Re: switching circuit with multiple power sources

Source: http://sci.tech−archive.net/Archive/sci.electronics.basics/2005−08/msg00051.html

- *From*: "Dan Hollands" <dhollan3@xxxxxxxxxxxxxxx>
- *Date*: Mon, 01 Aug 2005 02:33:55 GMT

It seems to me a much simpler solution is to just use a 3 pole switch or
relay

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"Jim Alexander" <jalex@xxxxxxxxxxxx> wrote in message
news:dcjv3p$1dv2$1@xxxxxxxxxxxxxxxxxxx
>I have three digital cameras on which I need to remotely trigger the
> shutters simultaneously. Triggering a single shutter is normally done
> with a remote that simply shorts two pins in the remote cameras connector
> together (the shutter pin gets shorted to ground; there's actually also
> an autofocus trigger pin, but a circuit that works for the shutter should
> also work for the autofocus trigger).
>
> I don't want to risk just connecting all of these cameras in parallel
> directly to a single switch since I don't know anything about the
> internal electronics except what I can read off a multimeter, and so
> I'm not at all sure that shorting their internal power sources together
> is safe (and the cameras a very expensive, so I can't just try it and
> hope for the best).
>
> So my thought was to connect each pair of terminals to its own NPN
> transistor,
> and connect all three base terminals together, and connect the bases to
> yet
> another power source (probably consisting of a battery and a resistor)
> through
> a switch. Pressing the switch would allow current to flow into the base
> drive all three transistors to saturation, current would flow across the
> remote
> terminals, and a picture would be taken. Schematically, it looks something

> like this:
>
>
> /−− shutter 1 (V1)
> −−−−−−−−− T1
> | \−− ground 1
> |
> / | /−− shutter 2 (V2)
> −−−−Rb−−−−−−−−−/ −−−−+−−−−−−−− T2
> | | | \−− ground 2
> −−−bat−−−− |
> |A /−− shutter 3 (V3)
> −−−−−−−−− T3
> \−− ground 3
>
> Now my basic semiconductor electronics knowledge is pretty rusty. I know
> how to pick the right base resistor when I am trying to drive a single
> transistor to saturation, but it seems to me I will need more current
> to get all three transistors saturated. The transistors are not really
> connected in series or parallel since their E and C are connected to
> 3 independent power supplies, and their B terminal gets fed by a fourth
> power supply. Is it even kosher to not have the base and emitter connected
> to seperate supplies? Every switching circuit I've ever built used a
> single supply, but I don't know whether this is a necessity.
>
> Can anyone tell me if there are any serious problems in how I am trying to
> accomplish my goal? Or can anyone suggest a better way? Note that one
> reason I want to use transistors is I want the cameras triggered as close
> to possible to simultaneously, so switching needs to be fast. Also,
> the resistance across the switch needs to be negligible, so I don't think
> a 4066 IC would work for me. Any ideas would be appreciated.
>
> −−
>
> _____ Jim Alexander _____ jalex@xxxxxxxxxxxx
> _____
> I have yet to see a problem, however complicated, which, when you looked
> at it
> in the right way, did not become still more complicated. −− Poul
> Anderson

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- ***Follow−Ups***:
  - ♦ ***Re: switching circuit with multiple power sources***
    - ◊ *From:* Jim Alexander

- ***References***:

- ***switching circuit with multiple power sources***
  - *From:* Jim Alexander

- Prev by Date: ***Re: Air conditioner contactor snubber.***
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