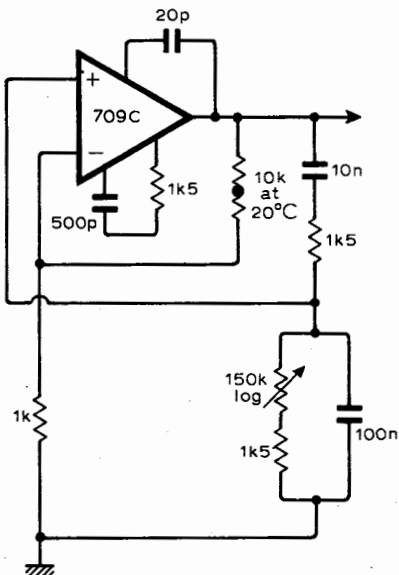


Wien oscillator with single component frequency control

Unlike the conventional Wien bridge oscillator, this circuit uses a single-gang potentiometer to control the frequency of oscillation. This is achieved by making the components in the two arms of the bridge in a large ratio to one another, in such a way that the attenuation of the network alters only slightly as one of the resistors is varied. Such a change of attenuation can then be compensated for by the usual thermistor in the negative feedback path of the maintaining amplifier.



Attenuation of the Wien network in the circuit, at zero phase shift, varies from 12 to 11.01 as the potentiometer is varied from zero to 150k Ω ; the frequency of oscillation varies by 10:1.

The circuit shown has been built and operates from 340Hz to 3.4kHz; it gives a constant output over the range. A log-law variable resistor is essential to achieve an even distribution of frequencies as the spindle is rotated. A 709C op-amp was used as one was to hand, but a 741 op-amp could be used without the need to include external frequency compensation components in the circuit.

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