

## VAH110 Digital Battery Volts/Amps/Amp-Hour Monitor

### Specifications:

Operating Voltage: 9.50 - 33.00 VDC

(Higher voltage versions available  
by special order)

Current Drain: 0.035 amps nominal

Display: Large 4 digits LCD, 5 levels of  
backlighting with external backlight  
on/off control

Data: Volts (for three batteries), Amps,  
Amp-Hours, percentage charge  
remaining for house bank

Ranges: 9.50 to 33.00 VDC, -450 to +450 Amps (in tenths below 20.0 amps, 0  
to 3000 Amp-Hours, 0-100% charge remaining

Custom OEM versions available to 60 VDC

Battery Size: 100 to 3000 Amp-Hours, programmable.

Data Output: NMEA 0183 serial 4800 BAUD

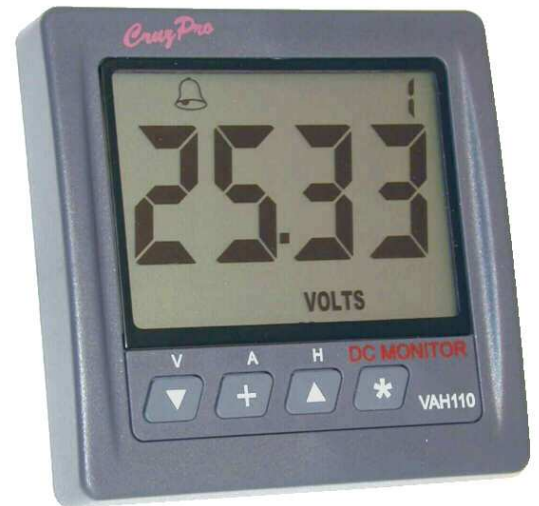
Programmable as an external alarm output

External charger control output- Programmable charger on/off  
control based on battery charge remaining

Alarms: Built-in 85 dB audible alarm. Settable high and low voltage alarms and  
low charge alarm.

Size: 110m x 110mm

Mounting: 54mm round hole





## **Description:**

The VAH110 Digital Battery Monitor provides accurate digital instrumentation. For banks of batteries between 9.50 and 33.00 Volts. The VAH110 displays battery voltage for up to three banks and charging or discharge current and tells you how much battery capacity has been consumed and how much is remaining in your battery bank. It keeps track of all current entering and leaving the battery and applies the appropriate Peukert's and charge efficiency factors four times per second. You can set Low and High voltage alarms for each battery bank independently and a Low Amp-Hours Remaining alarm for your main house bank. When activated, the built-in 85 dB alarm will sound and the display will flash. Five levels of backlighting can be selected and all set-up, calibration constants and alarm values are saved to non-volatile memory. The VAH110 comes complete with a calibrated 450 Amp shunt to measure current.

All constants and calibrations are pre-set during manufacture but you may alter these settings to suit your particular needs. Calibrations can be altered using the front-panel switches for: Battery voltage (for each battery separately), battery current, charge efficiency, Peukert's exponent, battery bank capacity (in amp-hours), low and high voltage alarms and low amp hours remaining alarm value. Two auto-zero functions (a one minute and/or a 24 hour measurement) are easily initiated from the front panel to zero the ammeter for maximum long term accuracy.

With a press of the button you can display three different battery voltages (9.50 to 33.00 VDC each in hundredths of a volt), current being delivered to or draining from the battery bank (-450 to +450 Amps, in tenths of an amp below 20.0 amps), the number of amp-hours remaining in the battery bank (0 to 3000 Amp-Hours) or the percentage charge remaining in the house bank (0 to 100%).

High volts, Low volts and Low Amp-Hours Remaining alarms can be independently set using the front panel switches and all alarms can be turned ON/OFF simultaneously with the press of a single key.

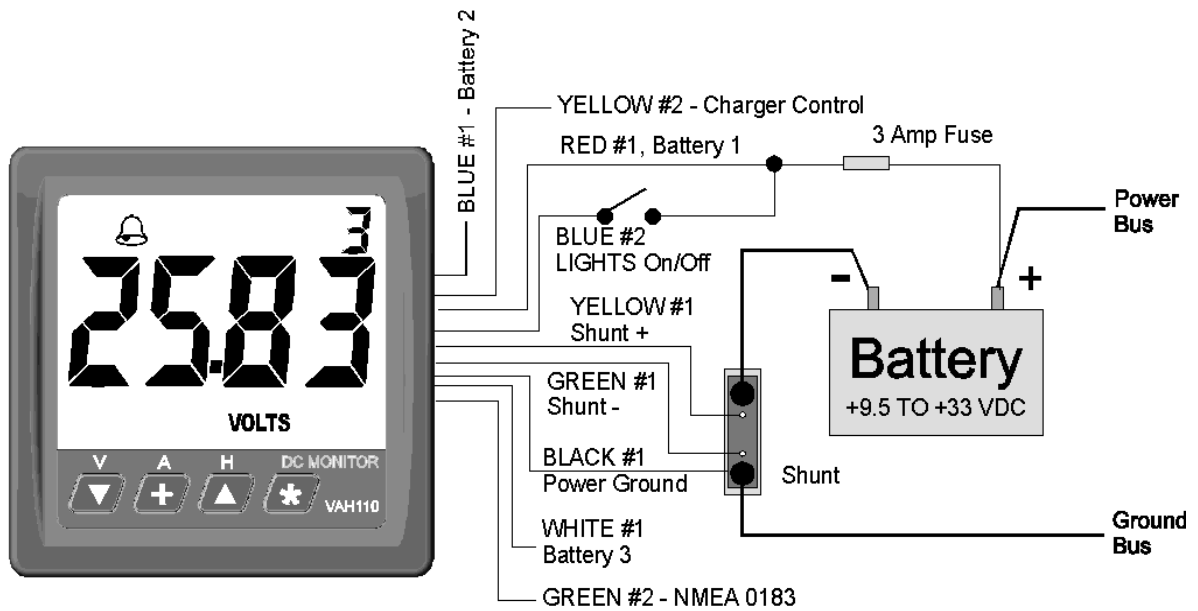
The VAH110 draws only 0.035 amps and is designed to be left on continuously. 5 levels of backlight (including OFF) can be selected from the front panel and is saved to non-volatile memory. An external backlight on/off control is provided to switch on backlights to multiple instruments simultaneously with one switch.

The VAH110 outputs Voltage (for all three battery banks), Amps and Amp-Hours Remaining on the standard NMEA 0183 serial data line at 4800 BAUD.

This ASCII information can be used to log performance or repeat the display information at a remote location on the RP30 and/or RP110 data repeaters. If NMEA 0183 serial data is not required, then the output terminal can be programmed as an external alarm output pin.

A special output wire can be programmed to turn on a charge source such as a generator when the battery gets below a certain amount of charge and to turn the charge source off again at a different programmable level of charge.

### VAH110 Connection Diagram



## Connecting the ER-1 External Relay module to the NMEA 0183/External Alarm Output

