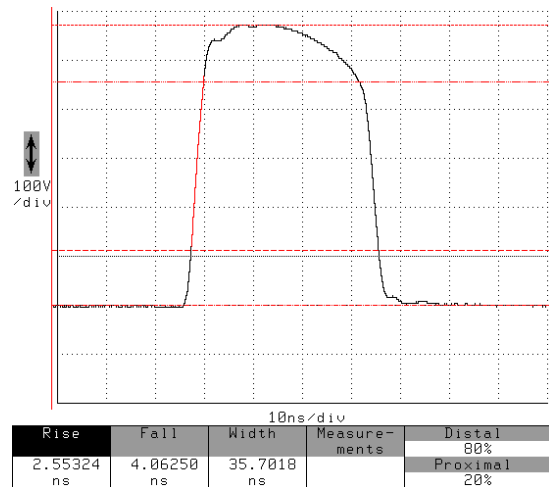


AVRK-3-B-P, 550V amplitude, 6 ns pulse width



AVRK-3-B-P, 550V amplitude, 35 ns pulse width

The AVRK series offers high-voltage outputs (to 750 Volts) with fast rise times, and pulse widths of up to 100 ns. All models operate at pulse repetition frequencies (PRF) of up to 1 kHz.

The AVRK-1-B model provides amplitudes of up to 300V, with a rise time of 3 ns or less. The fall time varies with the pulse width and amplitude. The pulse width is adjustable from 5 to 100 ns.

The AVRK-2-B is similar, except that the maximum amplitude is increased to 400V, and the pulse width range is reduced to 7 to 65 ns.

The AVRK-3-B model provides amplitudes of up to 550V, with 4 ns rise times. The pulse width is adjustable from 6 to 35 ns.

The AVRK-4-B model provides amplitudes of up to 750V, with 4 ns rise times. The FWHM pulse width is adjustable from 6 to 20 ns.

The rise times can be reduced on all models to < 1.5 ns with the addition of the -TR option.

The minimum useful operating amplitude is < 20% of the specified maximum on standard units. This can be reduced to < 4% by adding an internally-switched high-power attenuator (the -LVA option).

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 back-lit LCD displays the output

amplitude, polarity, frequency, pulse width or duty cycle as appropriate, and delay. To allow easy integration into automated test systems, the programming command set is based on the SCPI standard, and LabView drivers are available for free download at <http://www.avtechpulse.com/labview>.

A standard rear-panel Ethernet connector allows the instrument to be remotely controlled using the VXI-11.3, ssh, telnet, and web protocols. In particular, the VXI-11.3 features allows software like LabView to control an instrument using standard VISA communications drivers and network cabling, instead of using older-style GPIB cabling and GPIB controller cards. For details, please see <http://www.avtechpulse.com/options/vxi>.

A manual push button is provided for one-shot operation. A delay control and a sync output are provided for scope triggering purposes.

Either output polarity can be provided. A dual-polarity option is also available, which allows the polarity to be switched from the front panel, or by computer command.

A DC offset or bias insertion option is available with most units. Units with this option include a circuit similar to Model AVX-T at the output. The required DC offset or bias is applied directly to rear-panel solder terminals.

All models require 100-240 Volts, 50-60 Hz.

Contact Avtech (info@avtechpulse.com) with your special requirement! Many units can be customized for particular applications.



AVRK-3-B



SPECIFICATIONS

AVRK SERIES

Model:	AVRK-1-B ¹	AVRK-2-B ¹	AVRK-3-B ¹	AVRK-4-B ¹
Maximum amplitude ⁶ : (50Ω load required)	300 V	400 V	550 V	750 V
Usable amplitude range, standard units:	Range 1: < 20% to 100% of the maximum specified amplitude			
Usable amplitude range, with -LVA option:	Range 1: < 20% to 100% of the maximum specified amplitude Range 2: < 4% to 20% of the maximum specified amplitude (The ranges are automatically selected based on the amplitude setting. The threshold percentages are approximate.)			
Pulse width (FWHM):	5 – 100 ns	7 – 65 ns	6 – 35 ns	6 – 20 ns
Rise time (20%-80%):	Standard: ≤ 3 ns With -TR option: ≤ 1.5 ns		Standard: ≤ 4 ns With -TR option: ≤ 1.5 ns	
Fall time (80%-20%):	<i>Varies with amplitude and pulse width⁷:</i>			
<i>Min PW, Min of ampl range:</i>	≤ 6 ns	≤ 6 ns	≤ 6 ns	≤ 6 ns
<i>Min PW, Max of ampl range:</i>	≤ 4 ns	≤ 4 ns	≤ 4 ns	≤ 4 ns
<i>Max PW, Min of ampl range:</i>	≤ 40 ns	≤ 25 ns	≤ 15 ns	≤ 10 ns
<i>Max PW, Max of ampl range:</i>	≤ 15 ns	≤ 15 ns	≤ 7 ns	≤ 6 ns
PRF:	1 Hz to 1 kHz			
Required load impedance:	50 Ohms ⁵			
Output impedance ³ :	Low (much less than 50 Ohms)			
Polarity ² :	Positive or negative or both (specify)			
Propagation delay:	≤ 150 ns (Ext trig in to pulse out)			
Jitter:	± 100 ps ± 0.03% of sync delay (Ext trig in to pulse out)			
DC offset:	-OS option ⁴ : Apply required DC offset (± 50 Volts, 250 mA DC max) to rear-panel solder terminals			
Trigger modes:	Internal trigger, external trigger (TTL level pulse, > 10 ns, 1 kΩ input impedance), front-panel “Single Pulse” pushbutton, or single pulse trigger via computer command.			
Variable delay:	0 to 1.0 seconds (sync out to main out), for all trigger modes (including external trigger).			
Sync output:	> +3 Volts, > 50 ns, will drive 50 Ohm loads			
Gate input:	Synchronous or asynchronous, active high or low, switchable. Suppresses triggering when active.			
Monitor output:	Included. Provides a 20 dB attenuated coincident replica of the main output. Requires a 50 Ohm load, if used.			
Connectors:	BNC			
GPIB & RS-232 control ¹ :	Standard on -B units.			
Ethernet port, for remote control using VXI-11.3, ssh, telnet, & web:	Included. Recommended as a modern alternative to GPIB / RS-232. See http://www.avtechpulse.com/options/vxi for details.			
Settings resolution:	The resolution of the timing parameters (pulse width, delay, period) varies, but is always better than 0.15% of (set value + 20 ns). The amplitude resolution is < 0.1% of the maximum amplitude.			
Settings accuracy:	Not specified. The pulse width setting experiences some thermal drift and interaction with the amplitude setting. For this reason, the actual output characteristics should be verified by measuring the main output or the monitor output. For high-accuracy applications requiring traceable calibration, verify the output with a calibrated oscilloscope.			
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")			
Rack-mount kit:	Optional. Add -R5 to the model number.			
Temperature range:	+5°C to +40°C			

- 1) -B suffix indicates IEEE-488.2 GPIB and RS-232 control of amplitude, pulse width, PRF and delay. (See <http://www.avtechpulse.com/gpib>).
- 2) Indicate desired polarity by suffixing model number with -P or -N (i.e. positive or negative) or -PN for the dual-polarity option (one output with switchable polarity).
- 3) This is the input in series with the output, internally. Since the output impedance is not 50 Ohms, the load impedance must be 50 Ohms, or transmission line reflections will occur.
- 4) For DC offset option suffix model number with -OS.
- 5) A 50 Ohm load is required. Other loads may damage the instrument.

- 6) Consult Avtech (info@avtechpulse.com) if you need to drive other load impedances.
- 7) The maximum amplitude may fall by up to 10% at minimum pulse width, as the rise and fall times become comparable to the pulse width. The fall time varies with amplitude (higher amplitudes produce faster fall times) and pulse width (wider pulse widths produce slower fall times). These values are the limits for operation at minimum and maximum specified amplitudes and pulse widths. Fall times for other settings will lie between these values.