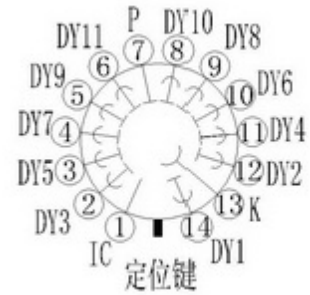


WY25 Tube-based Type 1mA Micro-Power Consumption High Voltage Power Module

Description:

WY25 is a kind of tube-based type high voltage module with its in-built voltage divider designed as a high linear DC micro-power consumption voltage divider. On each dynode there is a $1\mu\text{F}$ storage capacitor, thus the adoption of this voltage divider provides photomultiplier with high DC output linearity with fast response speed, wide range of output voltage and low ripple. This tube-based module simple for use can normally work only by inserting it on a photoelectric tube and providing +5V output and a 50K potentiometer (or voltage adjustment 0~+5V) and its working current is less than 1MA. So it is very suitable for battery powered supply system. This module supports photoelectric tube produced by Hamamatsu Photonics with diameter of 25mm and tube base is as shown in the figure. Other types of photoelectric tubes are also acceptable.



1. Pinout

Red: +5 input Black: Input power ground Green: Output voltage control end Shielded line: Signal output (7 pins)

2. Technical parameters

1. Input voltage: +4.5V ~ +7V
2. Input current: less than 1mA@- 1000V (+5V IN)
3. Output voltage: 0V ~ -1500V
4. Output ripple: 100mVp-p, typical 50mVp-p
5. Load regulation: 0.01(50% load fluctuation)
6. Linear regulation: 0.01%(10% linear fluctuation)
7. Working temperature: -25°C ~ +85°C
8. Storage temperature: -40°C ~ +105°C
9. Temperature stability: less than $\pm 30\text{PPM}/0\text{C}$, typical $20\text{PPM}/0\text{C}$
10. Shock resistance: 3G, 0~300Hz
11. Size: $\Phi: 29.0\text{MM} * L: 38.0\text{MM}$

3. Notes for use

- (1) For being designed with unique micro-power consumption voltage divider, this module only provides negative high voltage for photomultiplier. For this reason, much attention should be paid to the use of photomultiplier.
- (2) After high voltage module normally works, the interior voltage will reach the set value within 0.1s once control end changes. If power fails suddenly, the interior high voltage will take about five minutes to return to 0V. As the storage capacitor between interior dynodes is up to $1\mu\text{F}$, it will be very dangerous if it receives high voltage.
- (3) After being inserted into photoelectric tube, the DC load of this micro-power consumption module is less than $1\mu\text{F}$ and AC load up to 1A. After photoelectric tube normally works, its signal is alternating-current pulse, so it needs AC load capacity. The linearity of this module does not change with the increase of pulse and remains high linearity. On the premise that linearity does not change, the measured strength will reach the designed limit of photoelectric tube.
- (4) This module inserted into photoelectric tube enables it to have a good working state by only providing a load current less than $1\mu\text{A}$, but if the high voltage is directly provided without photoelectric tube, the DC load capacity will reach 1mA. Therefore, exterior short circuit or spark occur, its transit discharge capacity will be very strong.
- (5) After this module's output high voltage remains constant at control end, it does not changes with the variation of load and input voltage. But as its signal pulse current and DC load are less after it works normally, the load introduced by

measuring system is higher than working load in measuring high voltage. During measurement, 5V input current is higher than the actual working current and this depends on the measuring load introduced. The real input current value should be the value after removing high voltage measuring probe and the high voltage value is the value during measurement, but load only includes working load and +5V input current at the time is the real working current. For example, use a high voltage probe with its input resistance of 500M to measure high voltage, it reads +5V input 2mA and high voltage output -1000V. After removing probe, it reads +5V input 0.8mA. the high voltage measuring probe is introduced with a 1.2mA input current, which is higher than its normal working current 0.8mA.