

READ ME FIRST!

Tuning your own car is dangerous. By using this spreadsheet, you are accepting all risks and liability. You could damage your engine or cause it to perform incorrectly if you put the wrong settings into your PowerFC. I make no guarantees that this spreadsheet is correct for your application. Make absolutely sure that you properly select the version of FC-Edit you are using below in Step 1. If you are unsure, do NOT proceed.

You MUST select which version of FC-Edit you are using!
 Option 1 - FD3S-Only version of FC-Edit (versions 1.x.y.z)

Step 1 - VERY IMPORTANT
 SELECT

This worksheet is protected. This means that you can't edit some cells. I did this to try to make sure you didn't accidentally mess up items that aren't supposed to be changed. If you really want to, you may unprotect it by going to TOOLS -> PROTECTION. Comments? Errors? Flames? Contact Wargasm on rx7club.com

Handy Pressure Conversions Reference Area		
Absolute Pressure (PSI)	14.7	29.15785501
Absolute Pressure (kg/m ²)	10335.12239	20500

Fill in the yellow box and the converted value appears in the box above or below it.

Data in the dark blue table below shows experimental results that I obtained using the stock MAP. Data in the pink table below shows how I think the PowerFC uses "Scale" and "Offset" to document MAP behavior. I think you will agree that the blue and pink lines overlap nicely, showing that the PFC settings work how I think they do.

Keep in mind: Absolute pressure starts from perfect vacuum. Therefore, 0 boost = about 14.7 PSI absolute pressure. 15 PSI of boost would be about (14.7+15) 29.7 PSI absolute.

Stock MAP information on this side

Experimental results using the stock MAP sensor	
Absolute Pressure (PSI)	Voltage Observed
0	0.70
4	1.23
8	1.76
12	2.30
16	2.83
20	3.36
24	3.89
28	4.42
32	4.96

I got this data using a MityVac, a 12V source, and a multimeter using my stock 1993 MAP sensor.

Normal PowerFC settings for a stock MAP sensor		
Scale	Offset	
35086	3947	
MAP Voltage	Absolute Pressure (kg/m ²)	Absolute Pressure (PSI)
0.0	-3947	-5.61
0.5	-1313	-1.87
1.0	1321	1.88
1.5	3955	5.63
2.0	6589	9.37
2.5	9223	13.12
3.0	11858	16.87
3.5	14492	20.61
4.0	17126	24.36
4.5	19760	28.10
5.0	22394	31.85

The light blue table below is for you to enter your own experimentally derived data points into. Hopefully, you get a straight line of some sort on the graph. Now, use the light yellow table at the bottom to play with "Scale" and "Offset" to make the yellow line match the light blue one.

Keep in mind: Absolute pressure starts from perfect vacuum. Therefore, 0 boost = about 14.7 PSI absolute pressure. 15 PSI of boost would be about (14.7+15) 29.7 PSI absolute.

Your new MAP information on this side

Your experimental results with your new MAP sensor	
Absolute Pressure (PSI)	Voltage Observed
0	2.24
5	2.85
10	3.65
13	4.02
16	
20	
24	
28	
32	
36	
40	
44	
48	

Step 2: Fill in the boxes here for all your experimental data points with your new sensor.

Be sure to remove any unused points or add more if you need to. If you change the number of lines, you will need to update the graph source data above. I have entered some pretend data here to get you started.

You need to replace it with your own real data.

Your new settings for your new sensor		
Scale	Offset	
32000	10500	
MAP Voltage	Absolute Pressure (kg/m ²)	Absolute Pressure (PSI)
0.0	-10500	-14.53
0.5	-8988	-11.52
1.0	-6695	-8.10
1.5	-3293	-4.68
2.0	-890	-1.27
2.5	1512	2.15
3.0	3914	5.57
3.5	6317	8.98
4.0	8719	12.40
4.5	11122	15.82
5.0	13524	19.24

Step 3: Fill in the boxes in orange with your proposed values and see how well they line up with the behavior of your new sensor which is the light blue line on the graph below. Keep playing with the two numbers until the yellow line lays on top of your light blue line.

Scale changes the angle of the yellow line. Offset moves the yellow line left or right. Offset should be a positive number. I don't think the PFC accepts a negative value for it.

