

BMW · POWERTRAIN

P1633

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1633 · BMW

Throttle Valve Adaptation Limp Home Position

P1633 on BMW vehicles means the engine control module (DME) has detected that the throttle valve's learned limp-home position is outside the expected range or has not been successfully adapted. The DME commands the throttle plate to a mechanical default angle during certain key-on or fault conditions, and the feedback from the throttle position sensors does not match the stored adaptation values.

SYSTEM

Powertrain

CODE TYPE

BMW specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Computer and output circuits

Symptoms you may notice

- The yellow check engine light or EML (electronic engine power control) light is illuminated on the dashboard.
- The engine may enter limp-home mode with reduced power and a maximum engine speed limit.
- The idle speed may be erratic, too high, or the engine may stall when coming to a stop.
- The accelerator pedal may feel unresponsive or the throttle may feel like it is sticking or hesitating.
- Often no symptoms besides the warning light, especially if the fault is intermittent or stored during a key cycle.
- A message such as 'Engine fault! Reduced power' may appear in the iDrive display or instrument cluster.

Common causes, most likely first

- 1 Carbon buildup or contamination on the throttle valve plate and bore, preventing the plate from reaching or learning the limp-home position.
- 2 A failing throttle valve actuator motor or worn internal gears inside the electronic throttle body.
- 3 Throttle position sensor (TPS) signal inconsistency or failure within the throttle body assembly.
- 4 Damaged, corroded, or loose wiring and connectors at the throttle body or DME harness.
- 5 A low or failing battery, or poor charging system voltage, causing the DME to lose or corrupt adaptation memory.
- 6 An improperly performed throttle adaptation reset after battery replacement or throttle body cleaning.
- 7 A software fault or outdated DME programming that affects the adaptation learning process.



How to diagnose and fix it

- 1 Check battery voltage and charging system output; a weak battery is a common cause of lost or failed adaptations on BMW models.
- 2 Inspect the throttle body connector and harness for corrosion, loose pins, or chafed wires, and repair as needed.
- 3 Remove the throttle body and clean the throttle plate and bore with a suitable intake cleaner, then reinstall with a new gasket if required.
- 4 Use a BMW-compatible scan tool to clear the fault memory and perform the throttle valve adaptation reset procedure.
- 5 If the adaptation still fails, monitor live throttle position sensor voltages while slowly moving the throttle plate by hand to check for dead spots or inconsistent readings.
- 6 Replace the electronic throttle body assembly if the actuator motor or sensors are proven faulty, then perform the adaptation reset.
- 7 If the fault persists after mechanical and electrical checks, verify DME software level and update or reprogram the DME as applicable.

Why throttle adaptation fails on BMW

- A dirty throttle body is the most common cause of P1633 on BMW vehicles, and cleaning it often resolves the code without replacing any parts.
- The adaptation reset must be performed with a capable scan tool after cleaning or replacement; simply clearing the code will not relearn the limp-home position.
- Low battery voltage during cranking or a recent battery replacement without adaptation reset can set this code even when the throttle body is mechanically sound.
- A sticking throttle plate caused by oil vapors from the crankcase ventilation system can mimic a failed throttle actuator, so inspect the intake tract for oil residue.
- P1633 can be stored intermittently by a momentary loss of communication between the DME and throttle body, so check for other communication or voltage codes before condemning the throttle body.

Can I keep driving with P1633?

The vehicle can usually be driven in limp-home mode to a repair shop, but avoid heavy acceleration, high speeds, and sustained driving because reduced power may create a safety risk in traffic. If the engine stalls repeatedly or the throttle response is dangerously erratic, stop driving and arrange a tow.



Tools that help

- BMW-compatible scan tool with throttle adaptation reset capability
- Digital multimeter for voltage and resistance checks
- Socket set and Torx bits for throttle body removal
- Intake cleaner and clean shop rags
- Battery tester and charging system analyzer

Reading P1633

- P** Powertrain: engine, transmission and emissions.
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- 1** Manufacturer-specific code (BMW): its meaning depends on the make.
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- 6** Computer and output circuits.
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- 33** The exact fault within that area.

Often seen with

P1632 Accelerator Pedal Position Sensor 1 Power Supply Malfunction · **P1632** Battery Voltage Detection Circuit for Alternator Regulator · **P1632** Battery Voltage Detection Circuit for Alternator Regulator 1 · **P1632** Anti-Theft Fuel Disable Signal Received · **P1632** Throttle Valve Adaptation Condition Not Met · **P0121** Throttle Position Sensor A Circuit Range/Performance · **P0122** Throttle Position Sensor A Circuit Low Input · **P0123** Throttle Position Sensor A Circuit High Input · **P2101** Throttle Actuator Control Motor Circuit Range/Performance

See it working

Watch the animated explainer [Four-Stroke Engine Cutaway: Intake to Exhaust](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1633/>

