

# HVP500

High Voltage Pulse Generator



The HVP500 pulser is a high voltage pulse generator dedicated for using acoustic emission sensors as actuators.

In acoustic emission analysis, attempts are often made to localize the sources of acoustic events precisely in the material. For this purpose, an array of sensors is attached to a test object. The source can be localized based on the different arrival times of the acoustic wave at the various sensor positions. An important parameter in this calculation is the propagation speed in the material. This can vary in different directions depending on the material properties. The speed can also change during the test.

To measure the propagation speed, one sensor is used as an actuator while the others continue to act as sensors. As the sensor positions are known, the propagation speed can be calculated from the time differences.

In order to use the sensors as actuators, a relatively high voltage of between 50 and 500 V must be applied, but only for very short periods of a few  $\mu$ s. The HVP500 can generate pulses from 1  $\mu$ s to 1 ms. The timing of the output pulse is controlled via an external pulse input. The pulse voltage is controlled via a voltage input.

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## Summary

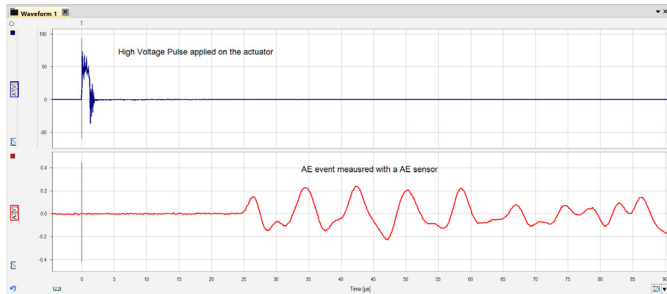
### Key Capabilities

- Output Voltage 50 to 500 V
- Pulse Length 1 $\mu$ s to 1 ms
- Max. pulse frequency 1 kHz
- TTL pulse trigger input
- Analog voltage input for pulse amplitude control

### Applications

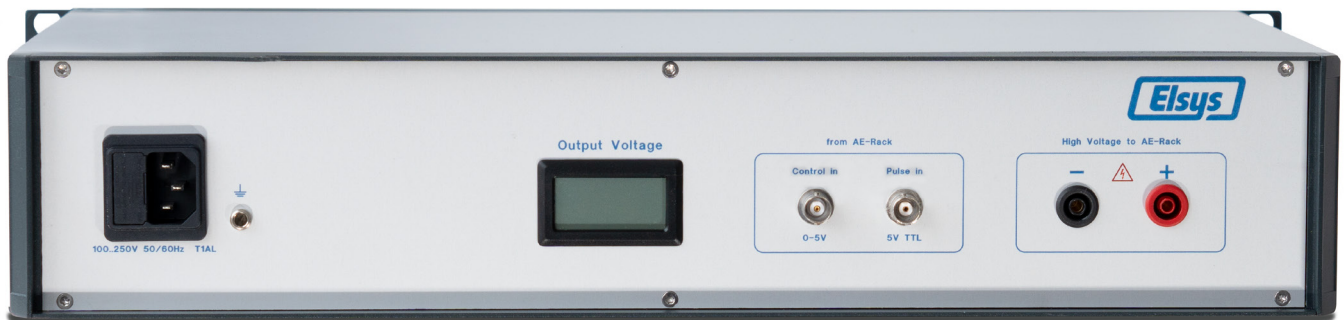
- Acoustic Emission propagation delay measurement
- Sensor connection test

## Example Waveform



## Specification

<b>HV-Output</b>	
Voltage	50 - 500 VDC
Internal R (charging)	5 $\Omega$
Settling time to lower values	$\sim$ 10 ms ( $U_{\text{delta}} = -200$ V)
Max. peak current	200 A
$F_{\text{max}}$	1 kHz
Pulse length	1 $\mu$ s - 1 ms
$C_{\text{max}}$	$\sim$ 1 $\mu$ F
HV sockets	4mm safety sockets
<b>Pulse In</b>	
Voltage range	5 V TTL
Input resistance	8 k $\Omega$
Plug	BNC
<b>Control In</b>	
Voltage range	0,5 - 5 V
Plug	BNC
<b>Line Voltage</b>	
Supply voltage	100 - 240 V AC
Fuse	1A sb 240VAC
<b>Mechanical</b>	
Dimensions	2 HE x 280 mm
Weight	3,9 kg



Back view of the HVP500