



AVMH-2-C

- ◆ Pulse widths as low as 200 ps
- ◆ Amplitudes to 100 Volts

- ◆ PRF to 25 MHz
- ◆ Low jitter

The AVMH family of low jitter, high amplitude impulse generators includes units providing pulse widths in the range of 200 ps to 1 ns, amplitudes from 10 Volts to 100 Volts, and pulse repetition frequencies as high as 25 MHz.

Model AVMH-1-C generates a 0 to 10 Volt impulse. The pulse width (measured at the 20% rise point) is adjustable from < 200 ps to > 1 ns.

Models AVMH-2-C provides 30 Volt impulses. The pulse width is adjustable over a narrow range around 400 ps. The similar AVMH-3-C provides 600 ps, 50 Volt impulses.

Model AVMH-4-C provides a 100 Volt, 1 ns output at pulse repetition frequencies as high as 10 MHz. Model AVMH-5-C is similar, but offers wider pulse widths, adjustable from 2 to 4 ns, at frequencies to 1 MHz.

All units include a one-turn amplitude control and two pulse width controls (TR and TF) that are used to shape the output impulse after the operating pulse repetition frequency and the output amplitude are set.

The pulse repetition frequency is variable from 3 kHz to 25 MHz (10 MHz for Model AVMH-4-C, and 1 MHz for the AVMH-5-C) using the internal clock oscillator, which is controlled by a one-turn fine control and a decade range

switch. A delay control and a sync output is provided for sampling oscilloscope triggering purposes. The units can also be triggered externally using a TTL-level (or optionally ECL-level) pulse. The propagation delay in the externally triggered mode is typically 50 ns.

Either output polarity or an optional dual output polarity can be provided. Polarity inversion in dual polarity units is accomplished by means of an inverting transformer module which mates to the pulse generator output port. A DC offset or bias insertion option is also available with most units. Units with this option include a circuit similar to Model AVX-T (see <http://www.avtechpulse.com/bias/avx-t>) at the output, and the required DC offset is applied to rear-panel solder terminals. AVMH units are also available with a monitor option that provides an attenuated (20 dB or x10) coincident replica of the main output impulse. All models require 100-240V, 50-60 Hz prime power.

In some cases, the above specifications can be adapted to satisfy a particular requirement. For lower pulse repetition frequency applications, see the AVH series and for higher amplitudes, see the AVG series. Both are described in detail at <http://www.avtechpulse.com/impulse/>.

Model ¹ :	AVMH-1-C	AVMH-2-C	AVMH-3-C	AVMH-4-C	AVMH-5-C
Amplitude (50Ω load ⁶):	0 to 10 Volts	0 to 30 Volts	0 to 50 Volts	0 to 100 Volts	0 to 100 Volts
Pulse width: (at 20% rise point):	200 ps to 1 ns	400 ps	600 ps	1 ns	2 to 4 ns
PRF, internal trigger:	3 kHz - 25 MHz			1 kHz to 10 MHz	100 Hz to 1 MHz
external trigger:	0 - 25 MHz			0 to 10 MHz	0 to 1 MHz
Polarity ² :	Positive or negative or both (specify)				
Propagation delay:	≤ 40 ns (Ext trig in to pulse out)				
Jitter:	± 15 ps (Ext trig in to pulse out)				
DC offset option ³ :	Apply required DC offset to back-panel solder terminals (+50 Volts, 250 mA max)				
Trigger required: (ext trig mode)	TTL (low = 0V, high = +3V to +5V), 10 ns or wider ⁴			TTL (low = 0V, high = +3V to +5V), 50 ns or wider ⁴	
Sync output:	+0.5 Volts, 20 ns, will drive 50 Ohm loads			+3 V, 50 ns, will drive 50Ω	+3 V, 200 ns, will drive 50Ω
Sync delay:	Sync out to pulse out, -C units only: Variable 0 to 200 ns				
Monitor output option ⁵ :	Provides a 20 dB attenuated coincident replica of main output				
Connectors:	Out, Monitor: SMA, Trig: BNC				
Power requirement:	100 - 240 Volts, 50 - 60 Hz				
Dimensions (HxWxD):	100 mm x 215 mm x 375 mm (3.9" x 8.5" x 14.8")				
Chassis material:	Anodized aluminum, with gray plastic trim.				
Temperature range:	+5°C to +40°C				

1) -C suffix indicates stand-alone lab instrument with internal clock and line powering. (See <http://www.avtechpulse.com/formats> for additional details of the basic instrument formats).
 2) Indicate desired polarity by suffixing model number with -P or -N (i.e. positive or negative) or -P-PN or -N-PN for dual polarity option where the suffix preceding -PN indicates the polarity at the mainframe output port.
 3) For DC offset option add suffix -OS.

4) For units with the -ECL option, an ECL logic level pulse (i.e., -1.6V = ECL LOW, -0.8V = ECL HIGH) is required to trigger this input, and the input impedance is 50 Ω to -2V.
 5) For monitor option add suffix -M.
 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.