

# Digital Battery Voltage Monitor – BAMVI v1.1 (2 Contacts)

## FEATURES

- LCD display for voltage
- Digital presettable thresholds for voltage and delays
- Three push buttons for selecting display measurement and accessing the menu
- Colored leds to indicate battery status
- Wiring through plug in connector
- Case conforms to DIN 43 880 of the British Standard
- Fits onto 35mm symmetric DIN rail to BS5584 (EN 50 022, DIN 46277-3)
- Humidity class, DIN 40040
- Environmental protection, DIN 40 050

## ABSOLUTE MAXIMUM RATINGS

Supply DC voltage	48 volts
Auxiliary contact	8A ac1
Operating temperature	0 to 70°C

## OPERATION

Battery voltage and charging current as well as produced (by the solar panel), consumed energy in KWh and battery capacity in Ah are measured and displayed. The up and down push buttons are used to scroll between the battery capacity in Ah (**Ah**) which is the default display reading after power-up, produced energy (**EnP**), consumed energy (**Enc**), battery voltage (**bAt**) and charging current (**cur**). A positive current causes the **EnP** counter to accumulate whereas a negative current causes the **Enc** counter to accumulate. A positive current causes the **Ah** counter to increment up to the battery capacity (**cap**) set in the menu; whereas a negative current causes the **Ah** counter to decrement. Following is a description of the operation of this device:

1. The first auxiliary power source is turned on (output relay de-energizes) after elapse of time set in “**ON DELAY**” when the voltage per battery goes below “**ON VOLT THR**”. Yellow led labeled **AUX. OFF** goes off simultaneously.
2. The first auxiliary power will remain ON for a minimum time set in “**RUN TIME MIN**”. After the elapse of this time, the auxiliary power source will be turned off (output relay energizes) when the voltage per battery goes above the voltage set in “**OFF VOL THR**” and the charging current goes below the current set in “**OFF CUR THR**” (Current must be greater than zero). Yellow led labeled **AUX. OFF** goes ON.
3. The second auxiliary power source is turned on (output relay de-energizes) after elapse of time set in “**ON DELAY2**” when the voltage per battery goes below “**ON VOL THR2**”.
4. The second auxiliary power will remain ON for a minimum time set in “**RUN TIM2 MIN**”. After the elapse of this time, the auxiliary power source will be turned off (output relay energizes) when the voltage per battery goes above the voltage set in “**OFF VOL THR2**”.

## DISPLAY DESCRIPTION

The produced energy and consumed energy are displayed as follows:

Energy range	Format
Up to 0.99KWh	###WWh
1 to 9.99KWh	#.##KWh
10.0 to 99.9KWh	##.# KWh
100KWh and above	#####KWh

The current is displayed as follows:

Current range	Format
-300 to -200A	-.## in KA
-199 to -20A	-### in A
-19.9 to -0.1A	-##.# in A
0 to 99.9A	##.# in A
100 to 300A	### in A

## SETTING

Press the push button in the middle to access the parameters menu. The up and down push buttons are used to scroll up and down respectively in the menu list. Pressing the push button in the middle will edit the value of the parameter displayed. Use the up and down push buttons to respectively increase and decrease the value. Press the push button in the middle to save new value. **FACTORY RST** requires the user to confirm the action by pressing the middle push button. Following is a description of the parameters:

Display	Description	Range	Factory setting
<b>NBRE OF BATT</b>	Number of Batteries	1 to 20	1
<b>ON VOLT THR</b>	On Voltage threshold for auxiliary output1 per battery	0 to 99.9	44 volts
<b>ON DELAY</b>	On delay in seconds for auxiliary output1	0 to 255 sec	2 sec
<b>NBR OF TURNS</b>	Number of turns	1 to 255	1
<b>OFF CUR THR</b>	Off Current threshold	0 to 255	2A
<b>OFF VOL THR</b>	Off voltage threshold for auxiliary output1 per battery	0 to 99.9	47 volts
<b>RUN TIME MIN</b>	Minimum run time for auxiliary output1 in minutes and seconds	0 to 9'99"	0'00"
<b>SENSING VOLT</b>	Voltage sensing range LOW (Voltage<=56V), sensing voltage connected to terminal <b>LV</b> HIGH(Voltage>56V) , sensing voltage connected to terminal <b>HV</b>	LOW(0) HIGH(1)	LOW
<b>CAPACITY</b>	Battery capacity	0 to 500	50
<b>MIN CAP</b>	Minimum capacity	0 to 255	150
<b>CONTRAST</b>	LCD Display contrast	0 to 63	5



<b>ON VOL THR2</b>	On Voltage threshold for auxiliary output2 per battery	0 to 99.9	48 volts
<b>ON DEL2</b>	On delay in seconds for auxiliary output2	0 to 255	2 sec
<b>OFF VOL THR2</b>	Off voltage threshold for auxiliary output2 per battery	0 to 99.9	51 volts
<b>RUN TIM2 MIN</b>	Minimum run time for auxiliary output2 in minutes and seconds	0 to 959	0 sec
<b>ENERGY CLR</b>	Clear energy counters	-	-
<b>FACTORY RST</b>	Load Factory settings	-	-
<b>EXIT</b>	Exit menu	-	-

## INSTALLATION

1. Supply Voltage: Connect terminals +, - to the positive and negative sides of the power supply respectively (48Vdc).
2. Sensing Voltage Input :
  - For up to 56Vdc: Connect the voltage to be sensed to terminal **LV**.
  - For up to 322Vdc: Connect the voltage to be sensed to terminal **HV**.
3. Auxiliary Output1: Connect terminals 5, 6 and 7 as desired.
4. Auxiliary Output2: Connect terminals **COM2, NO2, NC2** as desired.
5. Current Sensing: With the BAMVI held up-right, the wire from the source should enter from the left side through the body of the BAMVI and connect to the battery.



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