BOONTON

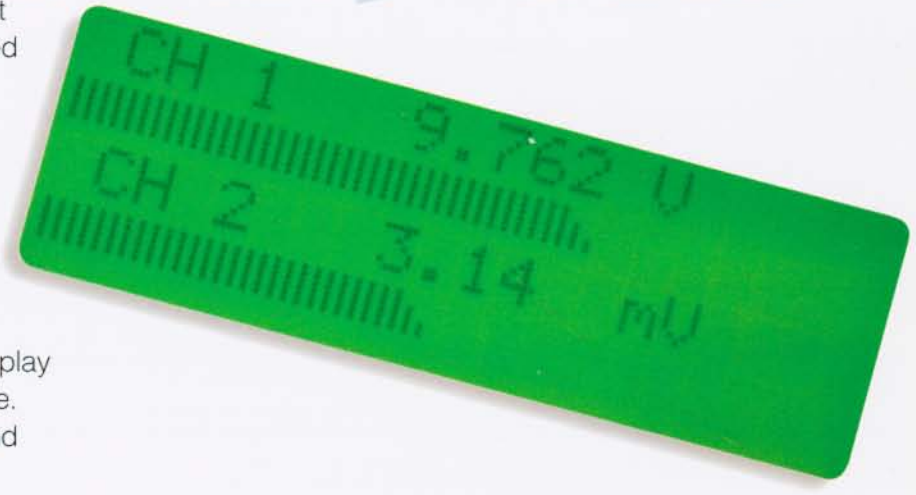
9230 Series RF Voltmeter

- 10 Hz to 2.5 GHz measurement range
- Dual-channel and differential voltage measurements
- 200 µV to 300 V measurement range
- 1% accuracy at full scale
- True RMS response below 30 mV
- Optional 50-ohm terminated sensor to 2.5 GHz
- Optional low-frequency probe for measurements from 10 Hz to 100 MHz
- DC recorder output
- IEEE-488 interface standard, RS-232 optional

The 9230 series is the latest addition to Boonton's popular 9200 series of RF voltmeters that combines accuracy, smart probes, and operator features that have never been available before in its price range. It is simple enough to use on the bench, and comprehensive enough to integrate into an ATE system.

Boonton's proven voltage probes directly measure from 200 µV to 10 V with usable indication as low as 50 µV and have true RMS response below 30 mV. A 100-to-1 divider allows operation to 300 V. Boonton's voltage probes and sensors allow the 9230 series to display power levels in dBm. The compact sensor data adapter allows any probe to download calibration data to the instrument automatically as soon as it is plugged in. Data for probes that do not have sensor data adapters can be stored in nonvolatile memory.

10Hz To 2.5 GHz



ADD A SECOND CHANNEL.

The 9230 series also can be specified with a second channel input that provides a duplicate set of input amplifiers and circuits with connectors for a second voltage probe or sensor. This feature allows the instrument to display channels 1 and 2 as well as ratio and difference. Other features include a DC recorder output and IEEE-488 interface (RS-232 optional).

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9230 Series RF Voltmeter

Boonton's legacy in RF Voltage Measurements is regarded by experts as second to none. The unsurpassed accuracy of previous generations of RF Voltmeters evolves into a high-performance RF Voltmeter, 9230 series. The specifications for the 9230 series and the voltage measurement specifications of the 5230 series are stated below.

Specification	Model 9230/Model 5230 Voltmeter specifications, RF Power Meter specifications opposite page
Voltage Range:	200 µV to 10 V in eight ranges (300 V to 700 MHz with a 100:1 divider). Indications to 50 µV.
Voltage Display:	1 mV to 300 V fs.
Decibel Range: dBmV dBV dBW dBm dBr	> 90 dB in eight ranges, 0.01 dB resolution. 0 dB = 1 mV 0 dB = 1 V 0 dB = 1 W 0 dB = 1 mW calculated from voltage drop across a selectable Z_r reference, 5 to 2000 ohms. 0 dB = any desired reference level. Reference level can be selected at front panel to 0.01 dB resolution if display range of +/- 99.99 dB is not exceeded.
Frequency Range:	10 kHz to 1.2 GHz, with 952001A probes. 100 kHz to 2.5 GHz with Model 952009 series voltage sensor. 10 Hz to 100 MHz with Model 952016 probe.
Waveform Response:	RMS to 30 mV, calibrated in the RMS of a sine wave above 30 mV (RMS to 3 V and 700 MHz with 100:1 divider).
Crest Factor:	**Direct Input**

Level	300 µV	1 mV	3 mV	10 mV	30 mV
Crest Factor	140	42	14	4.2	1.4

With Divider

Level	30 mV	100 mV	300 mV	1 V	3 V
Crest Factor	140	42	14	4.2	1.4

Input Capacitance:	Less than 1.5 pF.
Maximum AC Input:	10 V at all frequencies and ranges.
Maximum DC Input:	200 V at all frequencies and ranges.
Recorder Output:	10 V fs. proportional to indicated voltage in mV mode over each range. 7 V = 0 dBm regardless of Z_r in dB mode. Sensitivity of 1 V per 10 dB change over entire range.
Line Stability:	Less than 0.2% of reading with +/- 10% line voltage change at reference line conditions (115 to 120 VAC, 50 to 400 Hz).
Zero:	Automatic, operated by panel key switch. Usable after 5-minute warm-up.
Basic Uncertainty:	Voltage level (mV) — mV 3000 to 10,000: ± 2% of reading: ± 2 counts 3 to 3000: ± 1% of reading: ± 1 count 1 to 3: ± 2% of reading: ± 2 counts 0.2 to 1: ± 3% of reading: ± 3 counts
Options Available:	**Rack Mounting Kit** 95403001A **Rack Slide Kit** 95005901A **Sensor Data Adapter** 95109001A

Ordering Information:

9231	Single-input channel. Includes accesories as stated above.
9232	Dual-input channels. Allow display of channels 1 and 2 and ratio of channels expressed in dB.
5231	Single channel.
5232	Dual channel.

9230 SERIES PROBES (Not included in basic instrument)

Model Number	Description	Frequency
952063	Standard Probe	10 kHz to 1.2 GHz
952064	Low-Frequency Probe	10 Hz to 100 MHz
952009	50-Ohm Voltage Sensor	100 kHz to 2.5 GHz