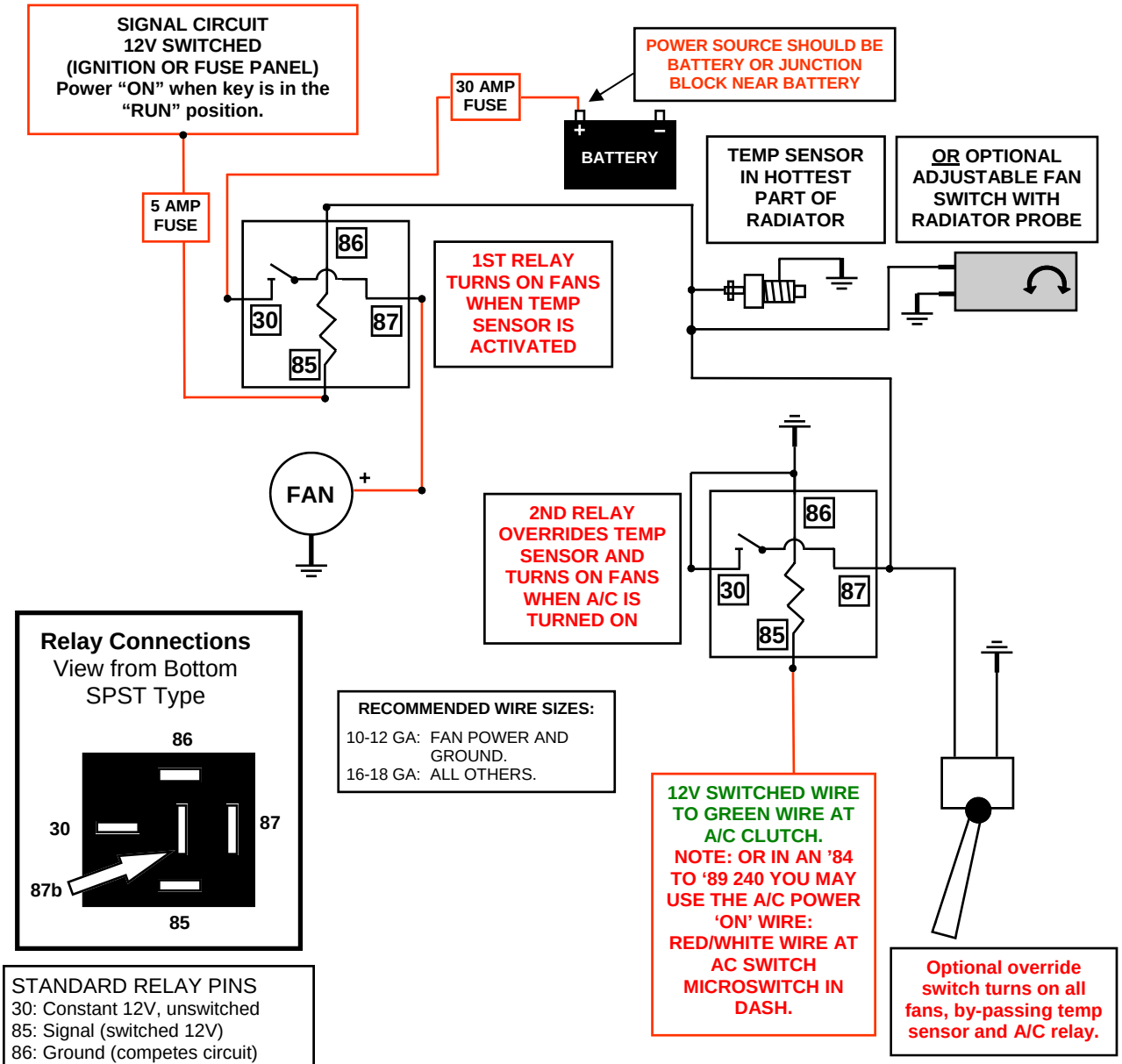
Suggested Electric Fan Wiring Diagrams

Primary Cooling Fan - Single Speed

Updated: 06/10/2010



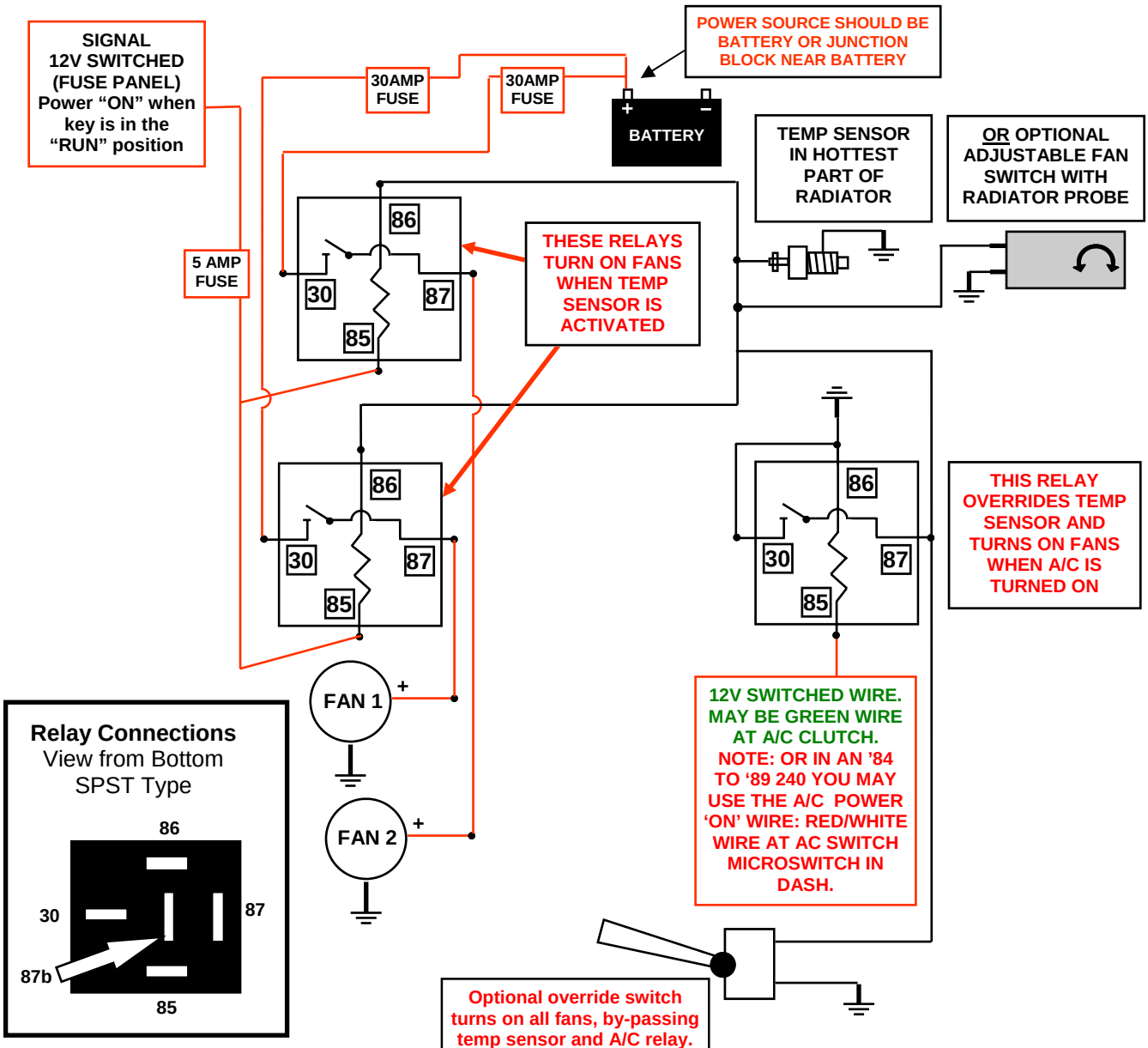
STANDARD RELAY PINS
30: Constant 12V, unswitched
85: Signal (switched 12V)
86: Ground (competes circuit)
87: Consumer (fan) 12V +
87b: Extra consumer (same as 87)

SPST vs SPDT Relays. What's the difference?

Single Pole, Single Throw (SPST): This relay will be identified as having a middle 87b spade (or no middle spade at all). This is the most common relay used for fog lights or other simple circuits. If there is a middle 87b pin, it will have power whenever there is power to the 87 (whenever relay is "activated"). This way the middle 87b pin may be used as an extra power output.

Single Pole, Double Throw (SPDT): If you have a relay with an 87a pin in the middle spot, it is a SPDT relay, sometimes called a "changeover relay." This type of relay will work for this application also, but you will not use pin 87a. In a changeover relay, the 87a pin will be "HOT" anytime the 87 pin is "OFF," so long as power is connected to pin 30.

PRIMARY COOLING FAN
DUAL FANS



Relay Connections
View from Bottom
SPST Type

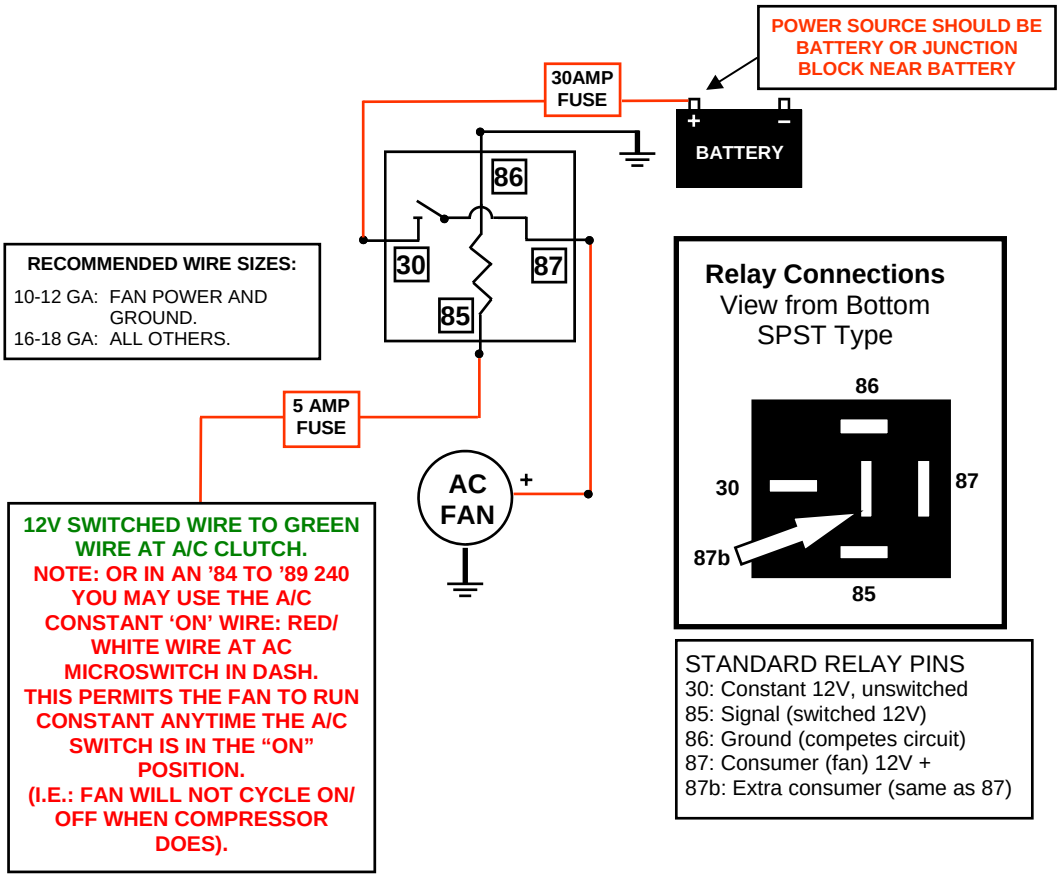
STANDARD RELAY PINS
30: Constant 12V, unswitched
85: Signal (switched 12V)
86: Ground (competes circuit)
87: Consumer (fan) 12V +
87b: Extra consumer (same as 87)

RECOMMENDED WIRE SIZES:

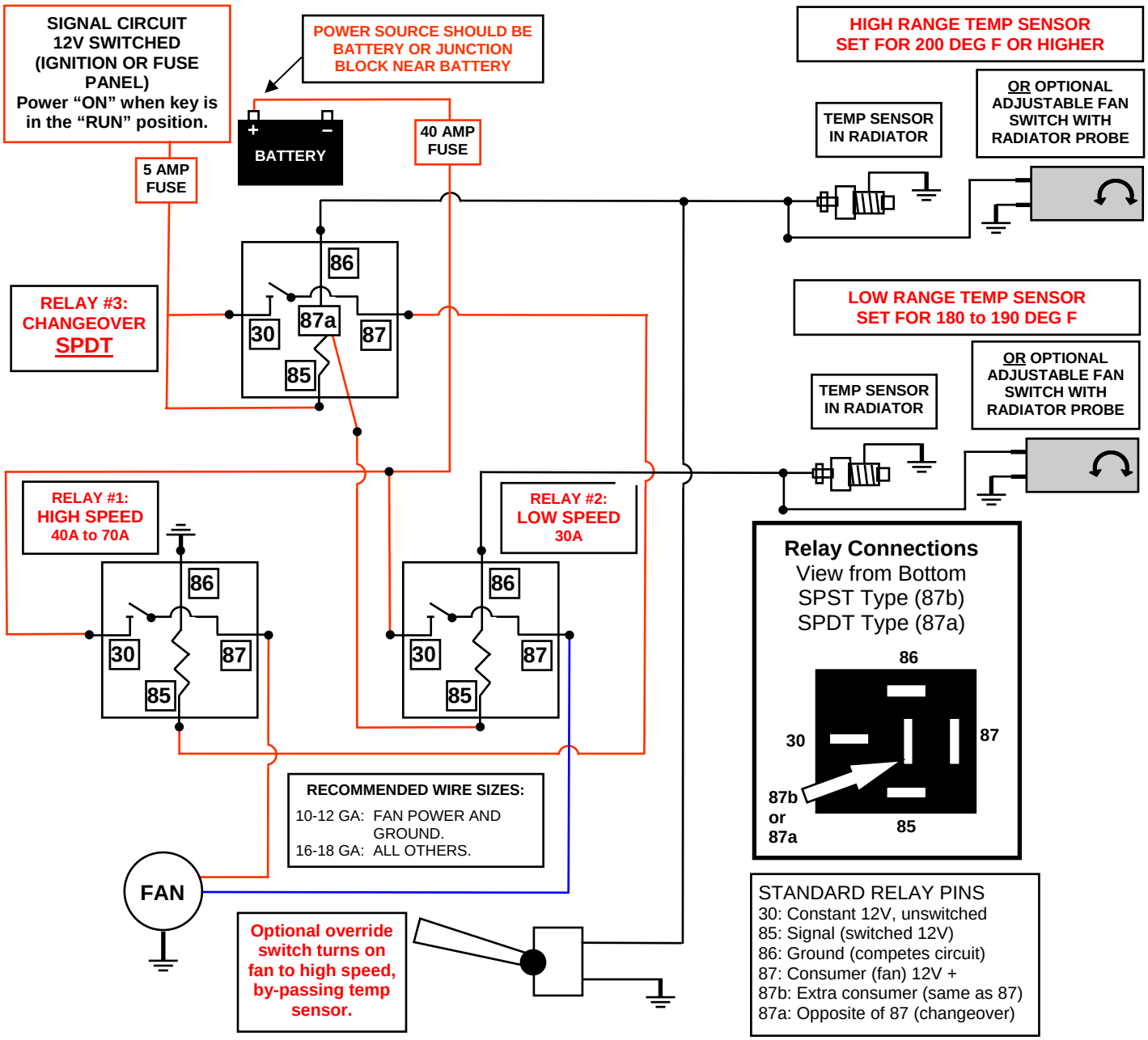
10-12 GA: FAN POWER AND GROUND.
16-18 GA: ALL OTHERS.

SINGLE A/C FAN ONLY
for A/C Condenser

This diagram works well if you only wish to add a single fan to the front of your A/C condenser. It will not come on at a particular temperature, but only when the A/C is turned on.



Primary Cooling Fan - Two Speed Type



TWO SPEED FAN CIRCUITRY SIMPLIFIED

This is not as confusing as it looks. A two-speed fan may be used as long as you use THREE relays and TWO temperature sensors set for different set points.

The fan will remain off until your low temperature set point is reached, activating the low speed relay. If your temperature climbs higher, the second sensor high set point will activate the changeover relay, sending power to the high speed relay, while at the same time shutting off the low speed circuit. This way you can be sure only one circuit will be on at a time.

The high speed relay capacity will depend on the fan. Most 16 inch or smaller fans can get by with a 40A relay for the high speed. A larger fan, such as the 18 to 19 inch Ford Taurus/T-Bird/Lincoln Mk VIII fans, should use a 70A relay. These fans generally use 35 to 40 amps, so power and ground cables for these big fans should be at least 10 GA.

Simple radiator coolant sensors may be used as long as they are different temperature ranges. Or simple electric adjustable fan controllers, (such as a probe and switch with no relay) can be purchased from Summit Racing for about $25 each. Or try one radiator sensor and one electronic type.