



P2C2E

Turbocharger/Supercharger Bypass Valve B Supply Voltage Low

P2C2E indicates that the powertrain control module (PCM) has detected a low supply voltage on the control circuit for the turbocharger or supercharger bypass valve B. This valve, often called a diverter or recirculation valve, vents boost pressure when the throttle closes to prevent compressor surge. The PCM monitors the voltage on the valve's supply circuit and sets this code when the signal falls below the expected threshold, indicating a short to ground, an open circuit, or a faulty valve.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Hybrid propulsion

Symptoms you may notice

- Illumination of the check engine light, often with no other noticeable symptoms.
- A slight loss of engine power or reduced boost response during acceleration.
- Rough idle or stalling when coming to a stop, as the bypass valve may not open correctly.
- Audible hissing or fluttering noises from the turbocharger area during throttle changes.
- In some cases, the engine may enter limp mode to protect the turbocharger.

Common causes, most likely first

- 1 Damaged or disconnected electrical connector at the bypass valve.
- 2 Chafed, broken, or corroded wiring in the valve's supply circuit.
- 3 Failed bypass valve solenoid or actuator.
- 4 Faulty powertrain control module (PCM) driver circuit, though rare.
- 5 Water intrusion or contamination in the connector causing a short to ground.
- 6 Aftermarket modifications or poor previous repairs affecting the circuit.

How to diagnose and fix it

- 1 Inspect the bypass valve connector for corrosion, loose pins, or damage and clean or repair as needed.
- 2 Check the wiring harness for chafing, breaks, or shorts, especially near hot or moving components.
- 3 Measure the supply voltage at the valve connector with the key on; compare to manufacturer specifications.
- 4 Test the bypass valve solenoid resistance and compare to the specified value; replace if out of range.
- 5 Perform a voltage drop test on the ground circuit to ensure a good ground connection.
- 6 If the circuit and valve are good, diagnose the PCM driver circuit and repair or replace the PCM as required.
- 7 Clear the code and perform a road test to verify the repair and ensure the code does not return.



Bypass Valve Circuit Checks That Often Get Missed

- A low supply voltage code is frequently caused by a poor ground connection rather than a failed valve, so always check the ground circuit before replacing parts.
- The bypass valve may share a power or ground circuit with other solenoids, so a fault in a related component can set this code even if the valve itself is fine.
- Intermittent codes can be caused by wiring that rubs only under certain engine movements, so wiggle-test the harness while monitoring live data.
- Some vehicles use a pulse-width modulated (PWM) signal to control the valve; a standard multimeter may not show the true average voltage, so use an oscilloscope or a duty-cycle capable meter.
- Replacing the bypass valve without checking the connector for water intrusion often leads to a repeat failure, especially on vehicles driven in wet conditions.

Can I keep driving with P2C2E?

You can generally drive the vehicle with this code, but avoid aggressive acceleration or heavy load until it is repaired, as the bypass valve may not function correctly and could lead to turbocharger damage over time. If the engine enters limp mode or you notice severe power loss, have it inspected promptly.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Test light
- Wire repair kit (splices, heat shrink, electrical tape)
- Socket set and screwdrivers for connector access

Reading P2C2E

P	Powertrain: engine, transmission and emissions.
2	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
C	Hybrid propulsion.
2E	The exact fault within that area.

Often seen with

P0243 Turbocharger Wastegate Solenoid A Malfunction · **P0245** Turbo/Super Charger Wastegate Solenoid 'A' Low · **P0246** Turbo/Super Charger Wastegate Solenoid 'A' High · **P2C2D** Turbocharger/Supercharger Bypass Valve B Position Exceeded L · **P2C2F** Turbocharger/Supercharger Bypass Valve B Driver Current/Temp



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/p2c2e/>

