UNI-T

UT-P43&UT-P44 Series Current Probe

Instruction Manual

UNI-T®

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Current Probe

Instruction Manual

Please read the instruction manual carefully to avoid injury and prevent damage to this product.

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Preface

At first, thank you very much for using our product UT-P43&UT-P44 series high voltage isolating probes. This instruction manual includes safety summary, brief introduction, main specifications and operating basics etc. Please read the manual carefully prior to use the product.

Warranty

UNI-T warrants that this product will be free from defects in materials and workmanship for a period of one (1) year from the date of shipment. If any such product proves defective during this warranty period, UNI-T, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product. Parts, modules and replacement products used by UNI-T for warranty work may be new or reconditioned to like new performance. All replaced parts, modules and products become the property of UNI-T.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care.

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1. Safety Summary

Please Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it.

Use proper AC adapter. Use only the AC adapter specified for this product.

Connect and disconnect properly. Connect the probe output to the measurement instrument before connecting the probe to the circuit under test. Disconnect the probe input from the circuit under test before disconnecting the probe from the measurement instrument.
Do not connect or disconnect probes while they are connected to a voltage source.

Ground the product. This product is indirectly grounded through the grounding conductor of the mainframe power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

Do not operate without covers. Do not operate this product with covers or panels removed.

Power disconnect. The power cord disconnects the product from the power source. Do not block the power cord; it must remain accessible to the user at all times.

Do not operate in an explosive atmosphere.

Do not operate in wet/damp conditions.

2. Brief introduction

UT-P43&UT-P44 series current probe applies Advanced magneto-electric sensors. It is used to measure the circuit current with an oscilloscope Using electromagnetic induction and magneto-electric induction.

UT-P43&UT-P44 series current probe can measure 20A（DC + peak AC）or 40A（DC + peak AC）current. The frequency bandwidth of measured signal is 25MHz or 50MHz.

UT-P43&UT-P44 series current probe can be used to do power analysis of high frequency signal with our UT-P35&UT-P36 Series high voltage isolating probe. The delay time of any two probes is less than 1ns.

UT-P43&UT-P44 series current probe is small and robust. It has very high stability, reliability and accuracy.

It may be used at the following location usually:

- Measure current without connect to circuit
- Power analysis
- Switch-mode power supplies design
- Power convert design
- AC inverter and UPS
- Transducer design
- Electronic ballast design
- Electromotor drive design
- CRT display design
- Electric and electronic experiment

3. Main Specifications

Electrical Specification		
Model	UT-P43	UT-P44
Bandwidth (-3dB)	25MHz	50MHz
Rise time	14ns	7ns
Max. measurable current	20A（DC + peak AC）	40A（DC + peak AC）
Current transfer ratio	100mV/A	50mV/A
Accuracy	± 3%	
Max. measurable pulse current	50A（Tp ≤10 μ s）	
Max. voltage on uninsulated wire	400V（DC + peak AC）	
Noise	≤ 1mVrms	
Linearity	±1%	
Delay time	20ns±1ns	
AC adapter output	DC9V，1000mA	
AC adapter input	AC100~240V，50~60Hz	
Typical mechanical specification		
Jaw opening	4.5mm	
Output cable length	About 130cm	

Probe body	188×40×24（mm）
Weight (probe only)	150g
Environment Specification	
Operating temperature	0~40℃
Storing temperature	-10~45℃
Operating humidity	85%RH
Storing humidity	90%RH
Operating altitude	3000m
Storing altitude	12000m

4. Unpacking and Preparation for Use

4-1 Unpacking

This product has been checked and tested for the quality before it comes out of the factory. Please check if there is damage during the transportation when unpacking. If there is, please inform the transportation company and the local agent immediately.

Packing list:

Current probe	1pcs
Instruction manual	1pcs
AC adapter	1pcs

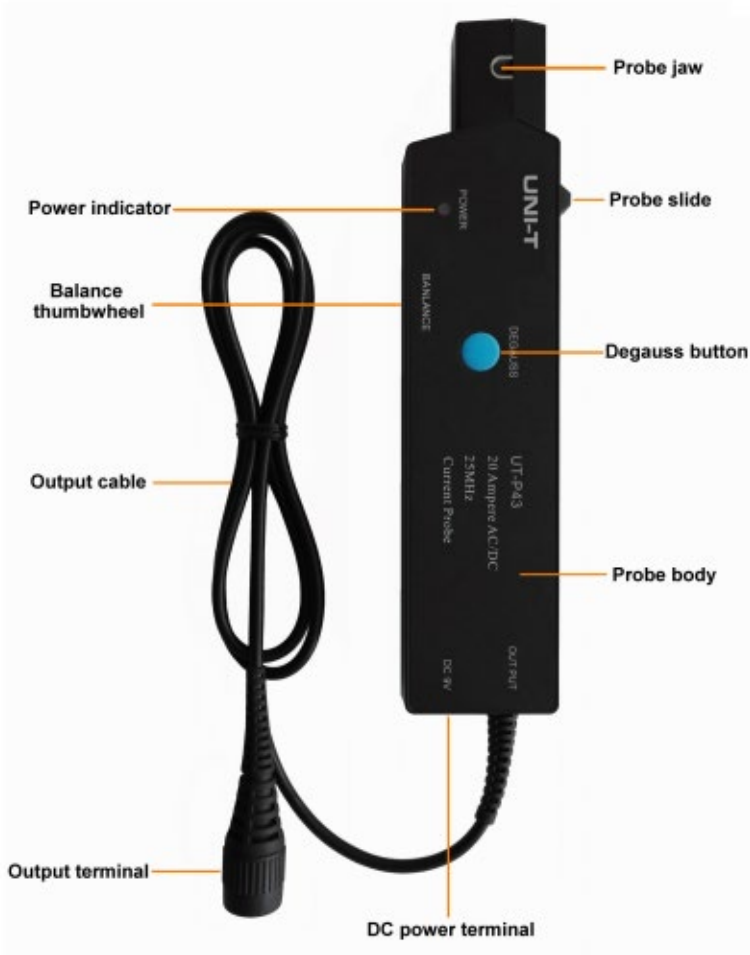
4-2 Preparation for use

Please check the line voltage prior to connect the AC adapter to the electric outlet. The line voltage should be coincident the following list. If the incorrect line voltage is used, it will damage the product and the AC adapter.

AC adapter input voltage	Frequency
AC100V~240V	50~60Hz

Warning: Use only the AC adapter specified for this product to avoid injury and prevent damage to this product.

5. General View of Product



6. General View of Accessories

The product include an accessories: An AC adapter

7. Operating Basics

UT-P43&UT-P44 series current probe is very convenient to operate. But we suggest every new user should read the manual perfectly prior to begin operating.

7-1 Operation steps

a. Check and affirm the AC adapter input voltage is correct prior to use.

b. To get accurate measuring result, degauss and balance the probe according to following step:

- After turning on the oscilloscope and allowing a 20-minutes warm-up period.
- Connect the current probe to an input terminal or the oscilloscope. Set the input channel to the highest sensitivity and set a zero reference point.
- With the probe jaw empty, push the slide on the probe until it locks completely.
- Press the DEGAUSS button.
- Adjust the BALANCE thumbwheel until the displayed signal is zero.

c. Slide the lid of probe jaw and open the probe jaw, then put the measured wire into the probe jaw and close the probe jaw completely as shown in Figure 7-1. The positive current is aligned with the arrow on the probe jaw.

d. After complete the previous steps, power on the wire circuit.

e. Adjust the oscilloscope to display the signal.

f. When the measure is over, power off the wire circuit, then open the

probe jaw to get out the wire.

Figure7-1

Figure7-2

7-2 Attention to use:

a. To measure differential or null current, you can place two wire in the probe jaw.

b. If you are measuring DC or low-frequency AC signal of very small amplitudes, you can increase measurement sensitivity of your current probe by winding several turns of the wire under test around the probe as shown in Figure 7-2.

7-3 Troubleshooting

The Power LED does not remain lit	Check that the AC adapter is plugged in and functional.
The measured waveform can't be displayed right and stability	Check that the probe jaw and keep it closed completely. Check the probe connection to the oscilloscope. Change a different channel on the oscilloscope or change a different oscilloscope.