中国外观设计专利：ZL03 3 60991.8
本产品依照UL及CE安全标准设计

P/N:110401106390X
REV.0

UNI-T®

UT8630
使用手册

数字交流毫伏表

Digital AC Milli Volt Meters

序　言

尊敬的用户：

　　您好！感谢您选购全新的优利德仪器，为了正确使用本仪器，请您在本仪器使用之前仔细阅读本说明书全文，特别有关“安全注意事项”的部分。

　　如果您已经阅读完本说明书全文，建议您将此说明书进行妥善的保管，与仪器一同放置或者放在您随时可以查阅的地方，以便在将来的使用过程中进行查阅。

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一、简　　介

感谢您购买我公司的产品！为了确保您正确使用本仪器，获得最佳的测试性能，建议在使用本仪器前详细阅读本说明书。阅毕，请保存好说明书。

该毫伏表是根据严格的质量控制标准生产，对元器件进行全面筛选老化，且通过了一系列的性能测试，环境测试及安规测试，保证你放心安全地使用。在规定的工作环境中能够处于最佳工作状态。

二、开箱检查

检查产品的外观是否有破损、刮伤等。包装箱的内容如下所述。如果内容不符或者仪器有损坏，请与本公司最近的销售服务处联系。

提供标准零部件如下：

UT8630双路数字交流毫伏表----------1台
三芯电源线----------1根
说明本----------1本
Q9双夹线----------2根
上位机安装光碟（UT8632N）----------1张
USB标准打印机线（UT8632N）----------2根

三、概 述

1. 概述

UT8630双通道数显交流毫伏表分为 UT8631、UT8632N（带数据传输）两种型号，此系列毫伏表具有测量电压频率范围宽，输入阻抗高（≥10ＭΩ），电压测量范围宽，分辨率高（1μV）且测量精度高的优点。可广泛应用于工厂、试验室、科研单位、部队及学校。

2. 技术指标

1）测量电压范围：400μV～400V，分辨率1μV，四位LCD数显，最大显示4040。分六个量程：4mV、40mV、400mV、4V、40V、400V。

2）频率响应范围：UT8631：10Hz～2MHz；
UT8632N：5Hz～2MHz

3）固有误差（以1KHz为基准）：（环境温度：23±5℃ 相对湿度：<60% 大气压力：86Kpa～106Kpa）

- 电压测量误差：
  ±（0.5%+15个字） 4mV档时±（1%+15个字）
  400V/1KHz档时±（3%±20个字）
- 频率响应误差：
  4mV档：200Hz～500KHz　　±（1%+0.1mV）
  10Hz～200Hz;500KHz～2MHz ±（2%+0.1mV）
  5Hz～10Hz　（UT8632）　　±（4%+0.1mV）

其它档：200Hz～500KHz　　±（3%+20个字）
10Hz～200Hz;500KHz~2MHz　±（5%+20个字）
5Hz～10Hz　（UT8632）　　±（5%+20个字）

4)输入阻抗：输入电阻≥10MΩ；输入电容≤47pF。
5)最大输入电压：600V（DC+ACp-p）。
6)噪声电压：在输入端良好短路时小于18个字。
7)档位选择：自动/手动
8)过载显示：
低于量程电压的8%显示 “UNDER”，低于量程电压的5%自动清零。
超出量程电压的5%显示 “OVER”，超出量程电压的10%显示 “O.L”。
9)正常工作条件：

- 环境温度0~40℃
- 相对湿度<90%
- 大气压750±30mmHg
- 电源电压220V±10%　50Hz±4%。
- 功率7VA

10)外形尺寸：320×220×92（mm）
11)重量：约3.0Kg

3. 使用注意事项

1)避免过冷或过热。
不可将交流毫伏表长期暴露在日光下，或靠近热源的地方。
2)不可在寒冷天气时放在室外使用，仪器工作温度应0~40℃。
3)避免湿度、水分和灰尘。
本仪器最好在35%~90%的相对湿度范围内使用。
4)应避免在强烈震动的地方使用，否则会导致仪器操作出故障。
5)注意磁器和存在强磁场的地方。
数字交流毫伏表对电磁场较为敏感，不可在具有强磁场作用的地方操作毫伏表，不可将磁性物体靠近毫伏表，应避免阳光或紫外线对仪器的直接照射。
6)贮运

- 不可将物体放在交流毫伏表上，注意不要堵塞仪器通风孔。
- 仪器不可遭到强烈的撞击。
- 不可将导线或针插进通风孔。
- 不可用连接线拖拉仪器。
- 不可将烙铁放在仪器框架或表面上。

- 避免长期倒置存放和运输。

7)使用之前的检查步骤：

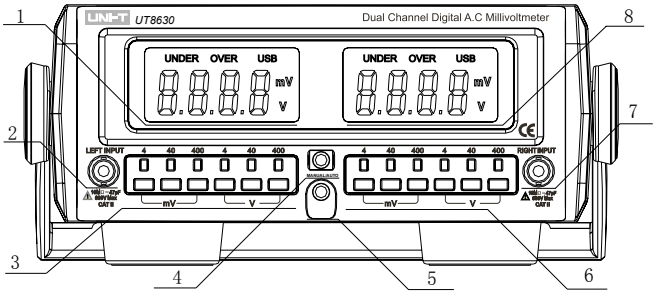
- 检查电压
  该毫伏表的正确工作电源电压范围是交流198V~242V。在接通电源之前应检查电源电压。
- 保险丝
  为了防止由于过电流引起的电路损坏，请使用正确的保险丝值。如果保险丝熔断，仔细检查原因，修理之后换上规定的保险丝。
- 确定所测试的电压不可高于本毫伏表规定的最大输入电压。
- 测试夹检查
  本仪器两通道低端与市电（220V）共地，且黑色测试夹接地。所有被测物均是以大地为参考零电压，请勿将红黑测试夹接反，以免造成被测物与大地短路。当两通道 同时使用时，请注意极性，以免两通道相互短路。
- 量程选择
  本仪表设自动量程选择是为方便之用，换挡速度较慢。建议在正常使用时用手动选择量程，特别在测试高压时采用手动换档可减少仪表处于过载状态的时间，提高测试效率。

8)开机预热与自检

- 自检
  本机开机时每量程自检1秒（手动量程开机时，仪器默认在4V量程，所以只在4V量程上自检1秒；自动量程开机时，仪器要自检完所有量程，共需要6秒钟）后方可进入测试状态。
- 预热
  本仪器自检完成后需预热15分钟方可正常测试。

四、面板操作说明

1. 前面板操作说明



1)左通道显示窗口
- LCD显示左通道输入信号的电压值。

2)左通道输入插座
- 左通道的交流测试信号由此端口输入

3)左通道手动量程选择按键与指示灯
- 使用手动量程时 ，在输入测试信号前 ，应先选择“400V”量程，同时对应的“400V”量程指示灯亮。输入测试信号后，根据测试信号大小选择相应的量程，同时对应的指示灯亮。

4)左通道按下自动,弹起手动量程转换开关
- 开关弹起：量程处于手动状态，可用量程选择按键选择相应的量程，同时对应的指示灯亮。
- 开关按下：量程处于自动状态，此时所有量程选择按键均不起作用。当显示电压超出满量程的5%时，自动跳到上一量程测试，同时对应的量程指示灯亮；当显示电压低于满量程的8%时，自动跳到下一量程测试，对应的量程指示灯亮；

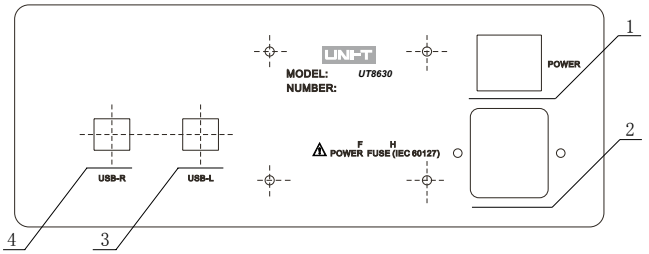
5)右通道按下自动,弹起手动量程转换开关
- 作用与左通道按下自动,弹起手动量程转换开关相同

6)右通道手动量程选择按键与指示灯
- 作用与左通道手动量程选择按键与指示灯相同。

7)右通道输入插座
- 右通道的交流测试信号由此端口输入

8)右通道显示窗口
- LCD显示右通道输入信号的电压值。

2. 后面板操作说明



1)电源开关
- 电源开关“I”端按下接通电源，“0”端按下断开电源。

2)电源插座
- 交流电源220V50Hz输入插座。

3)左通道USB接口（UT8632N）
- 与电脑的USB口相连，传输左通道数据。

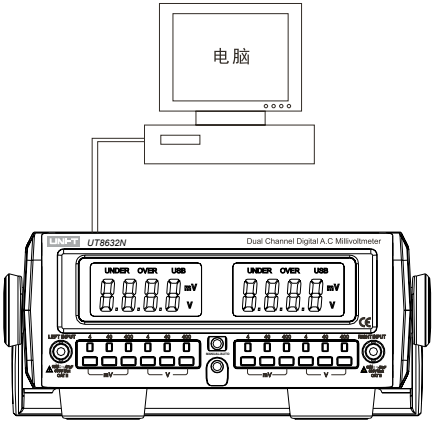
4)右通道USB接口（UT8632N）
- 与电脑的USB口相连，传输右通道数据。

3. 基本操作方法

1）打开电源开关前，首先检查输入的电源电压，然后将电源线插入后面板上的电源插座。
2）电源线接入后，按电源开关以接通电源，并预热15分钟。
3）使用手动量程时，先选择最大量程“400V”指示灯亮。
4）将输入信号由输入端口送入交流毫伏表。
5）选择相应的量程，使LCD数字表正确显示输入信号的电压值。数据显示在满量程的10%~100%为最佳。

五、联机功能（UT8632N）

UT8632N接口与上位机（电脑）的USB连接如下图，连接完好后LCD自动显示“USB”符号，此时不需按任何按键UT8632N即可向上位机传送数据，上位机软件的安装步骤及具体操作见光碟。



六、保养与维护

1. 保养与维护

1）本设备由高精度的元器件及精密部件构成，因此在运输和贮存时须小心轻放。
2）贮存该设备的最佳室温：-10℃~+60℃。

2. 保修

1）仪器自发货之日起保修期为两年。在保修期内本公司根据情况选择对故障仪器进行维修或更换。保修仪器必须发到本公司或由本公司指定的维修点进行维修。

2）下列情况不在保修范围

- 使用者操作或维护不当；
- 使用用户自己提供的软件或接口；
- 未经许可对仪器进行修改；
- 使用环境不符合要求造成仪器损坏。

本说明书内容如有变更，恕不另行通知！

UNI-T®

UT8630系列使用手册

优利德®

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UNI-T®

Model UT8630

OPERATING MANUAL

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Introduction

Thanks for purchasing our productIn!order to ensure to use this Meter correctly for the best performance, please read this manual in detail and keep it properly.

This Meter is under strictly quality control for production. All the parts go through screening and ageing,and a series performance testing,environmental testing and safety testing,Guaranty for safety in proper using.The best working performance under the guidelines of working environment.

Unpacking Inspection

Check the Meter whether there is any damage or metal part is exposed.Packing box include the below items.If any differences or damage,please contact the nearby sales offices.Standard accessories are as below:

UT8630 Dual channel AC Milli Volt Meter	1 pcs
3 Power lead	1 pcs
Operation Manual	1 pcs
Q9 duel clip lead	2 pcs
Software Installation CD (only UT8632N)	1 pcs
USB Interface cables (only UT8632N)	2 pcs

Overview

1. Overview

UT8630 Dual channel digital AC Milli Volt Meters are UT8631,UT8632N(with data transmission)2models, This milli volt meter series include AC voltage measurement frequency range,high input resistance(≥10MΩ),voltage measurement range,high resolution(1μV)high precision measurement advantage.Applications in factories, laboratories, R&D, military and colleges.

2. General Specification

1) Voltage measurement range:
400μV~400V resolution 1μV,4 digits, LCD display, maximum display 4040.With 6 measurements range: 4mV,40mV,400mV,4V,40V,400V.

2) Frequency response range:
UT8631: 10Hz~2MHz;
UT8632N: 5Hz~2MHz.

3) Best accuracy(with 1KHz as base):
(temperature:23±5℃ ;Relative Humidity:<60%; Atmos pheric pressure:86Kpa~106Kpa)

- AC Voltage measurement best accuracy:
  ±(0.5%+15 word); 4mV±(1%+15 word); 400V/1KHz±(3%±20 word)
- Frequency response best accuracy:
  4mV:200Hz~500KHz ±(1%+0.1mV)
  10Hz~200Hz;500KHz~2MHz ±(2%+0.1mV)
  5Hz~10Hz (UT632) ±(4%+0.1mV)
  Others:200Hz~500KHz ±(3%+20 word)
  10Hz~200Hz;500KHz~2MHz ±(5%+20 word)
  5Hz~10Hz (UT8632N) ±(5%+20 word)

4) Input impedance:
input resistance≥10MΩ;input capacitance≤47pF.

5) Maximum input voltage:600V(DC+ACp-p).

6) noise voltage:keep the connecting well and short less 18 seconds.

7) select position:Automatic/manual

8) Overload display:
Below 8% of voltage range display “UNDER” , below 5% of voltage range “Auto Zeroing”.
Over 5% of voltage range display “OVER” , over 10% of voltage range display “O.L”.

9) Normal working condition:

- Temperature: 0~40℃
- Relative Humidity: <90%
- Atmospheric pressure: 750±30mmHg
- Power supply: 220V±10% 50Hz±4%.
- Power: 7VA

10) product size:320X220X92mm
11) Product net weight:3.0Kg

3. Safety Information

1) Avoid too cold or too hot.
Cannot expose this AC milli volt meter under sunshine in long time, or close to the hot place.
2) Cannot operate it outdoor during the cold weather,working temperature is 0~40 ℃.
3) Avoid moisture,water and dust.Best performance in 35%~90% of the relative humidity range.
4) Avoid to use it in the strong motion place, otherwise may cause failure in operation.
5) Caution to magnetic instrument and the strong magnetic field area.
Digital AC milli volt meter is very sensitive with magnetic, it should not operate in the strong magnetic field area, and should not close to magnetic material,1and avoid expose direct in sunshine or ultraviolet/UV.
6) Storage & transportation
Do not place goods on the AC milli volt meter,
- do not block the meter's ventilation area.
Do not crush the meter.
- Do not place the lead or needles in the vent.
- Do not use the connection cable to pull or push
- the meter.
Do not place the hot plate on the surface or the
- body of the meter.
Avoid to keep in stock and transportation for a
- long time.

7) Steps for checking before use:
check voltage
- The correct use the meter in voltage range is AC 198V~242V. Check power voltage first before power on.

Fuse
- Prevent the circuit damage due to the over voltage,please use the correct fuse value.

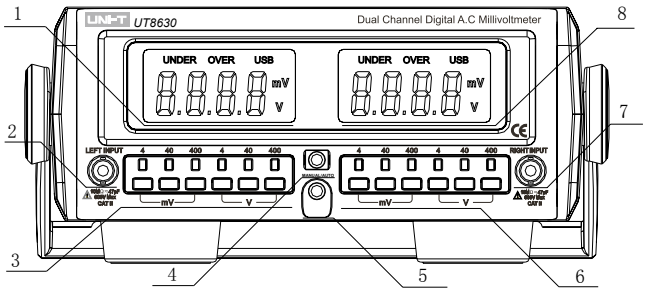
If the fuse is burned, check the reason carefully, replace the required fuse after repair.

- Ensure the testing voltage do not over the milli volt meter's maximum input voltage.
- Check testing clip
  This duel channel meter's low terminal and(220V) with the power source common earth,and black color test clip connect ground.All the objects being tested should use earth as the reference voltage. Do not opposite the red and black color clip in connection,avoid the testing object and earth shorting.When using 2 channels simultaneously, please caution polarity,n order to avoid 2 channels shorting.
- Measure range selection
  The meter has the auto ranging selection,change speed comparative slow.
  Recommend to manual select measure range in general use,especially when testing high voltage use manual increase the testing effectiveness.

8) Switch on warm up & self test
   - Self test
     When switch on the meter, every measure range do self test 1 second(when switch on by manual measure, the meter automatic select in 4V measurement, and only self test 1 second in 4V;When switch on by auto measure range, the meter do self test for all the ranges, it needs 6 seconds), then it starts measurement condition.
   - Warm up
     Before normal testing, the meter needs to complete self test and then warn up for 15 minutes.

Measurement Operation

1. Front Display Operation



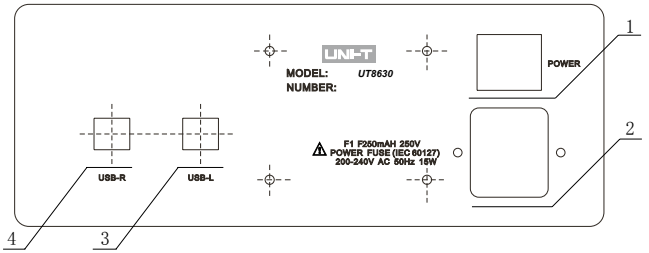
1) Left channel display window
   - LCD display left channel input signal's voltage value.
2) Left channel input terminal
   - Left channel AC testing signal from this input terminal.
3) Left channel manual measure range selecting button and indicating lamp
   - Use manual measure range,before input testing signal ,should select"400V"range, meanwhile corresponding"400V"measurement indicating light on.After input testing signal, according to the size of the testing signal to select the corresponding measurement range, meanwhile the corresponding indicating lamp on.
4) Left channel press auto, manual measure exchange ON/OFF pop-up
   - ON/OFF pop-up:measurement in manual condition,can use measurement selection button Select the corresponding range, meanwhile the corresponding indicating lamp on.
5) Right channel press automatic, manual measure
   - Press ON/OFF:measurement in ON/OFF condition,

Meanwhile, all the selected measurement button do not have function.When display voltage over full measurement range 5%, automatic shift to the higher measure range for testing, meanwhile the corresponding measurement indicating lamp on;when display voltage lower than the full measurement range 8%,automatic exchange ON/OFF pop-up .

- same as Left channel press auto, manual measure exchange ON/OFF pop-up

6) Right channel manual measure range selecting button and indicating lamp
   - same as Left channel manual measure range selecting button and indicating lamp.
7) Right channel input terminal
   - Right channel AC testing signal from this input terminal
8) Right channel display window
   - LCD display right channel input signal's voltage value.

2. Back Panel Operation



Shift to the lower measure range for testing,the corresponding measurement indicating lamp on;

1) Power ON/OFF
   - Power ON/OFF position press " I " for power connection,press" O "for disconnect power.
2) Power port
   - AC voltage 220V 50Hz input port.
3) Left channel USB port (UT8632N)
   - connect with PC's USB port,transmits left channel data.

4) Right channel USB port (UT8632N)
- connect with PC's USB port,transmits right channel data.

3. Fundamental Operation

1) Before power on,check the power voltage first, then connect power cable in the back panel of the power terminal.

2) After power cable connection,press power ON, and warm up for 15 minutes.

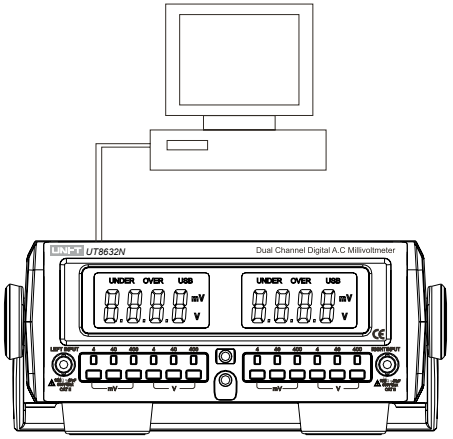
3) use manual measurement,first select the maximum range"400V"indicating lamp on.

4) place input signal through the input terminal of AC milli volt meter.

5) select corresponding measure range,let LCD digital meter display correctly of the input signal of voltage value.Digital display in full measurement range 10%~100% is the best.

Inter-connection Function(UT8632N)

UT8632N port connects with PC's USB port as below picture,After connection, LCD auto display"USB" symbol.Do not press any button of UT8632N, it will transmit data with PC,Software installation and operating procedure through CD.



Maintenance & Repair

1. Maintenance & Repair

1) the meter constructs with high precision components and comprehensive parts, therefore it must be careful during the transportation and storage.

2) storage temperature of the meter: -10℃ ~+60℃.

2. Warranty

1) Warranty period is two years with effective from the invoice date.Within the warranty period, our company will according to the situation to repair the faults or replace. Warranty product must send back to our company or the assigned maintenance location for repair.

2) Situations exclude from our warranty:

- users operate or repair improperly;
- users use their own software or connector/port;
- users repair the product without the permission;
- the environment for using the product is not under our requirements, from which cause damage.

END

Operating Manual content is subject to change without notice!

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