UT12S-ROW/UT12D-ROW/ UT12E-ROW/UT12M-ROW Voltage Detector User Manual

Preface

Thank you for purchasing the new voltage detector. In order to use this product safely and correctly, please read this manual thoroughly, especially the Warning part.

After reading this manual, it is recommended to keep the manual at an easily accessible place, preferably close to the device, for future reference.

Limited warranty and liability

Uni-Trend guarantees that the product is free from any defect in material and workmanship within one year from the purchase date. This warranty does not apply to damages caused by accident, negligence, misuse, modification, contamination and improper handling. The dealer shall not be entitled to give any other warranty on behalf of Uni-Trend. If you need warranty service within the warranty period, please contact your seller directly.

Uni-Trend will not be responsible for any special, indirect, incidental or subsequent damage or loss caused by using this device. As some countries or regions do not allow limitations on implied warranties and incidental or subsequent damages, the above limitation of liability may not apply to you.

Overview

The UT12 series products are non-contact voltage detectors with built-in flashlight and acousto-optic synchronous alarm function. The CAT IV 1000V safety class ensures users' safety, making them essential tools for industry and home.

Low voltage mode (24V AC ~ 1000V AC) (UT12D-ROW/UT12E-ROW/UT12M-ROW only):

Suitable for testing low-voltage motor (< 90V), audio systems, arc welding machines, underground mine lighting, cables with thick insulation layer, and other weak electromagnetic AC signals.

High voltage mode (90V AC ~ 1000V AC):

For detecting urban electric supply and three-phase systems. For example, power distribution units, electrical panels, electrical appliances.

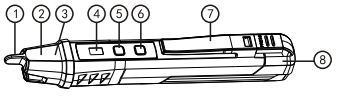
⚠ Warning

1. Please carefully read and fully understand the warnings and operating instructions before use. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equi pment may be impaired.
2. Please test the detector on a known live source within the rated AC voltage range before use.
3. If the detector appears damaged or is not working properly, stop using it immediately.
4. Do not detect voltage higher than 1000V.
5. Use caution when working with voltages above AC 30Vr.m.s, 42Vpeak or DC 60V. Such voltages pose a shock hazard. Clean the tester casing with a damp cloth and mild detergent. Do not use abrasives or solvents!
6. There may still be voltage even when no acousto-optic alarm is on.
7. The insulation type, wire thickness, distance from voltage source, shielded wire, other wires, socket design, and other factors may adversely affect test result. If there are uncertainties, use other methods to verify the voltage.
8. Do not assume neutral or ground wire is safe to touch. Incorrect or poorly connected circuits may cause wires to be charged.
9. The magnetic field generated by magnetized components may interfere with detection (UT12M-ROW only).
10. When low battery indication appears, please replace the batteries.
11. When using the detector, please only hold up to the line before the translucent sensing part and not over.
12. Comply with local and national safety regulations and requirements.
13. The detector will not detect any voltage if:
    - •The wire is shielded
    - •The operator is not connected with the ground or isolated from an effective ground
    - •The voltage is DC
14. The detector may not detect any voltage if:
    - •The operator does not hold the detector
    - •The operator is wearing gloves
    - •The wire under test is partially buried or in a grounded metal conduit
    - •The magnetic field generated by the voltage source is blocked, suppressed or interfered with
    - •The frequency of the voltage being detected is not a perfect sine wave and may be distorted by harmonics
    - •The detector is used outside of the operating specifications (see Technical Specifications for details)

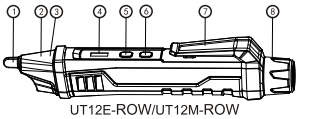
Electrical Symbols

⧈	Protected throughout by Double insulation or Reinforced insulation
~	Alternating current
⚠	Caution, possibility of electric shock
⚠	Warning! Refer to the manual
CE	In compliance with the directive of European Union
ETL Intertek	Conforms to UL STD 61010-1, 61010-2-030 Certified to CSA STD C22.2 No. 61010-1, 61010-2-030.
CAT IV	It is applicable to test and measuring circuits connected at the source of the building's low-voltage MAINS installation.

Panel Description



UT12S-ROW/UT12D-ROW



UT12E-ROW/UT12M-ROW

1	NCV sensor head	2	Flashlight lighting
3	sensing signal LED	4	Mode status indicator light
5	Power button	6	Flashlight button
7	Pocket clip	8	End of the detector (UT12S-ROW/UT12D-ROW) Battery cap (UT12E-ROW/UT12M-ROW)

Operating Instructions

1. Turning on the detector

Short press the power button. The buzzer will beep twice and the red indicator light on the panel will light up, indicating that the detector is on and ready for use. The default AC voltage detection range is 90-1000V.

UT12E-ROW only:

Long press (>1.5s) the power button. The detector will be on and vibrate. The vibration alarm will also occur when a strong signal is detected (only acousto-optic alarm for weak signals). To turn off the vibration, power off the detector and then restart it by short pressing the power button.

2. Turning on/off the flashlight

Flashlight on/off: Short press the flashlight button to turn on/off the flashlight.
The flashlight will automatically turn off when the detector is not used for 5 minutes.

3. AC voltage detection

Place the sensor head near the test object or the power socket with AC voltage. When AC voltage is detected, the red LED in the tip and buzzer will be on. Buzzer and sensing LED frequencies increase when detector gets closer to the test object. In vibration mode, when strong signals are detected, there will also be vibration alarm (UT12E-ROW only).

Note: Please unplug other electrical devices on the socket before detection.

4. Detection range selection

a) When the detector is on, the default mode is high voltage mode, with detection range of 90-1000V. The red indicator light on the panel will light up.

b) Short press the power button once. The red indicator light will switch to green, and the device will switch to low voltage mode, with range of 24-1000V. In low voltage mode, the detector is more sensitive to electrical interference/noise. Please only use low voltage mode during weak electrical field environment.
(UT12D-ROW/UT12E-ROW/UT12M-ROW only)

c) Short press the power button once again. The green indicator light will switch to yellow, and the device will switch to magnetic field detection mode. (UT12M-ROW only)
Note: In the magnetic field detection mode, voltage cannot be detected at the same time.

5. Magnetic field detection (UT12M-ROW only)

The magnetic field detection function of the detector can be used to easily determine whether there is a magnetic field, to quickly determine if components (solenoid valves, relays, contactors, permanent magnets and electromagnets, etc.) are working properly. The figure at right shows how to use this function to check if the solenoid valve is working properly.

In the magnetic field detection mode, place the detector tip near the solenoid valve in operation. When the magnetic flux is detected to be greater than 5mT, the yellow LED in the tip will be on, and the buzzer will beep slowly, indicating that the solenoid valve is working properly.
Note: If the magnetic flux is less than 5mT, please use the front of the detector tip to detect.

6. Auto power off

The detector will auto power off when it is not used for 5 minutes.

7. Turning off the detector manually

Short press the power button to turn off the detector (UT12S-ROW only). Long press the power button for 2 seconds to turn off the detector (UT12D-ROW/UT12E-ROW/UT12M-ROW only).

8. Low battery indication

When the battery voltage is lower than 2.4V, the detector will automatically shut down.

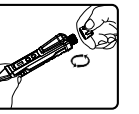
Battery Replacement

UT12S-ROW/UT12D-ROW:

1. Hold the detector with one hand, use your thumb of the other hand to press down on the battery compartment latch, and pull the end of the detector.
2. Pull out the end of the detector along the direction shown at right pictures and replace the batteries.

UT12E-ROW/UT12M-ROW:

1. Unscrew the battery cap counterclockwise as shown below, and then replace the batteries according to the polarity indication.
2. Tighten the battery cap clockwise and the buzzer will beep twice to indicate the completion of the replacement.



⚠ **WARNING:**
Do not mix old and new batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable (ni-cad, ni-mh, etc) batteries.

Technical Specifications

Items \ Models	UT12S-ROW	UT12D-ROW	UT12E-ROW	UT12M-ROW
AC voltage range	90 ~ 1000V AC (red indicator)	90 ~1000V AC (red indicator) 24 ~1000V AC (green indicator)	90~1000V AC (red indicator) 24~1000V AC (green indicator)	90~1000V AC (red indicator) 24~1000V AC (green indicator)
Frequency range	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
Alarm mode	Audio/visual	Audio/visual	Audio/visual/vibration	Audio/visual
Flashlight	White spotlight	White spotlight	White spotlight	White spotlight
Auto power off	About 5 minutes	About 5 minutes	About 5 minutes	About 5 minutes
Low battery indication	√	√	√	√
Vibration function	N/A	N/A	√	N/A
Magnetic field detection mode	N/A	N/A	N/A	√ (Yellow indicator light on)
IP rating	N/A	N/A	IP67	IP67
Safety class	CAT IV 1000V	CAT IV 1000V	CAT IV 1000V	CAT IV 1000V
Operating temperature	0 ~ 40°C	0~40°C	0~40°C	0~40°C
Storage temperature	-20 ~ 50°C	-20~50°C	-20~50°C	-20~50°C
Humidity	≤ 80% (non-condensing)	≤ 80% (non-condensing)	≤ 80% (non-condensing)	≤ 80% (non-condensing)
Altitude	< 2000m	< 2000m	< 2000m	< 2000m
Battery	2x1.5V AAA	2x1.5V AAA	2x1.5V AAA	2x1.5V AAA
Product size	150x18x23 (mm)	150x18x23 (mm)	160.5x21.5x25 (mm)	160.5x21.5x25 (mm)
Weight	About 50g	About 50g	About 72g	About 72g
Drop test	1m	1m	2m	2m

Standards: IEC/EN61010-1, IEC/EN 61010-2-030, IEC/EN 61326-1, IEC/EN 61326-2-2

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