IMPACT ECU · FUEL BUTTON GUIDE

Target AFR Adder Tables

Adder tables shift your Target AFR up or down based on a sensor you choose, like engine temperature. They don't replace the Target AFR table; they add to it. The most common use is a **richer target while the engine is cold**.

There are two, Target AFR 1 and Target AFR 2. They work the same way and both are **off** out of the box. This is an advanced feature, so call us before you rely on it.

WHERE TO FIND IT

Fuel ▸ Target AFR adder tables ▸ Target AFR 1 bias the settings

Fuel ▸ Target AFR adder tables ▸ Target AFR 1 adder the table; greyed out until a blend parameter is picked

How it works

- The **blend parameter** picks the sensor, for example CLT (engine coolant temperature).
- The **bias curve** says how much of the adder to use, from 0 to 100%, at each sensor reading.
- The **table** holds the amount, by RPM and engine load.
- The ECU multiplies the table value by the bias and adds the result to the target. Like the Target AFR table itself, this changes fuel right away, and closed loop then aims for the new target.

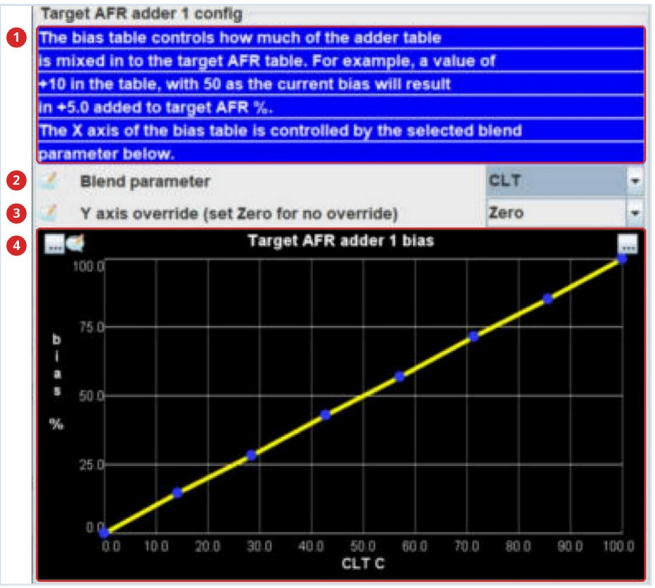
THE NUMBERS ARE LAMBDA, NOT AFR Adder values are in **lambda**. **Negative = richer.** −0.1 lambda is about 1.5 AFR on the gasoline scale (14.7 becomes 13.2). Keep values small: think −0.1 or −0.2, never −10.

The table only holds steps of 0.1. For smaller changes, use the bias curve: −0.1 at 50% bias is −0.05 lambda, about 0.7 AFR.

The help text at the top of the settings window is wrong for this table. Its example, "+10 with 50 as the bias," would add 5.0 lambda, an extremely lean target. The Help menu in the table window describes a different kind of table; ignore it too.

Target AFR 1 bias (the settings)

In this picture the blend parameter is set to CLT as an example; the bias curve is greyed out until a parameter is picked. The numbers are an example, not a recommendation.



1. **Help text** DISPLAY ONLY
   Describes the idea, but its example is wrong for this table (see the warning above).

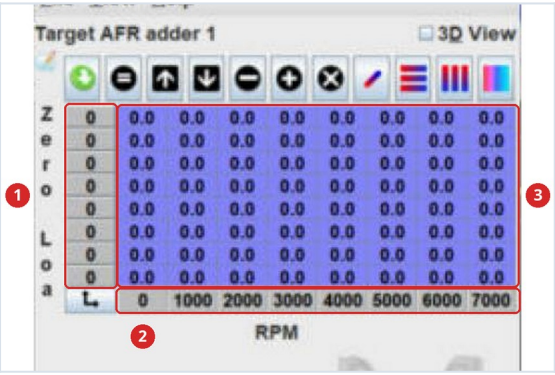
2. **Blend parameter** MAIN SETTING
   The sensor that controls this adder. **Zero = off.** CLT is the usual choice.

3. **Y axis override (set Zero for no override)**
   What the table's rows are. Leave on **Zero**: the rows are then engine load (kPa), like the Target AFR table.

4. **Target AFR adder 1 bias**
   How much of the table to use (0–100%) at each sensor reading.

   As it comes, it's a straight line: for CLT that means **more** adder when **hot**. Reshape it before use (see the example below).

Target AFR 1 adder (the table)



1. **Load rows (kPa)**
   Engine load. They're labeled "Zero Load" after the Y axis override, and they're all 0 out of the box. Fill them in from low to high (for example 20, 30, 40, 50, 60, 70, 85, 100), or put the same value in every cell so the rows don't matter.

2. **RPM columns**
   Engine speed.

3. **Adder (lambda)** MAIN SETTING
   Added to the target lambda, times the bias. **Negative = richer.** 0.0 = no change.

Burn means save. Changes go to the ECU as you make them, but they are only kept after you click **Burn**.

Example: a richer target while cold

1. Open **Target AFR 1 bias**. Set **Blend parameter** to **CLT**.
2. On the bias curve, drag the points so the line runs from **100%** at the coldest point down to **0%** at about **57 °C** (the fifth point), and stays at 0% above that. The points in between: 75, 50 and 25%. Click **Burn**.
3. Open **Target AFR 1 adder**. Drag across all the cells to select them, press **=**, type **-0.1** and press **Enter**. Click **Burn**.

Result: about 1.5 AFR richer at 0 °C (32 °F), about 0.7 richer at 29 °C (84 °F), and back to your normal target from 57 °C (135 °F) up. Check it in a datalog: **Fuel: target lambda** should read 0.1 lower at 0 °C, about 0.05 lower at 29 °C, and normal when warm.

IT ADDS TO WARMUP ENRICHMENT A richer cold target adds fuel on top of **Warmup enrichment**, which is also adding fuel while the engine is cold. If you add a cold adder, you may need less warmup enrichment. Check your AFR on a cold start before and after.