

UT-P41 AC/DC current probe

UT-P41 交流/直流 電流探測鉗

■UT-P41



INSTRUCTION MANUAL

使 用 說 明 書

SUMMARY / 目录

1、简述.....	1
2、规格.....	2
3、操作环境及状况.....	4
4、操作程序.....	4
5、产品维护.....	5
1、Presentation.....	6
2、Specification.....	7
3、Operating environment.....	8
4、Operation.....	8
5、Maintenance.....	9

一、简述

UT-P41 是一款使用霍尔效应技术测量 AC/DC 电流，无需修改安装（无需断开电路）的钳式电流探头。可测量 50mA 至 100A 的电流。

两个亮灯指示：

- “ON” 表示供电正确
- ” OL “ 表示超负荷的使用（饱和或者达到峰值）

此外有一个自动归零档位以便电流钳适用于不同环境。

此电流钳可跟任何有 BNC 接口的，且阻抗为 $1\text{M}\Omega$ ， $< 100\text{pF}$ 的测试仪器一起使用。

二、规格

量程	100mV/A	10mV/A
电流量程	50mA-10A 峰值	10A-100A 峰值
输出信号百分误差	$3\% \pm 5\text{mV}$	$3\% \pm 5\text{mV}$
频率范围（-3dB）	DC~100kHz	
相移	DC~65Hz: $<1.5^\circ$	DC~65Hz: $<1^\circ$
负载阻抗	$\geq 1\text{M}\Omega$ 和 $\leq 100\text{pF}$	
插入阻抗	0.01Ω	
噪声	6mV	$600\mu\text{V}$
转换速率	$0.3\text{V}/\mu\text{s}$	$20\text{mV}/\mu\text{s}$
上升/下降时间	$3\mu\text{s}$	$<4\mu\text{s}$
测量条件	23℃ $\pm$ 5℃, 20~75%RH, 正弦频率 48~65Hz, 外磁场 <40A/m, 附近无载流线, 中心测试样本, 负载阻 抗 $1\text{M}\Omega$	
电池	9V 碱性电池 (符合 NEDA 1604A, IEC 6LR61)	
低电池指示	当>6.5V 时, LED 为绿色	
过载指示	红色 LED 指示测量电流太大, 需要改变量程	
最大鄂中插入	直径 11.8mm	
尺寸	231×36×67mm	
重量	330g (含电池)	
输出	2 米同轴电缆, 终端带有绝缘 BNC 插座	

三、操作环境及状况

1. 操作温度：0~+50℃
2. 保存温度：-3~+80℃
3. 操作相对湿度：
+10℃~+30℃：85±5%相对湿度（无冷凝）；
+40℃~+50℃：45±5%相对湿度（无冷凝）
4. 操作高度：0~2000

四、操作程序

1. 要启动电流测试钳，把开关移至 100mV/A 档位。
检查确认电池绿色指示灯是亮的，不亮。
2. 连接电流钳到示波器上。
3. 在电流钳已关闭，但没有夹紧导体的情况下。
示波器上选择最高灵敏度（例如 1mV/cm），电
流钳选择 100mV/A 。
4. 在关闭电流钳并没有导体的情况下，选择示波器
和电流钳上最高的灵敏度（例如：1mV/cm），然后转动电
流钳零位按钮，示波器相应归零，这使得示波器可以
适应所做的位置。
5. 电流钳和示波器选择好测试敏感度。
6. 选择最适合测量的连接电流钳到示波器上的方式。

注意！箭头显示方向表示电流从正极到负极的流动方向。

电流钳钳住要测量的电流导体，开始测量。

如果有必要，可对电流进行二次测试，测量时，钳口不要过度夹紧导体。

五、产品维护



维修此产品，请使用指定的工具。如果由不合格维修人员以及使用非指定工具所做的维修而造成的机器损坏，本公司将不负任何责任。

- **钳口表面：**需经常保持钳口表面干净、清洁。为避免生锈，可在钳口表面轻抹一层油，不要让电流钳经常处于潮湿的环境，或直接与水接触。
- **清洁处理：**用通过肥皂水清洗过的清洁布或海绵轻轻搽试，然后用干燥清洁布搽干或置于通风处晾干。为保证电流钳的性能，建议每年进行一次检查或校准。

1. PRESENTATION

The UT-P41 clamp is a current probe for oscilloscope which uses a Hall effect cell for the measurement of DC or AC current without modification of the installation(without switching off the circuit).

It can measure currents from 0.05A to 100 A peak.

It has 2 ranges and 2 lights indication:

- “ON”,correct power supply to the clamp.
- “OL”,overload of the range in use (saturation or peak).

In addition a thumbwheel can be used to reset zero for adaptation to the measurement environment.

This clamp adapts to allow measurement instruments which have a BNC input and an impedance of $1\text{M}\Omega$, < 100pF.

2. SPECIFICATION

Model	UT-P41
Bandwidth	100KHz
Accuracy	3%±5mV
Current range	0.05A-10A,10A-100A
Ratio	10mV/A,100mV/A
Working voltage	600V
Low power	When>6.5V,green LED
Over-load	Red LED,use another range or model
Working Temp.	0°C to + 50°C /(+32°F to + 122°F)
Storage Temp.	-20°C to + 80°C/ (-4°F to 176°F)
Humidity	0°Cto40°C, 95%/ 40°C to 50°C, 45%
Clamp Dia.	11mm
Cable length	2m
Demision	231x67x36mm
Weight	330g(including battery)
Power supply	9V battery

3. Operating environment

- 1). Operating.Temp: $0\sim+50^{\circ}\text{C}$
- 2). Storage.Temp: $-3\sim+80^{\circ}\text{C}$
- 3). Operation relative humidity:
 $+10^{\circ}\text{C} \sim +30^{\circ}\text{C} : 85\pm 5\%$ relative humidity
(non-condensing):
 $+40^{\circ}\text{C} \sim +50^{\circ}\text{C} : 45\pm 5\%$ relative humidity
(non-condensing)
- 4). Operating height: $0\sim 2000\text{m}$

4. Operation

- 1). To make a current measurement,switch on the clamp by selecting the 100mV/A range.Check that the battery indicator(green)is lit and that the <>indicator is not lit
- 2). Connect the clamp to the oscilloscope
With the clamp closed and without clamping a conductor,select the highest sensitivity(for example 1mV/cm)on the oscilloscope and 100mV/A on the clamp ,then set zero on the clamp with the thumbwheel in relation to a reference chosen on the oscilloscope.Zero on the oscilloscope makes it possible to adjust this setting.
- 3). Select the measurement sensitivities of the clamp and the oscilloscope
- 4). Choose the connection method which is the best adapted to measurement on the oscilloscope
- 5). Note the direction of the primary current by means of

the arrow marked on and under the case .

6).Insert the conductor carrying the current to be measured in the clamp and take the measurement.

7). If necessary, re-check the origin of the graph,with the jaws not clamped around the conductor,and make the measurement again.

5. MAINTENANCE



For maintenance,please kindly contact the reseller or manufacturer..The manufacturer will not be held responsible for any accident occurring following repair done other than by its After Sales Service or approved repairs.

- **Jaw faces:**It is necessary to always keep the jaw faces clean. Clean them and lightly oil them to avoid rust.Do not leave the clamp in very damp places, or directly exposed to water.
- **Handles and case:**Clean with a cloth or a sponge soaked with soapy water,rinse in the same way without ever getting water on the clamp.Dry with a cloth or in an air flow.
- To maintain the performance of the clamp,it is advisable to carry out a check or recalibration every year.