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Installing the Hotronics Switch Kit for electric fans.

The Hotronics Switch kit for electric fans consists of a low voltage temperature sensor to trigger a high amperage relay, switching 40 amps to the cooling fan. The sensor is best installed in the hottest part of the cooling system near the engine thermostat or in the cylinder head, near the front of the engine in the water flow. Avoid rear intake water passages as they're found to lag from poor coolant flow.

Never place the Hotronics sensor in the water pump or bottom of the radiator as this is already cooled water and not relative to the engine temperature.

Do not place the sensors in a bushing resulting in the sensor sticking up into the cavity and out of the water flow. Coolant should flow over as much of the sensor probe as possible. Order sensor in thread size, according to the hole your putting it in.

Never place the sensor in a tee or heater hose. This is out of the current flow.

Always use anti corrosion inhibitors or antifreeze in cooling systems with aluminum manifolds, aluminum radiators or other aluminum engine components exposed to engine coolant.

Place the sensor in the intake near the thermostat or in the cylinder head.

All vehicles differ with radiator, engine size, cooling components and efficiencies.

The only part to the cooling system that is consistent on all applications is the engine, near the thermostat; the thermostat is what's controlling the water circulation and minimum operating range of the engine temperature right now.

(Preferred location)

Select a suitable water location for the sensor on the engine side of the thermostat, not the radiator side of the thermostat. Sensor does not respond rapidly like water gauges!

Apply a coat of anti-seize compound to the female threads in the intake or cylinder head before installing the sensor, the sensor thread is tapered-pipe and will drag the anti-seize compound in on the threads, and makes for less clean up.

(Hint)

Anti-seize compound seals and keeps the sensor and engine from sticking together or galling the metals. And allows for easier removal later if needed.

The Thermostatic Relay Pac can mount inside or out, just point the wires down if mounting in the engine compartment, so any condensation or moisture would run out the wire holes and not fill up like a bathtub.

Connect the heavy gauge Red and Blue wires on the Relay Pac with only heavy gauge Yellow crimp connectors. And be really sure to use a good crimping tool here, the circuit needs to be good and tight. If not it will burn and turn black from

the heat of a poor connection.

The Red Hot wire needs to carry all the power, so select the battery or starter stud or main feed wire coming to the fuse panel.

Be sure the location you select, can carry the load of the fan for an extended period of time.

Place a fuse or circuit breaker on the Red wire between the battery source and the Hotronics Relay Pac according to the amp draw of your fan.

Make sure your crimps are heavy gauge Yellow crimp terminals on the heavy gauge wires and a good solid crimp is achieved. Be sure a tight connection on the battery, starter stud or fuse box is made as well.

The Blue wire will supply 12 volts to the fan when the relay turns on.

Connect the Blue wire with a heavy gauge Yellow crimp connector and connect to the electric fan power wire. Connect a heavy ground wire on the fan motor also, grounding fan on the chassis or engine. Crimps must remain good and tight.

Connect the White wire to a 12 volt switched key 'ON', at the key or fuse box.

Connect the Black wire to one connector of the sensor, the remaining connector on the sensor place a wire to a good engine ground.

Smaller wires are ok with small red crimp terminals just crimp them tight.

Now when the engine warms up to temperature. The sensor turns on the Thermostatic Relay Pac, which turns on the Fan. Nothing left to do just get in and Drive.

If your running A/C with your fan switch. Proper heat transfer of the a/c condenser requires, the fan come on with the A/C, to pass air over the condenser for proper heat exchange and cycling of the A/C system, when at slower speeds.

Follow the wiring chart for a/c, using the AR-30 relay for engaging the Fan Switch kit when operating the air conditioning. (AR-30 Relay not supplied with kit)

This wiring chart allows fan to run any time the A/C switch is turned 'ON' and goes back to automatic mode when the A/C is turned OFF. (See wiring chart)

The A/C trips a Positive to the a/c temperature control switch to engage the compressor clutch. The Hotronics temperature sensor trips a Ground to the Cooling Fan Relay Pac, these are different so we use an AR-30 switching relay to trigger from the positive of the A/C switch, closing the contacts of the AR-30 relay and completing a ground to the sensor circuit whenever the A/C is turned 'ON'. (See wiring chart)

The AR-30, accessory relay, fools the sensor circuit, telling the Fan to turn 'ON'. Once the A/C is turned off, the AR-30 drops out and automatic sensor mode is resumed.

Note, like a belt driven fan the Hotronics shuts off with the key. So the fan turns off with the engine. A large fan draws, lots of current, leaving it run results in a

dead battery. Cool down timers work great here, they run the fan after the engine shuts off.

Hotronics has an adjustable, after-run cool down timer (CDT-240) that can be added to the fan switch kit and leaves the fan running, after the key is shut off for a predetermined time period to aid in cooling hot engine compartments, removing heat soak from the engine and compartment. Great for use on those higher compression blower motors, polished engines that hold heat or the more temperamental of beasts.

This helps remove rising engine compartment temps and helps keep the cooling system from belching out liquid thru the overflow after the motor stops.

Keeping your cool rod. Well, cool. And avoids, embarrassing moments.

And it's adjustable to 4 minutes of run time. (See part # CDT-240)

The best of both worlds, added cooling, without running the battery dead.

The Hotronics CDT-240 Cool Down Timer also works in total harmony with all of the mentioned combinations, and can be adding on, anytime later if desired.

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