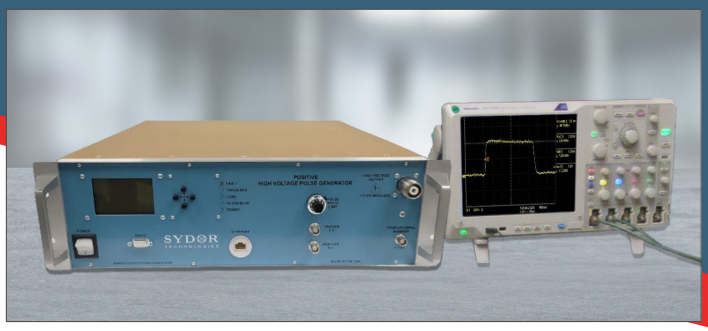
10 kV Pulser

SYDOR TECHNOLOGIES

COMPLEX MEASUREMENTS—CRITICAL RESULTS

Applications:

- Pockels Cell Driver
- EMI/EMP Testing



The Sydor 10 kV Pulser is a highly adjustable unit, offering pulse widths from 10 ns to 110 ns. The pulser architecture supports < 10 ns rise and fall times, while avoiding overshoot at peak voltage. There is also minimal post-pulse ripple. The design is tolerant of intermittent o/c, s/c, and arc load faults. All units include a health monitoring capability to check on critical components and supports limited maintenance periods.

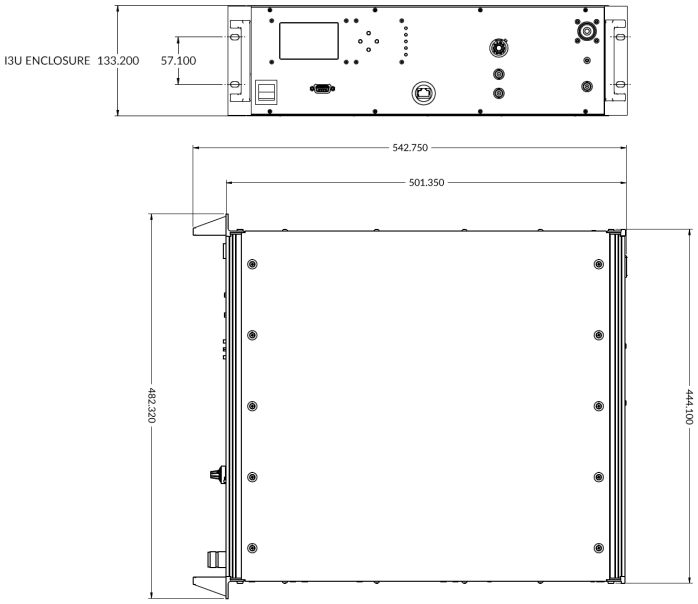
The 10 kV Pulser is optimized to serve as a Pockels cell driver, where fast rise/fall times without overshoot or post-pulse ripples are essential. With adjustable amplitude and pulse width, the unit is quickly able to be optimized for different experimental modes. The monitoring capabilities also supports deployment in areas with infrequent access, allowing the tracking of component health which can inform planned maintenance periods.

The robust design allows deployment in applications that may have varying loads or destructive testing. This design also makes the 10 kV Pulser a great consideration for new users that are being trained and might introduce a mistake. Supporting a front panel LCD interface and remote access over RS232 and Ethernet, the 10 kV Pulser can be deployed in a myriad of environments and support many modes of operation.

Benefits:

- Health monitoring of key components supports scheduled maintenance periods
- Unique architecture capable of fast rise/fall time (<10ns) at high voltages
- Supports a stable flattop waveform with fast rise/fall times without overshoot or post-pulse ringing
- Adjustable amplitude and pulse widths optimize for different experimental modes
- Deployable in a variety of environments in many modes of operation

PRODUCT DIMENSIONS (MILLIMETERS)



10 kV Pulser

PRODUCT SPECIFICATIONS

- **Output Voltage:** Positive polarity 1 kV to 10 kV adjustable into 50 Ohms
- **Output:** Single 50 Ohms coaxial e.g. HN, THT20 or other connector to be discussed and finalized with customer
- **Pulse duration:** Fixed duration FWHM of 10 ns to 110 ns (user adjustable)
- **Risetime:** 10% PV (Peak Voltage) to 90% PV ≤ 10 ns
- **Fall time:** 90% PV to 10% PV ≤ 10 ns
- **Repetition rate:** Single shot or up to 5 Hz nominal operating conditions
- **External trigger:** 5V logic level into 50 ohms, risetime ≤ 5 ns, pulse duration 50-500 ns
- **Timing jitter (with respect to external trigger input):** <0.2 ns (rms)
- **Timing drift (with respect to external trigger input):** <+/- 0.5 ns over 24 hours (10 minutes after application of power)
- **Control Interface:** RS232, ethernet and front panel LCD/keypad
- **Environment:** Room temperature environment.
- **Cooling, if required:** Air cooling with inlet at front of unit and exhaust at rear
- **Primary power:** 110 VAC, 60 Hz.
- **Self-monitoring:** switching stage health checks, load impedance, excess trigger rate

ANTICIPATED CHANNEL PULSE PERFORMANCE

- Pulse flatness and amplitude stability: +/- 5% of voltage setpoint.
- Post pulse voltage: The output voltage following the main pulse after falling to +4% will remain within +/-4% PV until the rising edge of the next pulse.
- Design is tolerant of intermittent o/c, s/c and arc load faults. To avoid connector and cable damage the pulser may shut down under fault conditions.
- Service life of >50 million pulses. Self-diagnostics allow the location of failed switching devices to be identified, which can be replaced during a scheduled service as required. Note that individual main switching device failures have a minimal effect on the output amplitude.
- Pulser will be enclosed in a standard rack mount configuration (3U rack mount configuration).

SYDOR PULSERS

Each pulser application requires its own consideration, generating specific priorities for what will be delivered. Sydor pulser technology is highly adjustable and able to adapt to various scenarios, providing a significant advantage.

CLICK OR SCAN
to configure your pulser

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COMPLEX MEASUREMENTS—CRITICAL RESULTS

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