

Re: Help with 12 volt rocket igniter

Source: <http://sci.tech-archive.net/Archive/sci.electronics.basics/2008-03/msg00144.html>

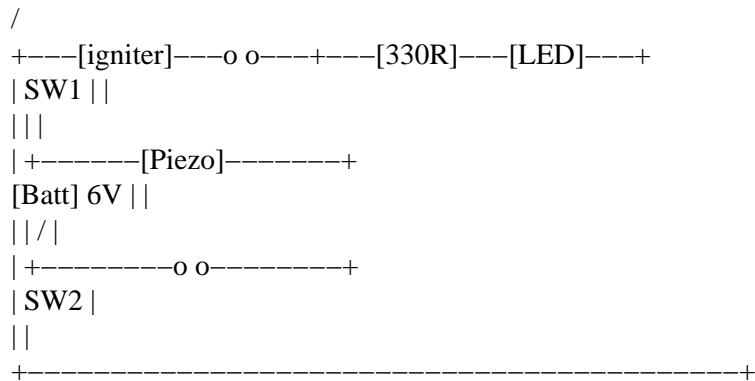
- From: ehsjr <ehsjr@xxxxxxxxxxxxxxxxxxxx>
- Date: Wed, 05 Mar 2008 06:50:14 GMT

ULB wrote:

On Mar 4, 10:50 am, Ecnerwal <LawrenceSM...@xxxxxxxxxxxxxxxxxxxx> wrote:

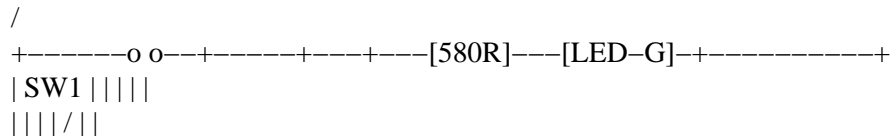
In article <nb4zj.7250\$6R.6969@trnddc04>,

ehsjr <eh...@xxxxxxxxxxxxxxxxxxxx> wrote:

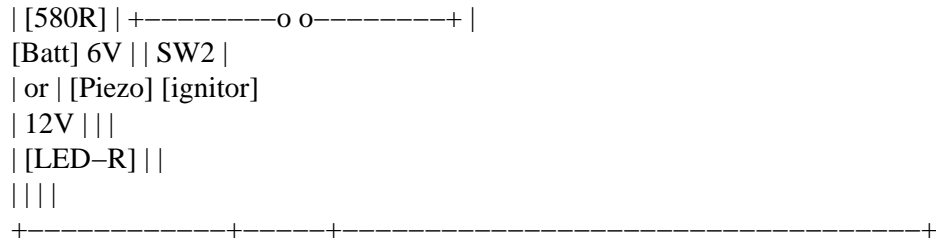


Use a piezo that draws 10 mA or less, such as CAT# SBZ-365 from AllElectronics, and the total draw for the LED and piezo will be under 20 mA. You can go to a 12 volt battery if you want, and change the resistor to 1K.

A slightly different, perhaps better, version:



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SW1 should be a keyed switch which can only have the key removed when off. The key should always be in hand when approaching the rocket.

The LEDs will light, albeit not very brightly, with 6V. In my experience, 12V is more reliable for launching, and easier to find. If doing a dedicated 6V version, go back to the 330 or 280 ohms.

In this version, LED-R (red) and the annoying noise both indicate that the arming switch (SW1) is on, and that there is power. If the annoying noise is on, don't approach rocket – that's an improvement (IMHO) over Ed's version in terms of safety, if using a noisemaker. The current from those does not pass through the ignitor.

LED-G (green) indicates a good connection of the ignitor wires (though it can't tell a short from an ignitor, so be careful when connecting wires at the rocket.) SW2 is the launch pushbutton.

Regardless of what circuit you use, remember not to approach the rocket for at least a minute in the event of a launch failure. Sometimes they smolder and go off.

If you like, you can replicate the right side of the circuit (beyond the piezo) to make a multiple-rocket launcher (where you'd set up 2 or more launch rods and rockets, and launch either at the same time, or in quick succession). In practice I've found that this is not usually very useful, as it increases the likelihood of losing the rockets, trying to track more than one at a time.

—
Cats, coffee, chocolate...vices to live by

Thank you all very much.

I went down to the local radio shack and got a bread board. Wired it all up. Everything seems fine. I do have two questions.

When I push the launch button all LED die off If an igniter is in place). I even tried using 12 volt incandescent lights minus the resistors and same problem. I am assuming this is because of the "short"? Is the above by design? Perhaps I mis wired it but I do not believe so. I played for 12 hours today. LOL.

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Yes, the circuit I provided is designed to turn off the LED when the launch button (sw2) is pressed.

Use a 12 volt tail light bulb in place of the igniter for your tests. See below for what the indicators should do.

Second question: While trying to mimic the Igniter (I went through 8 of them), I just used a jumper cable, same issue, all lights go off. However, if I leave the jumper on, boy does the battery (12 AA 1.5 volt) get hot. To the point I can tell something is definately amiss. I went back to Radio shack and got some diodes. Didn't fix the issue. I "Worry" about this as the final solution would be to use my car battery, and I certainly don't want to fry anything in the vehicle

With the 12 volt bulb installed in place of the igniter, you should be able to see (literally) if there is a wiring error. The 12 volt bulb must not glow until both switch 1 and switch 2 are on.

You mentioned 12 AA batteries – that gives you a total of 18 volts. Use 8 AA batteries to get 12 volts.

With a jumper installed in place of the igniter (not a good thing to do), the only way that batteries can get hot is if SW2 is in the on position. That assumes the system is "armed" by switch 1 in the on position. But aside from that, the jumper will short your batteries when switch 2 is on (again, if the circuit is "armed" by switch 1 being on). Don't use the jumper! You don't want to short your batteries, and you don't want them to get hot.

When you install a 12 volt bulb in place of the igniter, and use 12 volts to power the circuit, the indications should be as follows: (view in fixed font)

Condition INDICATORS
SW1 SW2 LED PIEZO BULB
=====
off off off off off
ON off ON ON off
ON ON off off ON

Ed

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Thank you all for any responses and helping a newb.