AVTECH

GPIB IEEE-488

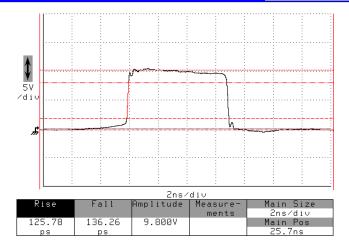## AVMP SERIES

0.1 / 0.5 / 1 MHz PULSE GENERATORS
WITH 120 / 200 ps RISE TIMES
AND PULSE WIDTHS TO 100 ns / 1 us / 10 us

Rise	Fall	Amplitude	Measure-ments	Main Size
				2ns/div
125.78 ps	136.26 ps	9.800V		Main Pos
				25.7ns

◆ Rise times as fast as 120 or 200 ps
◆ Amplitudes to 10 or 20 Volts
◆ PRF up to 1 MHz
◆ Pulse widths as low as 10 ns, as high as 10 us
◆ IEEE-488.2 GPIB and RS-232 control
◆ Ethernet/VXI port

The AVMP series of pulse generators offer 10V or 20V outputs with sub-nanosecond rise times, and pulse widths variable from several nanoseconds up to 100 ns, 1 us, or 10 us.

The 10 Volt AVMP-2-B family provides 120 ps rise and fall times. The pulse width can be varied from 10 to 100 ns. The maximum PRF is 1 MHz, and the maximum duty cycle is 10%.

The AVMP-2A-B family is a 10 Volt model that offers a wider pulse width range, of 10 ns to 1 us, with 200 ps rise and fall times. The maximum pulse repetition frequency (PRF) is 500 kHz, and the maximum duty cycle is 5%. For wider pulse widths, the AVMP-4 family operates from 10 ns to 10 us, with 200 ps rise and fall times. The maximum frequency is 1 MHz, and the maximum duty cycle is 10%.

The 20 Volt AVMP-3-B family provides 200 ps rise and fall times. The pulse width can be varied from 10 to 100 ns, and the PRF is variable to 1 MHz.

The AVMP-3A-B family is similar, but offers an extended pulse width range of 10 ns to 1 us, and the PRF is variable to 100 kHz.

All models include an internal oscillator with frequencies adjustable using the front-panel controls. A delay control and a sync output are provided for oscilloscope triggering purposes. All models can also be triggered externally with a TTL-level pulse.

Positive, negative, and dual-polarity models can be provided.

A bias insertion option is available, which provides a circuit similar to Model AVX-T at the output. The DC offset/bias is applied to rear panel solder terminals. (See http://www.avtechpulse.com/bias/avx-t for

details.) Another option adds an internally-generated DC offset (0 to ±5V), which is adjustable using the front-panel controls. All AVMP units are also available with a monitor output option that provides an attenuated coincident replica of the main output pulse.

All models include a complete computer control interface. 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. (See http://www.avtechpulse.com/gpib for details).

To allow easy integration into automated test systems, the programming command set is based on the SCPI standard, and LabView drivers (see http://www.avtechpulse.com/labview) are available.

These models also include a rear-panel Ethernet connector, allowing 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 additional details, please see http://www.avtechpulse.com/options/vxi.

All models require 100 - 240V, 50 - 60 Hz prime power.

The AVPP series is also available, which offers much the same performance of the AVMP series at wide pulse widths, but offers lower minimum pulse widths (below 1 ns). See http://www.avtechpulse.com/speed for details.

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

Model[1]:	AVMP-2-B	AVMP-2A-B	AVMP-4-B	AVMP-3-B	AVMP-3A-B
Amplitude[2]:	1 - 10 Volts	1 - 10 Volts	1 - 10 Volts	2 - 20 Volts	2 - 20 Volts
Pulse width (FWHM):	10 ns - 100 ns	10 ns - 1 us	10 ns - 10 us	10 ns - 100 ns	10 ns - 1 us
Maximum PRF:	1 MHz	500 kHz	1 MHz		100 kHz
Maximum duty cycle:	10%	5%	10%		5%
Rise time (20%-80%):	≤ 120 ps	≤ 200 ps			
Fall time (80%-20%):	≤ 120 ps	≤ 200 ps			
Required load impedance:	50 Ohms[6]				
Polarity[3]:	Positive or negative or both (specify)				
GPIB and RS-232 control[1]:	Standard on -B units.				
LabView Drivers:	Check http://www.avtechpulse.com/labview for availability and downloads				
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:	Amplitude: Typically ± (3% of setting) ± (2% of maximum). Delay, Period: Typically ± (3% of setting) ± (5 ns) Pulse width: Typically ± (3% of setting) ± (2 ns), at maximum amplitude. As the amplitude is reduced, the pulse width may shift ± 5 ns. For high-accuracy applications requiring traceable calibration, verify the output with a calibrated oscilloscope[7].				
Propagation delay:	≤ 200 ns (Ext trig in to pulse out)				
Jitter:	± 35ps ± 0.015% of sync delay				
DC offset:	Optional[4] (except not available for the AVMP-4-B). Apply required DC offset to back panel solder terminals (250 mA / ±50V maximum)				
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:	Sync out to main out: 0 to 1.0 seconds, for all trigger modes (including external trigger).				
Sync output:	> +3 Volts, > 50 ns, will drive 50 Ohm loads				
Monitor output option[5]:	Provides a 20 dB attenuated coincident replica of main output				
Connectors:	Out, Monitor: SMA, Trig, Sync, Gate: BNC				
Power requirements:	100 - 240 Volts, 50 - 60 Hz				
Dimensions: (H x W x D)	100 mm × 430 mm × 375 mm (3.9" × 17" × 14.8")				
Chassis material:	Aluminum frame & handles, blue vinyl on aluminum covers				
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) For operation at amplitudes of less than 20% of full-scale, best results will be obtained by setting the amplitude near full-scale and using external attenuators on the output.
3) Indicate desired polarity by suffixing model number with -P or -N (i.e. positive or negative) or -PN for dual polarity option.
4) The -OS option adds an internal bias tee circuit to the output, allowing an externally-generated DC offset (±50V/250mA max) to be added the output signal. The -OT option includes the -OS function, and adds the ability to generate a ±5V/100mA offset internally (controlled from the front panel, or by computer command on -B units).

5) Add -M to model number for monitor option.
6) A 50 Ohm load is required. Other loads may damage the instrument. Consult Avtech (info@avtechpulse.com) if you need to drive other load impedances.
7) These instruments are provided with a basic calibration checksheet, showing a selection of measured output parameters. These measurements are performed with equipment that is calibrated on a regular basis by a third-party ISO/IEC 17025:2005 accredited calibration laboratory. However, Avtech itself does not claim any accreditation. For applications requiring traceable performance, use a calibrated measurement system rather than relying on the accuracy of the pulse generator settings.