I N S T A L L A T I O N I N S T R U C T I O N S

109086 Relay Delay Module 0.7 sec.

This two-wire delay module is designed to install in-line in one of your two coolant fan relays. The delay is approximately 4-5 seconds. The purpose is to “stage” the coolant fans during power-up to minimize or prevent current surge that happens when both fans turn on at the same time. This current surge causes a power “sag” which can affect the vehicle’s computer, ignition system, and other voltage-sensitive components associated with engine control. Typically, the effects will cause a stutter in the engine, and, in severe cases, cause engine stalling and loss or corruption of ECU programming, and possible damage to sensitive electronic components.

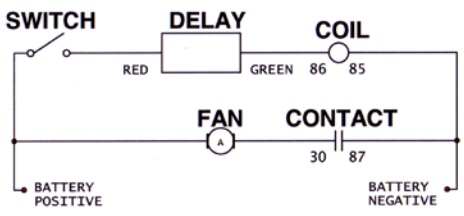
When an inductive load such as a coolant fan starts, the startup load draws as much as ten times the nominal running current necessary to maintain normal operating speed. This sudden load peak is normally absorbed by the battery, but when the vehicle is using two such loads, the load peak is doubled. The battery has difficulty in maintaining the power, so the power drops. Most ECU’s require a minimum of 9 volts to maintain operation, and in many cases, two fans turning on at the same time will cause the battery voltage to momentarily drop below this minimum threshold, causing temporary shut-down of the ECU. Staging the coolant fans using this delay module prevents the “stalled rotor” condition from affecting the electrical system by distributing the load. Once the first fan starts, its load factor drops rapidly, within about ½ second. By delaying the second fan by about ¾ of a second, the load factor is normalized, preventing excessive current peaks.

The Relay Delay Module installs on the coil side of the relay, NOT the load side. Installation is simple; splice the module in-between one of the relay coil wires. You must determine which of the relay coil wires are positive and which are negative. The module can be installed on either side, but you must follow proper polarity. Generally, the red wire goes to the positive coil feed and the green wire goes to the coil itself (where the positive feed was originally). Typical relays use No. 85 for the negative side, and No. 86 for the positive side of the relay coil.

NOTE: If you install the delay module backwards, there will be no delay; the relay coil will instantly energize. If this happens, reverse the red and green wires.

Maximum relay coil load is 1.2 amps, voltage rating is 10VDC to 16VDC. Red wire must see positive voltage, or green wire must see negative voltage. Upon energizing, delay is approximately 4-5 seconds, and resets once power to the coil is interrupted. Cut one of the two relay coil wires, and install this unit in-between those two wires. Use butt splices and heat shrink tubing to seal and protect the spliced connections. Both crimping and soldering the connection is recommended.

DO NOT WIRE THIS MODULE DIRECTLY TO A VOLTAGE SOURCE AS IT WILL BE PERMANENTLY DAMAGED AND WILL NOT BE COVERED UNDER WARRANTY.



TYPICAL FAN RELAY INSTALLATION