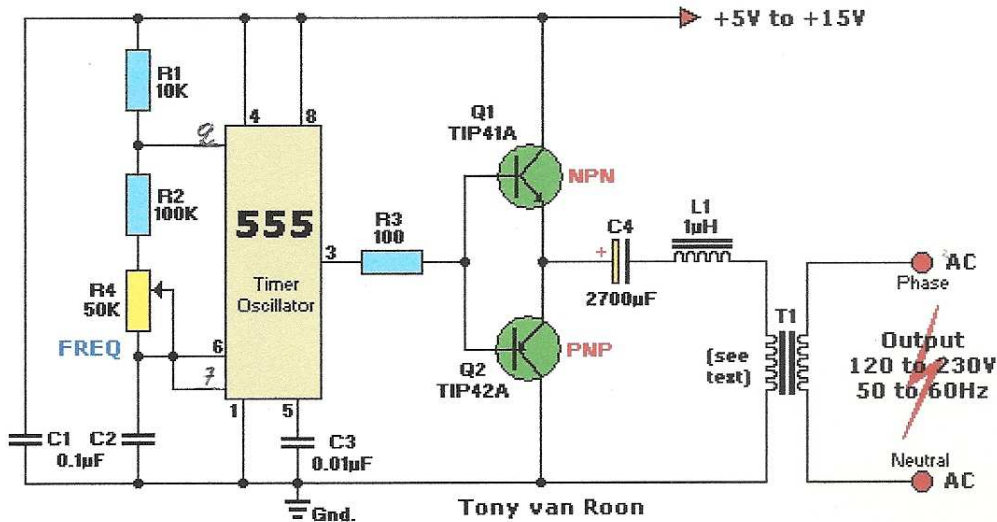


GELIJKSPANNING OMZETTEN NAAR WISSELSPANNING MET EEN "555" IC

DC to AC Inverter with the 555

<http://www.sentex.ca/~mec1995>



Error fix: Pin 7 and 2 were reversed. Original pinout was correct.

Parts List:

- R1 = 10K
- R2 = 100K
- R3 = 100 ohm
- R4 = 50K potentiometer, Linear
- C1, C2 = 0.1µF
- C3 = 0.01µF
- C4 = 2700µF
- Q1 = TIP41A, NPN, or equivalent transistor
- Q2 = TIP42A, PNP, or equivalent transistor
- L1 = 1µH
- T1 = Filament transformer, your choice

This DC-to-AC inverter schematic produces an AC output at line frequency and voltage. The 555 is configured as a low-frequency oscillator, tunable over the frequency range of 50 to 60 Hz by Frequency potentiometer R4.

The 555 feeds its output (amplified by Q1 and Q2) to the input of transformer T1, a reverse-connected filament transformer with the necessary step-up turns ratio. Capacitor C4 and coil L1 filter the input to T1, assuring that it is effectively a sine wave. Adjust the value of T1 to your voltage.

The output (in watts) is up to you by selecting different components.

Input voltage is anywhere from +5V to +15Volt DC, adjust the 2700µF cap's working voltage accordingly.

Replacement types for Q1 are: TIP41B, TIP41C, NTE196, ECG196, etc. Replacement types for Q2 are: TIP42B, TIP42C, NTE197, ECG197, etc. Don't be afraid to use another type of

similar specs, it's only a transistor... ;-)

If the whole thing is working, good. If not, relax and don't get frustrated. Do the following checks:

- 1) You have connected the filament transformer in **REVERSE** yes?
 - 2) If not, disconnect the power and reverse. If you have, disconnect the transformer and measure the voltage after L1 and ground.
 - 3) Just in case, **GROUND** for this circuit is same as negative (-).
 - 4) Q1/Q2 are opposites, e.i. npn/pnp.
 - 5) Is your 555 perhaps defective? Disconnect R3 from pin 3 and check **pin 3** for a pulse.
 - 6) Check your transistors to make sure they are not defective.
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