

GENERIC · POWERTRAIN

**P0648**

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

**P0648**

## Immobilizer Lamp Control Circuit

P0648 indicates that the powertrain control module (PCM) has detected an abnormal condition in the control circuit for the immobilizer indicator lamp, which is the light on the dashboard that shows the anti-theft system's status. The PCM monitors the circuit for expected voltage or current and sets this code when the signal is outside the manufacturer's specified range, often due to a wiring fault, a failed lamp, or a problem within the PCM itself.

SYSTEM

**Powertrain**

CODE TYPE

**Generic (all makes)**

SEVERITY

**Low**

FIX DIFFICULTY

**Intermediate**

AREA

**Computer and output circuits**

### Symptoms you may notice

- The immobilizer or security light may fail to illuminate when the ignition is turned on.
- The immobilizer light may stay on continuously instead of flashing or turning off as designed.
- The engine may crank but fail to start because the immobilizer system is not recognized as ready.
- In some vehicles, the engine may start and run normally with no drivability issues.
- Often no symptoms besides the warning light, especially if the lamp circuit fault does not affect the immobilizer's ability to read the key.
- Other dashboard warning lights or communication codes may appear if the fault is related to a shared power or ground circuit.

### Common causes, most likely first

- 1 A burned-out or faulty immobilizer indicator bulb or light-emitting diode (LED).
- 2 Damaged, corroded, or disconnected wiring in the immobilizer lamp control circuit.
- 3 A poor electrical connection at the lamp socket, instrument cluster, or body control module (BCM) connector.
- 4 A failed instrument cluster or BCM driver that controls the lamp ground or power.
- 5 A short to ground or short to voltage in the control circuit wiring.
- 6 An internal fault in the PCM or BCM that prevents proper lamp control.
- 7 Aftermarket alarm or remote starter installation that tapped into the immobilizer lamp circuit.



## How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related immobilizer or communication codes before proceeding.
- 2 Inspect the immobilizer indicator lamp bulb or LED and replace it if it is visibly burned out or damaged.
- 3 Check the wiring and connectors between the instrument cluster, BCM, and PCM for corrosion, looseness, or damage.
- 4 Test the control circuit for continuity, short to ground, and short to voltage using a digital multimeter (DMM) and the manufacturer's wiring diagram.
- 5 If the circuit tests good, substitute a known-good lamp or cluster to see if the code clears, confirming whether the cluster or BCM is at fault.
- 6 Perform a voltage drop test on the power and ground circuits to the lamp to rule out high resistance.
- 7 If all external circuits and components check out, follow the manufacturer's diagnostic flow for PCM or BCM replacement, as an internal driver fault may be present.

## Don't overlook the simple bulb first

- A surprisingly common cause of P0648 is simply a burned-out immobilizer indicator bulb, which many technicians overlook while chasing complex wiring faults.
- The code does not always mean the immobilizer system itself is disabled; the vehicle may start and run normally because the lamp circuit is separate from the transponder authentication circuit.
- Aftermarket alarms or remote starters that splice into the immobilizer lamp wire are a frequent source of this code, especially if the installation was poorly done.
- On some vehicles, the immobilizer lamp is controlled by the body control module (BCM) rather than the PCM, so diagnosing the BCM and its inputs is essential.
- A weak or failing vehicle battery can cause erratic lamp operation and set this code without any permanent circuit fault.

## Can I keep driving with P0648?

The vehicle is generally safe to drive because the immobilizer lamp circuit does not affect engine operation or safety systems, but the anti-theft system may not function correctly. Avoid leaving the vehicle unattended in high-theft areas until the fault is repaired, and address the code promptly to ensure the immobilizer status is accurately displayed.



## Tools that help

- OBD-II scan tool
- Digital multimeter (DMM)
- Test light
- Wiring diagram for the specific vehicle
- Trim removal tools
- Socket set

## Reading P0648

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| <b>P</b>  | Powertrain: engine, transmission and emissions.                      |
| <b>0</b>  | Generic (SAE) code: it means the same thing on every OBD-II vehicle. |
| <b>6</b>  | Computer and output circuits.                                        |
| <b>48</b> | The exact fault within that area.                                    |

## Often seen with

**P0513** Incorrect Immobilizer Key · **P0633** Immobilizer Key Not Programmed - ECM/PCM · **P0647** A/C Clutch Relay Control Circuit High · **P0649** Speed Control Lamp Control Circuit · **P0650** Malfunction Indicator Lamp (MIL) Control Circuit Malfunction

## See it working

Watch the animated explainer [How Push-Button Start Works: Keyless Ignition](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0648/>

