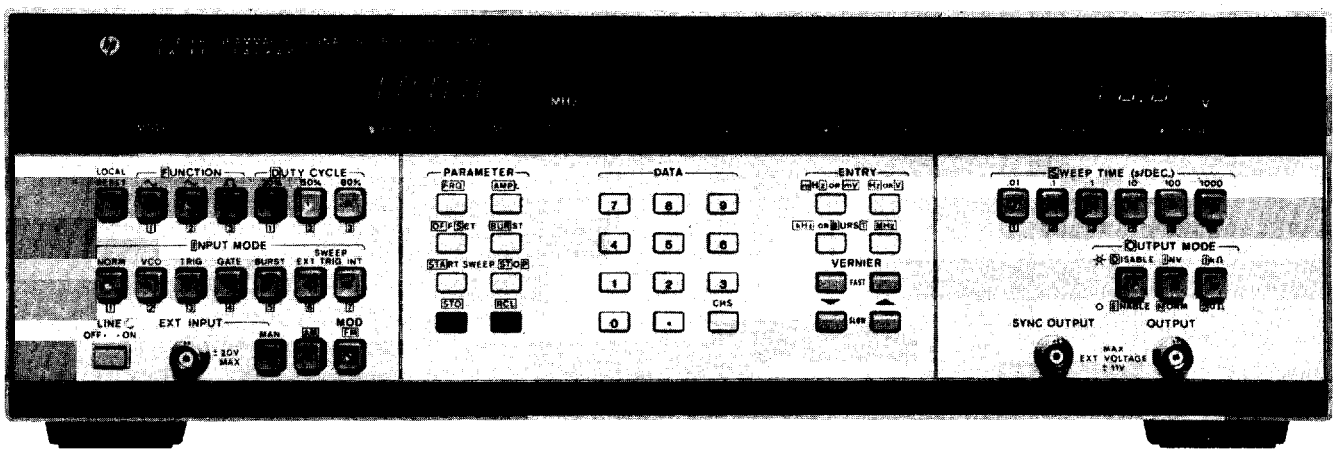
FUNCTION GENERATORS & WAVEFORM SYNTHESIZERS

50 MHz Programmable Signal Source

HP 8165A

- 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



DESIGNED FOR HP-IB SYSTEMS

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 μHz 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 Ω ± 1% or 1 kΩ ± 10%
Amplitude: 10.0 mVpp to 10.0 Vpp (50 Ω into 50 Ω)
2.00 Vpp to 20.0 Vpp (1 kΩ into 50 Ω)

Accuracy	Sine V Vrms	Square	Triangle (50%)	Ramp (20%–80%)	Pulse (20%–80%)
<1 kHz	±3%	±2%	±3%	±3%	±2%
1 kHz–4.99 MHz	±3%	±2%	±3%	±5%	±2%
5 MHz–19.9 MHz	±8%	±5%	±10%	±10%	±5%
20 MHz–50 MHz	±8%	±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 kΩ into 50 Ω)
Accuracy: ± 1% programmed value ± 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 kΩ into 50 Ω)
Preshoot/overshoot/ringing: ≤ ±5% (50 Ω into 50 Ω), ± 10% (1 kΩ into 50 Ω)

Triangle/ramp characteristics

Linearity: (10% to 90%): ≤ ± 1% (≤ ± 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; ±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 × 426 mm W × 422 mm D (5.2 in × 16.8 in × 16.6 in)

Ordering Information	Price
HP 8165A Programmable Signal Source**	$9600
Opt. 002 AM and logarithmic sweep	$1200
Opt. 003 Rear Panel Connectors	$0
Opt. 907 Front Handle Kit (Part No HP 5062-3989)	$56 ☎
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.