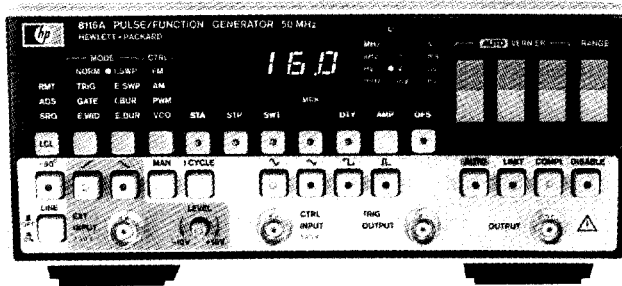


FUNCTION GENERATORS & WAVEFORM SYNTHESIZERS

1 MHz to 50 MHz Pulse/Function Generator HP 8116A

- Sine, triangle, square, haversine, and dc
- 1 MHz to 50 MHz, 32 V p-p for all waveforms
- Variable (10 ns min) pulse width, 6 ns transitions



HP 8116A with
Option 001, burst
and logarithmic
sweep



HP 8116A Pulse/Function Generator

The fully programmable HP 8116A features pulse as well as function generator capabilities in one small unit. A broad 1-MHz to 50-MHz band for all waveforms and a wide choice of operating and modulating modes assure high flexibility. These factors, plus good repeatability, make the HP 8116A a sound, long-term investment.

Specifications (50 Ω load, 0° to 55° C)

Functions

Sine, triangle, ramp, square, pulse, haversine, and dc

Timing

Frequency: 1 MHz to 50 MHz

Duty Cycle: 10% to 90% in 1% steps (20% to 80% above 1 MHz, 50% above 10 MHz)

Pulse Width: 10 ns to 999 ms

Pulse/Squarewave Transitions: < 7 ns

Output (50- Ω source)

Amplitude: 10 mV p-p to 16.0 V p-p into 50 Ω load
(20 mV p-p to 32.0 V p-p into open)

Offset/DC: 7.95 V (795 mV for amplitude < 100 mV p-p) into 50 Ω .
Voltages double into open

Accuracy

Typically 5%, please request data sheet 5953-6325 for performance details

Resolution: 3 digits

Repeatability: Typically 1%

Operating Modes

Standard: Internal, trigger, gate, and external width

Option 001: Logarithmic up sweep (single range 1 MHz to 50 MHz)

Sweep time/decade: Selectable 1-2-5 sequence from 10 ms to 500 s

Repetition: Continuous or external trigger

Counted burst: 1 to 1,999 cycles, any waveform up to 40 MHz

Repetition: Internal 100 ns to 999 ms or external trigger (pulse mode, external trigger only)

Control Modes

Frequency Modulation: $\pm 5\%$ max deviation

Sensitivity: 1 V for 1% deviation

Modulating frequency: DC to 20 kHz

Amplitude Modulation

Sensitivity: ± 2.5 V for 100% mod. (+2.5 V to -7.5 V for DSBSC)

Modulating frequency: DC to 1 MHz

- Modulation
- Self-prompting operating concept
- Error recognition and self testing

Pulse Width Modulation

Range: 10 ns to 1 s in 8 nonoverlapping decade ranges
Max width ratio: 10:1

Sensitivity: ± 9 V for 1:10 ratio

Voltage-Controlled Oscillator

Range: 2 decades in range 1 MHz to 50 MHz

Sensitivity: 0.1 V to 10 V for 2 decades

Modulating frequency: dc to 1 kHz

Auxiliary Modes

Manual: Simulates external input

1 Cycle (Opt 001): Triggers single output cycle in trigger, gate, and external burst modes

Auto Vernier: Continuous vernier that can be remotely or manually stopped

Limit: Programmable maximum output levels to protect DUT

Complement: Selectable normal/complement output

Disable: Relay disconnects output

Auxiliary Inputs and Outputs

External Input

Threshold: ± 10 V adjustable

Max input voltage: ± 20 V

Sensitivity: 500 mV p-p

Min pulse width: 10 ns

Input impedance: 10 k Ω typ

Trigger slope: Positive, negative, and off

Control Input

Max input voltage: ± 20 V

Input impedance: 10 k Ω typ

Trigger Output

Output levels: 0/2.4 V typ

Output impedance: 50 Ω typ

X-Output (Opt 001) for sweep X-Y recording (rear panel)

Output levels: 0 V (= start frequency) to 10 V max

Slope: 1.5 V per sweep decade

Marker Output (Opt 001) for sweep (rear panel)

Output levels: TTL

Leading edge: Positive at selected marker frequency

Hold Input (Opt 001), rear panel

Input levels: TTL

Leading edge: Positive transition causes HP 8116A output (f < 10 Hz) to hold at instantaneous level. Output droop 0.01% per second

Max input voltage: ± 20 V

General Specifications

Environmental

Storage temperature: -40° C to +70° C

Operating temperature: 0° C to 55° C

Humidity: 95% RH, 0° C to 40° C

Power: 100/120/220/240 V rms; +5%, -10%; 48 to 440 Hz;
120 VA max

Weight: Net, 5.9 kg (13 lb); shipping, 8.0 kg (18 lb)

Size: 212.3 mm W \times 89 mm H \times 450 mm D (8.36 in \times 3.5 in \times 17.7 in)

Ordering Information

HP 8116A Programmable Pulse/Function Generator* **Price**

Opt 001 Burst and Logarithmic Sweep **\$4,745**

Opt 910 Extra Operating & Service Manual **+\$560**

Opt 1BP Mil Std 45622A Calibration **+\$42**

Extended warranty options (see page 663) available **\$460**

on request

HP 5062-4001 Bail Handle Kit **\$40**

HP 5062-3972 Rack Mount Kit (single HP 8116A) **\$60**

HP 5062-3974 Rack Mount Kit (two instruments) **\$35**

HP 5061-9694 Lock Link Kit (for use with **\$45**

HP 5062-3974)

For rack mounting, contact factory.

*HP-IB cables not supplied, see page 99.

☎ For off-the-shelf shipment, call 800-452-4844.

For the most current prices and product information, contact your local Hewlett-Packard sales office—see page 691.