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# Data Sheet

## UT8803E Benchtop Digital Multimeter




# Main Features

- Reading resolution: 3¾, maximum reading 5999
- Measuring rate: 2~3 reading/s
- DC voltage range: 600mV～1000V
- DC current range: 600μA～20A
- AC voltage range: 600mV～750V (True-RMS)
- AC current range: 600μA～20A (True-RMS)
- Resistance range: 600Ω～60MΩ
- Capacitance range: 6nF～6mF
- Inductance range: 600μH～100H
- Frequency measurement range: 600Hz～20MHz
- Duty cycle measurement range: 5%~95%
- Mathematical operation: maximum, minimum, relative value, trend chart
- Interface: USB device, It can be connected to the upper computer control software
- Frequency response: 100KHz
- Data record: 20000 groups
- It can measure triode and thyristor
- Support global mains voltage

# Multimeter Panel




①Power switch ②Display screen ③10A jack ⑤uA/mA jack COM jack

⑥Function jack (voltage, resistance, inductance, capacitance, frequency, continuity, diode, duty ratio)

⑦Function Buttons Function dial




①Grounding ②Fuse dial(F2 600mA) ③USB Device interface ④AC voltage selector ⑤Power supply interface

# Product Introduction

UT8803E is a 6000 count 3 ⅚ digital, automatic range, portable desktop, AC powered digital multimeter. Large screen large character display with backlight, more clear and easy to read. With full function test, full range overload protection and unique appearance design, it has become an electrical test instrument with better performance. This instrument can be used to measure : AC / DC voltage, AC / DC current, resistance, frequency, capacitance, inductance, triode HFE, diode (LED), thyristor (SCR) and circuit on-off. Meet the measurement needs of users with multi-function, high precision and automation.

### Display accuracy

UT8803E digital multimeter can display 3 ⅚ digits (5999), It can provide you high-precision and accurate result display. Its simulation bar makes the display of measurement results more intuitive.




### D/Q parameter measurement

UT8803E digital multimeter can measure D / Q parameters of capacitance and inductance. In the capacitance or inductance measure, press the EQR key to switch and view the measured value of parameters, so as to provide you with reference.




### Inductance measurement

UT8803E digital multimeter has inductance test function. Switch to l option and cooperate with Q / R value measurement to better calibrate the measured inductance for you.




### Triode / thyristor measurement

UT8803E digital multimeter can realize the measurement of triode and thyristor with the help of ut-s03a. Connect the tested part according to the fixture guidance, the magnification, conduction direction and conduction voltage of the tested part can be measured, and it can help you screen good products.




### Multiple measurement items optional

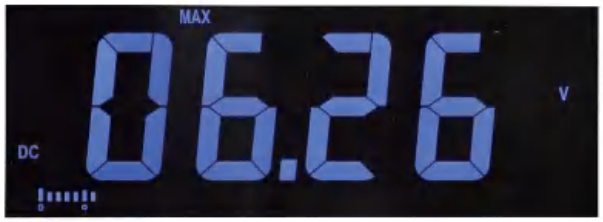
UT8803E digital multimeter covers the testing of AC / DC voltage, AC / DC current, resistance, capacitance, inductance, temperature, frequency duty cycle, triode thyristor, diode and other items. Provide you with a comprehensive universal test instrument. Solve the measurement problem of basic electronic devices.




### Extreme value function

The UT8803E digital multimeter has the function of

maximum and minimum value statistics. This function can help you find out the maximum output, the minimum output in batch products or multiple measurements.



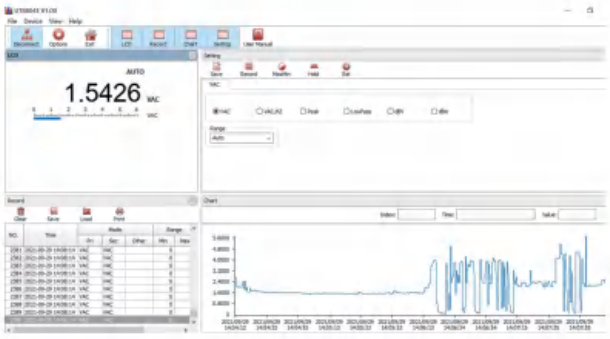

**Reference value mode**

Press REL to set the test reference value, which can be set according to the error or deviation of the measured items, Then you can see the calculation result relative to the reference value on the display,




**Remote operation**

UT8803E digital multimeter can be connected to the upper computer. After installing the driver software, it can realize remote viewing and control, and observe historical data and trend chart in real time.



# Technical Specification

## Explain:

Accuracy:±(%of reading +least significant digits), 1 year warranty

Ambient temperature:23℃±5℃

Ambient humidity:≤75% RH

Input impedance: 10MΩ

Overload protection: 1000V/750Vrms

AC Display: True RMS, applicable to 10%~100% of the range

If current ≥10A, measure time should less than 30s with 15mins interval. In open status, allowable error:≤5 residual digits.

| AC Voltage | | | | | |
|---|---|---|---|---|---|
| Range | Resolution | Accuracy | | | |
| | | 40-1kHz | 1k-10kHz | 10k-20kHz | 20k-100kHz |
| 600mV | 0.1mV | ±(0.6%+5) | ±(1.2%+5) | ±(3%+5) | ±(4%+5) |
| 6V | 0.001V | ±(0.6%+5) | ±(1.2%+5) | ±(3%+5) | ±(4%+5) |
| 60V | 0.01V | ±(0.6%+5) | ±(1.5%+5) | ±(3%+5) | ±(8%+5) |
| | | 40-1kHz | 1k-10kHz | | |
| 600V | 0.1V | ±(0.6%+5) | ±(3.5%+5) | | |
| | | 40-1kHz | 1k-3kHz | | |
| 750V | 1V | ±(1.2%+5) | ±(3%+5) | | |
| DC Voltage | | | | | |
| Range | Resolution | Accuracy | remarks | | |
| 600mV | 0.01mV | ±(0.5%+2) | | | |
| 6V | 0.0001V | ±(0.3%+2) | | | |
| 60V | 0.001V | ±(0.3%+2) | | | |
| 600V | 0.01V | ±(0.3%+2) | | | |
| 1000V | 0.1V | ±(0.5%+3) | | | |
| AC current | | | | | |
| Range | Resolution | Accuracy | | | |
| | | 40-10kHz | 10k-15kHz | | |
| 600uA | 0.1uA | ±(1%+5) | ±(2%+5) | | |
| 6mA | 0.01mA | ±(1%+5) | ±(2%+5) | | |
| | | 40-5kHz | 5k-15kHz | | |
| | | 40-5kHz | 5k-15kHz | | |
| 60mA | 0.1mA | ±(1%+5) | ±(3%+5) | | |
| 600mA | 0.1mA | ±(1%+5) | ±(3%+5) | | |
| | | 40-1kHz | 1k-15kHz | | |
| 10A | 0.01A | ±(2%+6) | ±(3%+6) | | |
| DC current | | | | | |
| Range | Resolution | Accuracy | | | |
| 600uA | 0.1uA | ±(0.8%+3) | | | |
| 6mA | 1uA | ±(0.8%+3) | | | |
| 6mA | 0.01mA | ±(0.8%+3) | | | |
| 600mA | 0.1mA | ±(1.5%+3) | | | |
| 10A | 0.01A | ±(2%+5) | | | |

| Resistance | | | |
|---|---|---|---|
| Range | Resolution | Accuracy | Remarks |
| 600Ω | 0.1Ω | ±(0.8%+5) | Open circuit voltage: -0.5V |
| 6kΩ | 0.001kΩ | ±(1%+5) | |
| 60kΩ | 0.01kΩ | ±(1%+5) | |
| 600kΩ | 0.1kΩ | ±(1%+5) | |
| 6MΩ | 0.001MΩ | ±(2%+5) | |
| 60MΩ | 0.01MΩ | ±(5%+5) | |
| **Capacitance** | | | |
| Range | Resolution | Accuracy | Remarks |
| 6nF | 0.001nF | ±(2.5%+5) | Minimum measure range:>8PF<br>Input impedance:4kΩ<br>If capacitance>6.6mF, OL symbol appears |
| 60nF | 0.01nF | ±(1.5%+5) | |
| 600nF | 0.1nF | ±(1.5%+5) | |
| 6uF | 0.001uF | ±(3%+10) | |
| 60uF | 0.01uF | ±(3%+10) | |
| 600uF | 0.1uF | ±(5%+5) | |
| 6mF | 1uF | ±(10%+8) | |
| **Inductance** | | | |
| Range | Resolution | Accuracy | Remarks |
| 600uH | 0.1uH | ±(2.5%+5) | Measure voltage: 0.6V RMS<br>Minimum measure range: >16uH<br>Input impedance: 4KΩ |
| 6mH | 0.001mH | ±(2%+5) | |
| 60mH | 0.01mH | ±(2%+5) | |
| 600mH | 0.1mH | ±(2%+5) | |
| 6H | 0.001H | ±(2%+5) | |
| 60H | 0.01H | ±(2%+5) | |
| 100H | 0.1H | Only for reference | |
| **Equivalent resistance(ACR)Ω** | | | |
| Range | Resolution | Accuracy | Remarks |
| 60Ω | 0.01Ω | ±(2%+10) | Minimum measure range: >0.1Ω<br>Input impedance: 4KΩ |
| 600Ω | 0.1Ω | ±(1%+5) | |
| 6kΩ | 0.001kΩ | ±(1%+5) | |
| 60kΩ | 0.01kΩ | ±(1%+5) | |
| 600kΩ | 0.1kΩ | ±(1%+5) | |
| 2MΩ | 0.001MΩ | ±(5%+5) | |
| **Temperature** | | | |
| Range | Resolution | Accuracy | Remarks |
| -40℃~0℃ | 1℃ | ±(2%+5) | K-type thermocouple applicable |
| 0℃~400℃ | 1℃ | ±(1%+5) | |
| 400℃~1000℃ | 1℃ | ±(2%+3) | |
| -40°F~32°F | 1°F | ±(2%+9) | |
| 32°F~752°F | 1°F | ±(1%+9) | |
| 752°F~1832°F | 1°F | ±(2%+6) | |
| **Frequency/duty ratio** | | | |
| Range | Resolution | Accuracy | Remarks |
| 600Hz | 0.1Hz | ±(0.1%+10) | Sensitivity: frequency< 600KHz, amplitude> 15Vrms or frequency > 600kHz, amplitude>2.5Vrms, minimum input>5Hz.<br>Duty ratio measurement only applicable for square wave≤10kHz.<br>2Vpp≤input amplitude≤30Vpp<br>Frequency<1kHz, Duty: 5.0%～95.0%<br>Frequency>1kHz, Duty: 30.0%~70.0% |
| 6kHz | 0.001kHz | ±(0.1%+10) | |
| 60kHz | 0.01kHz | ±(0.1%+10) | |
| 600kHz | 0.1kHz | ±(0.1%+10) | |
| 6MHz | 0.001MHz | ±(0.1%+10) | |
| 20MHz | 0.01MHz | ±(0.1%+10) | |
| 5%~95% | 0.1% | Only for reference | |

| Diode/audion/thyristor/continuity | | | | |
|---|---|---|---|---|
| Function | Position | Resolution | Accuracy | Remarks |
| Diode | | 10mV | 0.5~0.8V | When measuring hFE, Ib0: about 10uA; Vce: about 2.8V<br>When measuring diode, Silicon PN junction onset voltage drop: 0.5~0.8V, open status voltage: 8V<br>When measuring continuity, in good conducted circuit, resistance<10Ω, buzzer goes off; in open circuit, resistance>30Ω, buzzer does not go off.<br>When measuring SCR, onset voltage drop: 0.1~2V; open circuit voltage: about 9V. |
| SCR test | SCR | 10mV | 0.1~2V | |
| Audion hFE | hFE | 1β | No specified | |
| Continuity | | About 0.1Ω | No specified | |

| Display | SCR polarity indicator | Status | SCR polarity |
|---|---|---|---|
| 0.1~2V | | Normal | Two-way |
| 0.1~2V | | Normal | One-way |
| ERR | | SCR bad contact | Unknown |
| OL | | Pulse width term: >、<、= | Unknown |

*The UTD8803E have been certified by CE, cETLus.

# Standard accessories

| | |
|---|---|
| UT-L41 test lead | Alligator clip short test lead:110-130mm |
| UT30(CE) test probe | Test Leads , Double insulated wire CAT Ⅲ 1000V /CAT Ⅳ 600V 10A |
| UT-T01 K-type temperature probe | Temperature probe, flat plug-in point thin wire 1000 K type |
| UT-S03A | Auxiliary test fixture for triode thyristor |
| Power cable | Fits the standard of destination country |
| USB data cable | USB standard printer cable length 1m (RoHS) |

# Warranty

Three-years warranty, excluding probes and accessories.

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