

9240 Series
RF Voltmeter

Data Sheet



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The 9240 series is the latest addition to Boonton's popular 9200 series of RF voltmeters. It combines accuracy, smart probes, and operator features that have never before been available in its price range. It is simple 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. The voltage probes allow the 9240 series to display voltage levels in linear units. The compact sensor data adapter allows any probe to download calibration data to the instrument automatically as soon as it is plugged in.

Add a Second Channel

The 9240 series can also 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, IEEE-488 and RS-232 as standard interfaces.



Features

- 10 Hz to 1.2 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 low-frequency probe for measurements from 10 Hz to 100 MHz
- DC recorder output
- IEEE-488 interface standard, RS-232

* Probe Dependent



Specifications

Voltage Range	200 μ V to 10 V in eight ranges (300 V to 700 MHz with a 100:1 divider) indications to 50 μ V
Voltage Display	1 mV to 300 V fs
Decibel Range (> 90 dB in eight ranges, 0.001 dB resolution)	
	dBmV, 0dB = 1 mV
	dBV, 0dB = 1V
	dBW, 0dB = 1W
	dBm, 0dB = 1mW (Calculated from voltage drop across a selectable Z Reference 5 to 2000 Ω)
	dBr, 0dB = any reference level (Reference level can be selected at front panel to 0.001 dB resolution if display range of +/-99.99 dB is not exceeded)
Frequency Range	10 kHz to 1.2 GHz with 952001A probes 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 3V and 700 MHz with 100:1 divider)

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

Crest Factor

Direct Input

Level	300 μ V	1mV	3 mV	10 mV	30 mV
Crest Factor	140	42	14	4.1	1.4

With Divider

Level	30 μ V	100mV	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, all frequencies and ranges

Maximum DC Input 200 V, all frequencies and ranges

Recorder Output

10 V fs proportional to indicated voltage in mV mode over a range 7V = 0dBm regardless of Z. in dB mode, sensitivity of 1V per 10db 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, usable after 5 minute warm-up

Other Specifications

AC Power

Rated Voltage	100 to 240 VAC
Voltage Range	90 to 264 VAC
Rated Frequency	50/60 Hz
	400 Hz to max rated voltage of 120 VAC
Frequency Range	47 to 63 Hz, 400 Hz (90 to 135 VAC range only)
Power Consumption	35 VA

This instrument is designed for indoor use only

Operating Temperature	0° to +55 °C
Weight	5 lbs (2.3 kg)
Dimensions	8.26" (21.0 cm) wide 3.48" (8.9 cm) high 13.5" (34.3 cm) deep
IEEE-488 Interface	Complies with IEEE-488 and implements SH1, AH1, T6, L4, SR1, RL1, DC1, and DT1
RS-232 Interface	Complies with RS-232 (9-pin DCE)
Regulatory Compliance	CE compliance with the following European Union directives: Low Voltage Directive 2014/35/EU Electromagnetic Compatibility Directive (EMC) 2014/30/EU RoHS Directive EU 2015/863, WEEE Directive 2012/19/EU
Construction	Manufactured to the intent of MIL-PRF-28800F, Class 3



Ordering Information

- 9241 Single-input channel accessories as stated above
- 9242 Dual-input channels. Allow display of channels 1 and 2 and ratio of channels expressed in dB

Accessories Required

One or more of the available probe kits with sensor data adapter is required (one per probe included) to be ordered along with 9240 series

Accessories Available

41-2A/10	Sensor/Probe Interconnecting Cable (10 ft) A special low-noise cable that connects the power sensor to the power meter.
41-2A/20	Sensor/Probe Interconnecting Cable (20 ft)
41-2A/50	Sensor/Probe Interconnecting Cable (50 ft)
41-2A/100	Sensor/Probe Interconnecting Cable (100 ft)
95004701A	F/F Adapter, 41-2A
95004901A	Bulkhead Connector F/F
95403001A	Rack Mounting Kit 4241 Single Channel
95005901A	Rack Slide Kit 4242 Dual Channel
95109001A	Sensor Data Adapter
95006201A	Transit case (Holds the 4240 series & up to 4 sensors)

Options

- 01 Rear panel inputs
- 30 Warranty extension to 3 years

Probes

Model Number	Frequency Range	Power (dBm)
95206302A	Standard Probe	10 kHz to 1.2 GHz
95206402A	Low-Frequency Probe	10 Hz to 100 MHz



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