



Adjusting the MAP Clamp Voltage on the Comptech ESM (Electronic Signal Modifier)

Equipment required:

1. Single output adjustable Lab Power Supply (Instek Model GPS-1850D or equivalent). Specifications: Adjustment range 0-15V DC at at least 0.5A.
2. Digital Multi-meter (DMM) with probes (Fluke Model 177 or equivalent)
3. Small straight-bladed jeweler's screwdriver

Adjustment procedure:

1. Set the DMM to read DC volts and an appropriate range to read up to approximately 15 volts.
2. Before making any wiring connections, turn on Lab Power Supply. Adjust the voltage control of the lab power supply to 13.8V +/- 0.5V (13.3 to 14.3V) using the meter on the power supply or the DMM to confirm the voltage setting. The ESM works from 5 volts to 15 volts input at the power input wires.
3. Turn off Lab Power Supply
4. Attach ESM red wire lead to the positive (red) binding post and the ESM black wire lead to the negative (black) binding post of the Lab Power Supply.
5. Tape off the ESM green and blue wire leads to prevent them from shorting.
6. Turn on the Lab Power Supply.
7. Set the DMM to read DC volts and an appropriate range to read up to approximately 5 volts.
8. Insert the DMM red probe into the small 3/32" diameter hole in the top of the ESM case labeled + (plus) until it just touches the contact pad on the printed circuit board inside the case. Repeat this process for the DMM black probe inserting it into the small 3/32" diameter hole labeled - (minus).
9. The clamp voltage is adjustable from approximately 2.5 to 3.85 volts DC. Gently turn the small screwdriver potentiometer adjustment visible through the small 1/8" diameter hole in the end of the ESM opposite the wire inlet side of the ESM plastic case to adjust the clamp voltage to the desired setting. The factory setting is 2.840 +/- 0.010 volts DC which matches the output voltage produced by most Honda/Acura MAP sensor when at average altitudes. Clockwise adjustment increases the voltage. Counter clockwise decreases the voltage. The potentiometer adjustment range is 12 turns from the minimum to maximum setting. The potentiometer adjustment has a ratchet clutch when it reaches the end of the adjustment travel to prevent damage to the potentiometer.
10. When the desired voltage setting is achieved, remove the DMM probes from the holes in the ESM case, turn off the Lab Power Supply and detach the red and black ESM wire leads from the Lab Power Supply binding posts.
11. The ESM is now ready to install in the vehicle.
12. The ESM voltage is also adjustable while it is installed in the vehicle (with the ignition power turned on) by following steps 7 through 9.

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August 26, 2007

Procedure Revision A