GM and Ford PWM Alternator Setup

This document explains how to control either a GM or Ford alternator that was factory ECU controlled with a PWM signal. This includes most 2007 and up GM vehicles and most 2005 and up Ford vehicles.

NOTE: There are likely earlier applications, but we have only tested and verified LS and modular/coyote applications for functionality.

Wiring:

GM: The “Charge Indicator Control” wire needs to be hooked up to a PWM + output in the Holley EFI. This is usually Terminal #1 on the alternator connector, but should be verified by the installer before proceeding.

Connector:
Bosch 1-928-403-137 Junior Power Timer (JPT)
or
TE 0-2005388-6
TE 0-2005388-3
TE 0-2005388-2

Terminal:
TE
929939-6
or
927770-3

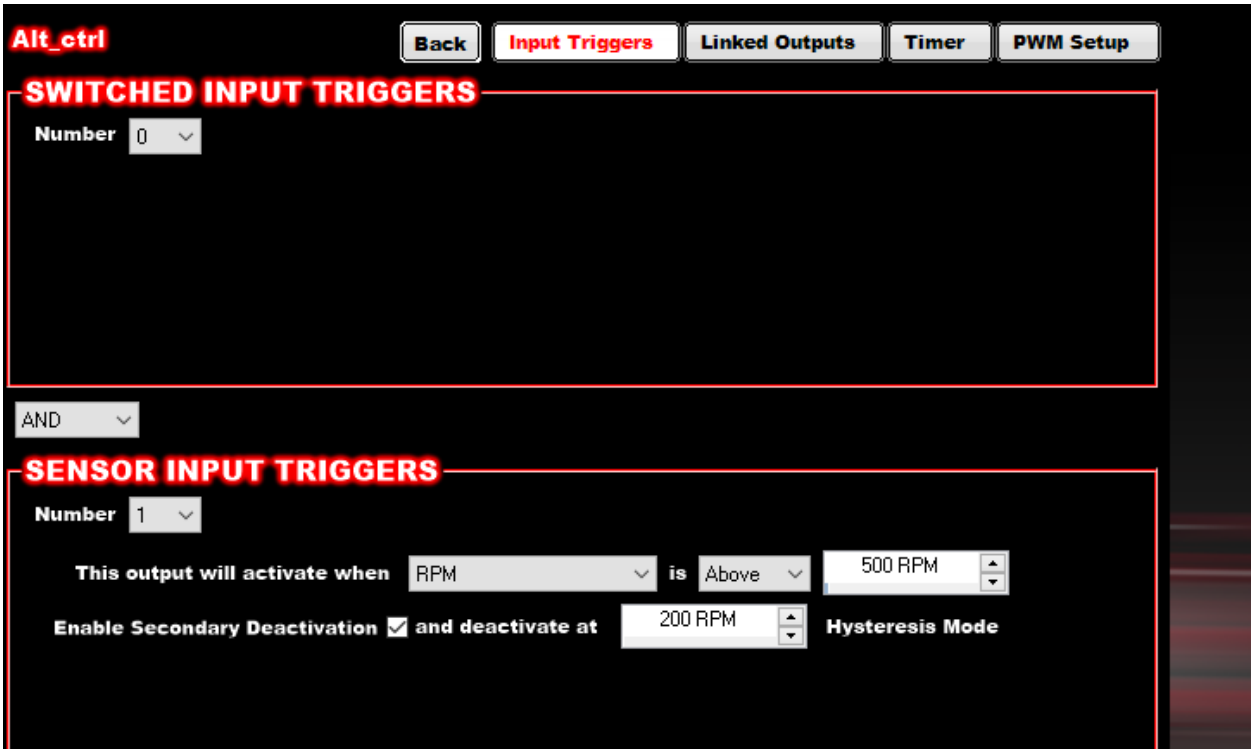
Seal:
TE 828904

FORD: The “RC-Charge Indicator Control IN” wire needs to be hooked to a PWM + output in the Holley EFI. This is usually Pin 2 on the connector, but should be verified by the installer before proceeding.

Connector Pigtail Part Number:
WPT-777
or
WPT-118

Software Setup:

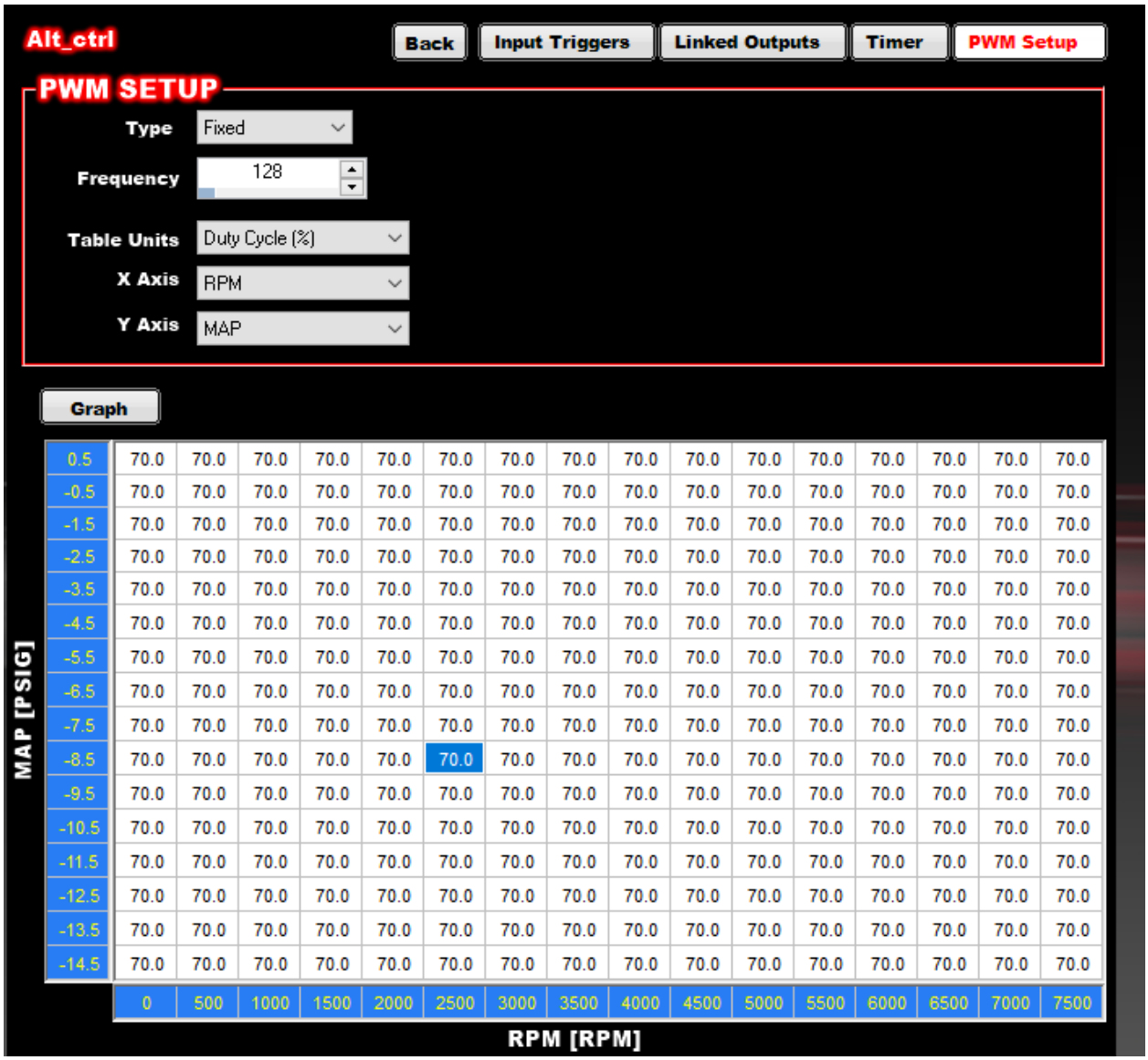
1) The alternator requires a PWM + output.
2) It is recommended to setup the output to only be enabled when the engine is running as shown.



3) Setup the PWM table as follows:
    a. Type = Fixed
    b. Frequency = 128
    c. Table units = Duty Cycle (%)
    d. The X and Y axis can be set however the user desires, but its recommended to use RPM and MAP

4) Fill the table with duty cycle values that correspond with the desired charging voltage. There is some variation, but for the most part 0% duty cycle is 11 volts and 90% is 15.5volts with the charging voltage being roughly linear with duty cycle between those points. This means that 14.6volts is roughly 70-75% duty cycle.

NOTE: Anything over 90% duty cycle is not recognized by the alternator and will result in the alternator shutting off until a valid duty cycle is seen.



MAP [PSIG]	RPM [RPM]														
	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
0.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-0.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-1.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-2.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-3.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-4.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-5.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-6.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-7.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-8.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-9.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-10.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-11.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-12.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-13.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
-14.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0