Hewlett-Packard offers over 250 measuring instruments for manufacturing, industrial and scientific research, equipment maintenance, communications and military use.

Each -hp- instrument gives you the economies of fast, accurate performance, broad usefulness, and dependable service. Each has the familiar -hp- characteristics of simple operation, minimum adjustment, independence of line voltage or tube changes, generous overload protection and highest quality design and construction.

This catalog gives brief details of major -hp- instruments. For complete information, see your -hp- representative, or write direct.
**hp- Oscillators — Signal Generators .01 to 10,000,000 cps**

### Instrument Primary Uses Frequency Range Output Price

#### -hp- 200 SERIES AUDIO OSCILLATORS

Four widely used -hp- oscillators have been redesigned into two compact, lightweight instruments offering wider frequency range, more operating simplicity, highest accuracy and stability. New Models 200AB and 200CD replace Models 200A through 200D, retain the time-tested RC circuits that insure constant output, low distortion; require no zero set. -hp- also offers Model 202A for sub-audio and audio tests; and Model 201, a spread-scale oscillator for interpolation or where frequency must be known precisely.

#### -hp- 650A TEST OSCILLATOR

Highly stable, wide band (10 cps to 10 mc) multi-purpose test oscillator for audio, supersonic, video, and rf measurements. Output variable 50 mV to 5 V. Frequency response flat ± 1 db. Output impedance 600 ohms, or 6 ohms with voltage divider. $490.00.

#### -hp- Distortion, Wave Form Analyzers — 20 cps to 20 kc

#### -hp- 330B DISTORTION ANALYZER

Measures distortion as low as 0.1%, 20 cps to 20 kc. Measures noise voltages as low as 100 μV. High sensitivity, high stability, broad applicability for broadcast, laboratory or production. Wide band 20 db gain input amplifier. Built-in VTVM usable separately. $410.00.

#### -hp- Vacuum Tube Voltmeters — 10 to 700,000,000 cps

#### -hp- 400D VACUUM TUBE VOLTMETER

Best -hp- voltmeter ever built! Covers all frequencies 10 cps to 4 mc. Extremely sensitive, wide range, accurate within ±2% to 1 mc, measures 0.1 mV to 300 V. Direct reading in dbm. 10 megohm input impedance insures negligible loading on circuits under test. New amplifier circuit with 56 db mid-range feedback assures utmost stability, freedom from change due to external conditions. $225.00.

### Data subject to change without notice. Prices f.o.b. factory.

*Open circuit. Internal impedance 600 ohms.*

WWW.HPARCHIVE.COM
**524B ELECTRONIC COUNTER**

with plug-in units to fit your exact measuring need

- hp- 525B Frequency Converter
- hp- 526A Video Amplifier
- hp- 526B Time Interval Unit

---

**Other -hp- Frequency Measuring and Monitoring Equipment**

**-hp- 100D SECONDARY FREQUENCY STANDARD**

Swift, sure frequency comparison, new convenience in standardizing with minimum external equipment. 100 μsec time markers, built-in oscilloscope, sine or rectangular waves. Low output impedance; short-time stability 1/1,000,000,000. Performed most functions of primary standards in audio, rf or supersonic ranges. $615.00.

**-hp- 335E TV MONITOR**

Channels 2 through 83. Exceeds F.C.C. requirements. Compact, only 12½" high, rack mounted. Low cost, all purpose, for visual and aural frequency monitoring, percentage aural modulation. Long-term dependability, precise accuracy, highest stability, no adjustment during operation. Forced ventilation, remote indication feature. $2,050.00.

**-hp- 512A/B FREQUENCY CONVERTERS**

Two new -hp- Frequency Converters extend range of -hp- 524A Electronic Counter without loss of accuracy and with increased sensitivity. -hp- 512A covers frequencies 10 to 100 mc, 512B covers 100 to 220 mc. Complex setups eliminated, are easily used by non-technical personnel. -hp- 512A, 512B, $350.00.

**-hp- 522B ELECTRONIC COUNTER**

Compact, low cost, versatile instrument for frequency, period or time measurements. Range 10 cps to 10 kc. Reads direct in cps, kc, seconds or milliseconds. Count automatically reset, action repetitive. Stability of time base 5/1,000,000. Display length variable. Easily used by untrained personnel. $915.00.

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**Table 1: Frequency Measuring Equipment**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Primary Uses</th>
<th>Frequency Range</th>
<th>Characteristics</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>hp- 524B Electronic Counter</td>
<td>Wide range highly accurate frequency, period measurements</td>
<td>10 cps to 10 mc</td>
<td>Without plug-in units measures frequency 10 cps to 10 mc, and period 0.2 to 10 sec.</td>
<td>$2,150.00</td>
</tr>
<tr>
<td>hp- 525A Frequency Converter</td>
<td>Extends hp-524B range to 100 mc</td>
<td>10 cps to 100 mc</td>
<td>10 mv rms minimum input 10 mc to 100 mc, 1 volt rms minimum input</td>
<td>250.00</td>
</tr>
<tr>
<td>hp- 526A Video Amplifier</td>
<td>Increases sensitivity of hp-524B</td>
<td>100 mc to 220 mc</td>
<td>.1 volt rms minimum input</td>
<td>250.00</td>
</tr>
<tr>
<td>hp- 526B Time Interval Unit</td>
<td>Used with hp-524B to measure time interval</td>
<td>Range: 1 μsec to 10&quot; seconds</td>
<td>Start and stop channels separately adjustable for triggering from —192 v to +192 v</td>
<td>175.00</td>
</tr>
</tbody>
</table>

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**Table 2: Frequency Measuring Equipment**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Primary Uses</th>
<th>Frequency Range</th>
<th>Characteristics</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>hp- 100D Secondary Standard</td>
<td>Frequency, time measurements</td>
<td>100 kc, 10 kc, 1 kc</td>
<td>Stability 1/1,000,000 (short-time) sine or rectangular output. Marker plugs</td>
<td>$615.00</td>
</tr>
<tr>
<td>hp- 335E TV Monitor</td>
<td>Channel 2 through 83</td>
<td>88 to 108 mc</td>
<td>Frequency deviation ± 3 kc; accuracy ±.001%, modulation 0 to 100 kc</td>
<td>915.00</td>
</tr>
<tr>
<td>hp- 500C Electronic Tachometer Generator</td>
<td>Frequency</td>
<td>Channels 2 through 83</td>
<td>Indicates visual, aural carrier frequency deviation, percentage modulation aural carrier</td>
<td>2,050.00</td>
</tr>
<tr>
<td>hp- 525A Frequency Meter</td>
<td>Rapid frequency measurements</td>
<td>40 to 3,000,000 rpm</td>
<td>99% accuracy, input 0.2 to 200 volts. Provides expanded scale.</td>
<td>285.00</td>
</tr>
<tr>
<td>hp- 525A Optical Tech. Pickup</td>
<td>Phototube transducer</td>
<td>300 to 300,000 rpm</td>
<td>Utilizes reflected beam of light to permit measurement without loading</td>
<td>100.00</td>
</tr>
<tr>
<td>hp- 525A Tachometer Generator</td>
<td>Low torque transducer</td>
<td>15 to 40,000 rpm</td>
<td>Provides output pulses per rpm of rotating shaft</td>
<td>100.00</td>
</tr>
<tr>
<td>hp- 525B Tachometer Generator</td>
<td>Low torque transducer</td>
<td>15 to 40,000 rpm</td>
<td>Provides output pulses per rpm of rotating shaft</td>
<td>100.00</td>
</tr>
<tr>
<td>hp- 512A Frequency Converter</td>
<td>Extends hp-524A range to 100 mc</td>
<td>100 kc to 100 mc</td>
<td>Fast, direct readings to signals of 100 mc with 524A. No chart. Interpolation. Min. Input 0.01 v</td>
<td>350.00</td>
</tr>
<tr>
<td>hp- 512B Frequency Converter</td>
<td>Gives hp-524A range 100 to 220 mc</td>
<td>100 mc to 220 mc</td>
<td>Same as 512A except for frequency coverage and input 0.2 v RMS min</td>
<td>350.00</td>
</tr>
<tr>
<td>hp- 520A Nuclear Scales</td>
<td>For counting high-rate pulses</td>
<td>Capacity 100 counts in 2 decades. 10,000,000 pps counting rate</td>
<td>101+ divider for operation of low speed scalers</td>
<td>615.00</td>
</tr>
<tr>
<td>hp- 521A Industrial Counter</td>
<td>Wide-range frequency, speed, time interval measurements</td>
<td>1 cps to 120 kc</td>
<td>Frequency measuring gate time is 1/10 or 1 second</td>
<td>425.00</td>
</tr>
<tr>
<td>hp- 522B Electronic Counter</td>
<td>Wide-range frequency, period, time interval measurements</td>
<td>10 cps to 100 kc</td>
<td>Measures rate of occurrences 0.00001 to 100,000/sec.; time interval 10 μsec to 27.8 hrs.; periods of frequency count</td>
<td>915.00</td>
</tr>
</tbody>
</table>

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**Note:** Includes new lightweight all-metal cabinet with carrying handles. Also available for rack mounting at slightly lower prices. Data subject to change without notice. Prices f.o.b. factory.

WWW.HPARCIVE.COM
Microwave Impedance Measuring Equipment

- **hp- 4158 STANDING WAVE INDICATOR**
  For all waveguide or coaxial slotted sections. Gives readings in SWR or dB. Single frequency operation; $15 to $3,000 cps. Low noise level; 0.1 µv sensitivity, 70 db, calib. attenuator. $200.00.

- **hp- 416A RATIO METER**
  Automatically combines forward and reverse signals and displays their ratio directly, irrespective of amplitude variations. Contains rf power monitor indicating proper power level. Rear terminal signal available to operate oscilloscope or recorder. In swept frequency operation, accuracy is within ±0.015. Accuracy for single frequency measurement, ±0.005. $365.00.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Primary Uses</th>
<th>Frequency Range</th>
<th>Characteristics</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>-hp- 360A-D Low Pass Filters</td>
<td>Eliminates harmonic voltages from UHF systems</td>
<td>Cutoff frequencies A-700 mc B-1,200 mc C-2,200 mc D-4,100 mc</td>
<td>50 dB rejection at 1.25 cutoff freq.</td>
<td>$40.00</td>
</tr>
<tr>
<td>-hp- 4158 Standing Wave Indicator</td>
<td>SWR indicator or null indicator</td>
<td>310 to 3,000 cps Normal freq. 1,000 cps</td>
<td>0 to 60 dB, att. Max. sensitivity 0.1 µv</td>
<td>$200.00</td>
</tr>
<tr>
<td>-hp- 416A Ratio Meter</td>
<td>Measure reflection coefficient, SWR</td>
<td>1,000 cps ± 40 cps</td>
<td>Min. 3 millivolts and 0.3 µv; accuracy ±2%</td>
<td>$365.00</td>
</tr>
<tr>
<td>-hp- 417A VHF Detector</td>
<td>VHF bridge detector (for -hp- 803A)</td>
<td>10 to 500 mc</td>
<td>Approx. 5% sensitivity</td>
<td>$250.00</td>
</tr>
<tr>
<td>-hp- 803A VHF Bridge</td>
<td>Measurement of VHF Impedance, SWR</td>
<td>50 to 500 mc</td>
<td>2 x 2,000 ohms impedance —90° to +90° phase</td>
<td>$495.00</td>
</tr>
<tr>
<td>-hp- 805A Coastal Slotted Section</td>
<td>Measurement of SWR</td>
<td>500 to 4,000 mc</td>
<td>For Type N Connectors, flexible cables</td>
<td>$475.00</td>
</tr>
<tr>
<td>-hp- 805B Coastal Slotted Section</td>
<td>Same as above</td>
<td>Same as above</td>
<td>For rigid ½&quot; RG4/U line</td>
<td>$475.00</td>
</tr>
<tr>
<td>-hp- 8058 Coastal Slotted Section</td>
<td>Same as above (Mounts in 809B)</td>
<td>3,000 to 12,000 mc</td>
<td>For Type N Connectors, flexible cables</td>
<td>$200.00</td>
</tr>
<tr>
<td>-hp- 809A Universal Probe Carriage</td>
<td>Supports 8068 section, also G, J, H, X and B10 Waveguide sections</td>
<td></td>
<td>Accepts 4428 and 444A probes</td>
<td>$160.00</td>
</tr>
</tbody>
</table>

- **hp- Waveguide Test Equipment — 2.6 to 18 kmc**
  Basic, low-cost elements offer utmost flexibility for assembly of exact instrumentation required. Each unit covers entire range of its waveguide size. Simple, sturdy mechanical design; accurate, multi-purpose operation.

**Instrument**

- **Adapter, Waveguide to Coax**
  $281A $75.00 G281A $55.00 J281A $50.00 H281A $50.00 X281A $35.00
- **Cover to choke Range**
  $290A $65.00 G290A $50.00 J290A $35.00 H290A $25.00 X290A $15.00 P290A $20.00
- **Attenuators, Fixed, 3, 6, 10, 20 db**
  $370 $75.00 G370 $65.00 J370 $65.00 H370 $65.00 X370 $55.00 P370 $40.00
- **Flap, 25 db max.**
  $375A $110.00 G375A $100.00 J375A $90.00 H375A $80.00 X375A $55.00 P375A $65.00
- **Calibrated, precision**
  $380A $260.00 G381A $240.00 J382A $200.00 H382A $300.00 X382A $250.00 P382A $250.00
- **Detector Mounts**
  402A $50.00
  440A $85.00
  485A $125.00 G485B $95.00 J485B $90.00 H485B $85.00 X485B $75.00 P485C $110.00
- **Thermistor Mounts (Fixed tuned)**
  477A $75.00 G477A $95.00 J477A $90.00 H477A $85.00 X477A $75.00
- **Frequency Meters, Reaction**
  J530A/B ** H532A $120.00 X532A $120.00 P530A $150.00
- **Directional Couplers, Cross Guide; 20, 30 db**
  $570 $100.00 G570 $85.00 J570 $70.00 H570 $60.00 X570 $50.00
- **Directional Couplers, Multi Hole; 3, 10, 20 db**
  $572 $120.00 G572 $170.00 J572 $140.00 H572 $120.00 X572 $100.00 P572A $135.00
- **Universal Waveguide Carriage**
  809B for frequencies 3,000 to 18,000 mc | $160.00
- **Slotted Sections, Waveguide**
  $580A* $450.00 G580B $390.00 J580B $90.00 H580B $90.00 X580B $90.00 P580B $90.00
- **Waveguide Tee, Series**
  $584A $100.00 G584B $85.00 J584B $65.00 H584B $55.00 X584B $35.00 P584A $40.00
- **Shunt**
  $584B $100.00 G584B $85.00 J584B $65.00 H584B $55.00 X584B $35.00 P584A $40.00
- **Hybrid**
  $584A $130.00 G584A $115.00 J584A $100.00 H584A $75.00 X584A $55.00 P584A $55.00
- **Transformers, Slide Screw**
  $870A $170.00 G870A $140.00 J870A $135.00 H870A $130.00 X870A $125.00 P870A $130.00
- **E-H**
  $880A $225.00 G880A $155.00 J880A $140.00 H880A $135.00 X880A $130.00 P880A $135.00
- **Waveguide Phase Shifter**
  J885A $300.00 G885B $250.00 J885B $200.00 H885B $150.00 X885B $130.00
- **Terminations, Low Power**
  $910A $45.00 G910B $40.00 J910A $35.00 H910A $30.00 X910A $25.00 P910A $30.00
- **Terminations, High Power**
  $912A $125.00 H912A $125.00
- **Moving Load**
  $914A $100.00 G914A $75.00 J914A $70.00 H914A $60.00 X914A $50.00 P914A $55.00
- **Adjustable Shorts**
  $920A $80.00 G920A $70.00 J920A $65.00 H920A $60.00 X920A $50.00 P920A $55.00
- **Broad Band Probe**
  4428 $35.00
- **Broad Band Probe, Untuned**
  444A $50.00

For use with bolometer or crystal. **For use with bolometer only. **Complete assembly including carriage. **Mounts in 809B Carriage—See next page. **Includes Thermistor, installed. See page 5. **Includes 0.85 to 8.2 KMC, $120.00; 5.85 to 7.05 KMC, $150.00.

Includes new lightweight all-metal cabinet with carrying handles. Also available for rack mounting at slightly lower prices.

Data subject to change without notice. Prices f.o.b. factory.

WWW.HPARCHIVE.COM
Microwave Power Measuring Equipment

- **-hp- 430C Microwave Power Meter**
  No computations! Provides instantaneous, automatic power readings direct in dbm or mw at all frequencies for which there are suitable bolometer mounts. For CW measurements, uses either 1/100 amp. fuse or Sperry 821 barretter. Also measures CW or pulsed power with negative coefficient thermistor. Provides up to 16 ma bias current. Operates with all mounts in adjacent table. $250.00.

- **-hp- 476A Bolometer Mounts**
  - **-hp- 476A Universal Bolometer Mount** measures rf power 10 to 1,000 mc. No tuning or adjustment. SWR less than 1.15, 20 to 500 mc; 1.25, 10 to 1,000 mc. $85.00.

- **-hp- 477A Coaxial Thermistor Mount**
  For frequency range 10 mc to 10 kmc. SWR less than 1.5. Thermistor element is 200 ohm negative. Input connector type N, output Type BNC. $75.00 (including thermistor).

---

**Equipment below available for most waveguide frequencies**

- **-hp- 809B Universal Probe Cariiage**
  Convenient, all-purpose -hp- 809B carriage operates with six different -hp- slotted sections, waveguide and coaxial. Mounts sections covering frequencies 3,000 to 18,000 mc—sections interexchange in 30 seconds! Precision-built carriage calibrated in mm to 0.1 mm; dial gauge may be mounted. Operates with -hp- 442B Bread Band Probe and -hp- 440A Coaxial Detector in combination; or with -hp- 444A Untuned Probe. -hp- 810A/B Slotted Sections. -hp- 810B, for mounting in 809B carriage, is a flanged waveguide section with accurately machined slot tapered at ends to minimize reflection. Available in 5 waveguide bands, 3.95 thru 18.0 kmc. -hp- S810A, complete slotted section assembly including probe carriage. Available for 26 to 3.95 kmc band only.

- **-hp- 420A Crystal Detector**
  Employs a silicon crystal to detect rf signals in Type N coaxial line. Coveres frequencies 10 mc to 12.5 kmc. Flat frequency response, sensitivity 0.1 v/mw. Uses modified 1N76 crystal.

- **-hp- 382A Precision Attenuator**
  Precision broad band attenuation to 50 db. Completely independent of frequency, phase shift constant all attenuations. Calibrated range 0 to 50 db, maximum error ± 2% of db reading. G, J, X and P bands available covering 3,950 to 18,000 mc. SWR less than 1.15 full range.

- **-hp- 485A Phase Shifter**
  For accurate, precisely controlled phase variation throughout frequency band. Ideal for microwave impendace, transmission measurements, antenna and system design. Direct reading, low power absorption, 360° (electrical) range.

- **-hp- 752 Multi-Hole Coupler**
  Directional couplers available in 2 models with coupling factors of 3, 10 and 20 db ± 0.7 db over full range of a waveguide. SWR better than 1.05. Directivity 40 db or better over entire range. Available as a 3-terminal network.

- **-hp- 485B Detector Mounts**
  To measure power over complete waveguide range in conjunction with -hp- 430C Power Meter and barretter. Also measures relative level or detects rf energy using 1N21 or 1N23 crystal. Semi-tuned by movable short to SWR 1.25.

- **-hp- 870A Slide Screw Tuners**
  For flattening waveguide systems. The position and penetration of a probe is adjusted to set up an SWR which is used to cancel existing SWR in system. SWR values up to 20 can be corrected with accuracy of 1.02 SWR.

△ Includes new lightweight all-metal cabinet with carrying handles. Also available for rack mounting at slightly lower prices.

Data subject to change without notice. Prices f.o.b. factory.
-hp- Signal Generators—10 to 21,000 mc

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Frequency Range</th>
<th>Characteristics</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>-hp- 608D</td>
<td>10 to 420 mc</td>
<td>Maximum stability. No incidental fm or frequency drift. Calibrated output 0.01 µv to 0.5 v throughout range. Built-in crystal calibrator provides frequency check accurate within 0.01% each 3 mc. Master-oscillator, intermediate and output amplifier circuit design. Premium quality performance, direct calibration, ideal for aircraft communications equipment testing. $1,050.00.</td>
<td>1,050.00</td>
</tr>
<tr>
<td>-hp- 608C</td>
<td>10 to 420 mc</td>
<td>Maximum stability. No incidental fm or frequency drift. Calibrated output 0.01 µv to 0.5 v throughout range. Built-in crystal calibrator provides frequency check accurate within 0.01% each 3 mc. Master-oscillator, intermediate and output amplifier circuit design. Premium quality performance, direct calibration, ideal for aircraft communications equipment testing. $1,050.00.</td>
<td>1,050.00</td>
</tr>
<tr>
<td>-hp- 612A</td>
<td>450 to 1,200 mc</td>
<td>Output 0.1 µv to 0.5 v into 50 ohm load. Pulse or CW modulation. Direct calibration. $1,200.00.</td>
<td>1,200.00</td>
</tr>
<tr>
<td>-hp- 616A</td>
<td>800 to 2,100 mc</td>
<td>Output 0.1 µv to 0.223 v into 50 ohm load. Pulse, CW or FM modulation. Direct calibration.</td>
<td>1,950.00</td>
</tr>
<tr>
<td>-hp- 618B</td>
<td>3,800 to 7,600 mc</td>
<td>Output 0.1 µv to 0.223 v into 50 ohm load. Pulse, CW, FM or square wave modulation. Direct calibration.</td>
<td>2,250.00</td>
</tr>
<tr>
<td>-hp- 620A</td>
<td>7,000 to 11,000 mc</td>
<td>Output 0.1 µv to 0.223 v into 50 ohm load. Pulse, CW, FM or square wave modulation. Direct calibration.</td>
<td>2,250.00</td>
</tr>
<tr>
<td>-hp- 623B</td>
<td>5,975 to 7,725 mc</td>
<td>Output 70 µv to 0.223 v into 50 ohm load. FM or square wave modulation. Separate power meter and wave meter section.</td>
<td>1,750.00</td>
</tr>
<tr>
<td>-hp- 624C</td>
<td>8,500 to 10,000 mc</td>
<td>Output 3.0 µv to 0.223 v into 50 ohm load. Pulse, CW, FM or square wave modulation. Separate power meter and wave meter section.</td>
<td>2,150.00</td>
</tr>
<tr>
<td>-hp- 628A</td>
<td>15,000 to 21,000 mc</td>
<td>Output 1 µw watt into 500 ohm load. Internal or external pulse, FM, or square wave modulation. Direct calibration.</td>
<td>3,000.00</td>
</tr>
</tbody>
</table>

SWEPT FREQUENCY

- hp- 670HM | 7,000 to 10,000 mc | Output app. 10 mw entire frequency range. Automatic, adjustable, mechanical sweep. | 850.00 |

SQUARE WAVE GENERATOR

- hp- 211A | 1 cps to 1 mc | Output 55 v peak to peak into 600 ohm load. Free running or external sync. .02 µsec rise time. Low or high impedance output. | 265.00 |

PULSE GENERATOR

- hp- 212A | 50 to 5,000 pps | Output 50 v peak into 50 ohm load. Free running or external sync. Variable delay. .02 µsec rise time. | 565.00 |

- hp- Regulated Power Supplies

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Primary Uses</th>
<th>Characteristics</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>-hp- 710B</td>
<td>Power Supply for low power bench and permanent setups</td>
<td>100 to 360 volts at 75 milliamperes.</td>
<td>100.00</td>
</tr>
<tr>
<td>-hp- 711A</td>
<td>Power Supply for experimental bench setups requiring wide voltage range, low power</td>
<td>0 to 500 volts at 100 milliamperes.</td>
<td>225.00</td>
</tr>
<tr>
<td>-hp- 712B</td>
<td>Power Supply meets requirements for heavy duty field and lab work</td>
<td>0 to 500 volts at 200 milliamperes. 0.5% regulation.</td>
<td>345.00</td>
</tr>
<tr>
<td>-hp- 715A</td>
<td>Klystron Power Supply regulated beam, reflector source for low power klystrons</td>
<td>Beam 250 to 400 volts at 50 milliamperes.</td>
<td>300.00</td>
</tr>
<tr>
<td>-hp- 717A</td>
<td>Klystron Power Supply regulated beam, reflector source for Type 5271 klystrons and for -hp- 670 series Swept Frequency Oscillators</td>
<td>800 to 1,300 volts at 25 milliamperes.</td>
<td>375.00</td>
</tr>
</tbody>
</table>

△ Includes new lightweight all-metal cabinet with carrying handle. Also available for rack mounting at slightly lower prices. Data subject to change without notice. Prices f.o.b. factory.

WWW.HPARCHIVE.COM
Amplifiers for General Use and Fast-Circuit Work

-hp- 460A/B AMPLIFIERS

Complete instrumentation for distortion-free fast pulse measurement. -hp- 460A Wide Band Amplifiers, in cascade with -hp- 460B Fast-Pulse Amplifiers offer up to 90 db gain, 125 v open circuit output. This permits full deflection of 5XP CRT, or 2-inch deflection of 5CP tubes. Rise time 0.0026 usec; can amplify millimicrosecond pulses; gives over 100 mc bandwidth to your standard oscilloscope. 460A, $185.00; 460B, $225.00. Connecting cables, plugs, accessories—prices on request.

-hp- 450A AMPLIFIER

Time - tested, general purpose instrument, 20 db or 40 db gain, for use wherever wide frequency range and high stability are needed. 10 cps to 1 mc. Negligible phase shift, no spurious responses. $140.00.

仪表表

-hp- 490A/491A TRAVELING-WAVE TUBE AMPLIFIERS

Two new broad band linear instruments providing a new, simple way to amplify, modulate, or increase power to 1 watt. Full S-Band coverage—2 to 4 kmc; 30 and 35 db gain, millimicrosecond pulse modulation, radical new coupled-helix design. High gain, low noise. -hp- 490A, $1,100.00. -hp- 491A, $1,100.00 (Includes capsulated tube).

-hp- AC-4A Decade Counter

Unique design enables AC-4A Counters to establish new standards of reliability while providing continuous counting to 120 kc. Low in cost, they fit all standard decade counters as ideal replacement units. A staircase output voltage proportional to count is available to operate recorders or external equipment using coincidence detectors. The exclusive -hp- etched circuit means low temperature operation, longer life. Optically engineered illuminated numerals are clear, bright, easy to read under all conditions. Double-pulse resolution, 5 usec. Input, approx. 80 v neg.; 1 usec rise time. Output, approx. 80 v neg. to drive succeeding counter. Reset 0 to 9. Staircase output, 135 v at 0, 55 v at 9. Internal resistance 700 K. $45.00. (Quantity discount prices on request.)

New Streamlined All-Metal -hp- Cabinets

3 mounting options, greater flexibility of use

Now you can buy -hp- instruments mounted any of three ways, and, later on, change to any other mounting you wish. This new versatility means greater utilization of your -hp- instruments, and can also increase the flexibility of your entire instrument setup.

Cabinets. -hp- instruments having the standard 10½" x 19" panel are now available in standardized -hp- AC-44 aluminum-and-steel cabinets. Equipped with sturdy carrying handles, these cabinets give your -hp- instruments greater protection, better ventilation, and a clean, rugged, modern appearance. Either the separate back cover or the cabinet itself can be removed quickly and easily. Cabinets are finished in wrinkle grey matching the -hp- grey baked enamel panel faces. Cabinet, with instrument, $15.00; separately, $25.00.

End frames. To increase flexibility and convenience of -hp- instruments for bench use, -hp- Model 17 End Frames are offered. These frames are of heavy gauge aluminum, equipped with sturdy carrying handles and finished in -hp- grey baked enamel. They fit all late model -hp- instruments with panel size 10½" x 19", and may be attached in moments. -hp- 17 End Frames, $7.50 set.

Rack mounting. Many -hp- instruments are basically rack mounting and can be installed directly into 19" relay racks. Many other -hp- instruments can be equipped for relay rack mounting at slight additional charge. A complete list of instruments available for rack mounting will be sent on request.

Smaller -hp- instruments, too, are now being delivered in new, streamlined cabinets. -hp- 512A/B Frequency Converter, illustrated, shows the rugged, lightweight metal cabinet now offered with such instruments as -hp- 200AB, 200CD, 410B and 715A.

△ Includes new lightweight all-metal cabinet with carrying handles. Also available for rack mounting at slightly lower prices.

Data subject to change without notice. Prices f.o.b. factory.

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**In development** — *hp* engineer teams are continually at work designing and producing accurate, helpful new instruments that meet and anticipate the demands of electronics.

**In instrumentation** — the *hp* line is the world’s largest and most complete. You choose from over 250 instruments the ones that provide exactly the measuring coverage you require.

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