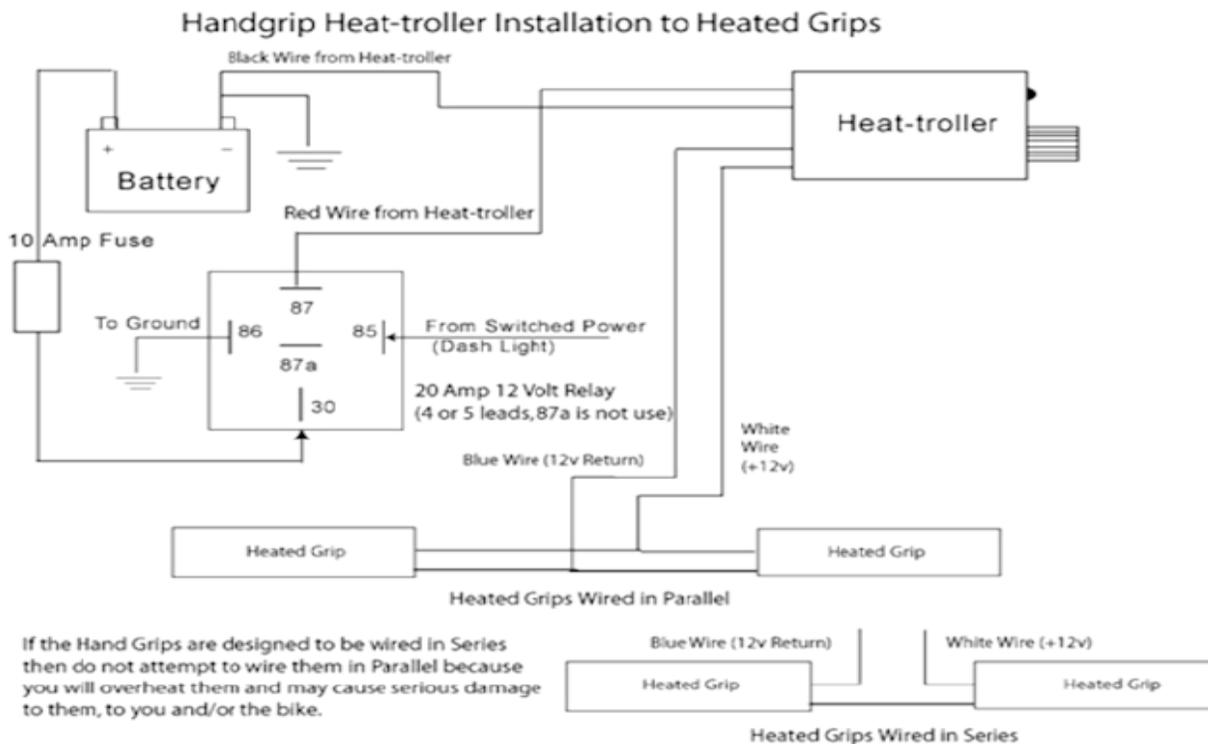


Heat-Troller™ (for heated grips) Hot Grips® Wiring Instructions

This is how the Heat-Troller™ should be wired up using Hot Grips®. **HOWEVER, WE HAVE JUST LEARNED THAT SOME MODELS OF HEATED GRIPS HAVE TO BE WIRED IN SERIES!** IF THEY ARE DESIGNED TO BE WIRED IN SERIES, DO NOT WIRE IN PARALLEL TO GET MORE HEAT. IT WILL CAUSE THE GRIPS TO OVERHEAT AND FAIL, AND WILL POSSIBLY DAMAGE YOUR ELECTRICAL SYSTEM.

1. Turn knob on Heat-Troller™ to off position and make sure it is unplugged from power.
2. Determine where the switch and LED should be mounted on your vehicle. The LED should be placed in your line of sight and not hidden behind the knob. Please note that the switch and LED are mounted on a circuit board which may be broken apart at score line if you prefer to mount the switch in a different place than where you mount the LED. Clip through the cable tie holding the board to the cable, strip back the casing of the cable as far as needed, and then reattach a cable tie (included) for strain relief.
3. Drill a hole through the mounting surface for the switch using a 9/32 inch or 17/64 inch drill bit. We recommend a Unibit #1 drill bit. If the mounting surface is too thick for the threads of the switch, an adaptor piece (included) may be needed. The collar of the nut fits into the hole through the fairing and will screw to the shaft of the switch, holding it in place. The hole drilled through the fairing will need to be made large enough for the collar to fit into it. Drill a hole for the LED using a 7/64-inch drill bit. Use hot glue or waterproof caulking to hold the LED in place. If you are going to use a relay, on a 5 pin relay, ignore pin 87A.



Note there are two sets of heated grips above, one is if you have a set wired in “PARALLEL”, and the other if in “SERIES”.

The Heat-Troller™ wiring shows a universally available RELAY for the following reason: The best way to add an accessory like heated grips or heated clothing is thru a RELAY. When you use a RELAY, which is triggered by something like your dash lights, then you eliminate the possibility of accidentally wearing down your battery if you leave the accessory on. It does involve more wiring, but well worth the effort. RELAYS are available at auto parts stores and they are \$5.-\$10. If you install a 10 amp relay, then you can use it to control up to 10 amps of total accessories. If you install a 20 amp relay, then you can control up to 20 amps of accessories. Hot Grips® are 2.5-3 amps total for the pair, depending on the length and model. Do not run more accessories (total amps) than your electrical system has the reserve power for, or you will have a dim headlight and run down the battery.

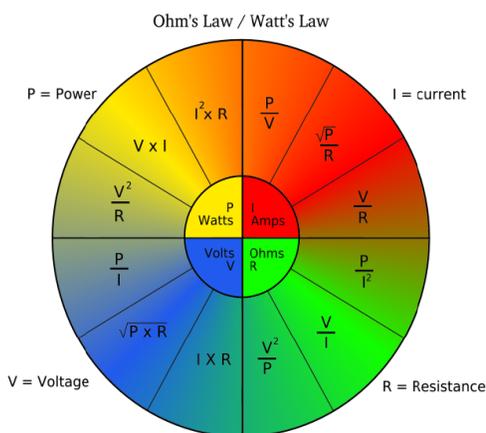
If you simply wire directly to the battery, it's only a matter of time before you forget to turn off the heated grips, and you will discharge your battery which is very bad for it. Discharged batteries can develop sulfation deposits on the lead plates inside, which can eventually ruin the battery.

If you don't install a relay, then be sure that the power source you use on your motorcycle (ATV, snowmobile, etc.) is switched off (no voltage) when the ignition key is turned off. Many vehicles have an unused accessory fuse available on the fuse panel (see your owner's manual or call your dealer where you bought it.)

If your Heat-Troller™ has a 10 amp fuse, then never substitute a higher amp fuse, or you will damage the Heat-Troller™ and your electrical system. However you can use a Heat-Troller™ with its original fuse to power Hot Grips®, even though the Heat-Troller™ has a 10 amp fuse and the Hot Grips® draw no more than 3 amps. Because Hot Grips® never can burn-out, the rubber may wear down, but they do not short-circuit inside and draw more amps. The external black lead wires can short out due to abrasion, but that will blow the 10 amp fuse.

The standard 3-position toggle switch and resistor from the Hot Grips® kit are NOT used when installing a variable heat controller. There is no polarity (positive or negative) to the two Hot Grips® black wires.

* The Heat-Troller™ should be installed in accordance with the enclosed instructions. We are not responsible for units damaged by incorrect installation, improper use or shorts in the clothing made by others. For all warranty replacement, contact us directly by sending an e-mail to Exchanges and Returns.... **If e-mail is not available, call 702-357-8664.** The Heat-Troller™ is a DC (direct current), power controller designed for heated clothing, blankets,



current), power controller designed for heated clothing, blankets, pads and other heated products that are powered by a battery. You can think of the Heat-Troller™ as a dimmer switch for your heated products. It has a positive off and provides a full range of heat that is constant at any setting, just as a light dimmer switch gives you constant light at different levels.

The Heat-Troller™ is a pulse-width modulated controller with a 1 second cycle time. That means that over a 1 second period, the power is turned on from about 10% to 100% of the time, adjustable with the knob on the controller. When the power is turned on, full power is applied to the load. In the example given, if the heated grip are 16 Watts each and the Heat-Troller is adjusted to 50%, the grips will get 16 Watts for half a second, then no power for half a second, giving an average of 8 Watts of power. The Heat-Troller is more efficient than a rheostat because it makes very little wasted heat when turned on. For two 16 Watt grips, the Heat-Troller makes less than 0.1 Watts of heat at 50%. A rheostat would make about 16 Watts of wasted heat at the same 50% setting.

IMPORTANT: If your Hot Grips® kit is wired in "series" you can still use this Heat-Troller™ but must wire the 2 grips in "series" like your Hot Grips® kit instructions describes. Examples for models: Ergo 1, Ergo 2, 101, 102, 103, 104, 105, 201, 301, 302, 401, 406, HW, KW, 88T, 8ED, 8DN. Refer to the lowermost 'heated grips' on the first page.

Contact First Gear - Warm 'N Safe for any Installation or Warranty Questions: 702-357-8664

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 USA tel. 603-448-0303 Email: support@hotgrips.com website: www.hotgrips.com