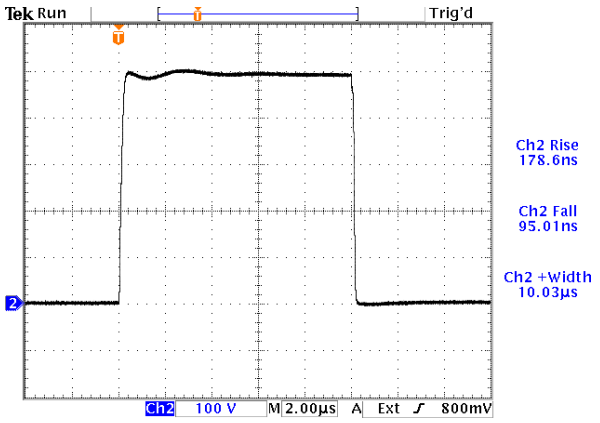


- High voltage, high current pulsers
- Maximum currents of 50 to 250 Amps
- Maximum voltages of 50 to 500 Volts
- Load resistances as low as 1 or 2 Ohms, or as high as open circuits (∞)
- Convenient 1 or 2 Ohm connectorized output cable and adapters
- Average output powers to 100 W
- Pulse widths of 0.5 to 10 us
- IEEE-488.2 GPIB and RS-232 interfaces
- Optional ethernet port for VXI-11.3 support

The AVOZ-E models are high-voltage, high-current pulsers ideal for testing high-current laser diode arrays, as well as testing multiple identical lower-current devices (for instance, production testing of attenuators).

All models offer pulse widths adjustable from 0.5 to 10 us, and average output powers of up to 100 Watts.

The AVOZ-E1-B generates up to 50V into a 1 Ohm load, for a maximum current of 50 Amps, at repetition rates of up to 10 kHz.

The AVOZ-E2-B generates up to 100V into a 1 Ohm load, providing up to 100 Amps, at repetition rates up to 10 kHz.

The AVOZ-E3-B generates up to 250V into a 1 Ohm load, providing up to 250 Amps, at repetition rates up to 1 kHz.

The AVOZ-E4-B generates up to 250V into a 2 Ohm load, providing up to 125 Amps, at repetition rates up to 3 kHz.

The AVOZ-E5-B generates up to 500V into a 2 Ohm load, for a maximum current of 250 Amps, at repetition rates of up to 500 Hz.

All models in the AVOZ-E series are voltage pulsers. For purely resistive loads, the output current can be calculated using Ohm's Law:

$$I_{OUT} = V_{OUT} / R_{LOAD}$$

When driving diode loads, a resistor must be connected in series with the diode under test to limit the current to the maximum rated current (or less). The output current (I_{OUT}) can be related to the pulser output voltage (V_{OUT}), the diode forward voltage drop (V_D) and the required series resistance (R_{SERIES}):

$$I_{OUT} = (V_{OUT} - V_D) / R_{SERIES}$$

Because of the extremely high output voltages of these instruments (up to 500V), diodes or stacked diode arrays with large forward voltage drops can be accommodated.

Avtech can construct suitable low-inductance, high-power, water-coolable series resistors for use with the AVOZ-E models, at additional charge. Contact the Avtech factory (info@avtechpulse.com) with the electrical and mechanical details of your special application!

For all models, either output polarity can be provided (positive or negative).

A delay control and a sync output are provided for scope triggering purposes. The units can also be triggered externally using a TTL-level pulse.

The output signal is provided on a high-voltage, high-current rear-panel safety connector. An included 1 meter / 3 foot long accessory transmission line cable mates to this rear-panel connector. The transmission line cable is specially designed to match to the specified 1 or 2 Ohm minimum load impedance, without degrading the signal rise and fall times. An adapter is included which mates to the end of this cable, and provides the output on two identical contact posts into which M6x1 threaded screws may be screwed. Two similar posts are provided for the ground line.

All models include a complete computer control interface (see http://www.avtechpulse.com/gpib 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. 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 http://www.avtechpulse.com/labview.

The -VXI option adds a rear-panel Ethernet connector, allowing an 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 more details, please see http://www.avtechpulse.com/options/vxi.

All models require 100 - 240 Volt, 50 - 60 Hz prime power. All models are protected against overload conditions such as excessively high duty cycles or a short-circuited load.

A burst mode option is also available, allowing a burst of 1-500 pulses to be generated in response to a single trigger event. Please see http://www.avtechpulse.com/options/br for details.

For lower average power applications, consider the AVOZ-A and AVOZ-D series instead.

Avtech can customize models (including single quantities) to meet your particular test requirements. Contact Avtech (info@avtechpulse.com) with your requirement!

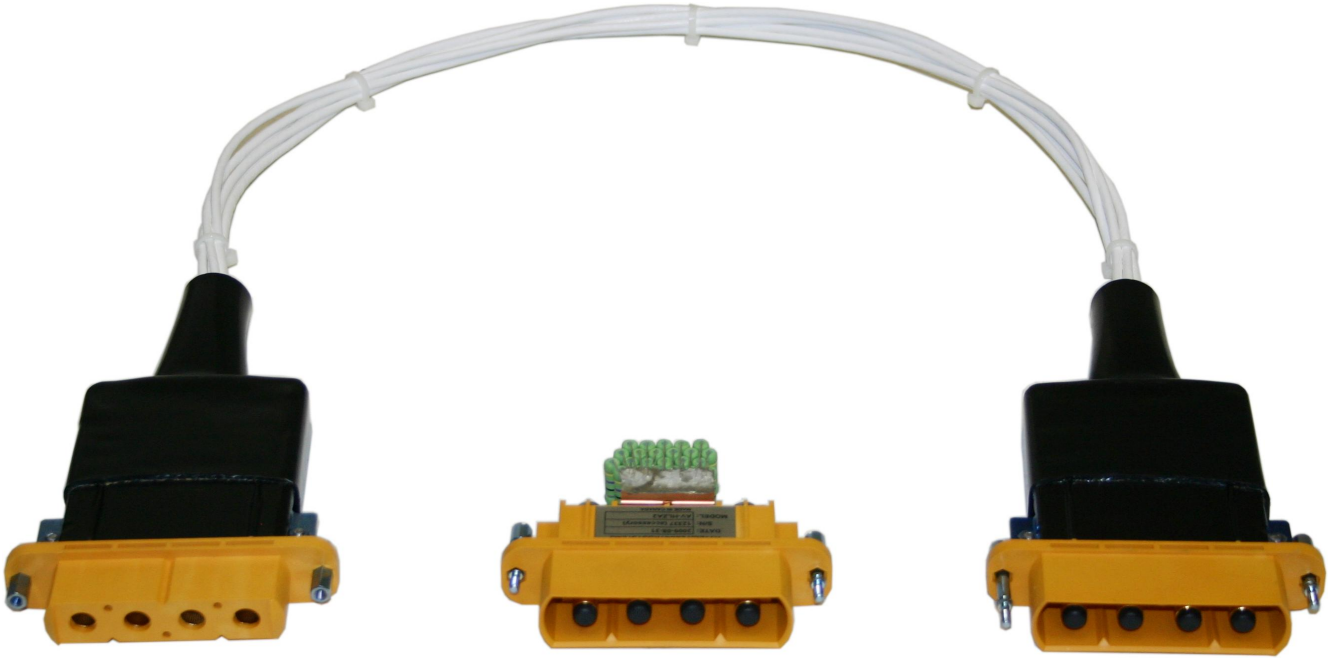
SPECIFICATIONS AVOZ-E SERIES

Model[1]:	AVOZ-E1-B	AVOZ-E2-B	AVOZ-E3-B	AVOZ-E4-B	AVOZ-E5-B
Amplitude[2,8,9]: set voltage: resulting current:	1 to 50V 0 to 50A	1 to 100V 0 to 100A	5 to 250V 0 to 250A	5 to 250V 0 to 125A	10 to 500V 0 to 250A
Minimum load impedance:	1.0 Ω (Must be non-inductive[3].)			2.0 Ω (Must be non-inductive[3].)	
Pulse width[9]:	200 ns - 10 us				
Rise & fall times (20%-80%)	< 150 ns	< 150 ns	< 200 ns	< 100 ns	< 200 ns
Maximum PRF:	10 kHz	10 kHz	1 kHz	3 kHz	500 Hz
Duty cycle: (max)	4 %	1 %	0.16 %	0.32 %	0.08 %
Output impedance (approx.):	0.05 Ohms				
Average output power:	100W maximum[8]				
Droop:	< 5%, at maximum pulse width and maximum amplitude				
Polarity[4]:	Positive or negative (specify)				
GPIB & RS-232 control[1]:	Standard on -B units. See http://www.avtechpulse.com/gpib for details.				
LabView drivers:	Check http://www.avtechpulse.com/labview for availability and downloads				
Ethernet port:	Optional[10], for remote control using VXI-11.3, ssh, telnet, & web. 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:	Typically ± 3% (plus ±1V or ± 2 ns) after 10 minute warmup. For high-accuracy applications requiring traceable calibration, verify the output parameters with a calibrated oscilloscope.				
Burst mode:	Optional[5]. Generates 1-500 pulses per trigger event. See http://www.avtechpulse.com/options/br.				
Propagation delay:	< 200 ns (Ext trig in to pulse out)				
Jitter:	± 100 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.				
Variable delay:	Sync 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				
Gate input:	Synchronous or asynchronous, active high or low, switchable. Suppresses triggering when active.				
Output connector, rear-panel:	Positronic (www.positronic.com) female connector[6]				
Output cable description:	An included 1 meter / 3 foot long accessory transmission line cable mates to the rear-panel connector. The transmission line cable matches the specified 1 or 2 Ohm minimum load impedance without degrading the signal rise and fall times significantly. The chassis end of the cable is terminated with a Positronic male connector[7], and the load end is terminated with a Positronic female connector[6]. An adapter[7] is included which mates to the end of this cable, and provides the output on two identical contact posts into which M6x1 threaded screws may be screwed (to a maximum depth of 15 mm).				
Output cable model:	AV-HLZ1-100			AV-HLZ2-100	
Output cable characteristic impedance (Z_0):	1 Ohm, approximately			2 Ohms, approximately	
Other connectors:	Trig, Gate, Sync: BNC				
Power, temperature:	100 - 240 Volts, 50 - 60 Hz.				
Dimensions (H x W x D):	138 x 430 x 425 mm (5.5 x 17 x 16.8”),				
Chassis material:	Anodized aluminum, with blue plastic trim				
Temperature range:	+5°C to +40°C				

1) -B suffix indicates IEEE-488.2 GPIB and RS-232 control of pulse amplitude, pulse width, delay and PRF. (See http://www.avtechpulse.com/gpib).
2) For operation at voltage amplitudes of less than 10% of full-scale, better results may be obtained by setting the amplitude near full-scale and increasing the load impedance accordingly. This will provide lower output currents.
3) For applications where additional resistance must be added in series with the device under test, Avtech recommends connecting multiple Ohmite (www.ohmite.com) OY-series ceramic composition resistors in parallel to create a high-power, low-inductance effective resistance. These resistors can be purchased readily at http://www.digi-key.com.
4) Indicate desired polarity by suffixing model number with -P or -N (i.e. positive or negative) or -PN for dual polarity option.
5) Add the suffix -BR to the model number to specify the burst mode option. See http://www.avtechpulse.com/options/br for details about this option.
6) Positronic part number GG8888F1, with four GGFIT00MS/AA high-current contacts. The inner two contacts carry the signal, and the outer two carry the ground lines.
7) Positronic part number GG8888M1, with four GGMIT00MS/AA high-current contacts. The inner two contacts carry the signal, and the outer two carry the ground lines.
8) The maximum voltage & current amplitudes will be reduced by 10%, approximately, when the average output power exceeds 75 Watts.
9) The maximum voltage & current amplitudes will be reduced by 20%, approximately, when the pulse width is less than 2 × rise time.
10) Add the suffix -VXI to the model number to specify the Ethernet port.

AVOZ-E4-B, with AV-HLZ2-100 output cable and mating AV-HLZA2 Adapter / Test Load

AVOZ-E4-B Rear Panel



AV-HLZ2-100 output cable and mating AV-HLZA2 Adapter / Test Load

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