

**BOONTON**  
**ELECTRONICS**  
CORPORATION

CONDENSED CATALOG CC-9

*ELECTRONIC INSTRUMENTS for LABORATORY and PRODUCTION*

Sensitive RF Voltmeters ■ Sensitive DC Voltmeters & Null Detectors ■ RF Admittance Bridges  
Capacitance & Inductance Bridges ■ RF Distortion Meters ■ Automatic Test Equipment

Boonton Electronics Corporation is a wholly independent firm devoted solely to the creation of precision electronic instruments for laboratory and production. The company is housed in an ultra-modern, fully air conditioned 18,000 square-foot plant. This building contains complete facilities for administration, engineering, manufacturing, and service, as well as for the basic research from which the majority of our unique instruments have sprung.

Boonton Electronic Corporation is represented throughout the world by highly skilled Sales Engineering Representatives who are thoroughly qualified to offer guidance and consultation on instrumentation problems. For the Representative in your area, see the listing on page 6.

## Sensitive Broad-Band RF Voltmeters



Model 91DA

The 91-Series broad-band meters provide reliable, reproducible voltage measurements from the low radio frequencies to the gigacycle region, and over a wide range of amplitudes. The versatility of these instruments plus their accuracy and convenience of operation have established them as standards for performance for the industry. The primary differences between the Models 91DA, 91H, and 91C are indicated in the specification table below. All three models are characterized by low noise, excellent stability, and high input impedance.



Model 91H

|                    | Model 91DA  | Model 91H                        | Model 91C                      |
|--------------------|---|----------------------------------|--------------------------------|
| Voltage Range:     | 300 $\mu$ V to 300 V*   | 100 $\mu$ V to 300 V*            | 1 mV to 300 V*                 |
| Frequency Range:   | 20 Kc/s to 1200 Mc/s*, with uncalibrated response for relative measurements to beyond 4000 Mc/s   |                                  |                                |
| Basic Accuracy:    | $\pm 2\%$ fs  | $\pm 3\%$ fs                     | $\pm 5\%$ fs                   |
| VSWR:              | Less than 1.2 up to 1200 Mc/s for all models  |                                  |                                |
| dB Range:          | 80  | 80                               | 70                             |
| Waveform Response: | True rms up to 0.03 V (to 3 V with accessory 100:1 Voltage Divider) gradually approaching peak to peak (calibrated in rms) above this level |                                  |                                |
| Power Sensitivity: | 0.0018 $\mu$ watt (50 $\Omega$ )  | 0.0002 $\mu$ watt (50 $\Omega$ ) | 0.02 $\mu$ watt (50 $\Omega$ ) |
| Linear DC Output:  | yes   | yes                              | no                             |
| Price:             | \$650.00  | \$595.00                         | \$495.00                       |

(Rack mounted versions of all RF Voltmeters \$25.00 extra)

\*Using appropriate accessory

## Accessories for RF Voltmeters

|          |  |      |        |   |      |
|----------|--|------|--------|---|------|
| 91-4C    | 1 Kc/s to 250 Mc/s Probe for 91C, 91H                | \$65 | 91-14A | Type N "Tee" Adapter (20 Kc/s to 1200 Mc/s)           | \$35 |
| 91-6C    | Unterminated BNC Adapter                             | \$20 | 91-15A | 50 $\Omega$ Type N Termination (20 Kc/s to 1200 Mc/s) | \$25 |
| 91-7C    | 100:1 Voltage Divider (50 Kc/s to 700 Mc/s)          | \$35 | 91-16A | Unterminated Type N Adapter                           | \$20 |
| 91-8B†   | 50 $\Omega$ BNC Adapter (other impedances available) | \$25 | 91-17D | 1 Kc/s to 250 Mc/s Probe for 91DA                     | \$65 |
| 91-12D*  | 20 Kc/s to 1200 Mc/s Probe for 91DA                  | \$50 | 91-18A | Accessory Storage Box                                 | \$10 |
| 91-12E†  | 20 Kc/s to 1200 Mc/s Probe for 91C, H                | \$45 | 91-19B | Accessory Storage Bracket                             | \$10 |
| 91-13B*† | RF Probe Tip   | \$ 3 | 91-20A | 10:1 Voltage Divider (50 Kc/s to 700 Mc/s)            | \$35 |

\*Supplied with Model 91DA, and included in price. †Supplied with Models 91C, 91H, and included in price.

## New Additions to the Boonton Electronics line of Laboratory Instruments

The following new instruments, introduced at the 1966 New York IEEE Show, are now being readied for production. At this stage their specifications are of necessity tentative. Latest available data on these units may be requested using the postage-free postcards attached to page 6 of this catalog.

### 100 Kc/s to 50 Mc/s Q Bridge Model 35A

Particularly useful for measuring High Q, High Capacitance Devices

The Model 35A provides accurate, convenient, direct reading measurements of Q and capacitance with low test signal levels and over a wide frequency range. The basic Q range of the Model 35A is from 2 to 10,000. Capacitance range is from 1 pF to 1000 pf. Basic capacitance accuracy is 0.25%. Since the Model 35A is a 3-terminal bridge, the test specimen may be connected by coaxial cables, or a remote test fixture may be used.

The directly calibrated test frequency is continually adjustable from 100 Kc/s to 50 Mc/s. The test level is constant regardless of the balance condition of the bridge. Maximum test signal level is 50 mV. With Q's of 10,000, measurements may be made at 25 mV under most circumstances; with Q's under 1000 test levels under 5 mV may generally be used. Internally supplied dc bias is continuously adjustable from 0 to 150 volts; externally supplied bias may be applied up to  $\pm 400$  volts. The Model 35A is completely self-contained and is packaged as a compact bench unit.

Availability, late 1966.

### RF Microwattmeter Model 41A

A Microwave Power Meter of Exceptional Sensitivity and Stability

The Model 41A offers a sensitivity of  $-60$  dBm (0.001  $\mu$ Watt) for power measurements from 1 Mc/s to beyond 5000 Mc/s. The meter scale is calibrated in both microwatts and dBm. The unique detection system of the Model 41A eliminates many problems associated with thermistor types. Drift is typically less than 0.001  $\mu$ Watt per hour.

Availability, June, 1966.

### Digital Capacitance/ Inductance Meter Model 71D

Accurate High-resolution Measurement of Capacitance and Inductance with Digital Readout

This digital-readout version of the Model 71A Capacitance/Inductance Meter provides measurements of 3-terminal capacitance and 2-terminal inductance from 0 to 1000 pF and 0 to 1000  $\mu$ H, each in 4 decade steps, with 4 digit resolution for all ranges. Basic accuracy is  $\pm 0.5\%$ . A capacitance calibration standard is built in and is switched into use by a front panel selector. Provision is included for applying dc bias up to  $\pm 200$  volts to the Capacitance specimen. A 10-line decimal voltage level output is provided at a rear terminal panel.

Availability, Mid 1966.



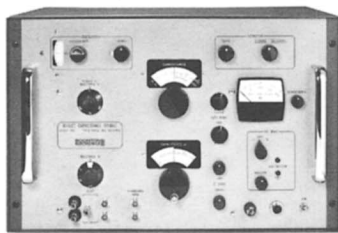
### 1 Mc/s Capacitance/Inductance Meter Model 71A

Instant, direct reading 3-terminal measurements of capacitance and 2-terminal measurements of inductance with the speed and convenience of a VTVM. Precise dc analog of the measured value. Internally supplied crystal-controlled 1 Mc/s test signal. Low signal level permits tests on semiconductors. Provision for dc bias. Accommodates both high and low Q devices. Remote capacitance test specimen may be connected to 71A by coaxial cables. DC analog is suitable for use with recorder, X-Y plotter, or oscilloscope; with suitable DVM, provides 3-digit resolution. Also useful as readout device for capacitive or inductive transducers.

**Capacitance Measurements:** 0 to 1000 pF in 7 ranges; accuracy,  $\pm 1\%$  fs; Resolution, 0.01 pF  
**Inductance Measurement:** 0 to 1000  $\mu$ H in 7 ranges; accuracy,  $\pm 1\%$  fs; Resolution, 0.01  $\mu$ H  
**Test Signal:** Frequency, 1 Mc/s, crystal controlled; level: 15 mV for capacitance measurements; less than 1 mV for inductance measurements.

**Q Range:** Specified accuracies for Q's of 3 or more; slightly reduced for Q's of lower value.  
**DC Analog Output:** 0 to 100 mV or 0 to 300 V depending on range numerics; also 1 V fs for loads  $> 10 \text{ M}\Omega$ ; linearity, 0.1% of reading  $\pm 0.005\%$  fs.

**Price:** \$735.00 (rack mounted Model 71AR, \$810.00)



### Variable Frequency Capacitance Bridge Model 75C

Versatile 3-terminal bridge having test frequency continuously adjustable from 5 Kc/s to 500 Kc/s. Permits determination of effects of frequency upon test. Includes built-in dc bias supply. Provides performance characteristics and convenience of operation similar to Model 75A 1 Mc/s bridge (see above).

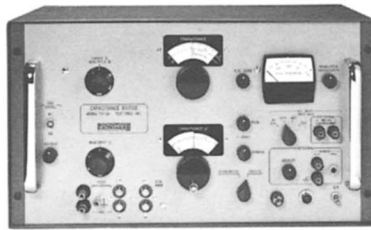
**Capacitance Measurement:** 0.0002 pF to 1000 pF; accuracy,  $\pm 0.25\%$ ; resolution, 0.0002 pF

**Conductance Measurement:** 0.001  $\mu$ mho to 1000  $\mu$ mhos; accuracy,  $\pm 5\%$ ; resolution, 0.01  $\mu$ mho

**Test Signal:** Internally supplied; continuously adjustable in frequency from 5 Kc/s to 500 Kc/s; level adjustable from below 1 mV to 3 V

**DC Bias:** Internal only; continuously adjustable from  $-5 \text{ V}$  to  $+100 \text{ V}$

**Price:** \$1,900.00



### 1 Mc/s Capacitance Bridges Models 75A and 75B

These precision capacitance bridges having test frequency of 1 Mc/s as required by many MIL SPECS have become the standard of the semiconductor and capacitor industries. 3-terminal (direct) arrangement eliminates errors resulting from lead capacitance to ground. High stability permits differential capacitance measurements. Main C balance control is zero-back lash vernier providing scale effectively 15 feet long. DC bias supply available in —S8 versions.

#### Model 75A

**Capacitance Measurement:** 0.0002 pF to 1000 pF; accuracy,  $\pm 0.25\%$ ; resolution, 0.0002 pF

**Conductance Measurement:** 0.01  $\mu$ mho to 1000  $\mu$ mhos; accuracy,  $\pm 5\%$

**Operating Mode:** 3-terminal (direct), or 2-terminal (grounded)

**Test Signal:** Built-in 1 Mc/s test oscillator-detector; level adjustable from 20 mV to 3 V

**DC Bias:** (—S8 version only); internal, continuously adjustable from  $-5$  to  $+125 \text{ V}$ ; external, to  $\pm 400 \text{ V}$ , 100 mA, max.

**Prices:** Model 75A, \$1,250.00. Model 75A-S8, \$1,325.00

#### Model 75B

**Capacitance Measurement:** 0.00002 pF to 1000 pF; accuracy,  $\pm 0.25\%$ ; resolution, 0.00002 pF

**Conductance Measurement:** 0.01  $\mu$ mho to 1000  $\mu$ mhos; accuracy,  $\pm 5\%$

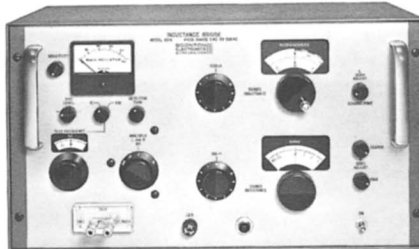
**Operating Mode:** 3-terminal (direct) only

**Test Signal:** Built-in 1 Mc/s test oscillator-detector; level adjustable from 1 mV to 3 V

**DC Bias:** (—S8 version only); internal, continuously adjustable from  $-5$  to  $+125 \text{ V}$ ; external, to  $\pm 400 \text{ V}$ , 100 mA, max.

**Price:** Model 75B, \$1,500.00. Model 75B-S8, \$1,575.00

### Models 63H, 63L, and 63M Inductance Bridges



Maxwell type bridges provide direct reading measurements of inductance and series resistance. All three completely self-contained, including test signal oscillator and detector. Exceptional stability. Measure inductance and Q over wide ranges and down to extremely low values. Particularly well suited for determination of temperature coefficient, and for measuring permeability and loss of magnetic materials.

#### Model 63H

**Inductance Measurement:** 0.0002  $\mu$ H to 110 mH; accuracy,  $\pm 0.25\%$ ; resolution, 0.01%



### 1 Mc/s Capacitance Limit Bridge Model 77B

Provides automatic high-speed dual, or single limit tests, or conventional manual measurements of capacitance and inductance. In automatic mode test is insensitive to specimen loss. Test decisions of HI, LO, or GO indicated by front panel lamps as well as by continuity closures for actuation of materials handling equipment or data logging. Internally supplied crystal controlled 1 Mc/s test signal; operates with low test level. Built in dc bias supply; provision for external bias. 3-terminal arrangement permits remote measurements.

**Capacitance Measurement:** Automatic, 0.001 pF to 1000 pF; Manual, 0.0001 pF to 1000 pF; basic accuracy,  $\pm 0.25\%$ .

**Inductance Measurement:** Manual or Automatic, 25  $\mu$ H to inf.; basic accuracy,  $\pm 0.25\%$ .

**Conductance Measurement:** Manual only, 0 to 1000  $\mu$ mhos, basic accuracy, 5%.

**Tolerance Limits:** Programmable at front panel controls from  $\pm 0.0005 \text{ pF}$  to  $\pm 200 \text{ pF}$ ; basic accuracy,  $\pm 1\%$  of limit.

**Test Time:** Approx. 0.05 second

**Test Signal:** Internally supplied; 1 Mc/s, crystal controlled; level adjustable from 250 mV to 15 mV for Automatic Mode, to 1 mV for Manual.

**Decision Output:** Programmable at front panel lamps indicating "Go", "High", and "Low", respectively; continuity contacts at rear panel in conformance with test decisions.

**DC Bias:** Internal, continuously adjustable from  $-5 \text{ V}$  to  $+125 \text{ V}$ ; external, to  $\pm 400 \text{ V}$ , 100 mA max. **Price:** \$2,000.00

### 100 Kc/s Capacitance Limit Bridge, Model 77B-S1

Essentially similar to Model 77B; has basic capacitance/inductance accuracy of 0.1%. operates with internally supplied 100 Kc/s crystal controlled test signal. Capacitance range, Automatic or Manual, is 0.001 pF to 1000 pF. Inductance range, 2500  $\mu$ pH to  $\infty$ . Otherwise specifications are as shown for Model 77B.

**Price:** \$2000.00

**Series Resistance Measurement:** 0.0002  $\Omega$  to 11,000  $\Omega$ ; accuracy,  $\pm 3\%$

**Test Signal:** Internal oscillator-detector continuously adjustable from 5 Kc/s to 500 Kc/s; max. open-circuit level, 3 V

#### Model 63L

**Inductance Measurement:** 0.02  $\mu$ H to 11 H; accuracy,  $\pm 0.25\%$ ; resolution, 0.01%

**Series Resistance Measurement:** 0.002  $\Omega$  to 110,000  $\Omega$ ; accuracy,  $\pm 3\%$

**Test Signal:** Internal oscillator-detector continuously adjustable from 400 c/s to 20 Kc/s; max. open-circuit level 5.5 V

#### Model 63M

**Inductance Measurement:** 0.002  $\mu$ H to 1.1 H; accuracy,  $\pm 0.25\%$ ; resolution, 0.01%

**Series Resistance Measurement:** 0.002  $\Omega$  to 110,000  $\Omega$ ; accuracy,  $\pm 3\%$

**Test Signal:** Internal oscillator-detector continuously adjustable from 1 Kc/s to 100 Kc/s; max. open-circuit level 5.5 V

**Prices:** Models 63H, 63L, and 63M, \$1,995.00

## SALES ENGINEERING REPRESENTATIVES

For skilled consultation on instrumentation, call your nearest Boonton Electronics Sales Engineering Representative (see addresses at left).

- |                          |  |
|--------------------------|--|
| Alabama #6               | New Mexico #13   |
| Alaska #15               | New York   |
| Arizona #11              | New York City, Long Island, counties of Rockland, Putnam, and Westchester only, #10      |
| Arkansas #1              | North of but NOT including above areas, #14  |
| California #11           | North Carolina #6  |
| Colorado #13             | North Dakota #15   |
| Connecticut #5           | Ohio #15   |
| Delaware #12             | Oklahoma #1  |
| District of Columbia #12 | Oregon #7  |
| Florida #6               | Pennsylvania   |
| Georgia #6               | East of (and including) counties of Potter, Clinton, Centre, Huntington, and Fulton, #10 |
| Hawaii #15               | West of (but NOT including) the above counties, #15                                      |
| Idaho #13                | Rhode Island #5  |
| Illinois #9              | South Carolina #6  |
| Indiana #9               | South Dakota #15   |
| Iowa #2                  | Tennessee #6   |
| Kansas #4                | Texas #1   |
| Kentucky #15             | Utah #13   |
| Louisiana #1             | Vermont #5   |
| Maine #5                 | Virginia   |
| Maryland #12             | South of (and including) counties of Rockingham, Madison, Culpeper, and Stafford, #6     |
| Massachusetts #5         | North of (but NOT including) the above counties, #12                                     |
| Michigan #15             | Washington #7  |
| Minnesota #2             | West Virginia #15  |
| Mississippi #6           | Wisconsin #2   |
| Missouri #4              | Wyoming #15  |
| Montana #15              | Canada #3  |
| Nebraska #4              | Export (Except Canada) #8  |
| Nevada #11               |  |
| New Hampshire #5         |  |
| New Jersey #10           |  |

**1 Airep Engineering Company**  
P.O. Box 9555  
Dallas, Texas 75214  
Phone: 214-824-3800

P.O. Box 36211  
Houston, Texas 77036  
Phone: 713-494-2260

**2 Arthur Engineering Sales Co.**  
3264 N. Victoria Avenue  
St. Paul, Minn. 55112  
Phone: 612-484-3277  
TWX: 612-361-7901

11216 W. Mallory Avenue  
Hales Corners, Wisc. 53130  
Phone: 414-425-5919  
TWX: 414-721-5802

**3 Canadian Marconi Company**  
**Marine & Land Communications Div.**  
2442 Trenton Avenue  
Montreal 16, Quebec

**4 Engineering Services Company**  
6717 Vernon Avenue  
St. Louis, Mo. 63130  
Phone: 314-726-2233  
TWX: 314-556-0173

7546 Troost  
Kansas City, Mo. 64131  
Phone: 816-363-6000  
TWX: 816-556-2347

**5 George Gregory Associates**  
7 Erie Drive  
Natick, Mass., 01762  
Phone: 617-655-1330

9 S. Main Street  
Cheshire, Conn., 06410  
Phone: 203-272-5040

**6 James L. Highsmith & Company**  
3733 Monroe Road, P.O. Box 9367  
Charlotte, N. C. 28205  
Phone: 704-333-7743  
TWX: 810-621-0455

Suite 18, Holiday Office Center  
3322 S. Memorial Pkwy.,  
Huntsville, Alabama 35805  
Phone: 205-881-3294  
TWX: 510-579-2210

5003 Brook Road, P.O. Box 9225  
Richmond, Va. 23227  
Phone: 703-266-2060  
TWX: 710-956-0075

2543 Industrial Blvd., P.O. Box 7835  
Orlando, Fla. 32804  
Phone: 305-293-5202  
TWX: 305-275-0501

**7 Harry Levinson Company**  
1211 E. Denny Way  
Seattle, Washington 98122  
Phone: 206-323-5100  
TWX: 206-998-1047

**8 A. V. Marano & Company, Inc.**  
276 Fifth Avenue  
New York 1, New York  
Phone: 212-686-5577

**9 Kenneth W. Meyers Company**  
7256 W. Touhy Avenue  
Chicago, Ill., 60648  
Phone: 312-774-6440  
TWX: 312-265-1119

**10 NLR Associates**  
617 Bloomfield Ave.  
Verona, N. J. 07044  
Phone: 201-239-4747

In New York City, phone:  
212-227-9460

529 Shoemaker Road  
Philadelphia, Penn. 19117  
Phone: 215-224-1663

**11 O'Halloran Associates**  
10700 Ventura Blvd.  
N. Hollywood, Cal. 91604  
Phone: 213-877-0173  
TWX: 910-499-2190

3921 E. Bayshore  
Palo Alto, Cal. 94303  
Phone: 415-326-1493  
TWX: 415-969-9144

3268 Rosecrans Street  
San Diego, Cal. 92110  
Phone: 714-224-2824

Tucson & Phoenix, Arizona  
Phone: ENterprise 1200

**12 Paddock-Joslow Company**  
721 Ellsworth Drive, P.O. Box 192  
Silver Spring, Md. 20907  
Phone: 301-589-6554 &  
301-588-7866

**13 Price-Parrish Electronics, Inc.**  
2130 S. Albion  
Denver, Colorado 80222  
Phone: 303-756-9455  
TWX: 303-292-3273

16 E. Stratford Avenue  
Salt Lake City, Utah 84115  
Phone: 801-487-7847  
TWX: 801-521-2402

507 Wyoming Blvd., N.E.  
Albuquerque, New Mex. 87112  
Phone: 505-268-6791  
TWX: 505-243-8353

**14 SBM Associates**  
1700 University Avenue  
Rochester, N.Y. 14610  
Phone: 716-271-7430  
TWX: 716-235-6898

In Lower New York State down to  
(but not including) Counties of  
Westchester, Putnam & Rockland;  
phone. 914-764-1811

138 Pickard Building  
5858 E. Molloy Road  
Syracuse, N.Y. 13211  
Phone: 315-454-9377

**15 Home Office**  
**Boonton Electronics Corp.**  
Parsippany, N.J. 07054  
(phone or TWX collect)  
Phone: 201-887-5110  
TWX: 510-235-6747

**BOONTON**  
**ELECTRONICS**  
CORPORATION

TELEPHONE: 201-887-5110

TWX: 510-235-6747

ROUTE 287 AT SMITH ROAD, PARSIPPANY, N. J. — 07054



### 100 Kc/s Capacitance Bridge Model 74D

Completely self-contained 3-terminal bridge for precision measurement of capacitance and conductance over very broad ranges; excellent stability with negligible warm-up drift. "Linear" mode for limit operation for go/no-go testing. Provision for use as comparison bridge. Test signal level adjustable to low values for semiconductor testing. 3-terminal arrangement permits use of remote test jig without lead capacitance problems; 2-terminal operation also provided. Balancing simple and convenient, with no false or sliding nulls. Internally supplied dc bias. Vernier capacitance dial provides scale effectively 15 feet long.

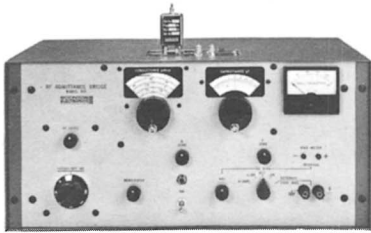
**Capacitance Measurement:** 0.0002 pF to 110,000 pF; accuracy,  $\pm 0.1\%$ ; resolution, 0.0002 pF

**Conductance Measurement:** 0.001  $\mu\text{mho}$  to 1000  $\mu\text{mhos}$ ; accuracy,  $\pm 5\%$ ;

**Test Signal:** Internally supplied; 100 Kc/s; level continuously adjustable from 1 mV to 4 V

**DC Bias:** Internal, -5 V to +110 V; External, up to  $\pm 400$  V

**Price:** \$1,350.00



### RF Admittance Bridge Model 33A

Precise, high resolution measurement of capacitance and loss at high frequencies and with low test signal levels. Shunt inductance, series and shunt resistance, dissipation factor, and Q may also be readily determined. Built-in dc bias supply with provision for external bias. Particularly useful for semiconductors and integrated circuits.

**Capacitance Measurement:** 0 to 150 pF; to 30 pF at 100 Mc/s; accuracy,  $\pm 1\%$ ; resolution .02 pF

**Conductance Measurement:** 0 to 25,000  $\mu\text{mhos}$ ; accuracy,  $\pm 2\%$ ; resolution, 0.5  $\mu\text{mho}$

**Test Signal:** 7 internally supplied crystal controlled frequencies of 1, 5, 10, 20, 30, 50, and 100 Mc/s; level continuously adjustable from 0.1 V down to as low as 1 mV

**DC Bias:** Internal, continuously adjustable from -5 to +100 V; external, to  $\pm 250$  V

**Price:** \$2,200.00

### Ultra High Capacitance Resolution Model 33A-S7

Capacitance measurements from 0 to 15 pF with resolution of 0.002 pF. Otherwise identical to Model 33A. Price \$2350.00

### Ultra High Conductance Resolution Model 33B

Conductance measurements from 0 to 5000 micromhos with resolution of 0.1 micromho. Otherwise identical to Model 33A. Price on request.



### Sensitive DC Null Detector Model 56A

Electronic galvanometer providing exceptionally high sensitivity and high input impedance. Especially valuable as indicator in conjunction with Wheatstone Bridge. Zero center scale. 60 dB scale compression in HUNT mode virtually eliminates range switching when measuring specimens of unknown value. Provision for remote mode switching. Amplifier output available at front panel terminals. Either floating or grounded operation.

**Voltage Sensitivity:** 1  $\mu\text{V}$  to 100 V in 8 ranges

**Current Sensitivity:** 0.1 pA to 10  $\mu\text{A}$

**Input Resistance:** 10 meg  $\Omega$ , all ranges

**Operating Modes:** HUNT (60 dB meter scale compression); CALIBRATE (linear meter scale)

**Amplifier Output Capability:**  $\pm 1$  mA into 1000  $\Omega$

**Amplifier Gain:** -40 to +100 dB

**Price:** \$495.00 (rack mounted Model 56AR, \$520.00)



### Sensitive DC Microvolt/ Picoammeter Model 95A

Unusually broad range of dc voltage and current measurements covered in 42 ranges. Front panel range and function switching uniquely simple and convenient. Zero center meter. Fast response. Amplifier output available at front panel. Amplifier output gain and reference level adjustable without interaction with meter. Either floating or grounded operation.

**Voltage Measurements:** 10  $\mu\text{V}$  to 1000 V fs; Accuracy,  $\pm 3\%$

**Current Measurements:** 1 pA to 1 A fs; Accuracy,  $\pm 4\%$

**Voltmeter Input Resistance:** 10 meg  $\Omega$ , all ranges

**Amplifier Output:** 1 V (fs) across 1000  $\Omega$

**Amplifier Gain:** 100,000, max.

**Price:** \$550.00 (rack mounted Model 95A-R, \$575.00)

For technical details use  
postage-free request card

Gentlemen:  
 Please send me technical information on: \_\_\_\_\_

I have a current need for equipment of this type  
 General interest only  
 Please have your Sales Engineering Representative phone for an appointment.

Phone: \_\_\_\_\_ Ext.: \_\_\_\_\_  
If we can assist you in any other way, please indicate how we may be of service:

Name \_\_\_\_\_ Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_ Zip code \_\_\_\_\_

cc-8

Gentlemen:  
 Please send me technical information on: \_\_\_\_\_

I have a current need for equipment of this type  
 General interest only  
 Please have your Sales Engineering Representative phone for an appointment.

Phone: \_\_\_\_\_ Ext.: \_\_\_\_\_  
If we can assist you in any other way, please indicate how we may be of service:

Name \_\_\_\_\_ Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_ Zip code \_\_\_\_\_

cc-8

FIRST CLASS  
Permit No.  
59  
Parsippany  
N. J.

BUSINESS REPLY MAIL

No Postage Stamp Necessary If Mailed in the United States

Postage Will be Paid by

**BOONTON  
ELECTRONICS**  
CORPORATION

ROUTE 287 AT SMITH ROAD  
PARSIPPANY, N. J. 07054



### DC Voltmeter/Amplifier Model 97A

Versatile, general purpose dc voltmeter providing high input impedance, good sensitivity, and high stability at moderate cost. Zero center meter. Amplifier output available at front panel and usable simultaneously with meter without interaction.

**Voltage Measurement:** 300  $\mu$ V to 1000 V fs in 14 ranges; accuracy,  $\pm 3\%$

**Input Resistance:** 10 meg  $\Omega$  to 100 meg  $\Omega$ , depending on range

**Amplifier Output:**  $\pm 0.5$  mA into 1500  $\Omega$ , or  $\pm 1$  V, unloaded

**Amplifier Gain:** 70 dB

**Price:** \$425.00 (rack mounted Model 97A-R, \$450.00)



### Differential DC Voltmeter/Amplifier Model 98A

A 3-terminal dc voltmeter capable of many measurements impossible with 2-terminal instruments, including measuring small differences between relatively large dc voltages, comparing a voltage to a known source such as a standard cell, or where grounding problems exist. Also usable in 2-terminal mode. Amplifier output available at front panel and usable simultaneously with meter without interaction.

**Voltage Measurement:** 300  $\mu$ V to 1000 V fs in 14 ranges; accuracy  $\pm 3\%$

**Input Resistance:** 10 meg  $\Omega$  to 100 meg  $\Omega$ , depending on range

**DC Common Mode Rejection:** Greater than 80 dB

**Amplifier Output Capability:** 0.5 mA into 1500  $\Omega$ , or 1.5 V, unloaded

**Amplifier Gain:** 70 dB

**Price:** \$495.00 (rack mounted Model 98A-R, \$520.00)



### RF Distortion Meters Models 85B and 85C

Convenient, simple means for measuring total harmonic content of rf signals. Particularly valuable in development and production testing of rf signal generators, oscillators, amplifiers, etc. Also usable as sensitive rf voltmeter, providing same characteristics as the Model 91C. Models 85B and 85C are identical except for fundamental frequency ranges.

**Fundamental Frequency Range:** 85B, 1 Mc/s to 100 Mc/s; 85C, 0.1 Mc/s to 6 Mc/s

**Distortion Measurements:** Sensitivity, 60 dB below 1 V; frequency range to approximately 300 Mc/s; Accuracy,  $\pm 2$  dB

**Input Impedance:** Approximately 50  $\Omega$

**RF Voltmeter Characteristics:** Identical to those of 91C

**Included Accessories:** 91-12E RF Probe; 91-13B Probe Tip; 91-8B 50  $\Omega$  Adapter

**Price:** \$900.00



### UHF Grid Dip Meter Model 101B

A compact, versatile instrument for a broad range of uhf measurements, including determining resonant frequencies of passive networks or oscillators and making relative power level or field strength measurements. Also useful as a calibrated variable uhf signal source with either modulated or cw output.

**Frequency Range:** 300 Mc/s to 1000 Mc/s

**Frequency Accuracy:**  $\pm 2\%$ ; scale hand calibrated

**Modulation:** Internally supplied 120 c/s am to approximately 30%; or external

**Output Capability:** At least 0.5 V into 50  $\Omega$  over entire range

**Price:** \$385.00

FIRST CLASS  
Permit No.  
59  
Parsippany  
N. J.

BUSINESS REPLY MAIL

No Postage Stamp Necessary If Mailed in the United States

Postage Will be Paid by

**BOONTON  
ELECTRONICS**  
CORPORATION

ROUTE 287 AT SMITH ROAD  
PARSIPPANY, N. J. 07054

**Automation Products** In addition to the laboratory instruments shown here, Boonton Electronics Corporation also produces a line of instruments for automatic measurement and control functions in high speed production. For information on "Automation Products", please use the attached postage free reply card.