



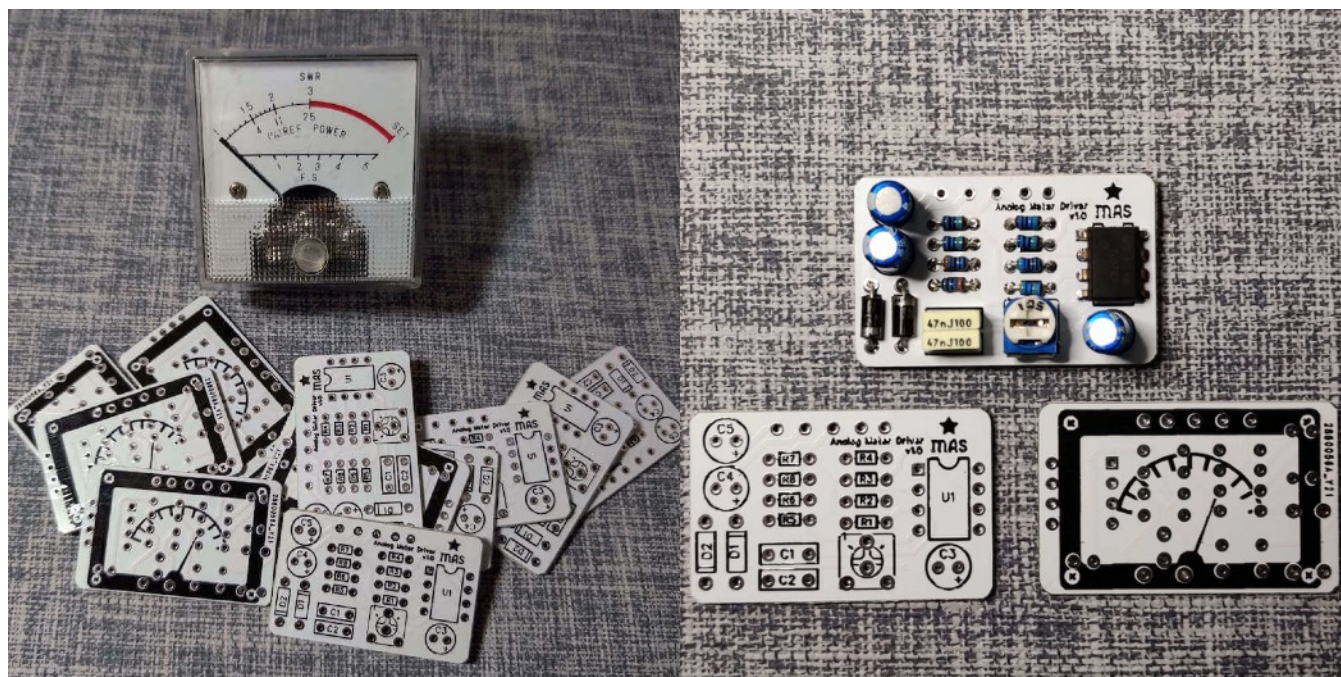
DC Meter Driver

mas-effects.com/vu-meter-driver/

Most VU meters these days are actually DC meters, so they need a rectifier. And if you're going to use them you typically want a buffer to prevent noise, too. The good news is you can get the meters dirt cheap, and scavenge them from battery testers, CB testers, and other old junk.

This PCB is a dead quiet, simple drop-in for any pedal, and should work with any DC meter.









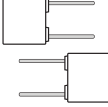








It powers a decorative dancing needle for your audio projects, but understand this isn't an ideal way to take measurements if accuracy is your goal.



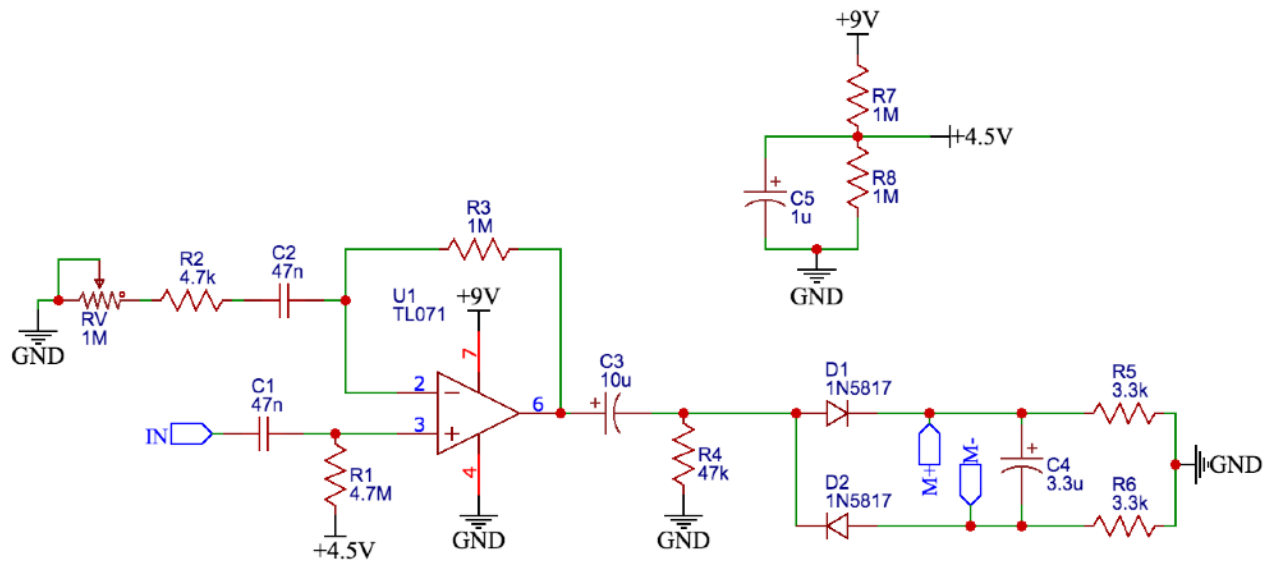
Bill of Materials

| Quantity | Name | Designator | Note |
|----------|--------|------------|--------------------------|
| 1 | TL071 | U1 | |
| 2 | 47n | C1,C2 | |
| 1 | 10u | C3 | Electrolytic |
| 1 | 3.3u | C4 | Electrolytic |
| 1 | 1u | C5 | Electrolytic |
| 1 | 4.7M | R1 | 1/8W or 1/4W |
| 1 | 4.7k | R2 | 1/8W or 1/4W |
| 3 | 1M | R3,R7,R8 | 1/8W or 1/4W |
| 1 | 47k | R4 | 1/8W or 1/4W |
| 2 | 3.3k | R5,R6 | 1/8W or 1/4W |
| 1 | 1M | RV | Trimmer or potentiometer |
| 2 | 1N5817 | D1,D2 | |

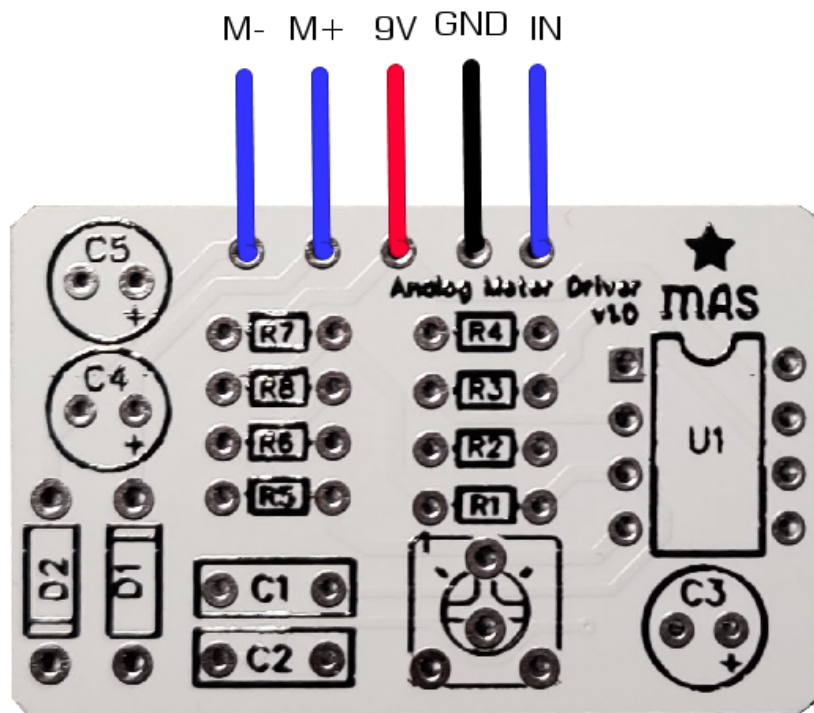
If you are building from a kit,
the components are presorted
in the order shown here

| | | |
|---|----|--------|
|  | R1 | 4.7 MΩ |
|  | R2 | 4.7 kΩ |
|  | R3 | 1 MΩ |
|  | R7 | |
|  | R8 | |
|  | R4 | 47 kΩ |
|  | R5 | 3.3 kΩ |
|  | R6 | |
|  | C1 | 47 nF |
|  | C2 | |
|  | C3 | 10 μF |
|  | C4 | 3.3 μF |
|  | C5 | 1 μF |
|  | D1 | 1N5817 |
|  | D2 | |
|  | U1 | TL071 |
|  | RV | 1M |

Schematic



Hookup



- M+ and M- go to your DC meter
- 9V and GND go to your power supply
- IN is the audio signal

Build Notes

Level Adjustment

The level can be adjusted using RV. Although the PCB has holes for a trimmer, you can absolutely use an off-board potentiometer, fixed resistor, or even multiple resistors selectable with a toggle switch.

Perhaps not surprisingly, you will find this responds differently to humbuckers and single coil pickups. Having an off-board potentiometer or toggle switch can make it a lot more convenient to use than a trimmer.

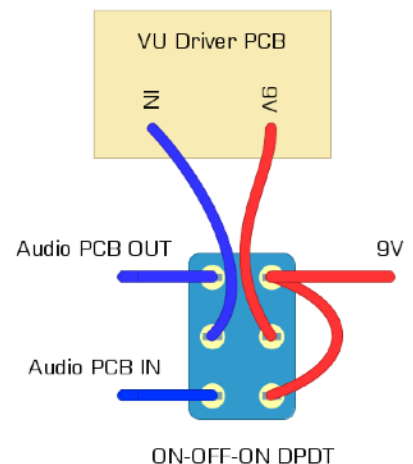
Tap Audio Before or After Effect?

When using this circuit in a guitar effects pedal, you may wonder whether to take the IN signal from your pedal's input or output. i.e. before or after your audio circuit processes the signal.

There's no right answer, and it's simply personal preference.

I actually prefer to use a toggle switch to let the player decide. What's more, I'll use an ON-OFF-ON switch to allow the middle position to cut power and audio signal to the meter's PCB, as shown in this illustration:

Taking the IN signal from your audio's PCB IN rather than directly from the input jack ensures this doesn't activate when your effect is bypassed.



Needle Speed

You can adjust the value of C4 to alter how quickly the needle rises falls back down.

100uF, for example, will slow it down considerably.

Reducing Bass Responsiveness

By default the low notes will push the needle harder than higher notes. If you want to counteract this you can try decreasing the value of either C2 or C3.

For example, changing C3 to 100nF will tame the needle when strumming heavily on the lower strings.

Problems? Questions? Share your build!

Visit the MAS Effects forum at reddit.com/r/maseffects/ to post questions, or to showcase your build.