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Thank you for choosing **TASI**.
If there are any technical questions,
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Overview

TA8315 series is a pocket-sized automatic digital instrument with stable performance, high precision, high reliability, and overload protection. Powered by 2x AAA 1.5V battery, the instrument adopts a super large LCD display and boosted power supply. Even with low battery, TA8315 devices deliver an ultra-high brightness backlight and flashlight. The meter is convenient to carry. It is easy to carry and a highly valued piece of equipment for users. The backlight can be programmed to turn off automatically after 15 seconds. This series of instruments can be used to measure DC voltage and AC voltage, AC/DC current up to 600A, resistance, capacitance, diode, temperature, on-off test, square wave output, frequency measurement and true RMS, etc. It is the ideal tool for laboratories, factories, radio enthusiasts and home improvements.

Safety Precautions

The design of the TA8315 series complies with the terms of IEC1010 (safety standards issued by International Electrotechnical Commission). Please read the safety precautions carefully before use.

- Do not use to measure voltages above DC 700V or AC 500V RMS;
- When measuring the voltages above 36V DC or 25V AC it is necessary to check whether the pen contacts the test point reliably, connects correctly, and insulates well to avoid electric shock;
- When changing function and range of the meter, remove the pen from the test point;
- Read this manual to ensure you have chosen the correct range and operation for your test requirements to avoid injury or damage to the device. Although the TA8315 series features full range protection, please consider your safety at all times when operating with any voltage;
- Security symbol description: "▲" Dangerous voltage, "⚡" Grounding, "□" Double insulation "▲" Operator must refer to instruction manual, "🔋" Low device battery.

Characteristics

General characteristics

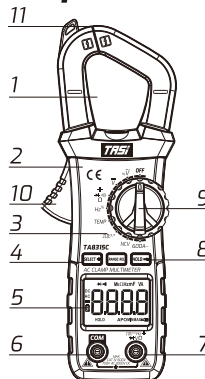
- Display mode: LCD;
- Maximum display: 5999(3 5/6) bit automatic polarity display);
- Measuring method: Double integral formula A/D conversion;
- Sampling rate: approx. 3 times per second;
- Overrange display: top bit display "OL";
- Low voltage display: "⚡" symbol appears;
- Working environment: (0-40)°C, relative humidity < 80%;
- Power: 2x AAA 1.5V battery;
- Volume (size): 176x67x33mm(LxWxH);
- Weight: approx. 300g(including 1.5V battery);
- Box contents: 1 Instruction manual, 1 certificate, 1 cloth bag, 1 pair of test pens, K type thermocouple TP01 probe 1 piece (TA8315B/C/D), 2 x AAA 1.5V batteries.

Technical characteristics

- Accuracy: $\pm(a\%$ of the readings+ least significant digit), ensure accuracy of ambient temperature: (23 $\pm$ 5) °C, relative humidity < 75%, calibration guarantee period one year from the manufacture date;
- Performance(Note "▲" indicates that the meter has this function).

Function	A	B	C	D
DC voltage DCV	▲	▲	▲	▲
AC voltage ACV	▲	▲	▲	▲
DC Current DCA				▲
AC Current ACA	▲	▲	▲	▲
Resistor/Diode	▲	▲	▲	▲
On-off test	▲	▲	▲	▲
Capacitance			▲	▲
Frequency F		▲	▲	▲
Square wave output			▲	▲
NCV	▲	▲	▲	▲
Full unit symbol	▲	▲	▲	▲
Backlight display	▲	▲	▲	▲
True RMS measurement	▲	▲	▲	▲
Temperature(°C/°F)		▲	▲	▲
Flashlight lighting		▲	▲	▲

Operation panel instructions



- 1 The clamp head measures vertically through the center of the hole;
- 2 Product model label position;
- 3 RANGE is the manual range conversion key, the REL key is relative measurement function in capacitance gear test;
- 4 Function selection key SELECT, press and hold for 2 seconds to turn on and off the backlight;
- 5 LCD display;
- 6 COM input port, negative input port, insert black pen;
- 7 Input ports for measuring Voltage, Resistance, Diode, Capacitance, Frequency, Square Wave Output, Current;
- 8 HOLD is data hold key, press and hold for 2 seconds to turn on and off the flashlight;
- 9 Function switching knob;
- 10 Current measurement wrench;
- 11 Open measurement clamp.

Technical Specifications

DC voltage(DCV) (TA8315A)

Range	Basic accuracy	Resolution ratio
400.0mV	±(0.5%+3)	0.1mV
4V		0.001V
40V		0.01V
400V		0.1V
1000V	±(0.8%+10)	1V

DC voltage(DCV) (TA8315B/C/D)

Range	Basic accuracy	Resolution ratio
6V	±(0.5%+3)	0.001V
60V		0.01V
600V		0.1V
1000V		1V

Input impedance: 10MΩ, overload protection: 6V range is 50V DC or AC peak value; The rest is 1000V DC or 750V AC peak.

The specific operations are as follows:

- Insert the black test lead into the "COM" jack and the red test lead into the "V/Ω/Hz" jack;
- Turn the range switch to the corresponding " $\overline{V}$ " range, which is displayed as the automatic DC voltage measurement mode. The internal switch will switch to the corresponding range according to the measured value of the input value;
- Use the pen to firmly contact the test point; the screen will display the measured voltage value. When measuring the DC voltage display, the red test pen is the voltage polarity of the connected point.

Note:

- Do not exceed the input voltage of DC1000V or AC750V. If exceeded, there is danger of damage to the instrument circuit;
- When measuring a high voltage circuit, please pay special attention to avoid electric shock;
- After completing all measurement operations, disconnect the test leads from the circuit under test.

AC voltage ACV(TA8315A)

Range	Basic accuracy	Resolution ratio
4V	±(0.8%+3)	0.001V
40V		0.01V
400V		0.1V
750V		1V

AC voltage ACV(TA8315B/C/D)

Range	Basic accuracy	Resolution ratio
6V	±(0.8%+3)	0.001V
60V		0.01V
600V		0.1V
750V		1V

Input impedance: 10MΩ; standard sine wave and triangle wave frequency response is 40Hz-1kHz; other wave form frequency response is 40Hz-200Hz;

The specific operations are as follows:

- Insert the black test lead into the "COM" jack and the red test lead into the "V/Ω/Hz" jack;
- Turn the range switch to " $\overline{V}$ " position, which is displayed as the AC voltage automatic measurement mode. According to the input value measurement value, the internal switch will automatically change to the corresponding

range. When no value is being measured, it is normal for the screen to display changing values- this does not affect the final reading;

- Ensure the test pen is contacting the test point firmly and the screen will display the measured voltage value.

Note:

- There are some residual numbers in each range before the test, but it does not affect the measurement accuracy;
- The input voltage must not exceed 750Vrms. If it exceeds this, there is danger of damage to the instrument circuit;
- When measuring high voltage circuits, pay special attention to avoid electric shock;
- After completing all measurement operations, please disconnect the test leads from the circuit under test.

AC current(ACA) (TA8315A)

Range	Basic accuracy	Resolution ratio
4A	±(2%+30)	0.001A
40A		0.01A
400A		0.1A
600A		1A

AC current(ACA) (TA8315B/C/D)

Range	Basic accuracy	Resolution ratio
6A(only B/C)	±(2%+30)	0.001A
60A		0.01A
600A		0.1A

Maximum measured voltage drop: 400mV; overload protection: 600A;

The specific operations are as follows:

- Turn the range switch to the corresponding range according to the measurement table, as shown in Figure
- Press the button to open the clamp and pass the test wire through the jaws. The current polarity of the red test pen point will be displayed on the screen at the same time. The clamp can only measure one conductor at a time. If two or more conductors are measured at the same time, the measurement reading will be wrong.
- In the current measurement state, the measuring probe between "VR" and "COM" should be unplugged due to the large test current.

Note:

The maximum input current is 600A (depending on the red pen insertion position), and an excessive current will display OL.

DC current (DCA) (TA8315D)

Range	Basic accuracy	Resolution ratio
4A	±(2%+30)	0.001A
40A		0.01A
400A		0.1A
600A		1A

Maximum measured voltage drop: 600mV; Overload protection: 600A.

The specific operations are as follows:

- Turn the range switch to the corresponding gear and press the SELECT key to select automatic measurement (Default value is DC current).The device can be switched internally to the corresponding range according to the size of the measured value (Internal automatic range60A/600A), using devices close to electromagnetic fields may show unstable or

incorrect readings. Please press "REL" before

measuring. As shown in Figure 1, press the button to open the clamp and pass the test wire through the jaws. The current polarity of the red test pen point will be displayed on the screen at the same time. The clamp can only measure one conductor at a time. If two or more conductors are measured at the same time, the measurement reading will be wrong.

- In the current measurement state, the measuring probe between "VR" and "COM" should be unplugged due to the large current.

Note:

The maximum input current is 600A (depending on the red pen insertion position), and an excessive current will display OL.

Resistance (Ω) (TA8315A)

Range	Basic accuracy	Resolution ratio
400Ω	±(0.8%+5)	0.1Ω
4kΩ	±(0.8%+3)	1Ω
40kΩ		10Ω
400kΩ		100Ω
4MΩ		1kΩ
40MΩ	±(2.5%+3)	10kΩ

Resistance (Ω) (TA8315B/C/D)

Range	Basic accuracy	Resolution ratio
600Ω	±(0.8%+5)	0.1Ω
6kΩ	±(0.8%+3)	1Ω
60kΩ		10Ω
600kΩ		100Ω
6MΩ		1kΩ
40MΩ	±(2.5%+3)	10kΩ

Open circuit voltage: 1V; overload protection: 550V DC or AC peak;

The specific operations are as follows:

- Insert the black test lead into the "COM" jack, insert the red test lead into the "V/Ω/Hz" jack; turn the dial to the corresponding gear position, press the "SELECT" key, and select the resistance file to automatically measure.

Note:

- When measuring low resistance, the test leads will have an internal resistance. To obtain an accurate reading, you can record the short value of the test lead first, and subtract the value when the test lead is shorted in the measurement reading;
- When measuring the line resistance, all the power of the circuit under test must be turned off and all capacitors should be completely discharged to ensure the correct measurement value;
- Do not measure voltage in the resistance range. Although the device has internal protection against this, it is still dangerous and should not be carried out.

Capacitance (C)(TA8315C/D)

Range	Basic accuracy	Resolution ratio
60nF	±(3.5%+20)	10pF
600nF		100pF
6uF		1nF
60uF		10nF
600uF		100nF
6mF		1uF
30mF	±(5%+3)	10uF

Overload protection: 550V DC or AC peak.

- Insert the black test lead into the "COM" jack and the red test lead into the "V/Ω/Hz" jack.
- urn the dial to the corresponding position and press the "SELECT" button to select the capacitance file for automatic measurement.
- Then connect the test leads across the capacitor under test.

Note:

- When measuring capacitance with 10nF file, there may be residual reading on the screen display value. This number is the distributed capacitance of the test pen. It is an accurate reading and can be subtracted after measurement.
- When the large capacitance file measures severe leakage or breakdown capacitance, some values will be displayed and unstable; when measuring large capacitance, the reading takes several seconds to stabilize, which is normal when measuring large capacitance;
- Please fully discharge the capacitor before testing the capacitor capacity to prevent damage to the fuse and meter.
Unit: 1F=1000mF, 1mF=1000uF
1uF=1000nF, 1nF=1000pF

Frequency measurement (TA8315B/C/D)

Range	Basic accuracy	Resolution ratio
10Hz	±(0.1%+3)	0.01Hz
100Hz		0.1Hz
1kHz		1Hz
10kHz		10Hz
100kHz		100Hz
1MHz		1kHz
10MHz		10kHz

Input sensitivity: 1V RMS; overload protection: 550V DC or AC peak (no more than 10 seconds)

The specific operations are as follows:

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

Note:

- When the input exceeds 10Vrms, a reading will display but has greater chance of error;
- In a noisy environment, it is best to use a shielded cable when measuring small signals;
- When measuring high voltage circuits, special care should be taken to avoid electric shock;
- It is forbidden to input voltage values exceeding 250V DC or AC peak to avoid damage to the meter.

Temperature measurement (°C/°F)(TA8315B/C/D)

Range	Basic accuracy	Resolution ratio
(-20-1000) °C	±(1.0%+5)<400°C; ±(1.5%+15) ≥400°C	1°C
(0-1832) °F	±(0.75%+5)<750°F; ±(1.5%+15) ≥750°F	1°F

The operation is as follows:

- Turn position to the "TEMP" file;
- Insert the two input ends of the temperature probe into the "V/Q/Hz" and "COM" terminals of the red test pen. The test probe is inserted into the measured water, and the temperature of the measured water will be displayed on the LCD.
- Press the SELECT button to toggle between Celsius and Fahrenheit (°C/°F).

Note:

It is forbidden to input voltage values exceeding 250V DC or AC peak to avoid damage to the meter.

9. Square wave output(方波输出)(TA8315C/D)

The operation is as follows:

- Dial to "方波输出"; (default Starting output is 50Hz);
- Insert the two inputs of the device under test into the V/Ω/Hz and "COM" terminals of the red test pen;
- Trigger the "SELECT" button The "V/Ω/Hz" and "COM" terminals of the table respectively output 50Hz-100Hz-200Hz-300Hz-400Hz-500Hz-600Hz-700Hz-800-Hz-900Hz-1000Hz-2000Hz-3000Hz-4000Hz-5000Hz. At the same time,the LCD screen displays the current output value.

Note:

It is forbidden to input voltage values exceeding 250V DC or AC peak to avoid damage to the meter.

NCV measurement

The operation is as follows:

- Dial to the "NCV" position; (in the no-measure state LCD displays "EF")
- The front end of the meter has NCV test points. As long as the point is close to the AC voltage, the buzzer will emit different continuations according to the different strength of the signal. At the same time, the LCD will display different number of segments according to the strength of the signal.

Diode and continuity test

Range	Basic accuracy	Resolution ratio
	Diode forward voltage drop	Forward DC current is about 1mA, open circuit voltage is about 3V
	The buzzer sounds continuously the resistance of the test is less than (50±20) Ω	Open circuit voltage is about 3V, press "SELECT" for function switching

Overload protection: 550V DC or AC peak;

Warning: For user safety, the input voltage value is prohibited in this range!

The operation is as follows:

- Insert the black test lead into the "COM" jack and the red test lead into the "V/Ω/Hz" jack (note that the polarity of the red test lead is "+")
- Set the range switch to the corresponding gear, trigger the "SELECT" button, select the diode measurement. Connect the test leads to the diode to be tested. The reading is an approximation of the forward voltage drop of the diode. For a silicon PN junction, it is typically about 500mV~800mV is confirmed as normal value; if the diode under test is open or reverse polarity, "OL" is displayed.

- Trigger the "SELECT" button, select the buzzer measurement, connect the test leads to the two points of the line to be tested. If the built-in buzzer sounds, the resistance between the two points is less than about (50±20) Ω.

Note:

It is forbidden to input voltage in " $\frac{4}{5}$ " gear to avoid damage to the instrument.

Automatic shutdown

When the meter is stopped for about 15 minutes, the meter will automatically power off and enter the sleep state. To wake up the device, turn the dial to the OFF position and turn the rotary dial to the other position. Press and hold the "SELECT" button and turn on the power switch. The "APO" symbol on the screen disappears and the auto power off function will be canceled.

Troubleshooting

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

Failure phenomenon	Inspection site and method
Not shown	Battery not connected
	Replace the battery
Low battery symbol	Replace the battery
Resistance display error	The test pen is not in contact

Warranty:

Each product is warranted in material and workmanship under normal use. The warranty period is one year and begins on the date of purchase.

To obtain warranty service, please contact the dealer or manufacturer to obtain return authorization information, then send the product to the service center.



Product: DIGITAL CLAMP MULTIMETER

Model: TA8315A/B/C/D

Date: 09/10/2022

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