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## ULTRASONIC PULSER OPGUD PR1

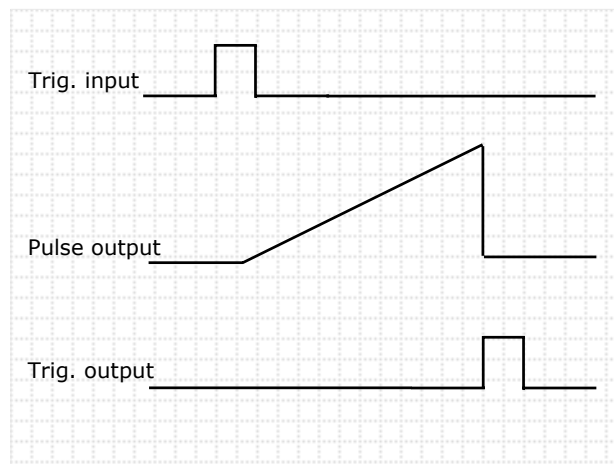
OPGUD PR1 is an ultrasonic pulser suitable for work with all ultrasonic transducers with about 500pF – 20nF impedance.



### Method of operation:

The rising edge of the Trigger signal (see picture) initiates the transducer charging process. After this time, the falling edge of the Trig\_Out is generated which indicates the end of the transducer charging process and a transistor switch which discharges the transducer is turned on.

- Pulse amplitude: 100V - 1250V
- Duty: 50% - 95%
- Frequency: 0.7 – 164Hz
- Trigger output/input: TTL



## Working mode

Generator can work in two modes:

- setting (SET), mode which allow to set parameters with the help of potentiometers, available on the front panel. The generator is also normally working in this mode, but not necessarily stable.
- Normal work mode (RUN). In this mode the possibility of changing the settings is blocked. The generated signal is stable in this modus.

Trigger:

- INT – Internal trigger
- EXT – External trigger.

In both cases trigger signal is send or received by BNC (TRIG) connector on the rear panel.

Trigger pulse is send out after the transducer is discharged.

In the case of external trigger mode, the generator reacts to the raising pulse, starting the process of loading and discharging the transducer.

Input/Output of trigger is placed on the rear panel.

## Panel

**SET/RUN** –  
Mode switch;

**INT/EXT** -trigger  
switch;

**POWER** switch

**AMPLITUDE** –  
setting of pulse  
amplitude;

**DUTY** – duty cycle  
regulation;

**FREQUENCY** –  
cycle length  
regulation



Front

BNC Connector  
**TRIG** – Trigger  
(internal / output or  
external / input)

**OUTPUT**

+

-

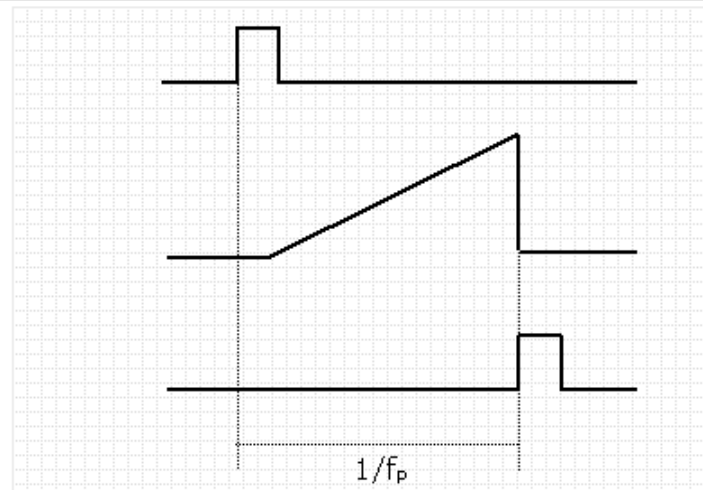
Jack Connector  
12V/3A



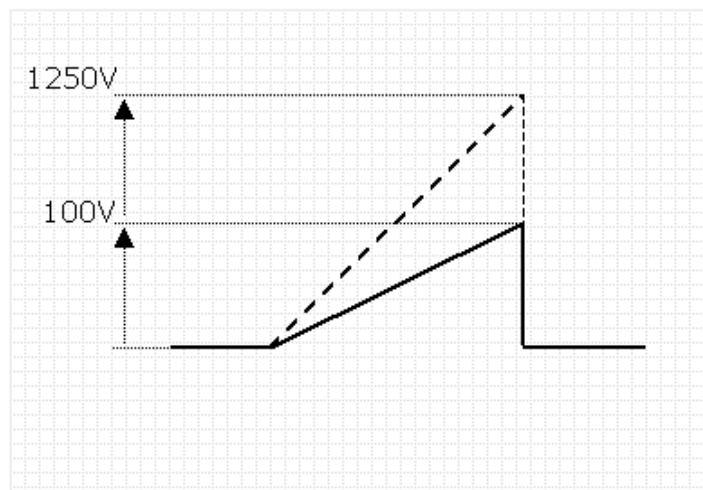
Back

## Settings

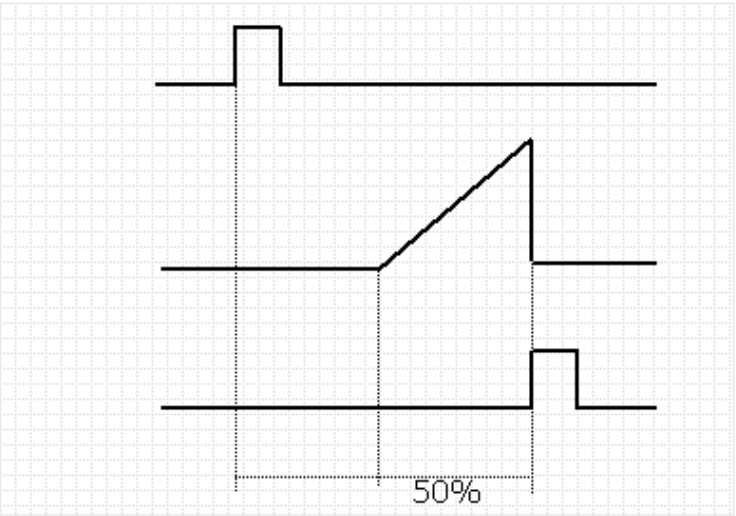
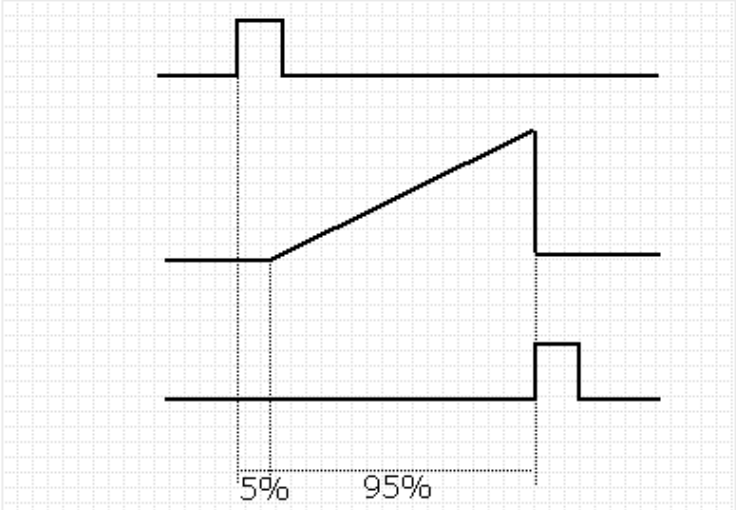
**Frequency:**



**Amplitude:**

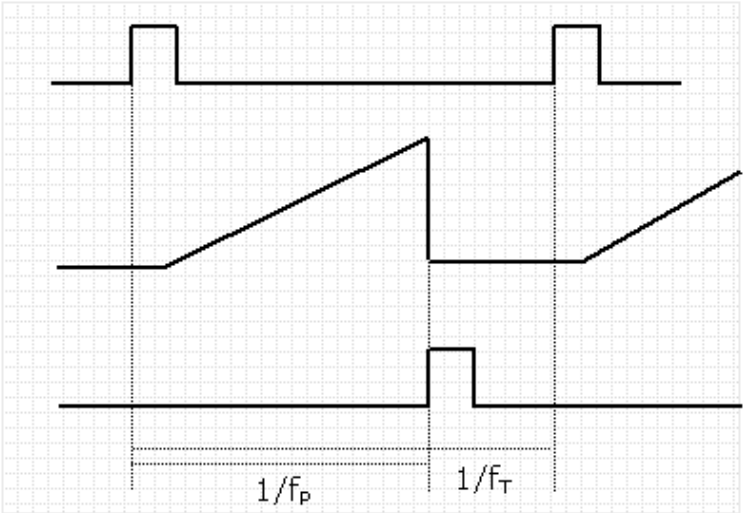


**Duty:**

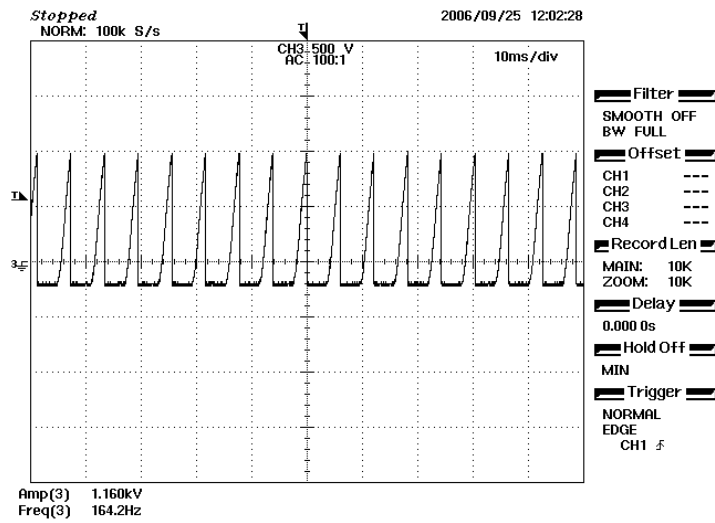


**External Trigger:**

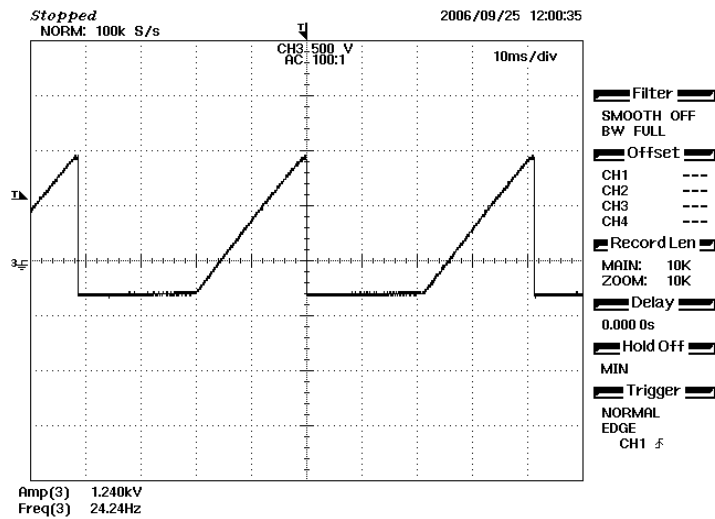
**Condition:**  
Frequency  $1/f_p$  must be larger than the repetition rate  $f_T$



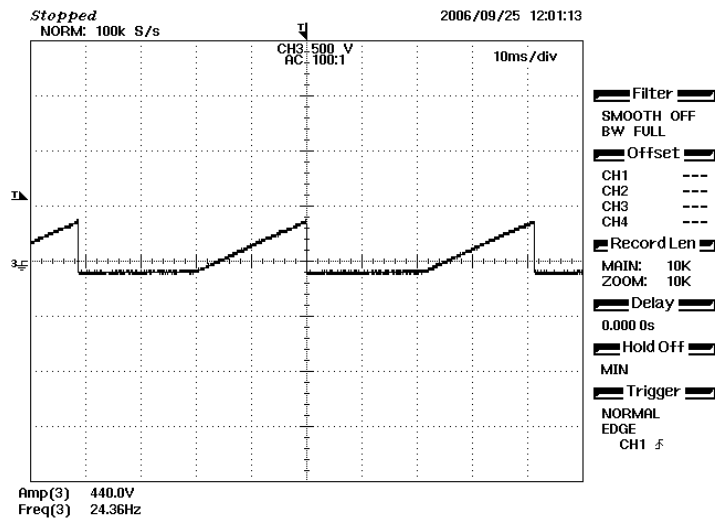
Examples of measured signals:



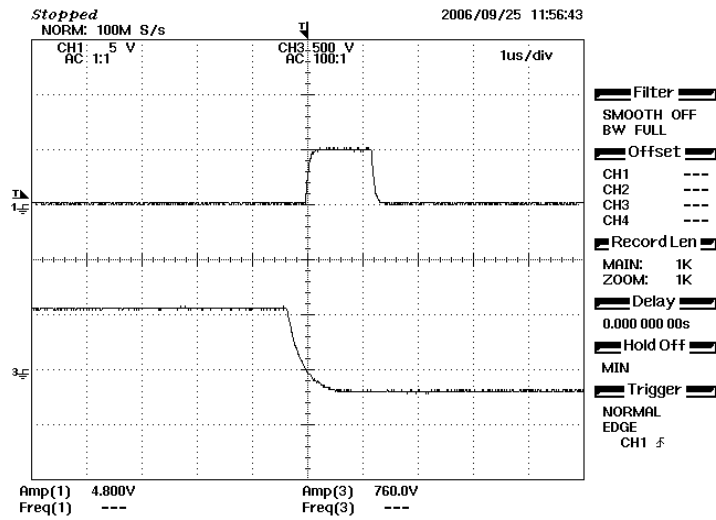
Amplitude = 1.160kV; Frequency = 164.2Hz



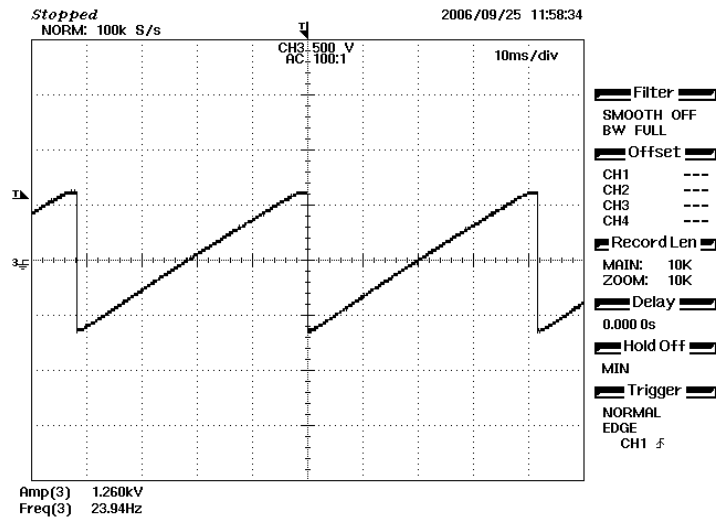
Amplitude = 1.240kV; Frequency = 24.24Hz



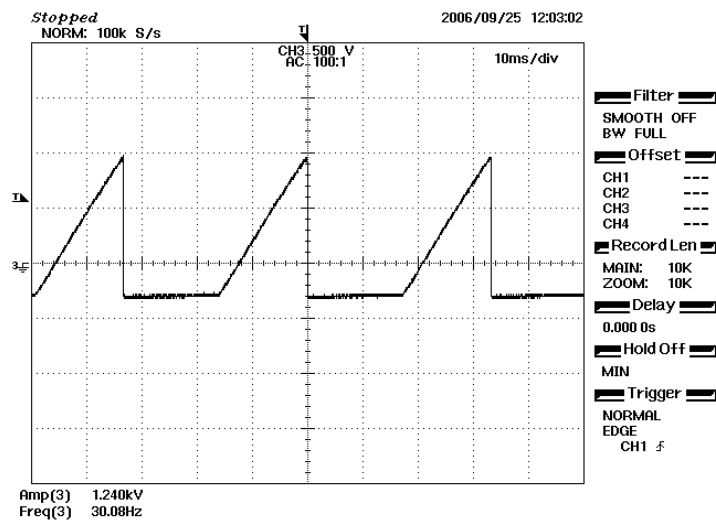
Amplitude = 440V; Frequency = 24.36Hz



Trigger output - TTL Signal 5V; 1.2us;



95% Duty



50% Duty.