

Ample Power Company



Energy Monitor, Next Step, Eliminator System

Drawing AT9610281

Drawing AT9610281 shows a system with the Energy Monitor, Smart Next Step Regulator and Eliminator. This system is suggested for most vessels, especially power boats. Consider also the newer Smart Alternator Regulator, V3 as an upgrade for the Next Step Regulator.

Eliminator

In the EMON/NEXT/ELIM system, the starter bank is maintained with an Eliminator. It continuously looks at the voltage of the house bank and whenever there is enough voltage to charge the starter bank, the Eliminator siphons some of the charge current to the starter bank. Any charge source can be charging the house bank . . . the alternator, solar panel, wind generator, or charger. They may even be charging all at once!

Unlike the other systems, where only the alternator can charge the starter bank via the parallel solenoid, any charge source in the EMON/NEXT/ELIM system can charge the starter bank. Furthermore, the Eliminator senses the temperature of the starter bank and compensates the voltage applied to the starter bank.

The Next Step Regulator can also be integrated with the Energy Monitor II. A signal is provided by the EMON II, telling the Next Step to stay in the absorption step until the batteries

are full. The EMON II knows present battery state of charge and battery temperature.

Auxiliary Shunt

Current from the solar panels and the wind generator is measured using the auxiliary shunt. The Amp-hours that these devices produce are accumulated by the Energy Monitor II in non-volatile memory. If knowing solar and wind generator production isn't necessary, the EMON II, H1A allows an Alternator Current Sensor and shunt to be used instead. The Alternator Current Sensor can share the same shunt that is shown connected to the ammeter. The Alternator Current Sensor translates the Amps signal into a voltage that is referenced to ground. A 0.05 Volt signal across the shunt is converted to a 2.00 Volt signal at the output of the sensor. This voltage is measured by the H1A and displayed as alternator Amps.

Pamper the Starter Battery

While a system with the Eliminator cost slightly more than the Next Step Regulator with a parallel solenoid, the starter battery is treated better since it doesn't have to see the same high absorption voltage as the house bank. Temperature sensing also improves the care given the starter bank. While starter batteries are usually inexpensive, they may fail at a most inopportune time.

