Configuration Utility Notes
KikloVault LiFeP04 Batteries

These instructions and the accompanying wiring diagram represent a “best practice” approach to charging KiloVault drop-in LiFeP04 batteries in 12V and 24V systems. Use at 48V is not recommended.

Required Components:

- WS500 Alternator Regulator – Updated to the current firmware revision and configured with the Kilovault charging profile
- WS500 Wiring Harness, such as the WS500/PH or WS500/NH
- WS500/BT Battery Temperature Sensor
- 500A/50mV Current Shunt

In LiFeP04 systems like the KiloVault batteries, where CANbus communication is not available, the best practice for alternator/regulator control is to provide the regulator with the ability to monitor system voltage, ambient battery temperature and current into and out of the batteries.

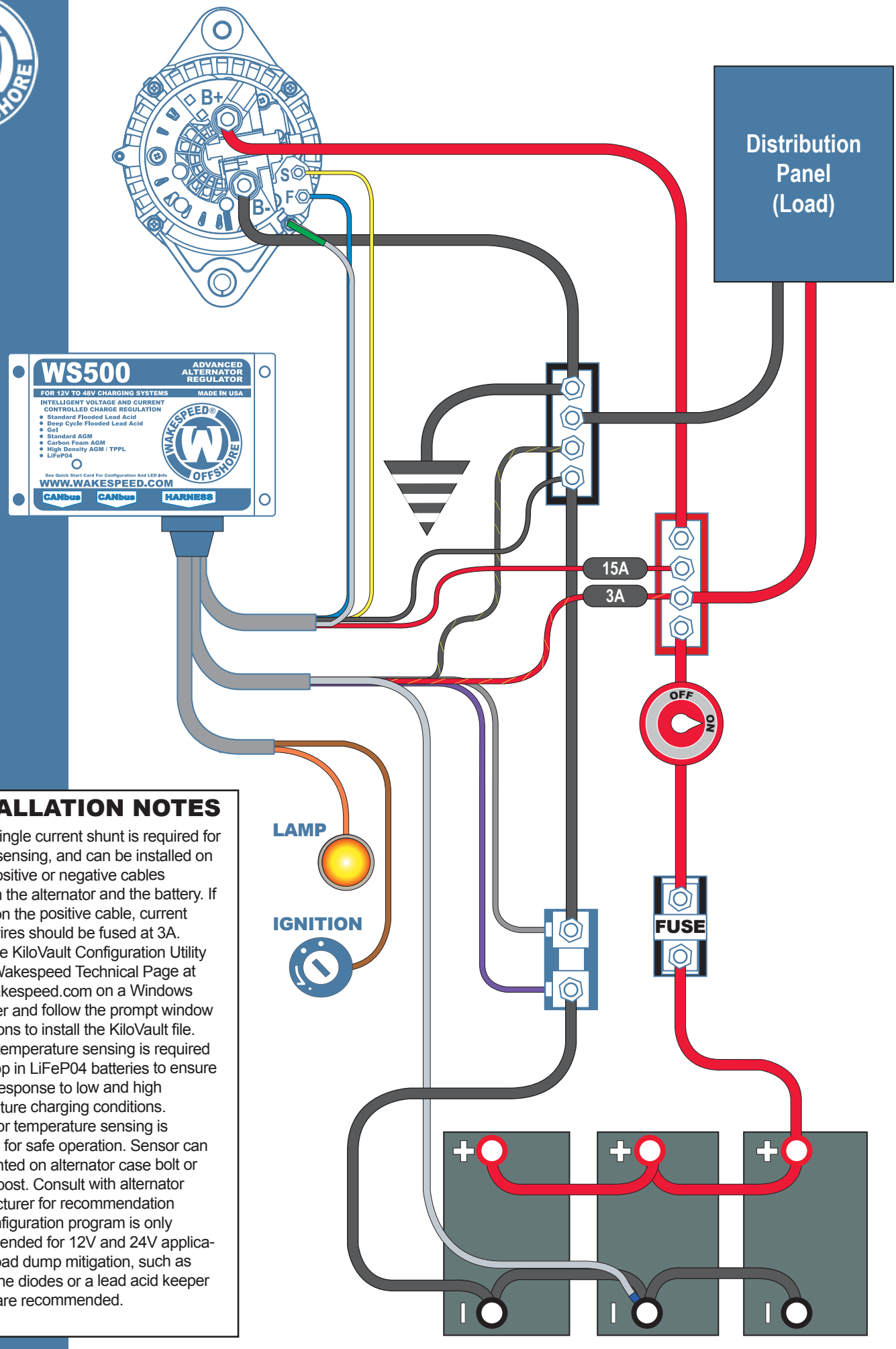
By closely monitoring battery temperature and the charge rate into the batteries, the WS500 can charge more safely by staying within the the KiloVault battery’s recommended C-rate and working temperature range.

When installing the configuration profile for your batteries, be sure to set the proper battery capacity multiplier to ensure that the regulator will be able to accurately monitor charging based on the overall capacity of the batteries being charged. See the Configuration Utility User’s Guide for instructions when modifying the configuration profile.

In order to safely monitor charging voltage, the regulator’s power and voltage sense wires (red and red/yellow tracer) must be connected in a location that’s always on alternator side of any switches or fuses.

KiloVault Configuration Data Points	
Alternator Temperature Setpoint	100°C
Default Battery Capacity Multiplier	500ah = 0.0
Engine Warmup Delay	30 Sec.
Bulk/Acceptance Voltage Target	14.1V (Std. 12V system)
Float Voltage Target	13.4 (Std. 12V system) at 3% tail current
Maximum Charge Rate	0.50C
Hard Temperature Limits (High / Low)	>45°C / <0°C
Reduced (0.05C) Charge Rates (High / Low)	40°C to 45°C / 0°C to 5°C

IMPORTANT: The information is provided for reference, and is intended to provide guidance required to tailor the configuration profile to your system. Please refer to the Wakespeed Communications and Configuration Guide and Configuration Utility Users Guide for detailed configuration instructions.



INSTALLATION NOTES

1. Only a single current shunt is required for current sensing, and can be installed on either positive or negative cables between the alternator and the battery. If placed on the positive cable, current sense wires should be fused at 3A.
2. Install the KiloVault Configuration Utility on the Wakespeed Technical Page at www.wakespeed.com on a Windows computer and follow the prompt window instructions to install the KiloVault file.
3. Battery temperature sensing is required with drop in LiFeP04 batteries to ensure proper response to low and high temperature charging conditions.
4. Alternator temperature sensing is required for safe operation. Sensor can be mounted on alternator case bolt or ground post. Consult with alternator manufacturer for recommendation
4. This configuration program is only recommended for 12V and 24V applications. Load dump mitigation, such as avalanche diodes or a lead acid keeper battery are recommended.