

BMW · POWERTRAIN

P1747

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1747 · BMW

CAN Bus Monitoring

P1747 on BMW vehicles indicates that the transmission control module (TCM) has detected a fault in the controller area network (CAN) bus, which is the high-speed communication link between the TCM and other control units such as the engine control module (ECM) and the anti-lock brake system (ABS) module. The TCM monitors the CAN bus for expected messages and signal integrity, and when it does not receive a required message or detects a communication error, it stores this code and may illuminate the warning light.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	BMW specific	Medium	Professional	Transmission

Symptoms you may notice

- Illumination of the transmission malfunction warning light or the general check engine light.
- The transmission may enter limp mode, defaulting to a single gear or a fixed gear ratio.
- Harsh or delayed gear shifts, or the transmission may refuse to shift out of a particular gear.
- Intermittent loss of communication with other systems, leading to multiple warning lights on the dashboard.
- Often no symptoms besides the warning light, especially if the fault is intermittent.

Common causes, most likely first

- 1 Damaged or corroded wiring in the CAN bus circuit, particularly at connectors or where the harness flexes.
- 2 Faulty transmission control module (TCM) or mechatronic unit, causing it to misinterpret CAN messages.
- 3 Poor electrical connections at the TCM, ECM, or other control modules due to loose pins or water intrusion.
- 4 A failed control module on the CAN bus (e.g., ECM, ABS) that is disrupting communication.
- 5 Low battery voltage or charging system issues causing erratic CAN bus behavior.
- 6 Aftermarket electronic devices improperly installed and interfering with the CAN bus signals.



How to diagnose and fix it

- 1 Perform a thorough visual inspection of the CAN bus wiring and connectors for damage, corrosion, or loose pins.
- 2 Check battery voltage and charging system operation to rule out low voltage as a cause.
- 3 Use a scan tool to read all stored codes in all modules and check for communication errors with other systems.
- 4 Measure CAN bus resistance (typically 60 ohms between CAN High and CAN Low) to verify bus integrity.
- 5 Inspect and test the TCM power and ground circuits, and check for water intrusion in the transmission connector.
- 6 If wiring and power are good, perform a software update or reprogram the TCM if applicable.
- 7 Substitute a known-good TCM or other suspect module to isolate the fault, following BMW diagnostic procedures.

CAN Bus Faults Often Misdiagnosed as TCM Failure

- A common mistake is to replace the transmission control module immediately, but the root cause is frequently a chafed wire in the harness near the transmission or a corroded connector.
- Intermittent CAN bus faults can be caused by a failing alternator or voltage regulator, which introduces electrical noise that corrupts digital signals.
- Aftermarket accessories such as dash cams or alarm systems tapped into the CAN bus can disrupt communication and set this code without any hardware failure.
- The code can also be triggered by a low battery during engine cranking, which causes a voltage drop that the TCM interprets as a CAN bus error.
- Always check for related communication codes in other modules (e.g., U-codes) to determine if the fault is isolated to the TCM or affects the entire network.

Can I keep driving with P1747?

If the vehicle is in limp mode or shifting erratically, avoid driving at high speeds or under heavy load and seek service immediately. If only the warning light is on and the car drives normally, you can drive cautiously to a workshop, but do not ignore the code as it may worsen.

Tools that help

- OBD-II scan tool with BMW-specific software
- Digital multimeter
- Oscilloscope for CAN bus signal analysis
- Wiring diagram and connector pinout information
- CAN bus breakout box or test harness



Reading P1747

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (BMW): its meaning depends on the make.
- 7** Transmission.
- 47** The exact fault within that area.

Often seen with

P1746 Transmission Control Unit Relay Malfunction · **P1746** Electronic Pressure Control Solenoid Circuit Open · **P1746** Pressure Regulator 2 · **P1746** Electronic Pressure Control Solenoid A Open Circuit · **P1746** Transmission Control Module Output Stage · **P0700** Transmission Control System Malfunction · **U0100** Lost Communication With ECM/PCM A · **U0101** Lost Communication with TCM · **U0121** Lost Communication With Anti-Lock Brake System (ABS) Control

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-p1747/>

