



Dual Integrator Oscillator

Quadrature outputs (ie sine and cosine)

$$\text{Output frequency } F = \frac{1}{2 \pi RC} \text{ Hz}$$

To change frequency, change both R's or both C's.

Maximum frequency ~ 20 kHz

Minimum frequency ~ 0.016 Hz using $C = 1\mu 0$, $R = 10M$, and TL081 op-amps

Oscillation amplitude = $2x(\text{zener voltage} + 1V2) V_{pp}$

This oscillator provides two sinewave outputs with a phase shift of 90° with respect to each other, i.e: sine and cosine waveforms. The output frequency is relatively stable provided good components are used, and distortion figures below 0.1% are easily obtained.