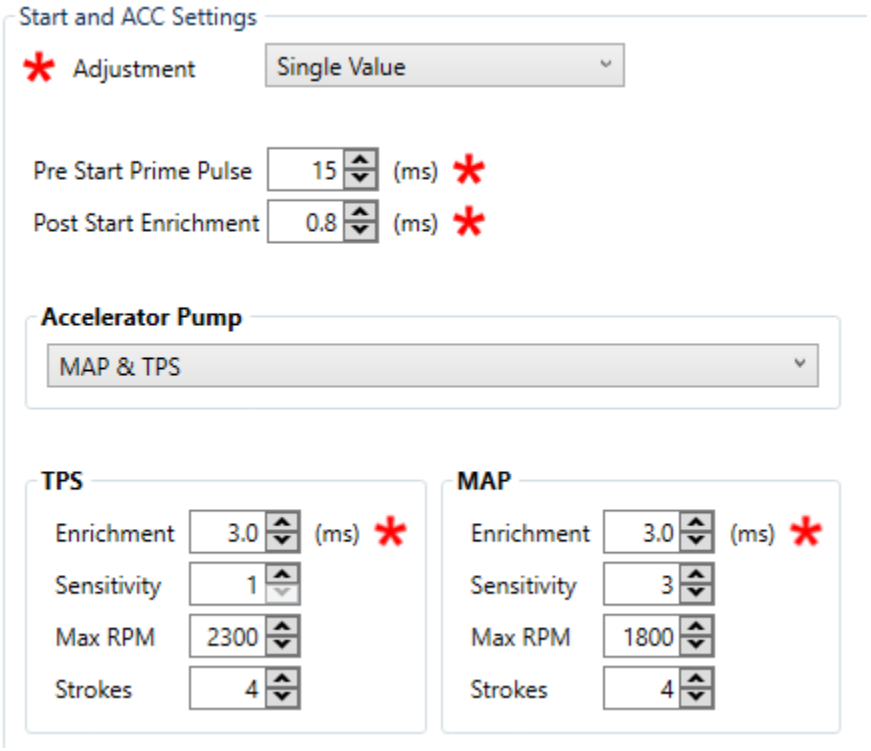
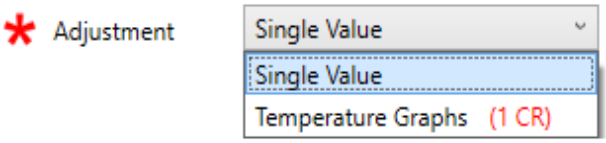
Fuel Start and ACC Timing

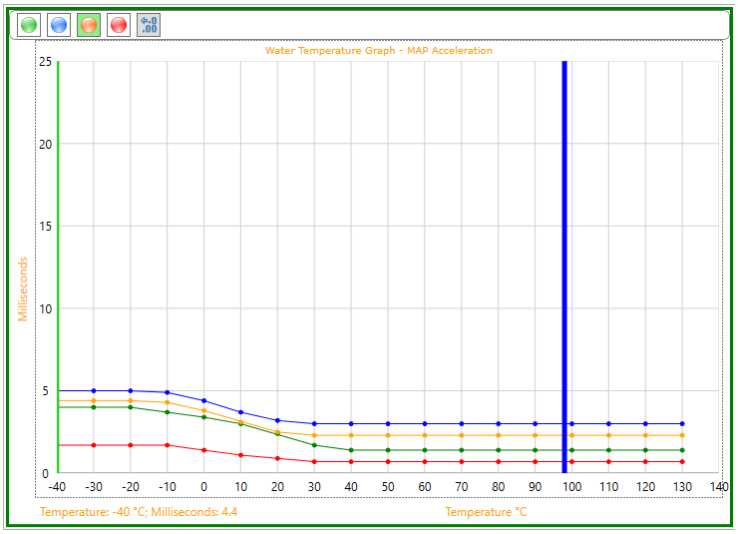
The settings on this page helps the engine start and maintain idling. Then it also helps taking flat spots out of fast acceleration. There is also a graph option that helps engines with racing fuel during different temperature extremes.



Adjustment



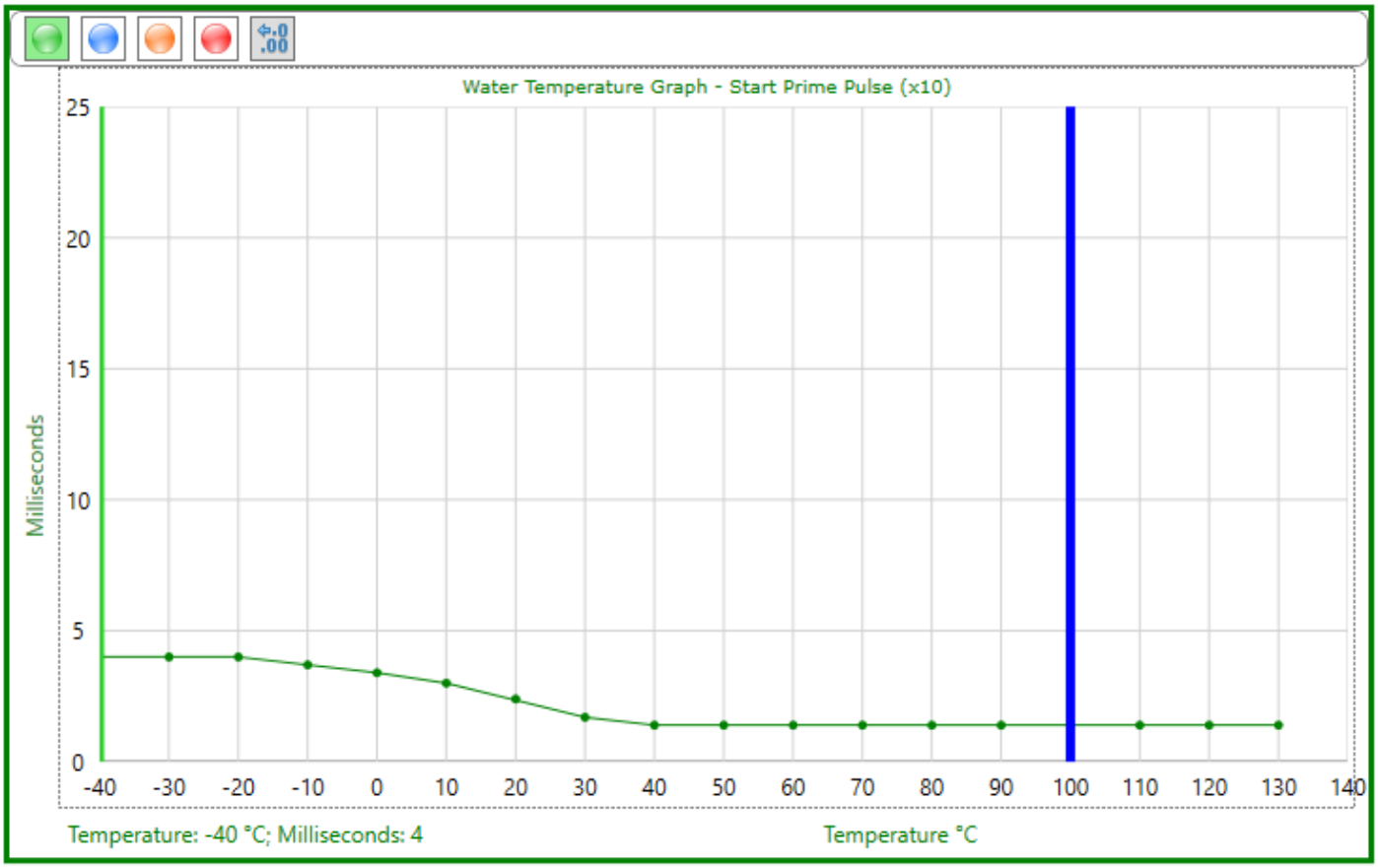
All the values marked with the red star can be adjust in a single value on this settings block if Single Value is selected. If you select Temperature Graphs another graph will become visible under the Graphs tab. Now you can select a range of settings over a temperature compensation graph. Values that are includes is Pre Start Prime Pulse, Post Start Enrichment, TPS and MAP Enrichment.



Pre Start Prime Pulse

Pre Start Prime Pulse 15 (ms) *

This setting is to assist in the starting of the engine. When the engine starts to crank and reaches 100 RPM a set amount of fuel is injected on all the injectors to get the first cylinder with spark to ignite and turn over the engine. A colder engine requires more initial fuel to start. This value is also compensated with the water temperature in Single Value mode. This value can also be adjusted on a graph if Temperature Graphs is selected. Note that this value is x10 so 6.4 is 64 milliseconds. See the graph sample below.



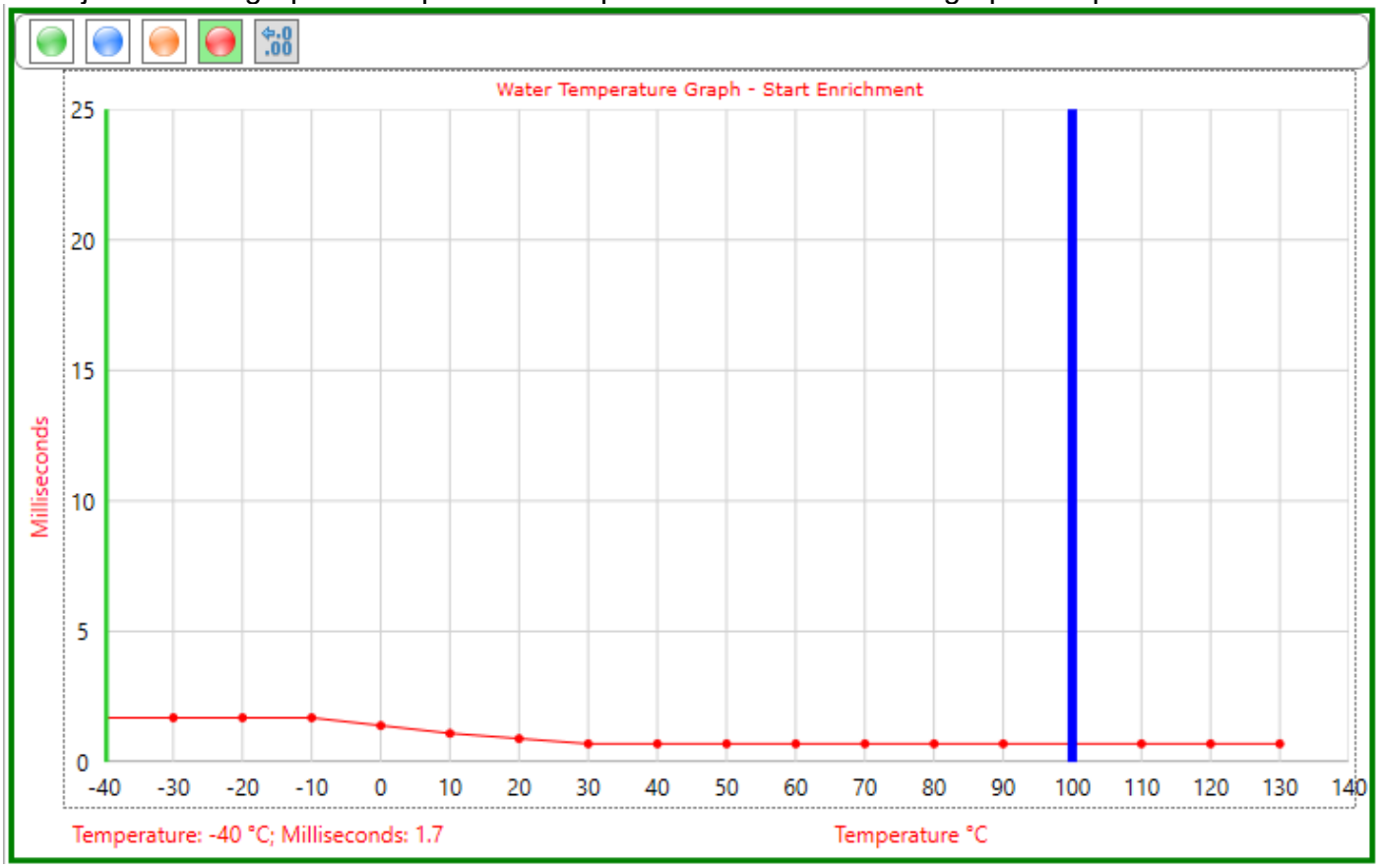
The ECU have a manual prime function where you can press the accelerator pedal before starting to inject fuel in the system. This fuel is measured at 50% of the start prime pulse setting. It is injected each time the throttle is pressed more than 25 % opening.

Should the engine be flooded, you may keep the pedal fully pressed to the floor during cranking. This will indicate the ECU to cut injectors and only provide spark. Press the throttle in all the way before putting the ignition on. It will prevent the prime pulse from injecting more fuel when the pedal is pressed. Once the engine starts release the pedal and then injection will commence as normal.

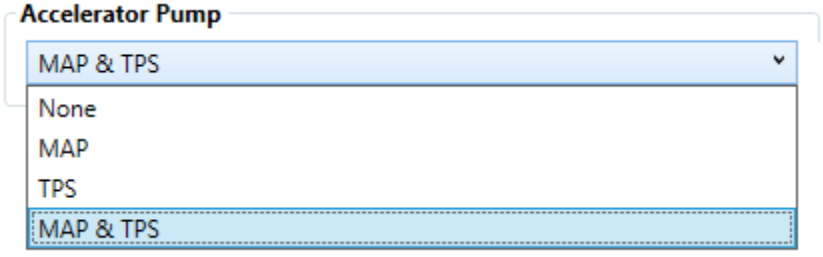
Post Start Enrichment

Post Start Enrichment 0.8 (ms) *

This is the amount of fuel that will be added momentarily when the accelerator pump is activated. This value is divided by the number of strokes and each stroke the value is reduced by the division value. It will start with 10 and reduce to zero so that fuel is gradually reduced. This value can also be adjusted on a graph if Temperature Graphs is selected. See the graph sample below.



Accelerator pump selection

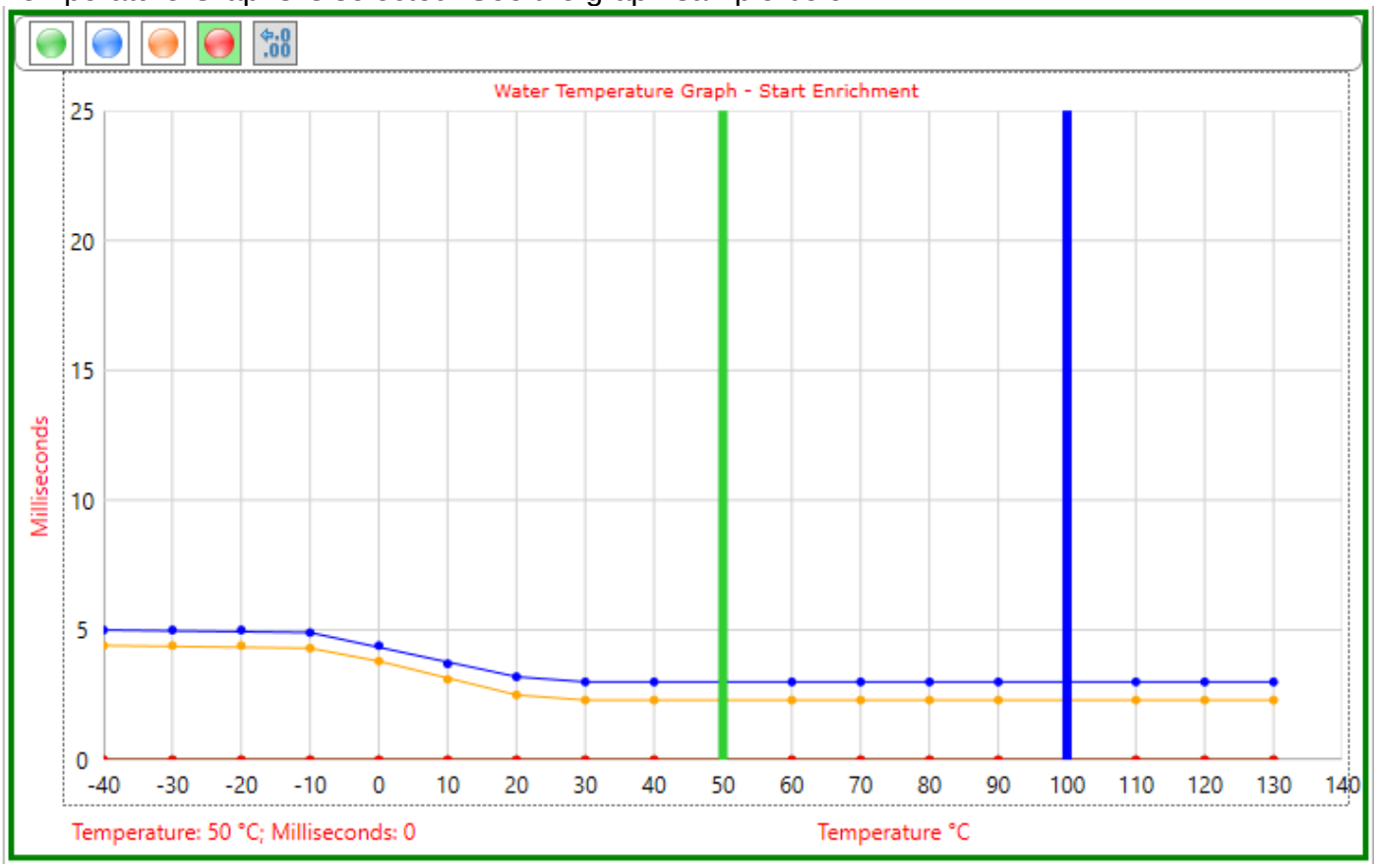


The accelerator pump setting is used to richen the fuel mixture when accelerating to avoid flat spots or bog. Here you can select not to use it, use either the TPS or MAP or both signals. Below are the selections to setup each pump for TPS and MAP.

Enrichment

Enrichment 3.0 (ms) *

This is the amount of fuel that will be added to the current amount when ACC Pump is activated. This value is reduced to zero by the dividing the number of Strokes to it. This fuel will also be injected on all the cylinders simultaneously. This value can also be adjusted on a graph if Temperature Graphs is selected. See the graph sample below.



Sensitivity

Sensitivity 1

The setting can be adjusted from 1 to 10. The lower the value, the more sensitive the accelerator pump will be. If the accelerator pump is set too sensitive it will activate randomly and cause the vehicle to over fuel. Rather keep the activation sensitivity as high as possible to avoid this from happening. For the TPS signal this value can be lower as it is more stable than MAP value and it reacts faster.

Max RPM

Max RPM 2300

This is the maximum RPM that the pump settings will be active. At high RPM you do not need an accelerator pump. A standard is 1500 to 3000 RPM for TPS and 1500 to 2200 RPM for MAP. If a value was initiated before this limit was reached it will finish the decay cycle.

Strokes

Strokes 4

This is the number of engine strokes that the fuel will be reduced for. If it is a 4-cylinder engine, a value of 8 will inject 4 full revolutions of fuel. There are two firing strokes per revolution. If it was a 6-cylinder engine, a value of 12 will inject 4 full revolutions of fuel. Always tune for the lowest value to eliminate flat spots. If a value of example 10 is selected it means that the enrichment amount will be decayed by a tenth every stroke until the tenth stroke.