Frequency Counters

SR625 — Frequency counter with rubidium timebase



Rubidium atomic timebase

- 2 GHz prescaler input
- 11-digit frequency resolution (1 s)
- 10 minute warm-up period
- 10 MHz Rb timebase output
- Statistical analysis & Allan variance
- Hardcopy to printers and plotters
- GPIB and RS-232 interfaces

SR625 Time Interval & Frequency Counter

The SR625 Frequency Counter is a NIST traceable frequency counting standard for calibrating base stations, transmitters and many other types of communication systems. It combines the high resolution and wide variety of features found in the SR620 counter with the atomic accuracy of a rubidium timebase.

Low Drift, High Accuracy

The SR625 Frequency Counter consists of a frequency counter (SR620), a high-accuracy rubidium timebase (PRS10), and a 2 GHz input prescaler. The combination of the SR620 and the prescaler allows direct frequency measurements up to 2 GHz with twelve digits of resolution in a 100 second measurement. The rubidium timebase ensures excellent short-term stability ($<2 \times 10^{-11}$ Allan variance (1 s)) and long-term drift ($<5 \times 10^{-11}$ /month).

Simple, Portable Operation

The SR625's warmup time is less than ten minutes, making it ideal for field applications. An additional back-panel output provides a rubidium stabilized 10 MHz signal which can be used to drive other test equipment (e.g., synthesizers or spectrum analyzers). The standard GPIB and RS-232 interfaces allow for complete control and data acquisition from any laboratory computer. The SR625's performance makes it the standard for remote applications or laboratory calibration.

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The following specifications relate to the 2.2 GHz prescaler and the rubidium timebase of the SR625. Please see the section on the SR620 for general specifications relating to the counter.

Rubidium Timebase

Frequency	10 MHz
Accuracy at shipment	$\pm 5 \times 10^{-11}$
One day stability	4×10^{-11} /day
Long-term drift	$<5 \times 10^{-11}$ /month, $<5 \times 10^{-10}$ /year
Short-term stability	
1 s Allan variance	$<2 \times 10^{-11}$
10 s Allan var.	$<1 \times 10^{-11}$
100 s Allan var.	$<2 \times 10^{-12}$
Warm-up interval	10 minutes to meet short-term
	stability specification
Power consumption	70 W (at warm-up),
	100/120/208/240 VAC,
	50/60 Hz

10:1 50 Ω +23 dBm

See graph

 50Ω

500 mV

10 MHz, 1 Vpp sine wave

50 MHz to 2.2 GHz

700 mVpp square wave

Output

Prescaler

Frequency ratio
Input impedance
Max. input level
Input freq. range
Input sensitivity
Output
Output load
Output amplitude
Output offset

General

Size	
Weight	
Warranty	

 $17" \times 3" \times 14.5"$ (WHD) 15 lbs. One year parts and labor on defects in materials and workmanship



Ordering Information	
SR625	Frequency counter
	(w/ Rb timebase and rack mount kit)



SR625 rear panel

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