

Installation Instructions

Model BM-AIK2 Airframe Interface Kit for **BatteryMINDER**® Maintenance Charger



Charger harness wired to battery bus.



Maintenance charger plug & cover installed.

Background Information – Read Completely Before Beginning Installation

Aviation-specific BatteryMINDER models through fall of 2013 were supplied with automotive-grade battery connection harness and a battery-mounted temperature sensor that are not eligible for installation on FAA certified aircraft, under Federal Aviation Regulations 14 CFR §21.9. They are suitable for temporary connection or bench charging, but cannot be legally installed on the aircraft. These cables are no longer included in current BatteryMINDER configurations, which are supplied with a battery clip harness for temporary connections.

This kit provides standard aircraft parts acceptable under 14 CFR §21.9 for a 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 10-amp in-line protective fuse. An insulating dust cover protects the plug when not connected to the charger. This product is not compatible with 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. Individual aircraft models and configurations vary, so an airworthy installation depends on the judgment of a competent mechanic to determine the best option. This kit provides commonly used installation parts. Other airframe configurations may require different or additional parts that are not supplied. Similarly, a length of protective fiberglass MIL-spec sleeving is provided to protect the harness from airframe chaffing, as needed in the judgment of the installing mechanic. Other protective and security measures not included in this kit may be employed at the discretion of the installing mechanic, who is ultimately responsible for an airworthy installation.

This kit also includes a short harness to adapt 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 BatteryMINDER's is accomplished by use of VDC's Ambient Temperature Sensor (ATS-1), a small plug connected to the short pigtail on the charger.

Parts List

Part Number	Description	Qty	Weights
6331G2	Anderson SB50 polarized plug (red) w/solder contacts	1	all negligible
716-367	Elastomeric insulating cover for SB50	1	
761-451	Cover Label "BATTERY MAINTENANCE CHARGER ONLY"	1	
852-2225	MIL-W-22759/16 16-gauge unshielded wire, red (250°C)	6'	
852-0005	MIL-W-22759/16 16-gauge unshielded wire, black (250°C)	6'	
882-014	MIL-I-3190E silicone-coated fiberglass sleeving	3'	
908-059	Fuseholder, phenolic in-line bayonet w/15" wire loop (125°C)	1	
031-056	Fuse, 10-amp AG3	1	
910-102	14-16 AWG 5/16" ID ring terminal	2	
910-103	14-16 AWG #8 ID ring terminal	2	
910-035	14-16 AWG crimp butt splice	2	
802-694	SAE to SB50 adapter harness (connects to charger, not aircraft)	1	not installed

Installation Procedures

- 1) Determine best electrical access to the aircraft battery. 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. Plastic or composite airframes that do not have battery busses may require connecting directly to the battery terminals. The best place to access the battery will vary from one aircraft type to another and must be determined by the installing mechanic.
- 2) Determine a safe location to secure the red 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.
- 3) Assemble SB50 plug to wiring. Fill the plug's wire cavities with RTV for strain relief and allow it to set.
- 4) Route and secure the wiring harness and trim to length. Use protective sleeving as necessary to prevent chaffing against airframe or other components.
- 5) Position the provided 10A inline fuse holder as close to the battery or battery relay as possible.
- 6) 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.
- 7) Placard the SB50 plug/cover using the supplied label, or equivalent.
- 8) Use a DC voltmeter to verify continuity and proper polarity to battery.
- 9) Connect the SAE-to-SB50 adapter harness to the BatteryMINDER's output cable.
- 10) Connect the BatteryMINDER SB50 output to the airframe SB50 and test for proper operation.
- 11) 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 10A 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."