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FAA APPROVED
AIRCRAFT FLIGHT MANUAL SUPPLEMENT

For

Make and Model Airplane

Registration No. _____

Serial No. _____

This supplement must be attached to the FAA approved Aircraft Flight Manual dated _____ when the EIS Back-up Battery System Panel, EA-26000-12 or EA-26000-24, has been installed per FAA STC #XXXXXXX. Make and Model Eligibility is found on the Approved Model List (AML) for this STC.

The information contained herein supplements or supersedes the basic Aircraft Flight Manual only in those areas listed. For limitations, procedures, and performance information not contained in this supplement, consult the basic Aircraft Flight Manual.

FAA APPROVED: _____
Manager, Aircraft Certification Office
Federal Aviation Administration
City, State

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Section 1: General:

This Aircraft Flight Manual Supplement contains the necessary information required for the operation of the EIS Back-up Battery System Panel. Part# EA-26000-12 and EA-26000-24.

A. FUNCTIONAL OVERVIEW

The EIS Back-up Battery System (EBBS) Panel is designed for use with dual Electroair Electronic Ignition Systems (EIS), STC# SA02987CH or SA03286CH, and TCW Technologies Integrated Back-up Battery System (IBBS), STC# SA04400NY. The panel has three LEDs, a voltmeter, and a switch. Two LEDs (green) will indicate whether or not the connected EIS is receiving power. The remaining LED (yellow) indicates if the back-up battery is supplying power to one of the EISs. The voltmeter indicates the voltage of the back-up battery system. The rocker switch enables the back-up battery to be isolated from the primary electrical system.

The panel has two options: The EA-26000-12 is for 12-volt systems and the EA-26000-24 is for 24-volt systems. Both panels operate the same way.



Figure 1: EIS Back-up Battery System Panel

B. SYSTEM OPERATION

Under normal operating conditions, the EA-26000 Electroair EIS Back-up Battery System Panel will be controlled by the flight crew. The flight crew will put the backup battery into a standby or "READY" mode by toggling the switch from the OFF position to the READY position during the Pre-flight phase of the flight. The charge status (state of charge) can be observed with the voltmeter on the panel. Flight crew will also verify the charge status (state of charge) of the backup battery during Pre-flight and will be able to observe the charge status (state of charge) whenever the switch remains in the READY position.

When the switch is in the READY position, the backup battery system automatically monitors the aircraft's electrical system and the backup battery will remain in a standby mode until the aircraft system voltage falls below the specified values listed in the battery manufacturer installation manual. For 12-volt aircraft, the minimum aircraft

system voltage is 11 volts. For 24-volt aircraft the minimum system voltage is 22 volts. When the aircraft falls below the specified minimum system voltage, the backup battery will automatically isolate one of the EIS that has been connected to the backup battery and provide power to that EIS for a minimum of 60 minutes.

If the aircraft's electrical system recovers during this time, in other words gets above 11V for a 12-volt aircraft or above 22V for a 24-volt aircraft, the back-up battery will cease supplying power to the EIS attached to it and return the power supplied from the aircraft's electrical system. The back-up battery will also recharge itself from the aircraft's electrical system to its nominal.

Since the back-up battery system operates automatically, the only requirement for pilot input is to make sure the system is in the "READY" mode as part of the Pre-Flight procedures. The pilot is also required to put the system in the OFF mode as a part of Post-Flight procedures.

The AFM procedures will be updated to include putting the back-up battery system into the READY mode as part of the starting procedure and putting the back-up battery system into the OFF mode as part of the Shutdown procedure.

Section 2: Limitations

No Change

Section 3: Emergency/Abnormal Procedures:

Emergency Procedures

Problem: Loss of Main aircraft electrical power: No change

NOTE: Do not load shed the Electronic Ignition Systems (EISs) during loss of main aircraft electrical power. Power supply to the EISs will be managed by the Backup Battery System.

Abnormal Procedures

Indication: Amber Light on EA-26000 comes ON

Action: Set 60 minute stopwatch on clock.

Action: Land as soon as practical.

Action: DO NOT TURN OFF Electronic Ignition Systems.

Section 4: Normal Procedures:

I. Preflight

1. Aircraft Master Switch is OFF.
2. EA-26000 Backup Battery Panel switch to the READY position.
3. Confirm "BATTERY IN USE" LED (yellow) turns on.
4. Check voltage on the voltmeter.
 - a. 12v System acceptable range: 12 - 15 volts
 - b. 24v System acceptable range: 24 - 29 volts
 - i. If voltage is low, Master Switch to ON. (See Note 1)
 - ii. When voltage is acceptable, Master Switch to OFF.
 - iii. Proceed with remaining checklist.
5. Both EIS switches to ON.
6. Verify that one EIS status LED (green) is ON. (See Note 2)
7. Both EIS switches to OFF.
8. Verify LEDs (green) turn OFF.
9. Aircraft Master Switch is ON.
10. Verify that the "BATTERY IN USE" LED (yellow) turns OFF. (See Note 3)
11. Proceed with remaining check list.

Notes:

1. This allows the back-up battery to recharge. Refer to back-up battery manufacturer instructions on how to properly charge the battery. When voltage has recovered to acceptable range, proceed with flight.
2. This indicates that one of the EISs is receiving power from the back-up battery. If not LEDs illuminate, terminate flight and consult with maintenance and I.C.A.
3. This will confirm that main aircraft power is working. If the LED does not turn off, then main aircraft power is insufficient. If main aircraft power is insufficient, cancel starting and resolve the issue.

II. Starting:

No Change

III. Ignition Check:

No Change.

IV. Takeoff:

No Change

V. Cruise:

No Change

VI. Descent:

No Change

VII. Landing:

No Change

VIII. Shutdown:

Following the EIS Shutdown and prior to the Master Switch – OFF, add the following step:

1. Turn the rocker switch on the EIS Back-up Battery System panel to the OFF position

IX. Post-flight:

No Change

Section 5: Performance:

No Changes

Section 6: Weight and Balance:

| Part | Weight |
|----------------------------------|--------|
| EIS Back-up Battery System Panel | 2 oz |

Product Mounting Footprint:

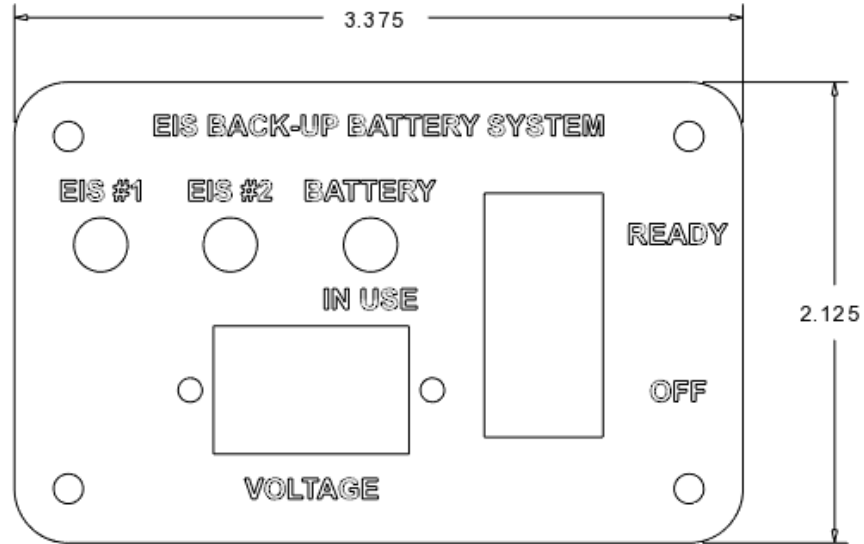


Figure 2: EIS Back-up Battery System Panel Overall Dimensions (inches)

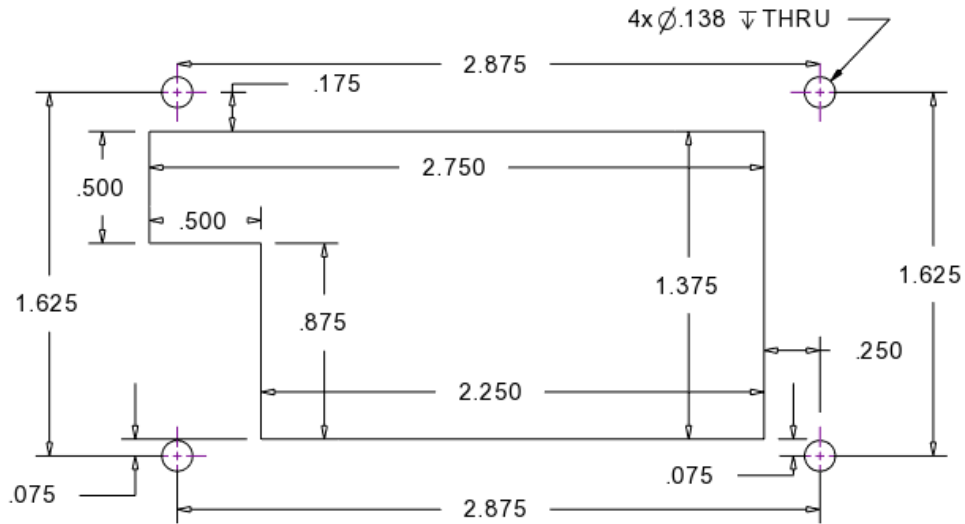


Figure 3: Suggested Cutout Dimensions (inches)

Section 7: Glossary and Abbreviations:

| | |
|---|--|
| AC – Advisory Circular | chamber near the end of the compression stroke. |
| ACO – Aircraft Certification Office | LED – Light-Emitting Diode |
| ACT – Action Identifiers | LH – Left Handed, used to indicated counter rotating |
| AD(s) – Airworthiness Directive(s) | Li-Fe-PO4 – Lithium-Iron-Phosphate |
| AED – Aircraft Evaluation Division | LOPC – Loss of Power Control |
| AFM – Aircraft Flight Manual | MAG – magneto |
| AFMS – Aircraft Flight Manual Supplement | MAP – Manifold Absolute Pressure |
| Amdt - Amendment | MDL – Master Data List |
| ALS – Aircraft Limitations Section | MEL – Minimum Equipment List |
| AML – Approved Model List | MMEL – Master Minimum Equipment List |
| Amp – Ampere | MOD – Modification |
| APP - Approval | MQP – Model Qualification Process |
| APU – Auxiliary Power Unit | MQR – Model Qualification Report |
| ASO – Applicant Showing Only | MTH – Mag Timing Housing |
| BTDC – Before Top Dead Center | NAV – Navigation System |
| CDL – Certification Data List | OEM – Original Equipment Manufacturer |
| CEA – Component Environmental Analysis | PSCP – Project Specific Certification Plan |
| CFR – Code of Federal Regulations | P/N – Part Number |
| CG – Center of Gravity | QTY – Quantity |
| COM – Communications Radio | POH – Pilot’s Operating Handbook |
| COTS – Commercial off the Shelf | REC – Recommend Approval |
| CSD – Compliance Summary Document | RPM – Revolutions per Minute |
| CSTW – Crank Shaft Trigger Wheel | RTCA – Radio-Technical Commission for Aeronautics |
| DC – Direct Current | SAN – Structural Analysis |
| DER – Designated Engineering Representative | SSA – System Safety Assessment |
| DOC – Document Identifiers | STC – Supplemental Type Certificate |
| EBBS – Electroair Backup Battery System | TCDS – Type Certificate Data Sheet |
| EIS – Electronic Ignition System | TDC – Top Dead Center |
| ELA – Electrical Load Analysis | TIA – Type Inspection Authorization |
| FAA – Federal Aviation Administration | TSO – Technical Standard Order |
| FHA – Functional Hazard Assessment | TSOA – Technical Standard Order Authorization |
| FLM – Flammability Assessment | USC – United States Code |
| GA – General Aviation | VDC – Voltage Direct Current |
| HIRF – High-intensity Radiated Fields | |
| IAW – In-Accordance With | |
| ICA – Instructions for Continued Airworthiness | |
| Ignition Timing – is the process of setting the angle relative to piston position and crankshaft angular velocity that a spark will occur in the combustion | |