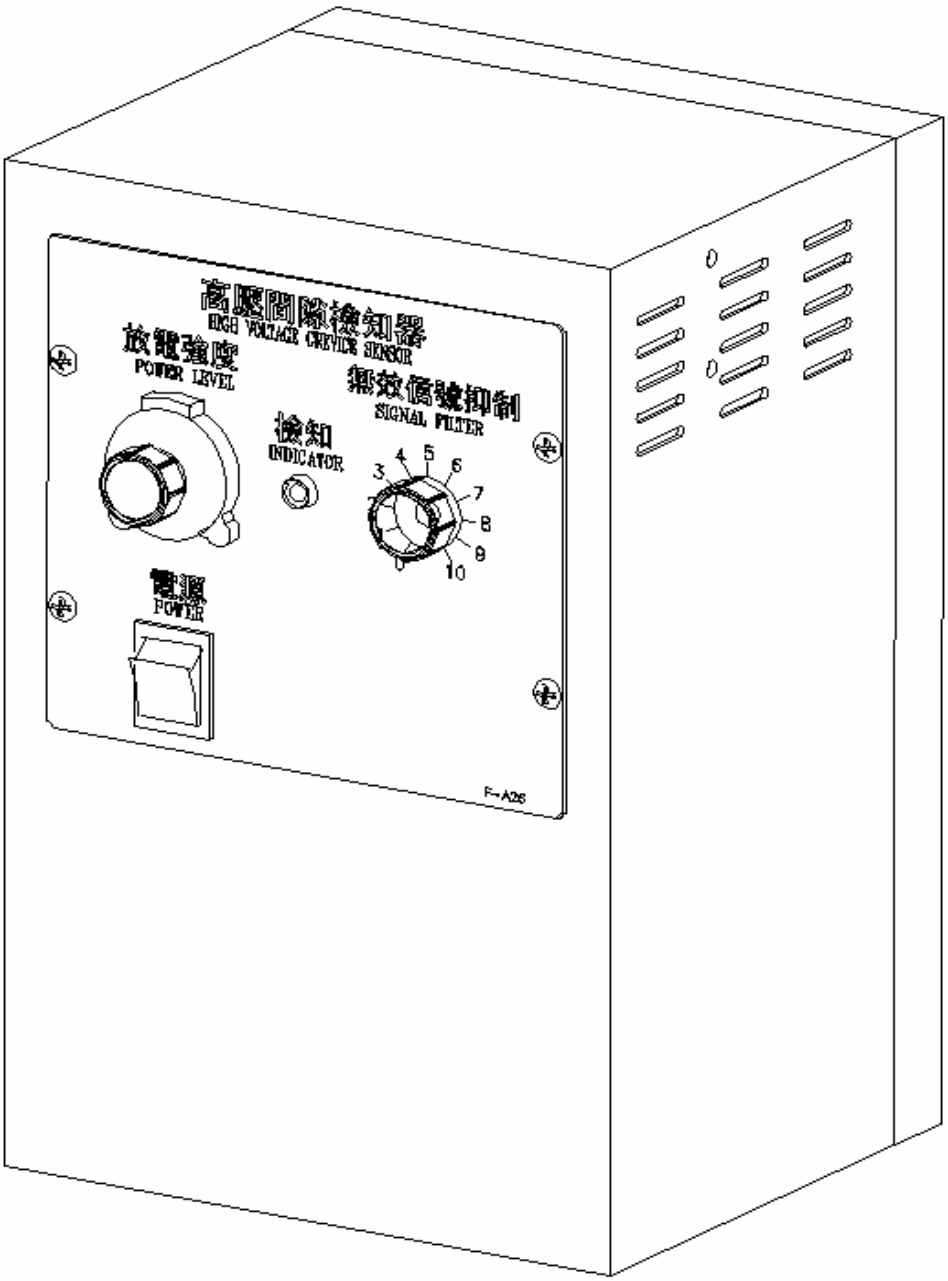
高壓間隙檢測控制器

A26-2 系列

使用說明書



目錄

1. 特性

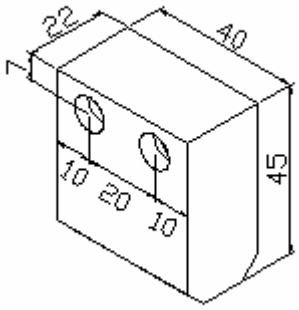
適用於非導電性之待測物場合，以高頻高壓偵測出電眼、近接或其他感測器無法偵測之微小孔徑或縫隙。

2. 規格

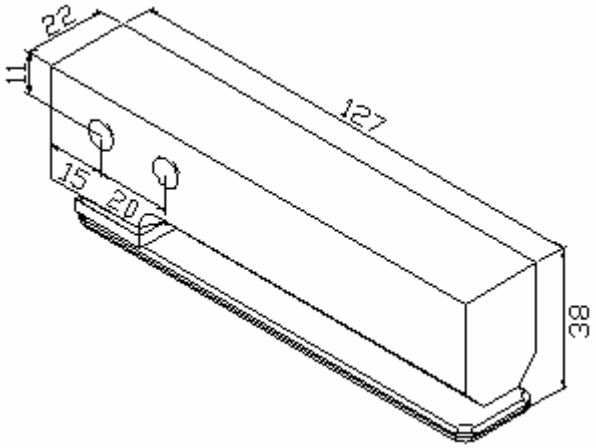
型號	H-A26-2*
電源電壓	輸入電壓 AC220V ± 10% ,50/60Hz
輸入控制電壓	DC12V~24V；漣波＜輸入電壓峰對峰值的 10%
輸出規格	NPN/PNP 輸出,負載電流 20mA(MAX), 殘餘電壓 1V 以下
動作頻率	1000PCS/分
總消耗功率	22W (AC220V/0.1A)
操作溫度	0 ～ +60˚C
操作濕度	35 ～ 80% RH (Non-condensing)
放電頭	此產品屬耗材，不同產品搭配不同規格；標準線長 2M，最長 3M
設備接地	第三種設備接地

3. 高壓放電頭尺寸說明

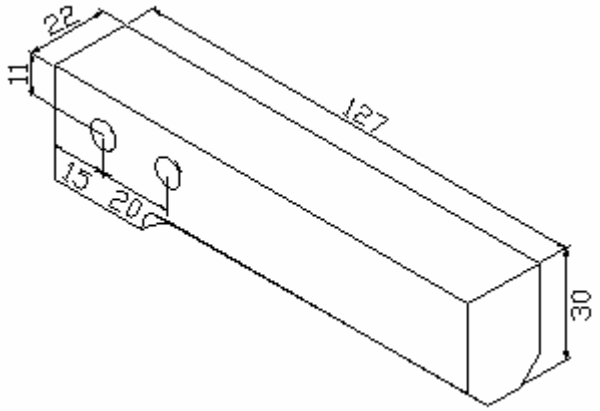
3.1. A26-1-H-34



3.2. A26-1U-H



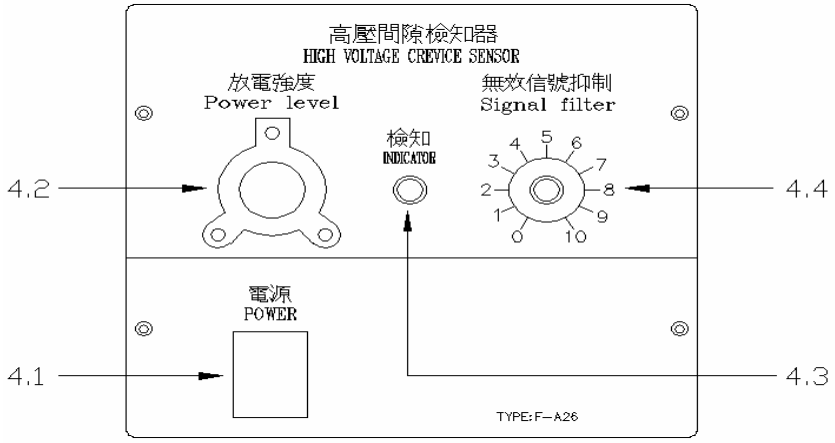
3.3. A26-1U-H-N



【註】: (1).A26-1U-H(-N)、A26-1-H-34 固定螺絲請用 4*15 以上的長度。

(2).放電頭此產品屬耗材，請於安裝及使用時特別小心。若於安裝或操作時，因人為因素或外力不當所造成放電頭故障或老化，則不在保固範圍【見】「8.注意事項」。

4. 操作面板功能說明



4.1. 電源開關

高壓間隙檢知器的電源總開關。

4.2. 放電強度

調整放電強度的強弱，調整愈大，火力愈強，則偵測愈靈敏，但相對容易打穿袋子；反之，調整愈小，火力愈弱，則偵測較不靈敏。請依實際袋子特性，調整適當火力。

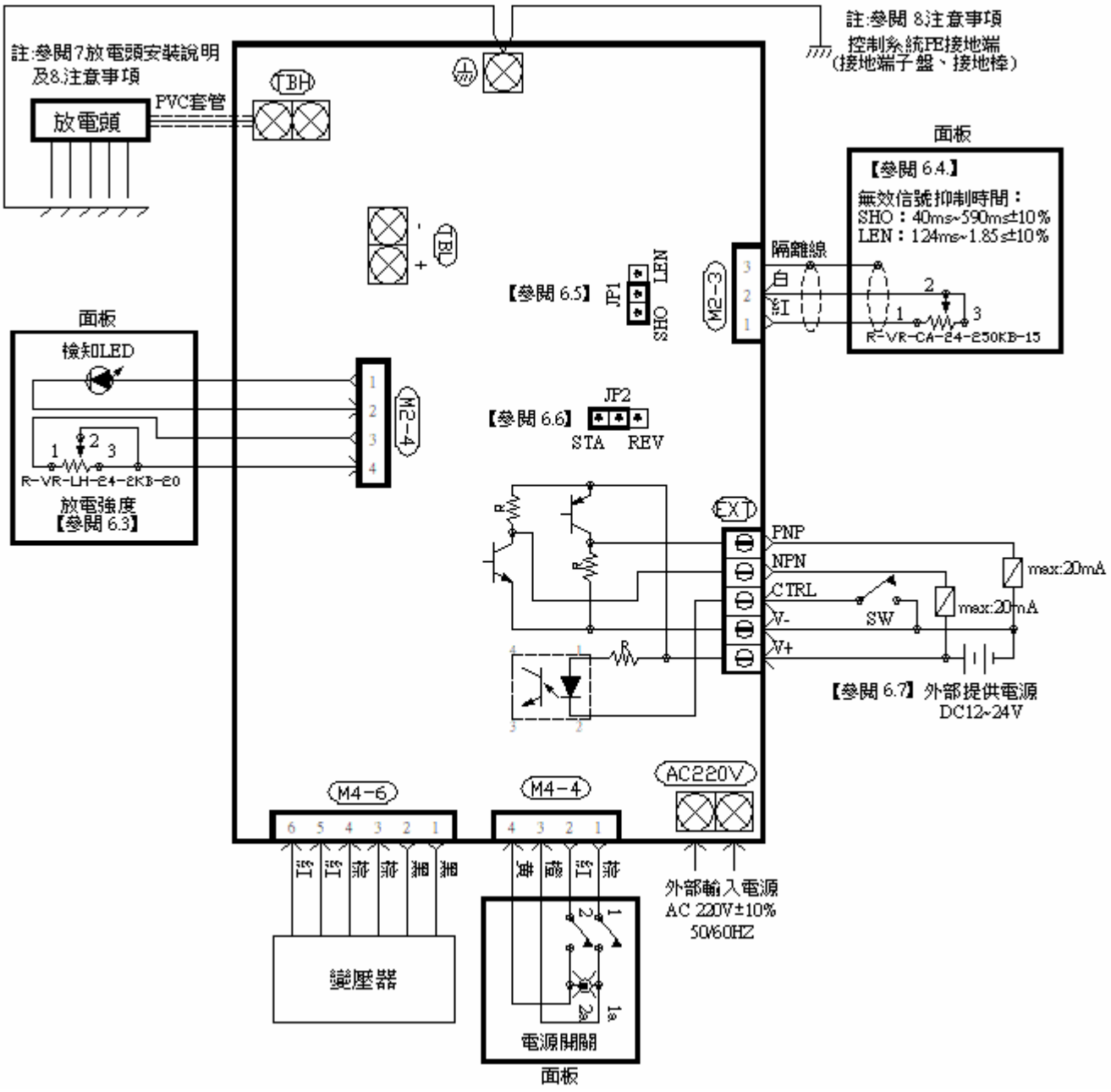
4.3. 檢知 LED

LED 亮時表示間隙被檢出；反之，LED 滅時表示間隙不被檢出。

4.4. 無效信號抑制

調整間隙偵測檢出時，抑制多餘無效訊號，避免無效訊號造成誤動作。動作調整參考「6.2. 動作時序」。

5. 內部配置圖



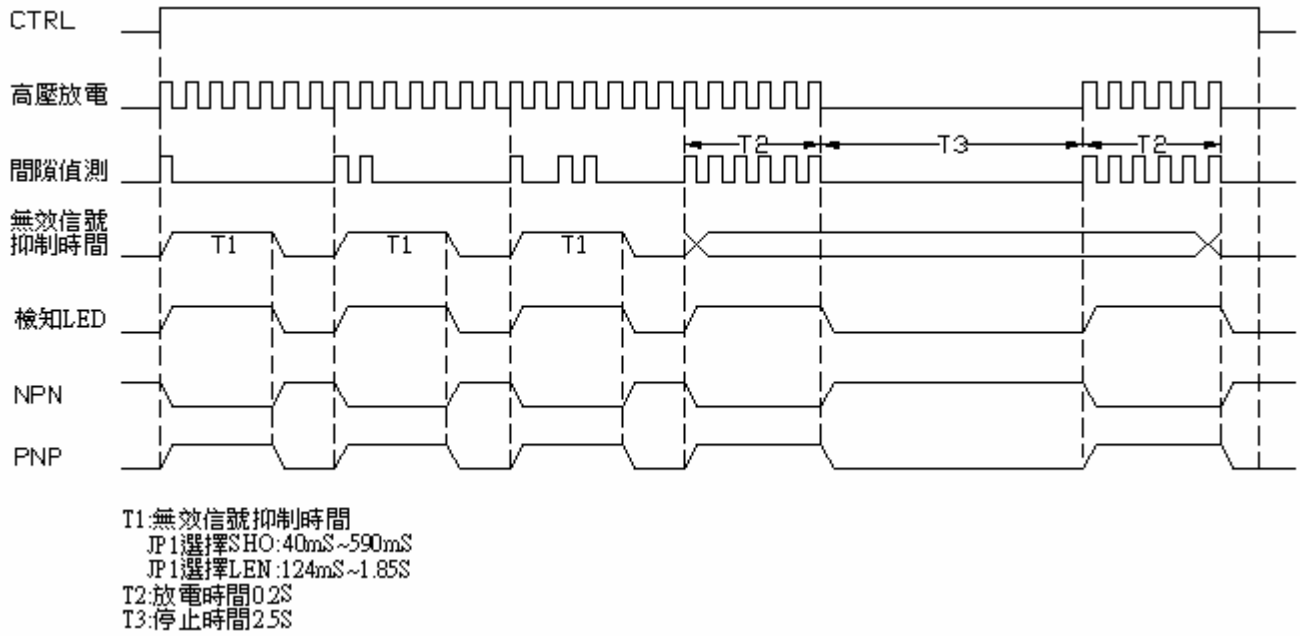
【註】：若無使用電源開關，則將 (M4-4) pin(1)(3)短路，pin(2)(4)短路。

6. 操作說明

6.1. 啟動前調整

啟動前，先將〝放電強度〞VR 和〝無效信號抑制〞VR 調至最小值，依「7.放電頭安裝說明」調整放電頭高度。

6.2. 動作時序



6.3. M2-4 放電強度 VR 及檢知 LED

6.3.1. 啟動後，調整〝放電強度〞VR 至每張袋長放電一次，然後監看計數是否正常。

6.3.2. 放電頭放電時，若無遮蔽物，則放電 0.2S→停止 2.5S→放電 0.2S….依此循環。

6.3.3. LED 亮時表示間隙被檢出，〝無效信號抑制〞時間越長，檢知 LED 動作時間越久。

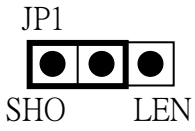
【註】：如運轉動作中，不可將 (M2-4) 排線拔除，避免輸出電壓過大而危及系統安全。

6.4. 無效信號抑制

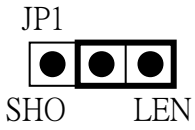
計數輸出延遲結束時間。若計數不正常時，則調整〝無效信號抑制〞VR 至計數正常為止。時間調整範圍參考「6.5 JP1 無效信號抑制時間選擇」

6.5. JP1 無效信號抑制時間選擇（JP1 出廠設定為”SHO”）

6.5.1. SHO：無效信號抑制時間較短(40mS~590mS±10%)



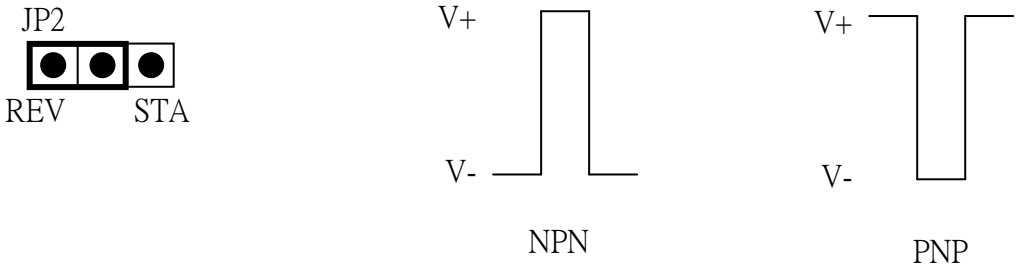
6.5.2. LEN：無效信號抑制時間較長(124mS~1.85S±10%)



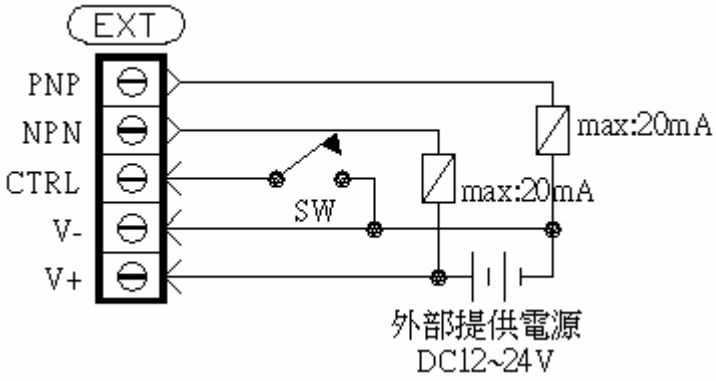
6.6. JP2 檢知輸出電路說明（JP2 出廠設定為”STA”）

6.6.1. STA：NPN、PNP 標準輸出

6.6.2. REV：NPN、PNP 反相輸出



6.7. EXT 高壓致能及輸出訊號



6.7.1. V+、V-外部提供電源 DC12-24V。

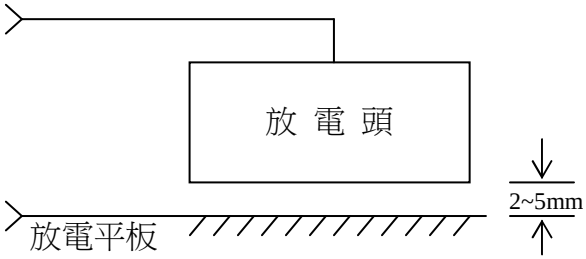
6.7.2. 當開關(SW)為 OFF，高壓致能(CTRL)為高電壓(V+)時，高壓不動作。

6.7.3. 當開關(SW)為 ON，高壓致能(CTRL)為低電壓(V-)時，高壓開始動作。

【註】:〝無效信號抑制〞時間越長，NPN、PNP 輸出動作時間越長。

7. 放電頭安裝說明

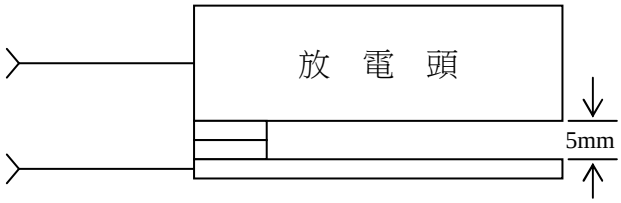
7.1. A26-1-H-34、A26-1U-H-N



7.1.1.放電頭距離放電平板的高度約 2～5mm，依檢測物的厚、薄及放電大小決定。

7.1.2.放電平板須和機台隔離。(註：可用電木或工程塑膠隔開)

7.2. A26-1U-H



7.2.1.上述放電頭已包含放電平板，但其間隔固定為 5mm，可自行拆除中間的墊片(一片 2 mm、一片 3 mm)或全部拆除等同 7.1。

7.2.2.此放電頭除作一般平面點斷袋子檢測外，還可用於點斷後有對折之袋子，只要將下方的放電鐵片插入對折之袋子，使其檢測一層袋子即可。(可避免袋子重疊而無法檢測問題)。

8. 注意事項

8.1. 高壓線接續

高壓線中間不可接續，避免漏電造成動作異常或人員安全之疑慮。

8.2. 高壓線破損

高壓線若有破損請更換新品，勿直接以膠布包覆隔離，避免有漏電疑慮。

8.3. 高壓線耐壓

高壓線請使用耐壓 20KVDC 以上(含 20KVDC)，避免有漏電疑慮。

8.4. 高壓線輸出隔離

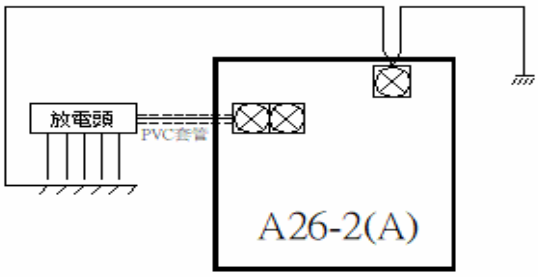
高壓線輸出屬高壓高頻信號，為高干擾源，配線時，須與其它信號線、電源線分開，或套用塑膠管隔離，安全間距須大於 5cm 以上，以確保其他系統穩定性。

8.5. 單組及兩組檢測控制器

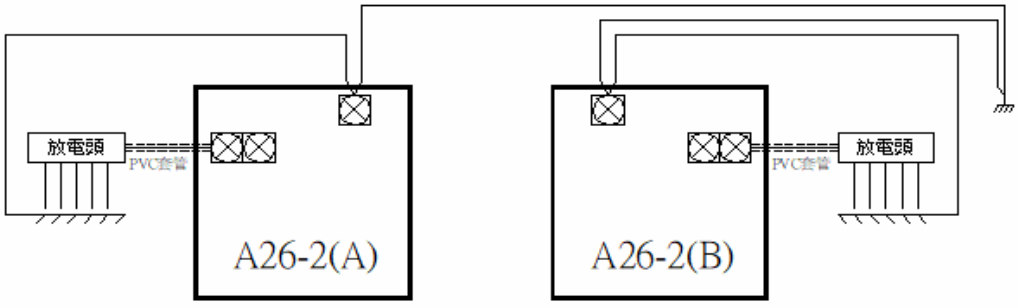
當使用兩組以上高壓檢知，配線時，兩組高壓線、放電頭接地線、控制箱接地線等，請獨立配置走線，並勿纏繞或固定一起，避免信號互相干擾而誤動作，規範同上述 8.4。

8.5.1.正確配線圖

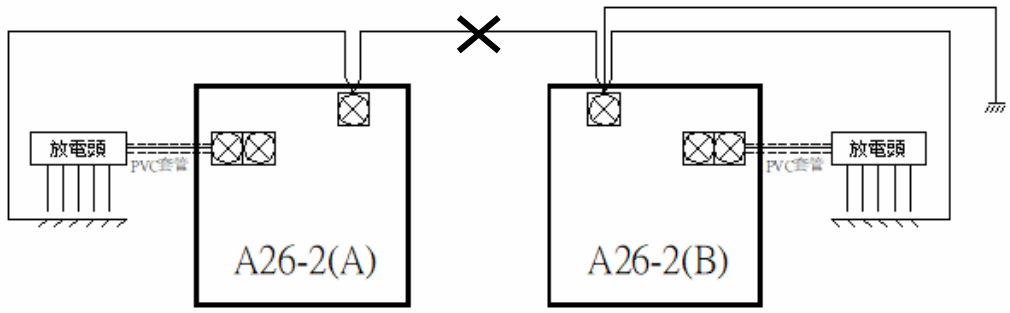
■ 一台控制器



■ 兩台控制器



8.5.2.錯誤配線圖



8.6. 待測物

待測物請勿使用導電係數高的材質，例如：鐵類、碳類(碳酸鈣)…等，否則會造成高壓放電頭一直放電而無法正常動作。

8.7. 高壓放電頭

8.7.1.高壓放電頭請定期清理，避免針頭積碳而無法動作。

8.7.2.禁止在空載(無遮袋)下使用，避免放電頭長時間放電，而導致故障。

8.7.3.偵測物(袋子)儘可能接近放電底板，以提高放電穩定性。

9. 異常排除

9.1. 高壓放電頭無法放電？

9.1.1.AC220V 電源沒接。

9.1.2.控制器的高壓線或地線沒鎖或斷路。

9.1.3.高壓線外皮破損或漏電。

9.1.4.外部 DC12~24V 輸入電壓沒接或電壓不足。

9.1.5.高壓致能(CTRL)信號無輸入。

9.1.6.放電強度 VR 調整太小或高壓放電頭高度太高。

9.1.7.待測物無間隙或間隙太小已超過可偵測線速度。

9.1.8.高壓放電頭或控制器故障。

9.2. 高壓放電頭放電不穩定？

9.2.1.「放電強度」或「無效信號抑制」為非最佳狀態。

9.2.2.控制器高壓線沒鎖緊。

9.2.3.高壓線外皮破損或漏電。

9.2.4.外部 DC12~24V 輸入電壓沒鎖緊或電壓不足。

9.2.5.高壓致能(CTRL)信號沒鎖緊。

9.2.6.放電強度 VR 調整太小或高壓放電頭高度太高。

9.2.7.待測物是否有破孔(可依慢速寸動測試)。

9.2.8.待測物無間隙或是間隙大小不一或厚薄不一。

9.2.9.待測物含有導電係數高的材質，例如：鐵類、碳類(碳酸鈣)、玉米粉…等。

9.2.10.放電頭接地迴路是否有接回控制器接地銅棒，且阻抗須為＜0.1Ω以下。

9.2.11.高壓放電頭或控制器故障。

9.3. 高壓放電頭有動作，但接點(NPN 或 PNP)無輸出？

9.3.1.外部 DC12~24V 輸入電壓沒接或電壓不足。

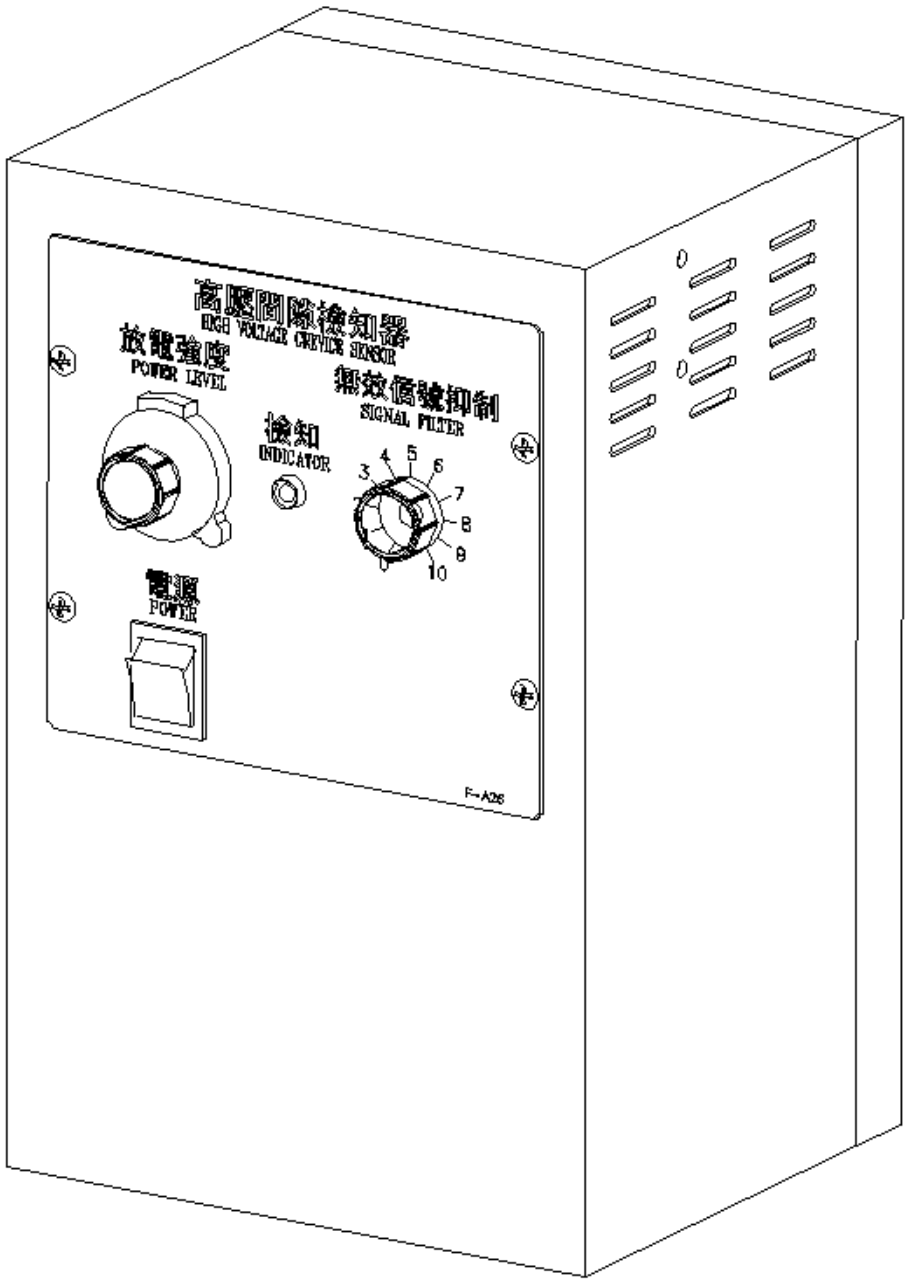
9.3.2.NPN 或 PNP 輸出沒接或斷路。

9.3.3.控制器故障。

High Voltage Crevice Sensor

Type：A26-2 Series

Manual



Catalog

1. Characteristic

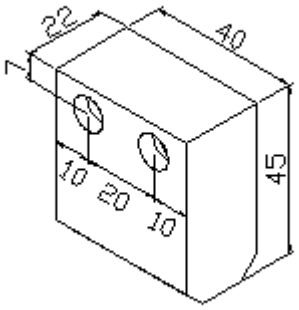
Suitable for non-conductive objects, detect tiny holes or gaps by high frequency and high voltage, which other sensors can't do.

2. Standard

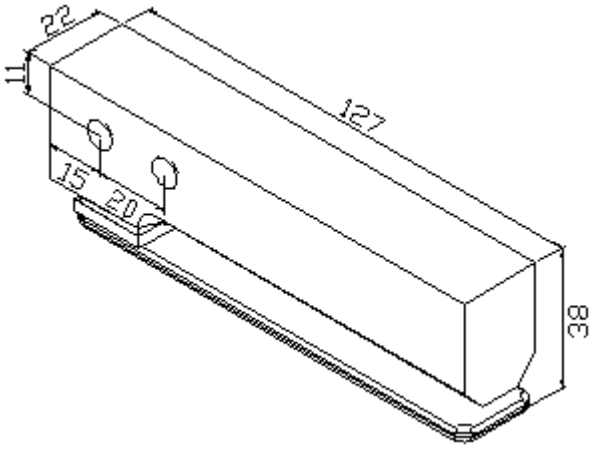
Type	H-A26-2*
Power Supply Voltage	Input Voltage AC220V ± 10% ,50/60Hz
Input Control Voltage	DC12V～24V；Ripple < 10% Of Peak To Peak Value Of Input Voltage
Output specification	Output NPN/PNP,Load current 20mA(Max),Residual voltage less than 1V
Operating Frequency	1000 PCS/min
Power Consumption	22W (AC220V/0.1A)
Operating Temperature	0 ～ +60°C
Operating Humidity	35 ～ 80% RH (Non-Condensing)
Discharge Head	The Product Is Consumable Materials, It Differs With Formats. Line: Standard Length：2M,Max Length：3M
Equipment Grounded	The 3rd equipment grounded

3. Dimension for discharge head

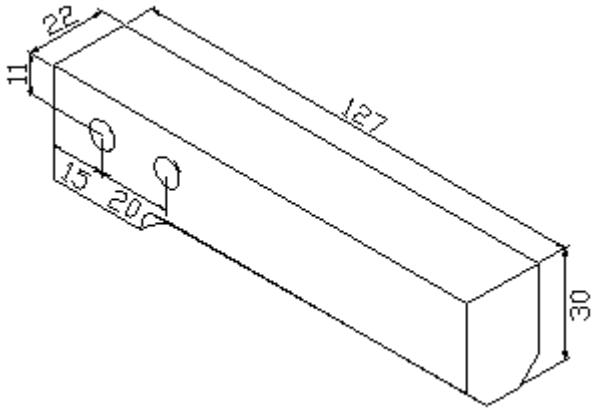
3.1. A26-1-H-34



3.2. A26-1U-H



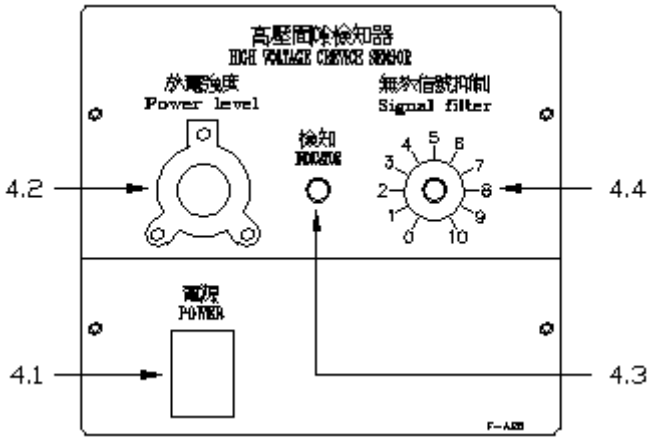
3.3. A26-1U-H-N



【Note】(1)Use the size 4*15(even bigger) of screw to firm A26-1U-H(-N),A26-1-H-34.

(2) The discharge head is consumable materials, please be careful when you install or use it. If it break or ageing because of improper use, it will not in warranty【8.Note】.

4. Appearance



4.1. Power SW

Power switch.

4.2. Power level

The higher the value of high voltage you set, the bigger power and more sensitive it will be, and easily to break through the bag. Please adjust power according to the bags' characteristic.

4.3. Indicator LED

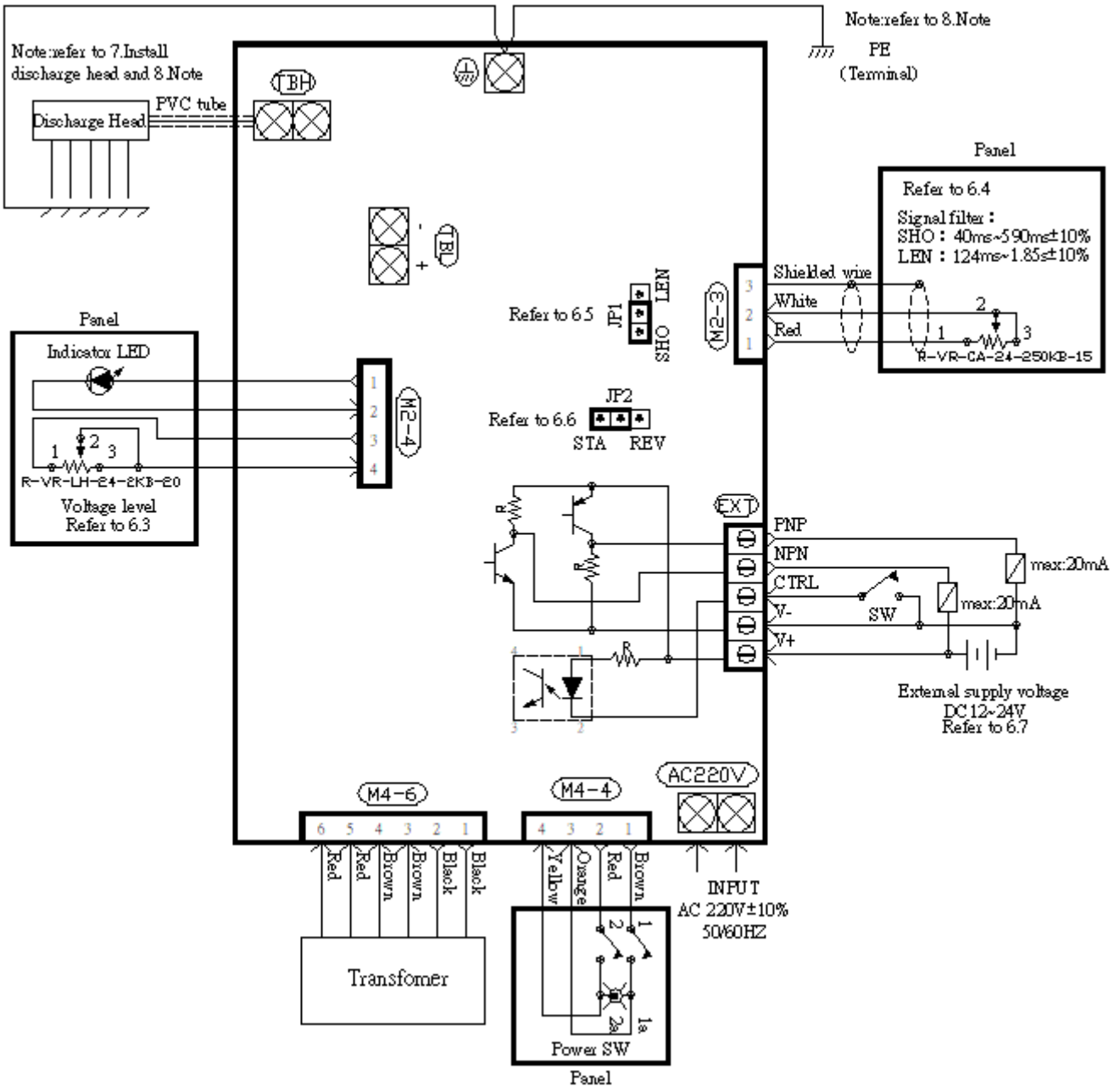
The gap is examined when LED is light; otherwise, it isn't.

4.4. Signal filter

When adjusting “Signal filter”, it filters extra invalid signal to avoid wrong action.

Action adjust, please refer to 6.2 “action sequence”.

5. Interiors layout



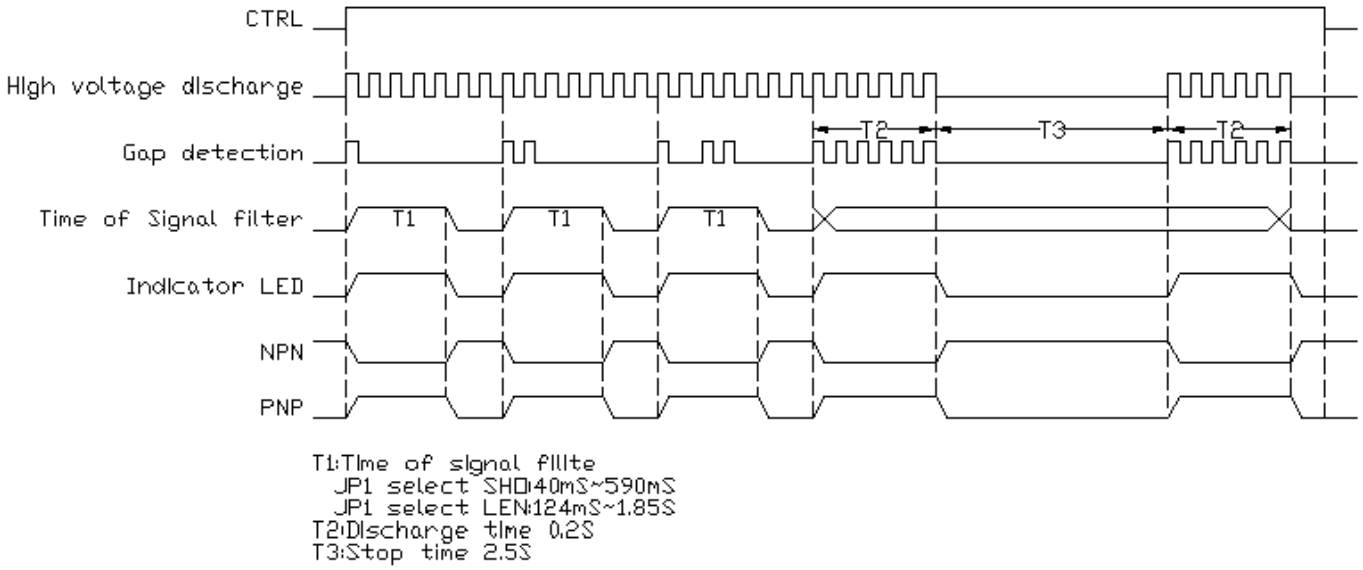
【Note】Without using the power switch, (M4-4) pin (1) connects with pin (3); pin (2) connects pin (4).

6. Operation

6.1. Adjust before start.

Adjust the lowest value of “power level” VR and “signal filter” VR before startup. Then, adjust the altitude of discharge head base on 7. “Install discharge head”.

6.2. Action sequence



6.3. M2-4 Power level VR and Indicator LED

6.3.1. After startup, adjust the VR of “Power level” to discharge once every single bag-length. Then check the counter.

6.3.2. If there is no shield when discharging, and it will discharges 0.2S→stop 2.5S→discharges 0.2S…loop accordingly.

6.3.3. When LED turns on, it means the gap has been detected. The longer the time of “Signal filter” takes, the longer “Indicator LED” acts.

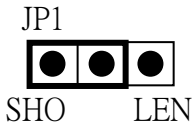
【NOTE】: Do not remove the cable of (M2-4) ,when machine is running. In case of too high output voltage makes whole system in danger.

6.4. Signal filter

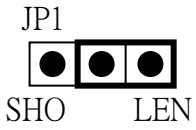
The end time of counter delay. If the counter act not properly, please adjust the ” Signal filter” until it is right. Time adjust, please refer to 6.5 “JP1 Time select of Signal filter”.

6.5. JP1Time select of Signal filter（JP1 original setting ” SHO” ）

6.5.1. SHO：shorter time(40mS~590mS±10%)

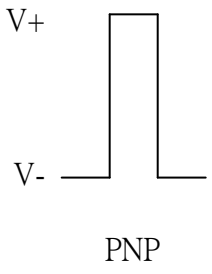


6.5.2. LEN：longer time(124mS~1.85S±10%)

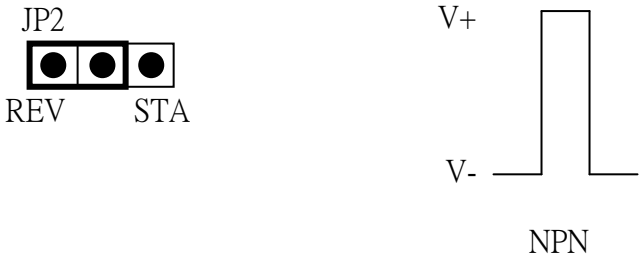


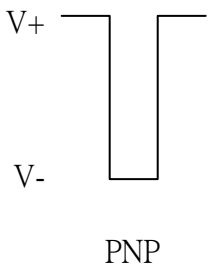
6.6. JP2 Circuit description（JP2 original setting ” STA” ）

6.6.1. STA：NPN、PNP standard output

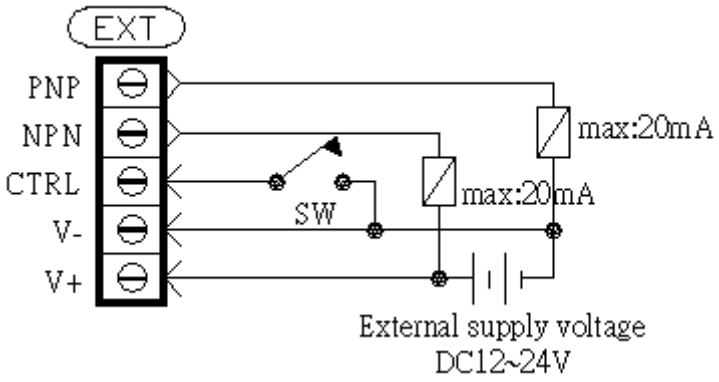


6.6.2. REV：NPN、PNP inverse output





6.7. EXT high voltage enable and output



6.7.1. V+、V- external supply voltage DC12~24V.

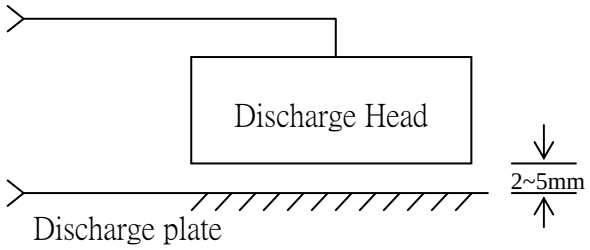
6.7.2. When switch(SW) is OFF and CTRL is high potential(V+), high voltage don't act.

6.7.3. When switch(SW) is ON and CTRL is low potential(V+), high voltage act.

【NOTE】: The longer the time of " Signal filter" is, the longer the output time of NPN、PNP will be.

7. Install discharge head

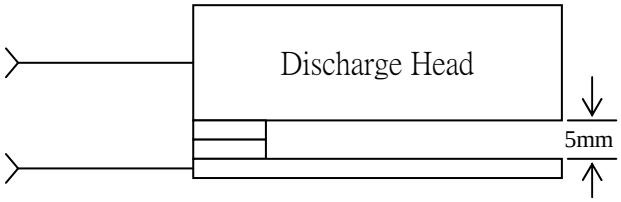
7.1. A26-1-H-34、A26-1U-H-N



7.1.1.The distance of discharge head and plate around 2~5mm, depending on the thickness and size of EUT.(Equipment under test)

7.1.2.Please separate the plate and machine by bakelite sheet. (note: bakelite or engineering plastics)

7.2. A26-1U-H



7.2.1.The discharge head includes plate and the fix distant is 5mm. It is free to dismantle spacers which one is 2mm another is 3 mm. Moreover, it will become 7.1 when dismantle all spacers.

7.2.2.The discharge head can check includes normal and folding bags. Bags are put into the discharge mental and it is available to detect one layer of bag.

8. Note

8.1. High voltage cable connection

Do not connect anything in the middle of high voltage cable, otherwise, electric leakage may lead to machine abnormal or endanger staff's safety.

8.2. High voltage cable damaged

If the high voltage cable damages, replaces a new cable. Do not repair it by tape and it could cause electricity leakage.

8.3. Pressure of high voltage cable

The dielectric strength of high voltage cable does endure 20KVDC even more. The wire should be shielded and the diameter is as wide as possible. it could cause electricity leakage.

8.4. Shield high voltage cable output

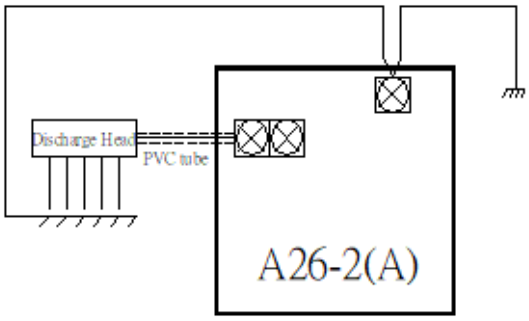
In order to make sure the system's stability, separate the signal and power cable, discharge head ground wire、cabinet ground wire…etc,or use plastic shield apart which the security distance must be greater than 5 cm.

8.5. 1 or 2 sets of high voltage crevice sensors

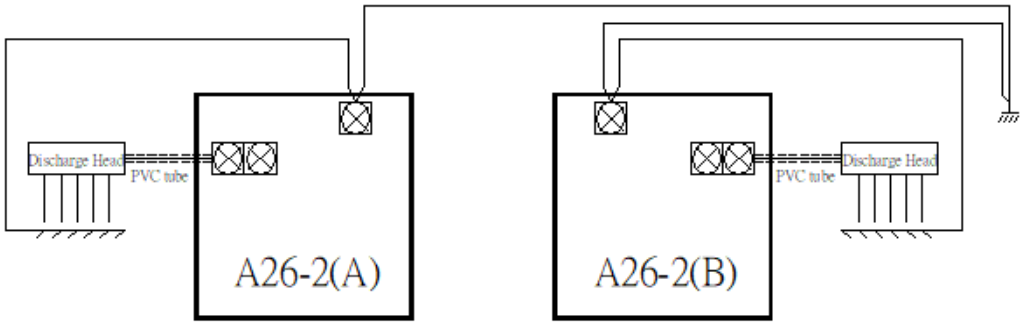
Separate 2 high voltage crevice sensors for wiring, avoiding noise disturbance. Same as 8.4.

8.5.1. Accuracy of wire diagram

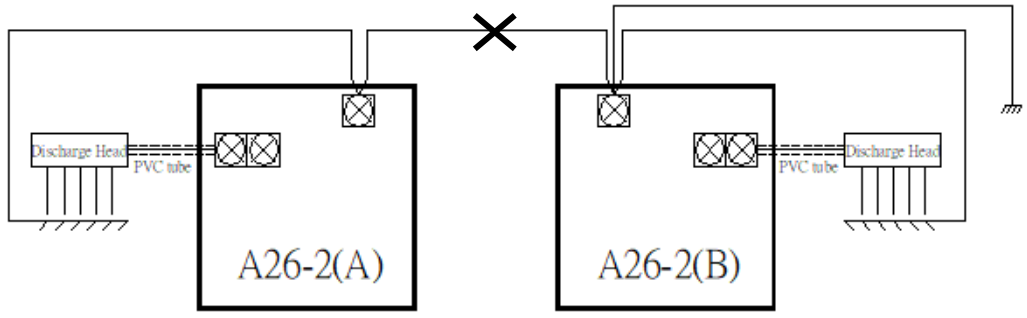
■ One counter



■ Two counter



8.5.2. Error of wire diagram



8.6. EUT (Equipment under test)

Do not use the material such as metal, calcium carbonate for EUT or the discharge head will not be able to work normally.

8.7. High voltage discharge head

8.7.1.Clean the high voltage head periodically, avoiding carbon stored.

8.7.2.Do not use without bags, in case of malfunction by long time discharge.

8.7.3.Bags should be put close to discharge plate as soon as possible for stability.

9. Troubleshooting

9.1. The high voltage discharge head does not work ?

9.1.1.Power of AC220V does not connect.

9.1.2.Check the high voltage cable or earth wire unlocked or shortcut.

9.1.3.Check any damaged in the surface of power cable or electricity leakage.

9.1.4.Check the DC12~24V input voltage unplug or insufficient voltage.

9.1.5.Input the signal of CTRL.

9.1.6.VR is in low value or the position of discharge head is too high.

9.1.7.Check the gap between the head and EUT. Is gap too narrow to indicate?

9.1.8.High voltage discharge head or controller damaged.

9.2. The high voltage discharge head is unstable ?

9.2.1. “Power level” or “Signal filter” is not on the best state.

9.2.2.High voltage cable of controller is loose.

9.2.3.Check any damaged in the surface of power cable or electricity leakage.

9.2.4.Check the DC12~24V input voltage is loose or insufficient voltage.

9.2.5.CTRL signal is loose.

9.2.6.VR is in low value or the position of discharge head is too high.

9.2.7.Is there any hole in EUT?

9.2.8.There is no gap or different thickness between EUT and head.

9.2.9.EUT is with high material of electric conductivity, such as metal, calcium carbonate, corn powder and so on.

9.2.10.Check the PE connect to the earth, ＜0.1Ω

9.2.11.High voltage discharge head or controller damaged.

9.3. The high voltage discharge head works but there is no output for NPN and PNP ?

9.3.1.Check the DC12~24V input voltage unplug or insufficient voltage.

9.3.2.Check the NPN or PNP shortcut or unplug.

9.3.3.Check if the controller broken.