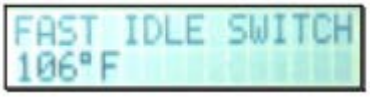
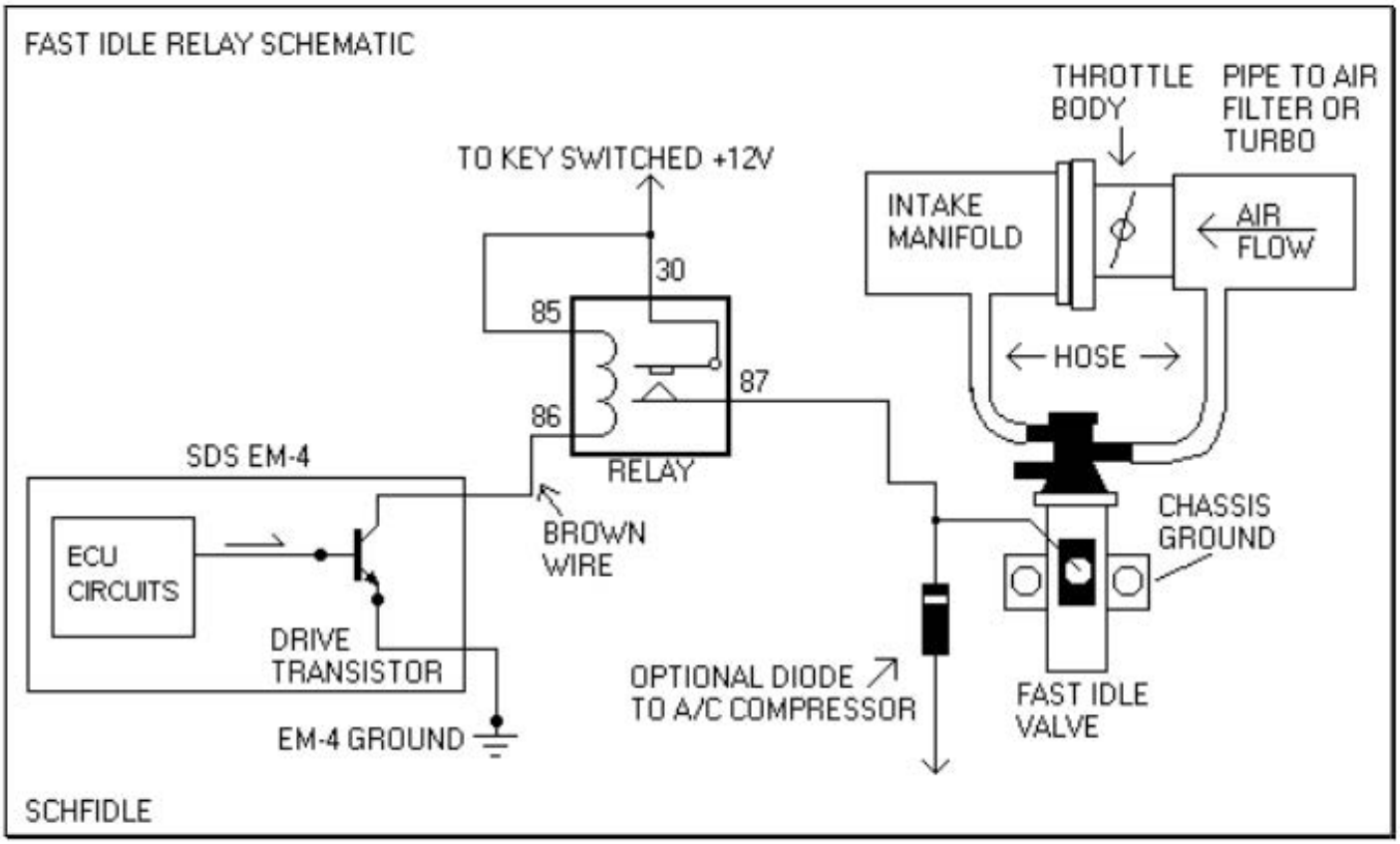
Revision
04/26/22

Pro Fuel - A/C Fast Idle/Cold Start Relay - Part #1063009

Optional Fast Idle:

The fast idle option consists of a solenoid valve which connects to the intake manifold via 5/16 vacuum hose and a relay controlled by the EM-5 via the engine temperature sensor. When the engine temperature reaches the preset point, set in the window, FAST IDLE SWITCH, the relay closes the solenoid to allow normal idle speed. Below this temperature, the solenoid is open bypassing additional air around the throttle plate. The point of solenoid closing (off) is adjusted under the FAST IDLE SWITCH parameter by using the +1 and -1 buttons. Note that the -1 button raises the temperature set point and the +1 button lowers it. The cut off point would usually be set between 100 and 140F on most engines.





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Relay connections are as follows:

- Pins 30 and 85 to key switched 12 volts. On SDS supplied relays 30 and 85 should have a wire soldered across them, so this will save you making an extra connection.
- Pin 87 to solenoid.
- Pin 86 to brown wire coming from the white injector drive harness plug.
- The solenoid mounting flange must be grounded.

If the fast idle rpm is higher than desired, a restricter can be placed in the other port hose to cut down the air volume bypassed. The MAP sensor automatically compensates for the extra air being admitted by the solenoid valve.

***Note:** Optional diode is not required if Pin 13 A/C sense wire is connected to the A/C clutch positive wire. Only
use diode on “D” (fuel only) type SDS systems.

Air Conditioning Solenoid

The a/c solenoid is used to speed up the idle when the a/c compressor is running. This valve is the same valve
that is used for fast idle operation. If you have the fast idle option installed, then there will be no need for a
second solenoid valve. If you don’t have the fast idle option then you will need the valve, and it’s terminal must
connect to the a/c clutch (+) wire, and the solenoid body must be grounded. Hose connections are the same as
for the fast idle relay option above.

For EM-5D (fuel only)

You can install a diode connected between the fast idle valve and the a/c clutch (+) connection. See the fast idle
diagram. The diode allows current to flow from the a/c clutch over to the valve. If the fast idle circuit is turned on,
then the diode will block any current from the fast idle circuit from going to the a/c clutch.

For EM-5E and EM-5F if you have fast idle option and/or radiator fan relay option:

You can use the PIN 13 green wire input for A/C sensing, and this input will activate the radiator fan relay and
can also activate the fast idle relay when the A/C is operating. See the E or F supplement manuals for more
information.

This option is not suitable for TP load sensing systems(no MAP sensor), because of the inability to compensate
for the extra load on the engine.

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