

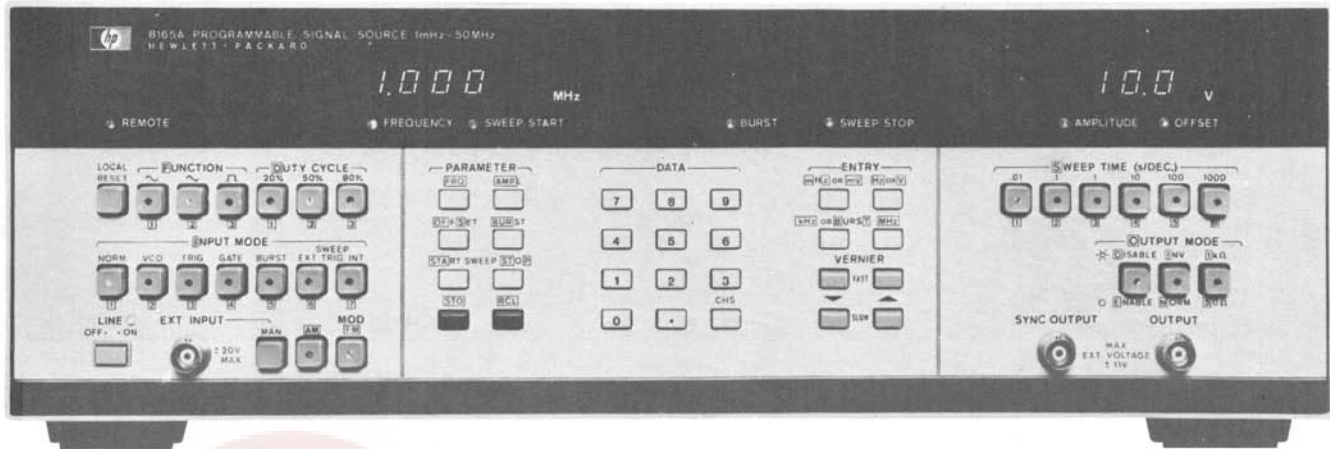
FREQUENCY, FUNCTION & WAVEFORM SYNTHESIZERS

50 MHz Programmable Signal Source

Model 8165A

423

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



Picture shows 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 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, 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 mV_{pp} to 10.0 V_{pp} (50 Ω into 50 Ω)

2.00 V_{pp} to 20.0 V_{pp} (1 k Ω into 50 Ω)

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

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

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

Accuracy: $\pm 1\%$ programmed value $\pm 1\%$ signal V_{pp} ± 20 mV.

Sine Characteristics

Distortion: total harmonic distortion (THD) for fundamental up to 1 MHz: 38 dBc.

Harmonic signals: (fundamental above 1 MHz): ≤ -30 dB.

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** (1-9999 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: non volatile. 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 H x 426 W x 422 mm D (5.2" x 16.8" x 16.6").

Ordering Information

HP 8165A Programmable Signal Source**

Opt. 002: AM and logarithmic sweep

Opt. 003: Rear Panel Connectors

Opt. 907: Front Handle Kit (Part No HP 5061-9689)

Opt. 908: Rack Mount Flange Kit (Part No HP 5061-9677)

Opt. 909: Opt 907, 908 combined (Part No HP 5061-9683)

Opt. 910: Additional Operating and Service Manual

Opt. W30: 2 years additional hardware service

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

**HP-IB cables not supplied, see page 569.

Fast-Ship product—see page 734

Price

HP 8165A Programmable Signal Source** \$8550

add \$1100

N/C

add \$56

add \$33.50

add \$82.50

add \$71

\$200