

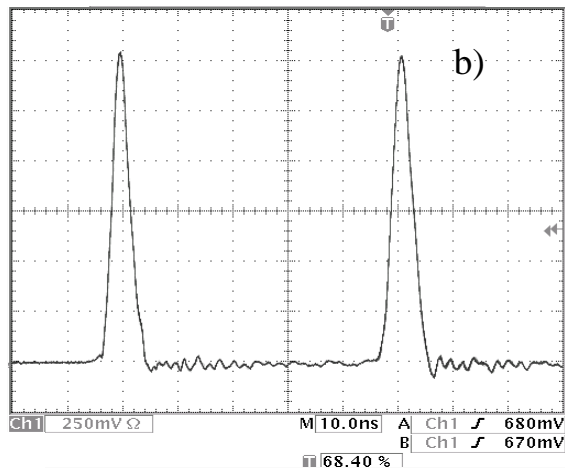
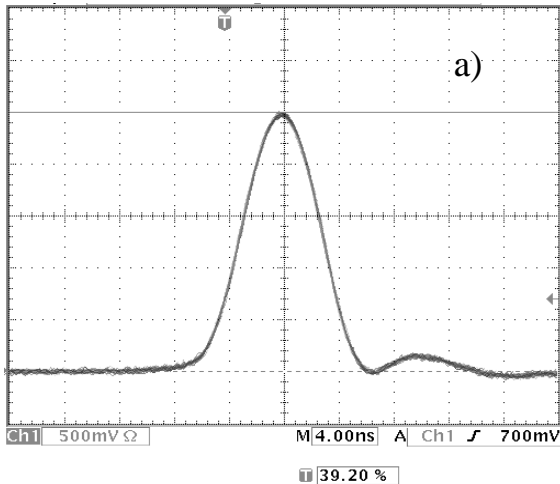
FDM HIGH VOLTAGE 10 KHz MODULES



FID GmbH



High voltage pulse generator.



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

GENERAL DESCRIPTION:

FDM series pulse generators are all-solid-state, compact, reliable and cost-efficient solutions for a variety of applications. These modules generate 3 - 14 kV, 4-10 ns pulses at repetition rates from single shots to 10 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 10 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-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-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-V for variable output pulse duration.

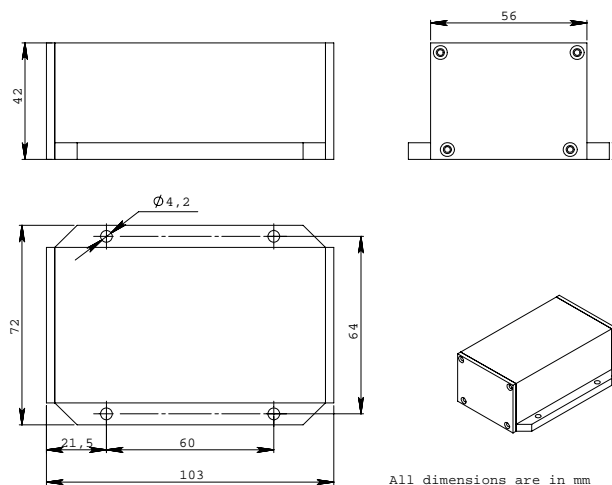
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PULSE GENERATOR SPECIFICATIONS:



MECHANICAL:



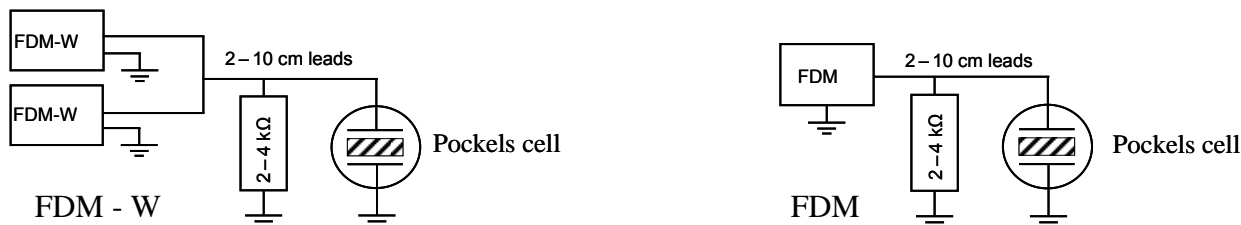
Units should be mounted on a heat sink to operate at frequencies above 5 kHz.

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.

This document is provided for information purposes only. Specifications are subject to change without notice.

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