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

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 positive). 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"**.
5. Full led turns **ON** and auxiliary power source turned off (output relay energizes and Yellow led labeled **AUX. OFF** goes **ON**) when the charging current goes below the current set in **"OFF CUR THR"** (Current must be positive) and the voltage per battery goes above the voltage set in**"** **OFF VOL THR"**. Full led turns **OFF** when the voltage per battery goes below the voltage set in**"** **OFF VOL THR" - 6%.**
6. Charging led turns **ON** when the charging current goes above the current set in **"OFF CUR THR"** (Current must be positive).
7. Discharging led turns **ON** when the absolute value of the charging current goes above the current set in **"OFF CUR THR"** (Current must be negative).

DISPLAY DESCRIPTION

The produced energy and consumed energy are displayed as follows:

Energy range	Format
Up to 0.99KWh	###Wh
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*
NBRE OF BATT	Number of Batteries	1 to 20	1
ON VOLT THR	On Voltage threshold for auxiliary output1 per battery	0 to 99.9	44 volts
ON DELAY	On delay in seconds for auxiliary output1	0 to 255 sec	2 sec
NBR OF TURNS	Number of turns	1 to 255	1
OFF CUR THR	Off Current threshold	0 to 255	2A
OFF VOL THR	Off voltage threshold for auxiliary output1 per battery	0 to 99.9	47 volts
RUN TIME MIN	Minimum run time for auxiliary output1 in minutes and seconds	0 to 9'99''	0'00''
SENSING VOLT	Voltage sensing range LOW (Voltage<=56V), sensing voltage connected to terminal **LV**	LOW(0) HIGH(1)	LOW

HIGH(Voltage>56V) , sensing voltage connected to terminal **HV**

CAPACITY	Battery capacity	0 to 500	50
MIN CAP	Minimum capacity	0 to 255	150
CONTRAST	LCD Display contrast	0 to 63	5
ON VOL THR2	On Voltage threshold for auxiliary output2 per battery	0 to 99.9	48 volts
ON DEL2	On delay in seconds for auxiliary output2	0 to 255	2 sec
OFF VOL THR2	Off voltage threshold for auxiliary output2 per battery	0 to 99.9	51 volts
RUN TIM2 MIN	Minimum run time for auxiliary output2 in minutes and seconds	0 to 959	0 sec
ENERGY CLR	Clear energy counters	-	-
FACTORY RST	Load Factory settings	-	-
EXIT	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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