

## LDG ELECTRONICS SP-200

Congratulations on selecting the LDG Electronics SP-200! The SP-200, when installed correctly, protects coax feedlines from surges exceeding 230V, such as caused by nearby lightning strikes and static build-up. The SP-200 employs a gas-discharge tube that arcs-over when 230VDC is exceeded between the RF center pin and shield connections.

## SPECIFICATIONS



- Two SO-239 coax connectors
- 50 ohm characteristic impedance
- Ring terminal for ground connection
- Gas Discharge Tube technology
- 230V DC discharge voltage  $\pm 15\%$
- DC - 1,500 MHz operation
- VSWR less than 1.1:1
- Insertion Loss  $< 0.1$  dB
- 200W maximum power capacity
- Max 1000V surge (1x 40  $\mu$ S duration)
- Max 6000A surge (1x 40  $\mu$ S duration)
- DC resistance 10,000 Megohm
- Weight 6 oz.

## GAS DISCHARGE TUBE (GDT) THEORY

The gas discharge tube employed in the SP-200 contains a pair of electrodes inside a sealed tube filled with an inert gas. During normal operation, the gas acts as an insulator, and there is no continuity between the two electrodes.

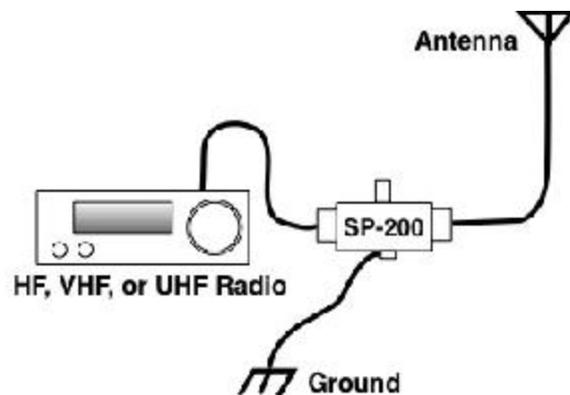
## GDT THEORY (CONT'D)

When the specified discharge voltage is exceeded, however, the gas ionizes, creating a conductive path for the discharge to occur. Conductivity rises almost instantly, and resistance between the two electrodes drops to a few thousandths of an ohm.

Once the surge is suppressed, the gas tube “resets” and may be used again and again, perhaps several hundred times, depending on the nature of the surge.

## INSTALLATION

Installation of the SP-200 Surge Protector is simple. Place the SP-200 in-line with your antenna system's coaxial feedline, as close to the protected equipment as is possible. Crimp or solder a wire, #16 to #10 AWG (the larger the better) to the supplied ring terminal, and connect this to the station ground bus. It is recommended to connect to a ground rod inserted at least 4 feet into the ground.



## GAS DISCHARGE TUBE REPLACEMENT

After many discharge events, eventually the gas discharge tube may need to be replaced. High VSWR or a “deaf” receiver are common symptoms that the discharge tube has failed. Simply unscrew the GDT from the SP-200, and install the new GDT by hand tightening. Do not use excessive force.

Replacement GDT's are available from [www.cheapham.com](http://www.cheapham.com) (732) 716-1600.

## IMPORTANT SAFETY NOTE

While the SP-200 protects against surges such as those caused by nearby lightning strikes, no device can protect against a direct lightning strike. Do not work on antenna systems during a thunderstorm.



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