play and switch operation.
- After replacing the sensor or master cylinder, some vehicles require a calibration or learn procedure for the piston position sensor using a scan tool, otherwise the code may return.

## Can I keep driving with C05CB?

You can usually drive the vehicle with this code, but the ABS and traction control systems may be disabled, which reduces safety in emergency braking or slippery conditions. Avoid hard braking and slippery roads, and have the fault diagnosed promptly to restore full brake system functionality.

## Tools that help

- OBD-II scan tool with ABS and brake system capability
- Digital multimeter
- Wire piercing probes or back-probe pins
- Service manual or wiring diagram for the specific vehicle
- Basic hand tools for trim and connector removal



## Reading C05CB

- 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.
- CB** The exact fault within that area.

## Often seen with

**C0040** Left Rear Wheel Speed Sensor Circuit · **C0051** Front Left ABS Solenoid 1 Circuit Malfunction · **C05CA** Brake Master Cylinder Piston Position Sensor A Circuit Voltage · **C05CC** Brake Master Cylinder Piston Position Sensor A Circuit Range · **C05CD** Brake Master Cylinder Piston Position Sensor B Circuit Voltage

## 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/c05cb/>

