MODEL 308-A RUBIDIUM FREQUENCY STANDARD

FEATURES

- LOW COST
- EXCELLENT FREQUENCY STABILITY
- HIGH RELIABILITY
- MODULAR CONSTRUCTION

DESCRIPTION

TRACOR introduced a rubidium frequency standard to the market over ten years ago. Since then, TRACOR has produced and sold more units than all other manufacturers combined. This knowledge and experience permits TRACOR to continue leading the field with the low-cost Model 308-A. Atomic accuracy is now available at near crystal prices. The Model 308-A is designed for applications in astronomy, navigation, metrology, communications, and wherever a precise and stable time base may be required.

The Model 308-A utilizes a stable quartz crystal oscillator whose frequency is controlled by the atomic resonance of rubidium 87. The stability of this atomic resonance is transferred to the crystal oscillator. Hence, the Model 308-A offers the short-term stability of a crystal oscillator and the long-term stability of an atomic resonator.

All TRACOR rubidium standards continue to exhibit a mean time between failures in excess of 25,000 hours. Options are available to provide additional outputs and standby D. C. powered operation. Other options and quantity prices for special systems are available on order.

SPECIFICATIONS

INITIAL FREQUENCY SETTING:	Factory set to $\pm 1 \times 10^{-11}$.
LONG-TERM STABILITY:	Better than 3×10^{-11} per month
SHORT-TERM STABILITY:	Better than 2×10^{-11} for one second averaging time.
OUTPUT:	5 MHz sinewave, 1 V rms minimum into 50 ohms.
SPECTRAL PURITY:	Harmonically related signals more than 40 dB below fundamental. Non-harmonically related signals more than 70 dB below rated output levels.
TURN-ON:	Frequency within 1×10^{-10} of previous value within one hour after turn on at 25°C ambient; within 5×10^{-11} after four hours, 0° to 50°C ambient.
INPUT VOLTAGE:	115 or 230 volts (switch selectable) ± 10%. 50-400 Hz single phase. 50 watts steady, 60 watts warm-up.

Tracor Instruments Tracor, Inc. 6500 Tracor Lane Austin, Texas 78721 Telephone 512:926 2800

ENVIRONMENT

OPERATING TEMPERATURE:	0°C to 50°C.
STORAGE TEMPERATURE	-40°C to 75°C.
OPERATING ALTITUDE:	To 40,000 feet.

MAXIMUM FREQUENCY CHANGE AS A FUNCTION OF:

AMBIENT TEMPERATURE:	1×10^{-10}, 0° to 50°C.
MAGNETIC FIELD:	1×10^{-11}, for any orientation in earth's field.
INPUT VOLTAGE:	1×10^{-11} over 20% voltage range, and in the event of switch over to standby power.

PHYSICAL SPECIFICATIONS

SIZE:	5¼" high, 19" wide, 17¼" deep behind panel. (13.3 cm x 48.3 cm x 43.8 cm)
WEIGHT:	31 pounds. (14.06 kg)

CONTROLS AND INDICATORS:

FRONT:	Fine Frequency Vernier settable with 1×10^{-12} precision over 2×10^{-9} range. Crystal Oscillator Centering Controls: Coarse and Fine. Loop Control Switch. Circuit Check Switch & Meter. Lock/Unlock Indicator Lamps.
REAR:	Power ON/OFF Switch. 115/230 v Switch.

OPTION A

ADDITIONAL FREQUENCIES:	1 MHz sinewave, 1 V rms into 50 ohms and 100 kHz sinewave, 1 V rms into 50 ohms.

OPTION B

ADDITIONAL OUTPUTS:	Output connectors on rear panel (normally on front only).

OPTION C

PROVISION FOR CONNECTION OF STANDBY POWER:	Connection for DC standby power, 23-31 volts DC, negative ground; to provide continuous operation during temporary failure of primary power. DC current requirement is 1.25 amp at 25°C. The recommended standby power source is the Tracor Model 312D.