

GENERIC · CHASSIS

C05A1

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

C05A1

Brake Pressure Sensor E Circuit/Open

C05A1 indicates that the anti-lock brake system (ABS) control module has detected an open circuit in the electrical path for brake pressure sensor E, which is typically part of the hydraulic control unit or master cylinder assembly. The module monitors the sensor's signal and return circuits and sets this code when the expected voltage or current is outside the normal range, often due to a broken wire, corroded connector, or failed sensor.

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 warning light and possibly the traction control and stability control lights
- Often no symptoms besides the warning light, with normal brake pedal feel and braking performance
- In some cases, a soft or spongy brake pedal if the sensor affects hydraulic pressure modulation
- Reduced or disabled ABS and traction control functions, which may be noticeable during hard braking or slippery conditions
- Intermittent warning light that comes and goes with vibration or temperature changes
- A stored code C05A1 in the ABS module with no other drivability issues

Common causes, most likely first

- 1 Open circuit in the brake pressure sensor E wiring, such as a broken wire or poor connection
- 2 Corroded or damaged electrical connector at the sensor or ABS module
- 3 Failed brake pressure sensor E itself, causing an open internal circuit
- 4 Faulty ABS control module with an internal open circuit on the sensor input
- 5 Damaged wiring harness due to chafing, rodent damage, or environmental exposure
- 6 Loose or improperly seated sensor mounting, leading to intermittent open circuit
- 7 Water intrusion into the connector or sensor, causing corrosion and an open circuit



How to diagnose and fix it

- 1 Connect a scan tool and verify C05A1 is current or history, then check for related codes in the ABS module
- 2 Inspect the brake pressure sensor E and its connector for corrosion, damage, or loose pins, and clean or repair as needed
- 3 Perform a visual inspection of the wiring harness from the sensor to the ABS module for chafing, breaks, or rodent damage
- 4 Use a digital multimeter to check for continuity and resistance on the sensor signal and return circuits, comparing to manufacturer specifications
- 5 If the circuit tests good, test the sensor itself with a multimeter or oscilloscope to confirm it is not open internally
- 6 If the sensor is faulty, replace it and clear the codes, then verify the repair with a test drive and scan tool
- 7 If the wiring and sensor are good, suspect the ABS module and perform further diagnostics or replacement as needed

Before you replace the ABS module

- A common misdiagnosis is replacing the ABS module when the real problem is a simple open circuit in the wiring or connector, so always perform continuity tests first.
- The brake pressure sensor E is often integrated into the hydraulic control unit, and on some vehicles it is not serviceable separately, requiring replacement of the entire unit.
- Intermittent open circuits can be caused by vibration or temperature changes, so wiggle testing the harness while monitoring sensor data can reveal the fault.
- This code can be set by a low brake fluid level or air in the hydraulic system on some vehicles, so check the basics before condemning electrical parts.
- Related codes such as C05A0 or C05A2 may also be present, indicating a problem with the sensor circuit range or performance, which can help narrow down the fault.

Can I keep driving with C05A1?

The vehicle remains safe to drive under normal conditions because the base brakes are unaffected, but ABS and traction control may be disabled, so avoid hard braking or slippery surfaces until the fault is repaired.

Tools that help

- OBD-II scan tool with ABS capability
- Digital multimeter
- Oscilloscope (optional for signal analysis)
- Wire repair kit and electrical contact cleaner
- Vehicle-specific service information for wiring diagrams and test procedures



Reading C05A1

- 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.
- A1** 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 · **C05A0** Brake Pressure Sensor E Circuit High · **C05A2** Brake Pressure Sensor E Range/Performance · **C05A3** Wheel Speed Sensors Supply Circuit High

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/c05a1/>

