

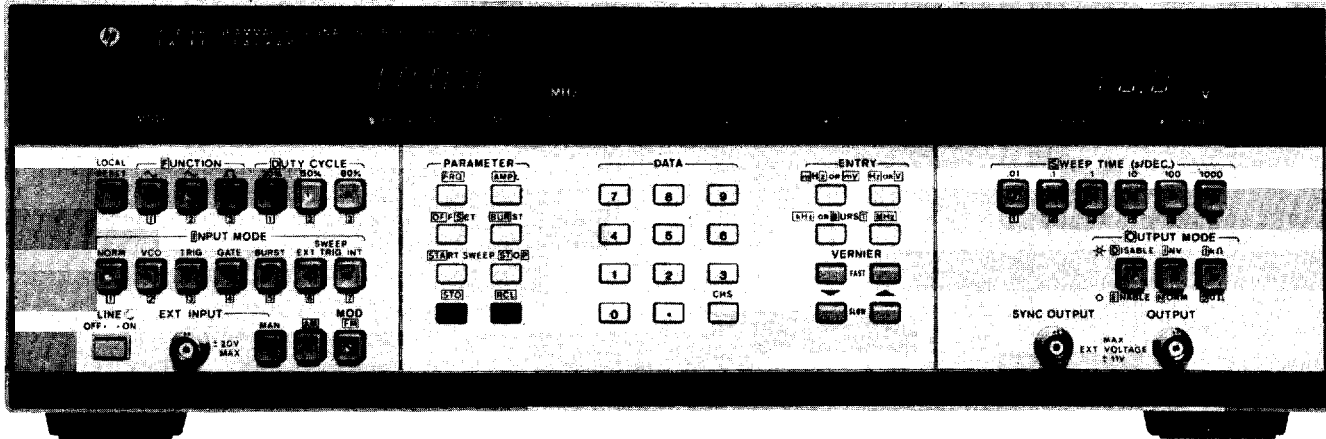
FUNCTION GENERATORS & WAVEFORM SYNTHESIZERS

50 MHz Programmable Signal Source

HP 8165A

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- Pulse/function capability
- Sine, triangle, and square to 50 MHz
- Pulses and ramps to 20 MHz
- Trigger, gate, and counted burst
- Synthesizer stability, precision amplitude
- Storage of operating parameters



HP 8165A with Option 002, AM, and Logarithmic Sweep

Versatility and Simplicity for Systems and Bench

The HP 8165A Programmable Signal Source is a versatile function generator with good accuracy and many trigger features. Microprocessor control assures rapid, accurate setup whether you're programming locally or via HP-IB.

Operating Set Storage

Ten complete sets of operating information can be stored and recalled. In the event of power failure, battery back-up retains all data plus the active settings.

Stability and Resolution

Stable frequency is ensured with an internal crystal. The four-digit frequency display provides a 1 μ Hz resolution in the 1 to 9.999 MHz range. In Normal mode, the accuracy is 0.001% with a stability of $\pm 1 \times 10^{-6}$.

Specifications

Waveforms and Frequency Range

Sine, square, and triangle (50% duty cycle): 1.000 mHz to 50.00 MHz

Pulse/ramp (20, 80% symmetry): 1.000 mHz to 19.99 MHz

Haversine/havertriangle: Please inquire for special option

Output Characteristics

Range: Amplitude and offset independently variable within ± 10 V window

Source impedance: selectable 50 $\Omega \pm 1\%$ or 1 k $\Omega \pm 10\%$

Amplitude: 10.0 mVpp to 10.0 Vpp (50 Ω into 50 Ω)

2.00 Vpp to 20.0 Vpp (1 k Ω into 50 Ω)

Accuracy	Sine V Vrms	Square	Triangle (50%)	Ramp (20%–80%)	Pulse (20%–80%)
<1 kHz	$\pm 3\%$	$\pm 2\%$	$\pm 3\%$	$\pm 3\%$	$\pm 2\%$
1 kHz–4.99 MHz	$\pm 3\%$	$\pm 2\%$	$\pm 3\%$	$\pm 5\%$	$\pm 2\%$
5 MHz–19.9 MHz	$\pm 8\%$	$\pm 5\%$	$\pm 10\%$	$\pm 10\%$	$\pm 5\%$
20 MHz–50 MHz	$\pm 8\%$	$\pm 5\%$	+5% to –20%	—	—

Offset: 0 \pm 10 mV to ± 5.00 V (50 Ω into 50 Ω)

0 \pm 20 mV to ± 10.0 V (1 k Ω into 50 Ω)

Accuracy: $\pm 1\%$ programmed value $\pm 1\%$ signal Vpp ± 20 mV

Sine characteristics

Distortion: Total harmonic distortion (THD) for fundamental up to 1 MHz: 38 dB

Harmonic signals: (Fundamental above 1 MHz): ≤ -30 dBc

Square/pulse characteristics

Transition times: (10% to 90%): ≤ 5 ns (50 Ω into 50 Ω), ≤ 7 ns (1 k Ω into 50 Ω)

Preshoot/overshoot/ringing: $\leq \pm 5\%$ (50 Ω into 50 Ω), $\pm 10\%$ (1 k Ω into 50 Ω)

Triangle/ramp characteristics

Linearity: (10% to 90%): $\leq \pm 1\%$ ($\leq \pm 5\%$ above 5 MHz)

Operating Modes

Norm (Continuous phase locked), **VCO** (external sweep voltage)

Trig (Ext or man. one-shot), **Gate**, **Burst** (1 to 9999 counted cycles)

Frequency modulation

HP-IB: Control and learn capability for all modes and parameters

Interface functions*: SH1, AH1, T6, L4, SR1, RL1, PP0, DC0, DT1, C0, E1

General

Memory: Nonvolatile. 10 addressable locations plus one for active operating state. Each location can store a complete set of operating parameters and modes.

Power: 100/120/220/240 Vrms; $\pm 5\%$, -10% ; 48 to 66 Hz, 200 VA max

Operating temperature: 0° to 50° C

Weight: Net 12 kg (26.5 lbs); shipping 16 kg (35.3 lbs)

Size: 133 mm H \times 426 mm W \times 422 mm D (5.2 in \times 16.8 in \times 16.6 in)

Ordering Information

HP 8165A Programmable Signal Source**

	Price
Opt. 002 AM and logarithmic sweep	\$9600
Opt. 003 Rear Panel Connectors	\$1200
Opt. 907 Front Handle Kit (Part No HP 5062-3989)	\$0
Opt. 908 Rack Mount Flange Kit (Part No HP 5062-3977)	\$33
Opt. 909 Opt 907, 908 combined (Part No HP 5062-3983)	\$82
Opt. 910 Additional Operating and Service Manual	\$71
Opt. W30 Extended repair service see page 671.	\$210

*For more on these codes, refer to the HP-IB section of this catalog.

**HP-IB cables not supplied; see page 615.

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