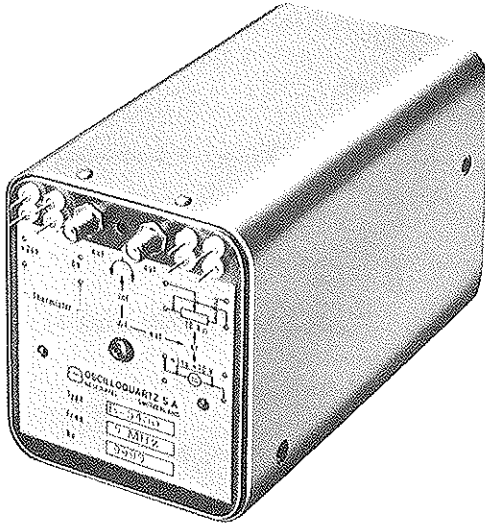


HIGH STABILITY QUARTZ CRYSTAL OSCILLATOR

B-5400



F E A T U R E S

- Lowest Phase Noise Commercially Available
- State-of-the-art Short Term Stability
- Aging below 1.10^{-10} per Day
- Voltage-Controlled Adjustment Permits Phase-Lock Operation in Communication Applications

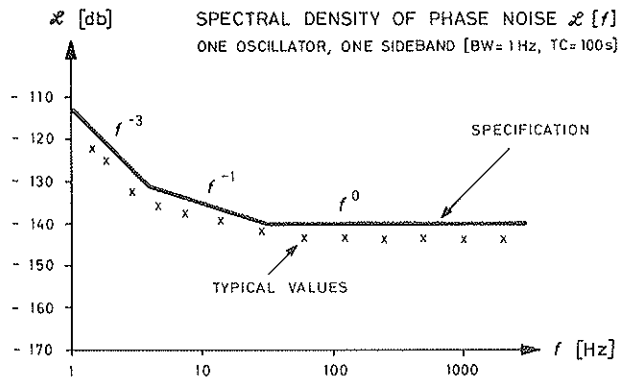
The Oscilloquartz B-5400 quartz crystal oscillator is a compact, versatile 5 MHz signal source combining exceptionally high short-term frequency stability with excellent spectral purity and long-term aging performance. Extremely low close-in phase noise (1 to 100 Hz away from the carrier) makes this oscillator ideal for narrow-band communication systems, frequency synthesizers, coherent radar and navigation systems, and other applications where signal multiplication to high frequencies is required.

Low drift rate and relative immunity to environmental effects permit direct utilization of the oscillator as the reference in many frequency measurement and timing systems. The external frequency-control voltage input allows phase-locked operation with other signal sources, in such applications as tracking receivers, atomic frequency standards, and sensitive noise-measurement systems.

T E C H N I C A L S P E C I F I C A T I O N S

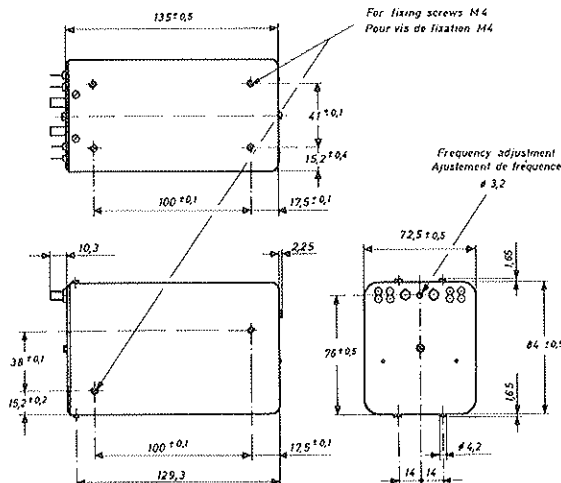
| | | |
|------------------|----------------------|--|
| <u>Output</u> | Frequency | : 5 MHz or another frequency between 4 and 7 MHz |
| | Voltage | : 2 outputs with each .5 Vrms into 50 Ω (short circuit protected), connector SMA |
| | Waveform | : Sinusoidal |
| <u>Stability</u> | Aging rate | : $< 1.10^{-10}$ per day after 90 days of continuous operation |
| | Short term stability | |
| | $\tau = 1$ s | : $\sigma_{\tau} < 1.10^{-12}$ |
| | $\tau = 10$ s | : $\sigma_{\tau} < 1.10^{-12}$ |

Phase spectral density : $S_{\delta\varphi} \approx 2 \mathcal{L}$ for $\delta\varphi$ very small



| | | | |
|-----------------------------|-----------------------------|----------------------|--|
| <u>Frequency adjustment</u> | Coarse adjustment range | : | $\geq 3,5 \cdot 10^{-7}$ with 20 turn potentiometer |
| | Electronic adjustment range | : | $\geq 1,5 \cdot 10^{-7}$ with external voltage +1 to +10 V |
| <u>Operating conditions</u> | Temperature | $\frac{\Delta f}{f}$ | $< 5 \cdot 10^{-10}$ over ambient range -30 to +55° C |
| | Load | $\frac{\Delta f}{f}$ | $< 5 \cdot 10^{-11}$ for a 10 % change from 50 Ω |
| | Supply voltage | $\frac{\Delta f}{f}$ | $\pm 5 \cdot 10^{-11}$ max. for 24 V ± 10 % |
| | Input voltage | : | +24 V (operates from +20 to +30 V) |
| | Input power | : | 11 W during warm up 3,5 W operating at 25° C |
| | Warm up time | : | 2.5 hours typ. |
| <u>Environmental</u> | Temperature | | -55° to +55° C |
| | Altitude | | 25000 ft (7,6 km) |
| | Humidity | | 95 % relative humidity at 55° C |
| | Vibration | | 1,5 to 0,5 mm peak to peak } (MIL-STD-167B) 8 to 50 Hz |
| | Shock | | 36 G 11 ms (all axes) |
| <u>Dimensions</u> | Size | : | 72,5 x 84 x 135 mm 2 55/64 x 3 5/16 x 5 5/16 inches |
| <u>Weight</u> | | : | 830 gr. 1,72 lbs |

Outline drawing



In accordance with our policy of continual improvement, we reserve the right to modify the design of any of our products without prior notice.

NOVEMBER 1982