有源差分探头
Differential Probe Active Probe

■UT-P33

INSTRUCTION MANUAL
使 用 说 明 书

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一、简述：

UT-P33 差分探头提供一个安全的仪器给所有的示波器使用，它可以转换由高输入的差分电压(≤14KVPEAK TO PEAK)进入一个低电压(≤7V)，并且显示波形在示波器上，使用频率高达 70MHz，非常适合大电力测试、研发、维修使用。

差分探头输出标示是设计在操作示波器 1MΩ的输入阻抗的相对衰减量，当使用 50Ω 匹配器进衰减量刚好为 2 倍量。

UT-P33 差分探头，也建议选购本公司生产的 PL-10 阻抗转换器，可以延伸差分探头的应用范围-可以在电表上观测更精确的实际测量电压值(示波器精确度为 1%，数位电表约精准 10 倍)。

二、规格：

(1) 频宽：

DC-50MHz(1:100) DC-70MHz(1:1000)

(2) 衰减：x100,x1000

(3) 精确度：±1% （测量 10V 以上）

(4) 输入电压范围(DC+AC PEAK TO PEAK)

≤1.4KVforx100,(约 490V RMS 或 DC)

≤14KVforx1000,(约 4900V RMS 或 DC)

(5) 允许最高输入电压：

最高差分电压：14KV(DC+AC PEAK TO PEAK)

输入端及接地端间最高电压：5KV RMS

(6) 输入阻抗：

差分：20MΩ /0.5pF

单端到接地端间的输入阻抗：10MΩ /1pF

（7）输出电压：≤7V

（8）输出 阻抗：50Ω

（9）上升时间：

5ns for x1000

7ns for x100

（10）噪声抑制率：

60Hz:＞80dB;100Hz:＞60dB;1MHz:＞50dB

（11）指定外接 6V DC 电源

（12）耗电：最大耗电量 150mA(0.9 瓦特)

三、操作环境及状况

(1) 尺寸及重量：245mm x84mm x36mm;

(2) 电子安全规范 IEC 1010-1

双绝缘

安装类目III

污染程度 2

相关电压或最大接地：5KV RMS

CE：EN50081-1 及 50082-1

四、操作程序

将 BP-250 与 UT-P33 的输出端连接，并与示波器连结。

如有需要先调整示波器上的垂直开关。

将示波器上的衰减率及垂直开关调整到一致的位置，如下表。

注意：电源必须打开。

衰减	X1000	X100
输入电压(DC+AC Peak)	14KVp-p	1.4KVp-p

(注意)
实际的垂直偏向是等于衰减乘上示波器上所选择的垂直偏向，例如是使用负载 50Ω 的两倍。

五、维护

保养此产品时请使用原厂指定的工具，原厂将不负任何责任由其他不被认可的维修人员所做的维修。

六、清洁

此产品不需要任何特定的清洁，如有需要，请用轻软干净的布沾上微量的清洁液轻轻的在产品外观擦拭。

七、保固

除了在人为上的特意损坏，本产品是受保固并可以维修的，并不包含在安全规范的责任。

保固是以不超出发票上的金额，零件的更换及运送的费用。

保固是仅在正常操作下而造成的损坏，并不包含任何刻意的损坏，操作上的错误，机械上的操作不当，保养不当，负载或过压。

原厂的保固是卖出后的 12 个月内，如有任意的非原厂的维修或更换零件，原厂保固将自然取消。

八、维修

有任何的维修，保养或更换零件是在保固以外，请将产品退回原厂维修。

UT-P33 Differential Probe

1. Features

The UT-P33 differential probe provides a safety means for measuring differential voltage to all models of oscilloscopes.It can convert the high differential voltage(≤14KVp-p) into a low voltage(≤7V)and display on the oscilloscope.Its bandwidth is up to 70MHz,which is ideal for big power testing,development and maintain.

The UT-P33 is designed to operate with the 1MΩ impedance oscilloscopes. When combine with the 50Ω load , the attenuation will be 2 times.

UT-P33 is recommend to use with our own manufactured PL-10 to expand the measuring with the electricity meter to observe more accurate measurement.The accuracy of oscilloscope is 1% and the DMM is less than 1%)

2. Specifications

(1) Bandwidth:DC-50MHz(1:100) DC-70MHz(1:1000)

(2) Attenuation: X100, X1000

(3) Accuracy:±1% (measured voltage ＞10V)

(4) Input voltage range(DC+AC PEAK TO PEAK)

≤1.4KV for x100,(about 490V RMS)

≤14KV for x1000,(about 4900V RMS)

(5) Permitted max input voltage:

Max differential voltage: 14KV(DC+AC PEAK to PEAK)

Max voltage between each input terminal and ground: 5KV RMS

（6）Input Impedance:

Differential: 20MΩ /0.5pF

Between terminal and ground:10MΩ /1pF

（7）Output voltage: ≤7V

（8）Output impedance: 50Ω

(9) Rise time:

5ns for x1000

7ns for x100

(10)Rejection rate on common mode:

60Hz:＞80dB;100Hz:＞60dB;1MHz:＞50dB

(11)Power Supply:Only External 6V DC power supply.

(12)Consumption: 150mA max (0.9 Watt)

3. Operating environmental conditions

	Reference	Use	Storage
Temperature	+20℃…+30℃	0℃….+50℃	-30℃….+70℃
Relative Humidity	≤70%RH	10%…85%RH	10%…90%RH

(1) Dimensions and weight：245X84X36mm; 500g

(2) Electrical safety to **IEC 1010-1**

Dual insulation

Installation category Ⅲ

Degree of Pollution 2

Related voltage or max line-earth：5KV RMS

CE：EN50081-1 and 50082-1

4. Operating procedure

- Connect the probe to the oscilloscope with the insulated BNC/BNC lead.
- Adjust the vertical zero adjustment of the oscilloscope if necessary.
- Select the attenuation ratio* and the vertical deviation of the oscilloscope in accordance with the conversion table below.
- NB: The POWER light must come on.

Attenuation ratio	X1000	X100
Voltage Input Range (DC+AC PEAK to PEAK)	14KV	1.4KV

[N.B]

The real vertical deviation in V/div is equal to the attenuation factor multiplied by the range of vertical deviation selected on the oscilloscope. It will be doubled in the case of use of a 50 Ω load.

Maintenance

For maintenance,only use specified spare parts.The manufacturer can not be held responsible for any accident arising following a repair made other than its after sales service or approved repairs.

Cleaning

This probe does not require any particular cleaning.If necessary,clean the case with a cloth slightly moistened with the soapy water.

Warranty

Unless notified to the country,our instruments are guaranteed against any manufacturing defect or material defect. They do not bear the specification known as the safety specification.

Our guarantee,which may not under any circumstances exceed the amount of the invoiced price,goes on further than the repair of our faulty equipment,carriage paid to our workshops.

Repair

Maintenance,repairs under or out of guarantee.Please return the product to the manufacturer.