

Installation Instructions

Model BM-AIK1 Airframe Interface Kit for GPU **BatteryMINDER**® Option



Background Information – Please Read Completely Before Beginning Installation

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 a certified aircraft's lead acid storage battery, for the purpose of connecting an aviation-specific BatteryMINDER brand of low-current, continuous-duty, maintenance-type battery charger. The finished harness typically has ring terminals at the battery or battery relay connecting to an Anderson SB50 polarized plug at the opposite end by MIL-spec unshielded 16-gauge aircraft wire, with a 10-amp in-line fuse. An insulating dust cover protects the plug when not connected to the charger.

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 greatly, so an airworthy installation depends on the judgment of a competent mechanic to determine the best option among many. This kit provides common terminals for connection to most batteries or the battery relay. Other airframe configurations may require different terminations, with standard hardware supplied by the installing mechanic. 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 that cannot be anticipated and are not included in this kit may be required and employed at the discretion of the installer.

Temperature sensing for charger output calibration is accomplished by an ambient temperature sensor that is embedded into the GPU's charger output cable, and is not part of this installation.

Parts List

Part Number	Description	Qty	Weight
802-695	Battery Harness:	1	Negligible
904-358	Anderson SB50 polarized plug	1	
716-367	Insulating dust cover	1	
852-2225	MIL-W-22759/16 16-gauge unshielded wire, red	6'	
852-0005	MIL-W-22759/16 16-gauge unshielded wire, black	6'	
882-014	MIL-I-3190E silicone coated fiberglass sleeving	3'	Negligible
802-703	10-amp in-line fuse	1	Negligible
910-102	14-16 AWG 5/16" ID ring terminal (battery terminal)	2	Negligible
910-103	14-16 AWG #8 ID ring terminal (battery relay)	2	Negligible
910-035	14-16 AWG crimp butt splice	2	Negligible

Installation Procedures

- 1) Determine best electrical access to the aircraft battery. The harness can be connected either directly to the battery terminals, or alternatively to the battery relay and grounded to the airframe. Since batteries are regularly removed for inspection, maintenance and replacement, making the electrical connection for the charger at the battery relay is preferable, if feasible. The best place to access the battery will vary from one aircraft type to another and be determined by the mechanic.
- 2) Determine a safe location to secure the red SB50 plug where it can be readily accessed by the pilot or line crew to connect the charger. Keep the distance from the plug to the battery as short as possible.
- 3) Route and secure the 2-wire harness and cut to length. Use the provided protective sleeving as necessary to prevent possible chaffing against airframe or other components.
- 4) Attach the provided 10A inline fuse holder as close to the battery or battery relay as possible.
- 5) Crimp the appropriate terminals to harness leads and attach to the battery or relay terminals, red wire to the positive terminal and black to negative or ground. If required, use alternate approved terminal hardware. *NOTE: Concorde battery terminal bolts are too short for more than one ring terminal. In all cases, verify that there remains adequate battery terminal thread engagement when adding a ring terminal to the connection stack. If not, contact the battery manufacturer to obtain longer battery bolts.*
- 6) Label the SB50 plug to identify its function.
- 7) Use a DC voltmeter to verify continuity and proper polarity to battery.
- 8) Connect the BatteryMINDER and test for proper operation.
- 9) 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 aircraft battery (or battery relay and airframe ground) with ring terminals. Terminated opposite end with Anderson SB50 plug and secured 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."