

≡ Pulse Induction Metal Detectors

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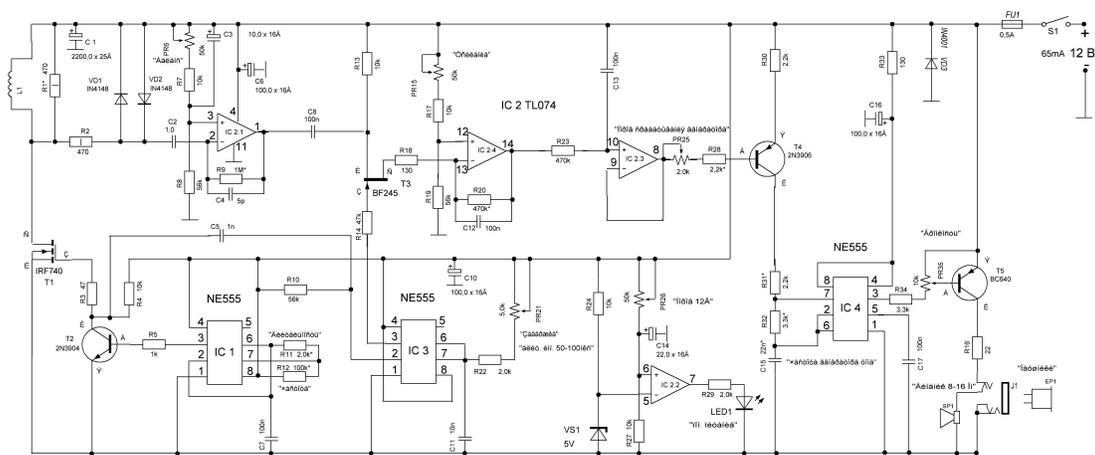
 SurfPI Pro metal detector

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VINTIK-PI V2 schematic

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Pulsed metal detector “VINTIK-PI” based on three ICs and four transistors, designed to search for small metal objects at great depths. The circuit does not contain any programmable micro-controller, and many parts are interchangeable.



The scheme differs from the previous version:

1. Added instead of the passive filter (R9-15, C8-10, see the previous version scheme) of the IC3-NE555 delay node on the chip and the T3-BF245 switch on the field-effect transistor. The delay pulse duration is adjusted by the PR21 trimmer (5 kΩ) in the range from 50 to 100 μs. In the previous version, the necessary part of the pulse was cut out by a passive filter on R9, R12, R14, C8, C9, C10. Now this makes a delay node with a key on a field-effect transistor (NE555 and BF245). With this solution, the task of setting up a metal detector is simplified, and the sensitivity increases by 5–7 cm, the current consumption also increased to 65 mA (depending on the supply voltage and the search coil used).
2. Added power control circuit on a free element (IC 2.2) TL074. When the power drops below 10V, the LED lights up. From 12 V to 10 V the circuit is still operational with a slight adjustment of the “gain” regulator. Sensitivity with a decrease in nutrition, of course, also decreases. The adjustment of the threshold is set by the resistance PR26 for the voltage of the battery that you use.
3. Changed the volume control scheme. Now the volume is adjusted more linearly. A more powerful transistor is installed at the output of the T5 (BC640), allowing you to connect both a headset and a speaker to the output. When headphones are connected, the speaker is turned off.

4. The scheme can use a search coil consisting of three turns of a computer cable “twisted pair” (without a screen), intended for laying indoors. You can also use a coil of ordinary enamelled wire.

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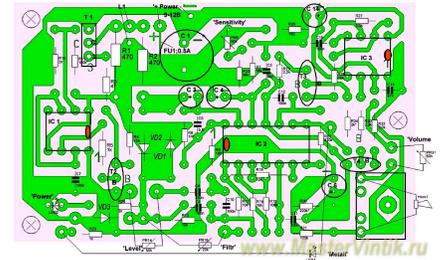
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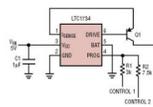
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