



Top: Main OUT, +10V, 2 MHz, 200 ns, into 50 $\Omega$ .  
Bottom: NOT-TTL out.  
Both: 5 V/div, 100 ns/div.

- $\pm 10$  Volt output (TTL and ECL also) into 50 $\Omega$
- Variable DC offset to  $\pm 10$  Volts
- 10 ns rise and fall times
- Low jitter and variable delay
- User-friendly front panel

Model AV-1020-C is a full-featured, 10 MHz high-performance general-purpose lab pulse generator providing 0 to  $\pm 10$  Volts, 10 ns rise time, single and double-pulse modes, variable DC offset, variable delay, ECL and TTL outputs (and their complements!), self-explanatory front panel controls and a heavy-duty metal chassis for low emissions and decades of trouble-free service. This is a versatile, cost-effective pulse source for many digital and analog applications in industrial and academic fields.

The output amplitude is controlled by a 3 position range switch (1, 5 and 10 Volts) and a one-turn control. Output polarity is controlled by a two-position switch. 50 Ohm back-matching is provided for the 1 and 5 Volt ranges.

A one-turn control allows the variation of the base line or DC offset from 0 to  $\pm 10$  Volts.

The output pulse width (and delay) is variable from 50 ns to 0.5 sec via a seven-position range switch and a one-turn control. The pulse width may also be set to the "DC" mode, allowing the AV-1020-C to be used as a variable  $\pm 10$  Volt, 200 mA DC power supply.

The pulse repetition frequency is variable from 1 Hz to 10 MHz in seven ranges. An externally applied TTL level pulse may also be used to control the output PRF and in addition the unit includes a "SINGLE PULSE" push button. A double pulse mode is available and a GATE input is provided for synchronous control of the internal triggering.

The logic and logic-complement outputs provide either TTL or ECL signals, depending on the TTL/ECL switch position.

The AV-1020-C operates from 100-240V, 50-60 Hz AC power.

For customers in the USA, a narrower-width version is also available (model AV-1020X-C), until stocks are depleted. At that time, it will be superseded by the full-width AV-1020-C.

See the AV-1023-C for a dual-channel version (<http://www.avtechpulse.com/general/av-1023>).

See the AV-1021-B for a GPIB-equipped version (<http://www.avtechpulse.com/general/av-1021>).

Avtech's full line of general-purpose pulse generators is summarized here:

<http://www.avtechpulse.com/general>



**AV-1020X-C**



## SPECIFICATIONS

## AV-1020-C SERIES

Model:	AV-1020-C <sup>1</sup>	AV-1020X-C <sup>2</sup>
Number of channels out:	One main output, plus 4 logic outputs: TTL, NOT TTL, ECL, NOT ECL	
PRF:	1 Hz to 10 MHz	
Amplitude (to 50 Ohms):	Main out: $\pm 0.25$ to $\pm 10$ Volts TTL low: 0 to $+0.7V$ , high: $+3V$ to $+5V$ ECL low: $-1.6V$ approx., high: $-0.8V$ approx.,	
Pulse width (FWHM):	50 ns to 0.5 sec, or DC	
Rise, fall times (20%-80%):	Main: $\leq 10$ ns, TTL: $\leq 5$ ns, ECL: 2 ns	
DC offset:	10 Volt range: 0 to $\pm 10$ V 1, 5 Volt ranges: 0 to $\pm 5$ V	
Source impedance (main output):	50 $\Omega$ (1, 5 V ranges), 1 $\Omega$ (10 V range)	
Polarity (main output):	Positive or negative (two-position selector switch)	
Duty cycle (max):	80% (100% in PW DC mode)	
Waveform aberrations:	Overshoot, undershoot, ringing and slope aberration are less than the larger of $\pm 5\%$ or 100 mV at amplitudes of 500 mV and higher with outputs terminating in 50 $\Omega$ .	
Propagation delay:	70 ns to 0.5 sec (Ext trig in to pulse out)	
Trigger required: (Ext trig mode)	$+ 5$ Volts, $\geq 4$ ns (TTL). Trigger input impedance: 50 $\Omega$	
Gate input:	0 to $+0.7$ V: No output $+3$ to $+5$ V (or open): normal out	
Sync delay, jitter:	35 ns to 0.5 sec, $\leq \pm 50$ ps or $\pm 0.05\%$ (sync out to pulse out)	
Sync output:	$+2$ Volts, 50 ns, will drive 50 Ohm loads	
Single pulse mode:	Manual push button	
Signal connectors:	BNC	
Power requirement:	100 - 240 Volts, 50 - 60 Hz	120/240 Volts (switchable), 50 - 60 Hz
Dimensions (H x W x D):	100 x 430 x 375 mm (3.9" x 17" x 14.8")	100 mm x 215 mm x 375 mm (3.9" x 8.5" x 14.8")
Rack-mount kit option:	Add -R5 to model number	N/A
Weight & chassis material:	4.5 kg (10 lbs), anodized aluminum, with blue-grey plastic trim	
Temperature range:	$+5^{\circ}C$ to $+40^{\circ}C$	

- 1) In full production. Supersedes models AV-1020X-C and AV-1022-C.  
2) Limited availability at reduced pricing while existing stocks are depleted. The "half-rack-width" (8.5 inches) chassis style is being phased out. Only available in USA.

For other countries, consider the "full-rack-width" (17 inches) AV-1020-C or AV-1002-C models.



AV-1020-C