



2010 43QGP Allegro Bus

11/8/2014

117- FYI – MAGNUM INVERTER CHARGER TRIVIA. Often I see discussions regarding the Magnum Inverter's charger, what the charger does and what the charger does not do.

I will use the Magnum MS 2812 Inverter as the reference for this document. This charger has FIVE charging modes:

BULK CHARGING: The initial stage of battery charging while in this stage the charger will supply a controlled CONSTANT current to the batteries until the batteries have reached the ABSORPTION charge voltage this voltage is determined by the type of battery selected in the AGS setup. In this case **WET CELL** battery type was selected which has an absorption voltage of 14.6 volts. The charger will remain in bulk charge until the battery bank voltage has reached 14.6 volts, at that voltage the charger moves into.

ABSORPTION CHARGING: The second charging stage begins when the batteries have reached 14.6 volts. The length of time the charger will remain in this charging stage is based on the size of the battery banks Amp Hr. capacity, the Amp. Hr. capacity is programmed in the AGS setup. In the case of our coach the house battery Amp hr. capacity is 1296 Amp. Hrs. this capacity is based on 12 - 216 Amp Hr. 6 volt batteries configured in series parallel to provide 12 VDC. The length of time needed for absorption charging based on the 1296 Amp Hrs. battery capacity, is 210 minutes or 3.5 hours. Another component of ABSORPTION charging is based on the TEMPERATURE of the battery, usually information received from the BTS (battery temperature sensor) mounted to one of the negative battery posts. If the battery temperature is 77 ° (F) the voltage in my case will be 14.6 volts. The charger voltage will be compensated higher or lower based on the BTS to a high of 15.35 volts when the battery temperature is 32 ° (F) or a low of 13.85 volts when the battery temperature is 122 ° (F). After the absorption charge time has lapsed, the charger will move into.

FLOAT CHARGING: The third charging stage begins after the end of the absorption charging. During this stage float charging voltage is determined by the battery type selected and programmed in the AGS setup. Our coach has **WET CELL** batteries float voltage is set at 13.4 VDC. During this

stage 13.4 volts will be maintained. After **FOUR** hours of float charging the charger moves into.

FULL CHARGING: During this fourth stage the battery charger is turned **OFF** and begins monitoring the battery voltage. With the charger turned **OFF** the charger is supplying **ZERO** amps to the batteries. With the charger off and zero amps supplied to the house batteries voltage will slowly taper off/down until the battery voltage is 12.7 volts, denoting a **FULL BATTERY**. This stage is used for long storage periods to prevent excess loss of water in the batteries. In this stage **IF/WHEN** the house battery voltage drops below 12.7 VDC the charger automatically initiates another **FOUR** hour **FLOAT** charge.



The dash mounted meter shown on the left displays either the **CHASSIS** battery voltage **OR** **HOUSE** battery voltage depending on the position of the switch on the left side of the meter. It is

currently displaying the **HOUSE** battery voltage of our garaged coach with **FULLY CHARGED** batteries with no load applied, and **BTS** around 70 °. What occurs when a load is applied to the fully charged (12.7 volt) house batteries? If the load is high enough to drop the **HOUSE** battery voltage **BELOW** 12.7 volts, the charger will automatically revert to **FLOAT CHARGING** for an additional four hours, this voltage drop usually occurs when the door is opened and the step motor extends the steps. At the end of four hours the charger moves back into **FULL CHARGE** mode where the battery voltage will taper drop to a fully charged state of 12.7 volts.

We covered four stages of battery charging however I stated there maybe five stages. Depending on the charger your coach may not have a **FULL CHARGE** mode. Most inverters however will have the following mode.

EQUALIZING CHARGING: This stage is used to stir up (**BOIL**) stratified electrolyte in an attempt to reverse battery plate sulfation that may have occurred over time.

FWIW, over the past ten plus years I've preformed **ONE** equalizing charge to our coach's house batteries that one time was prior to my purchase of two battery testing devices. Those purchases were a 500 Amp carbon pile load tester and the purchase of an electrolyte refractometer. Since those purchases there has not been a need to equalize the coaches wet cell **HOUSE** batteries.