

Rev Limiters Setup Tabs

The Rev Limiters in the ProEFI Ecu provide flexibility like no other system on the market. This document will walk you through the different options, parameters and tables to help you understand the best setup for your application. In the Fault Manager you will see an option for Engine OverRev, inside that fault there are actions to enable rev limiters. You do NOT want to active additional Rev limiters with Engine overrev faults. You would effectively be turning on 2 rev limiters and get VERY coarse operation. The Engine Overrev fault is mainly for performing other functions, such as disabling the O2 feedback, turning off nitrous etc.

Basic Setup Tab:

- Parameters
 - Current Active RPM Limit – This parameter displays the current RPM limit setting. This parameter is particularly useful when tuning launch control.
 - Burnout Switch Position – This parameter displays the state of the Burnout Limit Switch Position
 - Rev Limiter Active – This parameter displays which limiter is currently active.
 - Stage Switch Position – This parameter displays the Stage Limit switch position.
 - Strain Gauge Cut – This parameter displays the state of the Strain Gauge cut switch.
 - Launch Control Enabled – This parameter displays the state of the Launch Control System.
 - Two Step Switch Position – This parameter displays the state of the Two Step Limit Switch.
- Options
 - Rev Limit Type – This option sets which type of cut you wish to use for Rev Limiting: Ignition Cut, Fuel Cut, or both.
 - Primary Rev Limit Set point – This option sets the main RM limit for the engine.
 - Burnout Limit Analog Input – This option sets the Analog input to be used for this limiter
 - Burnout Limit Target Boost – This option sets the target boost for this limiter.
 - Burnout Limit Target Fuel – This option sets the target Fuel Mixture for this limiter.
 - Burnout Limit Set point – This option sets the RPM limit while on this limiter.
 - Burnout Limit ADC Switch – This option sets the ADC switch point to change the state of the switch used to activate this limiter.
 - Burnout Limit Polarity – This option inverts the input for this limiter for what the Ecu considers 'On' or 'Off'
 - Rev Limit Begin Speed – This option sets the RPM amount before the actual Target Rev Limit RPM to start the cut cycle to help achieve a smoother limiter response. Typically 50rpm.
Note: you should scale your Rev Limit cut table index according to the value you enter here. So for example if you use 50 as your begin rpm your cut table index would start at -50.
 - Max Overrev Amount – This sets the maximum over rev amount where you will turn off ALL cylinders. Typically this value is 100 to 200 rpm above the end value in the cut table index.
 - Stage Limit Analog Input – This option sets the Analog input to be used for this limiter
 - Stage Limit Target Boost – This option sets the target boost for this limiter.

- Stage Limit Target Fuel – This option sets the target Fuel Mixture for this limiter.
- Stage Limit Set point – This option sets the RPM limit while on this limiter.
- Stage Limit ADC Switch Point – This option sets the ADC switch point to change the state of the switch used to activate this limiter.
- Staging Rev Limit Polarity – This option inverts the input for this limiter for what the Ecu considers 'On' or 'Off'
- Number of Cylinders for Soft Cut – This option sets the number of cylinders to be cut when in the soft cut mode set in the Fault manager. Typically this is half the number of cylinders in the Engine.
- Rolling Antilag In – This option sets the input to be used to trigger the rolling antilag
- Rolling Antilag Switch Below ADC - This option sets the upper limit of the ADC Switch point to trigger the rolling antilag.
- Rolling Antilag Switch Above ADC – This option sets the lower limit above which will trigger the rolling antilag.
- Rolling Antilag Switch Polarity – This option inverts the resting state of the rolling antilag switch state.
- Rolling Antilag CAN – If you wish to use an available CAN channel to trigger the rolling antilag, set this to yes. Only available on some platforms.
- Rolling Antilag CAN Input – Set this to the desired CAN channel to be used as the input.
- Rolling Antilag Minimum VSS – This option sets the minimum VSS for the Rolling antilag to activate.
- Rolling Antilag Target Boost – This option sets the target boost for the rolling antilag.
- NOTE!!!! When using rolling antilag, you must set the fault manager to turn on the antilag reatard feature on turbocharged vehicles. This will then activate the automatic timing retard function and properly target your Antilag Target Boost.
- Tables
 - RevLimiter Error Index – This table sets the breakpoints for the Rev Limiter Error Retard table. Typically 0 to -150
 - Variable Two Step Drive Off Index – This table sets the breakpoints for the variable two step Drive Off Management table in Throttle Percentage. Typically 0 to 100.
 - Drive Off management Limiter – This table sets the Two Step RPM against Throttle angle. This allows for easier management of clutch engagement on 'grabby' clutches with light rotating assemblies, and also allows for a variable launch rpm control base on throttle position. This gives the driver the ultimate control over launching the car in all conditions.
 - Rev Limiter Cut Table – This table defines the number of cylinders to cut based on the error from the target limiter setting.
 - Rev Limiter Cut index – This table sets the breakpoints for the Rev Limiter Cut Table. Typically the values start at your Rev Limit begin speed (typically 50) . So -50 to 50 with a linear scale. The values in the middle at the zero point are typically half the number of cylinders in the engine.

Two Step Settings Tab:

- Stage 1-5 Two Step RPM – These options set the Two Step RPM Set point based on the position of the 5-way I boost Switch. These values are added to the Drive Off management table, which allows the two step to be variable against throttle for adjusting launch control.
- Stage 1-5 Two Step Boost – These options set the Two Step target Boost based on the position of the 5-way I boost Switch.
- Two Step Analog Input – This option sets the analog input to be used for the Two Step switch.
- Two Step ADC Switch Point – This option sets the ADC count at which the Two Step switch will change state.
- Two Step Switch Invert – This option inverts the state of the Two Step switch.
- Two Step MPH Bypass – This option sets the vehicle speed in MPH at when above, the Two Step input will be ignored.
- Two Step Takes Priority – This options tells the ECU which limiter will have priority, the Stage limiter or the Two Step limiter. The strategy works like this, if you have an automatic car, and are staging, your foot will be on the brake (typically the staging limiter in this case), and when you light the second bulb, you will grab the trans brake (two step) and the two step will then override the Staging limiter for proper staging as long as the Two Step takes Priority is set. If you have a manual transmission vehicle, and are staging, the clutch (two step) will always be in until you launch the vehicle. So in this case, the Staging limiter would have priority allowing you to override the two step with a button on the steering wheel (for example) so you could lower your launch rpm and boost while waiting for an opponent to stage their vehicle.
- Drive Off Management Table – This table is designed to help aid in drive off with grabby clutches and light rotating assemblies. The idea is to ramp the limiter table based on the amount of throttle being given to allow for easier management of clutch engagement. This table also works great as a variable launch control based on throttle given. NOTE: The individual two step RPM options are added to the values in this table. Example- If you have 500 in the two step RPM stage 1 option, and 4000rpm across the Drive off management table, you will get 4500rpm as your limiter value.

Strain Gauge Setup Tab:

- Strain Gauge Enable- This option enables the Strain Gauge Cut Strategy to allow the use of a Strain Gauge for ignition cut.
- Strain Gauge Analog Input – This option sets the analog input to be used for the Strain Gauge input.
- Strain Gauge Switch Invert – This option inverts the functionality of the Strain Gauge.
- Strain Gauge High ADC Count – This option sets the high ADC switch point to enable the Strain Gauge Cut.
- Strain Gauge Low ADC Count – This option sets the low ADC switch point to enable the Strain Gauge Cut.
- Strain Gauge RPM Minimum – This option sets the minimum Engine RPM to allow the Strain Gauge Cut to become active.
- Strain Gauge TPS Minimum – This option sets the minimum Throttle position to allow the Strain Gauge to become active.

- Strain Gauge VSS Minimum- This option sets the minimum Vehicle Speed in MPH to allow the Strain Gauge to become active.