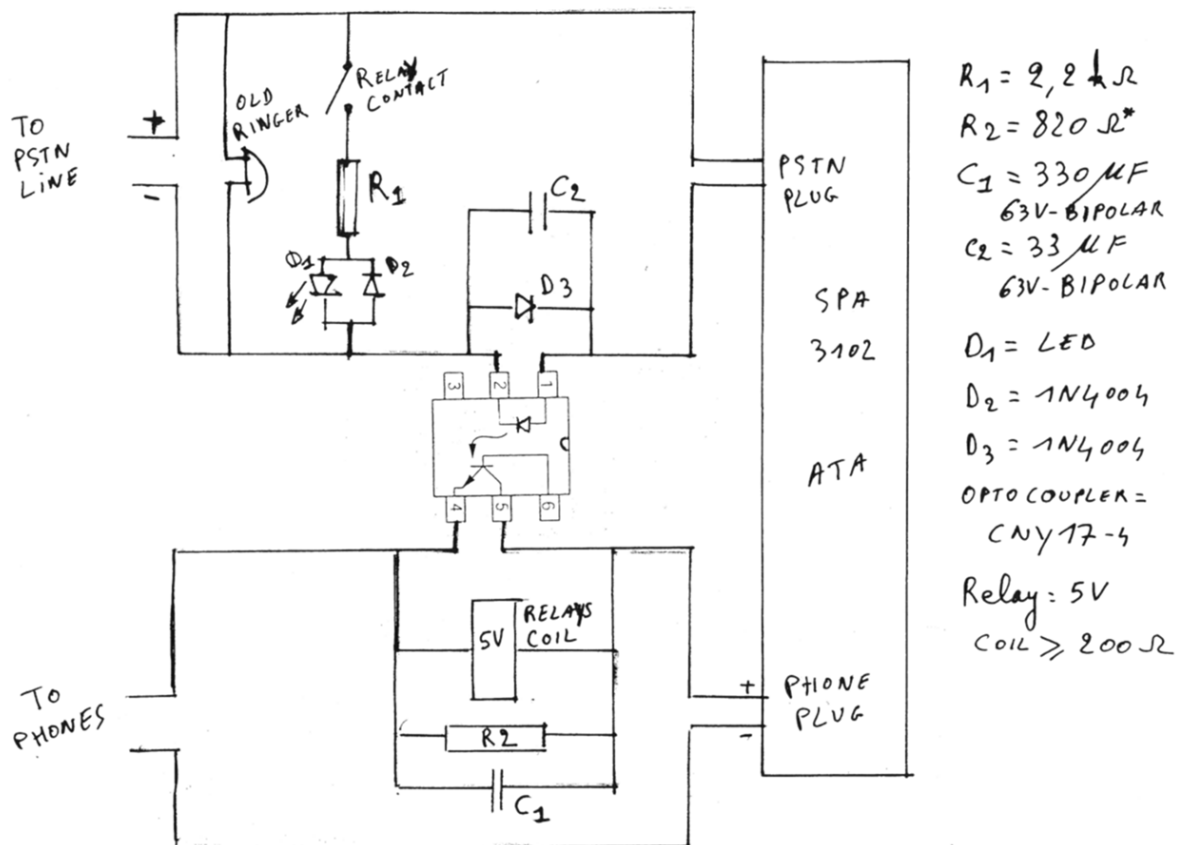


### Linksys SPA 3102: PSTN-line off-hook during voip call on Line1:



The relay coil is placed in series with the phone(s). It is activated when you take the phone off hook (20 to 25 mA). You have to choose a sensitive relay: coil resistance greater than 200 ohms. Best is 250 ohms (20 mA \* 250 ohms = 5 volt). R2 serves to adjust if the coil resistance is too high. I used a relay with resistance of 370 ohms → R2 = 820 ohms.

C1 is a bipolar elco (electrolytic capacitor), as used typically in speaker networks. It serves to pass through voice and ringer signals.

The contacts of the relay take the PSTN line off hook with R1. R1 must be low enough to simulate a phone current but not too low for the SPA3102. If the potential on the PSTN plug is too low, it refuses to dial out on the PSTN line.

The relay has to be inactive when you dial out on the PSTN line. This is achieved with the opto-coupler. It is activated when the SPA takes the landline off hook. The transistor shortens the relay coil. Hence all the current to the phone flows through the transistor in the opto-coupler and the relay is deactivated. C2 passes through the voice and ringer signals.

Take care of the polarity on the PSTN line plug and the phone plug of the SPA. D2 and D3 protects against polarity reversal.

In case you cannot find a suitable relay, I used part number 504282-89 at [www.conrad.com](http://www.conrad.com)