

OPERATING MANUAL

VAM7520P Voltage Meter

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1. Contact

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2. Inspecting Package Contents

When you get a new VAM7520P Voltage Meter, please inspect the instrument as follows:

2.1 Check if there is damage due to transportation

If the package is damaged, please retain them until the instrument and accessories are tested.

2.2 Check package contents

Contents of the case are as bellows, if the content does not match with the packing list or the instrument is damaged, please contact us.

VAM7520P Voltage Meter	1pc
User manual(pdf)	1pc

2.3 Check the machine

If the machine was damaged; did not work properly or failed to pass performance tests, please contact your dealer or our company.

3. Summary

3.1 Brief introduction

VAM7520P is a new-type voltage meter which can measure

voltage,current,power,charging capacity and time at the same time. It also can set the over voltage protection,over current protection,over power protection, over charging capacity protection,over time protection and low-voltage protection.The voltage meter adopts two groups of LED digital tubes to display the data. The meter can switch the display among different physical quantities.This meter is ideal for monitoring the output voltage and current, as well as the battery charge and discharge applications.

3.2 Main function

- 1、Dual display for voltage and current, and available for switching display power, charge capacity and time.
- 2、Flexible calibration function, you can calibrate the voltage and current value by yourself.
- 3、4-bit LED digital tube, in which 3-bit for measuring and one-bit for the unit.
- 4、With an output shutdown function key, you can turn on or off the output flexibly.
- 5、With over voltage, low-voltage, over current, over power,over charging and over time protection functions.

3.3 Technical data

Item		Parameter
Input voltage	Two wire system	10V~75V
	Three wire system	0~75V
Output current		0~20A
Display		4 bit LED (3 bit for value and 1 bit for unit)
Display resolution	Voltage	0.01V
	Current	0.01A
	Power	0.01W
	Capacity	0.01AH
	Time	0.01H
Accuracy	Voltage	$\pm 1\% + 2$ bytes
	Current	$\pm 2\% + 5$ bytes
Measuring rate		5times/s

VAM7520P Voltage Meter

Protection types	OVP(Over-voltage protection)	0.01V~75V
	OPP(Over power protection)	0.01W~9.99kW("P" represents W , "P." represents kW)
	OCP(Over-current protection)	0.01~20A
	OAH(Over charge protection)	0.01AH~999AH
	OFT(Overtime protection)	0.01 hour~99.9 hour
	LoP(Low-voltage protection)	
Dimensions(W*H*D)		79×43×52 (mm)
Installing hole (mm)		76.5*39.2 (mm)

3-1 Technical data

4.Instrument Introduction

4.1 Structure Description



Item	Introduction
1	Button
2	LED digital tube
3	Operation Tips

4-1 The introduction of VAM7520P

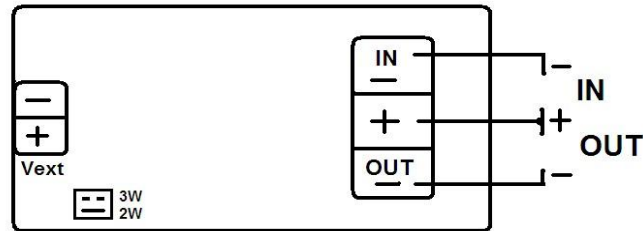
4.2 Wiring

On the back of the meter there are three terminals on the right, they are "IN—", "+", and "OUT—", the "+" is the public terminal of "IN +" and "OUT +" , the

“Vext” on the left side of the meter, it is used for three-wire system.

This meter has two-wire and three-wire dual input methods. Two wire system can connect the meter to the circuit directly, three-wire system requires an external power supply for the instrument.

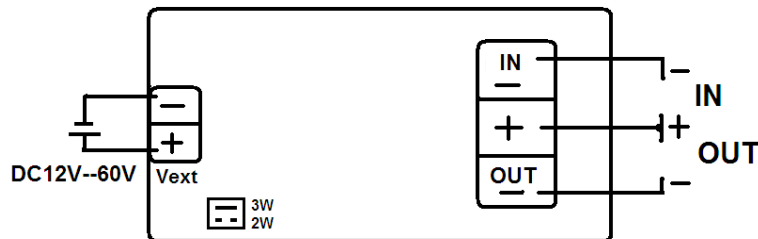
4.2.1 Two-wire wiring diagram and methods



4-2 Wiring diagram of two-wire

There are three terminals on the right side, top down, they are “IN—”, “+” and “OUT—”, the “+” is the public terminal of “IN +” and “OUT +”. Be careful not to reverse, the jumper cap in the lower left corner should be picked up on the 2W.

4.2.2 Three-wire wiring diagram and methods



4-3 Wiring diagram of three-wire

There are three terminals on the right side, top down, they are “IN—”, “+” and “OUT—”, the “+” is the public terminal of “IN +” and “OUT +”. Be careful not to reverse, the jumper cap in the lower left corner should be picked up on the 3W.

Two terminals "Vext (+, -)" at the left end require an external power supply of the meter, the voltage of the external power supply is DC12V ~ 60 V, three-wire system can measure voltage under 10V.

5. Operation

5.1 Wiring



Select the appropriate wiring according to the range of the measured voltage, ensuring input voltage is within the tolerance range of the instrument.

Note: The input voltage range of two-wire : 10V ~ 75V;

The input voltage range of three-wire : 0V ~ 75V.

5.2 Output

Power on, the above digital tube will display voltage value in default, the below digital tube will display “- OFF” in default, it means that the output is turned off , press the “OUT” button to output .

Press the  button to select the above display of the digital tube, press the  button to select the below display of the digital tube. Flexibility to switch the display of voltage (V), current (A), power (P), capacity (C) and time (H).

If you want to open the output function when boot, you need to enter debug mode.

In addition, the following settings are also need to enter debug mode, respectively:



- 1, You need to enable the overvoltage protection (OVP), under voltage protection (LoP), over current protection (OCP), over power protection (OPP), over-charging capacity protection (OAH) and overtime protection (OFT)
- 2, When there is a certain error of the measured voltage or current value and need to be calibrated.
- 3, When the parameters are confused, need to restore factory settings.



5.3 Debug mode



Enter debug mode : In the normal state, press the < OUT >key for a while, you have entered the debug mode when the the upper row of digital tube displays "0-U ", press < OUT > key again , the upper row of digital tubes display alternately among “0 - U”, “1 -C”, “2 - ES”, “3 - r”, “4 -ON” , “5 - OV”, “6 - OP”, “7 - OC”, “8 - AH”, “9 - Hr” and “10 - L” ,each one represents a function.



Exit debug mode : In the debug mode, you can exit by pressing the < OUT > button for a while.



5.4 The functions of debug mode

5.4.1 "0 - U" is the calibration of the voltage value, the voltage value displays in the digital tube is the current measure value. We can choose two points to calibrate the voltage. Generally, we choose 32V as the high voltage point, 12V as the low voltage point. The demarcation criterion of highs and lows is 20V. Above 20V is the high point voltage in default, less than 20V is the low point voltage in default. Now we can compare to a standard voltmeter, press  key to increase the voltage measure, press  key to decrease the voltage measure, two points will affect each other. After adjusting back and forth 2-3 times, the measured values can be consistent with the values of the standard voltmeter.

5.4.2 "1 - C" is the calibration of the current value, the current value displays in the digital tube is the current measure value. We can choose two points to calibrate the voltage. Generally, we choose 3A as the high current point, 0.1A as the low current point. The demarcation criterion of highs and lows is 2A, Above 2A is the high point current in default, less than 2A is the low point current in default. Now we can compare to a standard ammeter, press  key to increase the current measure, press  key to decrease the current measure, two points will affect each other. After adjusting back and forth 2-3 times, the measured values can be consistent with the values of the standard ammeter.

5.4.3 "2 - ES" is the function to save parameters. When you need to save parameters, adjusting to the "2 - ES", the digital tube displays "-n-" by default, indicating that don't save the parameters, you can adjust to "- y -" by pressing  or , then press < OUT >, the meter will save parameters and exit the debug mode automatically.


5.4.4 "3 - r" is to restore factory settings, if you want to return to the initial value, you can adjust to "- y -" by pressing  or , then press < OUT >, it will restore to the factory setting.


5.4.5 "4 - ON" is to set whether the output is open or not when boot, the default display is "- n -," indicating not open, if you want to output when boot, you can adjust to "- y -" by pressing  or , then save the parameters.

5.4.6 "5 - OV" over voltage protection (OVP), if you have set the OVP value, when the input voltage exceed the setting value, the machine will automatically cut off the output, at the same time the screen displays protection type is " OVP," press any key to return to normal.

5.4.7 "6 - OP" over power protection (OPP), if you have set the OPP value, when the actual output power exceed the setting power, the machine will automatically cut off the output, at the same time the screen displays protection type is "OPP", press any key to return to normal.


5.4.8 "7 - OC" over current protection (OCP) , if you have set the OCP value, when the output current exceed the setting value, the machine will automatically cut off the output, at the same time the screen displays protection type is "OCP", press any key to return to normal.

5.4.9 "8 - AH" over charging capacity protection (OAH), if you have set the OAH value, when the output AH exceed the setting value, the machine will automatically cut off the output, at the same time the screen displays protection type is "OAH". What should be noted is that the AH value is a cumulative value, once exceed, it will not output again , at this time, you can press  for a while to clear electric quantity value and time value to ensure that the electric quantity can be output again .

5.4.10 "9 - Hr"over time protection (OFT), if you have set the OFT value, when the output time exceed the setting time , the machine will automatically cut off the output,at the same time the screen displays protection type is "OFT". If you need to output again , you can press  for a while to clear the time .

5.4.11 "10 - L" low-voltage protection (LoP), if you have set the LoP value, when the output voltage is less than the setting voltage, the machine will automatically cut off the output, at the same time, the screen display protection type is "LoP", press any key to return to normal.

Attentions: "5 - OV" to "10 - L" represent the different protection setting values, the default is 0, indicating don't use the protection functions, the non-zero parameter means using the protection function, after setting the parameters, it need to be saved in "2 - ES".

If you have set the protection function of the meter, and want to return to the not enable state, you can press  button for a while under the normal mode.

6. Cautions

6.1 Don't exceed the range of the meter, otherwise it will damage the module.

6.2 Connect input and output properly, it is forbid to reverse connection, otherwise it will not measure correctly.

6.3 Operating temperature is from -10 to 50 degrees Celsius, and storage temperature is from -20 to 70 degrees Celsius; make sure the instrument kept dry.

6.4 Do not attempt to disassemble the instrument, destroying the package will void the warranty, this instrument has no user-serviceable parts inside, if it need to be repaired, you can repair it by specifying outlets, or return to the factory for repair.

6.5 Do not move the instrument violently as it is working to avoid irreparable damage to the internal circuitry.

7. Warranty and service

Thank you for purchasing our products. To maximize the use of the new product features, we recommend that you take the following steps:

- 1 Read safe and efficient use instruction.
- 2 Read the warranty terms and conditions.

We warrants to the original purchaser that its product and the component parts

thereof will be free from defects in workmanship and materials for a period of one year from the data of purchase.

We will repair or replace, at its' option, defective product or component parts. Returned product must be accompanied by proof of the purchase date.

Exclusions: This warranty does not apply in the event of misuse or abuse of product or as a result of unauthorized alternations or reapers. It is void if the serial number is alternated, defaced or removed.