

# INSTRUCTION MANUAL

# 使用說明書



## **For Series Models:**

適用系列機種:

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### **HVC-801 DC High Voltage Probe Calibrator/ Meter**

直流高壓測試棒校正器/電錶

### **HVC-802 DC High Voltage Meter**

直流高電壓電錶

### **HVC-803 DC High Voltage/ High Impedance Meter**

直流高電壓/高輸入阻抗電錶



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# HVC-801

## DC High Voltage Probe Calibrator/Meter

直流高壓測試棒校正器/電錶



# HVC 801 DC High Voltage Probe Calibrator/Meter

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## 1. GENERAL

- HVC-801 is an Electronic Instrument combines High Voltage Probe Calibrator and High Voltage Probe Meter in one.
- HVC-801 provides a small dimension, light weight, and convenient operation.
- HVC-801 keeps the max output current  $\leq 0.4\text{mA}$ ; and Max. Instantaneous short current  $\leq 15\text{ mA}$  to prevent the occurrence of accident.
- HVC-801 provides a continuous adjustable output voltage from 4kV to 40kV, and the loading effect (for  $1000\text{M}\Omega$ , 1/1000 High Voltage Probe) less than 5%.
- HVC-801 display is 4 ½ Red LED easy to observe, high resolution 10V high accuracy 0.5% is suit to use on QC, repairing, RD and educational application.

***Read carefully this manual before using the instrument and respect the safety precautions.***

## 2. SAFETY PRECAUTIONS

The steps outline the minimum basic safety precautions that must be followed when using this instrument.

- (1) Do not use the instrument in a damp environment or where there is risk of explosion.
- (2) Examine the instrument make sure it is clean and dry. If in doubt, wipe with a clean dry, lint-free cloth.
- (3) Look at the condition of the floor. It must be dry, clean and free of oil.
- (4) Only use this instrument as the calibrator of your High Voltage Probe or The DMM of your High Voltage Probe.
- (5) Verify that you are able to remain clear, dry and avoid contact with any exposed metal and /or other conductive material.

- (6) When use as High Voltage Probe Meter. Be sure of the common lead (alligator clip) of the High Voltage Probe has connected to a good earth ground before taking any measurements.
- (7) For the calibration Voltage Higher than 10kV. Connect the probe to the instrument as Fig.3 and (set the output voltage at lower than 10kV then) connect the tip of the probe to the out put terminal then turn the voltage. Adjustment the Output Voltage Adjustment Switch till the voltage you want.
- (8) Always keep the output voltage of the instrument at lower than 10kV before you connect the probe tip or any other conductive material to the output terminal of the instrument.
- (9) Do not pull out the High Voltage Output Terminal Cover if not necessary.
- (10) Do not touch the High Voltage Power Output terminal within 10 sec after power off.

### 3. SPECIFICATIONS

#### (1)High Voltage Probe Calibrator

Output Voltage: 4.00kV~40.00kV adjustable

Output Current:  $\leq 0.4\text{mA}$

Display: 4 ½ digits, 0.36" Red LED

Resolution: 0.01kV(10V)

Accuracy:  $\pm 0.5\%$   $\pm 2$  digits

Loading Effect:  $< 5\%$

(For1000M $\Omega$ , 1000:1 high voltage probe at output 20kV DC)

#### (2)High Voltage Probe Meter

(For 1/1000 High Voltage Probe only)

Input Voltage:  $\leq \pm 40\text{V DC}$ (after attun.)

Display: 4 ½ digits, 0.36" Red LED

Resolution: 0.01kV(10V)

Max. Display: 40.00kV

Accuracy:  $\pm 0.5\%$   $\pm 2$  digits+H.V. Probe accuracy

**(3)Power Source:** AC 115V/230V $\pm$  10%; 50/60Hz

**(4)Power Consumption:** 25W

**(5)Fuse:**

Line Voltage	Frequency	Fuse
110~120V	50/60Hz	600mA
220~240V	50/60Hz	300mA

**(6)Operating Temperature and Humidity:** 0~40°C; 0~80%RH

**(7)Storage Temperature and Humidity:** -20~60°C; 0~90%

**(8)Dimensions:** 270 x 95 x 31 mm

**(9)Weight:** 3.2KGS/17PB

**(10)Power Discharge Time:**

1/10 power residual at 4 sec after power off.

1/100 power residual at 8 sec after power off.

1/1000 power residual at 12 sec after power off.

## 4. CONTROL AND INDICATIONS

### Front Panel:(Refer to Fig.1)

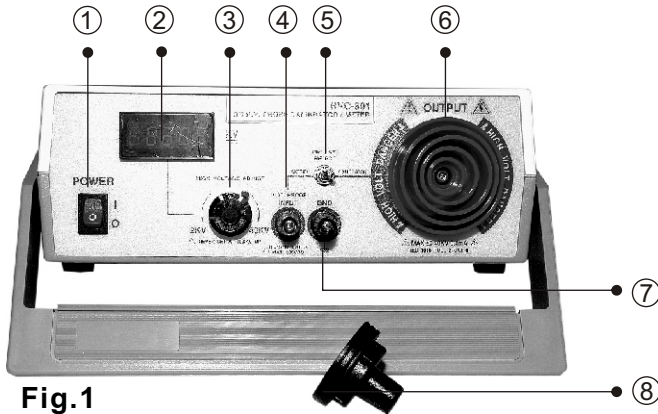


Fig.1

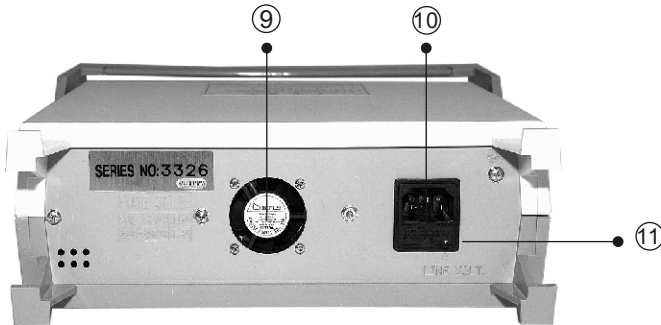
- ① **Power Switch:** When switch on the LED ② will be Light up.
- ② **LED:** 4 ½ digital display, display KV.
- ③ **Output Voltage Adjust Switch:**  
Adjust the output from 2kV to 40 kV.  
**⚠ Never set the output Voltage Higher than 40.0kV.**
- ④ **High Voltage Probe Meter Input:** Max. Input voltage:  $\pm 40V$  DC only.
- ⑤ **LED Display Selector:**  
The display of LED can be selected as the output voltage of the instrument or the input voltage from the High Voltage Probe.
- ⑥ **High Voltage Power Output Terminal:** The output voltage can be 2 kV~40 kV.  
**⚠ Never connect the terminal by and probe tip or any conductive material when the output voltage is higher than 10kV.**
- ⑦ **High Voltage Power Output Terminal Cover:**  
Adjust the output voltage at lower than 10 kV, then pull out the cover and connect the probe tip to the terminal.  
**⚠ Never pull out the cover if the instrument was used for high voltage probe meter.**



### ⑧ Ground Terminal:

This ground terminal is connected to the ground of PCB and ground of Power Connector ⑪.

### Rear Pane:(Refer to Fig.2)



**Fig.2**

⑨ **DC Fan:** DC 12V, 0.1A

⑩ **Power Connector.**

⑪ **Input AC Power Selector and Fuse:**

For selecting the AC voltage of the instrument by aligning its arrow head mark in the corresponding position and fuse is inside.

AC Power	Fuse
110~120V 50/60Hz	600mA
220~240V 50/60Hz	300mA

## 5. OPERATION

### A. HIGH Voltage Probe Calibrator: (Refer to Fig.3)

1. Connect the High Voltage Probe.
2. Set the LED Display Selector at CALIBRATOR position.
3. Pull out the High Voltage Output Terminal Cover.
4. Connect the High Voltage Probe Tip to the power output terminal.
5. To turn the instrument Power on .
6. Adjust the Output Voltage Adjust Switch to display 20kV on LED, or the output voltage you want from 2kV to 40kV.
7. Switch the LED Display Selector to METER.

If the LED Display are not the same as at the CALIBRATOR position. Adjust the VR of High Voltage Probe till the LED display the same at both METER and CALIBRATOR positions.

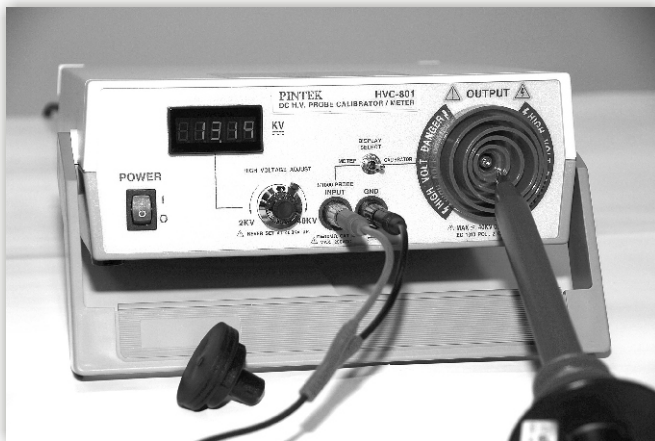


Fig.3

## B. High Voltage Probe Meter: (Refer to Fig.4)

When use the instrument as the METER, Please Do not pull out the cover.

1. Connect the High Voltage Probe.
2. Connect the common lead(alligator clip) of the High Voltage probe to a good earth ground or reliable chassis ground.
3. Switch the LED Display Selector to METER position.
4. Switch on the Power Switch and **Make sure the High Voltage Power Output Cover did not pull out.**
5. Connect the High Voltage Probe Tip to the test point. The LED will display the voltage test.

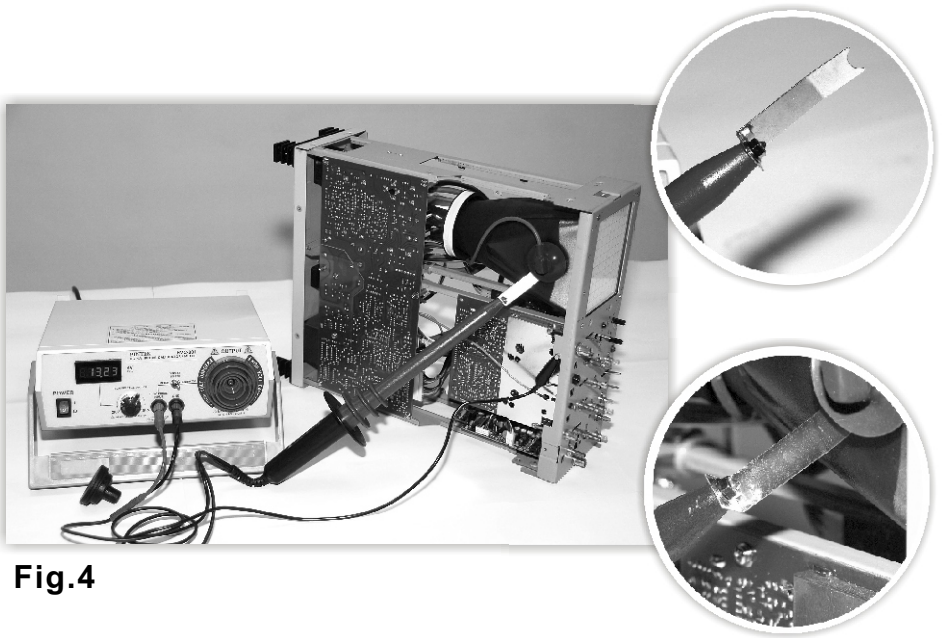


Fig.4

## 6. WARNING

- (1) Before switch on the instrument, please make sure the High Voltage Power Output Terminal Cover is covered.
- (2) Before connect the output terminal by any conductive material, make sure the output voltage is lower than 10kV. After connection, slightly adjust up the output voltage.
- (3) When use H.V. Probe Meter, please make sure the alligator chip of the probe is connecting to the good earth ground and the High Voltage Power Output Terminal Cover is covered.
- (4) Please make sure the input AC power is match to the indicated voltage.

## 7. MAINTANCE

For maintance only use specified spare parts.

The manufacturer can not be held of responsible for any accident arising following a repair made other than by its after sales service or approved repairers.

## 8. CLEANING

Remove any dirt, dust and grime whenever they become noticeable cleaning the outside cover with a soft cloth moistened with a mild cleaning solution.

# HVC 801 直流高壓測試棒校正器/電錶

## 一. 簡述:

HVC-801是一台非常實用的高壓測試棒校正器及高壓測試棒電錶二合一電子儀器,它具有最小的體積、最輕的重量及最簡便調校手續等優點。

本機連續輸出電流量最大值小於0.4mA, 短路瞬間電流<15mA, 因此可降低意外發生。電壓調整範圍超過10倍, 從4kV~40kV無限段調整, 負載效應<5%(1000MΩ 1000:1高壓棒負載) 電壓顯示誤差值<0.5%, 非常適合工廠品管、維修、開發、生產調整及學校教學等應用。

## 二. 規格:

### (1)高壓輸出端

高壓輸出: 4.00kV~40.00kV 無限段可調

輸出電流: MAX.  $\leq$  0.4mA

電壓顯示: 4 ½ 位, 0.36" 紅色 LED

解析度: 0.01kV(10V)

誤差值:  $\pm$ 0.5%  $\pm$ 2 digits

負載效應: < 5% (負載1000MΩ, 1000:1 測試棒於輸出20kV DC時)

短路瞬間電流:  $\leq$  15 mA (一秒鐘)

### (2)低壓輸入端

指定輸入條件: 1000:1 高壓衰減棒

衰減後最大輸入電壓:  $\leq$  40V DC

電壓顯示: 4 ½ 位, 0.36" 紅色 LED

解析度: 0.01kV(10V)

最大顯示值: 40.00kV

誤差值:  $\pm$ 0.5%  $\pm$ 2 digits+高壓棒本身誤差

### (3)電源輸入: AC 115V/230V $\pm$ 10%; 50/60Hz

### (4)電源消耗: 25W

### (5)保險絲:

電源	頻率	保險絲
110~120V	50/60Hz	600mA
220~240V	50/60Hz	300mA

- (6)操作溫濕度: 0~40°C; 0~80%RH  
 (7)儲存溼濕度: -20~60°C; 0~90%  
 (8)尺寸: 270(寬) x 95(高) x 310(深) mm  
 (9)重量: 3.2KGS/17PB  
 (10)關機殘存電壓:  
     4秒後電壓殘存 1/10以下  
     8秒後電壓殘存 1/100以下  
     12秒後電壓殘存 1/1000以下

### 三. 前面板指示說明:

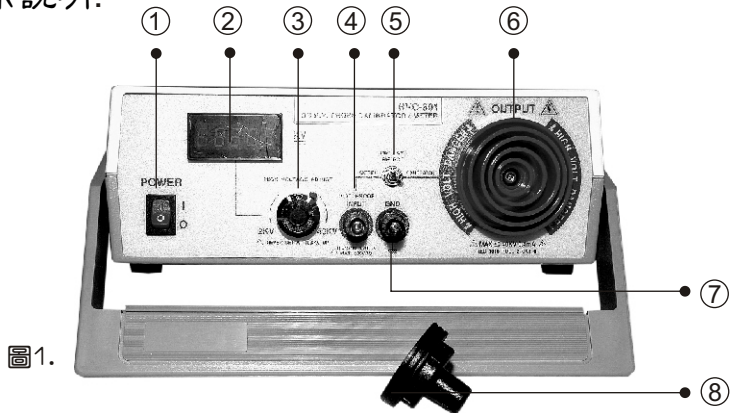


圖1.

- ① 電源開關: 電源ON時LED②亮起。  
 ② LED顯示器: 4 ½位數字型顯示, 0.36"紅色LED, 標示單位:KV。  
 ③ 高壓調整旋鈕: 共10轉, 設定請勿高於40.0kV。  
 ④ 1/1000高壓棒電錶專用輸入端。  
     A. 衰減後之電壓不得高於40V。  
     B. 本輸入端為CAT II, 禁止量測雙相及三相電源。  
     C. 僅能量測直流電; 任何交流電請勿輸入。  
 ⑤ LED顯示選擇鈕: 可選擇本機輸入電壓或是外部輸入電壓。

- ⑥ 高電壓輸出端:
- 10kV以上時請勿直接使用任何測試棒(含HVP-40), 由空氣中浮動接近, 因能量太大会造成雷暴, 會導致本機損毀。
  - 請切記接地線必須先接穩當, 否則HVP-40本身會帶有巨大能量易發生危險。
  - 使用10kV以上時請先關機, 待HVP-40正負端接受後再開機, 可防止任何雷爆。
- ⑦ 高電壓輸出端保護蓋:
- 欲拔去保護蓋前請將輸出電壓調至10kV以下。
  - 除非需要應用輸出電壓(例如:校正高壓棒), 否則請勿拔去保護蓋。

#### 四. 後蓋指示說明:

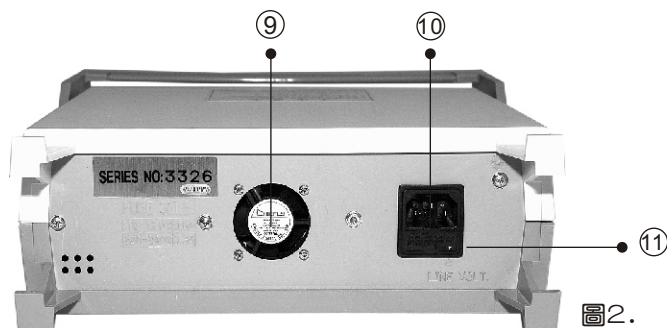


圖2.

- ⑧ 散熱風扇: 吸出型, 使用12V/DC/0.1A
- ⑨ AC電源輸入座
- ⑩ 保險絲座:

電源	保險絲
110~120V	600mA/250V
220~240V	300mA/250V

## 五. 操作方式

### A. 校正HVP-40

- 步驟一. 如圖接妥後再開機。
- 步驟二. 調整電壓為20.00kV。
- 步驟三. 切換選擇顯示鈕, 二端顯示應相同。
- 步驟四. 調整HVP-40之VR使步驟三之兩端顯示相同。



圖3.

### B. 高壓電錶

**注意!** 使用高壓電錶時, 請勿將輸出端保護蓋拔出, 必需檢查是否蓋好。

- 步驟一. 如圖接妥。
- 步驟二. 請切記先將接地線夾妥。
- 步驟三. 將顯示器切到1/1000 PROBE INPUT。
- 步驟四. LED顯示值為目前正確的量測電壓值。

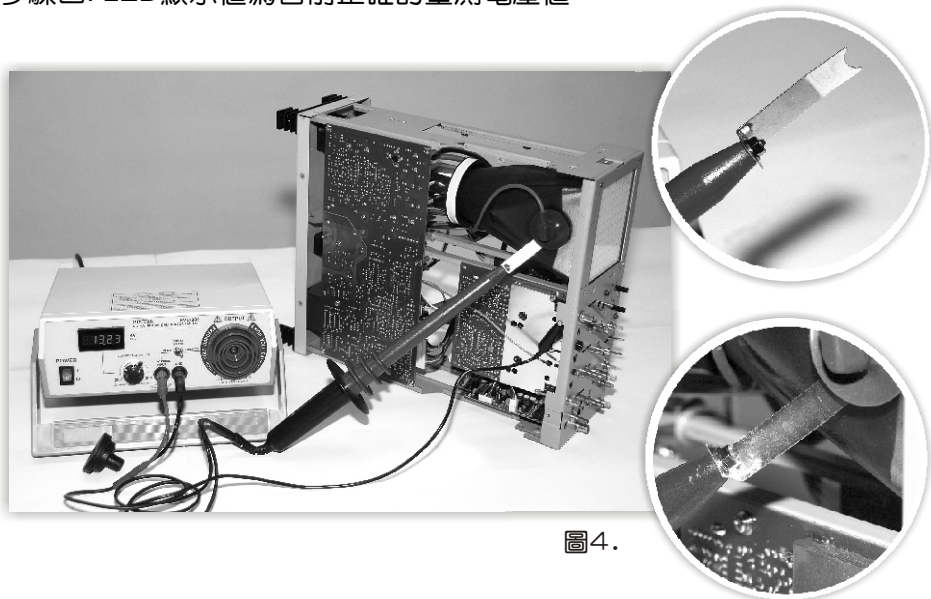


圖4.



## 六. 注意事項

- (1)將儀器電源開啓前，請確認儀器的高電壓輸出端有被妥善的包覆著。
- (2)儀器的電壓輸出端有與任何傳導性的物質連接時，請確認輸出電壓需先低於10kV, 待接妥後再微調升高輸出電壓。
- (3)在使用此儀器時，請確認測試棒的鱷魚夾一端須與接地端妥善接好，同時確認輸出端有被妥善的覆蓋著。
- (4)請確認輸入的交流電須與指定電壓相符合。

## 七. 維護

保養時請使用指定的套件進行保養. 製造廠對於銷售後由其他維修人員或(及)不合格的維修人員進行維修而產生的意外不負任何責任。

## 八. 清潔

請用少許的清潔劑倒在柔軟微濕的軟布上輕輕的將灰塵及髒污清理掉。

# HVC-802

## DC High Voltage Meter

直流高電壓電錶



# HVC 802 DC High Voltage Meter

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## 1. GENERAL

- HVC-802 is a combination designed DC 40kV high voltage Digital Volt Meter, directly 40kV measuring or indirectly measuring through High Voltage Probe.
- HVC-802 provides  $10G\Omega$  high input impedance on the directly measurement to minimize the loading effect so show you the actual voltage on the measuring circuit.
- HVC-802 display by 4 ½ Red LED, easy to observe.
- HVC-802 provides a high accuracy  $\leq 0.5\%$ , high resolution 10V for Max. 40kV measurement.
- HVC-802 suits for manufacturers of electrostatic equipment, CRT equipment and High Voltage parts equipment. As well as suits for the QC, repairing, RD and education application.

**Read carefully this manual before using the instrument and respect the safety precautions.**

## 2. SAFETY PRECAUTIONS

The steps outline the minimum basic safety precautions that must be followed when using this instrument.

- (1) Do not use the instrument in a damp environment or where there is risk of explosion.
- (2) Examine the instrument and make sure it is clean and dry. If in doubt, wipe with a clean dry, lint-free cloth.
- (3) Look at the condition of the floor. It must be dry, clean and free of oil.
- (4) Verify that you are able to remain clear, dry and avoid contact with any exposed metal and /or other conductive material.
- (5) Examine the 1/1 probe before use. Make sure that it is in good condition. Any damage on the surface of the wires could cause you serious personal harm.

- (6) Only use the 1/1 probe accessory for the directly high voltage measurements.
- (7) Examine the entry to your High Voltage test point. Make sure that you are able to bring the probe in to the point.
- (8) Always work within sight and hearing of another person. If an accident occurs, you will be able to aid quickly.

### 3. SPECIFICATIONS

#### (1) Directly High Voltage Input Terminal for 1/1 Probe:

**Max. Input Voltage:** DC only. 0~40kV

**Input Impedance:** 10G $\Omega$

**Display:** 4 ½ digits, 0.36" Red LED

**Accuracy:**  $\pm 0.5\%$   $\pm 2$  digits

**Max. Display Voltage:**  $\pm 40.00$ kV

**Resolution:** 0.01kV

**Test Lead:**

Voltage Insulation: 40kVDC

Length: about 2M

Wire: E35688 UL AWM, 3239/105°C/50kV, DC VW- 1/22AWG.

**Earth Clip:**

3.5mm Extra durable, 0.12mm x 64 cu plate with Tin 90cm long.

#### (2) Indirectly High Voltage Input Terminal for 1/1000 Probe:

**Max. Input Voltage:** DC only. 0~40kV

**Display:** 4 ½ digits, 0.36" Red LED

**Accuracy:** The accuracy of 1/1000 probe add  $\pm 0.5\%$   $\pm 2$  digits

**Max. Display Voltage:** 40.00kV

**Resolution:** 0.01kV

**Power Source:** AC 115V/230V $\pm$ 10%; 50/60Hz

**Power Consumption:** 25W

**Fuse:**

Line Voltage	Frequency	Fuse
110~120V	50/60Hz	600mA
220~240V	50/60Hz	300mA

**Operation Temperature and Humidity:** 0~40°C; 0~80%RH

**Storage Temperature and Humidity:** -20~60°C; 0~90%RH

**Dimension and Weight:** 270 x 95 x 31 mm; 3.2KGS

## 4. CONTROL AND INDICATIONS

### Front Panel:(Refer to Fig.5)

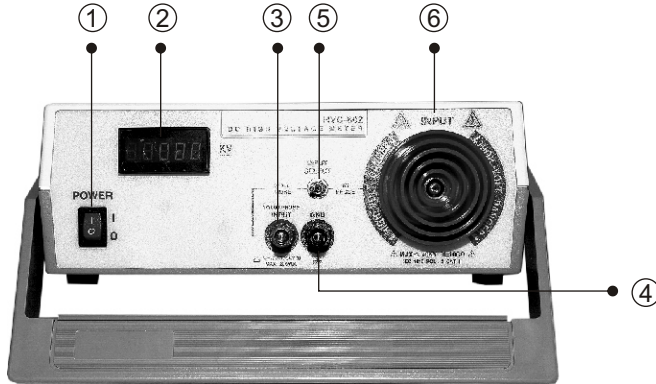
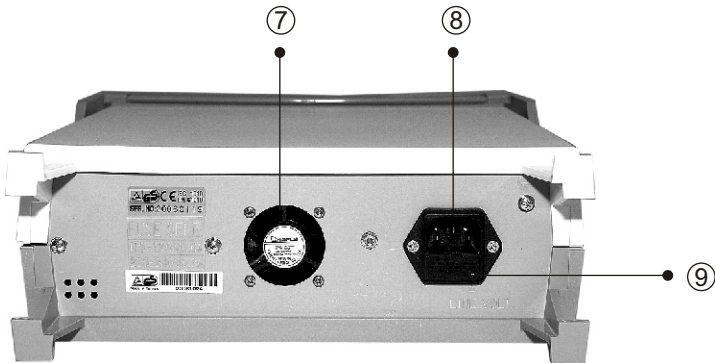


Fig.5

- ① **Power Switch:** When switch on the LED ② will be Light up.
- ② **LED:** 4 ½ digital display, 0 ~ ±40kV display.
- ③ **Indirectly High Voltage Input Terminal for 1/1000 Probe**  
**Max. Input voltage: ±40V DC only**  
**⚠ This input terminal for 1/1000 probe only.**
- ④ **Ground Terminal:**  
 The ground terminal is connected to the ground of PCB and ground of Power Connector ⑧ .  
**⚠ Before taking any measurements. Make sure the terminal is connected to earth ground in good electrically connection.**
- ⑤ **LED Display Selector:**  
 The display of LED can be selected as the voltage from the 1/1000 indirectly High Voltage Input Terminal or from the 1/1 Directly High Voltage Terminal.
- ⑥ **Directly High Voltage Input Terminal for 1/1 Probe:**  
**Max. Input voltage: ±40V DC only**  
**⚠ Do Not use the 1/1 probe other than the probe accessory.**

**Rear Pane:(Refer to Fig.6)****Fig.6**

⑦ **DC Fan:** DC 12V, 0.1A

⑧ **Power Connector.**

⑨ **Input AC Power Selector and Fuse:**

For selecting the AC voltage of the instrument by aligning its arrow head mark at the corresponding position and the fuse is inside.

AC Power	Fuse
110~120V 50/60Hz	600mA
220~240V 50/60Hz	300mA

## 5. OPERATION

### A. Directly High Voltage Measuring: (Refer to Fig.7)

**⚠ Never use the probe other than the accessory probe and make sure the probe is good, clean and dry.**

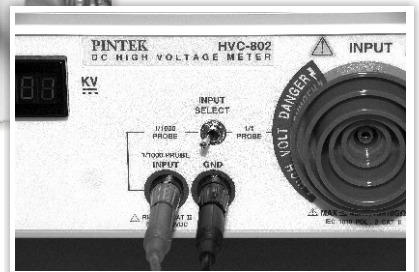
1. Connect the Ground Terminal(GND) to earth ground and make sure the electrical connection must be good.
2. Switch on the Power Switch. The LED will be light up.
3. Set the Led Display Selector to 1/1 probe.
4. Connect the 1/1 probe to HVC-802 and the test point as show in Fig.3

**⚠ Do not power on the equipment witch will be test before you make sure the connection is electrically good.**

5. Switch on the power of equipment be test.
6. Read the LED display.



**Fig.7**





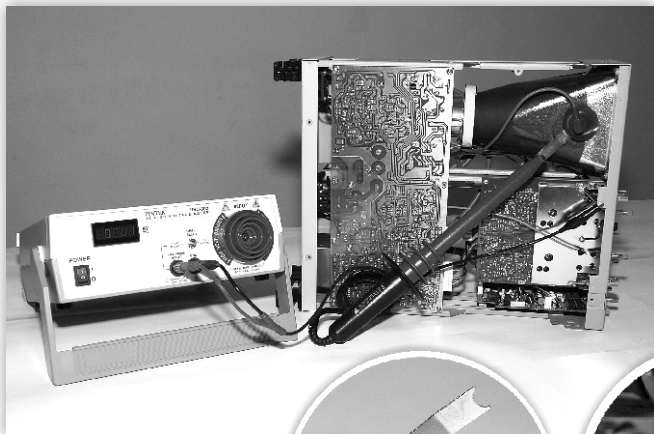
## B. High Voltage Probe Meter: (Refer to Fig.8)

**⚠ Use the 1/1000 probe only.**

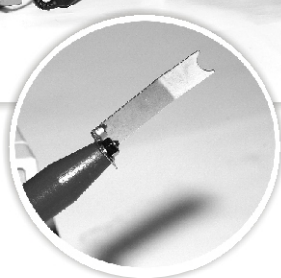
1. Connect the alligator clip of your 1/1000 probe to earth ground of the equipment be test and make sure the electrical connection must be good.
2. Set the LED Display Selector to 1/1000 probe.
3. Connect the red plug of your 1/1000 probe to Indirectly High Voltage Input Terminal and black plug of your 1/1000 probe to the Ground Terminal(GND).
4. Contact the tip of your 1/1000 probe to the test point as shown in Fig.4.

**⚠ Before you had connected. Do no power on the equipment be test.**

5. Switch on the equipment be test.
6. Read the LED display.



**Fig.8**



## **6. WARNING**

- (1) Before taking any measurements by 1/1 probe. Make sure the probe is clean, dry and good without any damage on the surface.
- (2) Do not switch on the equipment be test before you had connected well on any measurements.
- (3) Make sure appropriate probe is installed in HVC-802 for measurement. Use 1/1000 probe for Indirectly High Voltage Input measuring.
- (4) Verify that measurement source is DC. Never use HVC-802 for AC mesurement.
- (5) Before taking any measurements. Make sure the earth ground connection is electrically good.
- (6) Make sure the AC power of HVC-802 is match to the indicated voltage.
- (7) Always keep the input voltage of the instrument at lower than 10kV before connect the probe tip or any conductive material to the input terminal of the instrument.
- (8) Please make sure the alligator chip of the probe is connecting to the good earth ground, and the high voltage power input terminal is covered.

## **7. MAINTANCE**

For maintance only use specified spare parts.

The manufacturer can not be held of responsible for any accident arising following a repair made other than by its after sales service or approved repairers.

## **8. CLEANING**

Remove any dirt, dust and grime whenever they become noticeable cleaning the outside cover with a soft cloth moistened with a mild cleaning solution.

# HVC 802 直流高電壓電錶

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## 一. 簡述:

HVC-802是二合一高壓電錶,可直接量測40kV電壓及透過高壓衰減棒量測;直接量測高壓時,具有超高輸入阻抗10G $\Omega$ ,最能忠實傳送電路實際電壓,避免因負載效應使原本電路電壓改變,如:量測CRT時因負載效應造成聚焦失調、螢幕影像擴大等不正常現象,可立即有效獲得改善。

顯示用4½位紅色LED清晰醒目,誤差<0.5%,最大顯示40.00kV、解析度10V,是目前體積最小、重量最輕的桌上型高電壓電錶。

本電錶非常適合製造靜電設備工廠、映像管設備工廠及高壓電週邊設備工廠等生產、調整、品管與維修使用以及學校教學等應用。

## 二. 規格:

(1)直接高壓輸入: DC only. 0~40kV

輸入阻抗: 10G $\Omega$ (所有檔位)

電壓顯示: 4½位, 0.36" 紅色 LED

顯示誤差:  $\pm 0.5\% \pm 2$  digits

最大顯示值: 40.00kV

溫度係數:  $\leq 100$  PPM/ $^{\circ}\text{C}$

解析度: 0.01kV(10V)

指定測試棒:

耐壓: 40kVDC

長度: 大約 2公尺(含握柄)

線規: E35688 UL AWM, 3239/105 $^{\circ}\text{C}$ /50kV, DC VW-1/22AWG

接地線: 3.5mm 耐寒, 0.12mm x 64 蕊鍍錫銅線,長度約90cm.

(2)間接高壓輸入: 指定使用1/1000高壓衰減棒

指定輸入阻抗: 1000M $\Omega$

衰減後最大輸入電壓: 40V DC

電壓顯示: 4½位, 0.36" 紅色 LED

解析度: 0.01kV(10V)

最大顯示值: 40.00kV

顯示誤差值:  $\pm 0.5\% \pm 2$  digits+衰減棒本身誤差值

(3)電源輸入: AC 115V/230V $\pm 10\%$ ; 50/60Hz

(4)電源消耗: 25W

(5)保險絲:

電源	頻率	保險絲
110~120V	50/60Hz	600mA
220~240V	50/60Hz	300mA

(6)操作溫濕度: 0~40°C; 0~80%RH

(7)儲存溼濕度: -20~60°C; 0~90%

(8)尺寸: 270(寬) x 95(高) x 310(深) mm

(9)重量: 3.2KGS/17PB

三. 前面板指示說明:

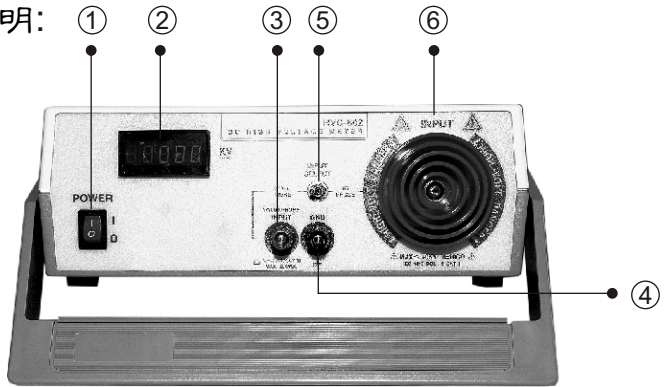
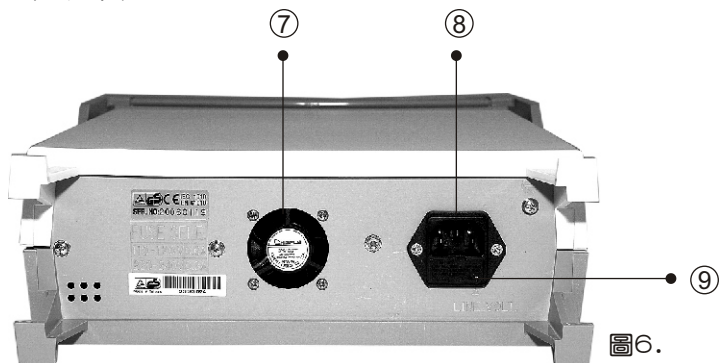


圖5.

- ① 電源開關: 電源ON時LED②亮起。
- ② LED顯示器: 4 1/2位數字型顯示,0.36" LED。
- ③ 1/1000高壓棒輸入端:  
指定使用1000M $\Omega$  阻抗, 衰減後最高電壓為40V DC。
- ④ 接地端:  
本點與基板地及電源地相連接, 不管從任何一端輸入電壓, 請先確認本接地端已連接妥當。
- ⑤ 輸入選擇鈕:  
可選擇高壓直接輸入或經過衰減棒再輸入; 如果待測電壓之電流很小時, 應指定使用1/1 高壓衰減棒, 因為 $R_i=10G\Omega$ , 測試後負載效應可降至最低, 可測最接近原始電壓, 例如: 顯像器測高壓後聚焦仍能保持清晰。
- ⑥ 高壓輸入端:  
請指定使用本公司所附之配件, 如果有破損、金屬外露、斷線等問題, 請立即停用, 並與原供應商聯絡。

## 四. 後蓋指示說明:



- ⑧ 散熱風扇: 吸出型, 使用12V/DC/0.1A
- ⑨ AC電源輸入座: 分離式, 收藏時可利用後支柱捲繞。
- ⑩ 保險絲座:

電源	保險絲
110~120V	600mA/250V
220~240V	300mA/250V

## 五. 操作方式

### A. 選擇直接量測高電壓(圖7.)

- 步驟一. 如圖示, 按電源ON開機後, LED會顯示。
- 步驟二. 將輸入選擇開關撥至1/1 高壓衰減棒。
- 步驟三. 將地線連接妥當及另一端之鱷魚夾亦需確實夾穩。
- 步驟四. 將高電壓、高壓衰減棒輸入端接妥。
- 步驟五. 將高壓端連接至待測物。

**注意!** 請先將待測物電源關閉, 待接妥後才能開機, 可避免電弧產生或造成放電, 使待測物零件受損。

- 步驟六. 正確電壓值顯示在LED上。

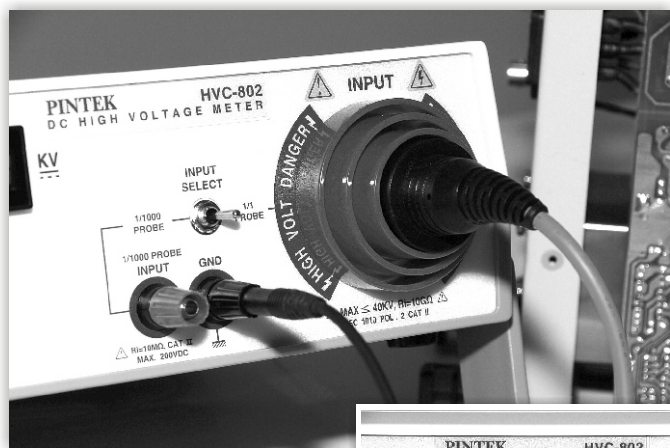
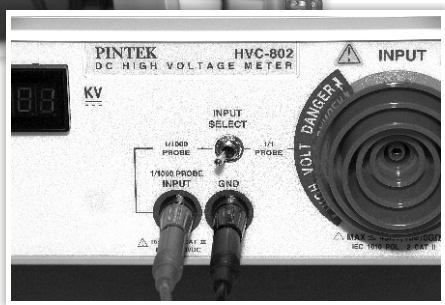


圖7.



## B. 選擇透過1/1000 高壓衰減棒輸入(圖8.)

- 步驟一. 如圖示, 按電源ON開機後, LED會顯示。
- 步驟二. 將輸入選擇開關撥至1/1000 高壓衰減棒。
- 步驟三. 將1/1000 高壓衰減棒之隔離線低電壓端, 紅色端插入輸入端(1/1000 PROBE INPUT)。
- 步驟四. 將1/1000 高壓衰減棒之隔離線低電壓端, 黑色端插入接地端(GND)。
- 步驟五. 將1/1000 高壓衰減棒之獨立線之鱷魚夾確實夾到待測物之地端。
- 步驟六. 將高壓端連接至待測點。

**注意!** 請先將待測物電源關閉, 待接受後才能開機, 可避免電弧產生或造成放電, 使待測物零件受損。

- 步驟七. 正確電壓值顯示在LED上。

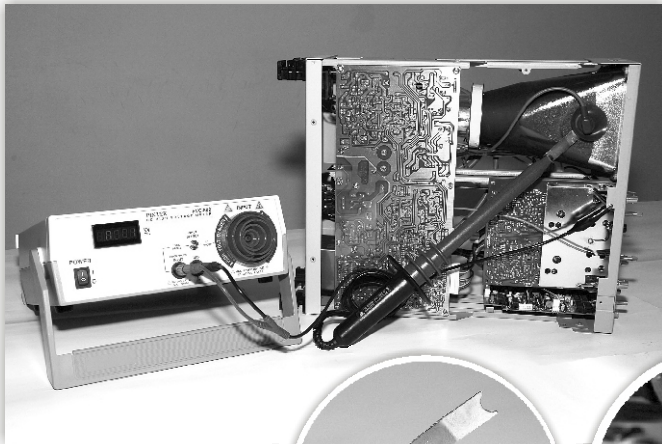
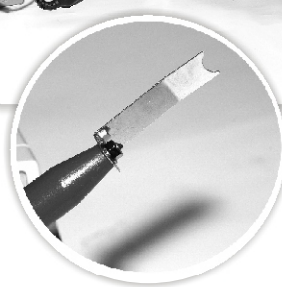


圖8.



## 六. 注意事項

- (1)將儀器電源開啓前，請確認儀器的高電壓輸入端有被妥善的包覆著。
- (2)儀器的高電壓輸入端有與任何傳導性的物質由空氣中浮動接近時，請確認輸入電壓需低於10kV。
- (3)在使用此儀器時，請確認測試棒的鱷魚夾一端須與接地端妥善接好，同時確認高電壓輸入端有被妥善的包覆著。
- (4)請確認使用電源輸入的交流電須與指定電壓相符合。

## 七. 維護

保養時請使用指定的套件進行保養。製造廠對於銷售後由其他維修人員或(及)不合格的維修人員進行維修而產生的意外不負任何責任。

## 八. 清潔

請用少許的清潔劑倒在柔軟微濕的軟布上輕輕的將灰塵及髒污清理掉。



# HVC-803

**DC High Voltage. High Impadance Meter**  
直流高電壓高輸入阻抗電錶



# HVC 803 DC High Voltage. High Impedance Meter

## 1. GENERAL

Bench Type high voltage meter, HVC-803 has high input impedance (10G $\Omega$ ), and high resolution reading (0.0001KV). It shipped with special design with test leader. The operation is easy and safe.

HVC-803 provides 10G $\Omega$  high input impedance on the direct measurement to minimize the loading effect. So that, it is able to show you the actual voltage on measuring circuit. Meanwhile, it also minimizes the errors applied to the test circuit. For instance to measure high voltage on CRT, it will not lose its focus unexpected image enlarge, the brightness change or other unwanted.

It has 3 steps voltage selectors. The users can select 2KV, 20 KV and 40 KV for different application and resolution.

**Read carefully this manual before using the instrument and respect the safety precautions.**

## 2. SAFETY PRECAUTIONS

The steps outline the minimum basic safety precautions that must be followed when using this instrument.

- (1) Do not use the instrument in a damp environment or where there is risk of explosion.
- (2) Examine the instrument and make sure it is clean and dry. If in doubt, wipe with a clean dry, lint-free cloth.
- (3) Look at the condition of the floor. It must be dry, clean and free of oil.
- (4) Verify that you are able to remain clear, dry and avoid contact with any exposed metal and /or other conductive material.
- (5) Examine the 1/1 probe before use. Make sure that it is in good condition. Any damage on the surface of the wires could cause you serious personal harm.

- (6) Only use the 1/1 probe accessory for the directly high voltage measurements.
- (7) Examine the entry to your High Voltage test point. Make sure that you are able to bring the probe in to the point.
- (8) Always work within sight and hearing of another person. If an accident occurs, you will be able to aid quickly.

### 3. SPECIFICATIONS

**Max. Input Voltage:** DC only. 0~40kV

**Voltage Selector:** 3 steps: 40kV/20kV/2kV

**Input Impedance:** 10GΩ (Full Range)

**Display:** 4 ½ digits, 0.36" Red LED

**Accuracy:** ±0.5% ±2 digits

**Max. Display Voltage:** ±40.00kV

**Temperature Coefficient:** ≤100 PPM/°C

**Resolution:**

40kV Range	0.01kV(10V)
20kV Range	0.001kV(1V)
2kV Range	0.0001kV(0.1V)

**Test Lead:** Voltage Insulation: 40kVDC  
 Length: about 2M  
 Wire: E35688 UL AWM, 3239/105°C/50kV,  
 DC VW- 1/22AWG

**Earth Clip:**

3.5mm Extra durable, 0.12mm x 64 cu plate with Tin 90cm Long.

**Power Source:** AC 115V/230V±10%; 50/60Hz

**Power Consumption:**25W

<b>Fuse:</b>	Line Voltage	Frequency	Fuse
	110~120V	50/60Hz	600mA
	220~240V	50/60Hz	300mA

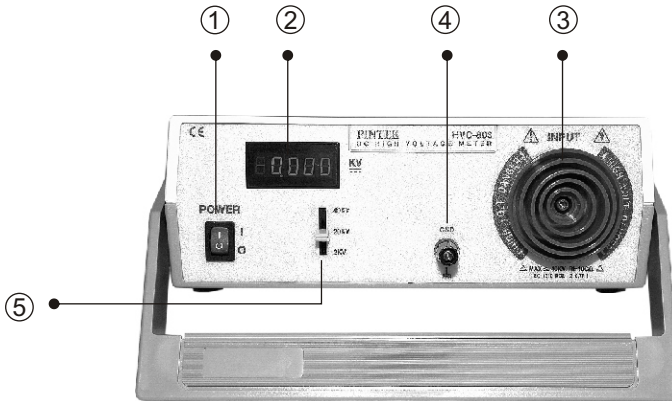
**Limits of Operation:** 0~40°C; 0~80%RH

**Storage Environment:** -20~60°C; 0~90%

**Dimension and Weight:** 270 x 95 x 310 mm; 3.2KGS

## 4. CONTROL AND INDICATIONS

### Front Panel:(Refer to Fig.9)



**Fig.9**

① **Power Switch:** When switch on the LED ② will be Light up.

② **LED:** 4 ½ digital display, RED 0.36" LED.

③ **High Voltage Input Terminal:**

**Max. Input voltage:**  $\pm 40\text{V}$  DC only

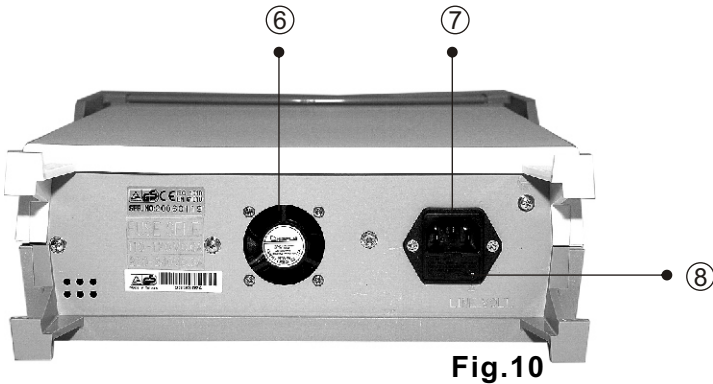
④ **Ground Terminal:**

The ground terminal been connected to the ground of PCB and ground of Power Connector ⑧ .

**⚠ Before taking any measurements. Make sure the terminal is connected to earth ground in good electrically connection.**

⑤ **Voltage Selectors:**

The display of LED can show the max voltage resolution by selecting different voltages. When it is over 1999, the LED will show flash "0000". And, it adjusts the voltage control the maximum output.

**Rear Pane:(Refer to Fig.10)****Fig.10**

- ⑥ **DC Fan:** DC 12V, 0.1A
- ⑦ **AC Power Connector.**
- ⑧ **Input AC Power Selector and Fuse:**

For selecting the AC voltage of the instrument by aligning its arrow head mark in the corresponding position and fuse is inside.

AC Power		Fuse
110~120V	50/60Hz	600mA
220~240V	50/60Hz	300mA

## 5. OPERATION

(Refer to Fig.11)

1. As show in figure, power on and light the red LED.
2. Connected GND of HVC-803 and GND of power source.
3. According to the power source and set the voltage switches of HVC-803 (ie, 2KV, 20KV and 40 KV) to get more accuracy of measurement.
4. test lead of High Voltage Probe connect to HVC-803 properly, and the tip of test probe touch to the test point.

**⚠ Before the above proper connection of procedures, never turn on the power source of the HVC-803 to prevent arc and discharge to damage the testing point.**

5. The correct value of the voltage will display on HVC-803 LED.

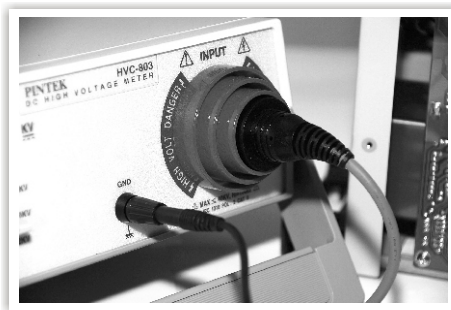


Fig.11



## **6. WARNING**

- (1) Before taking any measurements by 1/1 probe. Make sure the probe is clean, dry and good without any damage on the sureface.
- (2) Do not switch on the equipment be test before you had connected well on any measurements.
- (3) Make sure appropriate probe is installed in HVC-803 for measurement. Use 1/1000 probe for Indirectly High Voltage Input measuring.
- (4) Verify that measurement source is DC. Never use HVC-803 for AC mesurement.
- (5) Before taking any measurements. Make sure the earth ground connection is electrically good.
- (6) Make sure the AC power of HVC-803 is match to the indicated voltage.
- (7) Always keep the input voltage of the instrument at lower than 10kV before connect the probe tip or any conductive material to the input terminal of the instrument.
- (8) Please make sure the alligator chip of the probe is connecting to the good earth ground, and the high voltage power input terminal is covered.

## **7. MAINTANCE**

For maintance only use specified spare parts.

The manufacturer can not be held of responsible for any accident arising following a repair made other than by its after sales service or approved repairers.

## **8. CLEANING**

Remove any dirt, dust and grime whenever they become noticeable cleaning the outside cover with a soft cloth moistened with a mild cleaning solution.

# HVC 803 直流高電壓高輸入阻抗電錶

## 一. 簡述:

桌上型高壓錶HVC-803是一高輸入阻抗( $10G\Omega$ ),高解析度(最大 $0.0001kV$ ),附有特殊接頭設計的高壓探棒,操作安全且方便。

因為具有 $10G\Omega$ 的輸入阻抗,因此負載效應降到最小,更能忠實呈現待測物的實際電壓值,可避免量測的同時造成原本電路電壓急劇下降,產生異常。如測量CRT高壓時,聚焦不易失焦,或螢幕影像擴大,亮度突然變暗等異常現象,可得到立即的改善。

HVC-803具有三段電壓檔選擇開關,使用者可依實際需要選擇 $2kV$ , $20kV$ , $40kV$ 檔位,而換取更多的尾數電壓值。

## 二. 規格:

最大輸入電壓: DC only.  $0\sim 40kV$

電壓選擇開關: 共3檔:  $40kV/20kV/2kV$

輸入阻抗:  $10G\Omega$ (所有檔位)

電壓顯示:  $4\frac{1}{2}$ 位,  $0.36''$  紅色 LED

顯示誤差:  $\pm 0.5\% \pm 2$  digits

最大顯示值:  $\pm 40.00kV$

溫度係數:  $\leq 100$  PPM/ $^{\circ}C$

解析度:

40kV 檔位  $0.01kV(10V)$

20kV 檔位  $0.001kV(1V)$

2kV 檔位  $0.0001kV(0.1V)$

指定測試棒:

耐壓:  $40kVDC$

長度: 大約 2公尺(含握柄)

線規: E35688 UL AWM,  $3239/105^{\circ}C/50kV$ , DC VW-1/22AWG

接地線:  $3.5mm$  耐寒,  $0.12mm \times 64$  蕊鍍錫銅線,長度約 $90cm$ .

電源輸入: AC  $115V/230V \pm 10\%$ ;  $50/60Hz$

電源消耗:  $25W$



(5)保險絲:

電源	頻率	保險絲
110~120V	50/60Hz	600mA
220~240V	50/60Hz	300mA

(6)操作溫濕度: 0~40°C; 0~80%RH

(7)儲存溼濕度: -20~60°C; 0~90%

(8)尺寸: 270(寬) x 95(高) x 310(深) mm

(9)重量: 3.2KGS/17PB

三. 前面板指示說明:

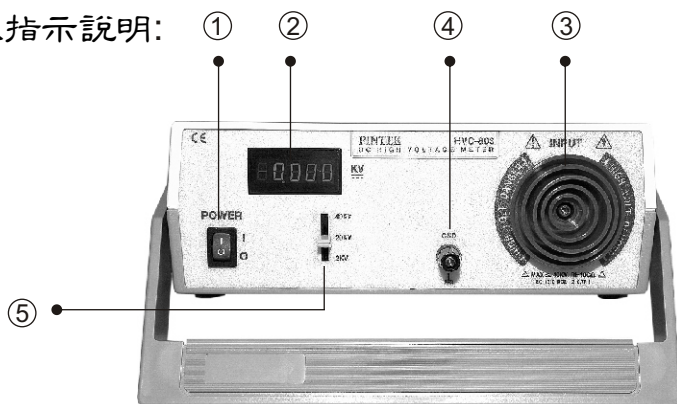


圖9.

① 電源開關: 電源ON時LED ② 亮起。

② LED顯示器: 4 1/2位數字型顯示,紅色0.36" LED。

③ 高壓輸入端:

請指定使用本公司隨機所附贈的專用高壓探棒, 如果發現有破損、金屬外露、斷線等問題, 請立即停用, 並與原供應商聯絡。

④ 接地端子:

本點與基板地及電源地相連接, 因此在量測前, 請先確認本接地端已連接妥當才可量測。

⑤ 電壓選擇器:

可依實際量測電壓選擇不同的電壓檔位以獲取最大的電壓解析度, 當超出"1999"最大顯示值時, LED顯示器上會出現"0000"閃爍狀態, 此時只要將電壓選擇器調整至更大的檔位即可。

## 四. 後蓋指示說明:

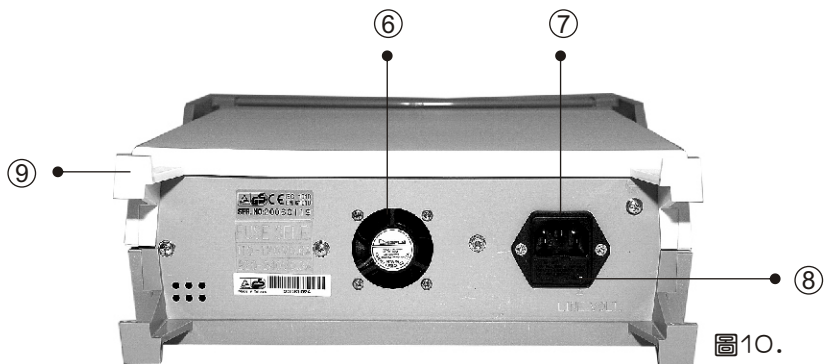


圖10.

- ⑥ 散熱風扇: 吸出型, 使用12V/DC/0.1A  
 ⑦ AC電源輸入座: 分離式, 收藏時可利用後支柱捲繞。  
 ⑧ 保險絲座:

電源	保險絲
110~120V	600mA/250V
220~240V	300mA/250V

- ⑨ 後支柱: 處了當做支撐柱外, 還可以捲繞電線以方便收藏。

## 五. 操作方式

(圖11.)

- 步驟一. 如圖示, 按電源ON開機後, 紅色LED會顯示。
- 步驟二. 將地線(GND)連接妥當及另一端接到待測物的地端。
- 步驟三. 選擇電壓量測檔, 請依實際量測值調整更換檔位以換取更多位數。
- 步驟四. 請確實接妥高壓棒附件的香蕉插頭端於面板的高壓輸入端, 柄將握把之末端尖頭放置於待測點。

**注意!** 請先將待測物電源關閉, 待接妥後才能開機, 可避免電弧產生或造成放電, 使待測物零件受損。

- 步驟五. 正確電壓值顯示在LED上。

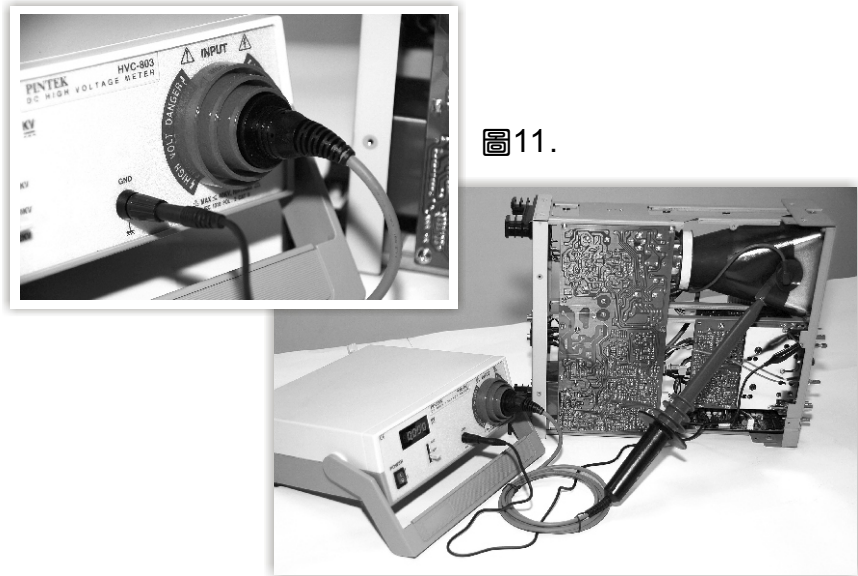


圖11.

## 六. 注意事項

- (1)將儀器電源開啓前，請確認儀器的高電壓輸入端有被妥善的包覆著。
- (2)儀器的高電壓輸入端有與任何傳導性的物質由空氣中浮動接近時，請確認輸入電壓需低於10kV。
- (3)在使用此儀器時，請確認測試棒的鱷魚夾一端須與接地端妥善接好，同時確認高電壓輸入端有被妥善的包覆著。
- (4)請確認使用電源輸入的交流電須與指定電壓相符合。

## 七. 維護

保養時請使用指定的套件進行保養。製造廠對於銷售後由其他維修人員或(及)不合格的維修人員進行維修而產生的意外不負任何責任。

## 八. 清潔

請用少許的清潔劑倒在柔軟微濕的軟布上輕輕的將灰塵及髒污清理掉。





