

FDM - U

COMPACT HIGH VOLTAGE

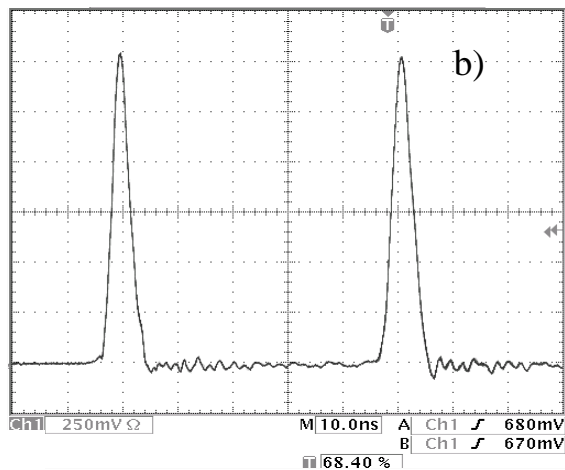
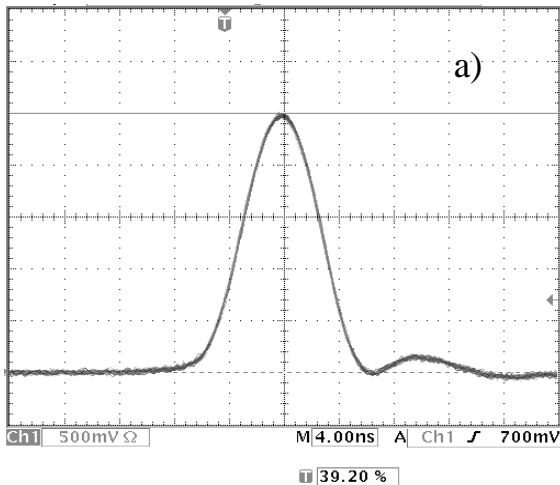
25 KHZ MODULES



FID GmbH



High voltage pulse generator.



Waveform acquired with high voltage attenuator for single (a) and paired (b) units.

GENERAL DESCRIPTION:

FDM-U series pulse generators are all-solid-state and reliable high voltage generators for applications demanding compact mechanical dimensions. These modules generate 3-14 kV, 4-10 ns pulses at repetition rates from single shots to 25 kHz. Variation of input DC voltage adjusts the high voltage output.

Designed for 4-6 pF Pockels cells, these modules can be customized for a broad selection of electro-optical modulators.

Solutions for 100 kHz are also available. Contact NISP Research Projects, LLC to configure modules specifically for your application.

ADVANTAGES:

- Repetition rates from single shots to 25 kHz.
- Half-wave voltage operation.
- Very long lifetime, low jitter and excellent pulse-to-pulse repeatability due to solid-state design.
- Short duration of high voltage pulses reduces safety hazards and chances of electrical arcing.
- Cost efficient, customizable modules.

APPLICATIONS:

- Single optical pulse selection.
- Regenerative amplification.
- Optical contrast improvement.
- Pulse slicing.
- Time-gated optical detection.

OPTIONS:

FDM-U-W for paired operation, to form a sequence of two individually controlled high voltage pulses, separated in time from 20 ns to several microseconds applied to the same Pockels cell.

FDM-U-K for applications where high optical contrast is critical. These units have the amplitudes of pre- and after pulses less than 0.1% of peak voltage.

FDM-U-V for variable output pulse duration.

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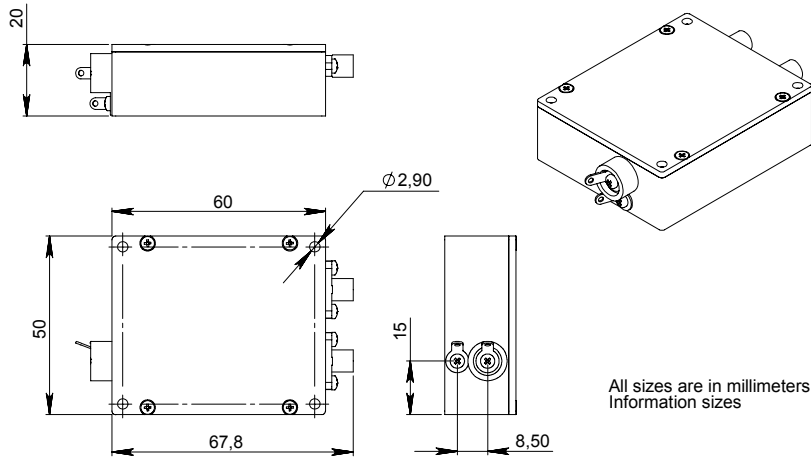
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PULSE GENERATOR SPECIFICATIONS:



MECHANICAL:



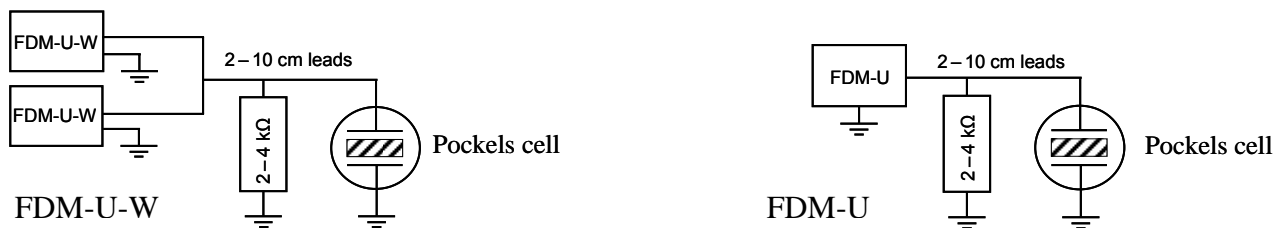
Units should be mounted on a heat sink to operate at frequencies above 5 kHz.

ELECTRICAL:

- Input voltage*: +250-500 V
- Trigger*: +30V / 10 ns rise time / 100 ns duration
- Output voltage: 3 – 14 kV, controlled by input voltage
- Pulse jitter: < 20 ps
- Internal delay: ~200 ns
- Rise time: 2-5 ns
- Fall time: 2.5 – 5 ns
- Pulse width: 4-10 ns @ 50% level
7-12 ns @ 10% level

*24 VDC to 500 VDC power converter integrated with TTL to 30 V trigger amplifier is available.

TYPICAL CONNECTION DIAGRAM:



Low inductance 2-4 kΩ resistor in parallel to the electro-optical modulators can be used to minimize electrical ringing.

Contact NISP Research Projects, LLC for customization options and detailed information.

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