

GENERIC · NETWORK

U355F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

U355F

Cathode Backpressure Valve Control Circuit

The U355F code indicates that the powertrain control module (PCM) has detected an abnormal condition in the control circuit for the cathode backpressure valve, which is part of the fuel cell system on hydrogen-powered vehicles. The PCM monitors the circuit for expected voltage or current and sets this code when the signal falls outside the manufacturer's specified range, often due to an open, short, or component fault.

SYSTEM Network	CODE TYPE Generic (all makes)	SEVERITY Medium	FIX DIFFICULTY Professional	AREA Network communication
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Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) on the dashboard
- Often no symptoms besides the warning light, especially if the valve fails to a default position
- Reduced power or a limp-home mode if the valve is stuck and affects fuel cell performance
- Rough running or hesitation during acceleration due to improper backpressure regulation
- Possible fuel cell system shutdown or inability to start in severe cases

Common causes, most likely first

- 1 Faulty cathode backpressure valve solenoid or actuator
- 2 Damaged or corroded wiring harness in the valve control circuit
- 3 Loose or disconnected electrical connector at the valve or PCM
- 4 Failed PCM driver circuit for the valve control
- 5 Contamination or mechanical binding of the valve itself, preventing proper movement
- 6 Water intrusion or corrosion in the connector causing intermittent signals



How to diagnose and fix it

- 1 Use a scan tool to retrieve all stored codes and freeze-frame data, then clear the code and test-drive to see if it returns.
- 2 Visually inspect the cathode backpressure valve, its connector, and the wiring harness for damage, corrosion, or loose pins.
- 3 Measure resistance and voltage on the control circuit at the valve connector and compare to manufacturer specifications.
- 4 Command the valve on and off with a bidirectional scan tool to verify mechanical operation and listen for actuation.
- 5 Check for technical service bulletins (TSBs) or software updates for the PCM that may address false setting of this code.
- 6 If the circuit tests good, remove the valve and inspect for carbon buildup or mechanical binding; clean or replace as needed.
- 7 If all components test within spec, suspect an internal PCM fault and perform pinpoint tests before replacement.

Before replacing the backpressure valve

- A loose ground connection at the fuel cell control unit can cause this code to set intermittently, mimicking a failed valve.
- The cathode backpressure valve often fails due to contamination from the fuel cell system, so replacing it without cleaning the passages may lead to a repeat failure.
- This code can be set by a low battery or charging system issue that causes voltage spikes, so always verify battery health first.
- On some vehicles, the valve is part of an assembly that includes the sensor, and replacing only the solenoid may not solve the problem.
- A stuck-open valve may not trigger drivability symptoms immediately, leading drivers to ignore the code until performance degrades significantly.

Can I keep driving with U355F?

You can usually continue driving with this code if the vehicle runs normally, but avoid heavy acceleration or long trips until it is diagnosed. If the vehicle enters limp mode or shows reduced power, seek service promptly to prevent further fuel cell system damage.



Tools that help

- OBD-II scan tool with bidirectional control capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools
- Manufacturer service information for pinpoint tests

Reading U355F

U	Network: communication between the vehicle's control modules.
3	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
5	Network communication.
5F	The exact fault within that area.

Often seen with

P0A0F Engine Failed to Start · **P0A1F** Battery Energy Control Module A Performance · **U0100** Lost Communication With ECM/PCM A · **U355E** Expander Inlet Pressure Sensor 2 Circuit · **U3560** Cathode Backpressure Valve Position Sensor Circuit

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/u355f/>

