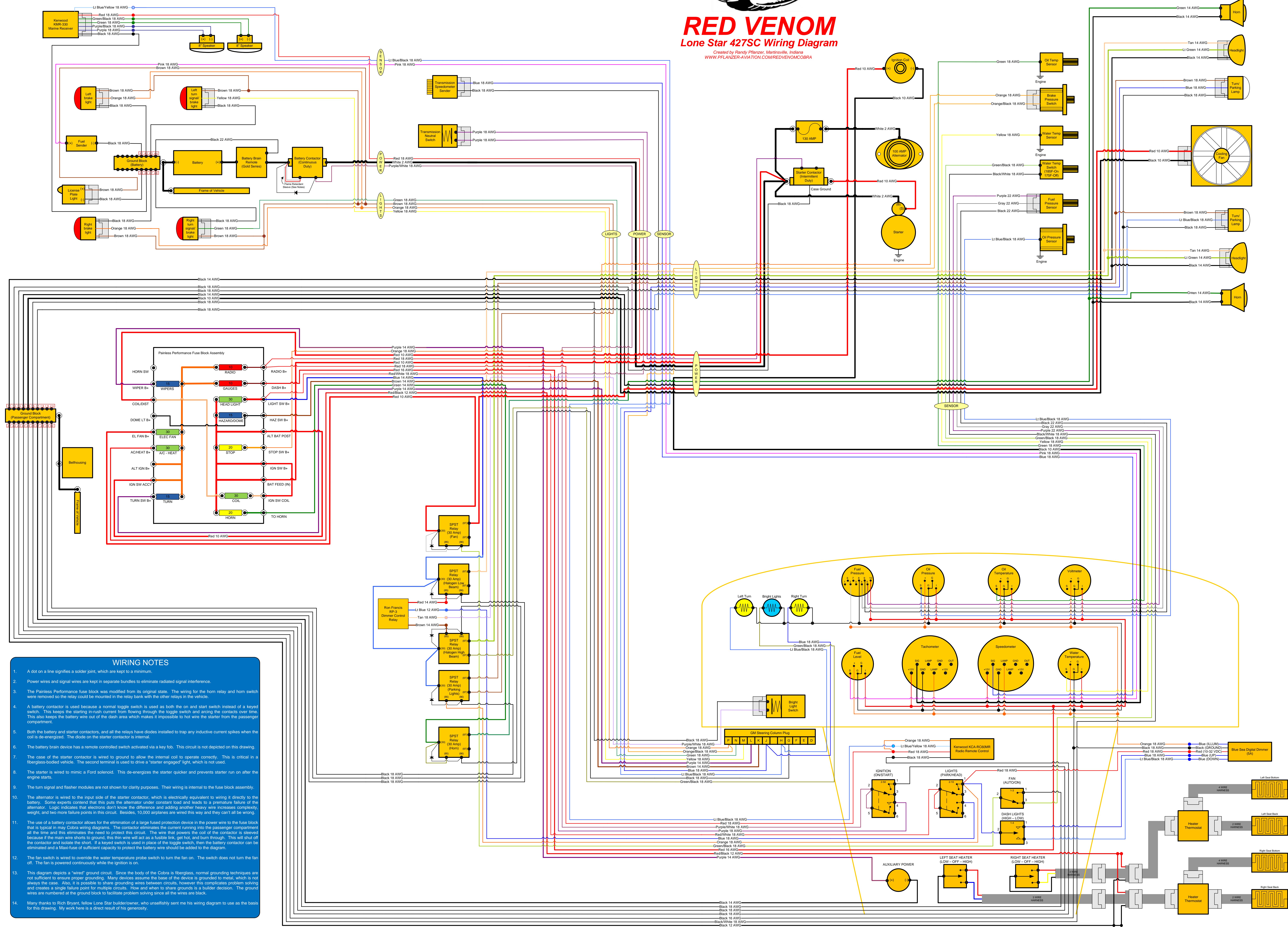




RED VENOM Lone Star 427SC Wiring Diagram

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WIRING NOTES

1. A dot on a line signifies a solder joint, which are kept to a minimum.
2. Power wires and signal wires are kept in separate bundles to eliminate radiated signal interference.
3. The Paintless Performance fuse block was modified from its original slate. The wiring for the horn relay and horn switch were removed so the relay could be mounted in the relay bank with the other relays in the vehicle.
4. A battery contactor is used because a normal toggle switch is used as both the on and start switch instead of a keyed switch. This keeps the starting in-rush current from flowing through the toggle switch and arcing the contacts over time. This also keeps the battery wire out of the dash area which makes it impossible to hot wire the starter from the passenger compartment.
5. Both the battery and starter contactors, and all the relays have diodes installed to trap any inductive current spikes when the coil is de-energized. The diode on the starter contactor is internal.
6. The battery brain device has a remote controlled switch activated via a key fob. This circuit is not depicted on this drawing.
7. The case of the starter contactor is wired to ground to allow the internal coil to operate correctly. This is critical in a fiberglass-bodied vehicle. The second terminal is used to drive a "starter engaged" sign, which is not used.
8. The starter is wired to mimic a Ford solenoid. This de-energizes the starter quicker and prevents starter run on after the engine starts.
9. The turn signal and flasher modules are not shown for clarity purposes. Their wiring is internal to the fuse block assembly.
10. The alternator is wired to the input side of the starter contactor, which is electrically equivalent to wiring it directly to the battery. Some experts contend that this puts the alternator under constant load and leads to a premature failure of the alternator. Logic indicates that electronics don't know the difference and adding another heavy wire increases complexity, weight, and two more failure points in this circuit. Besides, 10,000 airplanes are wired this way and they can't all be wrong.
11. The use of a battery contactor allows for the elimination of a large fused protection device in the power wire to the fuse block that is typical in many Cobra wiring diagrams. The contactor eliminates the current running into the passenger compartment all the time and this eliminates the need to protect this circuit. The wire that powers the coil of the contactor is sleeved because if the main wire shorts to ground, this thin wire will act as a fusible link, get hot, and burn through. This will shut off the contactor and isolate the short. If a keyed switch is used in place of the toggle switch, then the battery contactor can be eliminated and a Max-fuse of sufficient capacity to protect the battery wire should be added to the diagram.
12. The fan switch is wired to override the water temperature probe switch to turn the fan on. The switch does not turn the fan off. The fan is powered continuously while the ignition is on.
13. This diagram depicts a "wired" ground circuit. Since the body of the Cobra is fiberglass, normal grounding techniques are not sufficient to ensure proper grounding. Many devices assume the base of the device is grounded to metal, which is not always the case. Also, it is possible to share grounding wires between circuits, however this complicates problem solving and creates a single failure point for multiple circuits. How and when to share grounds is a builder decision. The ground wires are numbered at the ground block to facilitate problem solving since all the wires are black.
14. Many thanks to Rich Bryant, fellow Lone Star builder/owner, who unselfishly sent me his wiring diagram to use as the basis for this drawing. My work here is a direct result of his generosity.