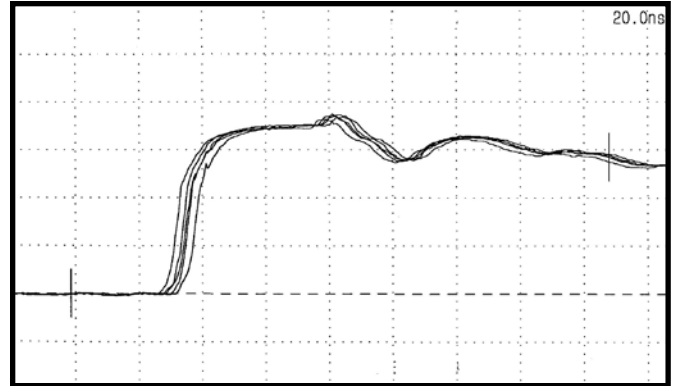
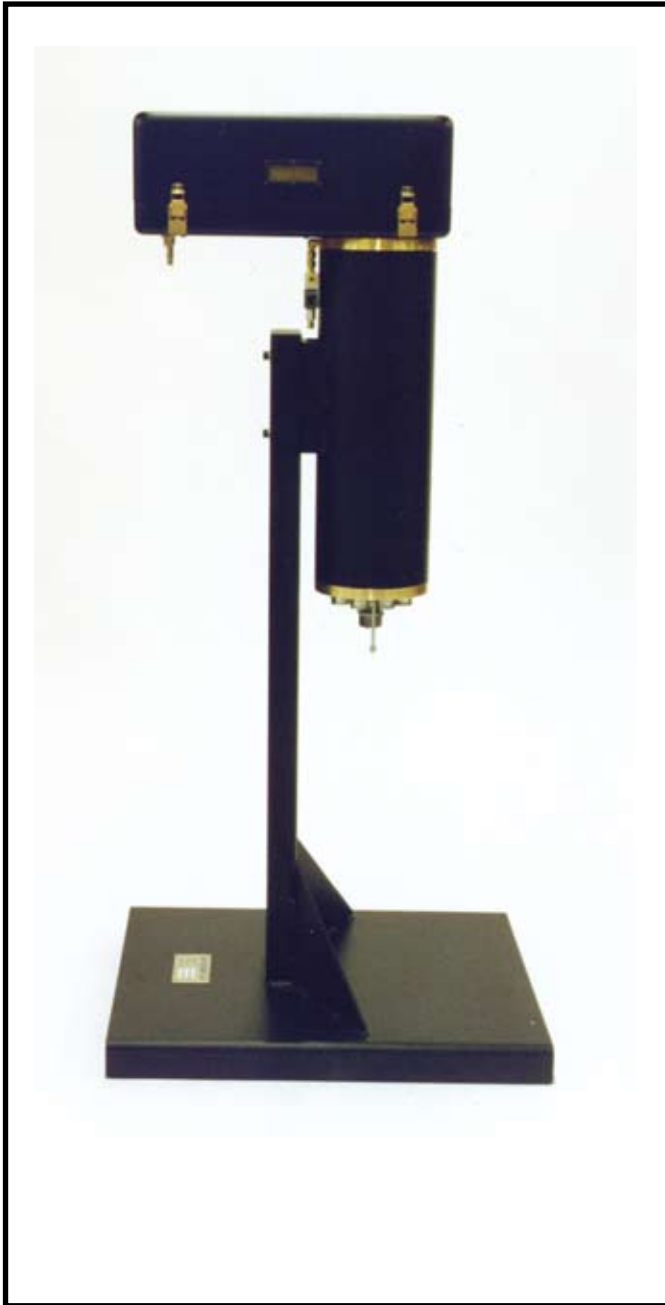


PA-80 and PA-100 Trigger Generators



Above waveform shows five consecutive pulses with single cable output into 50 ohm load.

Features

- *Fast-risetime, high-voltage pulsers generate 80 kV, and 100 kV, respectively, into 50 Ω*
- *Pulse voltage doubles into high-impedance loads*
- *Reliable, uncomplicated system assures low-jitter triggering*



General Description

The PA-80 and PA-100 high-voltage trigger generators produce very fast risetime, high-voltage output pulses into as many as 6 parallel coaxial cables. The pulse amplitude in the output cables is essentially equal to the charge voltage: 80 kV and 100 kV, respectively. The peak pulse voltage at the output end of the cables nearly doubles into high impedance loads. The pulse source is a low inductance energy storage/discharge capacitor which is dc-charged and switched into the cables by a triggered pressurized gas spark gap. The ease of operation and proven reliability of the PA-80 and PA-100 make them ideal for use in numerous pulsed power applications. Low internal timing jitter and fast risetime output pulse assure low timing jitter for the system when triggered by either of these units.

The trigger generator system consists of (1) the high-voltage assembly; (2) the remotely-located control chassis; (3) the gas panel; and, (4) 30 feet of control cable and gas lines.

Applications

The PA-80 and PA-100 trigger generators are designed primarily as low-impedance, high-voltage trigger sources for Marx generators, capacitor banks, and single or multiple switches. They can also be used as low-impedance pulsers for a variety of applications, such as electromagnetic pulse injection or laser excitation.

Specifications

| | PA-80 | PA-100 |
|---|-----------------------|-----------------------|
| Maximum charge voltage: | 80 kV | 100 kV |
| Output voltage into 50 Ω: | 80 kV* | 100 kV* |
| Output pulse polarity: | Positive** | Positive** |
| Capacitance: | 0.075 μ F | 0.01 μ F |
| Std No. of output cables: | 3 RG 218/u*** | 3 RG 220/u |
| Output pulse risetime into one 50 Ω cable: | ≤ 5 ns (10%-90%) | ≤ 5 ns (10%-90%) |
| Timing delay: | < 500 ns | < 500 ns |
| Timing jitter: | ≤ 5 ns rms **** | ≤ 5 ns rms**** |

Triggering: Both units can be triggered remotely or from pushbuttons on the control panel. For remote triggering, a + 5 V fast rise (~ 10 ns) pulse or fiber optic trigger applied to the external trigger input at the control panel.

Synchronization output: Low level (+ 10 V) synchronization outputs are provided at both the control panel and the trigger generator.

Input power: 120 V, 50/60 Hz, 550 VA maximum

* Output pulse voltage doubles if the 50 Ω output cable is terminated in a high impedance.

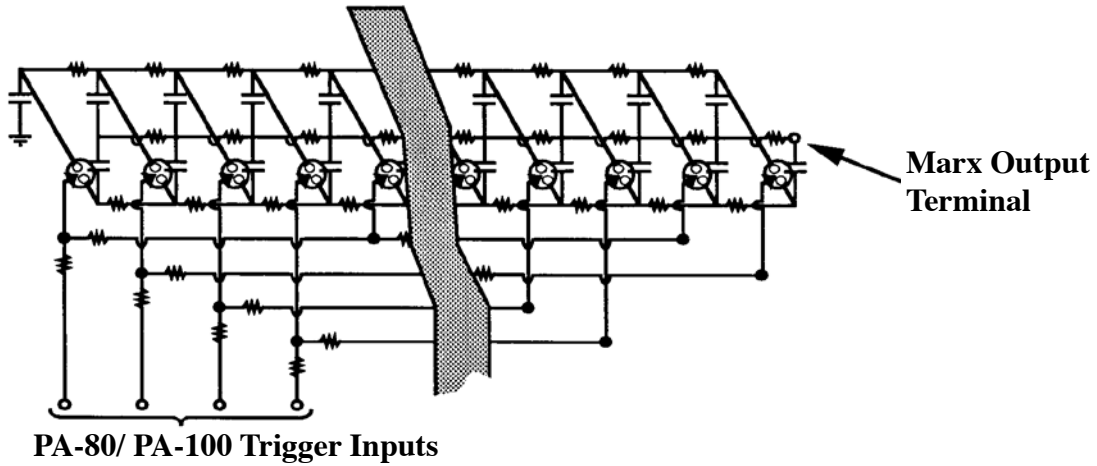
** Negative output pulse polarity models are available upon request.

*** Units providing as many as 6 RG 218/ μ and as many as 12 RGH 217/ μ output cables are available upon request.

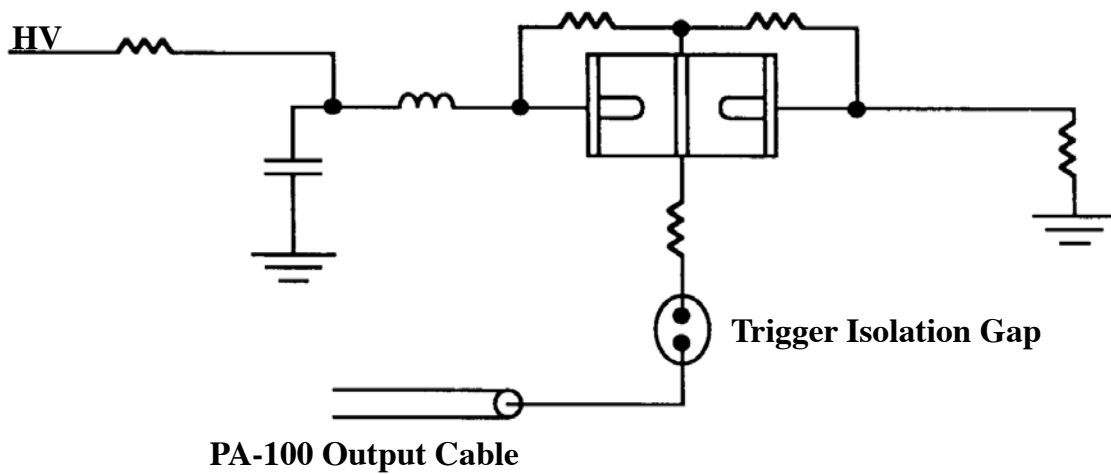
**** 1 σ at 50% of self-break voltage.

System Operations

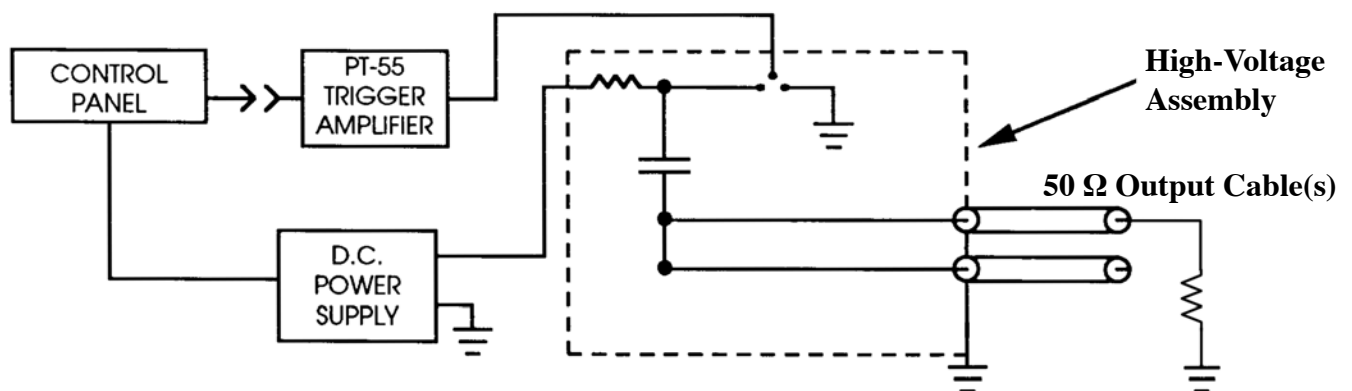
Marx Generator Triggered by a PA-80/ PA-100



High-Voltage Switch Triggered by a PA-100



Block Diagram



Customer-Furnished Equipment

- Regulated SF₆ at 100psi
- Output Cables
- Rack Space for Controls and Power Supply – 19" wide x 18.25 " tall

Shipping Weight

Overall Dimensions

PA-80 Approximately 300 lbs.

| | |
|---------------------------|----------------------|
| Pulser | 20" x 20" x 60" H |
| Power Supply (Rack Mount) | 19" x 24"D x 5" H |
| Control Chasis | 19" x 8" D x 8.25" H |
| Gas Panel | 19" x 8"D x 5" H |

PA-100 Approximately 300 lbs.

| | |
|---------------------------|----------------------|
| Pulser | 20" x 20" x 60" H |
| Power Supply (Rack Mount) | 19" x 24"D x 5" H |
| Control Chasis | 19" x 8" D x 8.25" H |
| Gas Panel | 19" x 8"D x 5" H |

