

## Hewlett Packard 8131A Pulse Generator Specifications

Specifications describe the instrument's warranted performance (30 minutes warm-up, 50 W load) at 0 °C to 55 °C ambient temperature.	
<b>TIMING PARAMETERS (measured at 50% of amplitude)</b>	
<b>Resolution</b>	3 digits (best case: 10 ps)
<b>Period</b>	2 ns to 99.9 ns
<b>Delay</b>	
<b>Fixed</b>	20 ns
<b>Variable Range</b>	from 0 ns to 99.9 ms (max < period) measured between trigger out and main out
<b>Double pulse</b>	2 ns to 99.9 ms (period <sup>3</sup> 5.00 ns) Double Pulse and Delay are mutually exclusive
<b>Width</b>	500 ps to 99.9 ms (max < period)
<b>Transition times (for leading and trailing edges)</b>	10%-90% of amplitude: <200 ps, 300 mV to 3V range, period $\leq$ 1 $\mu$ s 20%-80% of amplitude: <200 ps, 100 mV to 5V range
<b>DIFFERENTIAL OUTPUTS</b>	
<b>Output Levels</b>	(Into 50 W, output levels double when driving into open circuits, instrument disables outputs if levels exceed $\pm$ 6.5 V, or ampl. exceeds 6.5V) <b>High level:</b> -4.90 V to +5.00 V <b>Low level:</b> -5.00 V to +4.90 V
<b>Resolution</b>	3 digits (best case: 10 mV)
<b>Settling Time</b>	10 ns
<b>OPERATING CHARACTERISTICS (values describe typical, non-warranted performance)</b>	
<b>Inputs and Outputs</b>	
<b>External input (Trigger, Gate, Burst, Ext. Width)</b>	Trigger slopes can be selected pos/neg
<b>Input impedance</b>	50 W $\pm$ 2.5 W
<b>Threshold</b>	-5 V to + 5 V
<b>Input frequency</b>	dc to 500 MHz
<b>Min. pulse width</b>	1 ns
<b>Input sensitivity</b>	<sup>3</sup> 300 mV (peak-to-peak)
<b>Transducer input</b>	
<b>Impedance</b>	50 W $\pm$ 2.5 W
<b>Frequency</b>	10 MHz to 1 GHz
<b>Transistor</b>	< 50 ns
<b>Sensitivity</b>	<sup>3</sup> 600 mV (peak-to-peak)
<b>Trigger output</b>	
<b>Levels</b>	high 0V, low -0.6 V
<b>Delay from external input to trigger output</b>	16 ns
<b>Source impedance</b>	50 W $\pm$ 5 W
<b>HP-IB CAPABILITIES</b>	
<b>All modes and parameters are fully HP-IB programmable</b>	
<b>OPERATING MODES</b>	
<b>Manual</b>	Simulates an external input signal
<b>1 Pulse</b>	in Trigger, Gate, and Burst mode, one pulse or double pulse is generated
<b>Auto</b>	Continuous pulse stream
<b>Trigger</b>	Each active input transition generates a single output pulse or double pulse
<b>Gate</b>	External signal enables period generation. First output pulse is synchronous with active edge. Last pulse is always completed. Width and period of first pulse may deviate from subsequent pulses.
<b>E. Width</b>	Restoration of external signal with selectable output levels
<b>E. Burst</b>	Each active input transition generates a preprogrammed number of pulses (1 to 9999); min burst period is 5 ns. Width and period of first pulse may deviate from subsequent pulses.
<b>Transducer</b>	External sinewave (up to 1 GHz) toggles output. Output levels are selectable
<b>Limit</b>	Max. high and low levels into 50 OHm can be limited to protect the device under test. Pushing the limit key declares present levels as limits, which then can not be exceeded as long as the mode is active.
<b>Complement</b>	Normal/complement selectable
<b>Disable</b>	Relays connect/disconnect outputs
<b>Set</b>	Sets parameters to fixed ratio relative to period
<b>Store</b>	Stores complete setting in displayed location
<b>Recall</b>	Recalls complete setting from displayed location
<b>GENERAL</b>	
<b>Storage temperature</b>	-40°C to + 65°C
<b>Operating temperature</b>	0°C to 55°C
<b>Power</b>	100/120/220/240 Vrms, $\pm$ 10%, 400 VA max., 48 to 66 Hz
<b>Weight</b>	20 kg (44.4 lb)
<b>Sizes</b>	145 mm H X 426 mm W X 525 mm D (5.7 in X 16.75 in X 20.65 in)
<b>Recalibration period</b>	1 year recommended