

8920A/8921A

**Table 1-2. 8920A/8921A Accessories
 (for C size instruments)**

ACCESSORY MODEL NO.	DESCRIPTION
Y2014	Rack Mounting Kit (single unit)
Y2015	Rack Mounting Kit (double unit)
Y2020	Panel Adapter (DIN size)

1-8. The PTI (Portable Test Instrument) case is a family of injection molded, plastic instrument packages of various sizes which may be stacked vertically and latched together to form portable test stations. When

instruments are stacked they should be limited to 40 pounds total, and the instrument drawing the most power should be on the top. Stacked instruments have a horizontal air space between them to reduce heat conduction between instruments.

1-9. SPECIFICATIONS

1-10. Detailed specifications for the Models 8920A and 8921A True RMS Voltmeter are given in Table 1-3.

1-11. Specifications, Options

1-12. Detailed specifications for the Models 8920A and 8921A's options are given in Table 1-4.

Table 1-3. 8920A/8921A Specifications

ELECTRICAL (Basic)	
The electrical specifications given assume an operating temperature of 23°C ±5°C, relative humidity up to 80% and a minimum 90 day calibration cycle.	
FUNCTIONS	AC true RMS, AC + DC true RMS
DISPLAY	Digital Display, Panel selectable for volts or dB: analog peaking/nulling meter.
RANGING	Autoranging, Hold to defeat Autoranging, step-up for manual up-ranging.
AUTORANGING POINTS	Ranging up at 2000 counts. Ranging down at 180 counts.
MAXIMUM INPUT	700V rms or 1000V peak, not to exceed 1 X 10 ⁸ volts-Hz product on any range.
RESPONSE TYPE	True RMS thermal converter, will accept: sine, complex, pulse or random waveforms.
RESPONSE TIME	1.6 seconds typically to rated accuracy within a range, composed of 1 second settling time and 0.6 seconds maximum digitizing time.
INPUT IMPEDANCE	2 mV to 700V range = 10 MΩ/shunted by < 30 pF.
CREST FACTOR	7 at full scale, increasing down scale by: 7 X V range ÷ V input.
FREQUENCY RANGE	2 mV range – 2 MHz maximum. 20 mV – 20V range = 20 MHz maximum. 200V – 700V range = 1 MHz maximum.
ELECTRICAL (VOLTS Display Mode)	
RANGES	2 mV, 20 mV, 200 mV, 2V, 20V, 200V and 700V.
RESOLUTION	0.05% of range.

Table 1-3. 8920A/8921A Specifications (cont)

ELECTRICAL (dB Display Mode)

dB RANGE In the autorange mode the instrument appears as though it has a single range spanning 132 dB. Transients will appear in the readout as the transition through which the analog voltage range points occur.

dB RANGE REFERENCES:

dBm REFERENCES Twelve manually selectable impedances with which to reference a 0 dBm, 1 mW signal level. Impedances are 50, 75, 93, 110, 124, 135, 150, 300, 600, 900, 1000 and 1200 ohms.

RELATIVE dB REFERENCE A voltage present when this switch is depressed to its REL position is held as 0 dB reference for all other voltages.

dB RESOLUTION 0.01 dB.

ACCURACY

The accuracy specifications given below apply to the volts and dB display modes at 9% to 100% of full scale, 23°C ±5°C, 90 days.

Table -1. AC: ±% of Voltage Reading or ±dB

INPUT VOLTAGE	RANGE	AC ACCURACY:								
		10 Hz	20 Hz	50 Hz	200 kHz	1 MHz	2 MHz	10 MHz	20 MHz	
180-700V 18.0-199.9	700V 200V	5% 0.5 dB	1% 0.15 dB	0.5% 0.1 dB	0.7% 0.15 dB	NOT SPECIFIED				
1.80-19.99 .180-1.999 18.0-199.9 mV	20V 2V 200 mV					3% 0.35 dB		5% 0.5 dB		
1.80-19.99 mV	20 mV					2% 0.25 dB	1% 0.15 dB	2% 0.25 dB	4% 0.4 dB	
.180-1.999 mV	2 mV					3% 0.35 dB	2% 0.25 dB	3% 0.35 dB	NOT SPECIFIED	
		10 Hz	20 Hz	50 Hz	200 kHz	1 MHz	2 MHz	10 MHz	20 MHz	

Temperature Coefficients: 20 Hz - 1 MHz .07%/°C; .006 dB/°C

(0°C-18°C, 28°C-50°C): 1 MHz - 20 MHz .1%/°C; .01 dB/°C

Table 1-3. 8920A/8921A Specifications (cont)

Table -2. AC + DC: ±% of Voltage Reading or ±dB

INPUT VOLTAGE	RANGE	AC + DC ACCURACY:							
		10 Hz	20 Hz	50 Hz	200 kHz	1 MHz	2 MHz	10 MHz	20 MHz
180-700V 18.0-199.9	700V 200V	3% 0.35 dB					NOT SPECIFIED		
1.80-19.99 .180-1.999 18.0-199.9 mV	20V 2V 200 mV								
1.80-19.99 mV	20 mV						See Table -3		
.180-1.999 mV	2 mV								

NOTE: DC only measurements can also be made using the 100 Hz accuracy specification.

Temperature Coefficients: 2 mV range 5%/°C; .5 dB/°C

(0°C-18°C, 28°C-50°C): 20 mV range and above .5%/°C; .05 dB/°C

Table -3. AC + DC Accuracy (2 mV range)

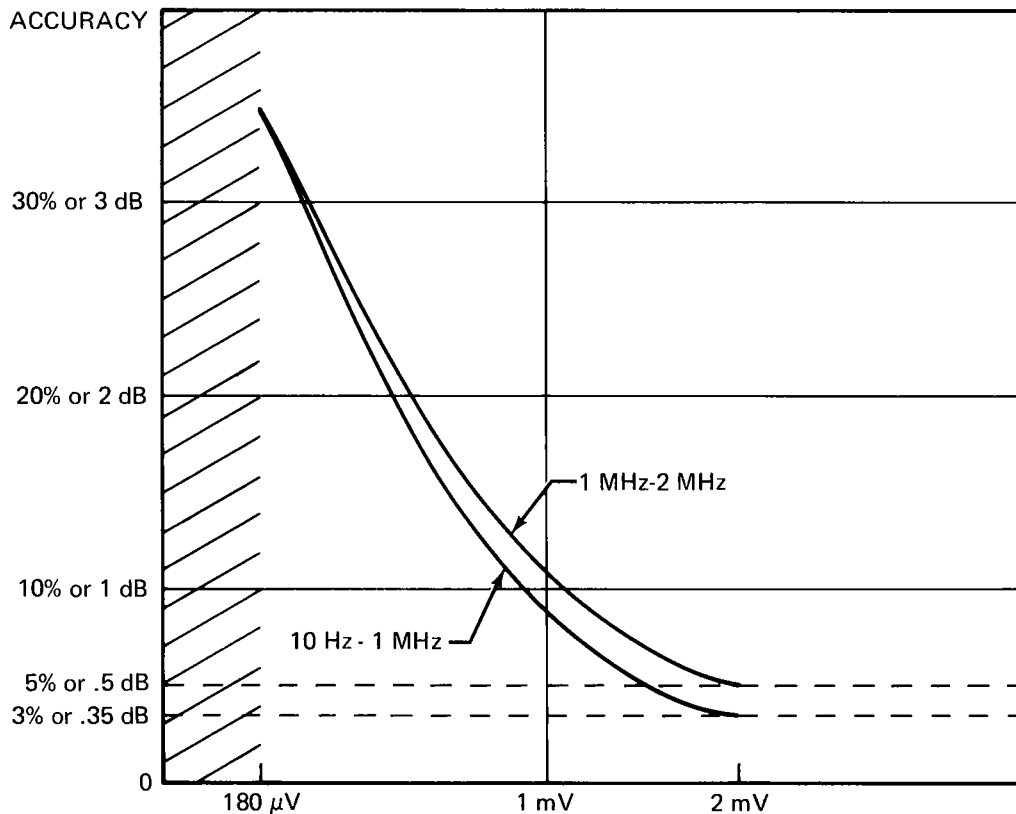


Table 1-3. 8920A/8921A Specifications (cont)

GENERAL

INPUT	8920A isolated BNC input floating up to .6V peak. 8921A isolated dual banana plus ground jack input.
DISPLAYS	5, 0.3" high, digit, 7-segment LEDs with automatic decimal point location and mV, V, dB, RELATIVE REFERENCE, and "2 MHz max annunciators". The display also incorporates an uncalibrated analog meter for nulling and peaking.
AUTORANGING RATE:	
VOLTS	700 ms max/range change; 2.2 sec max for 6 range changes.
dB	950 ms max/range change; 2.9 sec max for 6 range changes.
READING RATE	2.5 readings per second.
OVERRANGE INDICATION	Flashes maximum allowed reading for that range.
UNDERRANGE INDICATION	Flashes decimal point, but continues to display the reading.
MAXIMUM COMMON MODE	
VOLTAGE	8920A: 400 mV rms or 600 mV peak. 8921A: 500V rms or 700V peak.
INPUT COMMON MODE	
REJECTION	> 80 dB @ 50 or 60 Hz (with 100 ohms in either lead).
LINEAR ANALOG OUTPUT	
(8920A ONLY)	Each range provides a linear output with 2V dc equal to 2000 counts on the readout, $\pm 1.0\%$ of reading relative to display; essentially 0 ohm output resistance into a $>10\text{ k}\Omega$ load; non-isolated with output common the same as input common; provided only on the 8920A.
STORAGE TEMPERATURE	-40°C to $+75^{\circ}\text{C}$.
OPERATING TEMPERATURE	0°C to 50°C .
HUMIDITY RANGE	80% RH.
MTBF	Greater than 10,000 hours.
POWER	100V ac $\pm 10\%$, 120V ac $\pm 10\%$, 220V ac $\pm 10\%$, or 240V ac $\pm 10\%$ to 250V ac max. selected by internal switches, 45 to 440 Hz, 10 W max.
DIMENSIONS	40.3 cm (12.9 in.) long X 20.3 cm (8.0 in.) wide X 10.8 cm (4.3 in.) high.
WEIGHT	2.47 Kgm (5 lb. 7 oz.)