


## Thank you for your purchase.

Please read the complete installation instructions or view the video instructions on YouTube before attempting to install this product.

 If not installed properly, PowerMAX will not function and may be damaged.

PowerMAX Voltage Booster-Regulator will increase the output of any fuel pump or ignition system. The PowerMAX unit has been designed to be mounted inside the vehicle cabin (*under a seat*) or in the trunk. Install the unit so it does not come into direct or prolonged contact with water or extreme engine heat (+250F).



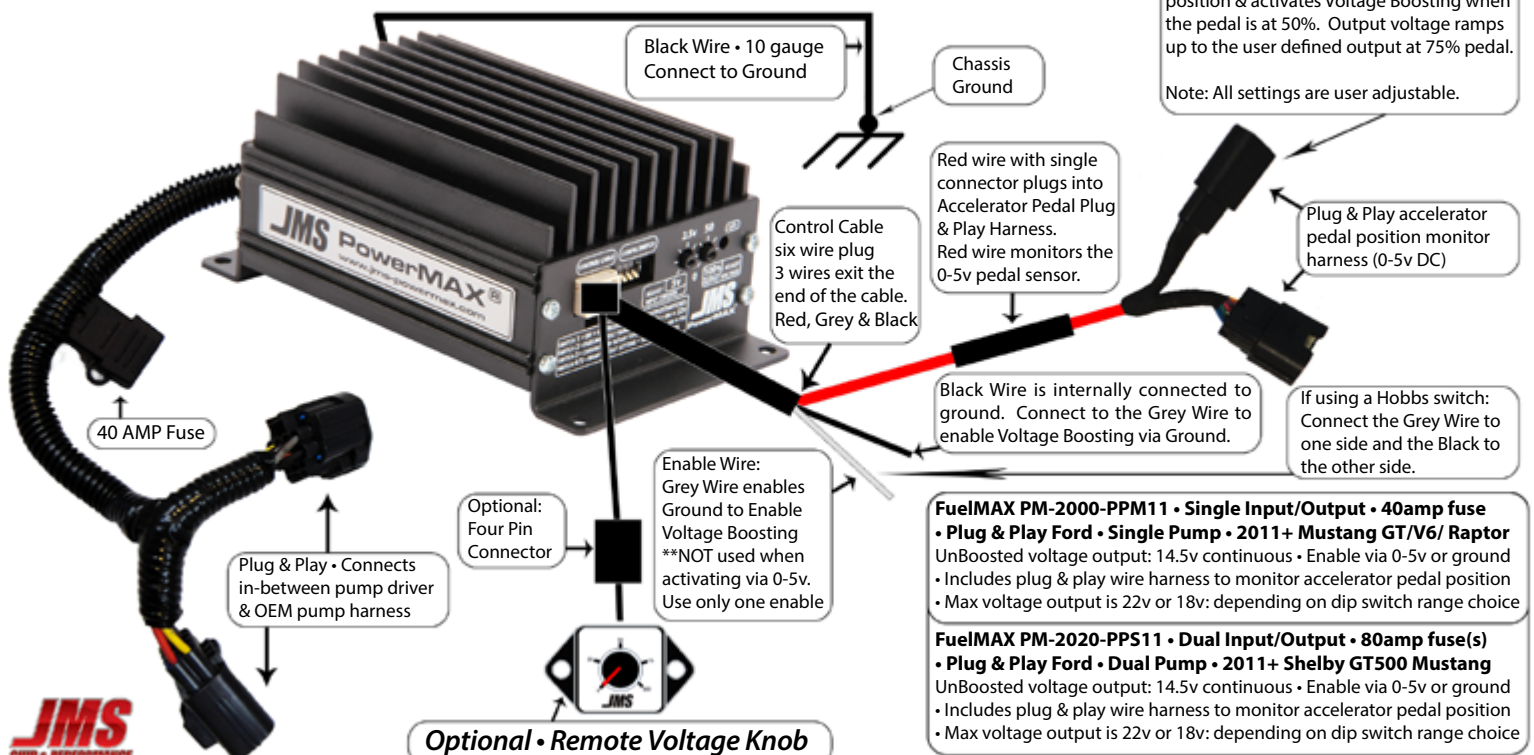
## Reasons to choose PowerMAX!

	FuelMAX Single PM-2000	FuelMAX Boost-Single PM-2009-B	FuelMAX Dual-Pump PM-2020	FuelMAX Dual-Boost PM-2029-B	SparkMAX 25V PM-2100	SparkMAX 31V - Race PM-2100-R31	SparkMAX Boost - 25V PM-2109-B
<i>Ford • Plug and Play</i>	X	X	X	X			
<i>User Adjustable Output Voltage &amp; Voltage Ramp In/Out Rate</i>	X	X	X	X	X	X	X
<i>Highest Voltage Output &amp; Highest Amperage Output</i>	X	X	X	X	X	X	X
<i>Single Output Wiring • Fuel Pump or Ignition • 40AMP Fuse</i>	X	X			X	X	X
<i>Dual Fuel Pump Wiring • 80AMP Fuse</i>			X	X			
<i>Heaviest Gauge Wiring &amp; Highest Capacity Fuse • 40/80AMP</i>	X	X	X	X	X	X	X
<i>Enable via Ground or via (0-5v) External Voltage • via MAP, TPS or PPS Sensor</i>	X		X		X	X	
<i>Voltage Ramp In/Out • User Selectable • Adjustable Based on Time or Voltage</i>	X		X		X	X	
<i>JMS Exclusive • Digital Technology</i>	X	X	X	X	X	X	X
<i>Enable via Internal Boost Sensor • Pressure Range (1-29psi)</i>		X		X			X
<i>Voltage Ramp In/Out • User Selectable • Adjustable Based on Time or Boost</i>		X		X			X
<i>Widest Pressure Adjustment Range Available • (1-29psi)</i>		X		X			X
<i>Industrial Heat-Sink • Heavy-Duty Construction</i>	X	X	X	X	X	X	X
<i>Easy to Use • Instructions On the Unit</i>	X	X	X	X	X	X	X
<i>Option • Remote Knob</i>	X		X		X	X	

## The concept behind boosting the voltage of your fuel pump or fuel pump driver?

- Reliably use the factory fuel pump to support additional horsepower.
  - 2011+ Mustang GT customers have reported making +925rwhp with the stock fuel pump and a FuelMAX.
  - Shelby GT500 customers have reported making +1050rwhp with the stock fuel pumps and dual FuelMAX.
  - SVT Raptor customers have reported making +750rwhp with the stock fuel pump and a FuelMAX.
  - Camaro customers have reported making +800rwhp with the stock fuel pump and a FuelMAX.
  - Nissan GTR customers have reported making +1000rwhp with the stock fuel pump and a FuelMAX.
- Boost fuel pump voltage *ONLY* when the extra fuel volume is needed.
  - Keep your fuel cool and reduce or eliminate the chance of vapor lock.
  - No need to upgrade the factory fuel pump or fuel lines.
  - Eliminate the gasoline smell associated with aftermarket fuel systems.
  - Enable Voltage Boosting via either Ground and external pressure switch or via external 0-5 volt sensor signal
- Simple to install: Choose from either *Plug and Play* or *Universal Single Wire* splice in design
  - Plug and Play for most 2011-2014 Fords: Mustang GT and Shelby (Anyone can quickly and easily install)
  - Plug & Play units activate voltage boosting via Accelerator Pedal Position (Can also use ground activation)
  - Universal: If you can cut and splice a single wire then you can install a universal PowerMAX FuelMAX.
  - Universal units activate voltage boosting via Ground or a monitored 0-5 volt sensor signal

## FuelMAX PM-2000-PPM11 Wiring • Ford Plug & Play Activation via 0-5 volt sensor • Pedal Monitor



## Installation Instructions • PM-2000-PPM11 • PM-2020-PPS11 • Plug & Play

PM-2020-PPS11  
Dual Plug & Play



JMS Plug & Play  
FPDM Harness



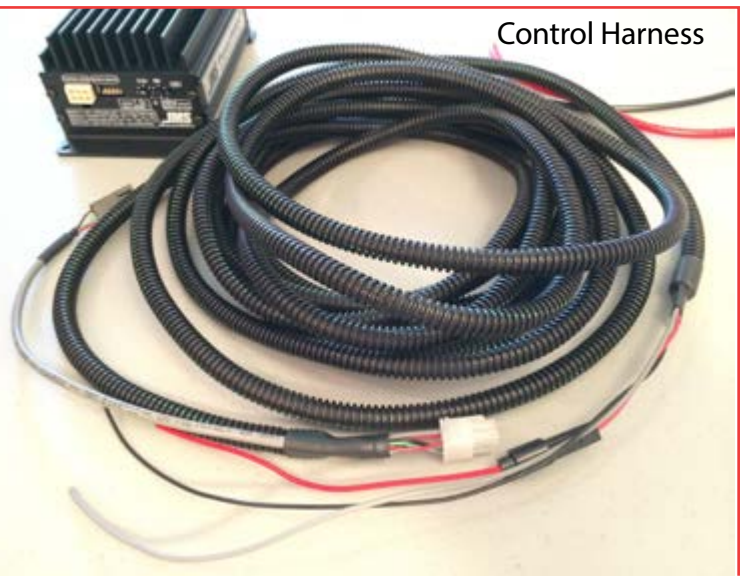
Close up  
of Plug & Play



Pedal Position  
Monitor Harness



Control Harness



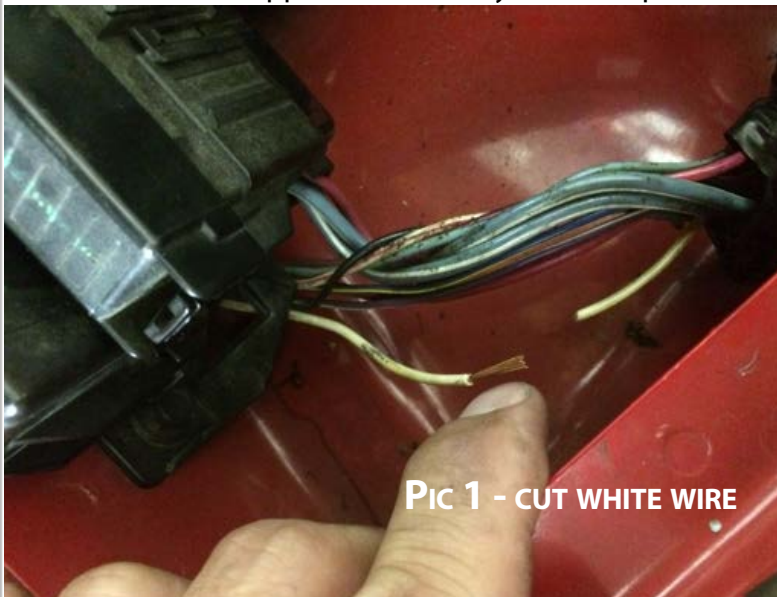
Single - Plug & Play  
install kit



## SPECIAL ADDENDUM – JMS FUELMAX V2 INSTALLATION ON 2007-2010 SHELBY GT500 MUSTANG

This special addendum applies to ALL 2007-2010 Shelby GT500 Mustangs. To eliminate the potential for the JMS FuelMAX V2 unit to remain powered on by the secondary FPDM when the ignition key is turned to the off position, you are required to perform the following modification.

1. Locate the add-on relay/fuse box under the hood. It is located on the front of the passenger strut tower near the big fuse box. Remove tape covering the wires that exit the add-on relay/fuse box.
2. Locate the thin white wire. (pic 1) This wire activates the secondary FPDM (fuel pump driver module).
3. Cut the white wire and strip the wire end closest to the secondary fuse box (pic 1). Cover the other open wire side with tape. This wire needs to be connected to another key on power source. We recommend connecting this wire to the grey wire with a white tracer located in the second bundle of fuse box wires (pic 2).
4. Connect the stripped end to a "Key On" +12v power source, we recommend the silver wire with white tracer (pic 3).



Pic 1 - CUT WHITE WIRE



Pic 2 - connect white wire to grey with white tracer



Pic 3 - connect white wire to grey with white tracer

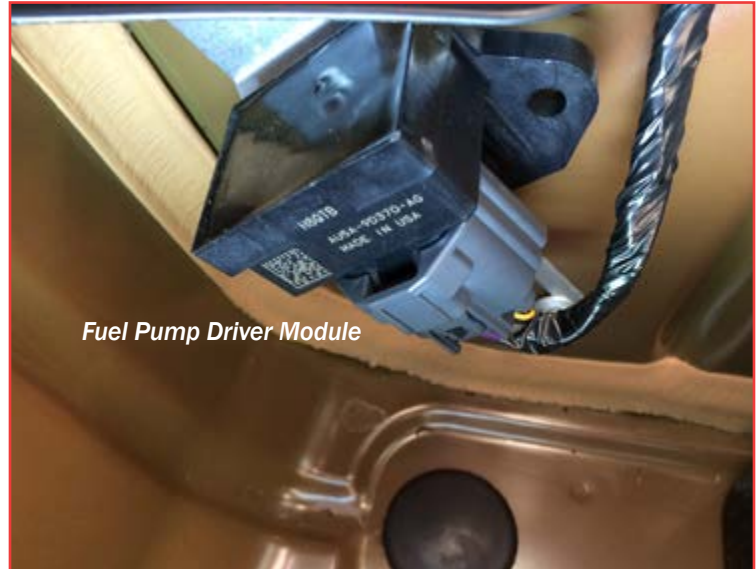
This mod corrects an issue where the secondary fuel pump driver may remain powered on when the car is turned off.

2011-2012 Shelby GT500's have ONE fuse supplying both fuel pumps. The factory 2011-2012 wiring needs to be upgraded to properly function with big horsepower. All 2011-2012 Shelby vehicles need the waterproof JMS 70 amp relay and wire upgrade kit.

2013 - 2014 Shelby's do not have any issues. Ford updated the factory wiring on the 2013-2014 Shelby vehicles so each FPDM relay has its own separate +12v Key on Power source

### STEP 1 - LOCATE THE FUEL PUMP DRIVER MODULES

- Verify that the vehicle is turned off (no key in ignition).
- Locate the Fuel Pump Driver Module or Modules
- The Fuel Pump or Fuel Pump Driver Module is typically located in the trunk or possibly in or near the fuel tank.
- Shelby GT500's utilize two fuel pump driver modules. Shelby's use pn: PM-2020-PPS11 or two PM-2000's. We also offer a Shelby wiring upgrade for high hp vehicles.
- Tip: Typically newer cars (2000-up) utilize a fuel pump driver module to drive the fuel pump. FuelMAX boosts the voltage to the fuel pump driver module and this increases the fuel flow from the fuel pump.



### STEP 2 - CONNECT THE JMS PLUG & PLAY HARNESS

- Install the JMS Plug & Play Fuel Pump Driver Module harness in-between the factory harness and the fuel pump driver module.
- Connect the two pin connector to PowerMAX.
- Tip: To remove the OE Pump Driver Plug you press and hold the tab and remove the connector plug.



### STEP 3 - SECURE THE GROUND WIRE

- The Black Wire is Pre-Crimped with a Yellow Ground Ring.
- Terminate the Black Wire to a factory ground chassis ground point.



## STEP 4 - UPGRADE THE FUEL PUMP FUSE

- Most vehicles have a single pump and a single fuse.
- Locate and replace fuse or fuses that provide +12v to the fuel pump driver module(s). Replace the stock fuse or fuses with 30amp versions.
- Tip: 2007 - 2010 Shelby Vehicles utilize two fuses.
- Tip: 2011 - 2012 Shelby GT500 vehicle utilize a single fuse. To support big hp on the 2011-12 Shelby: Use the JMS Shelby Fuel Pump Wiring Upgrade. This upgrade easily supports the amperage requirements required to make big horsepower.
- Tip: 2013 - 2014 Shelby Vehicles utilize two fuses (circuit 13 & 14 shown in RED in the picture to the right)



## STEP 5 - MOUNT THE UNIT

- Utilizing self-taping screws to mount FuelMAX (included)
- Mount the unit so that the switches and knobs can easily be seen and adjusted by the user.
- Make sure that the mounting location leaves you with enough excess wire so none of the connections are under strain.
- Pay attention to where you are mounting the unit (avoid drilling into the factory fuel lines, brake lines or wire harness).
- Be sure to mount the unit away from extreme heat and direct contact with water.
- Typically the unit is mounted inside the vehicle cabin or trunk.
- Verify that the two pin connector is plugged into PowerMAX.



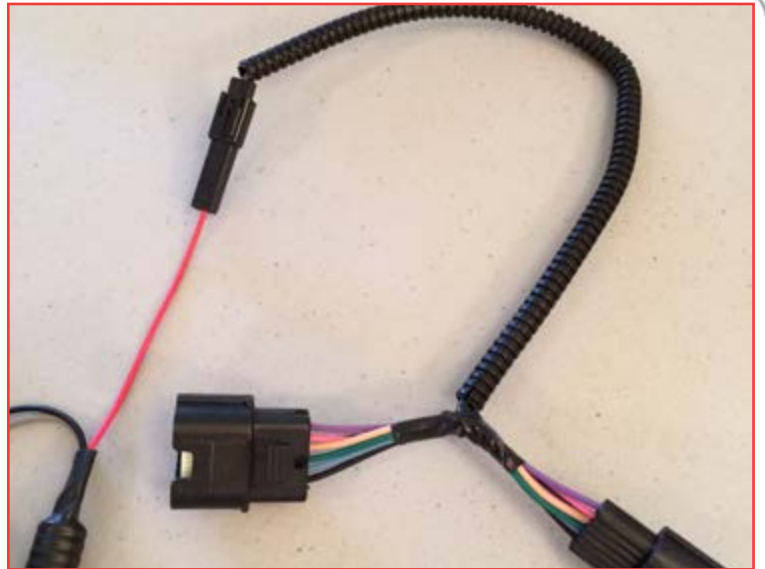
## STEP 6 - CONNECT & ROUTE THE CONTROL CABLE

- Plug the six-wire control cable into the unit and route the wires to the front of the vehicle.
- Route the wires inside the car and up to the accelerator pedal area. (Located under the driver's side of the dashboard)
- Secure the wires with the included tie-straps.
- PowerMAX monitors the accelerator pedal position and the increase in output voltage is directly proportional to the pedal.
- Voltage Boosting starts around 1/2 pedal and ramps up to full voltage output around 3/4 pedal.



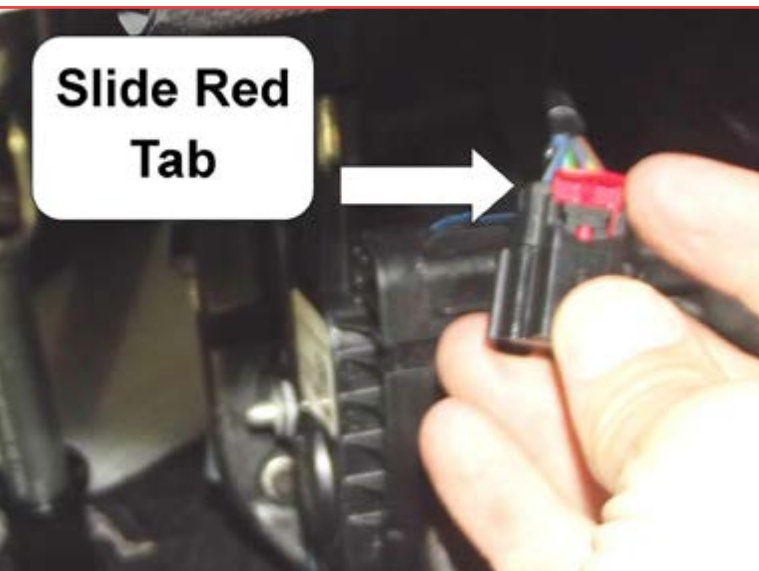
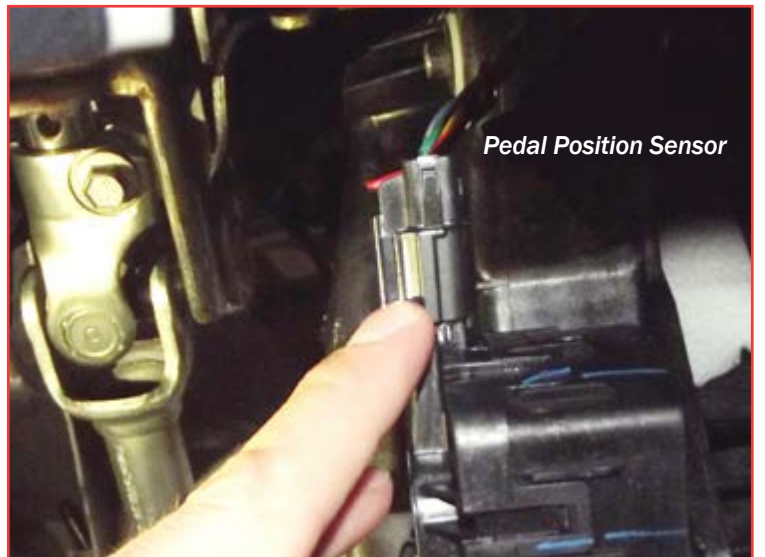
### STEP 7 - CONNECT PEDAL POSITION MONITOR CABLE TO THE POWERMAX CONTROL CABLE

- Connect the Single Position Pedal Position harness into the main Six-Wire Control Cable (red wire/black connector).
- Look for the alignment tab and plug the two connectors together. Make sure that the connector latches.



### STEP 8 - CONNECT PEDAL POSITION MONITOR CABLE TO THE ACCELERATOR PEDAL AND OE PEDAL HARNESS

- Verify that the vehicle is turned off (no key in ignition).
- Locate the accelerator pedal and pedal position sensor under the driver's side of the dashboard.
- Install the pedal position harness in between the factory harness and the accelerator pedal position sensor.
- Use tie-wraps to tie up and secure any wires that are hanging down from under the dashboard.



## STEP 9 - VERIFY THAT THE UNIT POWERS ON

- Green LED will illuminate ON (solid), when the ignition key is set in the “ON” position.
- The Green LED will slowly blink when the unit is Boosting Voltage and the unit is enabled via the Pedal Position Sensor.

Tip: With the vehicle’s engine not running, you can quickly test and set the Boosted Voltage output by holding the accelerator pedal to the floor, turn the ignition key to the ON position, Turn Dip switch 1 - ON and adjust the Adjust Output Voltage Pot.

Monitor the white wire boosted output with a Digital Volt-OHM Meter. Set the DVOM range to: 20v DC.



## STEP 10 - ADJUST THE BOOST VOLTAGE AND RANGE

- Set the Boosted Output Voltage & options via the front panel configuration switches and knobs.
- Set the Ignition Key to the “ON” position • (Power ON = Green LED is ON [illuminated ON])
- Set Dip Switch 1 - “ON” (Switch 1 “ON” - Enables the configuration of the front panel switches and knobs)
- Set Dip Switch 2 - Choose the voltage output range. OFF = 18v, ON = 22v
- Adjust Voltage Output - 0 = 14.5v, 100% = Maximum for the selected voltage range.



## STEP 11 - SAVE THE BOOST OUTPUT VOLTAGE SETTING

- Set Dip Switch 1 - “OFF” When SW 1 is moved from ON to OFF, the current front panel switch and voltage settings are saved & the LED twinkles.
- Tip: When saving configuration settings, the unit must be powered ON and Dip Switch 1 set to ON. Make your changes and turn OFF Dip Switch 1 to save your switch settings/changes. (Notice that the LED will twinkle when Switch 1 is Turned OFF and the config values are saved).
- Tip: When saving, you must leave Switch 1 ON for a few seconds before you can turn it off and update the Saved Config values.



*Dip SW 1 - Turn OFF to Save LED Twinkles when saving the front panel settings*



## STEP 12 - SETUP PEDAL POSITION ACTIVATION

Unit comes PRE-SET with the following Pedal Configuration.

This configuration starts Voltage Boosting at just over 1/2 pedal and ramps into full output by 3/4 pedal.

- Set the Ignition Key to the “ON” position. (Green LED ON)
- Set Dip Switch 1 - “ON”. (Switch 1 “ON” - Enables the adjustment of the front panel switches and knobs)
- Adjust Input Trigger, set to: “2.4v”. (Sets voltage boosting start point @ 2.4v [set just under 2.5V mark])
- Set Dip Switch 3 - “ON”. (Sets the ramp type to 0-5 volt)
- Set Dip Switch 5 - “ON”. (Sets the voltage ramp over 0.8v: max voltage boosting ramp end point @ 3.2v)
- Set Dip Switch 1 - “OFF”. (Saves the front panel switch settings, LED twinkles while saving)



## STEP 13 - SAVE THE FRONT PANEL SETTINGS

- Set Dip Switch 1 - “OFF” (When moved from ON to OFF, this Saves the current front panel switch and voltage settings & the LED twinkles while saving)

• Tip: When saving configuration settings, the unit must be powered ON and Dip Switch 1 set to ON. Make your changes and turn OFF Dip Switch 1 to save your switch settings/changes. (Notice that the LED will twinkle when Switch 1 is Turned OFF and the config values are saved).

• Tip: When saving, you must leave Switch 1 ON for a few seconds before you can turn it off and update the Saved Config values.



*Dip SW 1 - Turn OFF to Save  
LED Twinkles when saving the  
front panel settings*

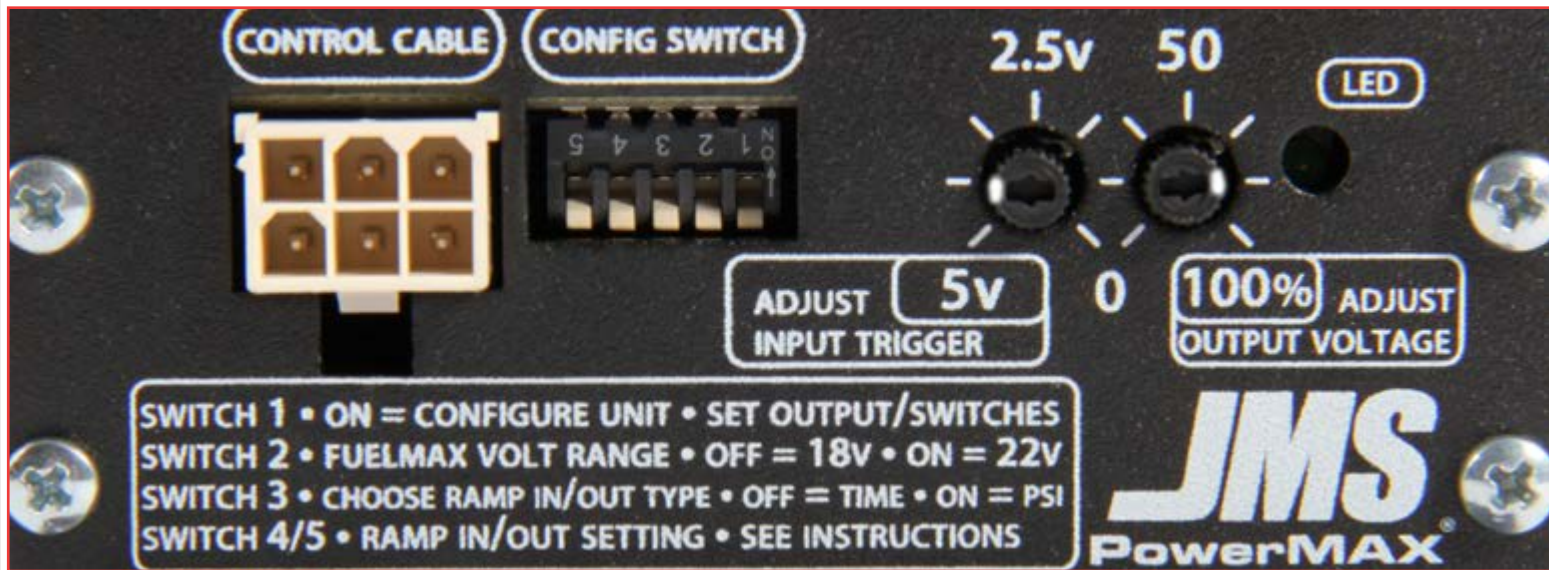
## STEP 14 - VERIFY THAT VOLTAGE IS BOOSTED WHEN EXPECTED (AT JUST ABOVE HALF PEDAL)

- Verify that Voltage is boosted at the expected Pedal Position.
- Setup pedal position activation and the boosted output voltage. (Follow the procedure in step 12)
- Set the Ignition Key to the “ON” position. (Green LED ON)
- Depress the Accelerator Pedal to the floor. (Wide Open Pedal). Verify that the LED is blinking slowly.
- LED should only start blinking when the Accelerator Pedal is pressed just past the 1/2 way point. When the pedal drops past the 1/2 way point the Green LED should stop blinking.
- Boosted Voltage Output is proportional to the Accelerator Pedal Position. (Start boosting 1/2 pedal, Full boosting 3/4 pedal).



*Accelerator Pedal  
Voltage Boosting occurs at just  
above 1/2 pedal.  
Green LED blinks when boosting*

**Reference guide to the PowerMAX front panel**



**Set Dip Switch 1 ON to ADJUST boosted output voltage: Set via Adjust Output Voltage Knob.**

Adjust Output Voltage: 0 = 14.5v boosted output; 100% = 18v or 22v boosted output (depending on the range: dip switch 2)

**Remember: Dip Switch 1 must be ON to ADJUST dip switches or knob settings on the front panel.**

**When Dip Switch 1 is turned OFF: LED will twinkle and ALL of the front panel settings are saved.**

DIP SWITCH 1	DIP SWITCH 2	DIP SWITCH 3	DIP SWITCH 4	DIP SWITCH 5
<b>Configure Unit</b>	<b>Set Voltage Range</b>	<b>Choose Ramp Type</b>	<b>Depends on SW 3</b>	<b>Depends on SW 3</b>
OFF = Save Settings	OFF = 18V Range	OFF = Time Based	See tables below	See tables below
ON = Set Voltage/Config	ON = 22v Range	ON = 0-5v Based	See tables below	See tables below

Time Based Voltage Ramp Works with either Gnd or 0-5v	DIP SWITCH 3	DIP SWITCH 4	DIP SWITCH 5	GROUND ENABLE	VOLTAGE ENABLE
<b>Time - Immediate Ramp 0</b>	OFF - 3	OFF - 4	OFF - 5	YES	YES
<b>0.75 second Ramp 1</b>	OFF - 3	ON - 4	OFF - 5	YES	YES
<b>1.50 second Ramp 2</b>	OFF - 3	OFF - 4	ON - 5	YES	YES
<b>2.25 second Ramp 3</b>	OFF - 3	ON - 4	ON - 5	YES	YES

0-5v Based Voltage Ramp Works ONLY with 0-5v enable	DIP SWITCH 3	DIP SWITCH 4	DIP SWITCH 5	GROUND ENABLE	VOLTAGE ENABLE
<b>0-5v - Immediate Ramp</b>	ON - 3	OFF - 4	OFF - 5	NO	YES
<b>Base enable v + 0.4v Ramp</b>	ON - 3	ON - 4	OFF - 5	NO	YES
<b>Base enable v + 0.8v Ramp</b>	ON - 3	OFF - 4	ON - 5	NO	YES
<b>Base enable v + 1.2v Ramp</b>	ON - 3	ON - 4	ON - 5	NO	YES

**PM-2999**

**Optional Remote Voltage Knob**  
• Overrides front panel voltage setting when connected to the harness.

## TROUBLESHOOTING POWERMAX

• Power Issue -> LED is OFF and the unit does not Output Voltage

- 1) Is the Key turned ON?
  - Check the fuse(s) for the fuel pump
- 2) Blown Fuse (check the 40amp Heavy Gauge Red Wire Input Fuse)
- 3) The Black Ground wire is not connected to Chassis Ground.
- 4) Verify that the two pin connector is plugged into each PowerMAX.

• 0-5v Enable Issue -> LED is ON and the unit does not ENABLE (LED does not blink)

- Verify that the pedal position wire harness is connected to the pedal sensor and the oe harness.
- Verify that the pedal position wire harness is connected to the PowerMAX six pin control harness.
- Check for a broken wire in the six pin control wire harness.
- Verify the Pedal Position setup in steps 12-14.

• Voltage Boosting Output Issue -> LED is Blinking Slowly and the unit is not putting out the expected voltage (white wire).

- 1) Check to see if a manual over-ride knob is plugged into the unit (PM-2999 four pin flat connector)
  - When connected the manual over-ride knob “over-rides” the saved internal settings of the unit.
- 2) The unit output voltage has never been programmed or was programmed with a LOW value.
  - Set Dip Switch 1 on, wait two seconds
  - Rotate the Adjust Output Voltage Pot to the FULL Clockwise position (100%)
  - Verify that the output voltage matches the range dip switch setting. (See tables on Page 10).

• Voltage Boosting Ramp In / Ramp Out Issue -> 0-5v Based Ramp: Fuel Pressure has a spike.

- 1) Turn Dip Switch 1 ON and verify/adjust the Time Ramp Rate to it's maximum ramp.  
(Max Ramp = Dip Switch 3 - ON, Dip Switch 4 - ON, Dip Switch 5 - ON). Test to see if the issue still occurs.

• 0-5v Enable Issue -> LED is blinking slowly and unit is not putting out the expected voltage on the white wire.

- 1) Turn Dip Switch 1 on and verify that both the range dip switch setting and the Adjust Output Voltage Pot are set correctly and then retest.

• Can PowerMAX be enabled by BOTH Ground and 0-5v at the same time? Yes -> PowerMAX will continue to Boost Voltage until both inputs have stopped enabling the device. It is simple to test to see if the unit boosts voltage when you use one enable. • The Plug & Play PowerMAX units are designed to enable via the Pedal Position Sensor.

• What if I enable PowerMAX via Ground but have it configured to a Voltage Ramp?

PowerMAX automatically defaults all ground enable events to use Time Based Voltage Ramps.

• What if I use a non-GM unit on a GM -> Worst case scenario is a dead battery. Please use a GM unit for a GM vehicle.

Several different PowerMAX versions are available:  
**FuelMAX, SparkMAX, FanMAX & IntercoolMAX**  
 The product guides below detail the different types of devices and their functions.

## Product Guide • FuelMAX V2

	SINGLE PUMP	DUAL PUMP	PLUG & PLAY	SETUP FOR GM	ACTIVATE GND OR 0-5V	ACTIVATE INT BOOST	REMOTE KNOB OPTION
<b>PM-2000</b>	X				X		X
<b>PM-2000-GM</b>	X			X	X		X
<b>PM-2000-PPM11</b>	X		X		X		X
<b>PM-2009-BOOST</b>	X					X	
<b>PM-2009-BOOST-GM</b>	X			X		X	
<b>PM-2009-BOOST-PPM11</b>	X		X			X	
<b>PM-2020</b>		X			X		X
<b>PM-2020-PPS11</b>		X	X		X		X
<b>PM-2029-BOOST</b>		X				X	
<b>PM-2029-BOOST-PPS11</b>		X	X			X	

## Product Guide • SparkMAX V2

	SPLICE IN DESIGN	SINGLE OUTPUT	OUTPUT 25v	OUTPUT 31v	ACTIVATE GND OR 0-5V	ACTIVATE VIA BOOST	REMOTE KNOB OPTION
<b>PM-2100</b>	X	X	X		X		X
<b>PM-2100-R31</b>	X	X		X	X		X
<b>PM-2109-BOOST</b>	X	X	X			X	
<b>PM-2109-BOOST-R31</b>	X	X		X		X	

## Product Guide • FanMAX 2200 V2 & IntercoolMAX V2

	SPLICE IN DESIGN	SINGLE OUTPUT	DUAL OUTPUT	OUTPUT 15v	OUTPUT 16v	PLUG & PLAY	REMOTE KNOB OPTION
<b>PM-2200</b>	X	X		X			
<b>PM-2220</b>	X		X	X			
<b>PM-2300</b>	X	X			X		
<b>PM-2300-PPS13</b>		X			X	X	

## ABOUT JMS CHIP & PERFORMANCE

For more than 20 years, JMS Chip & Performance has been an industry leader in late model domestic and import vehicle tuning. JMS brand electronics components are some of the most technologically advanced in the automotive industry and feature

innovative high quality engineering, materials and workmanship. The JMS technical center in Lucedale, MS is one of North America's premier automotive and motorcycle tuning, manufacturing, and turn key automobile development facilities, producing numerous custom high performance vehicles each year. JMS is also a pioneer in domestic vehicle calibrations and highly regarded as a foremost expert in Ford, GM and Chrysler powertrain and drivetrain systems.



## LIGHT VEHICLE ASSEMBLY

JMS produces countless custom or specialty vehicles ranging from contemporary late model domestic performance cars to full blown turn key race cars, each year. Our teams of professionals are experts in supercharging, turbocharging, engine assembly, chassis production, suspension upgrades, and specialty equipment integration.



## JMS TECHNICAL CENTER • LUCEDALE, MS

A state of the art facility that integrates custom and specialty vehicle manufacturing, race car production, electronics development and manufacturing, custom tuning and vehicle calibrations engineering, prototype development, and after-market component sales and distribution.



## CUSTOM ECU CALIBRATION ENGINEERING

Since 1993, JMS has been a pioneer and industry-leader in Ford vehicle calibrations and instrumental in helping to develop the modern custom tuning aftermarket. Our tech center's tuning facility features two chassis dynamometers specifically for car and truck calibrations and engineering, and one motorcycle dyno to service the growing powersports market.