P213E: FUEL INJECTION SYSTEM FAULT - FORCED ENGINE SHUTDOWN

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	$350-$850
Can I Still Drive?	:	Yes

What Does The P213E Code Mean?

When a code P213E has been stored in an OBD-II vehicle, it means that the powertrain control module (PCM) has detected a problem in the fuel injection system and the engine has undergone a forced shutdown. This code may be caused by either a mechanical issue or an electrical malfunction.

Typically, this code will need to be cleared before the engine will start.

Use caution when attempting to diagnose any high pressure fuel system related codes. Follow manufacturer's recommendations carefully and always use the appropriate safety equipment. The fuel system should only be opened in a well ventilated area away from open flame or spark.

The PCM relies on input signals from the fuel pressure sensors, fuel volume sensors, and the electronic fuel pressure regulator to effectively control fuel delivery to the engine. Where it pertains to emergency engine shutdown, the fuel delivery system is usually divided into two sections.

The fuel supply section encompasses the fuel pump (or pumps) and all supply lines up to the electronic fuel injection common rail or direct injection lines. The fuel injection system contains the fuel rail and all the fuel injectors.

In this type of system, multiple fuel pressure and fuel volume sensors may be incorporated.

These sensors are positioned in strategic areas of the fuel delivery system and designated with a character of the alphabet. For instance, in a vehicle with a gasoline powered engine a voltage signal from fuel pressure sensor (A) in the fuel supply section would be compared (by the PCM) with a voltage signal from fuel pressure sensor (B) in the fuel injection system, whenever the key is on and the engine is running (KOER).

If the PCM detects a variation between fuel pressure sensors A and B that exceeds the maximum threshold for more than a specified amount of time, voltage to the fuel pump will be interrupted (injector pulse may be deactivated as well) and the engine will be shut down.

Vehicle applications with diesel propulsion are setup slightly differently. Since the diesel fuel injection system requires much higher levels of fuel pressure in the fuel injection quadrant than in the fuel supply quadrant, no comparison is made between the fuel supply pressure sensor and the fuel injection pressure sensor.

Instead, the PCM monitors each fuel delivery quadrant independently and shuts the engine off if a malfunction is detected. The area of the malfunction determines which code is stored.

In either case, if the PCM detects a degree of fuel injection system pressure deviation which warrants engine shut down, a code P213E will be stored and a malfunction indicator lamp (MIL) may be illuminated.Gasoline and diesel applications may also monitor fuel delivery component voltage.

These components usually include fuel pumps and fuel injectors. Each component is expected to draw a certain amount of voltage under a specific load.

If the fuel delivery component in question draws an excessive degree of voltage under a certain percentage of maximum load, the engine may be shut down and a code P213E may be stored. In this type of system, an additional code indicating a specific cylinder will also be stored. When the PCM detects an overloaded component or circuit, a code P213E is stored and a service engine soon lamp illuminated.

What Are The Symptoms Of The P213E Code?

Symptoms of a P213E diagnostic code may include:

- No start condition
- Fuel leaks
- Additional drivability and fuel system codes

What Are The Potential Causes Of The P213E Code?

Causes for this P213E code may include:

- Fuel leak near the fuel injectors or fuel rail
- Defective fuel injector
- Faulty fuel pressure sensor
- Bad fuel pressure/volume regulator
- PCM failure or PCM programming error

How Can You Fix The P213E Code?

Tools needed to diagnose a code P213E include:

- A diagnostic scanner
- A digital volt/ohmmeter
- A fuel pressure tester with adapters and fittings
- A source of reliable vehicle information

Step 1

Use your source of vehicle information to obtain testing specifications and procedures for the fuel system and fuel system components. You should also find wiring diagrams, connector face views, connector pin-out charts, and diagnostic flow charts that will aid you in your diagnosis.

Step 2

You will need to clear this code before the fuel pump can be activated and a fuel system pressure test or leak check may be performed. Connect the scanner to the vehicle diagnostic connector and retrieve all stored codes and freeze frame data. Write this information down in case you need it later. After that, clear the codes and attempt to start the engine.

If possible, have one person cycle the ignition key on while a second person looks for fuel leaks near the fuel injection rail and fuel injectors. If a fuel leak is discovered, you have most likely found the problem. Repair it and drive the vehicle until the PCM enters readiness mode or the P213E is reset.

Step 3

If no fuel system leaks are discovered, use the fuel pressure tester and follow manufacturer's guidelines for performing a manual fuel pressure test. You will need to connect the tester near the fuel injection rail. With fuel pressure test results in hand, make the appropriate repairs and retest the system.

If fuel pressure is insufficient, suspect a fuel filter or fuel pump problem.

If fuel pressure is excessive, suspect a fuel pressure regulator problem.

If fuel pressure is within specs and no leaks are present, follow manufacturer's recommendations for testing fuel pressure sensors, the fuel pressure regulator, and the fuel volume regulator.

Additional notes:

- A defective fuel injector is not necessarily the cause of this code being stored
- High pressure diesel fuel systems should be serviced by qualified personnel only

Severity Description

Any fuel system related code should be considered severe and addressed with a great degree of urgency. Since this is a fuel shutoff code, you will likely have no choice.

Reference Sources

[P213E Fuel Injection System Fault - Forced Engine Shutdown](), OBD-Codes.