BM-AIK2B
Installation Instructions

Airframe Interface Kit for 12 Volt

BatteryMINDer®

Maintenance Charger-Desulfator



Enhanced Flight
by Audio Authority Corporation

Background and Regulatory Information

Read Completely Before Beginning Installation

Some non-aviation BatteryMINDer models are supplied with an automotive-grade battery connection harness and a battery-mounted temperature sensor. However, these are not eligible for installation on FAA-certified aircraft, under Federal Aviation Regulations 14 CFR §21.9. They are suitable only for temporary connection or bench charging but cannot be legally installed on the aircraft. Aviation-specific BatteryMINDer models are supplied with a battery clip harness for temporary connections for a battery that is removed from the airframe.

This kit provides standard aircraft parts acceptable under 14 CFR §21.9 for an FAA certificated mechanic to fabricate and install a fused, 2-wire harness to access a certified aircraft's lead-acid storage battery or related battery electrical bus, for the purpose of connecting an aviation-specific BatteryMINDer brand of low-current (8A or less), continuous-duty, maintenance-type battery charger. The finished harness typically has ring terminals at the battery relay & ground, connecting to an Anderson SB50 polarized plug at the opposite end via MIL-spec unshielded 16-gauge aircraft wire, with a 15-amp in-line protective fuse. An insulating dust cover protects the plug when not connected to the charger. This product is not designed or intended for chargers greater than 8-amperes.

This kit can be installed as a minor alteration under 14 CFR §1.1 and §21.93(a) as it has "no appreciable effect on the weight, balance, structural strength, reliability, operational characteristics, or other characteristics affecting the airworthiness" of the aircraft. No Form 337 submittal or FSDO field approval is required per FAA Order 8900.1 Figure 4-67. A §43.9 airframe maintenance logbook entry is required and sufficient for return to service.

These instructions are advisory only. Aircraft models and configurations vary widely, so an airworthy installation depends on the judgment of a competent mechanic to determine the best option. This kit provides commonly used installation parts. Some airframe configurations may require different parts that are not supplied. Similarly, a length of protective fiberglass MIL-spec sleeve is provided to protect the harness from airframe chafing, as needed in the judgment of the installing mechanic. Other protective and security measures not included in this kit may be needed and employed at the discretion of the installing mechanic, who is ultimately responsible for the airworthiness of the installation.

This kit also includes an adapter harness to convert the charger's SAE (trailer plug) output connector to a mating Anderson SB50 plug. This harness is connected to and remains with the charger; it is not installed on the aircraft. Finally, temperature sensing for aviation BatteryMINDers is accomplished by use of VDC's Ambient Temperature Sensor (ATS-1), a small plug connected to the short pigtail on the charger, not installed on the battery or airframe.

IMPORTANT: This harness is designed only for maintenance battery charging, not for supplying ground power for airframe operations. Disconnect the charger before turning on airframe electrical power. Reconnect the charger after turning airframe electrical power off to recharge and then maintain/desulfate the battery.

Installation Procedures

1. Determine best electrical access to the aircraft battery. See installation examples in a variety of airframes at www.audioauthority.com/BM-AIK2B. Since batteries are regularly removed for inspection, maintenance and replacement, we recommend attaching the positive ring terminal to the battery relay post or stud that is connected to the positive battery cable and the negative to a convenient airframe ground (see Figure 1). Plastic or composite airframes that do not have battery busses may require direct connection to battery terminals. The best method to access the battery varies by aircraft type and must be determined by the installing mechanic.

2. Determine a safe location to secure the SB50 plug where it can be readily accessed for connecting the charger. Keep the distance from the plug to the battery as short as possible. If wire length required is longer than 6 feet supplied in this kit, do not splice. Run a continuous length of wire as required.

3. Assemble the SB50 plug to the wiring. Take care to observe proper orientation when inserting the contacts into the enclosure (Figure 2). Fill the plug's wire cavities with RTV for strain relief and allow it to set (Figure 3).

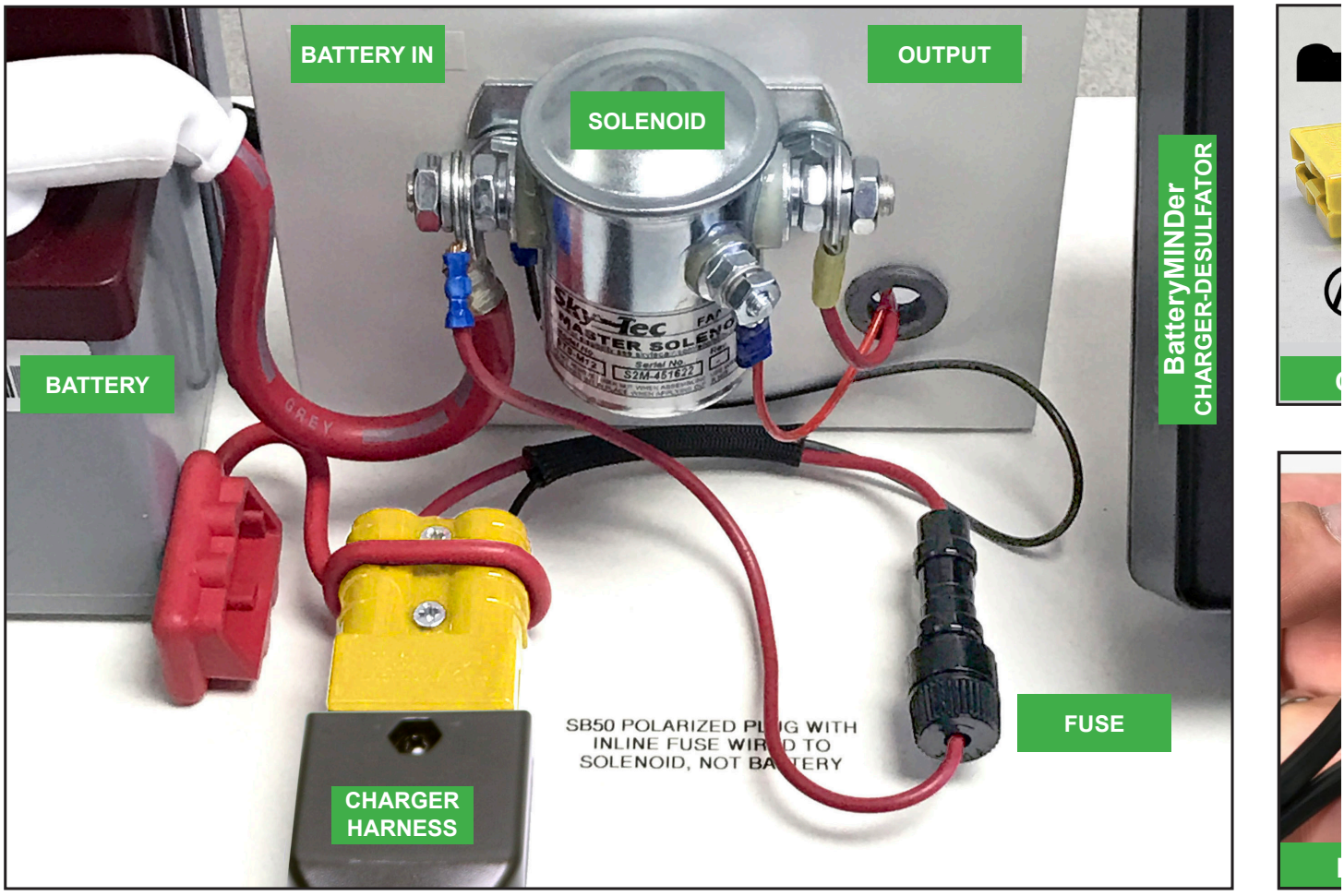


Figure 1. Simplified example of connection to battery solenoid. For more examples, see www.audioauthority.com/BM-AIK2A.

4. Route and secure the wiring harness and trim to length. Use protective sleeve as necessary to prevent chafing against airframe or other components. Do not over torque the screws as you mount the SB50 plug. Use spacers underneath to provide clearance if necessary.

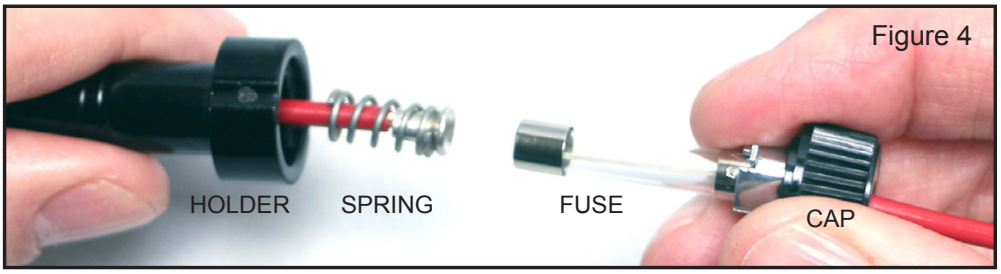


Figure 4

5. Assemble the fuse holder:
   a) Cut wire leads, remove springs (use smallest spring – discard others).
   b) Assemble fuse and holder as shown in Figure 4.
   c) Install cap to provide positive contact pressure with the fuse.

6. Position the assembled fuse holder so it is accessible and close to the battery relay or unswitched battery bus.

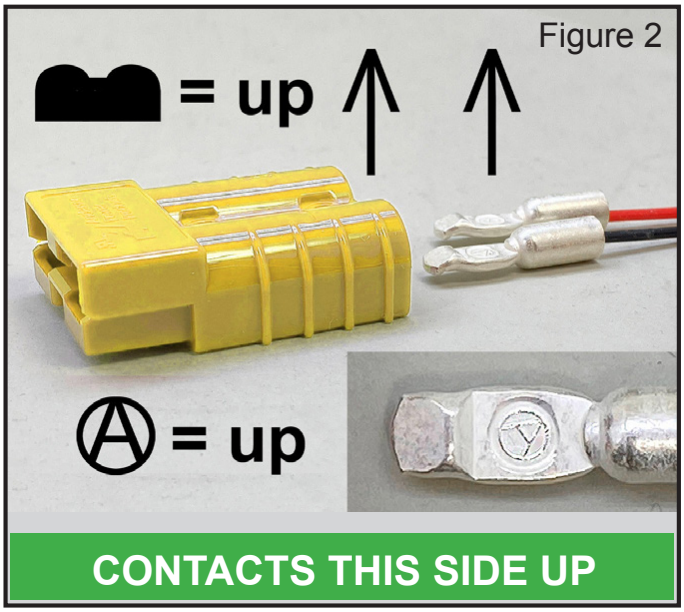


Figure 2

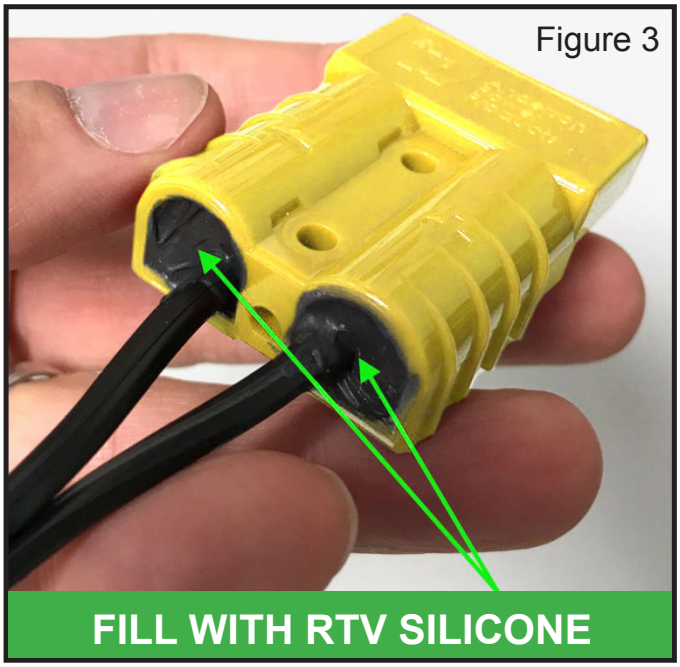


Figure 3



Figure 5. Finished installation example.

7. Crimp the appropriate terminals to harness leads and attach to the battery relay terminals, red wire to the positive terminal and black to negative or ground. If required, use alternate approved terminal hardware.

8. Placard the SB50 plug/cover using the supplied label or equivalent.

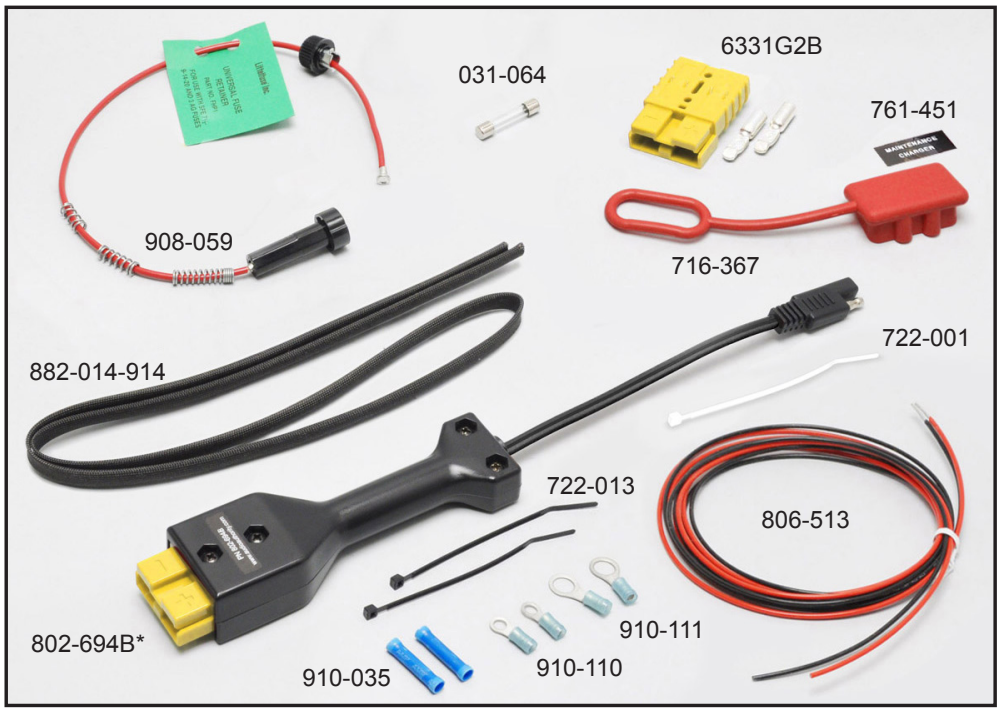
9. Verify continuity and proper polarity to battery.

10. Connect the SAE-to-SB50 adapter harness to the BatteryMINDer's output cable.

11. Connect the BatteryMINDer SB50 output to the airframe SB50 and test for proper operation.

12. Make appropriate entry in airframe maintenance logbook to document installation and return aircraft to service. Sample text below, edit as required for specific installation:

    "Fabricated & installed 2-wire battery charger connection harness using MIL-W-22759/16 wire with 15A inline circuit protection fuse. Attached to battery relay and airframe ground with ring terminals. Terminated opposite end with Anderson SB50 plug with protective cover and mounted in forward baggage compartment. All work IAW AC43.13/1B. Verified continuity, polarity, tested with charger and for proper aircraft electrical system operation. No defects noted at this time."



Parts List – PN: BM-AIK2B

Weight of all installed items is negligible. The 802-694B is not installed on the aircraft.

031-064	Fuse AG 10A 32VDC	1
6331G2B	SB50 plug (yellow) with contacts	1
716-367	Dust cover for SB50	1
722-001	Wire tie 4 inch (white)	1
722-013	Wire tie 4 inch (black)	2
752-792	Installation instructions	1
761-451	Label for dust cover	1
802-694B*	Adapter SAE-2 to SB50 (yellow) with strain relief	1
806-513	Stranded wire M22759/11-16 (red and black, 6ft. each)	1
882-014-915	Sleeving #3 fiberglass 915mm (black)	1
908-059	Fuseholder inline with 15 in. wire loop	1
910-035	Butt splice 14-16 (blue)	2
910-110	Ring terminal #10-32 14-16 insulated MS25036	2
910-111	Ring terminal 5/16 14-16 insulated MS25036	2

* The 802-694B adapter harness attaches to the charger, not the aircraft.

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