

Mounting the Keypad/Module and Creating an Overlay

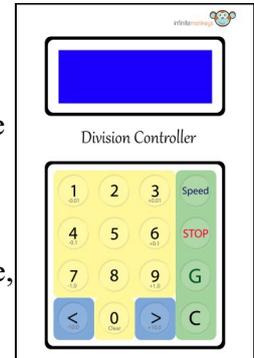
The keypad I supply is intended to be mounted with the button tops 'flush' to the case and an overlay glued over the top.

This provides a nice finished professional looking product with buttons that have a nice positive 'clicky' feel.

Overlays can be home made or purchased from my shop.

The ones I provide are professionally manufactured in 250 micron polycarbonate, silkscreen printed and has embossed buttons and a self adhesive backing. They also come with the drilling template pre-printed at the correct size.

(Unfortunately due to tooling costs they're not as cheap as I'd have liked.)



To make your own see the instructions on page 4 along with the printable template and overlay on pages 5 & 6.

Choosing a case.

The overlay provided is A5 (148 x 210mm) and can be cut down to a minimum of around 100 x 160mm so your case should reflect this range of sizes (you may want to have everything in front of you before deciding how big it should be).

Some cases provide overlay recesses, these are ideal since the recess can protect the edges of the overlay.

The drill template can be temporarily attached to the front of the case and the various holes drilled. Accuracy isn't too critical since the overlay will hide most things, any binding or tightness of the buttons or display should be eased.

Positioning the overlay.

When coming to stick down the overlay positioning isn't critical other than for cosmetic reasons. The buttons can be out by a few mm without adverse affects however the LCD can look off centre particularly if the black surround is prominent on one side so I would concentrate on getting it correct.

Before fitting the overlay should be trimmed with a sharp craft knife and straight edge to the correct size.

The easy way to position the overlay is to attach a piece of sticky tape as an 'hinge' on the top edge. This makes it easy to move around and when you're happy with the position it can be hinged back and the backing removed then hinged forward and stuck down.

(Powering up the controller so you can easily see the LCD helps get the position right).

Before sticking down be sure to thoroughly clean the surface with alcohol.

Drilling the case and mounting the module and keypad.

The mounting screws are all drilled for 3mm clearance.

If purchased from me the module already has 3mm countersunk screws provided but you'll need similar for the keypad.

Make sure the heads of the screws are flush with the surface of the case and fit locking nuts behind making sure they can't come undone since you won't be able to access the screw heads once the overlay is glued in place.

Either spacers or another nut can be used to set the height of the module and keypad. (I would recommend a pair of nuts to set the height of the keypad to allow for adjustment so that you can fine tune the 'feel' behind the panel. With a 1mm thick case I find 10-11mm is about right.)

Once drilled the black surround of the LCD should fit through the hole in the front panel and spacers or nuts used to hold it such that the surround is flush with the front of the panel. (The surround will be hidden by the overlay).

Similarly the keypad should be mounted such that the buttons are almost flush with the front panel (just slightly above to give some 'feel', see fig 1).

Try holding the overlay in place and pressing all the buttons to check how they feel and adjust the keypad until you're happy.

Make sure the buttons don't bind, if so then ease the panel around them.

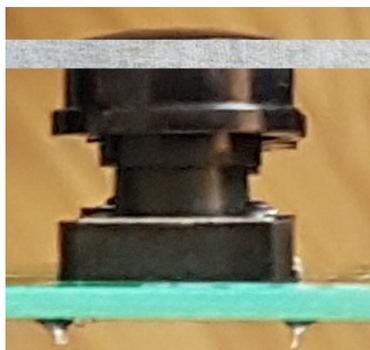


Fig 1 – approximate position of button in front panel.



Fig 2 – Hardware in case before overlay glued.

If the module was purchased from me the LCD can be separated from the controller to ease fitting (fig 3 below). Ensure the controller is fully seated in the socket and that the screws can't turn when screwing the two parts back together.

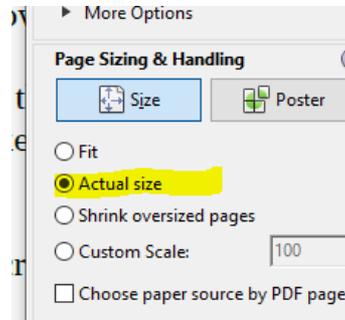


Fig 3 – Case internals with LCD fitted.

Printing the drilling template and overlay

(Tested using Adobe Reader.)

Ensure the 'Actual size' box is ticked as below in the print dialogue.



You can check the size for accuracy once printed by verifying that the horizontal and vertical lines on the drilling template marked “100mm” are indeed 100mm.

Once you have successfully printed the drilling template you can print the overlay using the same size settings.

Best results for the overlay are obtained using a lightweight photo paper with the quality set to 'photo' (I use 102 g/m paper; Epson S041061, but any lightweight photo paper will do) You could use heavier paper but it will affect how the buttons feel or you can use normal paper and up the quality setting to see how it looks.

The viewing window can be dealt with in one of a number of ways:

You can cut the blue window out before lamination, this results in a clear rectangle although it can leave the lamination warping slightly.

Or you can laminate and cut it out after leaving a hole in the front panel (you could glue a piece of acetate or similar behind it if required).

The weight of the lamination used will affect feel, I find 125gm is about right.

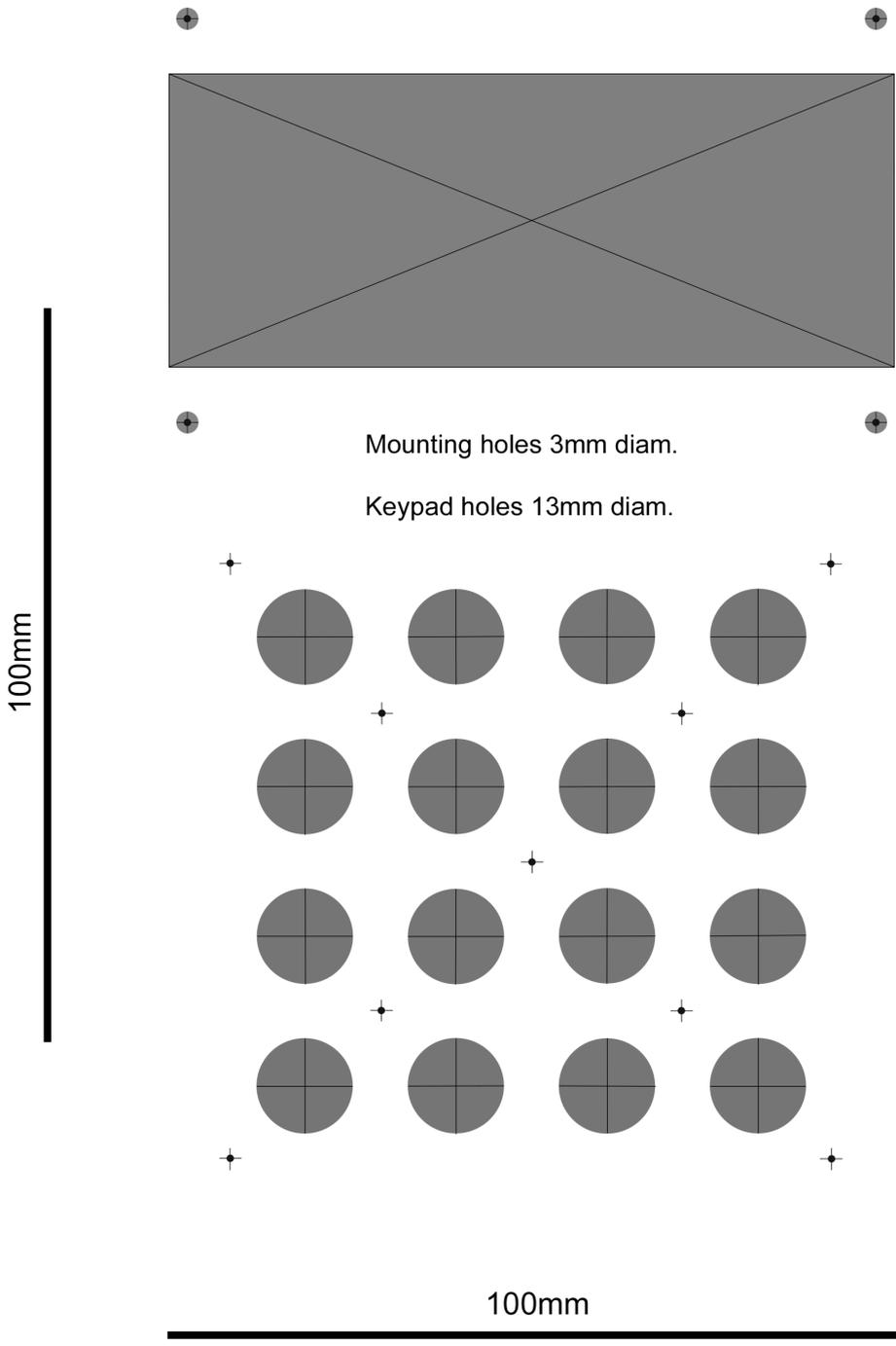
If you wish you can cut the overlay down to the correct size before lamination to seal the edges (allow a few mm extra for the edges).

See page one for fitting the overlay.

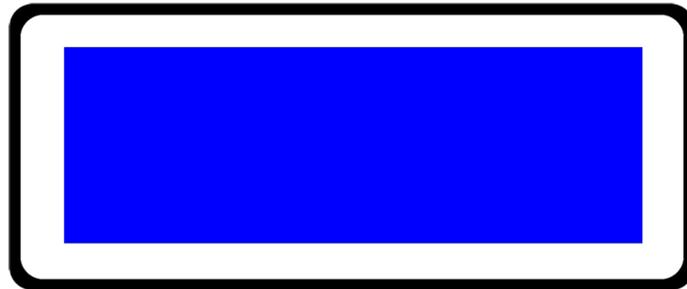
I use double sided tape but it's very aggressive so make sure you line the overlay up correctly before it connects as it's almost impossible to reposition without damaging the overlay.

Drill Template

Print at 360 dpi



Overlay



Division Controller

