Coastal DC "Watt Wizard"

Installation and Operation

Description

The Coastal DC **Watt Wizard** comprises of a digital display with a membrane keypad mounted in a plastic mounting plate measuring 3.5" x 2.25". The installation requires a cut-out of 3.25"w x 1.75"h and a minimum depth of 1.5" A small ancillary Terminal Board connects via an 8" ribbon cable, and a remote shunt is included that is to be connected in the negative lead of the charge source or load to be monitored. An external power supply is not required if wiring is made as shown in the accompanying wiring schematic.

Location

The Display is designed to be mounted on a vertical surface and secured with the screws provided. Care must be taken to ensure that the location chosen will not subject the panel or its components to splashing or running water, steam, corrosive gasses, excessive vibration, or physical damage. The Display connects by a ribbon cable to the Terminal Board, which can be attached to the rear of the Display or elsewhere using the Velcro provided, once the wiring connections have been made. Install the Shunt in the negative line of the charge source or load to be monitored. The optional Mount for the Shunt simplifies installation and provides low resistance connections.

Wiring

Wire the **Watt Wizard** as per the diagram included. Use minimum AWG 18 wiring for all connections to the Terminal Board. Connect the supplied fuse holder as shown on the diagram, but do not insert the 1 amp fuse until all wiring has been completed. The main negative lead connections to the Shunt must be made with ring terminals suitable for 5/16" dia. The ring terminals must be compatible with the wire size of the main negative leads, and properly crimped or soldered. Connect the wires exactly as shown on the diagram, as any deviation from that shown will result in inaccurate readings. An optional 12v or 24v relay can be installed, as shown, if there is a desire for the load or charge source to be disconnected either manually from the display, or under an alarm condition. If a relay is installed, it must have contacts rated for at least the maximum continuous current expected. Also, the relay coil must be of the same voltage as the power supply to the Terminal Board and have a current rating of less than 500 mA.

Basic Operation

The top line of the **Watt Wizard** Display shows volts as default. Watts can be selected by pushing the "V/W" button. The lower line is set to show instantaneous amps as default, but accumulative amp/hours and run time can be displayed by repeatedly pushing the "A/AH" button. When power is first applied, the "OUT" LED will be lit, and amp/hour and run time calculations will start along with alarm protection. Pressing the "OUT" button at any time will extinguish the "OUT" LED, stop the amp/hour and run time calculations, cease alarm protection, and operate an optional relay, if installed. A long press of the "A/AH" button will reset the amp/hour and run time readings to zero. If an alarm is activated, the display will show "-AL-0xxx", the buzzer will sound, and the "AL" LED will flash. If an optional relay is installed it will be operated under an alarm condition. Pressing the "OUT" button will stop the alarm.

Programming

Pressing and holding the "OUT" button enters the program mode. Use the "OUT" button to scroll through parameters; use the "V/W" and A/AH" buttons as up and down buttons to change settings.

O-U - Voltage Calibration

1-C - Current Calibration

2-FL - Current Multiple (default 75)

3-ON - Relay Status when meter powered on

4-ES - Save settings

5-r - Reset to factory default values

6-OV - Over-Voltage alarm setting

7-OC - Over-Current alarm setting

8-OP - Over-Power alarm setting

9-AH - Over Amp/Hour alarm setting

10-H - Time-Out value

11-T - (Reserved for future use)

12-L - Under-Voltage alarm setting

13-F - Voltage Multiple (default 10)

Use parameter 14-L to change the state of the relay output if an optional relay is installed. Default is for the relay output to be normally de-powered, and only powered under an alarm condition or when the "OUT" button has been pushed and the "OUT" LED is not lit. Use 14-L to reverse that setting if desired.

Use parameter 4-ES to save all settings after programming changes have been made. Change "n" to "y" and press the "OUT" button. All settings will then be saved and stored.

Calibration

The **Watt Wizard** has been calibrated before shipping, but it is suggested that you fine-tune the calibration once the unit is installed and operational. Use an accurate multi-meter with a DC clamp-on ammeter to verify the settings shown on the Watt Wizard display. Enter parameters O-U (voltage) and 1-C (current), and use the "V/W" (up) and "A/AH" (down) buttons to adjust the displayed value. Save the adjustments by scrolling to parameter 4-ES, changing "n" to "y", and then pressing the "OUT" button.

Specifications

Power Supply	5v to 40v (Remote power supply required if voltages between 40v and 90v are anticipated)
Measuring Range	0 to 90.0 volts - 0 to 75.0 amps
Accuracy	Volts: +/- 0.1% - Amps +/- 0.05%
Resolution	0.01 volts, amps, watts, amp/hrs
Sampling Rate	5 readings per second
Voltage Measuring	Internal
Current Measuring	External by negative line Shunt (Supplied)
Operating Temperature	0 to 50 C (32 to 122 F)
Operating Humidity	35% to 85% Relative Humidity
Alarms Available	High and low volts, high amps, high Watts, high Amp/Hrs
Alarm Action	Buzzer, plus relay operation if installed (Optional. Not Included)
Relay Coil Voltage (if installed)	12v if 12v power supply used; 24v if 24v power supply used
Relay Coil Current (if installed)	Maximum 500 mA
Dimensions: Overall - Panel w/ Mounting Plate	4.0" x 2.5"
Dimensions: Required Cut-Out	3.125" x 1.75"
Dimensions: Required Depth	1.5"
Weight (Inc. Shunt)	250g / 9oz

Coastal Climate Control, Inc.