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How To Make Nice Looking DIY Front Panel

- Tutorial

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by JumperOne

Want to make really nice looking front panel for your next DIY project? Then you're in the right place!

First you're gonna need to have some basic tools and materials:

- InkJet or Laser printer(Color InkJet is better)
- Utility knife or X-Acto knife (X-Acto knife is better)
- Pair of scissors
- General Usage Labels (self-adhesive white paper)
- Self-Adhesive Laminating Sheet (self-adhesive clear film)
- Imagination!

I am using labels and laminating sheets from www.Avery.com. Quality is ok, I guess, although adhesive side of labels could've been slightly more sticky. I haven't used any other brands, so I can't compare it to anything else on the market.

Measure twice, cut once

In this example I designed front panel board using Eagle 6.1, which has Dimension tool that let's you do stuff like this:
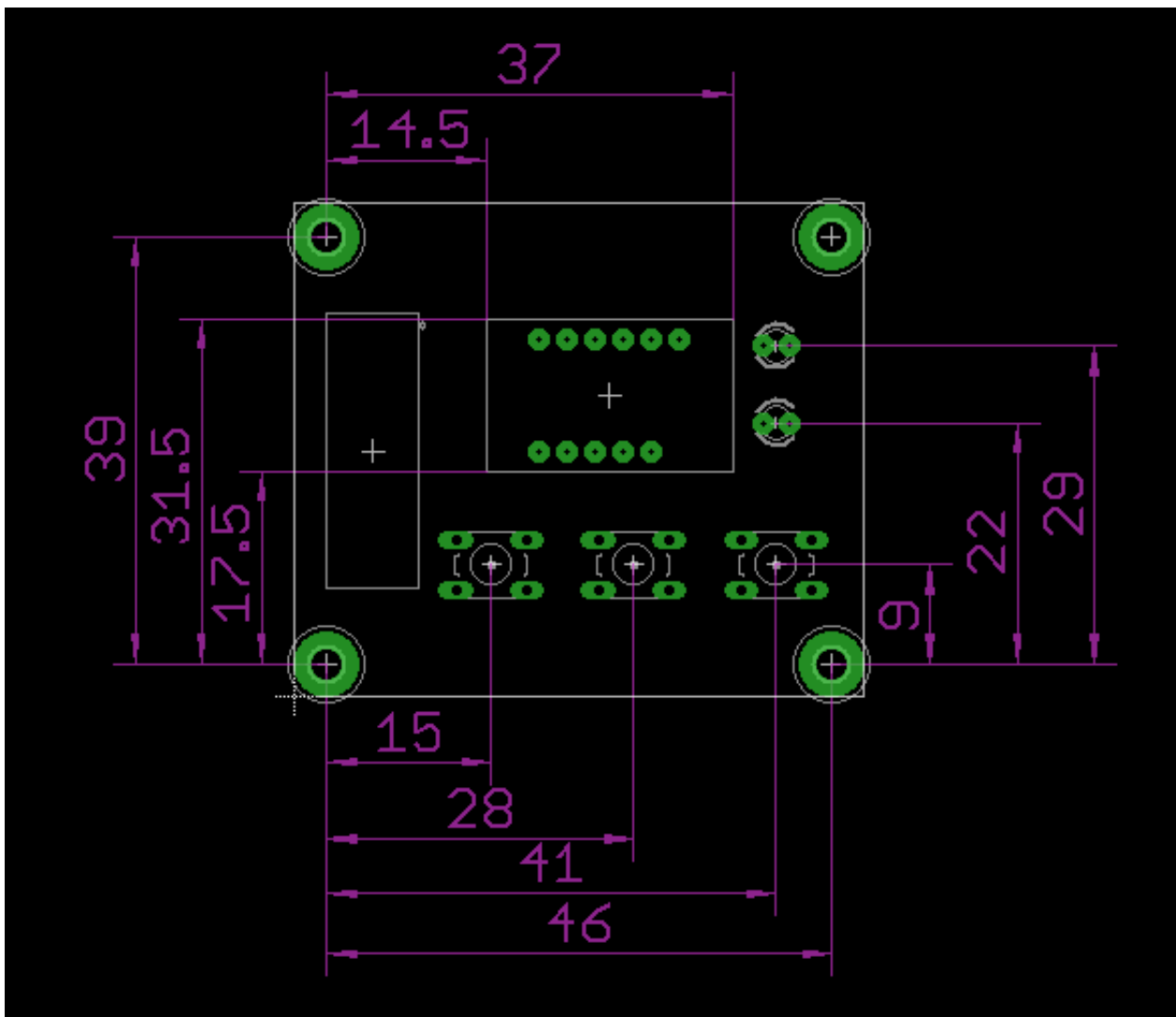

This kind of information about board dimensions and components placement would be essential for designing front panel labels, where you need to know where all the switches, buttons, displays and other components are.

Art school degree, anyone?

For designing front panel label I've used free vector graphics software called Inkscape (inkscape.org). But you can use any number of vector graphics or CAD software out there. Whatever tool you're most familiar with, as long as it supports absolute dimensions, so you can tell it exactly where all the components should be.

As you can see in this screenshot, the front panel label is pretty much done, and it has all the hole centers marked – you would need that to drill holes in the right places.
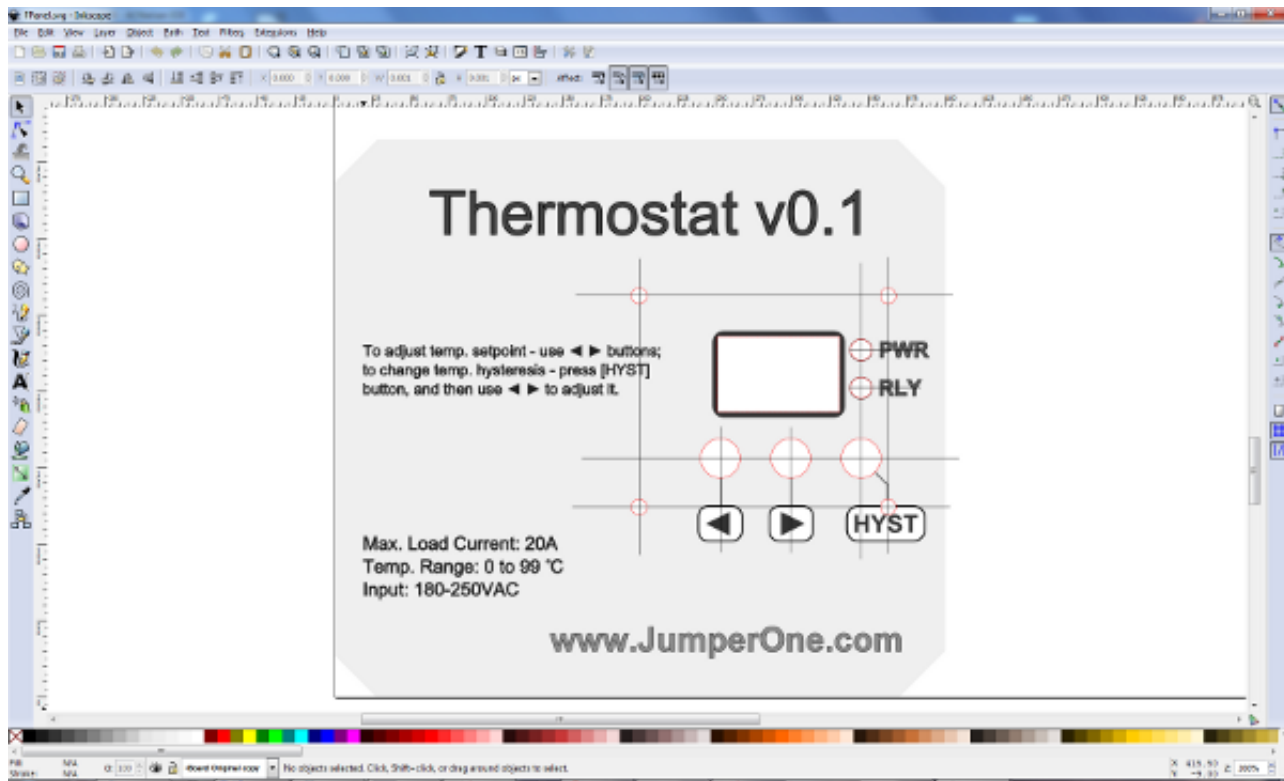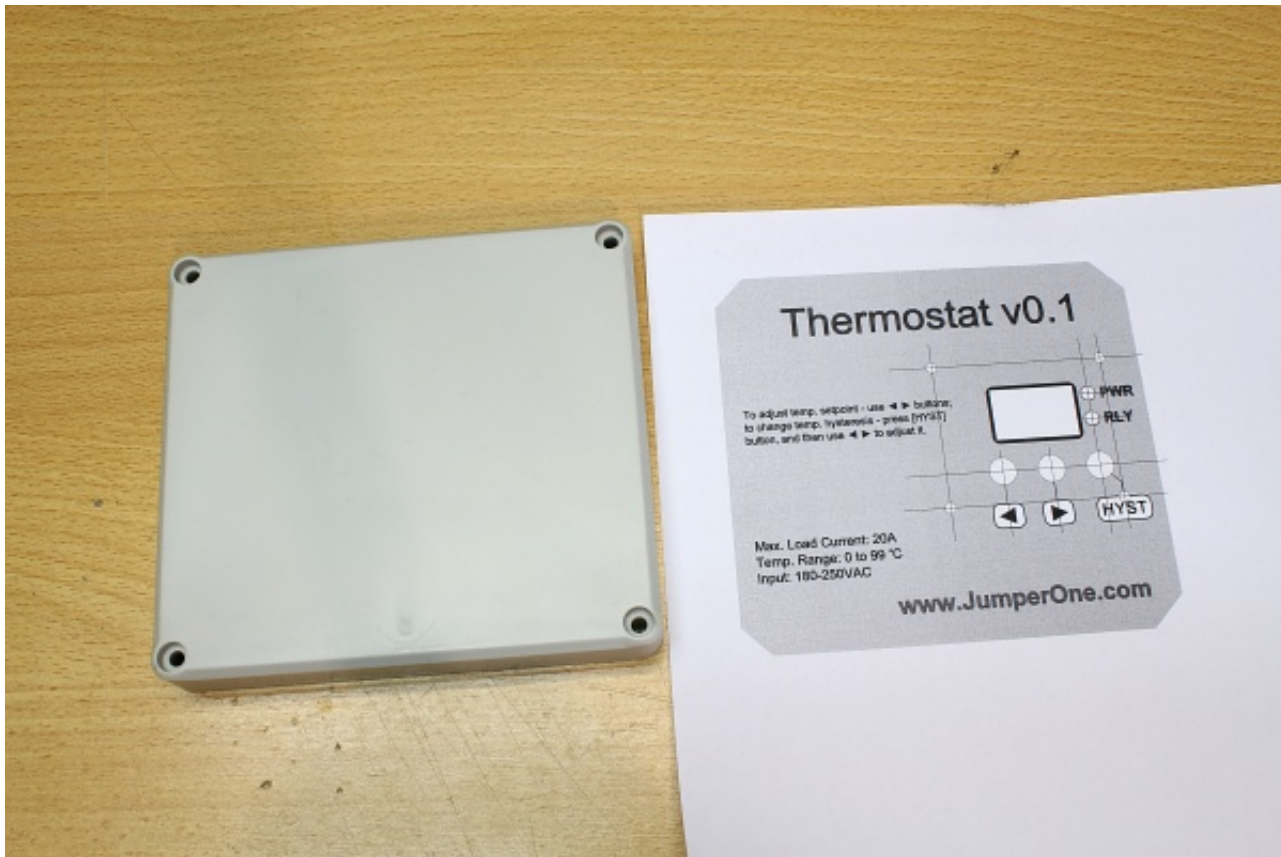

And this is how front panel label looks like when it's done. Btw, I've messed it up a bit – I should've made display and LED centers white, instead of gray.
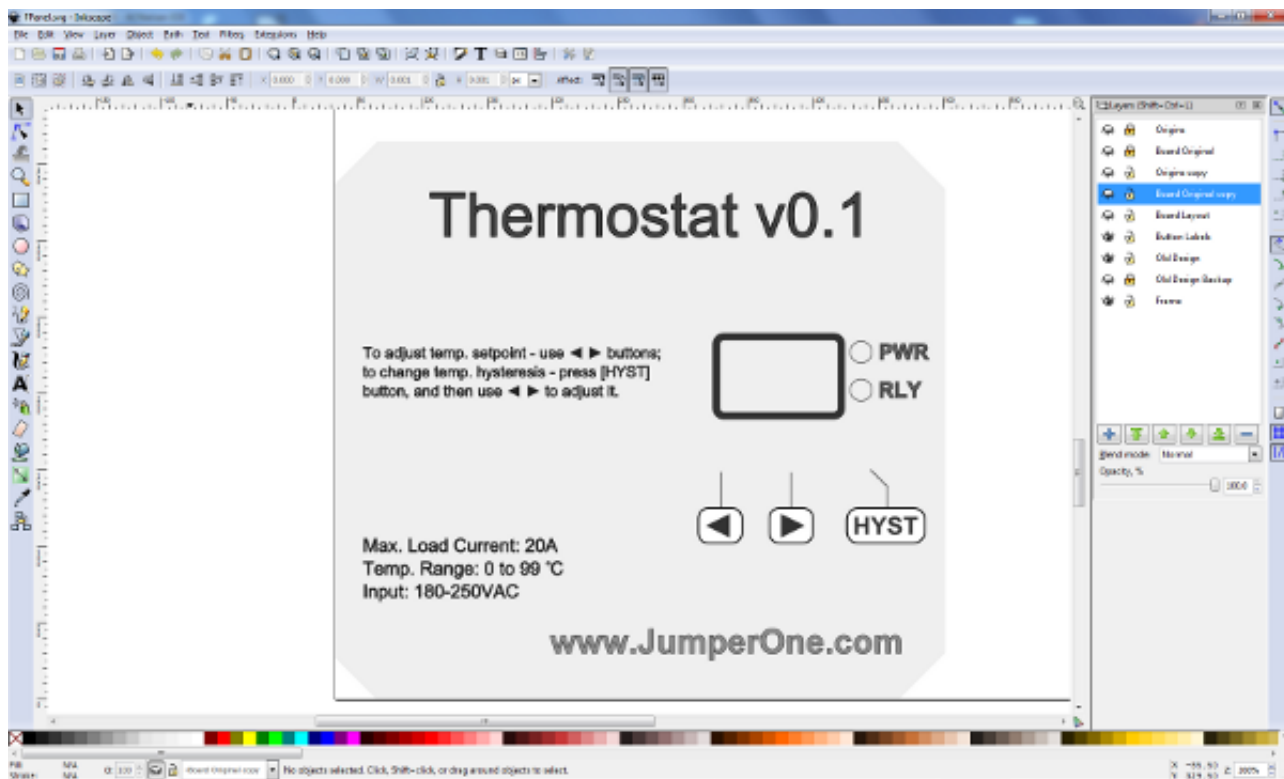
# It's time to get your hands dirty!

Print out label on an ordinary paper, see if it fits nicely and if all the control elements is in the right place. It might take you many iterations until you get satisfying results.

When you've got label printed with all the component centers marked, take some needle(if it's plastic case)

or some kind of marker or center punch to mark all the component centers, after label has been aligned with front panel.
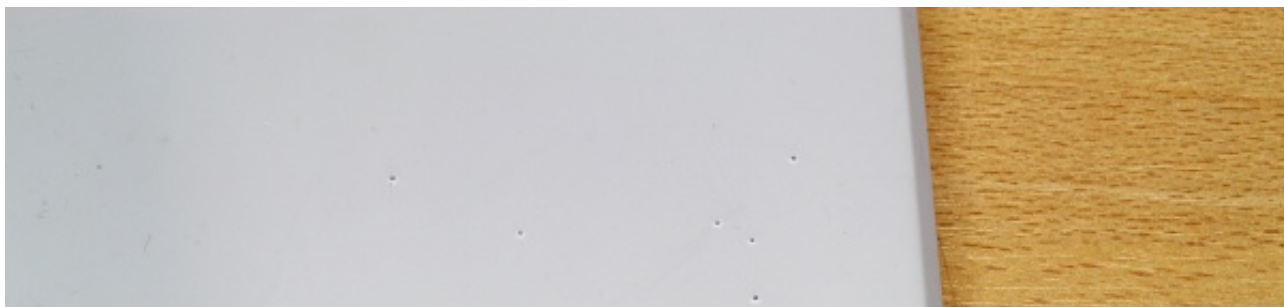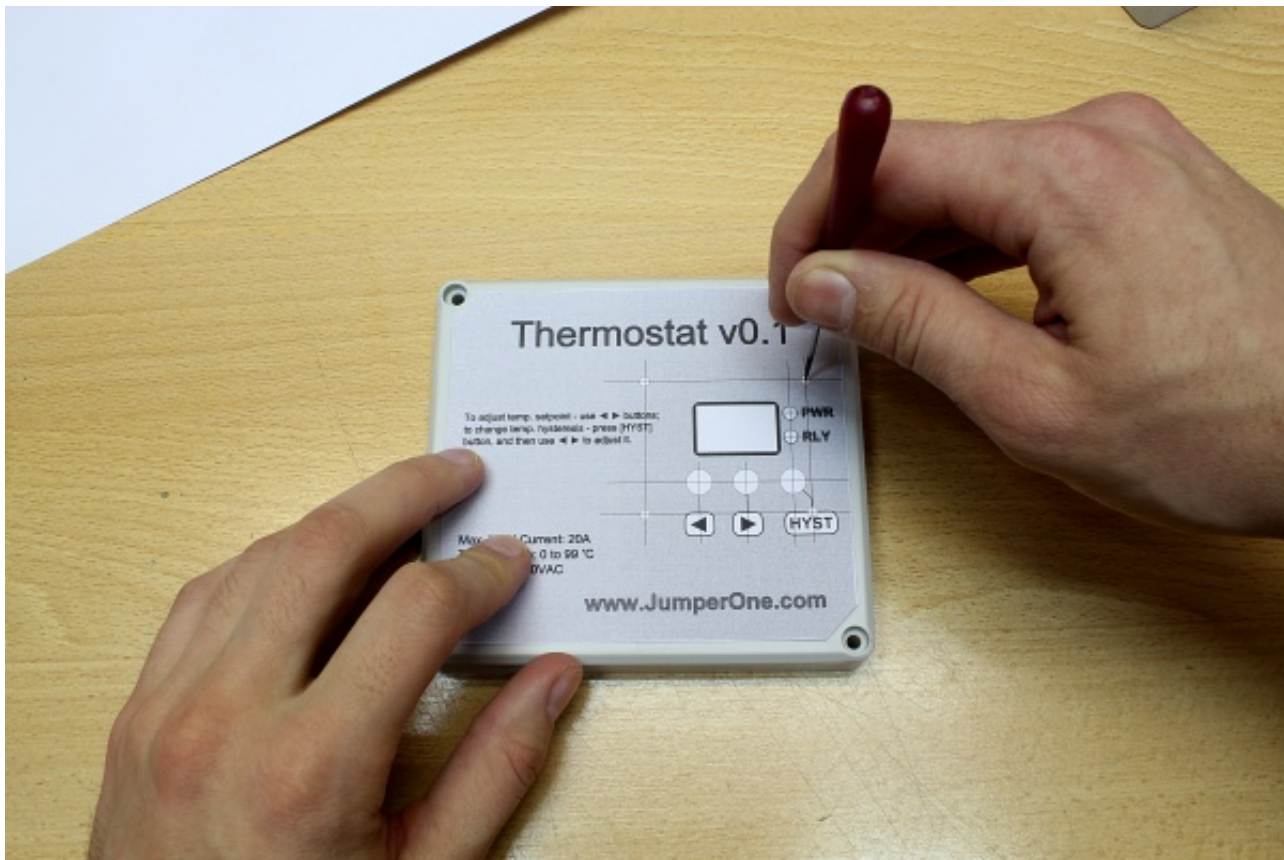

Make appropriate size holes for all the stuff you will have on FP. And make sure you start-off with smaller size drill bits and gradually make your way up.

P.S. Please, don't ask me about this hand drill. Just go out there and buy yourself a Dremel.

I intentionally haven't tried to make nice straight cuts for a display, to show you that it doesn't really matter, because you won't see any of it behind the front panel label.
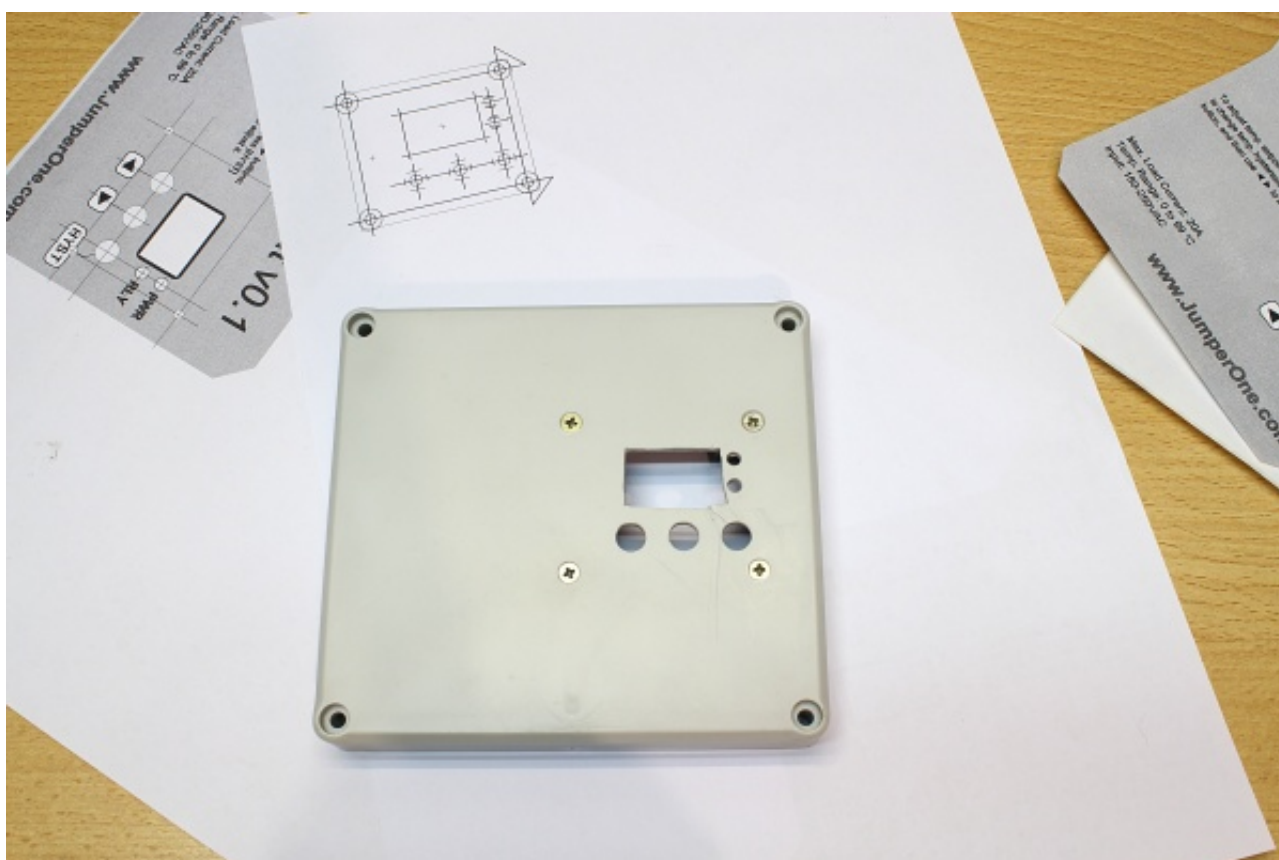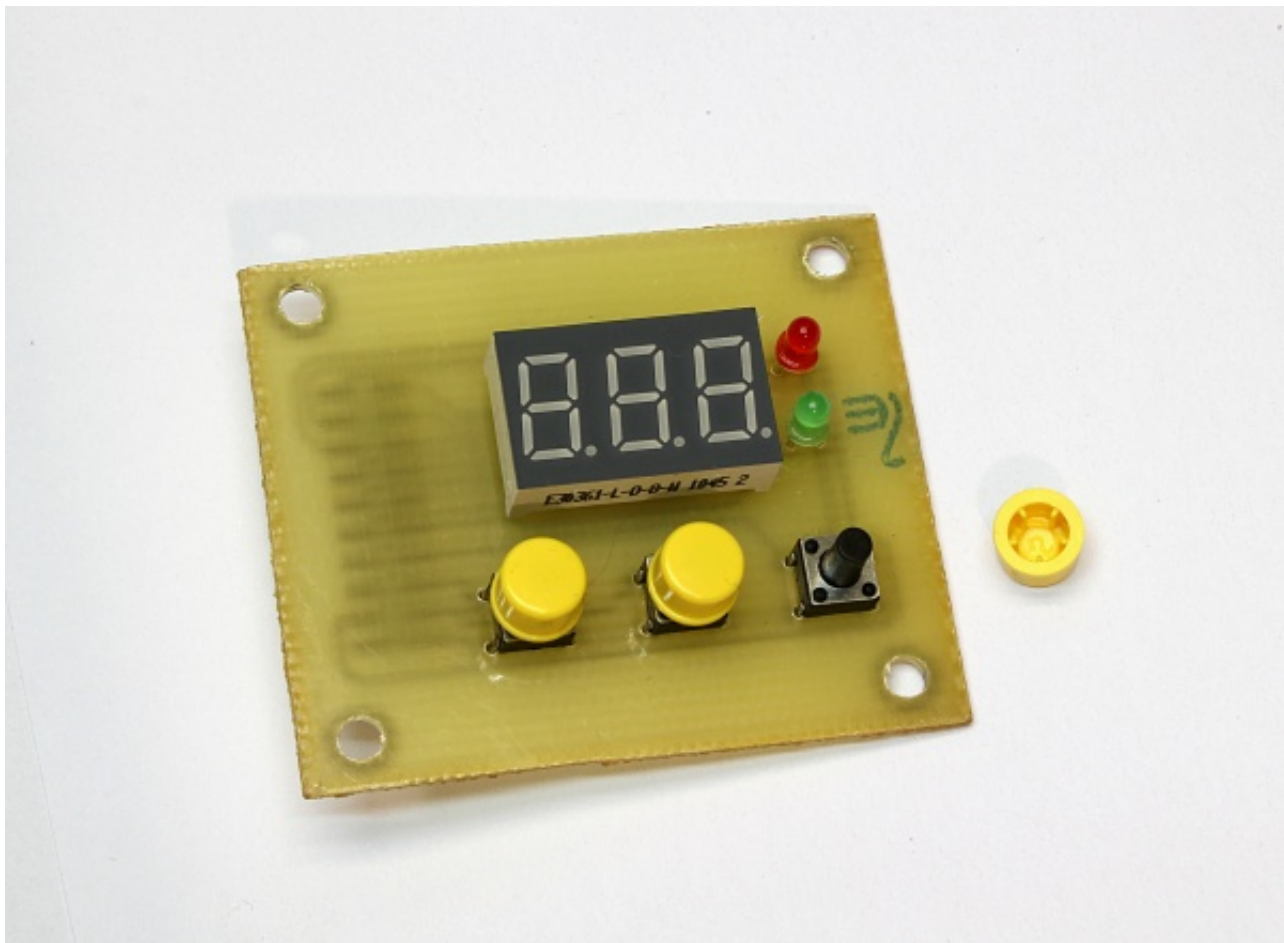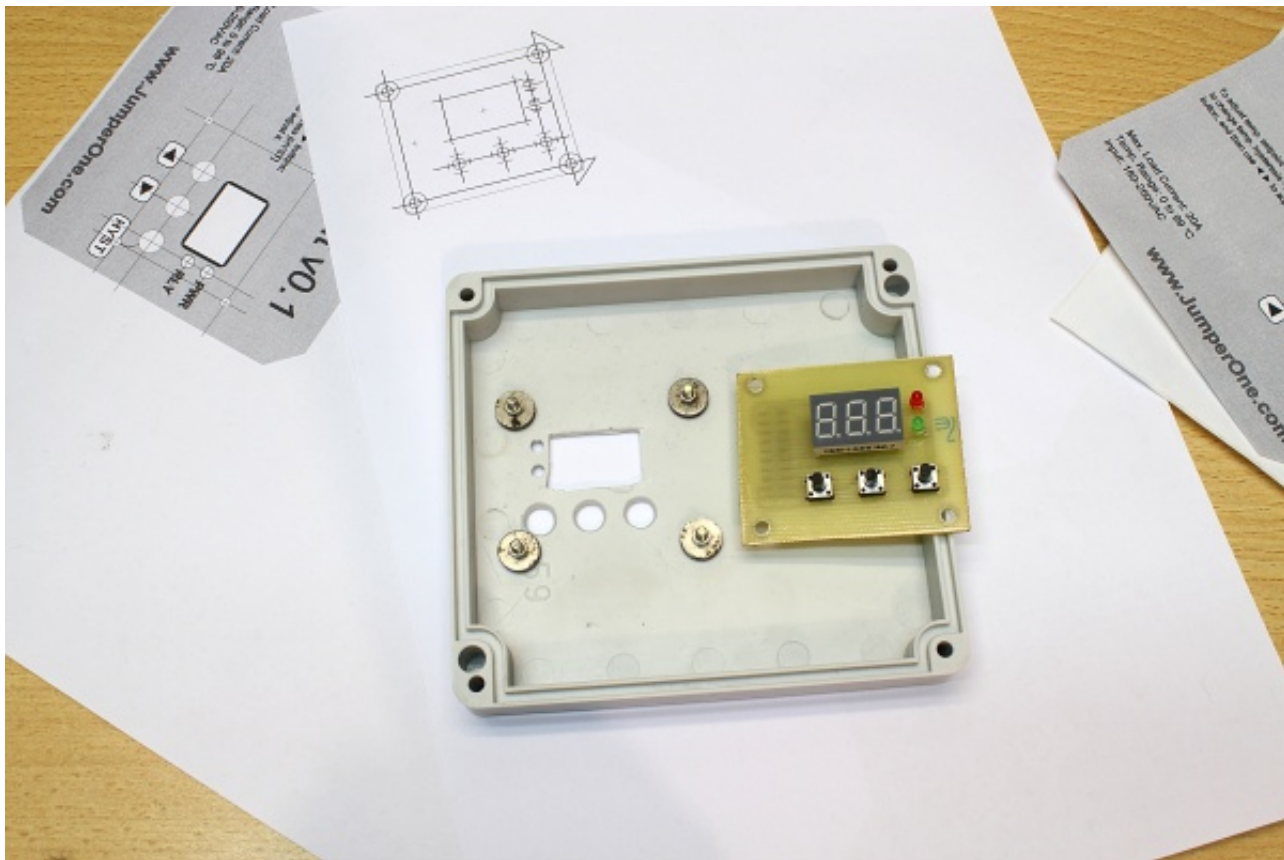
If your front panel is built around PCB, you need to adjust the height of PCB stands so that display(in this case) would be flush with FP surface. The front panel label should stick to the display, so that digits would show up through the label perfectly.
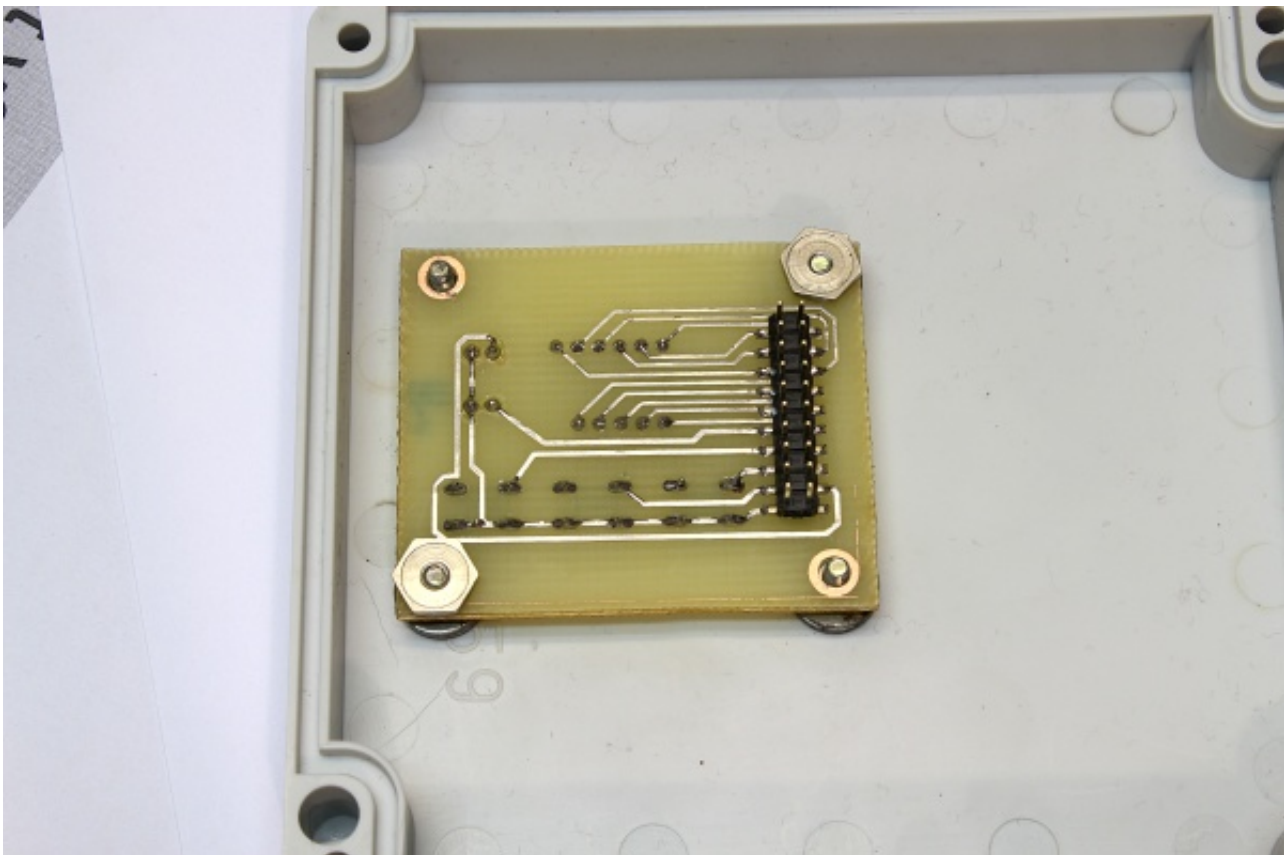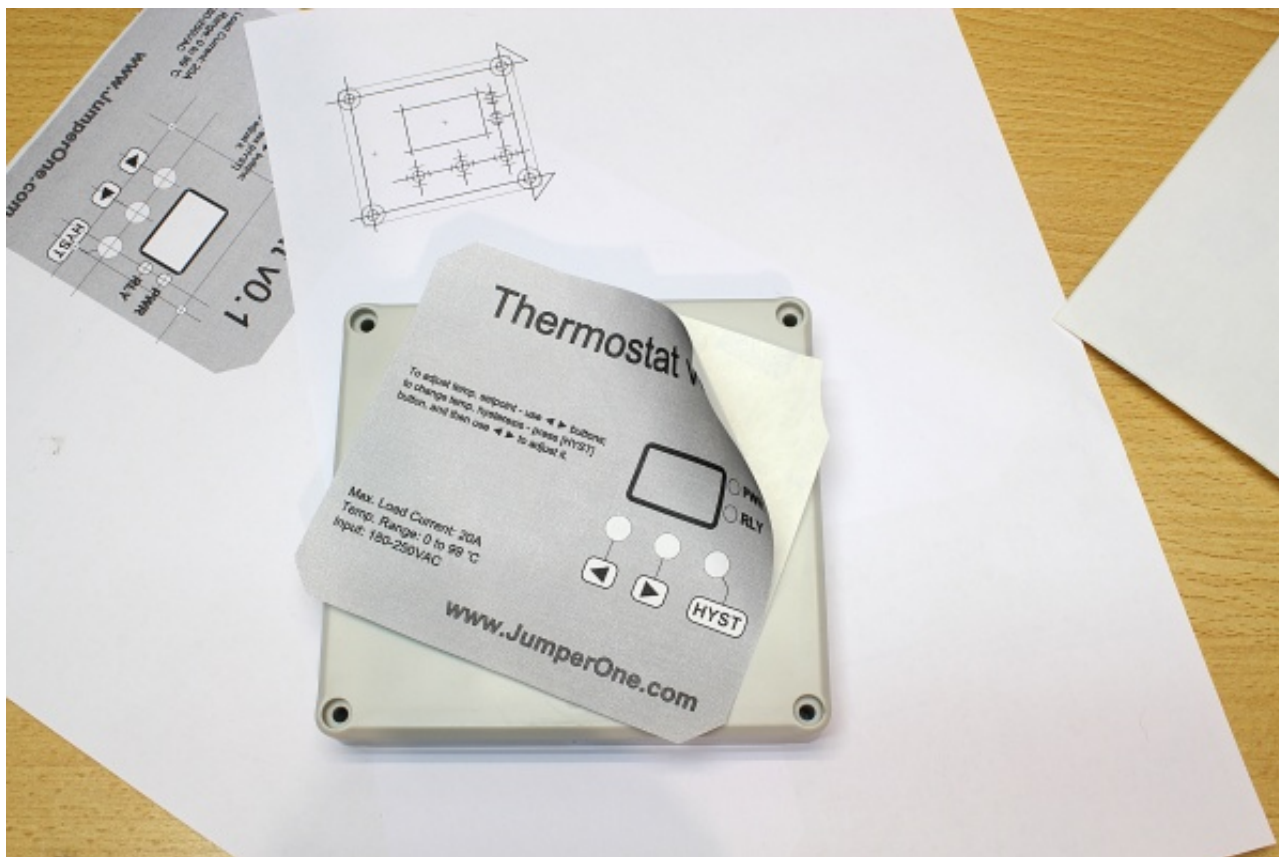
Sticky business

Here comes the fun part. Print out the final version of the front panel label design on general purpose labels(single-side adhesive paper) and then very carefully align it with all the holes. Remember, you'll have only one shot at this!

Now when label is in place, cut a piece of laminating sheet, aka cold laminating film(self-adhesive clear film) to the exact size of your front panel label.
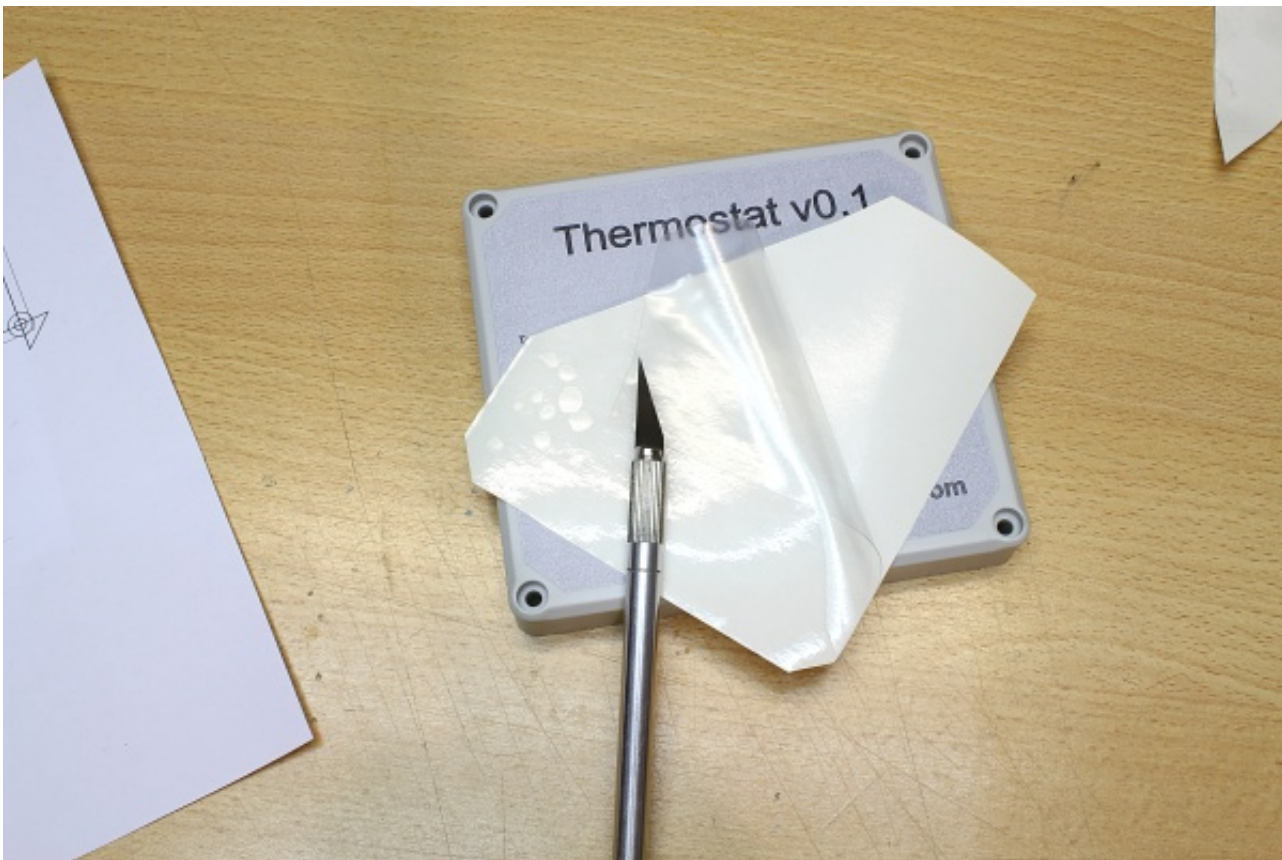
And align it with FP label as well.

Carefully cut the holes for buttons, switches and other components as needed.

Put it all together, and observe the result.

I should've made display and LEDs a bit brighter. IRL it looks just fine, since it gonna be used in pretty dark room, but it's a royal PITA to take pictures of this FP for the tutorial.