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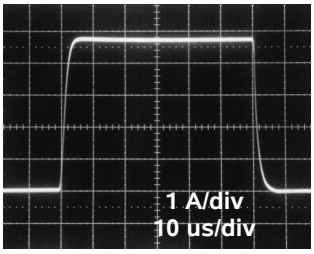
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AV-156 SERIES

PULSED CONSTANT CURRENT GENERATORS WITH 1.5A TO 20A MAXIMUM CURRENT, SINGLE AND DUAL-CHANNEL VERSIONS



- Peak outputs ranging from 1.5 to 20 Amps
- High compliance voltages
- Pulse widths from 1 us to 100 ms
- Two dual-channel units, ideal for airbag squib testing
- IEEE-488.2 GPIB and RS-232 standard, VXI optional
- Output current monitor and overload protection

The AV-156 series of pulsed constant current generators was designed for a wide variety of component testing applications. The AV-156 series is used to test a wide range of devices, including laser diodes, LED lighting arrays, airbag squibs, fuses, power resistors, and power semiconductors. All AV-156 models described here include IEEE-488.2 GPIB and RS-232 computer control interfaces, making them ideal for many automatic test and R&D applications.

Model AV-156K-B is a +0.01 to +2 Amp pulser, with 200 ns rise and fall times. The pulse width is variable from 1 us to 10 ms, with repetition rates to 100 kHz. The maximum duty cycle is 80% for amplitudes below 1A, and 40% for amplitudes to 2A. The usable load voltage range is 0 to +20 Volts.

Model AV-156A-B is a +0.01 to +5 Amp pulser, providing 4 us rise times, pulse widths from 10 us to 10 ms (100 ms optional), pulse repetition frequency (PRF) to 10 kHz and a load voltage range of 0 to +15 Volts.

The model AV-156G-B is similar, but the maximum amplitude is increased to 10 Amps, and the maximum duty cycle is 10%.

The load voltage of both the AV-156A-B and AV-156G-B can be increased to +25V by adding the -HC option.

Model AV-156L-B is a +0.02 to +20 Amp pulser, providing 15 us rise times, pulse widths from 30 us to 3 ms, pulse repetition frequency (PRF) to 1 kHz and a load voltage range of 0 to +32 Volts.

The AV-156M-B offers an unusually high compliance voltage of 350V, with peak amplitudes up to 1.5A, making it useful for testing series arrays of LED lighting devices.

LabView drivers are available for these single-output instruments at http://www.avtechpulse.com/labview. The instrument may be controlled by the GPIB and RS-232 ports, or by the front-panel keypad and adjust knob.

For more complex test applications, two dual-channel units are available. Model AV-156E-B is dual-channel 5 Amp, 25 Volt unit ideal for airbag squib testing. The output pulse widths are independently variable up to 100 ms. The amplitudes are also independently variable. One of the two channels has a variable delay, of 0 to 1.0 seconds. The pulse repetition frequency is variable from 1 to 100 Hz and the unit includes pushbutton and external triggering capability. Both channels share a common trigger. The AV-156E-B offers 10 us rise and fall times.

Model AV-156F-B is a similar dual-channel pulser, but offers higher amplitudes of 0 to +10 Amps, with 4 us rise & fall times. The pulse repetition frequency is variable from 0.5 to 50 Hz.

All models include a rear-panel monitor output (for display on an oscilloscope) that provides an attenuated coincident voltage replica of the load current. All models are protected against high duty cycle overload conditions by an automatic control feature that limits the average output power for as long as the overload condition persists.

On initial power-up, the output is shorted to ground by a relay, until the output is enabled by the user. The shorting relay may be re-enabled as required.

All instruments with the -B suffix include a complete computer control interface. This provides GPIB and RS-232 computer-control (see http://www.avtechpulse.com/gpib for details), as well as front panel keypad and adjust knob control of the output pulse parameters. A large backlit LCD displays the output amplitude, frequency, pulse width, and delay. To allow easy integration into automated test systems, the programming command set is based on the SCPI standard.

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, see http://www.avtechpulse.com/options/vxi.

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

See the AV-108 Series for high duty cycle pulsed constant currents to 200 Amps, the AV-106 Series for currents of 5, 30 and 100 Amps and the AV-107 Series for fast rise time current pulses to 20 Amps. These models are described in detail at http://www.avtechpulse.com/current. A parametric search engine is available online at http://www.avtechpulse.com/pick to assist you in selecting the best instrument for your application.

Many aspects of the AV-156 family can be adapted to meet your particular requirements. Call or email Avtech today (info@avtechpulse.com) with your requirement.



AV-156E-B

SPECIFICATIONS AV-156 SERIES

Model:	AV-156K-B	AV-156A-B	AV-156G-B	AV-156L-B	AV-156M-B	AV-156E-B	AV-156F-B
Amplitude:	0.01 - 2.0 A	0.01 - 5.0 A	0.01 - 10 A	0.02 – 20 A	0.15 - 1.5A	0.01 - 5.0 A	0.01 - 10.0 A
Number of output channels:	One					Two (independent control of amplitude and pulse width)	
Pulse width (FWHM):	1 us to 10 ms	10 us to 10 ms Optional[6]: 10 us to 100 ms		30 us to 3 ms	1 to 50 ms	0.5 to 100 ms	
Max. pulse repetition frequency:	100 kHz	10 kHz		1 kHz	10 Hz	100 Hz	50 Hz
Max. duty cycle:	80% for 0-1A, 40% for 1-2A.	20%	10%	5%	2.5%	10%	5%
Rise & fall time[1] (20%-80%):	< 200 ns	< 4 us		< 15 us	< 300 us	< 10 us	< 4 us
Load configuration:	Referenced to ground.						
Polarity:	Positive - sources current.						
Output current regulation[1]:	< 2 % load voltage change from 0 Volts to maximum rated voltage						
Load voltage range:	0 to +20V	Standard: 0 to +15V With -HC option[2]: 0 to +25V		0 to +32V	0 to +350V	0 to +25V	
Overshoot[3]:	< 10 %						
Jitter:	< ± 200 ps ± 0.03% of sync delay (Ext trig in to pulse out)						
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.						
Sync delay: (Sync out to pulse out)	0 to ±1.0 seconds					Channel 1: 0 to 1.0 seconds Channel 2: 0 (fixed)	
Sync output:	> +3 Volts, > 50 ns, will drive 50 Ohm loads						
Amplitude accuracy[1,4,8]:	± 3 mA ± 3%						
Frequency accuracy[4,8]:	± 3%						
Pulse width accuracy[1,4,8]:	± 3%, subject to a minimum timing uncertainty of ±1.5 × (Rated rise time + Rated fall time)						
Sync delay accuracy[1,4,8]:	± 3%, subject to a minimum timing uncertainty of ±1.5 × (Rated rise time + Rated fall time)						
Gate input:	Active high or low, switchable. Suppresses triggering when active.						
Monitor output:	N/A	Back-panel BNC connector provides a coincident replica of the output current.					
Connectors, main output:	DB-37, rear-panel[7]	BNC, front-panel[5]					
Connectors, other:	Sync output: BNC, front-panel. Gate, Ext Trig, Monitor: BNC, rear-panel						
GPIB and RS-232 control:	Standard feature. See page See http://www.avtechpulse.com/gpib for details.						
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.						
Power requirements:	100 - 240 Volts, 50 - 60 Hz						
Dimensions (H×W×D): mm: inches:	100 × 430 × 375 3.9 × 17 × 14.8				138×430×425 5.5×17×16.8	100 × 430 × 425 3.9 × 17 × 16.8	
Chassis material:	cast aluminum frame & handles, blue vinyl on aluminum cover plates						
Temperature range:	+5°C to +40°C						

1) Valid when driving a load impedance that is between zero Ohms and the impedance given by (Maximum Compliance Voltage) / (Maximum Rated Current). For load impedances higher than this value, de-rate the rise and fall times proportionally.
2) To specify the high compliance voltage option, add the suffix -HC to the model number.
3) Valid for amplitudes greater than 5% of the full-scale value, into non-inductive loads.
4) Typical values, at room temperature after 10 minute warmup, when operating into a resistive load. For high-accuracy applications requiring traceable calibration, verify the output with a calibrated oscilloscope.
5) To add a duplicate main output connector on the rear panel, add the suffix -RP to the model number.
6) Add the suffix -PW to the model number to specify the wider pulse width range.
7) Pins 1-19 = signal, pins 20-37 = ground. Includes one AV-CLZ11-100 cable and one AV-CTL11 test load. See http://www.avtechpulse.com/transmission/av-clz11/ for details.
8) 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.

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