

BMW · POWERTRAIN

P1602

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1602 · BMW

Control Module Self Test Control Module Defective

P1602 on BMW vehicles indicates that the engine control module (ECM) or another control module has failed its internal self-test routine, meaning the module's own diagnostic circuitry has detected a fault within itself. The computer is not reporting an external sensor or actuator problem but rather a defect in its own processing, memory, or watchdog monitoring circuits.

SYSTEM

Powertrain

CODE TYPE

BMW specific

SEVERITY

High

FIX DIFFICULTY

Professional

AREA

Computer and output circuits

Symptoms you may notice

- Illumination of the check engine light or service engine soon light, often with no other warning lamps.
- The engine may enter limp mode or exhibit reduced power output as the module protects itself.
- Intermittent no-start conditions or stalling if the self-test failure affects the module's ability to run the engine.
- Erratic operation of systems controlled by the affected module, such as fuel injection or ignition timing.
- Often no symptoms besides the warning light, especially if the fault is stored but not currently active.
- Possible communication errors with scan tools or other modules on the CAN bus.

Common causes, most likely first

- 1 Internal failure of the engine control module or another control module due to component degradation.
- 2 Low or unstable battery voltage causing the module's self-test to fail during startup or operation.
- 3 Poor ground connections or corroded power supply wiring to the control module.
- 4 Water intrusion or corrosion into the module connector or circuit board.
- 5 Software corruption or a failed flash programming event in the module's memory.
- 6 Voltage spikes or electrical interference from a faulty alternator or ignition system.



How to diagnose and fix it

- 1 Verify battery condition and charging system output; load test the battery and check alternator voltage for stability.
- 2 Inspect and clean all ground connections for the engine control module and related modules, including chassis and engine grounds.
- 3 Check the module's power and ground circuits for voltage drops and corrosion at the connectors.
- 4 Clear the fault code and perform a road test to see if it returns; note any freeze-frame data to understand the conditions.
- 5 If the code persists, check for technical service bulletins or software updates for the module that may address self-test errors.
- 6 Perform guided diagnostics with a BMW-specific scan tool to confirm the module's internal self-test status and rule out other modules.
- 7 Replace and reprogram the control module only after all external power, ground, and communication faults have been eliminated.

Don't Replace the Module Before These Checks

- A weak battery is the most common cause of a false P1602 on BMW vehicles, as the module's self-test can fail during cranking if voltage drops below a critical threshold.
- Corroded ground points, especially the engine-to-chassis strap, often mimic an internal module failure and should be inspected before condemning the ECM.
- The code can be stored by modules other than the engine control module, so always check all modules for P1602 and identify which one actually set it.
- After replacing a module, the self-test may still fail if the replacement is not properly coded or if the underlying voltage issue remains uncorrected.
- Intermittent P1602 codes that clear after a battery recharge often indicate a marginal power supply rather than a defective module, so monitor system voltage over time.

Can I keep driving with P1602?

If the engine runs normally and the light is steady, you may drive cautiously to a repair shop, but avoid long trips or heavy load. If the engine stalls, runs poorly, or enters limp mode, stop driving and have the vehicle towed to prevent damage or unsafe operation.

Tools that help

- BMW-specific diagnostic scan tool (e.g., ISTA or equivalent)
- Digital multimeter for voltage and resistance checks
- Battery load tester
- Electrical contact cleaner and dielectric grease
- Basic hand tools for accessing module connectors and grounds



Reading P1602

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

Often seen with

P0600 Serial Communication Link Malfunction · **P0601** Internal Control Module Memory Checksum Error · **P0602** Control Module Programming Error · **P0606** PCM Processor Fault · **U0100** Lost Communication With ECM/PCM A

See it working

Watch the animated explainer [How a Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/bmw-p1602/>

