



Home Power Monitor LCD Control Unit



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[VIEW IN BROWSER](#)

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Summary

Case and removable lid for a Raspberry Pi Home Power Monitor LCD, buttons and PIR control panel.



3.75 hrs



2 pcs



0.30 mm



0.40 mm



PLA



77 g



Prusa
MK3/S/S+

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Home Power Monitor LCD Control Unit

A case and removable front lid for the 16×2 LCD control panel used in my Home Power Monitor project. The panel combines a display, three menu buttons, a contrast potentiometer and an AM312 PIR sensor. The Raspberry Pi runs the monitoring software; the meter and isolation circuitry are housed separately.

The enclosure has internal LCD mounting points, a cable-gland opening, a potentiometer opening and a front panel with cut-outs for the display, three buttons and PIR sensor. Four M3 screws secure the lid into threaded inserts.

Files

Print one case and one lid. The assembly STL contains reference hardware and is supplied for viewing. The editable Fusion archive, STEP assembly, exploded drawing and assembly animation show the complete arrangement.

Parts

Part	Quantity	Notes
Printed case	1	92 × 90 × 32 mm bounding size
Printed lid	1	92 × 90 × 2 mm bounding size
16×2 LCD module	1	Match the mounting pattern in the CAD
AM312 mini PIR sensor	1	Front-panel sensor
B10K potentiometer	1	Contrast adjustment; side opening
Panel pushbutton	3	CAD reference: Phobya power switch 16 black
M12 cable gland	1	Cable entry
M3 × 6 mm screws	8	Four lid and four LCD mounting screws
M3 threaded inserts	4	CAD reference M3*6*5

M3 male-to-female standoffs	4	CAD reference 20 mm + 6 mm
M3 nylon nuts	4	LCD mounting
Control circuitry, connectors and cable	As required	See hardware repository and supplied build photos

Counts and sizes come from the supplied CAD and drawing. Purchased parts are reference components; check the dimensions of your own LCD, switches and sensor against the editable CAD.

Assembly

Fit the four threaded inserts into the case. Mount the LCD using the four standoffs, nylon nuts and mounting screws shown in the drawing. Fit the cable gland and contrast potentiometer, then mount the three buttons and PIR sensor in the lid. Connect the control circuitry using the hardware schematics and harness documentation, and secure the lid with four M3 screws.

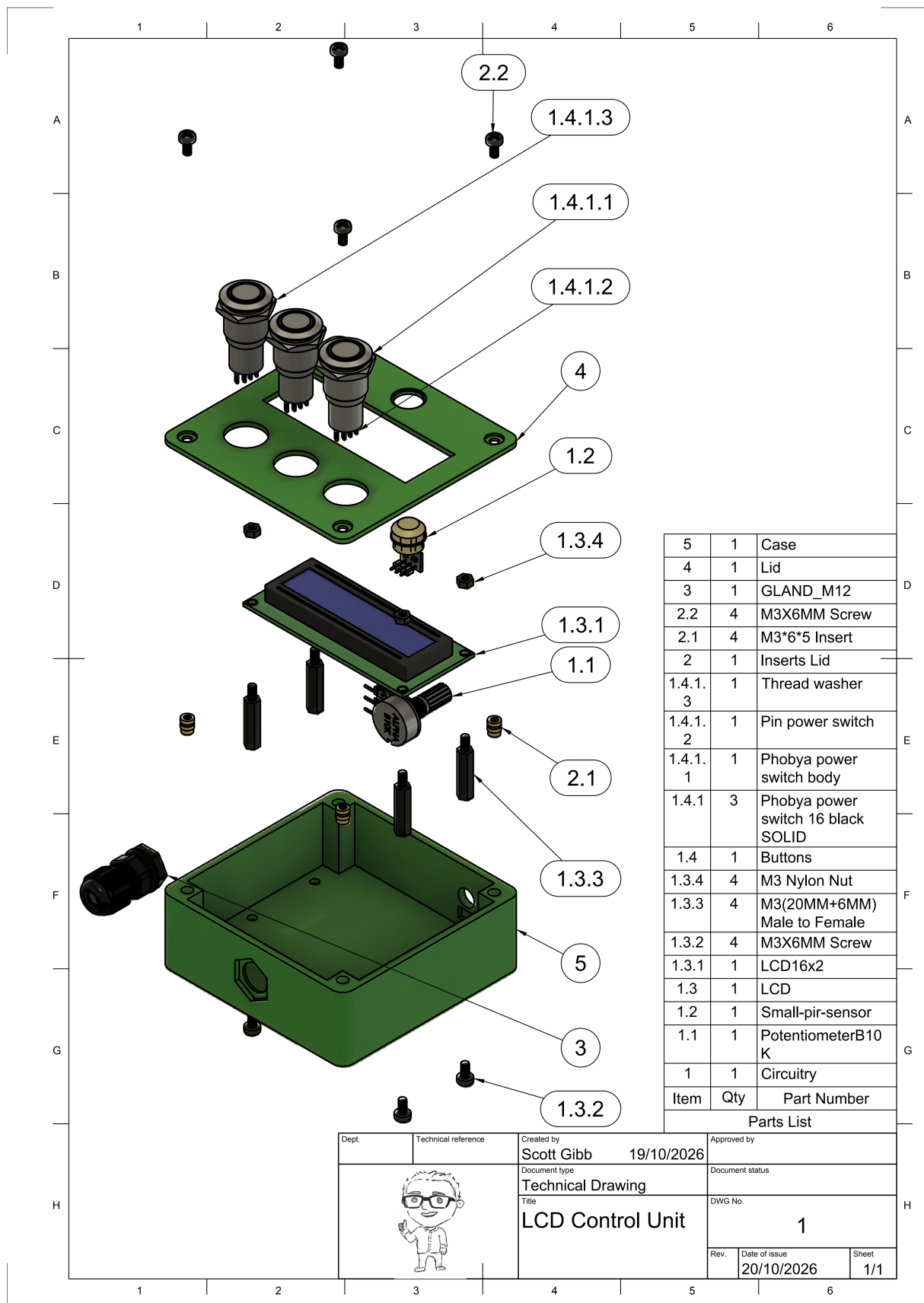
Project links

[Home Power Monitor hardware and wiring](#)

[Home Power Monitor software](#)

Technical drawing

Download the drawing PDF from Other Files. The exploded drawing is also shown below.



Exploded view

Assembly animation supplied as LCD Screen v23; CAD export v22.

<https://www.youtube.com/watch?v=6QzYySJ8XxU>

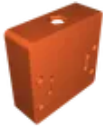
Model files



home-power-monitor-lcd-control-unit-v22-assembly.step



home-power-monitor-lcd-control-unit-v22-assembly.stl



home-power-monitor-lcd-control-unit-v22-case.stl

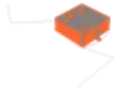


home-power-monitor-lcd-control-unit-v22-lid.stl



home-power-monitor-lcd-control-unit-v22.f3d

Print files



home-power-monitor-lcd-control-unit-v22-case.gcode

PLA 0.40 mm 0.30 mm 3.01 hrs 63 g Prusa MK3/S/S+



home-power-monitor-lcd-control-unit-v22-lid.gcode

PLA 0.40 mm 0.30 mm 0.74 hrs 14 g Prusa MK3/S/S+

Other files



home-power-monitor-lcd-control-unit-v22-drawing.pdf

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