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Data Sheet

August 14, 2026

HP / AGILENT

HP / Agilent 8005B 20 MHZ, DUAL-OUTPUT PULSE GENERATOR

HP Agilent 8005B 20 MHz Dual Output Pulse Generator The HP 8005B is a general-purpose 20 MHz triple-output pulse generator with simultaneous positive, negative, and TTL outputs. OEM operating manuals specify variable repetition rate from 0.3 Hz to 20 MHz, widths from under 25 ns to 3 s, variable transitions from under 10 ns to 2 s, and gating/square/double-pulse modes. Used for TTL and discrete logic testing, service and education benches, dual-polarity pulse stimulus, square-wave generation to 10 MHz, and setups needing independent amplitude/offset on positive and negative channels. The HP 8005B is a general-purpose 20 MHz triple-output pulse generator with simultaneous positive, negative, and TTL outputs. OEM operating manuals specify variable repetition rate from 0.3 Hz to 20 MHz, widths from under 25 ns to 3 s, variable transitions from under 10 ns to 2 s, and gating/square/double-pulse modes. Used for TTL and discrete logic testing, service and education benches, dual-polarity pulse stimulus, square-wave generation to 10 MHz, and setups needing independent amplitude/offset on positive and negative channels.



MODEL

HP / Agilent 8005B

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

8005B

LISTING

<https://aumictechlabs.com/products/8005b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The HP/Agilent 8005B is a 20 MHz dual-output pulse generator engineered for digital circuit testing, time-domain analysis, and general electronic characterization. It delivers simultaneous positive and negative pulse outputs plus a separate TTL output, all independently controllable. With pulse widths spanning 25 ns to 3 s, transition times as fast as 10 ns, and amplitude control from 300 mV to 10 V, the instrument accommodates both precision pulse generation and rapid signal switching across a wide operational bandwidth.

Technical Specifications

Output Frequency: DC to 20 MHz external trigger; 0.15 Hz to 10 MHz square wave; double pulse mode to 10 MHz

Pulse Width: < 25 ns to 3 s with jitter < 0.1% of setting + 50 ps

Rise/Fall Time: ≤ 10 ns to 2 s; non-linearity 30 ns)

Pulse Amplitude: 300 mV to 10 V with 3-step attenuator and continuous vernier adjustment

Output Impedance: 50 ohms ± 10% or high impedance selectable

Pulse Delay: < 100 ns to 3 s with jitter 80% (0.3 Hz to 1 MHz); > 50% (1 MHz to 20 MHz)

TTL Output: +4.6 V, 50 ohm impedance, normal or complement mode

Trigger Output: > +2 V across 50 ohms, width > 6 ns; input-to-output delay ≈ 35 ns

External Trigger Input: DC to 20 MHz, ±10 V maximum, 1 kΩ impedance; sensitivity: 2 Vpp sine or ±1 V peak pulses

Preshot/Overshoot/Ringing: < 5% of pulse amplitude

Power: 115/230 V rms (+10%, -15%); 48-440 Hz

Operating Temperature: 0°C to 55°C

Dimensions: 130 mm H × 426 mm W × 290 mm D

Weight: 7 kg

Key Features

- Simultaneous positive and negative pulse outputs with independent control
- TTL-compatible output (all parameters variable except amplitude)
- Synchronous and asynchronous gating modes
- Programmable pulse delay and width with tight jitter specifications
- External trigger input supporting DC to 20 MHz signals
- Selectable 50 ohm or high impedance output

Typical Applications

- Digital logic circuit testing and validation
- Time-domain waveform characterization
- Pulse train generation for circuit stimulation
- TTL/CMOS signal simulation
- Gate control in synchronous measurement systems

Compatibility & Integration

External triggering accepts standard logic and analog signals. Gate input impedance is 1 kΩ, DC coupled, with gate amplitude range 2 V to 20 V (negative polarity). Maximum external voltage protection: ±10 V.

8005B Characteristics / Specifications

PARAMETER	VALUE
Repetition rate	0.3 Hz to 20 MHz
Double pulse maximum rate	10 MHz (simulates 20 MHz)
Square wave range	0.15 Hz to 10 MHz
Square wave duty cycle below 1 MHz	50% $\pm$ 5%
Square wave duty cycle at 10 MHz	50% $\pm$ 15%
Pulse width	less than 25 ns to 3 s in five ranges
Width jitter	less than 0.1% + 50 ps of setting
Maximum duty cycle 0.3 Hz to 1 MHz	greater than 80%
Maximum duty cycle 1 MHz to 20 MHz	greater than 50%
Duty cycle in complement	up to 100%
Pulse delay versus trigger out	less than 100 ns to 3 s
Delay jitter	less than 0.1% + 50 ps
Period jitter	less than 0.1% of period setting
Transition times	less than 10 ns to 2 s
Rise to fall ratio	up to 30:1
Linearity 10% to 90%	deviation less than 4% of amplitude
Overshoot ringing	each less than 5% of pulse amplitude
Amplitude into 50 ohm	300 mV to 10 V class (pos/neg channels)
Trigger output amplitude into 50 ohm	greater than 2 V
Trigger output pulse width	15 ns $\pm$ 7 ns
External trigger rate	dc to 20 MHz
Maximum external input	$\pm$ 10 V
Operating temperature class	lab instrument 0 °C to 55 °C series
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8005B Specifications

PARAMETER	VALUE
HP Agilent 8005B 20 MHz Dual Output Pulse Generator	Overview
External and manual triggering plus asynchronous gating	Double-pulse mode simulating 20 MHz at 10 MHz max rate
Technical Specifications	Repetition rate: 0.3 Hz to 20 MHz

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	class: lab instrument 0 °C to 55 °C series
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Operating temperature class	lab instrument 0 °C to 55 °C series Notes Numeric values are from the HP 8005B Operating and Service Manual specification section (Table 1-2 family). Exact amplitude vernier ranges follow the five-range front-panel organization described in the OEM manual.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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PARAMETER	VALUE
Repetition rate	0.3 Hz to 20 MHz
Double pulse maximum rate	10 MHz (simulates 20 MHz)
Square wave range	0.15 Hz to 10 MHz
Square wave duty cycle below 1 MHz	50% ±5%
Square wave duty cycle at 10 MHz	50% ±15%
Pulse width	less than 25 ns to 3 s in five ranges
Width jitter	less than 0.1% + 50 ps of setting
Maximum duty cycle 0.3 Hz to 1 MHz: greater than 80%	
Maximum duty cycle 1 MHz to 20 MHz: greater than 50%	
Specifications	
PARAMETER	VALUE
Duty cycle in complement	up to 100%
Pulse delay versus trigger out	less than 100 ns to 3 s
Delay jitter	less than 0.1% + 50 ps
Period jitter	less than 0.1% of period setting
Transition times	less than 10 ns to 2 s
Rise to fall ratio	up to 30:1
Linearity 10% to 90%	deviation less than 4% of amplitude
Overshoot ringing	each less than 5% of pulse amplitude
Amplitude into 50 ohm	300 mV to 10 V class (pos/neg channels)
Trigger output amplitude into 50 ohm	greater than 2 V
Trigger output pulse width	15 ns ±7 ns
External trigger rate	dc to 20 MHz
Maximum external input	±10 V
Operating temperature class	lab instrument 0 °C to 55 °C series

Notes

Numeric values are from the HP 8005B Operating and Service Manual specification section (Table 1-2 family).
Exact amplitude vernier ranges follow the five-range front-panel organization described in the OEM manual.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
30-day returns
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.