

Denso 1-Wire SE and IR Alternator Diagnosis

1. Check the state of the battery. A battery in good working condition will show between 12V and 12.5V with nothing drawing on it. If your battery is below that level chances you may have a bad battery. Charge it to perform other tests if below 12v.
2. Compare voltage at the battery + post to the voltage at the output + post of the alternator. There should be very little drop in voltage from the battery to the output post of the alternator. Any significant resistance on this wire could be detrimental to the operation of the alternator. If you show very low or 0 voltage at the output post of the alternator, check the fuse or fusible link and the power wire going to the battery as it may be blown or the cable ends are bad or corroded. Replace this cable as needed.
3. IR ONLY: Check the voltage on the small white wire on the back of the alternator. This wire should not have voltage with the ignition key off; it should have battery + voltage with the ignition key on.
4. If equipped with dual batteries: check voltage at both ends of the battery crossover cable. This is a known source of issues on trucks. The crossover cable connects B+ on both batteries, but, when this cable has high resistance or is bad, the voltage will not be the same at each end, the result is the alternator will not charge, or it will overcharge one battery and undercharge the other.
5. Are your brackets painted, or powder coated? The alternator needs a clean quality ground path through the case, brackets, and engine block. This is an often overlooked but common issue with poor charge, or no charge.
6. Tach wire if equipped: do not connect power to the tach wire, this wire is intended to send a signal to the aftermarket Tach gauge, in a "wave form" or "W" signal. The alternator produces 12 pulses per revolution, if you have added a tach but need to calibrate it, you will need to know that it produces 12 pulses per engine revolution.
7. Visual Inspection: make a visual inspection of the back aluminum cover. Although we foam pack these, sometimes the carrier can be rough on them, and if the rear cover is dented and touching the internal parts it may not work. If you suspect this issue, please email or text pictures we can help identify.

**** Never under any circumstances remove the battery cable while the vehicle is running!**
Doing this can damage the internal voltage regulator making the alternator no longer charge. This test only worked on early cars that had very low draw and an external mechanical voltage regulator, common from the 1960's to the mid 1980's. **