

With compliments

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# AF Power Meter

# 893B



Model 50893-321J with SINAD filter 14715j5

- Ten power ranges: 300  $\mu$ W to 10 W full scale
  - Frequency range: 20 Hz to 35 kHz
  - Impedance: 2.5  $\Omega$  to 20 k $\Omega$  in 48 steps
  - Balanced or unbalanced inputs
  - Direct calibration in watts and dBm
- Version available with SINAD filter

AF Power Meter 893B covers the wide power range of 300  $\mu$ W to 10 W full scale in ten ranges, and operates over the frequency range of 20 Hz to 35 kHz.

Power delivered by the source into a load provided by the power meter is measured by a temperature-compensated multi-range detector circuit feeding a voltmeter. Ten power range push-buttons are marked in voltage and in dBm, and the meter is calibrated with voltage scales marked from 0 to 3 and from 1 to 10, providing good resolution, and also with a dBm scale.

The required input impedance is obtained by means of a tapped transformer and switched resistive matching pads, providing 48 impedances between 2.5  $\Omega$  and 20 k $\Omega$ . Unbalanced inputs are provided by connecting across the two input terminals, and balanced inputs by connecting the centre tap of the source to the CT terminal.

Impedance of one quarter of the marked value (i.e. down to 0.625  $\Omega$ ) can be obtained by connecting the source between one input terminal and the CT terminal. Impedance is selected by means of two controls with colour coded panel markings, a six position IMPEDANCE SELECTOR and an eight-position IMPEDANCE RANGE MULTIPLIER.

A SINAD version of the power meter incorporates a switchable 1 kHz filter for making signal-to-noise measurements by comparison of two power level readings. An initial reading is taken with the filter switched out and a second reading with it switched in to remove the 1 kHz fundamental. The difference between readings on the dBm scale gives the SINAD ratio. The standard version of 893B can be converted for SINAD measurement by fitting a filter kit which is available as an optional accessory.

# 893B

## MODEL 50893-920M

### RANGE

<b>Power</b>	Ten power ranges with full scale deflections from 300 $\mu$ W to 10 W in a 1-3-10 sequence. Decibel ranges are provided with a 0 dB reference at 1 mW.
<b>Impedance</b>	48 impedance settings between 2.5 $\Omega$ and 20 k $\Omega$ , with an impedance selector of 2.5, 3, 4, 5, 6, 8, 6.25, 7.5, 10, 12.5, 15, 20 and with multipliers X1, X10, X100, X1000. Impedances of one quarter of the above settings (extending the range down to 0.625 $\Omega$ ) may be obtained using the input centre tap, but at reduced accuracy. The impedance of the power meter falls when it is connected into a circuit carrying d.c. At 50 Hz a drop of approximately 5% is produced by 60 mA d.c. at the 100 $\Omega$ setting, and by 4 mA at the 20 k $\Omega$ setting.

### ACCURACY

<b>Power</b>	$\pm 7\%$ of f.s.d. $\pm 10 \mu$ W, from 100 Hz to 10 kHz and from 5° to 35°C.
<b>Impedance</b>	$\pm 7\%$ at 1 kHz.

### FREQUENCY CHARACTERISTICS

Power level is less than 3 dB down (typically 0.7 dB down) at 20 kHz relative to level at 1 kHz.  
Power level is less than 1 dB down at 50 Hz relative to 1 kHz level.  
The instrument can be used over the extended frequency range 20 Hz to 35 kHz with reduced accuracy.

### TERMINALS

The high and low terminals are isolated from the case earth. A separate terminal is provided for linking to the case.  
The terminals will accept:  
Bare wires.  
Crocodile clips  
4 mm plugs (and pin type AVO leads).  
Spade type AVO leads.

### SAFETY

Complies with IEC 348.

### LIMIT RANGE OF OPERATION

<b>Temperature</b>	0° to 55°C.
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### CONDITIONS OF STORAGE AND TRANSPORT

<b>Temperature</b>	-40° to +70°C.
<b>Humidity</b>	Up to 90% relative humidity.
<b>Altitude</b>	Up to 2500 m (pressurized freight at 27 kPa differential, i.e. 3.9 lb/in <sup>2</sup> ).

### DIMENSIONS AND WEIGHT

Height	Width	Depth	Weight
153 mm	246 mm	338 mm	4 kg
6 in	9.7 in	13.3 in	8.8 lb

## MODEL 50893-321J

The specification for this model is the same as that given above with the following additions.

### SINAD FILTER

<b>Centre frequency</b>	1 kHz with the SINAD FILTER switch in.
<b>Rejection at 1 kHz</b>	At least 20 dB at 1 W input power. At least 30 dB at 300 mW or less. input power.
<b>3 dB bandwidth</b>	Not greater than 480 Hz.
<b>20 dB bandwidth</b>	At least 150 Hz.
<b>Power</b>	Maximum total input power with SINAD filter in circuit is 1 W.

### VERSIONS AND ACCESSORIES

When ordering please quote eight-digit code numbers

<b>Ordering numbers</b>	<b>Versions</b>
50893-920M	AF Power Meter 893B.
50893-321J	AF Power Meter 893B with SINAD filter.
50893-322F	AF Power Meter 893B. NATO version. Cat. No. 6625-99-541-2891.
	<b>Supplied Accessories</b>
	Instruction Manual 46881-349G.
	<b>Optional Accessories</b>
54499-041N	SINAD Filter Kit to convert model 50893-920M to model 50893-321J.
54124-023J	Stowage Cover Assembly.