

BMW · POWERTRAIN

P1386

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1386 · BMW

Control Module Self-test Knock Control Baseline Test Bank 1

P1386 on BMW vehicles indicates that the engine control module (DME) has detected an out-of-range or failed result during its internal self-test of the knock control baseline for bank 1. The DME runs this baseline test to verify that the knock sensor signal path and its own knock detection circuitry are functioning within expected parameters before enabling normal knock control.

SYSTEM

Powertrain

CODE TYPE

BMW specific

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Ignition system
and misfire

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- Reduced engine performance or power, as the DME may default to a conservative ignition timing map.
- Occasional rough running or hesitation under acceleration if knock control is inhibited.
- Poor fuel economy due to retarded ignition timing.
- In rare cases, a slight knocking or pinging sound if the fault allows uncontrolled knock.
- Intermittent fault setting during cold starts or after extended idle, depending on when the self-test runs.

Common causes, most likely first

- 1 Faulty knock sensor (bank 1) or damaged sensor wiring/connector.
- 2 Poor electrical connection at the knock sensor or DME harness.
- 3 Internal fault in the DME (engine control module) affecting the knock control circuit.
- 4 Mechanical engine noise (e.g., from worn lifters or timing chain) mimicking knock and confusing the baseline test.
- 5 Incorrect knock sensor installation (over-torqued or loose) altering signal characteristics.
- 6 Corrosion or water intrusion in the knock sensor circuit.
- 7 Aftermarket or incorrect spark plugs causing abnormal combustion signals.



How to diagnose and fix it

- 1 Perform a visual inspection of the bank 1 knock sensor and its wiring for damage, corrosion, or loose connections.
- 2 Check for technical service bulletins (TSBs) or software updates for the DME that address false P1386 setting.
- 3 Measure the resistance of the knock sensor and compare to specifications; replace if out of range.
- 4 Verify sensor mounting torque and condition of the mounting surface; reinstall or replace sensor as needed.
- 5 Inspect spark plugs and ignition components for signs of abnormal combustion or wear; replace with OEM-specified parts.
- 6 Perform a smoke test or check for vacuum leaks that could cause lean conditions and false knock.
- 7 If all external checks pass, diagnose the DME internal knock circuit or replace/ reprogram the DME as a last resort.

Knock sensor baseline test nuances

- The DME runs the knock control baseline test only under specific conditions (e.g., during deceleration fuel cut-off), so a P1386 may not set immediately after a fault occurs.
- A common misdiagnosis is replacing the knock sensor when the real issue is a poor ground connection or a failing DME, so always check grounds and power supply first.
- Mechanical noises from the valvetrain or accessory drive can be misinterpreted as knock by the baseline test, leading to false P1386 without any actual sensor fault.
- Aftermarket knock sensors or incorrect installation torque can alter the signal frequency response, causing the baseline test to fail even though the sensor is new.
- On some BMW engines, a failing crankshaft position sensor or camshaft sensor can indirectly affect knock control timing and trigger P1386 alongside other codes.

Can I keep driving with P1386?

You can generally continue driving with P1386, but avoid aggressive acceleration or heavy loads until the fault is diagnosed, as the engine may be running with reduced ignition timing and performance. Prolonged driving with knock control disabled could risk engine damage if actual knock occurs, so schedule a diagnostic soon.

Tools that help

- OBD-II scan tool with BMW-specific software (e.g., INPA, ISTA)
- Digital multimeter for resistance and voltage checks
- Torque wrench for knock sensor installation
- Oscilloscope for signal analysis (advanced)
- Socket set and extensions for sensor access
- Service manual or wiring diagrams for the specific BMW model



Reading P1386

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (BMW): its meaning depends on the make.
- 3** Ignition system and misfire.
- 86** The exact fault within that area.

Often seen with

P1326 Cylinder 2 Knock Control Limit Attained · **P1385** Variable Cam Timing Solenoid B Malfunction · **P1385** Knock Sensor 4 Circuit · **P0325** Knock Sensor 1 Circuit Malfunction (Bank 1) · **P0327** Knock Sensor 1 Circuit Low Input (Bank 1) · **P0330** Knock Sensor 2 Circuit

See it working

Watch the animated explainer [Helicopter Simulator: Take Off, Hover and Land](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1386/>

