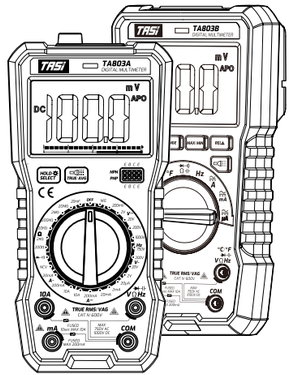
TA803A / TA803B

Digital Multimeter

Instruction manual



Pack #:PB01-9969

Thank you very much for your patronage and choosing our products. Before you use this product please read this manual carefully as it will familiarize you with the correct operating procedure of our TASI product.

Summary

TA803A is 3 1/2 automatic digital instrument, with a stable performance, high precision, high reliability; with battery-driven automatic digital multimeter, the instrument adopts 21mm high LCD display, clear reading; About 15 seconds delay backlight, high pressure alarm and overload protection. It will more convenient to use. This series of instruments can be used to measure the DC voltage and AC voltage DC current and AC current; resistance;capacitance;diode;on-off test;True RMS measurement;frequency parameters is a superior performance instrument, is an ideal tool for the laboratory, factory, radio enthusiasts.

Safety Precautions

This series of instruments is designed to comply with IEC1010 (International Electrotechnical Commission promulgatedsafety standards), before use, please read the safety precautions.

- *When measuring the voltage, please input the limit voltage of DC 1000V or AC 750V rms;*
- *The voltage below 36V is safe voltage. When measuring above 36V DC and 25V AC voltage, check whether test pen is reliable contact or right connected or good insulation properly, whether insulation is good and so on, in order to avoid electric shock;*
- *When Change function and range, test pen should leave thetest point;*
- *Select the correct function and range, guard against accidental operation. The series of instruments although there is full-range protection, but for safety reasons, you still pay more attention;*

- *When measuring current, do not input batteries more than 10A. Safety Symbol Description"⚠"Exist dangerous voltage . "⏚" Ground . "⧈" Double insulation. "⚠"Operator must refer to the instruction manual. "🔋"Low voltage symbol.*

Characteristics

General Characteristics

- *Display, liquid crystal display (LCD);*
- *Maximum display: 1999 (3 1/2) bits automatic polarity display;*
- *Measurement: double integral A / D conversion;*
- *Sampling rate: about 3 times per second;*
- *Overrange display: the most significant bit was "0L";*
- *Low voltage display:"🔋" symbol appears;*
- *Working environment: (0 ~ 40) °C, relative humidity <80%;*
- *Power supply:9V;*
- *Volume (size):184 x 90 x 46 mm(L x W x H);*
- *Weight: about 320g (including 9V battery);*
- *Attachment: a manual,a certificate,a box,a pair of pen,K-type thermocouple.*

Technical characteristics

- *Accuracy (reading data of a%+ least significant digits), guaranteed accuracy environment temperature: (23±5)°C.Relative humidity <75%,calibration guarantee period from the date of manufacture for one year.*
- *Performance:*

Symbol function	2000 counts
DC voltage DCV	▲
AC voltage ACV	▲
AC DC current mA/uA	▲
AC DC current 10A	▲
Resistor \diode\ on-off	▲
Capacitance C	▲
Auto on off	▲
Backlight Display	▲
Unit symbol display	▲
True RMS measurement	▲
Electricfield measurement	▲

DC voltage(DCV)

Range	Resolution	Accuracy
200mV	100μV	±(0.5%+3)
2V	1mV	
20V	10mV	
200V	100mV	
1000V	1V	±(1.0%+10)

Input impedance:10MΩ Overload protection:200mVrange is 550V DC or AC peak;
The rest is 1000V DC or 750V AC peak.

AC voltage RMS (ACV)

Range	Resolution	Accuracy
2V	1mV	±(0.8%+3)
20V	10mV	
200V	100mV	
750V	1V	±(1.2%+10)

Input impedance: 10MΩ
Standard sine wave and triangular wave frequency response:40 Hz-1kHz;
Other waveform frequency response: 40Hz-200Hz.

DC current

Range	Resolution	Accuracy
20μA	0.01μA	±(1.2%+8)
2mA	1μA	
20mA	10μA	
200mA	100μA	
10A	1mA	±(1.5%+10)

The maximum measured pressure drop: 200mv
Overload protection:200:200mA / 250V speed
Glass Fuse: 10A: 10A / 250V ceramic speed fuse.

AC current

Range	Resolution	Accuracy
20mA	10μA	±(2.0%+5)
2000mA	100μA	
10A	10mA	±(3.0%+10)

The maximum measured pressure drop: 200mv
Overload protection 200mA: 200mA / 250V speed
Glass Fuse 10A: 10A / 250V ceramic speed fuse Frequency response:Sine wave and triangular wave is 40Hz-1Kz;
other waveform is 40Hz-200Hz;
Display: True RMS.

Resistance

Range	Resolution	Accuracy
200Ω	0.1Ω	±(0.8%+5)
2KΩ	1Ω	±(0.8%+3)
20KΩ	10Ω	
200KΩ	100Ω	
2MΩ	1KΩ	
20MΩ	10KΩ	±(5.0%+30)

measurement: Open circuit voltage: less than 3V; overload protection: 550V DC or AC peak;

- *In the use of 200Ω range, you should first short-circuit test leads, measured lead resistance, and then subtracted from the real;*
- *When measures larger than 1MΩ resistance, the slow reading is a normal phenomenon, please read the value after show stability.*

NCV measurement

When dial to the measurement ncv function, the instrument approached electric field. beep sound changes according to the strength of the electric beep intermittent sounds also from strong to weak.

Capacitance

Range	Resolution	Accuracy
20nF	10pF	±(3.5%+20)
200nF	100pF	
2μF	1nF	
20μF	10nF	±(5.0%+10)
200μF	100nF	
2000μF	1μF	
20000μF	1μF	

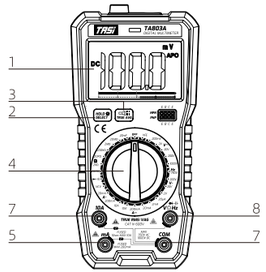
Overload protection: 550V DC or AC peak
Input sensitivity: 1V RMS; overload protection; 550V DC or AC peak (not more than 10 seconds).

Diodes power-on test

Range	Display value	Test Conditions
⊣◀ ·)) Ω ⊣⊢	Diode forward voltage drop	Forward DC current about 1mA Open circuit voltage about 3V
	The buzzer long sounds Test the resistance of two points less than (50±20)Ω	Open circuit voltage about 3V

Overload protection: 550V DC or AC peak
Warn :for safety. within this range, It is Prohibited to input the voltage value.

Use Method



Operation panel instructions (see right graphic)

1 LCD display;
2 HOLD/Backlight selection;
3 RMS/AGV/ Press more than 2 seconds voice selection key, press more than 3 seconds flashlight key;
4 Function selection switch;
5 mA/uA current input socket;
6 10A current input socket;
7 COM input,negative input,black table into the pen;
8 voltage,resistance,diodes,capacitors,frequency,"+" Input.

DC voltage measurement

- *Insert the black test lead into the "COM" socket.The red test pen into the "V /Ω/ Hz" jack;*
- *Turn the range switch to the DC voltage measurement mode;*
- *The test pen to reliably touch the test point,the screen shows the measured voltage value,display the DC voltage measured, the red pen is connected to the point of the polarity of the voltage.*

Note:

- *Do not input voltage exceed DC1000V or AC750V,if do, there will damage the instrument circuit;*
- *When measuring high voltage circuit,pay special attention to avoid electric shock;*
- *After completing all measuring operations,disconnect the test leads from the circuit under test.*

AC voltage measurement

- *Insert the black test lead into the "COM" socket while the red test lead into the "V /Ω/ Hz" jack;*
- *Turn the range switch to the AC voltage auto measurement mode.*

Note:

- *Before test there exits some residual numbers in the range,but does not affect the measurement accuracy;*
- *Do not input voltage exceed 750Vrms,if do,there will damage the instrument circuit;*
- *When measuring high voltage circuit, pay special attention to avoid electric shock;*
- *After completing all the measuring operations, disconnect the test leads from the circuit under test.*

DC current measurement

- *Insert the black test lead into the "COM" socket,insert the red test lead into the"mA /uA"jack (max. 200mA),or insert the red test lead into"10A"(max.10A);*
- *Turn the range switch to the corresponding DCA position,then insert the instrument into the circuit pending to test.The current value of the measured current and the polarity of the red test point will also be displayed on the screen at the same time.*

Note:

- *The instrument series connection to the circuit pending to test before the circuit should be the first power off;*
- *The maximum input current is 200mA or 10A (depending on the location of the red test pen inserted), excessive current will damage the mA file fuse. when measures 10A to be careful,each measurement time shall not exceed 10 seconds,Too much current will make the circuit heat, or even damage the instrument;*
- *When the test leads are plugged into the current input terminals, do not connect the test leads to any circuit in parallel or it will damages the fuses and the instrument;*
- *After the completion of all measurement, at first you should turn off the power and disconnect the test leads than measured circuit connection,this is more important to high current;*
- *Forbidden to input more than 36V DC,25V AC voltage between the current jack and the "COM" jack.*

AC current measurement

- *Insert the black test lead into the "COM" socket, insert the red test lead into the "mA / uA" jack (max. 200mA),or insert the red test lead into "10A" (max.10A); Default value for the dc current.Choose"SELECT" key to switch between AC and DC current;*
- *Turn the range switch to the corresponding DCA position, and then insert the instrument into the circuit pending to test.The measured current value and the current polarity of the red test point will also be displayed on the screen at the same time.*

Note:

- *the instrument series connection to the circuit pending to test before the circuit should be power off firstly;*
- *If there is no concept of the measured current range in advance,the range switch should be transferred to the highest range,and then according to the display value to the corresponding file; such as the screen display"OL" that has exceeded the range, needed to turn the range switch to the appropriate gear;*
- *The maximum input current is 200mA or 10A (depending on the location of the red test pen inserted), excessive current will damage the mA file fuse in the measurement of 10A to be careful,each measurement time shall not exceed 10 seconds,Too much current will make the circuit heat, or even damage the instrument;*
- *When the test leads are plugged into the current input terminals,do not connect the test leads to any circuit in parallel .or it will damage the fuses and the instrument;*
- *After completion of all measurement operation,you should firstly turn off the power,disconnect the test leads to the measured circuit,especially to high current Measurement;*
- *It is forbidden to input more than 36V DC,25V AC voltage between the current jack and the "COM" jack.*

Resistance Measurement

- *Insert the black test pen into the "COM" socket while the red test pen leads into the "V /Ω/ Hz" jack;*
- *Rotate the dial to the "⏛" position, trigger the"SELECT" key and select the resistance grade for automatic measurement;*
- *Connect the two test pens leads across the measured resistance.*

Note:

- *If the measured resistance is open or resistance exceeds the selected range, the display will show "OL". When the measured resistance value exceeds 1MΩ, the reading takes several seconds to stabilize.It is normal when measuring high resistance;*
- *When measuring low resistance, the table will bring the internal resistance, in order to obtain accurate readings, you can firstly record the short-circuit value of the table pen,by testing value minus the short-circuit value;*
- *When measuring the on-line resistance, pls make sure that all the circuits under test must be turned off and all capacitors fully discharged in order to ensure the measured value accurately;*
- *Do not enter the voltage in the resistance range,which is absolutely prohibited, although the instrument in the gear on the voltage protection.*

Capacitance Measurement

- *Insert the black test pen leads into the"COM"socket while the red test pen leads into the"V /Ω/ Hz"jack;*
- *Rotate the dial to the " ⏛ " position,trigger the"SELECT" key,and select the capacitance profile for automatic measurement;*
- *Then connect the test leads across the measured capacitance.*

Note:

- *When measuring the capacitance with 10nF range,there may be residual reading on the screen display value. which is the distributed capacitance of the test pen.For an accurate reading,which can be subtracted after measurement;*
- *When large capacitance stalls is measuring serious leakage or breakdown capacitor, it will show some unstable values;it is normal that be measuring large capacitors,the reading takes a few seconds to stabilize;*
- *Please test the capacitor capacity before the capacitor should befully discharged to prevent damage to the fuse and instrumentation;*
- *Unit:1F=1000mF 1mF=1000uF 1uF=000nF 1nF=1000pF.*

Diodes and on-off test

- *Insert the black test lead into the"COM"socket while the red test lead into the"V /Ω/ Hz"jack (note the polarity of the red test pen is"+");*
- *Set the range switch to" ⏛ "grade,trigger the"SELECT" key,select the diode measurement,and connect the test leads to the diode was not tested.The reading is an approximation of forward voltage drop of the diode.For silicon PN junction, 500niV~800niV confirmed as normal; if the measured diode open circuit or reverse polarity, then display"OL";*
- *Trigger the"SELECT"key to select the buzzer measurement and connect the test leads to two points of the circuit pending test.If the built-in buzzer sounds and the on-off alarm indicator is on,the resistance between the two points is below(50±20)Ω.*

Note :

Do not input voltage symbol,so as not to damage the instrument.

Frequency Measurement

- *Insert the test leads or shielded cable into the "COM" and "V /Ω/ Hz" jacks;dial to"Hz";*
- *Turn the range switch to the frequency range,and connect the test leads or cables across the signal source or load under test.*

Note:

- *When the input exceeds 10V rnis,you can read,but may be weak;*
- *In noisy environment,it is better to use shielded cable when measuring small signal;*
- *In the measurement of high voltage circuit,with particular attention to avoid electric shock;*
- *Do not input more than 250V DC or AC peak voltage,so as not to damage the instrument.*

keep data/backlight is on/off

Press "HOLD" key for data retention,keep press"HOLD"for 3 seconds,backlight is on.
And press 3 seconds again, backlight will be off,15 seconds after the backlight will auto close.

Automatic Startup & Shutdown

When the instrument stops using for about 15 minutes,the meter will automatically power off to enter the sleep state;To restart the power,dial to the OFF position,turn the knob to other gears.Hold down the "SELECT" button,and turn on the power switch at the same time,the screen "APO" symbol disappears,will cancel the automatic shutdown function.

Troubleshooting

If your instrument does not work,the following method can help you solve the general problem, if the fault still can not be excluded,please contact the service center or dealer.

Failure phenomenon	*Check the location and methods*
Not shown	*Battery not connected Replace the battery*
Symbol exits	*Replace the battery*
Current is not input	*Replace fuse*
Display error	*Replace the battery*

Once this manual is being changed without notice.
These contents of this manual included are considered to be correct,if the user found errors,omissions,etc..please contact the manufacturer directly;
The company does not undertake due to user error operation and the harm caused by the accident;
The functions described in this manual are not intended to reasons of the product for special purposes.

Instrument maintenance

The series of instruments is a accurate instrument,the user should not arbitrarily change the circuit.

- *Please pay attention to waterproof and dustproof;*
- *Should not be in the high temperature and high humidity flammable and explosive environments and strong magnetic field to store and use the instrument;*
- *Please use a wet cloth and mild detergent to clean the appearance of the instrument, do not use abrasive or other strong solvents like alcohol and so on;*
- *If you do not use for a long time, you should remove the battery to prevent leakage of the battery corrosion instrument.*

Note the battery usage, when the screen shows the" " symbol,you should replace the battery, the steps are as follows:

- *Unscrew the screws that fixed the battery cover and eject the battery cover;*
- *Remove the battery and replace it with a new one. Although any standard battery can be used,it is best to use alkaline batteries for extended use;*
- *Attach the battery cover and tighten the screws;*
- *Fuse Replacement When replacing the fuse,use the same type of fuse.*

TASI CE

Product: *Digital Multimeter*
Model: *TA803A / TA803B*
Manufacture place: ***MADE IN CHINA***

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