HB 404 DC Power/Wattage Meter

by Annex Depot Inc Copy Right®

Features

- Support DC input: 5A, 1A, 75mV, 100V, 500V
- Wide range measurement can be achieved by using a proper DC shunt
- Auto range switching: 0.001W-9999KW
- Two alarm output; Alarm or Control can be accomplished
- RS485 communication port(optional)

1) Specification

- Input range: Current: 0~9999A(need a DC shunt) : +/- 0.5%FS+3d; 0~500VDC (0.5% FS+3d)
- Input mode: Common Ground
- Sampling: 3times/sec
- Overload: “EEEE” or “-EEE”
- Expandable(need a proper DC shunt, programmable)
- Power 0.001W~9999KW
- DC Accuracy: +/- 1%
- LED Display: Power (Blue/0.56”)
- Operating Power: DC8-30V/2W
- Temperature: 0~ +50’C
- Humidity: <<85% RH
- Relay: AC220V/3A
- Relay Life Span: 10^5
- Dimension: 96*48*82(mm), Mounting hole: 92*44(mm)

2) Panel

(1) Display
(2) KiloWatt indicator
(3) Watt indicator
(4)J1 alarm indicator
(5)J2 alarm indicator
(6)Voltage indicator
(7)Current indicator
(8)Set/Confirm
(9) Selection key
(10) decrement/parameter up
(11)Increment/parameter down

3) Key setting

During the stage of measuring, Press ⊜ to select reading from P(watt), V, and I(amp). Press ⊜ for over 3’s, it will display P,V,I in sequence. Press ⊜ again will cancel it.

Parameter setup: Press (SET), enter pass code: 0036

Fig 1

Full scale value	Decimal point	Display	Resolution
0500	2	5.00	10mA
5000	3	5.000	1mA

Fig2

0	1	2	3
----	---.-	--.--	-.---

Setting

- Press (SET) to enter programming mode
- Input Password using ⊜, ⊙, ⊙
- Press ⊙, ⊙ to set parameters
- Press (SET) to save change

Measurement setup

Symbol	Name	Definition	Selection/Range	Default	Remark
A-Sn	A-Sn	Input Current Sets	5A/1A/75mV	5A	1
APvL	APvL	"Zero A Input" display	-1999~9999	0.000	2
APvH	APvH	Full scale display (A)	-1999~9999	5.000	3
Adot	Adot	Decimal point pos. (A)	0-3	3	4
U-Sn	U-Sn	Input Voltage Sets	500V/100V	500V	5
UPvL	UPvL	"Zero V Input" display	-1999~9999	000.0	
UPvH	UPvH	Full scale display (V)	-1999~9999	500.0	
Udot	Udot	Decimal point pos. (V)	0-3	1	
FILt	FILt	Digital filtering index	0-3	0	6
End	End	End of setup			

*1. Current Input (A-Sn): Input range 5A (-1A~5A), 1A(-0.2~1A), 75mV(shunt value: -15~75mV). Default: 5A
*2. Zero current input(APvL): Setup the meter how to display when the input current is “0.0A”. It serves as offset adjustment. Default: “0000”
*3. Full scale current display: (APvH): To display value when input current is at max. Resolution varies with this setting.
*4. Decimal point position: Can be set arbitrary
*5. Voltage Input(V-Sn): Voltage input range
500V (-100~500V); 100V(-20~100V)
*6. Digital filtering Index: Range: 0,1,2,3 where 0 means no filtering. 1=weak, 2=medium, 3=strong. The higher the index, the more stable of the display but w/ slower refresh rate

(B) Power Alarm Parameters(Press (SET), enter password “0001”)

Symbol	Name	Definition	Range	Default	Remark
AH1	AH1	Relay J1 latched	0~9999KW	0200W	7
AL1	AL1	Relay J1 unlatched	0~9999KW	0100W	
AH2	AH2	Relay J2 latched	0~9999KW	0200W	
AL2	AL2	Relay J2 unlatched	0~9999KW	0100W	
End	End	End of setting			

Note: The position of the decimal point change automatically when displaying the power.

To setup the alarm value or the decimal position:
Press ⊜, decimal point blink, press ⊙ or ⊙ to set the value

The setting of alarm is similar to the setting of measurement

*7 Alarm/relay(J1,J2) operation

AH1 & AH2 are the latched value, where AL1 & AL2 unlatched value

1. Set AH1=AL1(AH2=AL2), relay disable
2. Set AH1>AL1(AH2>AL2), when measured value ≥ AH1, the relay will latch; when AL1 ≥ measured value, relay unlatched. This is for 'upper limited' configuration. See Fig 1.
3. Set AH1<AL1(AH2<AL2), when AH1 ≥ measured value, the relay will latch; when measured value ≥ AH1, the relay unlatched. This is for the "lower limited" configuration. See Fig 2
4.

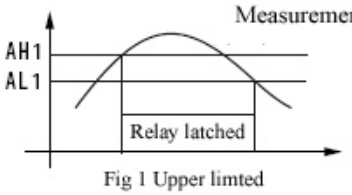


Fig 1 Upper limted

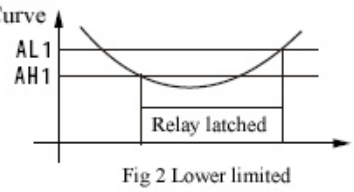


Fig 2 Lower limited

(III) Transmission Output (Press SET, enter code: 0042)

(note: this function does not apply to all model. It's optional)

1) Table of transmission parameters

Symbol	Name	Definition	Range	Default	Remark
obty	obty	Output mode	0-20/4-20	4-20	8
obL	obL	Output(lower)	0~9999KW	0000W	9
obH	obH	Output(upper)	0~9999KW	0200W	10
End	End	End of setting			

2) Procedures of setting up Transmission is similar to the measurement setup

3) Parameters definition:

*8 Transmission mode(obty): Output selection either in 0-20mA or 4-20mA

*9 Transmission lower limit(obL): output is either in 0mA or 4mA

*10 Transmission upper limit(obH): output is 20mA. Resolution varies depends on the obH setting. The smaller value of obH, the lower the resolution is. To set the decimal point, press ⊙ or ⊙ for W or KW selection

Setup Procedures:

1) Press SET to enter the programming stage
2) Use ⊙ ⊙ ⊙ to enter password
3) Use ⊙ ⊙ to set value
4) Press SET to confirm and save

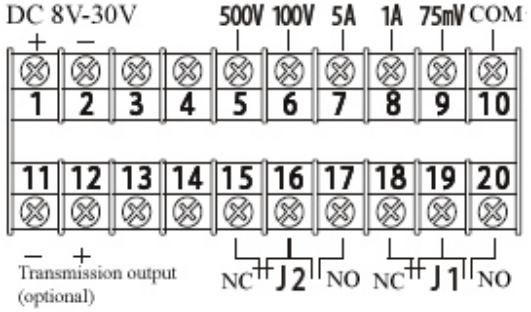
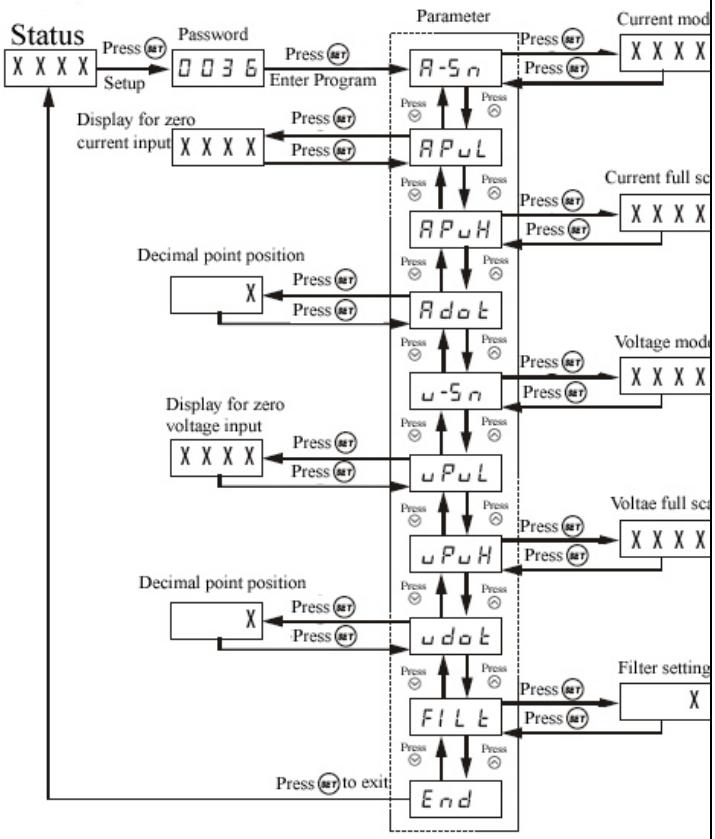


Fig 3

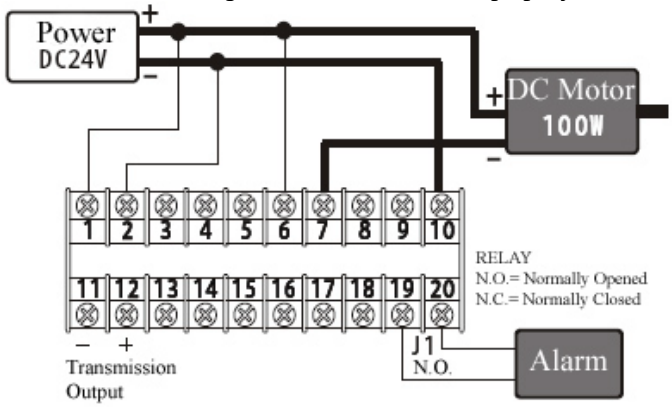


Example: Monitoring a DC motor (Power: 100W; DC24V, <5A or equal.

Condition requirement:

1) When power go over 110W, relay J1 latched to set off alarm
2) Convert 0-100W to 4~20mA for transmission output
3) Power is DC24V

To full this requirement, the meter must equipped with "Transmission output" and "relay output" functions. * ***Never 'jump' a short cable between #1 and #6. Doing so the meter will not read properly ****



Setup:

1)Enter password: 0036

Current mode: A-Sn = 5A, Current "zero input" APvL: 0.000;
Current full scale APvH: 5.000; Decimal point dot=3 (0.000~5.000A)
Voltage mode U-Sn: 100V; Voltage "zero input" UpvL= 000.0;
Voltage full scale: UpvH=100.0; Decimal point dot=2 (0.0~100.0V)

2) Enter password: 0001, set alarm

Set current upper limit J1 latched value(AH1)= 110.0W
Set current lower limit J1 unlatched value(AL1) = 109.5W
Set voltage upper limit J2 (AH2) = 200W;
Set voltage lower limite J2 (AL2) = 200W; (AH2=AL2, disable J2)

3) Enter password: 0042

Set obty = 4~20mA, set obL = 0000W, set obH= 0100W

End

Annex Depot Inc.
9688 Nature Trail Way
Elk Grove, CA 95757
(916) 548-7974
http://www.lightobject.com
Support & forum:
http://support.lightobject.com
Contactus@actionbuy.com