

APPLICATION

The following notes may be used as a general guide for detecting negatively charged particles with 14150 or 14151 series Active Film Multipliers™. More specific details will depend on the application and further inquiries should be directed to your nearest ETP office. Standard models 14150 and 14151 use the multiplier mounting as the +HV connection. Models with the IG option have a separate lead for the +HV.

ELECTRICAL CONNECTIONS

The figures below show the basic electrical connections recommended for negative ion detection when using either a model 14150 or a model 14150IG Active Film Multiplier. **(Connections for the 14151 are identical to the 14150)**

- In the case of the **14150IG** the +HV connection is made using the separate +HV lead provided. The multiplier mounting bracket is electrically isolated from the rest of the multiplier (refer **figure 1**).

In the case of the **14150** the +HV connection is made via the multiplier mounting which is electrically connected to the end of the dynode chain (refer **figure 2**).

- The resistor R_S is used when detecting electrons with low energy and ensures that the electrons reach the first dynode with an energy of at least 200eV. R_S is not required for the detection of electrons with energy >200eV, and in this case R_S can be replaced by a short to earth.

If electrons with minimal energy are to be detected, then the voltage on the first dynode should be maintained at +200 volts. This can be achieved by using an external +200 volt power supply in place of R_S , or by choosing R_S to be 10% to 15% of the multiplier internal resistance. For example, for a 14150 (internal resistance = 30.8 Megohm) an appropriate value for R_S would be 4 Megohm.

IMPORTANT

When operating a **14150** or **14151** in the configuration shown in **figure 2**, ensure the multiplier is mounted so that the mounting bracket at the base of the multiplier is isolated from earth.

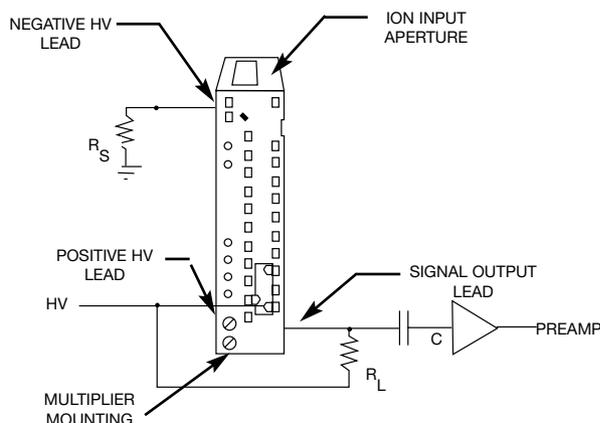


Figure 1. Electrical connections for negatively charged particle detection using an **14150IG** or **14151IG**

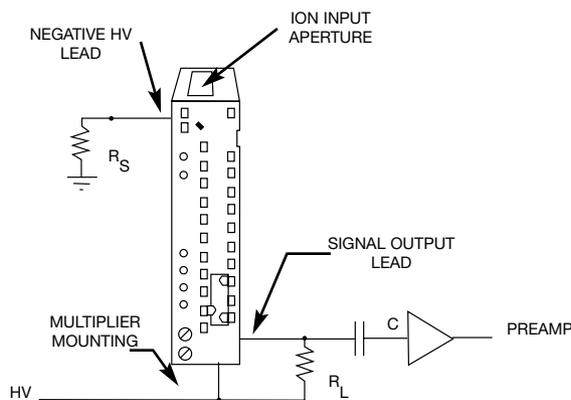


Figure 2. Electrical connections for negatively charged particle detection using an **14150** or **14151**

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