Re: Converting +/−50V source to 0−5V via diff amp?

Source: http://sci.tech−archive.net/Archive/sci.electronics.design/2006−09/msg00629.html

- *From*: Fred Bloggs <nospam@xxxxxxxxxx>
- *Date*: Sun, 03 Sep 2006 19:24:59 GMT

John Woodgate wrote:

> In message <44FAFE61.5090506@xxxxxxxxxx>, dated Sun, 3 Sep 2006, Fred Bloggs <nospam@xxxxxxxxxx> writes
>
> > Hey− thanks for catching that!− and here after all this time, I still can't even get simple resistor networks right. You're the man− quite quick and clever, very impressed here. I can see you're going to go places. Please tell us how you eventually solve this state of the art problem, We all will be in your debt! Anxiously awaiting your teachings...
>
> Fred − his second diagram is just upside down. Don't be too hard on him.
>
> To the OP: The best solution is to make it impossible to connect the supply the wrong way, by using a non−reversible connector. If you can't do that, you can either connect a diode in series (if the 0.6 V drop doesn't matter), or put a fuse in series and a diode across the input after the fuse, if you can tolerate an interruption if the polarity is reversed.

I'm just fed−the−@!#*()−up with these people jumping right into electronics when they haven't even passed Electricity I.

Anyway− he doesn't need anything except a rotated T, assuming input impedance >> 10K and forgetting about CMR which can usually be handled with good layout, and there are no "negative" voltages in this circuit:
View in a fixed−width font such as
Courier.

.
.
.
. Va >−−−−−−.

```
. |
. [120k]
. |
. +−−−−−−−−−+−−−−> IN
. | |
. [120k] [15k]
. | |
.. Vb >−−−−−−' |
.. −−−
.. ///
..
..
..
.. Va Vb IN
..
.. 50 0 5
..
.. 0 50 5
..
..
..
..

.
```