



AEROMOTIVE Part # 16306 INSTALLATION INSTRUCTIONS

CAUTION:

Installation of this product requires detailed knowledge of automotive systems and repair procedures. We recommend that this installation be carried out by a qualified automotive technician.

When installing this product, wear eye goggles and other safety apparel as needed to protect yourself from debris. If the vehicle must be raised to obtain access to the undercarriage, make sure the vehicle is supported by jack stands on a hard, level surface. Set the vehicle parking brake and use wheel chocks as necessary.

WARNING!

Disconnect the vehicle negative battery cable before beginning this installation. Observe all routine safety precautions when working on or near the vehicle battery.

Note: If you have a force induction application which implements an FMU (Fuel Management Unit) in the fuel system, the system fuel pressure will be affected, in most cases, as the PSC switches from running the fuel pump at a lower speed to running at normal operating speed. Addition tuning of the FMU may be required in these applications.

Note: If using the PSC on a distributorless ignition system, i.e. Ford modular motors or GM LS series motors. The use of a Tach driver, Autometer 9117 or equiv., will be required

Aeromotive system components are not legal for sale or use on emission controlled motor vehicles.

This kit contains the following parts:

1ea Fuel Pump Speed Control Module
20ft 10 ga. Black Wire
20ft 10 ga. Red Wire
10ft 16 ga. Black Wire
10ft 16 ga. Red Wire
10ft 16 ga. Green Wire
1ea SPST Toggle Switch
1ea 30 Amp Circuit Breaker
2ea 10-24 X 1 1/4" Mounting Screws
2ea 10-24 Locking nuts

1ea Blue Butt Connector
3ea Blue #10 Stud Ring Connector
2ea Blue Quick Wire Tap Connector
2ea Blue Female Blade Connector
2ea Yellow Butt Connector
5ea Yellow Spade Connector
6ea Yellow #10 Stud Ring Connector
1ea Yellow 1/4" Stud Ring Connector
12ea Wire Ties
1ea Screwdriver

The following steps are typical of most installations:

1. Disconnect the negative battery cable and find a suitable place inside the vehicle to mount the Aeromotive Pump Speed Controller (PSC). Make sure the location will accommodate the two 10-24 mounting bolts and will position the wiring clear of any suspension, drivetrain or exhaust components.

Note: *The PSC is moisture resistant, but not water proof! Be sure to locate the PSC such that it will never become wet!*

2. Drill two #5 or .206 diameter mounting holes, using the PSC as a template. Securely attach the PSC to the vehicle using the two provided #10 screws and nuts.

Note: *Route all wires as instructed before making any electrical connections to the PSC. Be sure to route all electrical wires clear of any suspension, drivetrain or exhaust components! Protect wires from abrasion and road obstructions or debris.*

3. Locate a 12-18V supply for powering the fuel pump. You can use the alternator charging stud or a pigtail from the starter solenoid. Find a suitable mounting location for the included 30amp circuit breaker, for maximum circuit protection ensure that the provided 30A circuit breaker is installed as close to the power source as possible. Using 2 of the self drilling screws mount the circuit breaker.
4. Using the enclosed #10 red wire, route the wire from the power source, to the 30 amp circuit breaker, then to the PSC "BAT+" Terminal, but do not make any electrical connections yet.
5. Next locate a good clean ground connection on the battery or chassis, using the enclosed #10 black wire, route the ground wire to the PSC "GND" terminal.
6. Using the #10 red wire, route the wire from the fuel pump positive terminal or lead wire to the "Pump+" terminal on the PSC.
7. Using the #10 black wire, route the wire from the fuel pump negative terminal or lead wire to the "GND" terminal on the PSC or to a good clean chassis ground.
8. Referring to the attached wiring schematic, locate your existing Fuel Pump Supply/Control Wire or Fuel Pump Switch. Using the enclosed #16 red wire, route a lead from your existing Fuel Pump Supply/Control Wire or Fuel Pump Switch to the PSC "IGN PWR" terminal.

Note: *The PSC may be activated by either engine RPM and/or an external switch, only one of these is necessary to activate the PSC, but both are recommended.*

9. Locate a 12VDC positive tach signal, this is usually found on the "-" terminal of the ignition coil. **If you are using any kind of aftermarket ignition control you must use the tach signal terminal on the controller.** Some newer vehicles will require a tach adapter available through your local speed shop. Using the enclosed #16 green wire, route the wire from the tach signal source to the PSC "TACH" terminal.

Note: *If using the PSC on a distributorless ignition system, i.e. Ford modular motors or GM LS series motors. The use of a Tach driver, MSD p/n 8913 or equiv., will be required*

Note: *Connecting the Manual Override Switch is optional; this switch will allow you to have full pump speed on demand.*

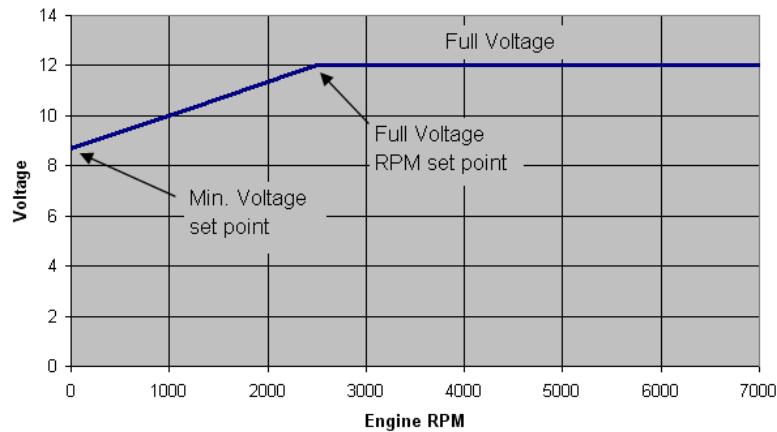
10. If you choose to use the manual override switch, find a convenient location in the passenger compartment for mounting the switch. Drill a ½" diameter hole and mount the switch.
11. Using the enclosed #16 black wire, route the wire from the PSC "override" terminal to the Manual Override Switch. Make sure the switch is in the "OFF" position.

12. Using the enclosed #16 black wire, route the wire from the Manual Override Switch to a clean chassis ground. The override function will allow the pump to run at maximum voltage overriding the tach signal trigger.
13. Using the attached wiring schematic as a guide, recheck all wires for proper routing. Again, make sure all wires are routed clear of all moving parts and exhaust components. Protect wires from cutting and abrasion as necessary.
14. Using the enclosed wire ties, secure all wires to the vehicle chassis. Do not secure any wires to any suspension or moving drive train components!
15. Using the enclosed crimp type electrical connectors, complete all wire connections. Make sure you follow the PSC connection layout shown on the wiring diagram.
16. Reattach the negative battery cable.
17. Depending on which setup you are using, do one of the following.
 - If you are using an ECM to control the fuel pump, turn the ignition key to "ON". The fuel pump should run at full speed for several seconds, then shut off.
 - If you are using a toggle switch to control the fuel pump, switch it to "ON". The fuel pump should run for several seconds at full speed, then go to low speed and stay there until the PSC is activated via the tach signal or manual switch.

If the fuel pump does not run as described above, recheck all wires and connections for proper installation. Make sure the Manual Override Switch is in the "OFF" position.

18. Once the fuel pump runs properly at initial system startup, start the fuel pump and vehicle engine. Several seconds after starting, the fuel pump should switch to low speed.
19. Once the pump switches to low speed, switch the manual override switch (if installed) to "ON". The pump should immediately go to full speed. The green LED labeled SWT should be lit. Switch the manual override switch to "OFF".
20. While the engine is running, the yellow LED labeled TACH should be flashing, indicating the PSC is getting a tach signal.
21. With the vehicle transmission in "PARK" or "NEUTRAL" and the parking brake set, have someone carefully rev the engine to 2500 RPM (Assuming Engine is a 8 cylinder). For 6 cylinder engines the preset RPM will be around 3300 RPM and 5000 RPM for 4 cylinder engines. The pump should go to full speed and the green LED labeled FULL should be lit, while the engine is revved up. Allow the engine to go back to idle. The pump should go back to low speed.
22. Shut the engine and fuel pump off. The pump should slow down and stop within a few seconds.

23. Once the PSC is working properly, the rpm threshold at which the pump goes to full speed can be adjusted. To adjust the threshold, bring the engine up to the speed at which you want the fuel pump to go to full speed. Using a ball point pin or small blunt object press the “SET TACH” button and the new rpm will be set.



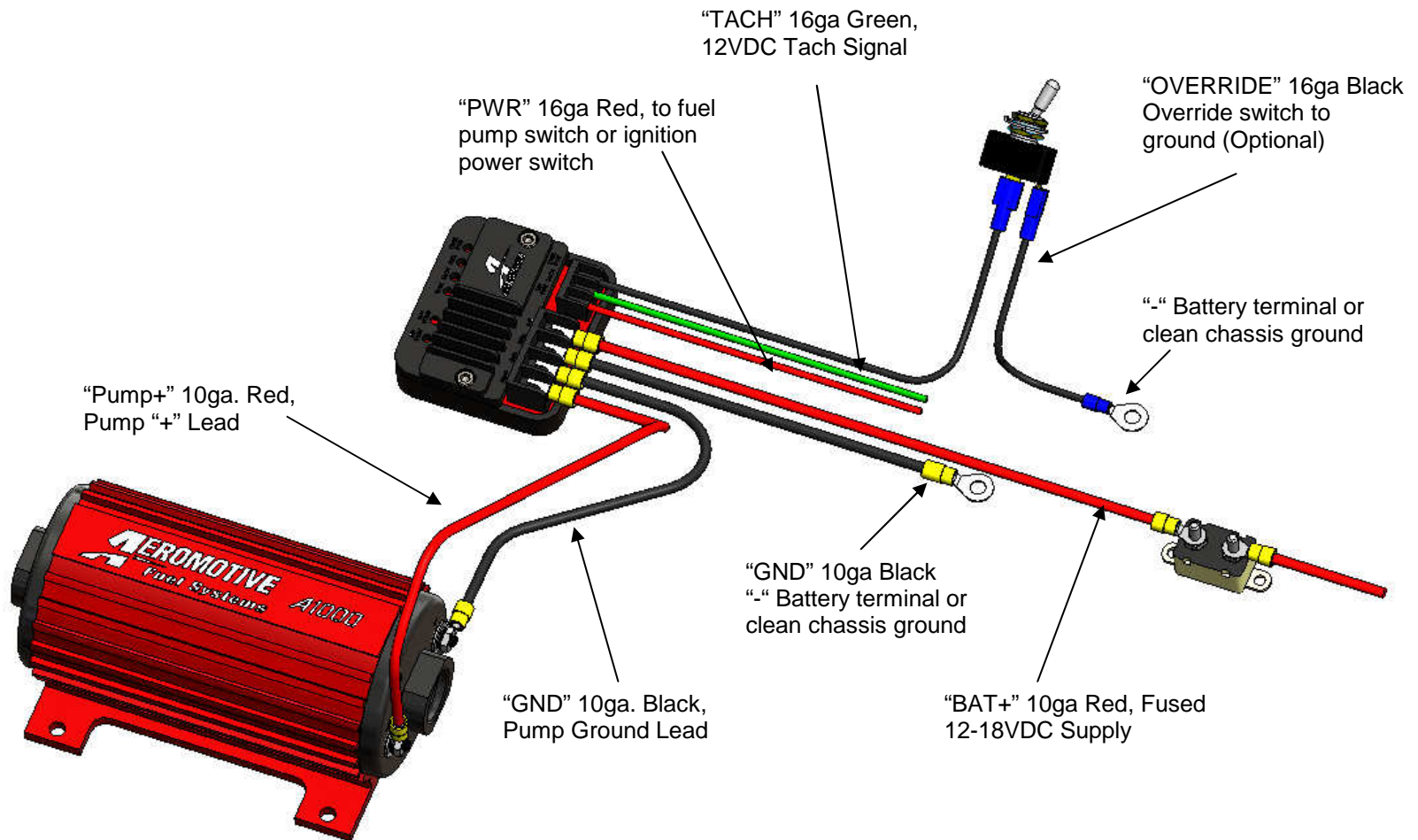
24. The initial pump voltage at idle or minimum voltage may also be adjusted by using a small screw driver and turning the “MIN VOLTS” screw on the front of the controller. Turning the adjustment screw counter-clockwise will decrease the initial pump voltage and clockwise will increase the initial pump voltage. This adjustment screw has a 15-turn range.

The PSC is now ready for use. Upon pump startup, the PSC will cause the pump to go to full speed for several seconds. After the initial several seconds, the PSC will slow the pump down, unless the engine rpm is raised above the threshold value or the Manual Override Switch is activated. As long as the engine rpm is above the threshold value or the Manual Override Switch is activated, the pump will run at full speed.

If you experience problems with the PSC, the following diagnostics can be performed.

- Using a test light, make sure positive battery power is being supplied to the PSC terminal “IGN PWR” and the “BAT+” terminal.
- Using a test light, make sure the PSC terminal marked “GND” is connected to ground.
- Using a test light, make sure the PSC terminal marked “OVERRIDE” is connected to ground, through the Manual Override Switch.

With the engine running, make sure the “TACH” light is flashing. If it is not, check the tach signal wire and connections.



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