



- ◆ Amplitudes to 1000, 2000 and 3000 Volts
- ◆ 50 and 100 ns rise and fall times
- ◆ Pulse widths variable from 0.2 to 5 μ s
- ◆ PRF to 1.0 kHz
- ◆ IEEE-488.2 GPIB and RS-232 ports

The AVRH series of pulse generators consists of three basic models providing output amplitudes in the range of 1000 to 3000 Volts into high impedance loads.

Model AVRH-3-B provides up to 3000 Volts out (to $R \geq 10$ k Ω) with rise and fall times of 100 ns and pulse widths variable from 200 ns to 2.5 μ s. The pulse repetition frequency (PRF) is variable from 0 to 1.0 kHz, with a 0.25% duty cycle limit.

Model AVRH-2-B is similar but provides a maximum output of 2000 Volts (to $R \geq 10$ k Ω) with a rise time of 80 ns. The pulse width is variable from 200 ns to 2.5 μ s, and the pulse repetition frequency is variable from 1 Hz to 1 kHz.

Model AVRH-1-B provide output amplitudes of up to 1000 Volts (to $R \geq 1$ k Ω) at pulse widths variable from 200 ns to 5.0 μ s. The unit features a rise time of 50 ns and a PRF variable to 1.0 kHz with a 0.5% duty cycle limit.

The MOSFET output stage for all models will safely withstand any combination of front-panel control settings, output open or short circuits, and high-duty cycles. An internal power supply monitor removes the power to the output stage for five seconds if an average power overload exists. After that time, the unit operates normally for one second, and if the overload condition persists, the power is cut again. This cycle repeats until the overload is removed. The output stage for Model AVRH-1-B will source up to 1.2 Amps (and will automatically shut down if the load current exceeds 1.2 Amps). Models AVRH-2-B and AVRH-3-B will source 0.25 and 0.35 Amps, respectively, and will shut down if the load current exceeds these values.

Aside from the internal clock, the units can also be triggered by a single-pulse pushbutton or an external TTL-level trigger input. When triggered externally the output pulse width can be set to track the input trigger pulse width (PWOUT = PWIN). A delay control and a sync output are

provided for scope triggering. A gate input is also provided. Either (or both) output polarity can be provided.

All models include a complete computer control interface (see <http://www.avtechpulse.com/gpiib> for details). This provides GPIB and RS-232 computer-control, as well as front-panel keypad and adjust knob control of the output pulse parameters. A large backlit LCD displays the output amplitude, polarity, frequency, pulse width, and delay. An Ethernet port for Telnet-based control is optional (-TNT option, <http://www.avtechpulse.com/options/tnt>) on all -B units.

The output connector on standard units is an SHV jack. MHV or HN output connectors are optionally available. An adapter kit, consisting of an SHV plug to MHV female adapter and an MHV male to BNC female adapter, is also available.

All models are available with a DC-voltage-controlled output amplitude option (0 to +10 V). All AVRH units require 100 - 240 Volts, 50 - 60 Hz, and are mounted in a rugged all-metal 4" x 17" x 15" chassis.

For high-voltage 50 Ω load applications, consider the AVR-8A series, which offers 1000 Volt pulses into 50 Ω loads (see <http://www.avtechpulse.com/medium/avr-8a>), with 100 ns rise times. Alternatively, the AVRZ-5 series of pulsers (<http://www.avtechpulse.com/medium/avrz-5w>) provides 500V pulses into 50 Ω loads, with rise and fall times below 10 ns.

A parametric search engine is available on the Avtech web site, at <http://www.avtechpulse.com/pick>, to assist you in selecting the best instrument for your application.



AVRH-3-B



SPECIFICATIONS

AVRH SERIES

Model ¹ :	AVRH-1-B	AVRH-2-B	AVRH-3-B
Amplitude ² :	0 to 1000 Volts (to R ≥ 1 kΩ)	0 to 2000 Volts (to R ≥ 10 kΩ)	0 to 3000 Volts (to R ≥ 10 kΩ)
Rise time: (20%-80%)	≤ 50 ns	≤ 80 ns	≤ 100 ns
Fall time: (80%-20%)	≤ 50 ns	≤ 80 ns	≤ 100 ns
Pulse width: (FWHM)	200 ns to 5.0 us	200 ns to 2.5 us	
PRF:	internal trigger: 1 Hz to 1 kHz external trigger: 0 Hz to 1 kHz		
Duty cycle (max):	0.5 %	0.25 %	
Polarity ³ :	Positive or negative or both (specify)		
GPIB and RS-232 control ¹ :	Yes (standard on -B units)		
LabView Drivers:	Check http://www.avtechpulse.com/labview for availability and downloads		
Telnet / Ethernet control ⁴ :	Optional. See http://www.avtechpulse.com/options/tnt for details.		
Propagation delay:	≤ 200 ns (Ext trig in to pulse out)		
Jitter: (Ext trig in to pulse out)	± 100 ps ± 0.03% of sync delay		
Trigger required: (ext trig mode)	Mode A: + 5 Volts, 50 ns or wider (TTL) Mode B: + 5 Volts, PW _{IN} = PW _{OUT} (TTL)		
Sync delay:	Variable 0 to ± 1.0 seconds (sync out to pulse out)		
Sync output:	+ 3 Volts, 100 ns, will drive 50 Ohm loads		
Gated operation:	Synchronous or asynchronous, active high or low, switchable. Suppresses triggering when active.		
Connectors:	Out: SHV ^{5,6} Trig, Sync, Gate: BNC		
Power requirements:	100 - 240 Volts, 50 - 60 Hz		
Dimensions (H x W x D):	100 mm x 430 mm x 375 mm (3.9" x 17" x 14.8")		
Chassis material:	cast aluminum frame and handles, blue vinyl on aluminum cover plates		
Mounting:	Any		
Temperature range:	+5°C to + 40°C		

- 1) Provides IEEE-488.2 GPIB and RS-232 control of amplitude, pulse width, polarity, PRF and delay. (See <http://www.avtechpulse.com/gpib> for details).
- 2) For electronic control (0 to + 10V) of amplitude, add the suffix "-EA" to the model number. These units also include the standard front-panel controls.
- 3) Indicate desired polarity by suffixing model number with -P or -N (i.e. positive or negative) or -PN for dual polarity option.

- 4) Add the suffix -TNT to the model number to specify the Telnet / Ethernet control option.
- 5) MHV or HN output connectors can also be provided. To specify, suffix the model number with -MHV or -HN as required.
- 6) An adapter kit, consisting of an SHV PLUG to MHV FEMALE adapter and an MHV MALE to BNC FEMALE adapter, is available. Add the suffix -ADPT1 to the model number to order this kit.

Use the "Pick the Perfect Pulser" parametric search engine at <http://www.avtechpulse.com/pick> to find the best pulser for your application!