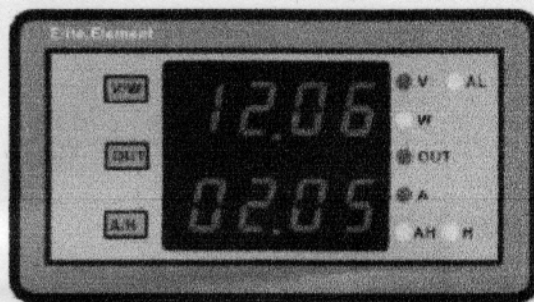## Features

- Combines many functions in one, Dual display for Voltage (V), Current (A), Power (W), Ampere-hour (Ah), Working Hours (H).
- Alarm control for over/under limit.
- Cut off output power for over/under limit.
  OCP over Current protection
  OAH over Charge protection
  OVP over Voltage protection
  OPP over Power protection
  OFT Over Time protection
  LOP Low Voltage protection

- Flexible On-line calibration function, calibrate Voltage and amps reading easily.
- Lowe power consumption.
- Expandable with ext'l Shunt and Relay.

## Specification

- Power Supply: DC5-40V
- Measuring range
  (1) Volt 0~90.0V / Amp 0~30.0A, external power supply, Three-wire system
  (2) Volt 5~40.0V / Amp 0~30.0A, Internal Power supply, Two-wire system
- Accuracy:
  Volt $\pm 0.1\%$ + 2byte, Amp $\pm 0.5\%$ + 3byte
- Resolution 0.01V, 0.01A, 0.01W, 0.01Ah, 0.01H
- Protect Type OCP, OAH, OVP, OPP, OFT, LOP
- Protection value
  OCP 0.01~ Upper limit
  OAH 0.01Ah~9999Ah
  OVP 0.1V~99.99V
  OPP 0.01W~9999W
  OFT 0.01H~99.99H
- Dimensions 79mm×43mm×30mm
- Panel cutout 76.5mm×39.2mm
- Response rate: 4.5S
- Display: 4 digits Red LED
- Operating Temperature: 0~50℃
- Operating Humidity: 35~85% RH
- Weight: 100g include expander board



## Common operation steps

1. Connect meter and expander board.
2. Connect Shunt in series with your power and load, please reference Figure 1, 2, 3 It doesn't require a power when input power between 5V~40V Two-wire).
3. By default, top line LED display Volts reading, bottom line display Amps reading.
4. Out LED is out when the power is applied, and there is no Output at the moment. Press button OUT, Out LED is on, and Output is available now.
5. Switch to Power (W), Charge capacity (AH) and Working hours (H) by Pressing V/W or A/AH button.

## Debug mode operation steps

1. Press and hold down the key OUT to access the Debug mode function, Press and hold down the key OUT again will quite menu without saving parameters.
2. [0-U] Calibrate Voltage reading, we need to calibrate high voltage point (20-30V)) and low voltage point (10-20V) Value. Press V/W and increase reading, press A/AH and reduce Value, repeat it 2-3 times and will get accurate reading.
3. [1-C] Calibrate Amps reading, we need to calibrate high amp point (2-30A) and low amp point (0-2A) reading. Press V/W and increase reading, press A/AH and reduce reading, repeat it 2-3 times and will get accurate reading.
4. [3-ON] Output ON/OFF switch, by default, it is Not available [-N-], Press V/W or A/AH and

change [-Y-].

5. [4-ES] Save parameters before quitting the menu, Press V/W or A/AH and select [-Y-] or [-N-].

6. [5-r] Factory Default.

7. [6-OV] to [12-L] for setting allowable limit value, all the default values is [0], it's not enabled by default. Press V/W and increase value, press A/AH and reduce value.

[6-OV] over Voltage protection
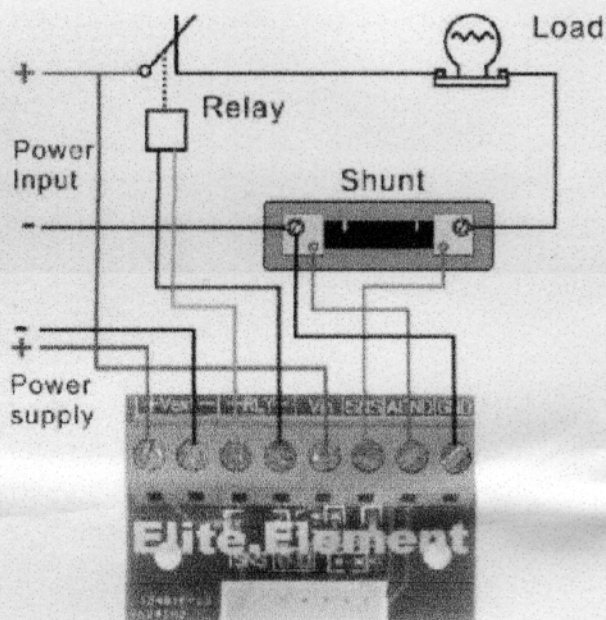[7-OC] over Current protection
[8-OP] over Power protection
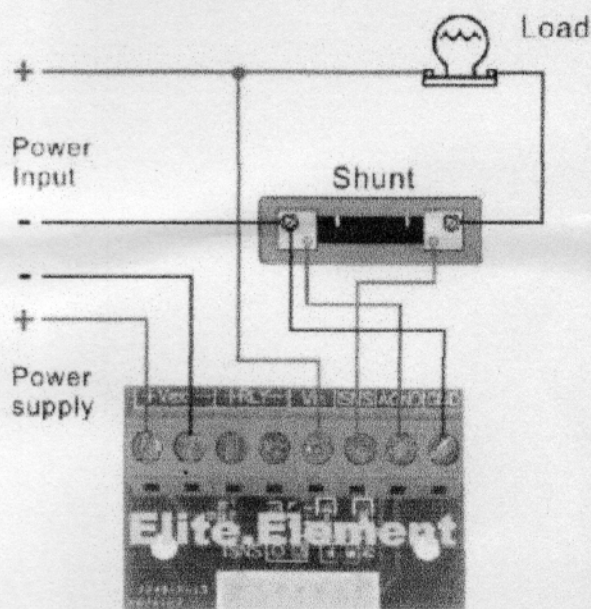[9-AH] over Charge protection
[10-H] Over Time protection
[12-L] Low Voltage protection

8. [14-L] Control relay
[-1-] Output high Level
[-0-] Output Low Level

## (2)Three-wire system



## (1)Full function system



## (3)Two-wire system