

Re: How to wire a Reed Relay

Source: <http://sci.tech-archive.net/Archive/sci.electronics.design/2005-04/msg00223.html>

- *From:* John Fields <jfields@xxxxxxxxxxxxxxxxxxxxxx>
 - *Date:* Thu, 31 Mar 2005 15:48:05 -0600
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On 31 Mar 2005 11:18:46 -0800, "Lathe_Biosas"
<lathe_biosas@xxxxxxxxxx> wrote:

>Ross Herbert wrote:

>> Let's forget about your experiments, other than to say it is obvious
>> you don't know anything about electricity... The old adage that " a
>> little bit of knowledge is a dangerous thing" applies in your case,
>> but don't take this too personally. It is usually a good idea to ask
>> the questions BEFORE you start to blow expensive items up due to lack
>> of knowledge.

>

>Hi Ross,

>

>Thank you very much for your answer and time

>

>> You must apply +5V to terminal 6 and -VE to terminal 13 in order to
>> energise the relay.

>

>What does VE stands for?

>

>> The diode is for user configuration. In the usual arrangement the
>> diode is connected across the coil (insert strap between 13 and 9) to
>> SUPPRESS the back emf from the coil during release. The disadvantage
>> of this method is that the release time of the relay is increased
>> considerably but if this isn't a problem then connect it like this.

>>

>> The diode can also be wired in series with the coil by connecting +VE
>> to terminal 9 instead of 6 (leave 6 open or no connection). The diode
>> will now BLOCK the coil back emf during release to prevent damage to
>> the relay driver and will have the advantage of minimising the
>release

>> time of the relay. A small voltage will be dropped across the diode
>> (0.7V) but since the relay will operate reliably down to 3.5V this
>> shouldn't be a problem.

>>

>> You will need to check that your relay driver TTL output can source
>or

>> sink at least 25mA depending on your arrangement. What TTL driver are
>> you using?

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>
>
>If relay driver TTL output current is the output current at the
>terminal of the TTL chip, im getting 735 mVolts and 735mA . The TTL
>driver is a 74F00 I got those values setting the current probe
>sensitivity to 1 V/A (Unfortunately I don't know what is the meaning
>of V/A and neither if I actually I'm measuring the real current, sorry
>about that)
>
>As for now, I'm testing the relay as follows:
>
>Terminal 1 connected to 330 Ohm Resistance and resistance to Power
>Supply's GND
>Terminal 6 connected to Power Supply's +5 Volts
>Terminal 7 connected to a LED and LED to Power Supply's +5 Volts
>Terminal 9 and 13 connected to Power Supply Ground
>Terminal 14 and 8 are not connected (Seem to be the same as 1 and 7
>respective)
>
>Terminal 2 has two "states":
>
>a) Connected to Power Supply's +5 Volts -> The LED emits light
>b) Disconnected from Power Supply's +5 Volts -> The LED doesn't emit
>light and the relay makes click.

Something is very wrong if that's what's happening, because pin 2 is
an electrostatic shield and it looks like, on the drawing, it's
internally connected to pin 13. That means that if you connect pin 2
to +5V you'll be shorting out the supply and I have no idea why the
LED would come on. The other state makes a little more sense if
you've got the LED wired backwards, in that the relay would click ON
if you removed the short (disconnected pin 2 from +5V), but the LED
wouldn't come on.

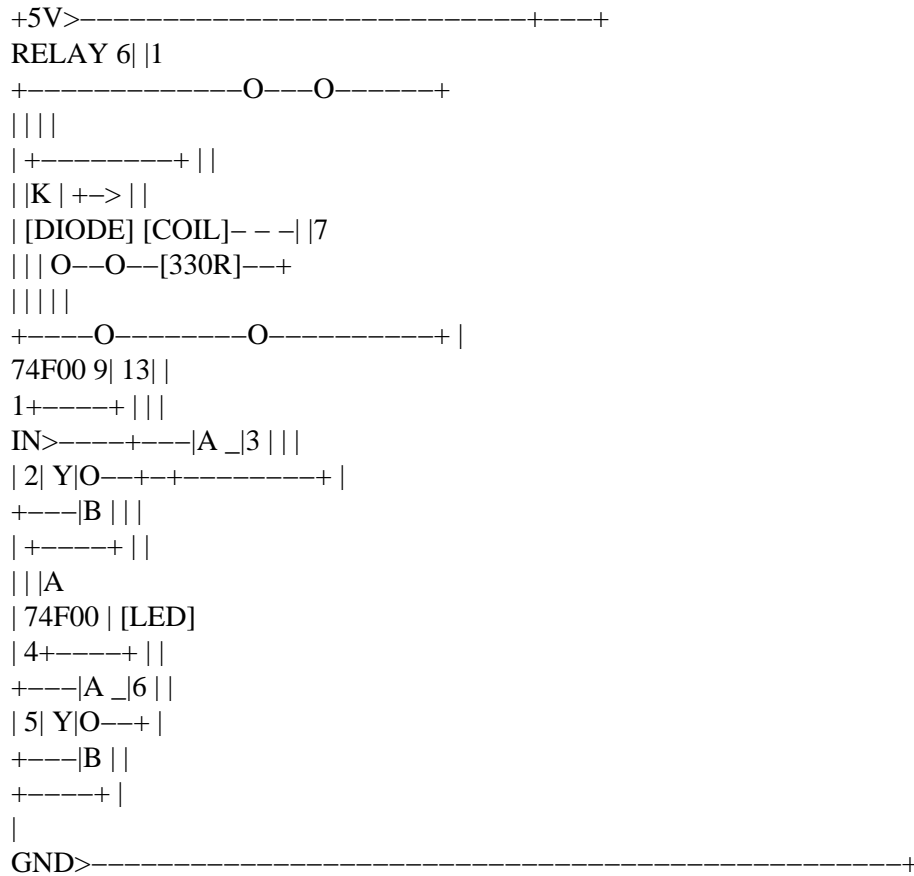
>
>If the test connection is ok, the following step would be to wire:
>
>- output of the 74F00 to Reed Relay's Terminal 1
>- input of a 74HC to Reed Relay's Terminal 7
>- output of an other 74F00 to Reed Relay's Terminal 2

ABSOLUTELY NOT!!! I don't mean to sound insulting, (unless you're a
troll) but you're either a troll or completely clueless, and this
discussion really belongs in sci.electronics.basic. But, since
you're here...

Here's what your circuit should look like if you want to use a 74F00
to drive the relay. Read it with a non-proportional font like Courier:

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Drive IN high and the relay contacts will close, turning on the LED, or drive IN low to open the relay contacts and turn off the LED.

That's ALL... Forget about the HC. You should also connect the unused F00 inputs to +5V

>

>As much as I can assume, the terminal 2 of the reed relay chip is the
>one that controls the "open" and "close" states between terminals 1-7
>and respective 14-8. Is this assumption right?

No. See above. What causes the relay contacts to close is simply the magnetic field which builds up around the coil when you connect it to a source of power. Pin 2 has nothing to with it, so forget it.

John Fields
Professional Circuit Designer

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- ***Follow-Ups:***
 - ◆ ***Re: How to wire a Reed Relay***
 - ◇ *From: Lathe_Biosas*

- ***References:***
 - ◆ ***How to wire a Reed Relay***
 - ◇ *From: Lathe_Biosas*
 - ◆ ***Re: How to wire a Reed Relay***
 - ◇ *From: Lathe_Biosas*

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