



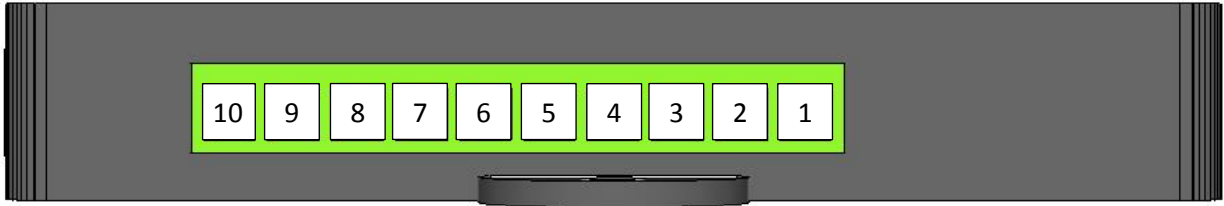
## MegaSpartan User Manual

## Warning

- Do not connect or disconnect the Lambda Sensor while MegaSpartan is powered, only do so when MegaSpartan is unpowered.
- The Lambda Sensor gets very hot during normal operation, be careful when handling it.
- While the Lambda Sensor is in an active exhaust stream it must be controlled by MegaSpartan. Carbon from an active exhaust can easily build up on an unpowered sensor and ruin it.
- Lambda sensor life when used with leaded fuels is between 100-500 hrs. The higher the metal content the shorter the life of the Lambda sensor.

## MegaSpartan Installation

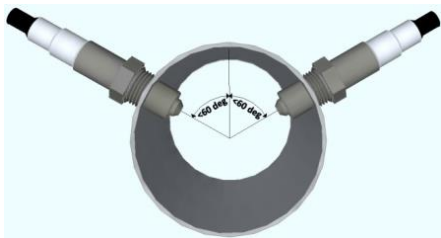




Screw Terminal #	Name	Connects to	Note
1	PowerA	12v	Use 15A fuse
2	PowerB	12v	Use 15A fuse
3	GroundA	Ground	Can connect all grounds to same point
4	GroundB	Ground	Can connect all grounds to same point
5	GroundC	Ground	Can connect all grounds to same point
6	CANH	MegaSquirt CAN Bus High	
7	CANL	MegaSquirt CAN Bus Low	
8	Pressure sensor input	Pressure Sensor Output	
9	5[V] output		Provides 5[V] power to pressure sensor
10	12[V] protected output		Not currently used. This terminal is protected by; fuse, diode (reverse polarity protection), and Transient Voltage Suppressor.

For PowerA and PowerB each should be connected through the supplied fuse holders and 15A fuses. The best place to tap power is generally after the ignition switch or any other source of power that is always “live” when the engine is running. If the Lambda sensor is in an active exhaust stream and unpowered, carbon from an active exhaust can easily build up on an unpowered sensor and ruin it.

You can ground all the grounds to the same point.



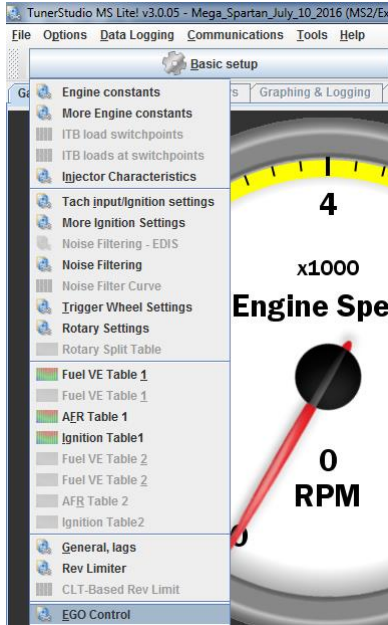
## Lambda Sensor Installation

The Lambda Sensor should be installed between the 10 o'clock and the 2 o'clock position, less than 60 degrees from vertical, this will allow gravity to remove water condensation from the sensor.

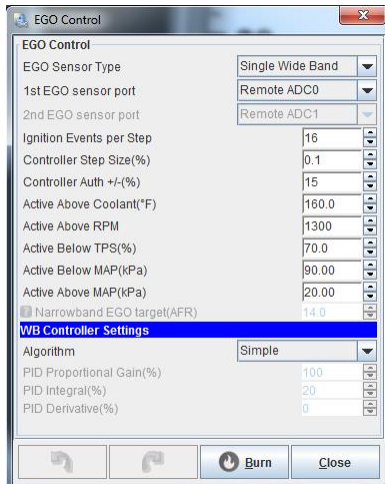
For all Oxygen sensor installations the sensor must be installed before the catalytic converter.

For normally aspirated engines the sensor should be installed about 2ft from the engine exhaust port. For Turbocharged engines the sensor should be installed about 3ft from the engine exhaust port after the turbocharger. For Supercharged engines the sensor should be installed 3ft from the engine exhaust port

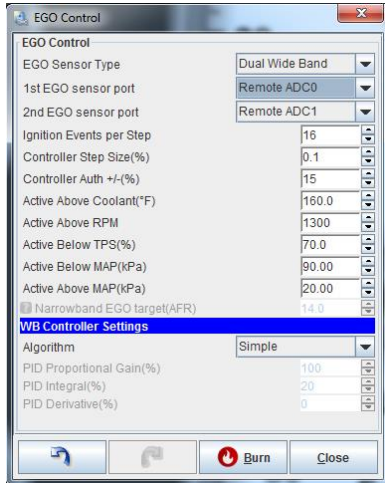
## TunerStudio Configuration for MegaSquirt 2



In TunerStudio under "Basic Setup" select "EGO Control".



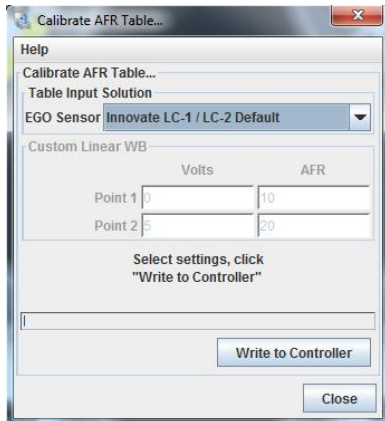
For MegaSpartan with single Lambda, set "EGO Sensor Type" to "Single Wide Band", set "1<sup>st</sup> EGO sensor port" to "Remote ADC0". "Burn" the settings to your MegaSquirt.



For MegaSpartan with dual Lambda, set “EGO Sensor Type” to “Dual Wide Band”, set “1<sup>st</sup> EGO sensor port” to “Remote ADC0”, set “2<sup>nd</sup> EGO sensor port” to “Remote ADC1”. Burn the settings to your MegaSquirt.

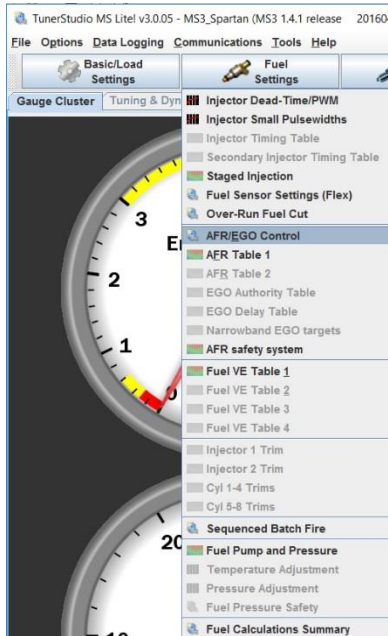


Under “Tools” select “Calibrate AFR Table”

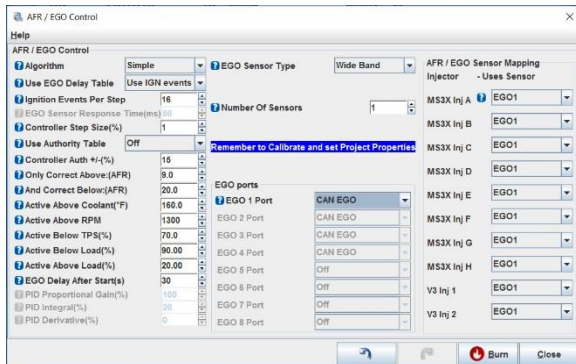


Set “EGO Sensor” to “Innovate LC-1/LC-2 Default”. “Write to Controller” your settings.

## TunerStudio Configuration for MegaSquirt 3



In TunerStudio under “Fuel Settings” select “AFR/EGO Control”



Set “EGO Sensor Type” to “Wide Band”. Set “Number of Sensors” to appropriate number of Lambda sensors.

For each Lambda sensor, set the “EGO X Port” to “CAN EGO”.

Set “MS3X Inj A” to “MS3X Inj H” to the appropriate EGO#. EGO1 is MegaSpartan Lambda 1 ... EGO8 is MegaSpartan Lambda 8. For example, if you set “MS3X Inj A” to “EGO1” then MegaSquirt will assign MegaSpartan Lambda 1 to Injector A.

“Burn” settings to your MegaSquirt.

## Hardware DIP Switches

Opening up the MegaSpartan case will reveal a set of DIP switches.

Position	PCB Name	Default	About
1	CA0	Off	Bit 0 of CAN Address
2	CA1	On	Bit 1 of CAN Address
3	CA2	Off	Bit 2 of CAN Address
4	CA3	On	Bit 3 of CAN Address
5	CR	On	CAN Bus Resistor between CANH and CANL
6	Boot	Off	Triggers Bootloader

## Warranty

14Point7 warrants this product to be free from defects for 2 years. Sensors if purchased from 14Point7 carry no warranty whatsoever. Warranty does not cover user error and abuse.

## Disclaimer

14Point7 is liable for damages only up to the purchase price of its products. 14Point7 products should not be used on public roads.