Series T-670

High Precision Spark Gap Switches

For use in:

- Laser Drivers
- Marx Generators
- Capacitor Banks
- Current Injectors
- Pulse-forming Networks

General Description

The T-670 switch is an extremely versatile and compact pressurized spark gap. Designed for operation in the 20 to 100 kV range, the switch can reliably handle a peak current of 100 kA and a charge transfer of 0.15 Coulomb. Its unique “pancake design allows maximum use of available space for high density packaging and low inductance. The T-670 can be operated “maintenance-free” for more than 10,000 shots at full ratings, making it ideally suited for systems requiring a high rate of use with minimum down-time. This switch has proven to be the standard of the industry because of its high reliability, versatility, long life, low maintenance, and easy disassembly for periodic cleaning.

Applications

These switches are used in laser drivers, Marx generators, capacitor banks, current injectors, pulse-forming networks, and other applications requiring high-voltage switching. Their “pancake” configuration makes them particularly well-suited to fairly high-energy applications requiring small size and/or low inductance.

Specifications

- Maximum Peak Current: 100 kA
- Voltage Range: 18-100 kV
- Timing Jitter (RMS): <1 ns
- Max Rep Rate: 10 Hz
- Inductance: ~ 60 nH
- Dielectric Gas: Dry Air or SF₆
- Minimum Trigger Voltage: >50% (CV)*
- Maximum Charge Transfer: 0.15 Coulomb
- Maintenance Interval at Full Ratings: >10,000 Shots
- Dimensions: 4.25” square
- Weight: 1.75 lb.

*(CV) Charge Voltage
These curves depict the self-breakdown parameters of the T-670 switches in the two available gap options. The operating voltage should be approximately 75% of the self-breakdown levels. Triggering is accomplished by applying a voltage to the mid-plane electrode. The trigger pulse should be a minimum of 50% of the gap operating voltage - 100% is recommended.