

SQUARE WAVE PULSER

Model SP-801A

HIGH VOLTAGE, LOW IMPEDANCE, FAST RISE AND FALL TIME
PULSER DESIGNED FOR THE MOST DEMANDING
ULTRASONIC APPLICATIONS



- ADJUSTABLE OUTPUT FROM -40 TO -400 VOLTS
- OVERLOAD PROTECTION AND FAST RECOVERY
- PEAK CURRENT OUTPUT AS HIGH AS 50 AMPERES
- ACCEPTS HIGH VOLTAGE TRIGGERS FROM STANDARD SPIKE GENERATORS

Adjustable high voltage output.

The negative 400 Volt rectangular pulse is adjustable in 2 dB steps down to -40 Volts (-20 dB setting). This provides a simple, reproducible way of controlling the signal amplitude. Step-up transformers are available for use with high impedance piezoelectric transducers to produce drive levels up to 1200 Volts.

Very high pulse power output.

The low output impedance of approximately 4 Ohms makes possible pulse powers of approximately 10 kilowatts when working into a matched 4 Ohm load. The average power output is limited to 4.5 Watts by circuitry which automatically shuts down the high voltage supply.

Pulse Width optimized for transducer frequency.

The pulse width control for the SP-801A has eight positions, four of which are set for operating frequencies of 0.5, 1, 2.25 and 5 MHz. The remaining four positions allow continuous width control from less than 50 nanoseconds to greater than 14 microseconds. This makes it possible to adjust the width for half the period of any operating frequency from 50 kHz to greater than 20 MHz. Wider or narrower pulse widths (lower or higher frequency) available on special order; please contact factory.

Internal or External Triggering.

The the internal repetition rate generator may be set from 0.17 Hz to 10 kHz in a 0.17, 0.25, 0.5, 1 ratio sequence though a 20 position rotary switch, or the unit may be triggered externally with either a positive or negative going TTL waveform. In some cases it may be convenient to trigger the unit from an existing spike pulser with spikes of up to 1 Watt of average power.



SPECIFICATIONS

PULSE AMPLITUDE: -40 Volts to -400 Volts in 2 dB steps with a -40 dB output monitor.

FIXED TRANSDUCER FREQUENCIES:

Pulse Width optimized for 0.5, 1, 2.25 and 5 MHz.

ADJUSTABLE FREQUENCY OPERATION:

Pulse width adjustable from less than 25 ns to greater than 12 microseconds; corresponding to frequencies of less than 50 kHz to greater than 20 MHz.

OUTPUT IMPEDANCE: Less than 4 Ohms resistive during the on time and clamped at 6 Ohms during the off time.

LEADING EDGE: Typically 15 ns into 50 Ohms, 10 ns into 10 Ohms

TRAILING EDGE: Typically 15 ns into 50 Ohms; 10 ns into 10 Ohms

REPETITION RATE: 0.17 Hz to 10 kHz in 20 steps in a 0.17, 0.25, 0.5, 1 sequence.

EXTERNAL TRIGGER SOURCE: Unit may be triggered from a positive or negative TTL pulse or a high voltage spike of either polarity with an average power of less than 1 Watt. Input Impedance for this input is nominally 50 Ohms.

INPUT POWER: 100, 120, 220, or 240 V at 50 to 60 Hz; 30 Watts

CABINET SIZE: 17" (43.2 cm) wide x 3" (7.6 cm) high x 9" (22.9 cm) deep

WARRANTY: All RITEC instruments are warranted against defects in materials and workmanship for a period of one year after date of shipment.

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