

SymTech Labs

Fuel Cut Defender

Thank you for purchasing the SymTech Labs Fuel Cut Defender (FCD)! Your FCD will safely suppress "fuel cut" to allow OEM naturally aspirated engines to be turbocharged, or factory turbocharged engines to handle more boost. Certain models can also reintroduce fuel cut at an adjustable boost threshold to protect the engine. Please take note that this product is licensed for **off-road use only**.

INSTALLATION

Required Tools:

- Wire crimping and cutting tool
- Digital multi-meter (DMM)
- Butt or closed end splice crimp connectors
- Small flat-head screwdriver

Optional Tools:

- Soldering iron and solder
- Heat-shrink tubing

Your FCD features a five wire connection, a potentiometer for adjusting the hold point, and a potentiometer for adjusting the release point (if equipped). Please take note of each wire's function: the *red*, *green*, and *black* wires are used to power the unit, the *yellow* wire is the input and connects to the MAP/MAF sensor, and the *orange* wire is the output and connects to the powertrain control module (PCM)/engine control unit (ECU).

Begin by locating the MAP sensor, on the intake manifold, or MAF sensor, along the intake tract. Most sensors have three wires: a *voltage reference*, *ground*, and *signal* wire. The *ground* wire is usually black, but the other wire colors will vary depending on the manufacturer of the vehicle. Identify the wires by temporarily disconnecting the sensor from its plug and probing each of the connector pins with a DMM. The *ground* wire will measure 0V, whereas the *voltage reference* wire will measure close to 5V. The remaining wire is the *signal* wire.

You must also locate a switched *12V source*. Suitable wires can be found throughout the interior and engine bay. Use a DMM to verify the wire supplies 12V whenever the ignition switch is in the "ON" and "START" positions only.

Mount the FCD as far away from engine heat as possible. Cooler areas of the engine bay or the vehicle's cabin are ideal. The FCD is splash and heat resistant, but submersion and extreme heat will permanently damage the device.

Cut the *signal* wire using a wire cutting tool. Connect the *yellow* wire ("IN") from the FCD to the end of the *signal* wire leading to the sensor, and connect the *orange* wire ("OUT") to the end of the *signal* wire leading to the PCM/ECU. Crimp and blade-type connectors will work, but soldered connections protected by heat-shrink tubing are best. Tap the *black* wire ("GND") from the FCD into the sensor's *ground* wire. Tap the *red* wire ("VREF") from the FCD into the sensor's *voltage reference* wire. Finally, tap the *green* wire ("12V") from the FCD into the *12V source* you located earlier.

If equipped, connect a vacuum hose directly from the intake manifold to the vacuum port on the side of the FCD.

TUNING

Adjusting the hold point

With the ignition switch "ON", but with the engine off, pressurize the intake manifold to ~1-2psig, or wherever fuel cut occurs. Locate the potentiometer near the small green light on the top of the FCD. Adjust the potentiometer until the green light just barely illuminates.

Adjusting the release point (if equipped)

With the ignition switch "ON", but with the engine off, pressurize the intake manifold to the maximum safe boost pressure for your engine. Locate the potentiometer near the small red light on the top of the FCD. Adjust the potentiometer until the red light just barely illuminates.

Bypassing the FCD

A check engine light (CEL)/malfunction indicator lamp (MIL) may or may not illuminate. You can temporarily bypass the FCD to suppress a CEL/MIL by disconnecting the *orange* and *yellow* wires from the FCD, then connecting the two ends of the sensor's *signal* wire.

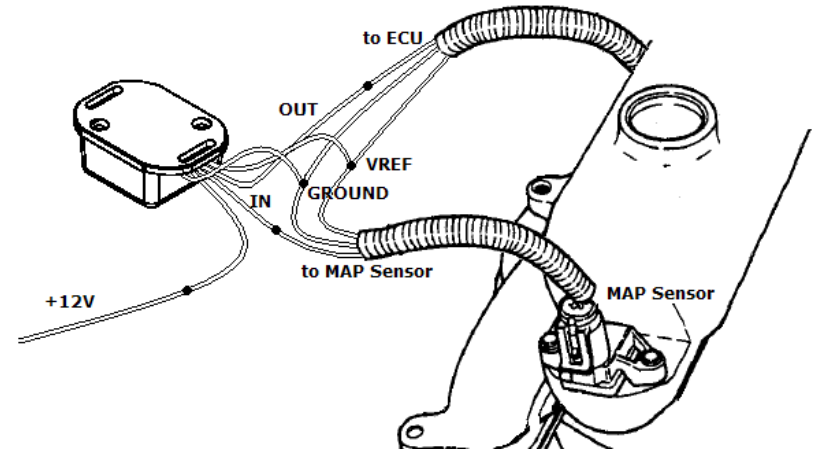


Figure 1: Typical Installation

WARNING

Fuel cut defenders are to be used on OFF-ROAD ONLY vehicles. SymTech Laboratories assumes no responsibility for losses or damages due to installation of this product.

LIMITED WARRANTY

SymTech Laboratories, LLC warrants to the original customer purchasing products directly from SymTech Laboratories, LLC that all such products sold will be free from defects in materials and workmanship affecting form, fit and function. SymTech Labs, at its option, will repair, replace, or provide a credit or refund of either the original purchase price or fair market value, whichever is lower, of any product that is determined by SymTech Labs to be defective during the warranty period.

Any claim must be made within one (1) year from the original date of shipment by SymTech Laboratories, LLC; SymTech Laboratories, LLC shall have no liability thereafter. Customer must notify SymTech Laboratories, LLC within one (1) year from the original date of shipment. The foregoing warranty granted on SymTech Laboratories, LLC products is to the initial customer end-user and is non-transferable.

This warranty is in lieu of any and all other warranties, whether oral, written, expressed, implied or statutory. Implied warranties of fitness for a particular purpose and merchantability are specifically excluded and shall not apply. The above warranties cover only defects arising under normal use and do not include malfunctions or failures resulting from misuse, abuse, neglect, alteration, problems with electrical power, usage not in accordance with product instructions, acts of nature or improper installation or repairs made by anyone other than SymTech Laboratories, LLC or a SymTech Laboratories, LLC-authorized third party service provider. SymTech Laboratories, LLC reserves the right to substitute functionally equivalent new or serviceable used parts.

COPYRIGHT NOTICE AND DISCLAIMER

This document and its content is copyright of SymTech Laboratories, LLC - SymTech Laboratories, LLC © 2012. All rights reserved.

Any redistribution or reproduction of part or all of the contents of this document in any form is prohibited.

You may not, except with our express written permission, distribute or commercially exploit the content. Nor may you transmit it or store it in any other website or other form of electronic retrieval system.