
TACHOMETER DISPLAYING “0” RPM AT DIFFERENT TIMES DURING ENGINE OPERATION - SMART REGULATOR

At times customers are surprised to find when glancing at their tachometer that it's erratic or even reading zero. A good number of these indications can be traced back to the fact the tachometer is using the alternator for its signal source. With the advent of alternators with “smart” regulators, when the regulator senses the battery is topped off and fully charged it no longer gets voltage/current from the regulator, to prolong battery life. Unfortunately, the tachometer no longer gets the proper signal and so it either becomes erratic or drops to 0 RPM.

Excerpts from a few alternator manufacturers:

“When multi-step regulators are used, the tach signal strength can vary according to the charge state. When the regulator switches from the absorption state to the float state, there may be a complete loss of tachometer signal during the time the battery voltage decays. During this period most regulators shunt down completely, and the tach signal does likewise”.

Or “should bouncing of the tachometer be observed when the batteries are fully charged, turning on some DC loads or adding a 25 watt, 25 ohm resistor between the field and ignition will often cure the problem”.

Or “when the batteries are fully charged (especially gel batteries), little field current is necessary to maintain the float voltage at a proper level. Under these conditions the NEXT reduces field current to a level consistent with the output demand, so that the batteries will not be overcharged. The NEXT is designed to be kind to the batteries first, and kind to the tachometer second.” “the tachometer may still become erratic or even stop.”

The problem is more apparent on sailboats than power boats as there is always some load on batteries on a power boat. Sailboats, in their strife for tranquility, can at times have little to no real current draw on the batteries.

If your boat has a smart regulator and you are experiencing similar symptoms, contact your alternator manufacturer to see how you might remedy this situation. Veethree Marine alternator driven tachometers process the signal sent to it. When that signal deteriorates or becomes absent, the tachometer will become erratic or return to the 0 position.