


Engine Settings

Engine Configuration



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Engine Type

Engine Type Piston Engine

The ECU firmware will lock this selection for a Piston or Rotary engine. For Rotary it will enable a Trailing degree graph and also a Maximum trailing degree setting. For most firmware this block will be hidden.

Cylinders

Cylinders 4 Cylinders

Most ECU firmware will lock this selection for a specific number of cylinders. Other firmware like the standard unit will open this dropdown menu for the tuner to decide for which engine it is required.

Map Teeth (Gear Type Trigger Only)

Map Teeth 9

This setting is used to synchronize the crank angle degrees where the manifold vacuum is sampled. This is very useful for engines with individual throttle bodies that has poor vacuum signal due to a common vacuum rail. This setting can be adjusted up to 180° of engine rotation after TDC. If it is a 36-1 gear as in this example, then 9 teeth will result in 90° after TDC. Start at 90° after TDC and adjust the teeth more or less at idling till the best vacuum signal is achieved. Start with the gear teeth divide by 4. For 60-2 it will be 15.

Throttle Selection

Multiple

On multiple throttle bodies you only connect one cylinder to the Map sensor. It must be cylinder 1, or the one that shares the same TDC degrees with it. Do not use a common vacuum rail. Set the setting as below.

Map sensor

Map Sensor

2.5 Bar

1.1 Bar

2.5 Bar

3.0 Bar

4.0 Bar

Custom

Spitronics have a selection of 4 Map Sensors to choose from. 1.1 Bar, 2.5 Bar, 3.0 Bar, 4.0 Bar and a Custom sensor option. Select the one that is supplied with the ECU. The most popular one is 2.5 Bar.

Map Sensor

Custom

Map Range

1.5

If you use an engine MAP sensor that is not standard with the 4 selection you may choose Custom and calibrate it yourself. Select the following.

Chose custom sensor and chose a map range. The range cannot be larger than the sensor capability.

☒ MAP

Go to MAP sensor select and click the calibrate button.

Offset Value

150

Map / Vacuum: 0.33 BAR

Ok

Adjust the Offset value till the software reads the altitude at your level. Click OK.

Map Range

Map Range

1.1

Spitronics can use any MAP sensor to fuel even a normal aspirated engine. Note however, that it is best to use a sensor that is just higher than your maximum manifold pressure. It is more accurate because the sensor has better resolution over the 0 to 5-volt range. On this field you select the maximum boost pressure that you will use in the application. For example, if the engine is required to run at 0.8 Bar boost, select 1.9 Bar. This means at sea level you can run 0.8 Bar boost without running the tuning pressure off the scale. Making the scale too large will reduce valuable tuning space on the graphs or matrix. For normal aspirated engines always select 1.1 bar.

RPM Range

RPM Range

7000

This setting is used to adjust the ranges of the RPM tuning graphs or matrix. Set it to a value of 500 RPM above the engine max RPM. If you use a higher value, you will reduce valuable tuning space.

Trigger Type

Trigger Type

36-1

Off

60-2

36-2

36-1

Selective firmware may let the user choose the crank angle sensor type. This program is written to minimise stock on the shelf for retail stores.

Two Stroke

☐ Two Stroke Engine

This Setting will select between 2 or 4 stroke to correct the injector duty % indication bar. If it is on 4 stroke the injector time is calculated over 2 RPM's while on 2 stroke the injector time is calculated over 1 RPM. For example, on a split sequential setup, 10 milliseconds on 4 stroke means that the injector will inject 5 milliseconds each RPM to make up 10 milliseconds. While on 2 stroke 10 milliseconds will inject the full 10 milliseconds on each RPM. If you have an engine that does not rev high and the injectors are too small you may put it on 2 stroke to double the injector time. Note however, the injector duty % during tuning must not go over 100% as this will occur at a lower RPM. 85% Max is a recommended maximum duty cycle as the injector may stay open after that.

Engine Shutdown

Engine Shutdown

Fuel First

Fuel First

Fuel & Spark

This setting will select how the engine is shut down. **Fuel first** means that the ECU will run normally but stop injecting fuel when the key is turned off. This will let the spark burn all the unwanted fuel from the cylinder. That is handy for rotaries where the injectors are far from the intake valve. It may sound as if the engine keeps going for a moment after the key is switched off. **Fuel & Spark** cuts both immediately when the key is turned off. There may be unburned fuel on the cylinder but the engine dies immediately. **Note:** This feature is only available with certain products that have Power management capability.