



Air Quality Monitoring System (MQTT Sensor Enclosures)



potatoworld

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Summary

Aesthetically pleasing Enclosures for MQTT Connected Environment Sensors. Capable of holding many types of modules.

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Recently, I setup home assistant goal of collecting data from various sensors around the house. for some reason, having Information like temperature, humidity, and Co2 levels all visually displayed on a dashboard sounded like a pretty neat idea to me. But for some reason, I like to make things hard on myself. So instead of using off the shelf sensors, I decided to build my own.

I'd love to see what sensors other people put into these boxes, the main goal was to create an aesthetically pleasing enclosure that wouldnt look out of place in a home.

I have included 3 versions of the Sensor Enclosures

1. Empty, no pre-made mounts for any microcontroller/sensor. This is ideal for someone looking to make their own custom setup

2. Pico W Mount, with no Sensor mount.
3. Pico W and DHT22/DHT11 Mount.

The boxes have enough space for a small 20mm fan as well as all your wiring.

The Screw holes for the Pico W should accept M2 screws, but I ended up just using double sided tape on the Pico and Sensor for simplicity.

There are also 2 screw holes on in the back of the enclosure for mounting it to a wall using drywall screws, but again I ended up just using double sided tape as the boxes are so lightweight.

The lid requires 4x M3 heatset nuts and M3 screws.

I've written a guide with some basic code here: <https://github.com/potatoworld/MQTT-Sensor-Boxes>

Model files



air-quality-sensor-box-lid.stl



air-quality-sensor-box-v1.stl



air-quality-sensor-box-no-sensor-mount-rpi-pico-mou... .stl



air-quality-sensor-box-no-mounts-v1.stl

air-quality-sensor-box-no-mounts-v1.step

air-quality-sensor-box-v1.step

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