AVR-9A-B output, 12V, 250 Hz, 50% duty cycle, into 10Ω

- IEEE-488.2 GPIB and RS-232 control
- Peak outputs to 20V into 1 Ohm, 20 Amps
- Pulse widths from 200 ns to 2 ms
- Rise times as low as 10 ns
- Ideal for solenoid and MOSFET testing
- PRF as high as 50 kHz

The AVR-9 series of pulse generators offer fast medium voltage pulsing with high current capability. These models are ideal for driving solenoids, pulse testing of MOSFETs, and other applications.

Model AVR-9A-B provides up to 12 Volts into load impedances of 10 Ω or greater, with rise times of 10 ns and pulse widths from 200 ns to 2 ms. The pulse repetition frequency (PRF) is variable from 0 to 50 kHz, and the maximum output duty cycle is 50%.

Model AVR-9B-B is similar, but provide higher amplitudes of up to 20V into 10 Ω. The rise and fall times are 15 ns.

Model AVR-9C-B can drive even lower load impedances, providing up to 12 Volts into a load of 1Ω or higher (i.e., up to 12 Amps of current). The rise and falls times are 50 ns, and the pulse width is variable from 200 ns to 200 us. The PRF is variable from 0 to 5 kHz, and the maximum output duty cycle is 10%.

Model AVR-9D-B has the highest current rating, providing amplitudes of up to 20V into 1Ω (i.e., up to 20 Amps of current). The rise and falls times are 80 ns, and the pulse width is variable from 200 ns to 200 us. The PRF is variable from 0 to 5 kHz, and the maximum output duty cycle is 10%.

The AVR-9A and AVR-9B series both provide a front-panel BNC connector for the main output.

The higher-current AVR-9C and AVR-9D models have a rear-panel DB-37 output connector to which a unique 100 cm long high-current transmission line may be attached. This line has a characteristic impedance of 1 Ohm. A medium-power test load (5 Watts) is provided with these models for the convenience of initial testing purposes. See http://www.avtechpulse.com/transmission/av-clz1 and

http://www.avtechpulse.com/accessories/av-ctl1 for additional information about cables and test loads.

All models are available with positive or negative outputs. The polarity must be specified when ordering, by adding "-P" or "-N" to the model number.

In all models, the output stages 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. The output stage will source up to 120% of the maximum rated current, and will automatically shut down if the load current exceeds this amount.

Aside from the internal clock, all models 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 ($PW_{OUT} = PW_{IN}$). A delay control and a sync output are provided for oscilloscope triggering. A gate input is also provided.

All models include a complete computer control interface (see http://www.avtechpulse.com/gpib). 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, 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 download at the Avtech web site (http://www.avtechpulse.com/labview).

Some parameters can be modified to suit particular requirements. Contact the Avtech factory with your special requirement (info@avtechpulse.com)!

Model:	AVR-9A-B	AVR-9B-B	AVR-9C-B	AVR-9D-B
Amplitude:	0 to 12V, $R_L \geq 10\ \Omega$, 1.2 Amps maximum	0 to 20V, $R_L \geq 10\ \Omega$, 2.0 Amps maximum	0 to 12V, $R_L \geq 1\ \Omega$, 12 Amps maximum	0 to 20V, $R_L \geq 1\ \Omega$, 20 Amps maximum
Pulse width (FWHM)[1]:	0.2 to 2000 us		0.2 to 200 us	
Rise time, fall time (20%-80%):	≤ 10 ns	≤ 15 ns	≤ 50 ns	≤ 80 ns
Duty cycle (maximum):	50%		10%	
Average output power (max):	7.2W	20W	14.4W	40W
PRF:	0 to 50 kHz		0 to 5 kHz	
Output impedance:	≤ 0.5 Ω		≤ 0.1 Ω	
Polarity[2]:	Positive or negative (specify -P or -N)			
GPIB and RS-232 control[3]:	Standard on -B units.			
LabView Drivers:	Check http://www.avtechpulse.com/labview for availability and downloads			
Propagation delay:	≤ 150 ns, Ext Trig in to pulse out			
Jitter:	± 100 ps ± 0.03% of sync delay (Ext trig in to pulse out)			
Trigger required (for Ext Trig mode)	Mode A: +5 Volt, 50 ns or wider (TTL) Mode B: +5 Volt, $PW_{IN} = PW_{OUT}$ (TTL)			
Sync delay:	Variable 0 to ± 1 s (sync out to pulse out)			
Sync output:	+ 3 Volt, 100 ns, will drive 50 Ohm loads			
Gate input:	Synchronous or asynchronous, active high or low, switchable. Suppresses triggering when active.			
Connectors, output:	BNC		DB-37 female, to mate with the provided AV-CLZ1-100 cable. Pins 1-19 = signal, pins 20-37 = ground.	
Supplied output transmission line:	N/A		AV-CLZ1-100[4]	
Supplied test load:	N/A		AV-CTL1-ENC[5]	
Connectors, other:	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) The output pulse width may also be controlled externally by applying a TTL-level trigger of the desired width to a rear-panel BNC connector (PWIN = PWOUT mode).
2) Indicate desired polarity by suffixing model number with -P or -N (i.e. positive or negative).
3) Provides IEEE-488.2 GPIB and RS-232 control of amplitude, pulse width, polarity, PRF and delay. (See http://www.avtechpulse.com/gpib).
4) See http://www.avtechpulse.com/transmission/av-clz1 for details.
5) See http://www.avtechpulse.com/accessories/av-ctl1 for details.

AVR-9A-B