Electric Vehicle Hardware Installation and Wiring Guide

Belktronix

Initial Release 071206
Revised 100306
Rev 1.5

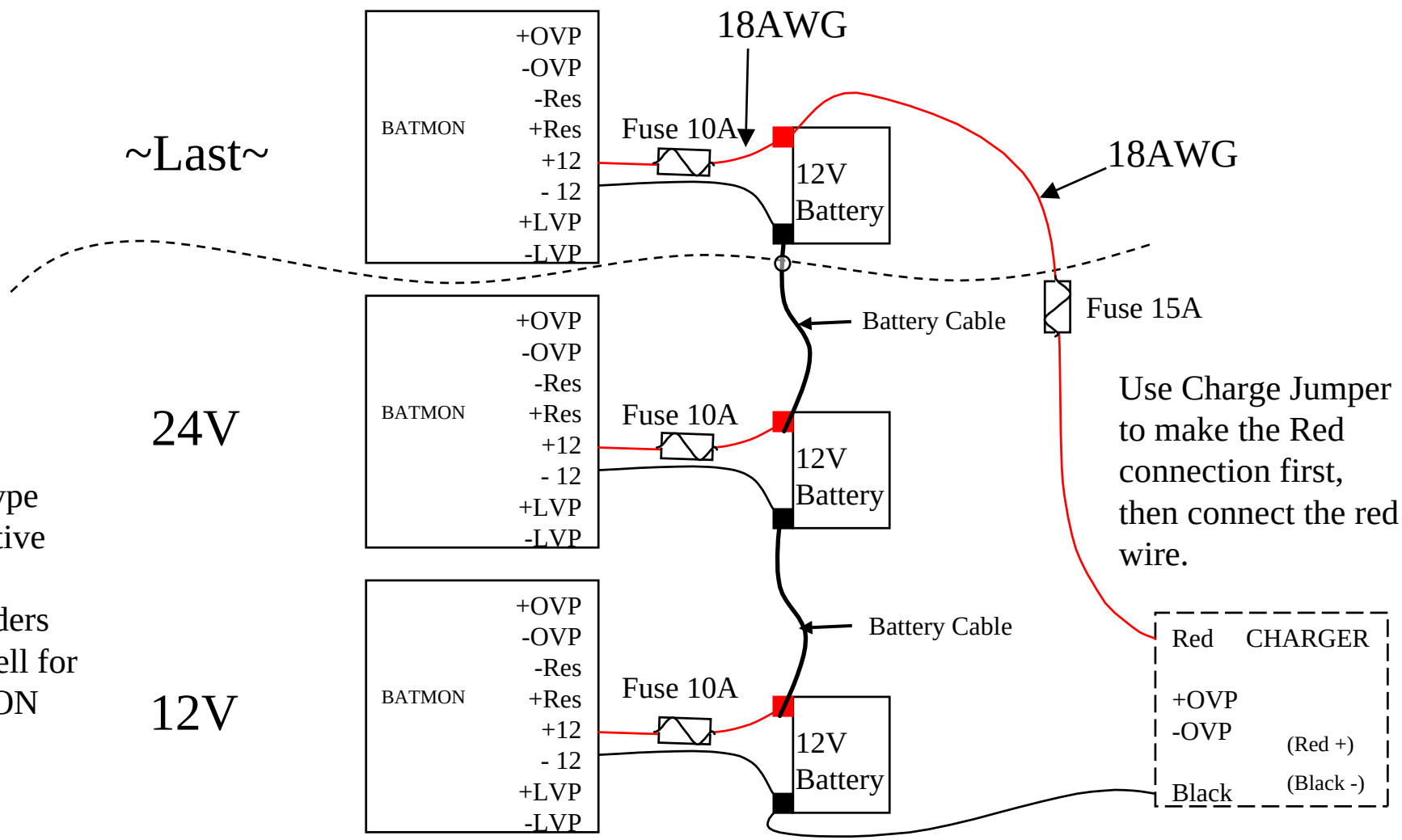
Document Revision History

- 1.1 Initial release
- 1.2 Cleaned up wiring diagrams, relabeled Power Center, added BATMON details
- 1.3 Added more VEHINT info with photos, updated VEHINT symbols
- 1.4 Added info for mechanical and wiring skills, charge jumper use, Labeling updates.
- 1.5 Extract this document to illustrate the wiring portion of the assembly process.

System Wiring

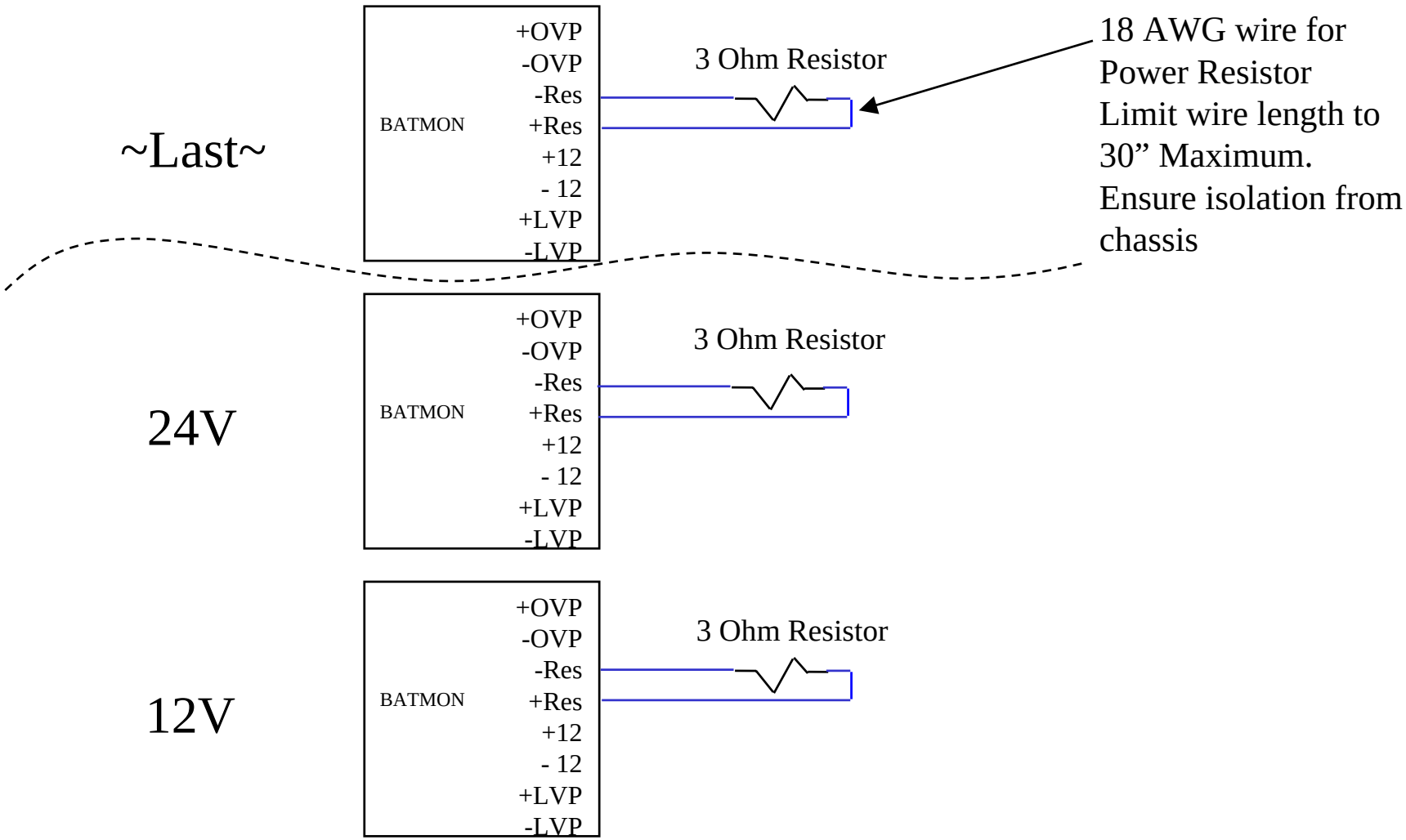
- The following slides will show individual systems hookup to provide an overall system installation view.
- Each wiring task is illustrated to make it easy to follow, point to point.
- Route low signal wiring away from high current wires.
- A 3 Traction Battery string is illustrated in the diagrams. Add more batteries to increase the voltage for your vehicle (up to 12).
- Each Battery in the string has a BATMON board. (except the vehicle battery).
- The BATMON resistor can dissipate up to 75W each! Be sure to allow adequate ventilation for heat to be dissipated from the resistors.
- Use the recommended crimp tool for crimp style lugs.
- For battery terminals, add additional 18ga wires for BATMON and other system modules. For the BATMON’s, this will offer another level of system protection by sensing a LVP condition if battery terminals become loose.

BATMON & Charger Wiring



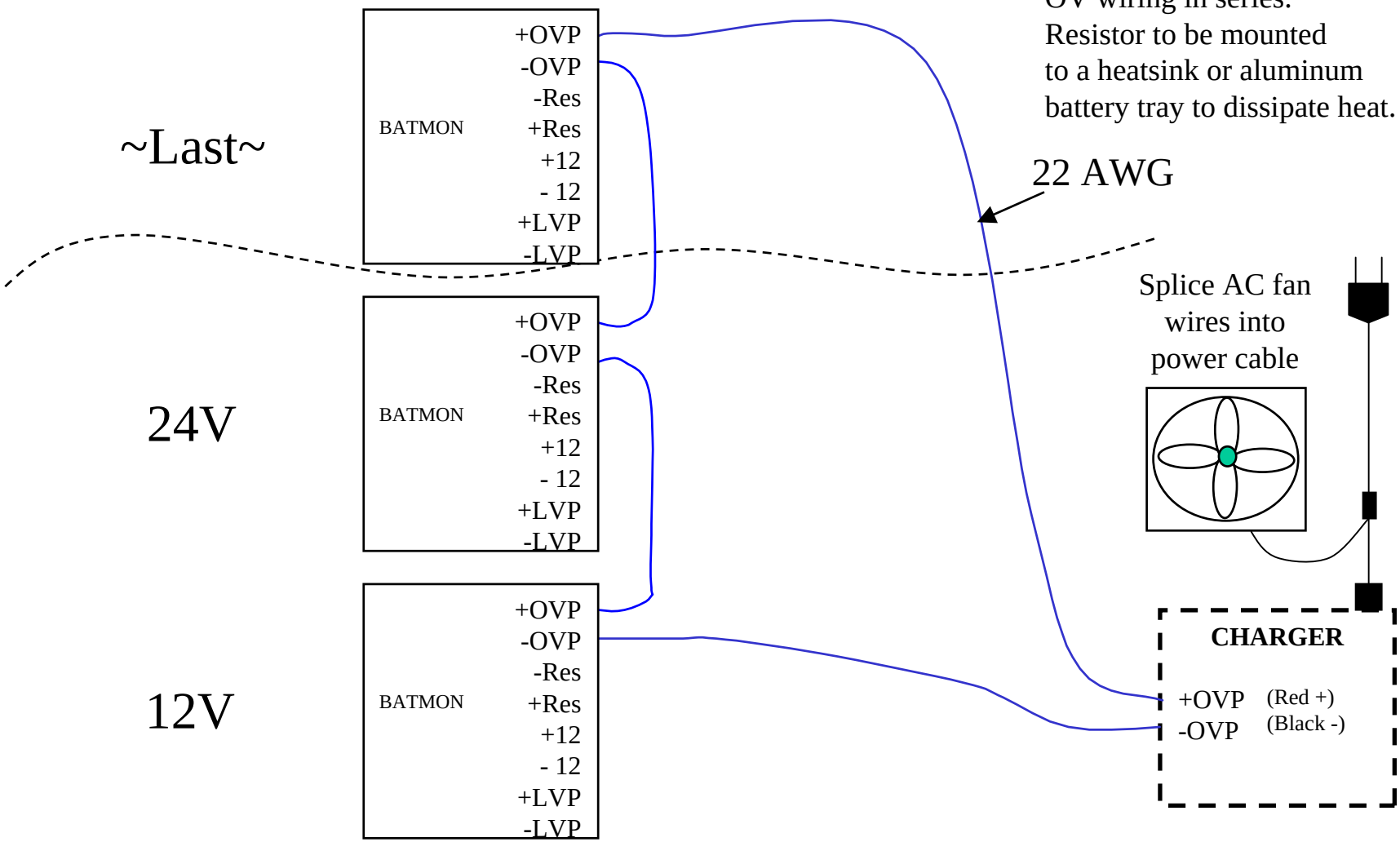
Blade type automotive fuses & fuseholders work well for BATMON boards.

BATMON Resistor Wiring



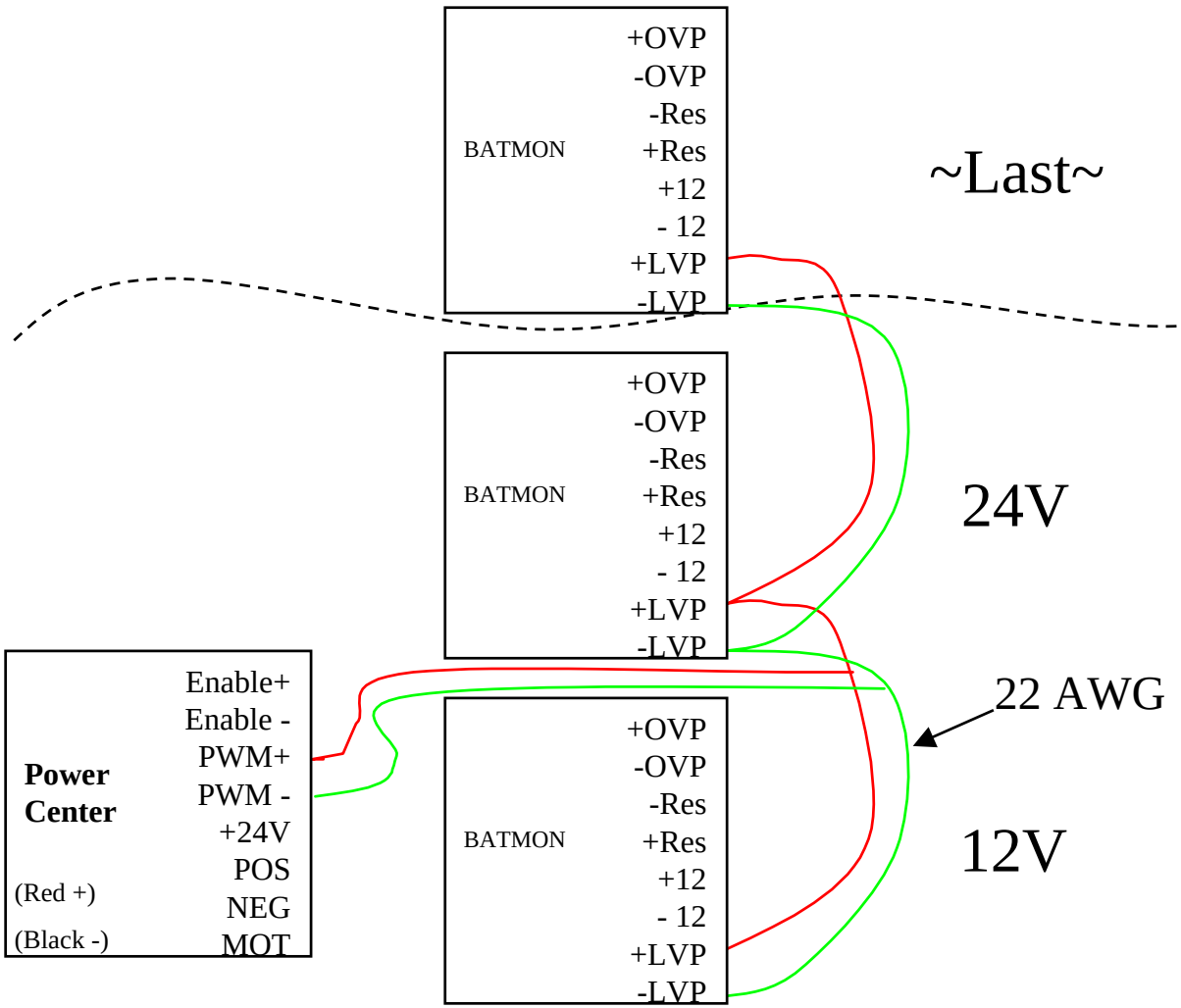
BatMon Wiring

Over Voltage Protection (OVP)



BatMon Wiring

Low Voltage Protection (LVP)

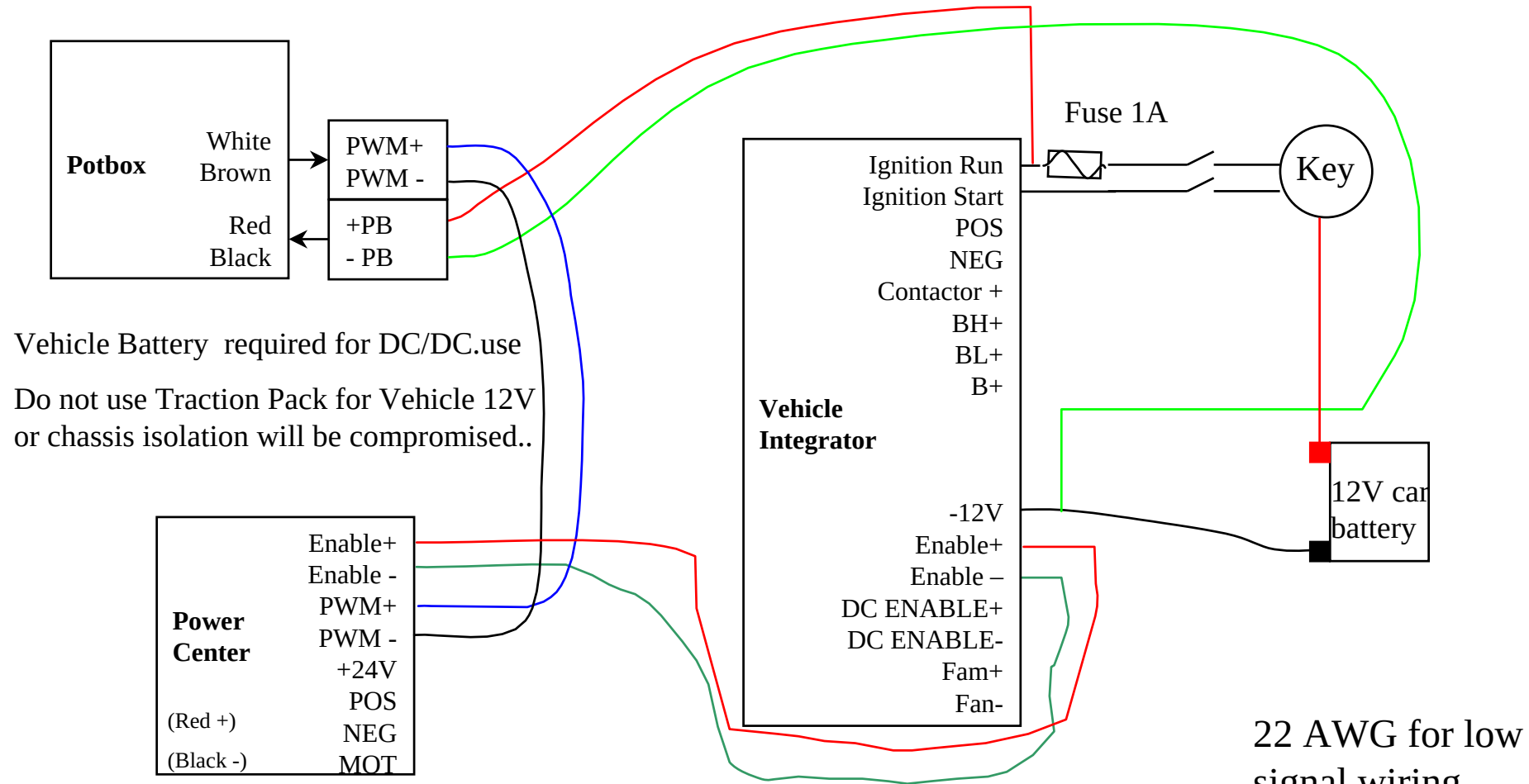


LVP wiring in parallel.

NOTE:

For PWM (PowerCenter) interface
Use a pigtail to go from 2 male
Fast-on connectors to 1 female.
Duplicate for other connector.
See next Slide (PWM)

Vehicle Integrator to Power Center, Potbox wiring

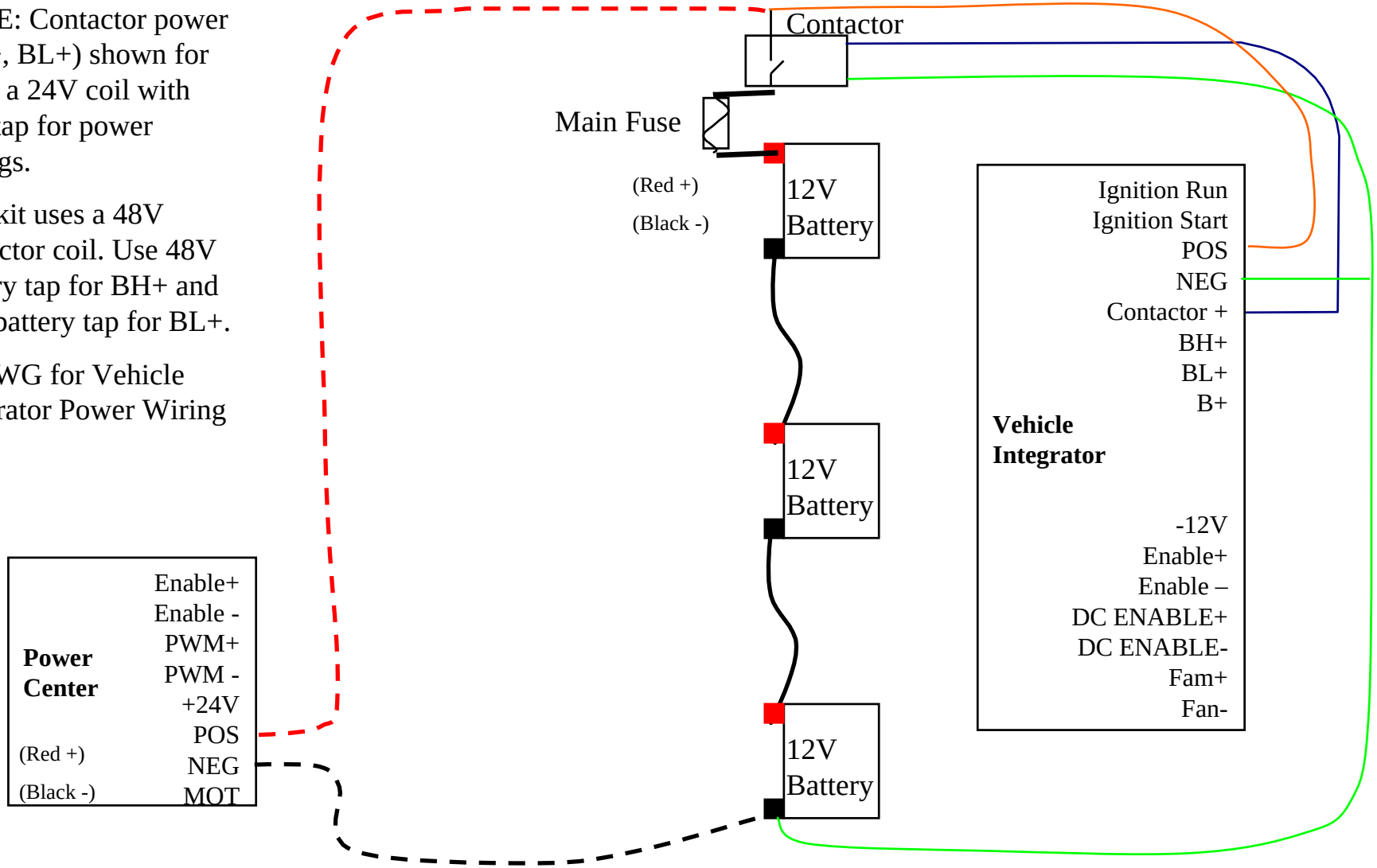


Vehicle Integrator - Contactor Wiring

NOTE: Contactor power (BH+, BL+) shown for using a 24V coil with 12V tap for power savings.

This kit uses a 48V contactor coil. Use 48V battery tap for BH+ and 24V battery tap for BL+.

18 AWG for Vehicle Integrator Power Wiring



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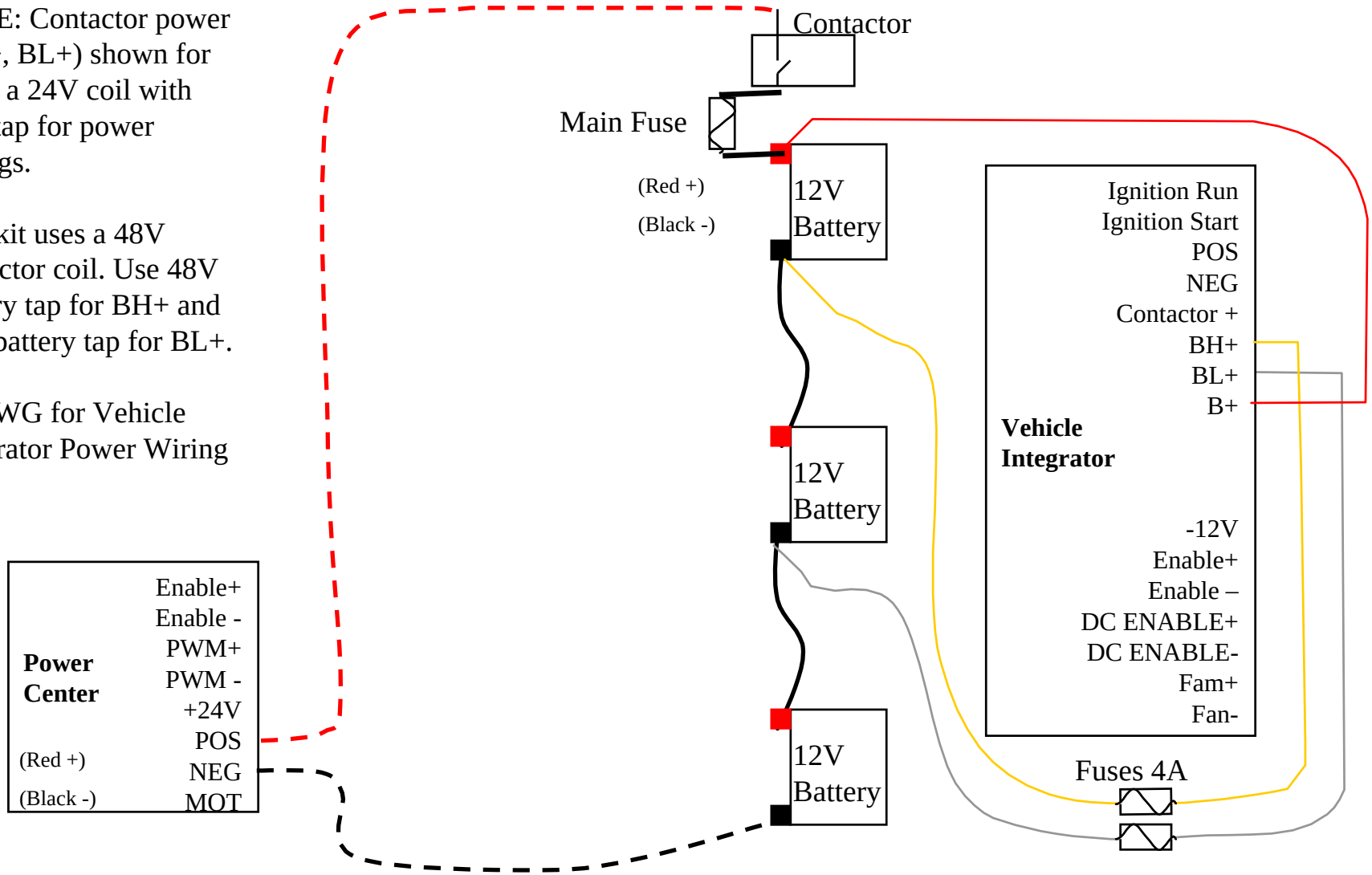


Vehicle Integrator to DC/DC Power & low signal wiring

Vehicle Battery required for DC/DC.

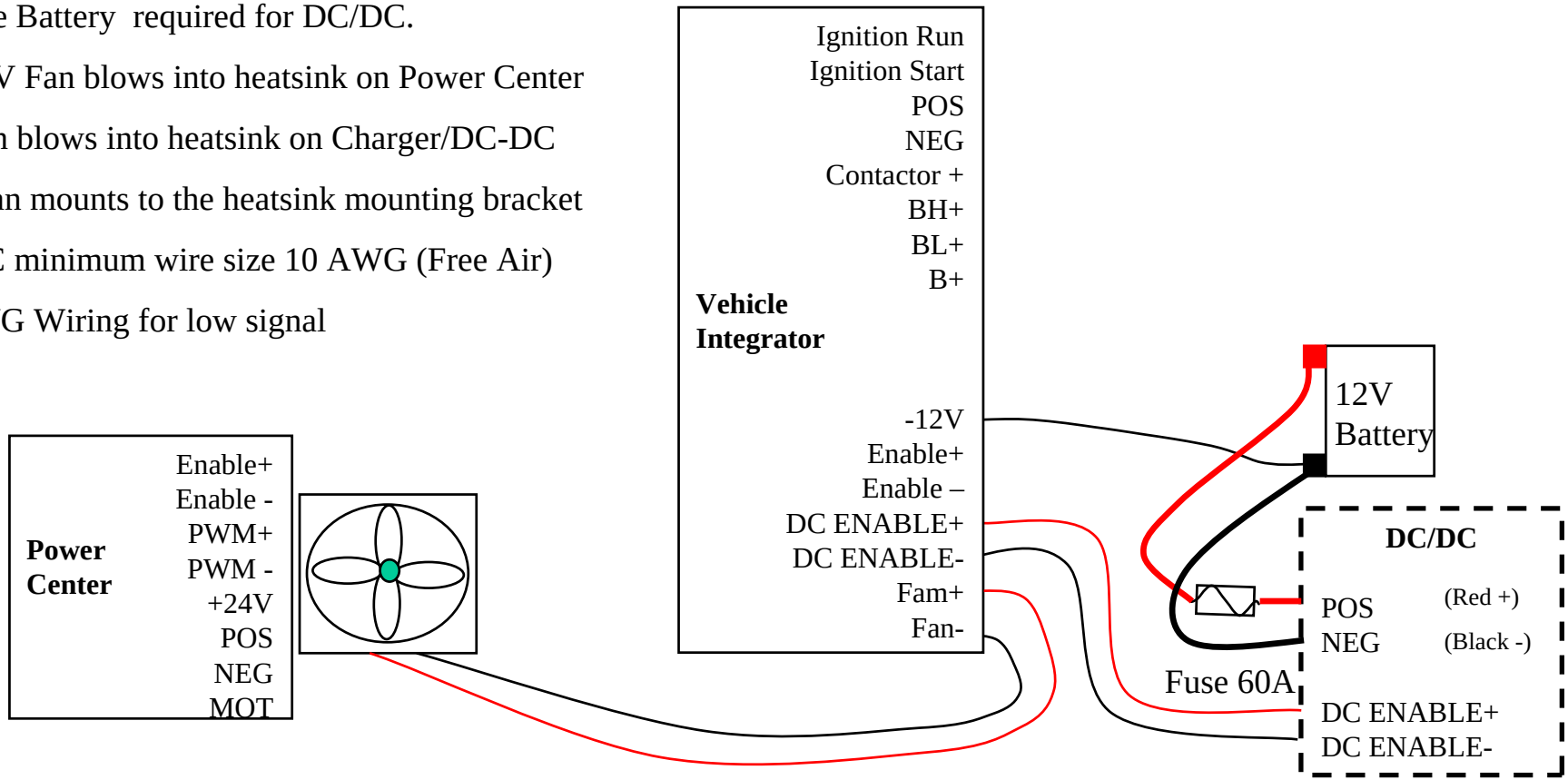
DC 48V Fan blows into heatsink on Power Center

AC Fan blows into heatsink on Charger/DC-DC

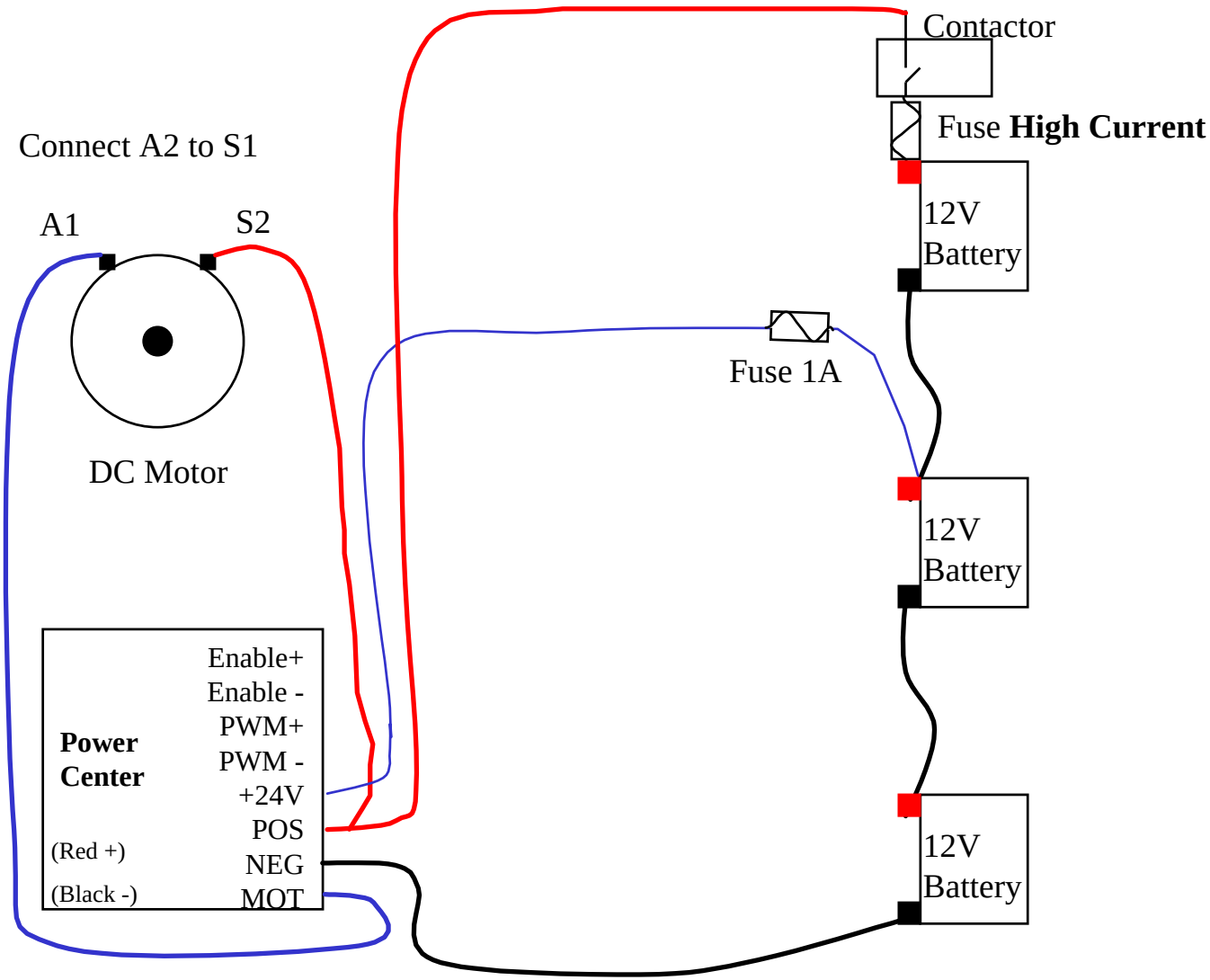
Each fan mounts to the heatsink mounting bracket

DC/DC minimum wire size 10 AWG (Free Air)

22 AWG Wiring for low signal



Power Center Wiring



Battery Cable 2/0
Motor Cable 3/0

Depending on motor rotation, terminals may be different. Consult motor mfgr for correct direction/ terminal connections.

Fuse rating to exceed rated Power Center output by 100A

Torque Power Terminals to ____ in/lbs.