

# IGNITION SYSTEMS

## SUREFLY ELECTRICAL IGNITION

SureFly is an FAA certified electronic (solid state) magneto replacement. The SureFly Ignition Module replaces one magneto - generally the left or impulse-coupled/starting magneto on most aircraft. 4 and 6-Cylinder models are available for Lycoming and Continental engines.

Replacing just one magneto eliminates magneto maintenance and cuts associated costs in half! Zero maintenance. Zero rebuilds. Zero overhauls. Cessna 172s, 470-powered Bonanzas and AA5 Grumman owners can utilize the advanced timing feature for improved efficiency. Other single-engine fixed-wing aircraft will be able to enable the timing advance feature as the FAA extends the Airframe STC AML.

### Features:

**Reliability** - For SureFly customers, 500 hours simply isn't good enough. When their airplanes stop flying to service low time parts, they stop making money. SureFly Electronic Ignition Modules provide customers with a service life of up to 2,400 hours. Simply install a new SIM at every engine overhaul.

**Safety** - The magneto itself isn't inherently unsafe. What makes an externally powered electronic ignition more safe than a mag is a fact that it is simply never opened-up, inspected and potentially rebuilt/overhauled like a magneto is every 500 hours. No mechanical parts to wear = Zero maintenance = a 0% chance of introducing a maintenance-related ignition failure.

**Performance** - Longer spark dwell and RPM/manifold pressure-moderated timing advance, up to engine manufacturers' prescribed maximum, provide SureFly customers real fuel savings. Low power consumption and lightweight (up to 2 lbs. lighter than a Bendix magneto) make SureFly Ignition Modules light on fuel and light on the wallet too.

**Better Starts** - SureFly perfectly controls timing at TDC below 400 rpm which combined with longer spark dwell and the option to use wider gapped spark plugs, makes starting a breeze, greatly minimizing wear and tear on high-performance starters and electrical systems.

**Trusted** - SureFly Ignition Modules are hand built in Granbury, Texas almost entirely from components manufactured in Texas and Michigan. Designed, engineered, created and supported by the same team that brought you Sky-Tec starters and Plane-Power alternators, our approach to SureFly shares the same commitment, experience and passion for creating and bringing sensible, affordable solutions to the piston engine aviation market.

**FAA approves SureFly dual electronic ignitions.**



### SIM4P 4 CYLINDER IMPULSE COUPLED MAGNETO REPLACEMENT

The vast majority of 4-Cylinder applications will replace the impulse coupled magneto. 4.4 lbs. **Now approved for the replacement of both mechanical magnetos on most certified four- and six-cylinder Lycoming and**

**Continental powered aircraft with dual SureFly Electronic Ignitions. Please review the Engine and Airframe STC's and installation instructions for further application information.... P/N 08-17074**

### SIM4N 4 CYLINDER NON-IMPULSE MAGNETO REPLACEMENT

Replaces 4-cylinder non-impulse coupled magnetos on Lycoming & Continental engines. 4.0 lbs. P/N 08-17075



### SIM6L 6 CYLINDER LYCOMING MAGNETO REPLACEMENT

Replaces 6-cylinder magnetos on Lycoming engines. 5.2 lbs. P/N 08-17076

### SIM6C 6 CYLINDER CONTINENTAL MAGNETO REPLACEMENT

Replaces 6-cylinder magnetos on Continental engines. 5.0 lbs. P/N 08-17077



## SUREFLY TACH2 TACHOMETER SIGNAL CONVERTER



The Tach Signal Converter (Tach2) converts SIM P-Lead signals to negative going signals compatible with the Horizon P-1000 digital tachometer input and to a positive-going 0-5V square wave signal compatible with electronic tachometers that rely on a signal from a magnetic

pickup inserted into a magneto. Tach 2 can accept one or two SIM P-Leads as input, converts and conditions the signals and outputs them to corresponding output terminals. The Tach2 must be installed in the aircraft cabin and secured to the airframe with screws and nuts. The Tach2 power input from the aircraft bus may range from 8.5VDC to +30VDC without damage. The Tach2 consumes less than 0.25A of power. 0.2 lbs. P/N 08-17284

## E-MAG ELECTRONIC IGNITION

**Note: New installation requires a harness, and possibly a gear, depending on the application (See Accessories). Verify requirements before ordering.**



Of all the E-MAG innovations, the self-powering capability of the "P" Model is the most significant. It solves the largest single issue faced by all electronic ignitions - their need for an uninterruptible power supply. Power back-up strategies that a) compromise ignition effectiveness, b) solve only half the problem, or c) require additional maintenance are less than ideal. Next-Generation ignitions need a better solution. So what does a next-generation electrical back-up need to do?

Above all, it has to be reliable. When it's needed, it has to work - period. It should operate for as long as needed. Whether it's the last 10 minutes of

a Sunday pleasure flight, or you're crossing the Atlantic. It should be maintenance-free. Benign neglect should not prevent it from working. On the rare occasion it's needed, it should automatically engage without operator intervention. A simple and convenient pre-flight check should confirm it's working properly. This P model ignition has an internal three phase brushless alternator that produce enough power to sustain the ignition when the engine is turning 800 rpm, or more. If the aircraft buss voltage goes off-line, the ignition has an internal alternator. With this arrangement, dual electronic ignitions can be run "clean". No back-up batteries and no back-up magnetos.

The P Model Built-In Alternator adds no (zero) mechanical contact/wear parts to the system. Adds only a few ounces of weight. Requires no additional hardware to install. Will operate as long as the engine is turning.

Description	Part No.	Price
"P" Model (P-MAG) Ignition - Lycoming (and like) engines.	07-01292	---
E-Mag P Model Ignition with Alternator 4C Continental - Ignition compatible with 4 cylinder Continental O-200 Engines.	07-01311	---
E-Mag Gear Adapter Kit C 200	07-01805	---
E-Mag Spark Plug Adapters w/o Gaskets (4 pk) Short Reach	08-06753	---
E-Mag Spark Plug Adapters w/ Gaskets (4 pk) Short Reach	08-06753-1	---
E-Mag Spark Plug Adapters w/ Gaskets (4 pk) Long Reach	08-07608	---
E-Mag Spark Plug Adapters w/o Gaskets (4 pk) Long Reach	08-07608-1	---

## E-MAG 200 SERIES IGNITION FOR 6 CYL EXPERIMENTAL AIRCRAFT



E-Mag is a next-generation electronic ignition, designed to serve as an upgrade or replacement for traditional aircraft engine magnetos.

**Built-in back-up operating power** - The importance of power supply for any electronic ignition cannot be overstated. E-MAG's internal alternator (redundant back-up power) provides automatic switching between aircraft (14v to 28v) and internal operating power.

**High energy spark** - A standard feature for any modern electronic ignition. But to avoid too much of a good thing E-MAGS uses a closed-loop energy management system (not too much - not too little) to reduce operating stresses.

**Variable spark firing** - Another standard feature for electronic ignitions. Tuning the advance range is key. Series 200 has simple built-in tools for adjusting the variable boundaries. **Note:** An optional cockpit switch lets the pilot choose fixed or variable mode firing [required for boosted engines].

**Simplified mechanical section** - All moving mechanical elements are housed in the nose (engine oil/wet) section with a solid barrier separating the electronics/dry section - i.e. no oil seal to wear out.

Multi-strike firing and boosted energy at start-up. Starts more like a car. Lycoming ..... P/N 07-26839 ..... Continental (TCM) ..... P/N 07-26840

## IGNITION KITS



Auto style custom fit kits. Include low-resistance spiral wound lead wire, end fittings, and tool. Auto style harness with terminals and boots installed on both ends. Same wire used in their custom trim-to-fit kit.

Description	Part No.	Price
Auto Harness - 4 Lead Kit without adapter	07-02716	---
Spark plug adapters - 4 pack	08-06753	---

## IGNITION DRIVE GEARS



Description	Part No.	Price
Lycoming 68C19622	07-02011	---
Superior SL68C19622	08-11837	---