



## INTRODUCTION

This is a short guide to the construction of the PMM MIDI Controller. It is not a comprehensive set of instructions.

For a simpler, more detailed build, please visit the [EQ Kit](#).

## OTHER FILES IN THIS ARCHIVE

- *PMM\_PartsList.xls*; *PMM\_PartsList.pdf*: List of all parts in this build.
- *Back.fpd*; *Bottom.fpd*; *Front.fpd*; *Top.fpd*; *Lid\_Top.fpd*: Aluminum Milling files for the enclosure, for use with [Front Panel Designer](#).
- *Lid\_Negative.svg*: Vector graphics file for the lid.
- *Rotary\_Switch\_Notes.jpg*: A crude guide to wiring the ladder resistor chain to the rotary switch. See “Rotary Switch” for details.

## LED SWITCH

When connected in the following manner, the LEDs in the PMM will behave based on switch position, instead of requiring a MIDI output from the UMC:

1. LED Anode: +5V on UMC with 100Ω resistor.
2. LED Cathode: IO pin on UMC.
3. Switch, Pole 1: GND on UMC.
4. Switch, Pole 2: SAME IO PIN as LED Cathode.

## ROTARY SWITCH

By laddering 10K resistors between contacts, a single rotary switch will behave like a selector switch, “jumping” to various points on the 0 > 5V (CC: 0-127) spectrum.

*Rotary\_Switch\_Notes.jpg* shows how this was done with the Alps switch in the parts list.

- In the diagram, the 15K resistor is used to force a 6-position switch to operate the first 6 parameters of a 7-position MIDI control.
  - The 15K resistor trick isn’t needed with versions of MiniMoogV newer than 2.5, as it has a built-in scaling parameter.
- This is not an ideal performance solution. Between actuations, the rotary switch will send a CC signal of 127 or 0.
  - In other words, for a few milliseconds while you’re turning the switch, it’ll jump to one extreme. The moment the switch reaches its “notch,” it will behave properly.
- This is a cumbersome manual wiring job. If your enclosure can fit it, [this helper board](#) will save quite a bit of time.

## FIT AND FINISH

This is a VERY tight build. It was designed to be as portable as possible. Clearances are incredibly narrow, and in some cases, require grinding down of parts to achieve a proper fit. Use as small a gauge of wiring as possible, and keep in mind that some pots need to be mounted upside-down to fit the top panel.