



# AIRFRAME

# INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

Document No. SF2005, Revision C

## Revision History

Revision:	Date:	Description:	Approved By:
IR	12/13/2018	Initial release.	RVC
A	08/27/2019	Added placard and AFMS inspection details to section 2.1.1	RVC
B	07/17/2020	Added Tach2.	RVC
C	06/28/2022	Updated for dual SIM installations,	RVC

# Contents

---

Contents .....	2
1. Airplane Maintenance Section .....	3
1.1. Introduction - 14 CFR §23 Appendix G23.3(a)(1):.....	3
1.2. Systems - 14 CFR §23 Appendix G23.3(a)(2):.....	3
1.3. Basic Control & Operating Information - 14 CFR §23 Appendix G23.3(a)(3):.....	3
1.4. Servicing Information - 14 CFR §23 Appendix G23.3(a)(4):.....	3
2. Maintenance Instructions .....	4
2.1. Scheduling Information - 14 CFR §23 Appendix G23.3(b)(1):.....	4
2.2. Troubleshooting - 14 CFR §23 Appendix G23.3(b)(2):.....	4
2.3. Removing & Replacing - 14 CFR §23 Appendix G23.3(b)(3):.....	4
2.4. General Procedural Instructions - 14 CFR §23 Appendix G23.3(b)(4):.....	4
3. Inspection Access .....	5
3.1. Inspection Access - 14 CFR §23 Appendix G23.3(c):.....	5
4. Special Inspection Techniques .....	5
4.1. Special Inspection Techniques - 14 CFR §23 Appendix G23.3(d):.....	5
5. Protective Treatments.....	5
5.1. Protective Treatments - 14 CFR §23 Appendix G23.3(e):.....	5
6. Structural Fasteners.....	5
6.1. Structural Fasteners - 14 CFR §23 Appendix G23.3(f):.....	5
7. List of Special Tools.....	5
7.1. List of Special Tools - 14 CFR §23 Appendix G23.3(g):.....	5
8. Commuter Category Airplanes.....	5
8.1. Commuter Category Airplanes - 14 CFR §23 Appendix G23.3(h):.....	5
9. Airworthiness Limitations .....	6
9.1. Mandatory Replacement Time, Structural Inspection Interval and Structural Inspection Procedure - 14 CFR §23 Appendix G23.4:.....	6
9.1. FAA Approval - 14 CFR §23 Appendix G23.4:.....	6

# 1. Airplane Maintenance Section

---

## 1.1. Introduction - 14 CFR §23 Appendix G23.3(a)(1):

The **S**ureFly **I**gnition **M**odule (SIM) is a magneto replacement for Continental & Lycoming aircraft piston engines.

This document provides Instructions for Continued Airworthiness for an airframe with a SIM-modified engine installed into it in accordance with SureFly's airframe STC.

The SIM is installed onto an engine in accordance with SureFly's engine STC.

SureFly Tach2 Signal Converter is an optional accessory that allows electronic tachometers to operate with the signal produced by the SIM p-lead.

## 1.2. Systems - 14 CFR §23 Appendix G23.3(a)(2):

The SIM requires a constant, external supply of 8.5 – 30VDC power to operate.

The SIM grounds through the engine.

When turned off (SIM p-lead grounded), a SIM goes into standby and will continuously draw less than 1milliamp in this mode.

## 1.3. Basic Control & Operating Information - 14 CFR §23 Appendix G23.3(a)(3):

There are no changes to the basic control and operation of the airframe.

## 1.4. Servicing Information - 14 CFR §23 Appendix G23.3(a)(4):

There are no changes to the servicing of the airframe.

## 2. Maintenance Instructions

---

### 2.1. Scheduling Information - 14 CFR §23 Appendix G23.3(b)(1):

Inspection intervals and procedures for each SIM:

1. Annually:
  - a. Inspect the power wire connected to the SIM,
  - b. Inspect the 10A circuit protection device of the power wire and verify SIM power is interrupted when circuit protection device is open.
  - c. Inspect to ensure placard (placard1 from Installation Instructions, document SF2001) is installed on the instrument panel and in view of the pilot.
  - d. Inspect AFMS (document SF2006) for currency and ensure Section I is correctly identified for configured mode as shown in the maintenance log book. See [www.surefly.aero/airframe](http://www.surefly.aero/airframe) for current revision of AFMS.
  
2. On Condition:
  - a. Un-ground the SIM p-lead (turn the ignition on), measure the voltage at the aircraft battery then measure the voltage at the power wire terminal connected to the SIM. There should be less than 0.2Volts difference between the two measurements.
  - b. If a Tach2 is installed and the aircraft's electronic tachometer reading is incorrect, inspect the connections to the Tach2 device. Measure voltage on the PWR terminal of the Tach2 barrier strip and ensure that aircraft battery voltage (10-30Volts) is present when the aircraft master switch is turned on.

### 2.2. Troubleshooting - 14 CFR §23 Appendix G23.3(b)(2):

SureFly's Troubleshooting guide may be found at [www.surefly.aero/airframe](http://www.surefly.aero/airframe)

Condition:		Probable Cause:	Remedy:
No power present at SIM timing terminal	Airframe battery voltage above 12VDC	Power wire circuit protection device closed (circuit closed)	Power wire not electrically connected to airframe battery Check power wire terminals @ airframe battery & circuit protection device. Replace terminals as needed
		Power wire circuit protection device open (circuit broken)	Power wire integrity compromised Replace power wire & all terminals
	Airframe battery voltage below 12VDC		Fuse blown or circuit breaker open Discharged airframe battery

### 2.3. Removing & Replacing - 14 CFR §23 Appendix G23.3(b)(3):

Installation instructions may be found at [www.surefly.aero/airframe](http://www.surefly.aero/airframe)

1. SureFly document SF2001, Airframe Installation Instructions, provides instructions on installing a SIM-modified engine into an airframe.  
Remove the SIM-modified engine in reverse order of the Installation Instructions.
  
2. SureFly document SF2002, Tach2 Installation Instructions, provides instructions on installing a Tach2 accessory into an airframe.  
Remove the Tach2 in reverse order of the Installation Instructions.

### 2.4. General Procedural Instructions - 14 CFR §23 Appendix G23.3(b)(4):

None.

### 3. Inspection Access

---

#### 3.1. Inspection Access - 14 CFR §23 Appendix G23.3(c):

None.

### 4. Special Inspection Techniques

---

#### 4.1. Special Inspection Techniques - 14 CFR §23 Appendix G23.3(d):

None.

### 5. Protective Treatments

---

#### 5.1. Protective Treatments - 14 CFR §23 Appendix G23.3(e):

None.

### 6. Structural Fasteners

---

#### 6.1. Structural Fasteners - 14 CFR §23 Appendix G23.3(f):

None.

### 7. List of Special Tools

---

#### 7.1. List of Special Tools - 14 CFR §23 Appendix G23.3(g):

The following tools may be required:

1. Voltmeter.

### 8. Commuter Category Airplanes

---

#### 8.1. Commuter Category Airplanes - 14 CFR §23 Appendix G23.3(h):

Not Applicable.

## 9. Airworthiness Limitations

---

### 9.1. Mandatory Replacement Time, Structural Inspection Interval and Structural Inspection Procedure - 14 CFR §23 Appendix G23.4:

None.

### 9.1. FAA Approval - 14 CFR §23 Appendix G23.4:

The Airworthiness Limitations section is FAA approved and specifies maintenance required under §§43.16 and 91.403 of Title 14 of the Code of Federal Regulations unless an alternative program has been FAA approved.

None.