

# HB 416 PVA Single Phase Power/Wattage Meter by Annex Depot Inc CopyRight®

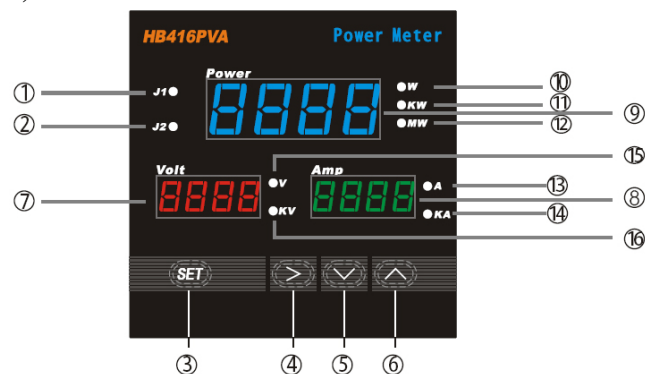
## Features

- Individual display for Power, Volt, I
- Wide range measurement can be achieved by using a proper coupling transformer(AC shunt)
- Auto range switching
- Two alarm output; Alarm or Control can be accomplished
- RS485 communication port.

## 1) Specification

- Input range: Current: 0~5A; Voltage: 0~500VAC
- Frequency: 50Hz or 60Hz
- Expandable(need coupling):  
Power -999MW~9999MW  
Voltage: 0 ~ 9999KV Current: 0 ~ 9999KA
- Volt/Current coupling ratio: 1~9999 programmable
- Current Input resistance: 0.002Ohm
- Accuracy: 0.5%
- LED Display: Power (Blue/0.56")  
Volt(Red/0.36"), Current(Green/0.36")
- Display Range: -999~9999
- Overload error: "EEEE"
- Operating Power: AC85~260V(DC85~360V)/4VA
- Temperature: 0~ +50°C
- Humidity: <<85% RH
- Relay: AC220V/3A
- Relay Life Span: 10^6
- Dimension: 96\*96\*82(mm), Mounting: 92\*92(mm)

## 2) Panel



- (1) J1 Alarm indicator  
(2) J2 Alarm indicator  
(3) Set  
(4) Selection  
(5) Decrement/Parameter Up  
(6) Increment/Parameter Dn  
(7) Voltage Display  
(8) Current Display  
(9) Power Display  
(10)(11)(12) Power Unit  
(13)(14) Current Unit  
(15)(16) Voltage Unit

## 3) Parameters Definition

(A)Parameter Setting Press **SET**, enter password: 0089

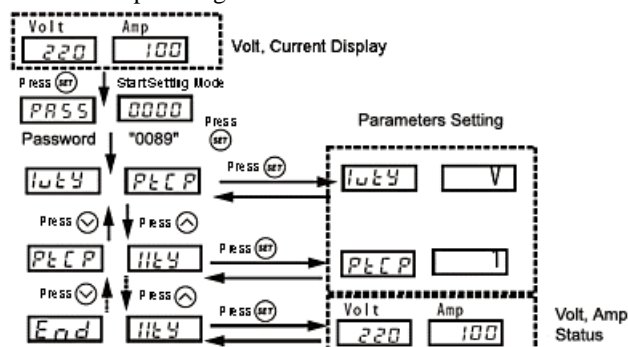
Symbol	Name	Definition	Unit, Range	Default	Note
lvty	lvty	Voltage	V, KV	V	
PtcP	PtcP	Volt Ratio	1~9999	1	
lity	lity	Current	A, KA	A	
CtPt	CtPt	Current Ratio	1~9999	1	
IPtY	IPtY	Power	W, KW, MW	W	
ld	ld	Local Address	0~260	0	
BAud	BAud	Baud Rate	1200, 2400 4800, 9600	9600	
End	End	End			



## Setting

- Press **SET** to enter programming mode
- Input Password using **>**, **<**, **▲**
- Press **<**, **>** to set parameters
- Press **SET** to save change

"0089" Group Setting flow chart



Other group setting are in the similar way

- Note: (1) If any input is over '9999', the controller will auto switch to another Unit; ex: 'W' will auto switch to "KW"  
(2) Coupling ratio for V and I is the ratio between the primary coil and the secondary coil

(B) Power Alarm Parameters( Press **SET**, enter password "0036")

Symbol	Name	Definition	Unit, Range	Default	Note
P-WS	P-WS	Power Alarm Pramotor	no, L, H, HL	no	
P--H	P--H	Upper Limit Alarm	0~9999	9999	
PHdI	PHdI	Upper Limit Alarm Differential Feedback	0~9999	0	
PH-o	PH-o	Upper Limit Relay(s)	0, 1, 2	0	
P--L	P--L	Lower Limit Alarm	0~9999	0	
PLdI	PLdI	Lower Limit Alarm Differential Feedback	0~9999	0	
PL-o	PL-o	Lower Limit Relay(S)	0, 1, 2	0	
End	End	End			

Note: (1) Alarm type

"No" - no alarm, "L" -lower limit alarm, "H" -upper limit alarm, "HL" - both upper and lower limit alarm

(2) Alarm & Diff. Feedback Unit &Decimal point setting

Use **>** to select the last LED, press again **>** and the decimal point will blink. Use **<**, **>** to set the decimal point Press **>** again and the "W" indicator will blink. Use **<**, **>** to set the Power unit

(3) Alarm Relay Output

After the Upper or Lower alarm initiated, you must select which relay to handle the output. Pick "0" if you don't want any output. Pick "1" if you want alarm J1 or pick "2" if you want alarm J2. You may set up multiple alarm at J1 or J2. By doing so, any alarm will activated the J1 or J2 relay

### (C) Current Alarm Parameters and setting

(Press **SET**, password: "0037")

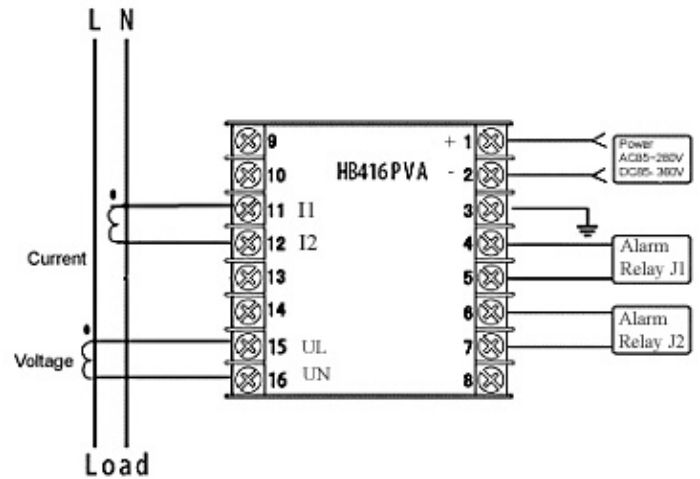
Symbol	Name	Definition	Unit, Range	Default	Note
<b>I-H S</b>	<b>I-WS</b>	Current Alarm Type	No, L, H, HL	no	
<b>I--H</b>	<b>I--H</b>	Upper Limit Alarm	0~9999	9999	
<b>IHdl</b>	<b>IHdl</b>	Upper Limit Alarm Differential Feedback	0~9999	0	
<b>Ih-o</b>	<b>Ih-o</b>	Upper Limit Relay(s)	0, 1, 2	0	
<b>I--L</b>	<b>I--L</b>	Lower Limit Alarm	0~9999	0	
<b>ILdl</b>	<b>ILdl</b>	Lower Limit Alarm Differential Feedback	0~9999	0	
<b>IL-o</b>	<b>IL-o</b>	Lower Limit Relay(S)	0, 1, 2	0	
<b>End</b>	<b>End</b>	End			

Volt Alarm Parameters (Setup: Press **SET**, Password: 0038)

Symbol	Name	Definition	Unit, Range	Default	Note
<b>V-H S</b>	<b>V-WS</b>	Voltage Alarm Type	No, L, H, HL	no	
<b>V--H</b>	<b>V--H</b>	Upper Limit Alarm	0~9999	9999	
<b>VHdl</b>	<b>VHdl</b>	Upper Limit Alarm Differential Feedback	0~9999	0	
<b>Vh-o</b>	<b>Vh-o</b>	Upper Limit Relay(s)	0, 1, 2	0	
<b>V--L</b>	<b>V--L</b>	Lower Limit Alarm	0~9999	0	
<b>VLdl</b>	<b>VLdl</b>	Lower Limit Alarm Differential Feedback	0~9999	0	
<b>VL-o</b>	<b>VL-o</b>	Lower Limit Relay(S)	0, 1, 2	0	
<b>End</b>	<b>End</b>	End			

Note: The setup for Volt & Current, value and Power setting are similar

### (E) Alarm Diagram



When current is lower than 5A and voltage is lower 500V, external coupling transformer is not necessary. See below

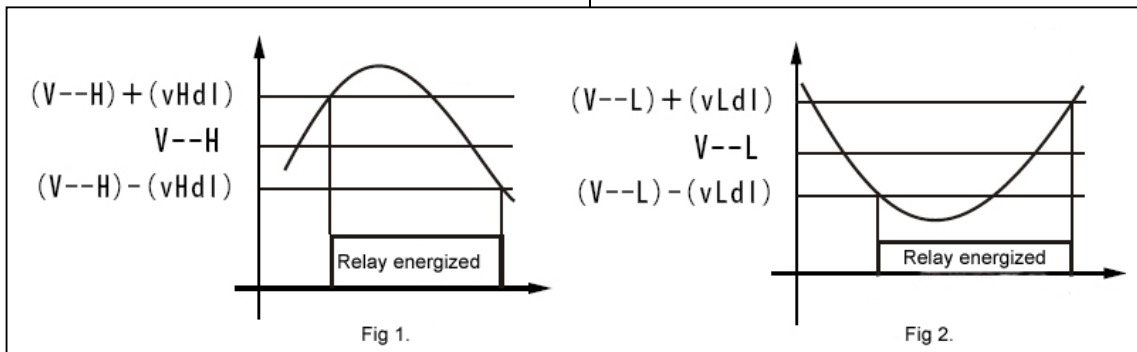
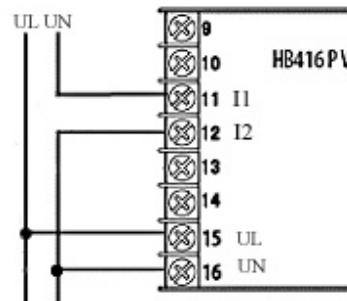
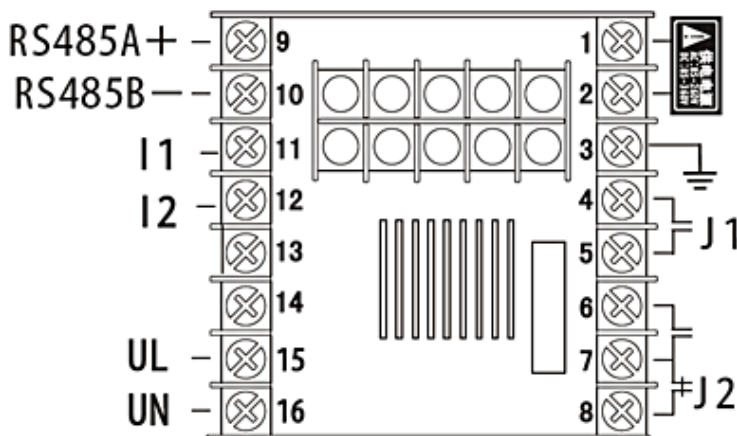


Fig1. Upper Limit Alarm

Fig2. Lower Limit Alarm

Terminal Layout



## Annex Depot Inc.

9688 Nature Trail Way, Elk Grove, CA 95757  
(916) 548-7974  
[www.lightobject.com](http://www.lightobject.com)  
Contactus@Lightobject.com