Operation
The status LED on the Fiber-optic Transmitter will indicate its state. You must have this working before you install the cable and Fiber-optic Receiver. When the status LED is "OFF", the ignition should be off. Check that when this LED is off the LED connected to the Fiber-optic Receiver is also off. When the status LED on the Fiber-optic Transmitter is "ON", the LED connected to the Fiber-optic Receiver should also be on.

Testing the installation
The Ignition Cutoff installation is tested by observing the LEDs on both the Fiber-optic Transmitter and Fiber-optic Receiver in the ON and OFF modes. They should both be ON and both be OFF with the given transmitter command. If the switch On/Off position is not the direction you would prefer, use the channel reverse to change this.

The channel controlling the Ignition Cutoff must have its failsafe set if the radio is any type other than FM (PPM). To test this, turn the Ignition Cutoff on using the switch on the transmitter and then turn the transmitter off. The Ignition Cutoff should turn off. If not, check your failsafe settings for this channel.

The following table gives some help on tracking down problems:

Symptom	Suggestion
Status LED on Fiber-optic Transmitter does not turn on.	a) Check to make sure the Fiber-optic Transmitter is plugged into the right channel for the switch on the transmitter. b) Check the ATV for the channel the Fiber-optic Transmitter is plugged into. It should be set at least at 100% for the unit to operate correctly.
Status LED on Fiber-optic Receiver does not come on.	a) Check to be sure the ignition is on. b) Check the LED is plugged in securely to connector. c) Check that the connector is in the correct orientation, red wire to "Red" and black wire to "Blk". a) Check that the fiber-optic cable is seated all the way back in the ferrule. Check that the ends of the fiber-optic cable are clean-cut and clear.

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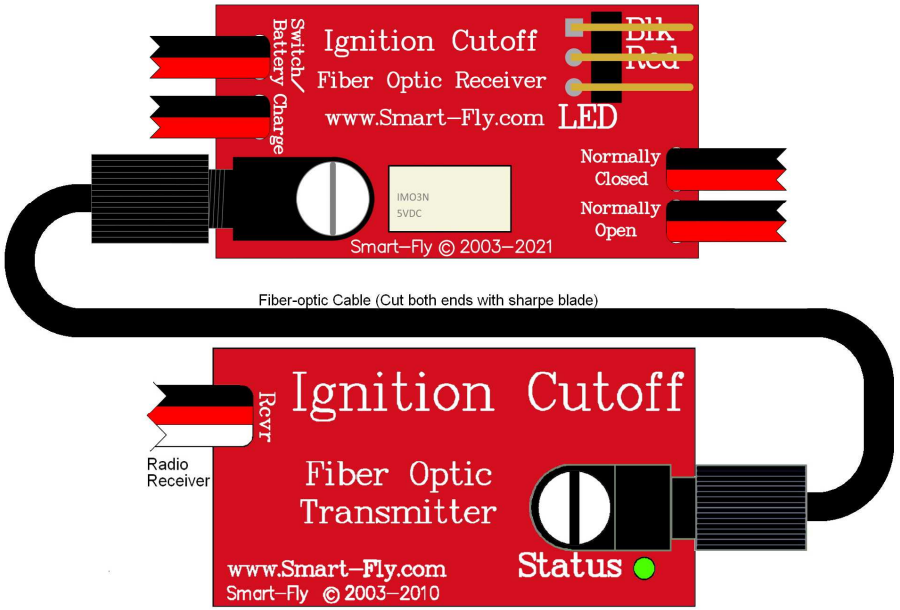
Smart-Fly

Magneto Ignition Cutoff
User Guide

Thank you for purchasing the Smart-Fly Ignition Cutoff!

This manual takes you through the installation and operation of the Smart-Fly Magneto Ignition Cutoff unit.



How it all works
The Ignition Cutoff consists of an optically coupled pair of modules. The Fiber-optic transmitter connects to your receiver. The Fiber-optic receiver connects to your magneto primary coil. The Ignition Cutoff works by sending infrared light (not

visible to the human eye) from the Fiber-optic Transmitter over the fiber-optic cable to the Fiber-optic Receiver. The ignition is enabled when the Fiber-optic Transmitter is sending light down the cable. The Fiber-optic Transmitter responds to a channel on the receiver controlled by a switch on the radio transmitter. ***On any radio system except FM (PPM) the failsafe must be set so that when the transmitter is turned off the receiver turns off the Cutoff.***

Why use an ignition cutoff?

The main reason for installing an ignition cutoff device is safety. The unit provides several levels of safety to both the pilot and the spectators. If the radio system is not turned on but the ignition system is turned on the Ignition Cutoff prevents the engine from starting. Another reason is safety while in the air. If you were to lose power to the receiver because of a dead battery or a broken wire, your plane is going to go where it wants at the throttle setting that you had just before the power loss. This could be any direction. It could just fly off into the sunset until it runs out of gas or, worse, it could be headed towards other pilots and spectators. With the Ignition Cutoff in the plane the engine will be cut when power is lost. This means the propeller will not be spinning when the plane hits, what ever it hits, and the speed is reduced. Lastly, the Ignition Cutoff provides a means of cutting the engine if anything happens to the throttle servo or linkage. Rather than fly until your tank runs out you can now bring the plane in quickly and safely.

Installation

The Fiber-optic Transmitter should be installed near the receiver. The channel on your transmitter you want to use for the Ignition Cutoff should be assigned to a two-position switch. The Fiber-optic Transmitter module is plugged into the receiver corresponding to the switch channel on the transmitter. Travel should be set to at least +/- 100%. Double-sided Velcro tape is an acceptable way to mount the unit.

You should make sure the radio transmitter switch is enabling the Fiber-optic Transmitter by observing the Green LED on the unit and confirming the LED is going on and off when you toggle the radio transmitter switch. If the Green LED is not going on and off with the switch then try putting a small servo in the radio receiver channel you think should be controlling the Ignition Cutoff and see if the servo moves back and forth with the toggle switch on the radio transmitter.

The Fiber-optic Receiver is designed to ground the magneto primary coil to turn off the engine. The normally closed output is connected to your primary coil and ground. When the Cutoff is disabled this grounds the primary coil. When the Cutoff is enabled this circuit is OPEN.

The Fiber-optic Receiver should be mounted near the engine. The Fiber-optic receiver requires a battery to operate. It draws a maximum of 80mAH. An 800mAH battery will give you at least 10 hours of flight time. You can use a switch between the battery and the Fiber-optic receiver but you do not need to. ***If you do not use a switch, the Ignition Cutoff is acting similarly to a failsafe- or soft-switch and will draw a small amount of current when off. This is approximately 5mA per DAY (0.21mAH) from the battery pack.*** The lead marked "Switch/Battery" goes to the ignition switch or battery.

The LED on the Fiber-optic Receiver will mount in a ¼" hole. If you want to mount the LED in this way, the easiest way to get the LED into the hole is to remove the pins from the JR male connector housing and feed the leads through the ¼" hold you made. Then re-insert the pins in the JR male housing. The LED may be extended using a standard Futaba or JR extension 3-lead extension. If you do not want to use the LED it is not necessary for the unit to operate and may be left off.

If you are not using a mechanical ignition switch, you may bring the lead marked "Charge" out to a charge jack (like an Ernst charge jack) so you can check the ignition battery during the day and charge the battery.

The fiber-optic cable should be prepared for your length of installation and to get clean ends to promote efficient light transmission. ***Both ends of the fiber-optic cable should be cut with a very sharp razor blade or Xacto blade.*** The cut should be as square as possible providing a clear, flat face to the Fiber-optic Transmitter and receiver. The ferrules on the Fiber-optic Transmitter and receiver should be unscrewed until they have disengaged from the threads (do not force off the unit). The fiber-optic cable should then be inserted as far as it will go (approximately 5/8"). The ferrules should then be tightened down snuggly, but do not over tighten.