

7 February 2019

A test of the effect of removing the housing of a PA-II monitor on temperature and relative humidity readings.

It is known that the wifi radio on the ESP8266 processor board of the PA-II monitor releases heat that is trapped by the white PVC instrument housing. It seems reasonable that if the housing were removed we would find the temperature lower and the relative humidity higher.

The station used is labelled on the Purple Air map as cleanairplan.ca-Smithers-F01. Its associated data can be downloaded from that named entry at <https://purpleair.com/sensorlist>.

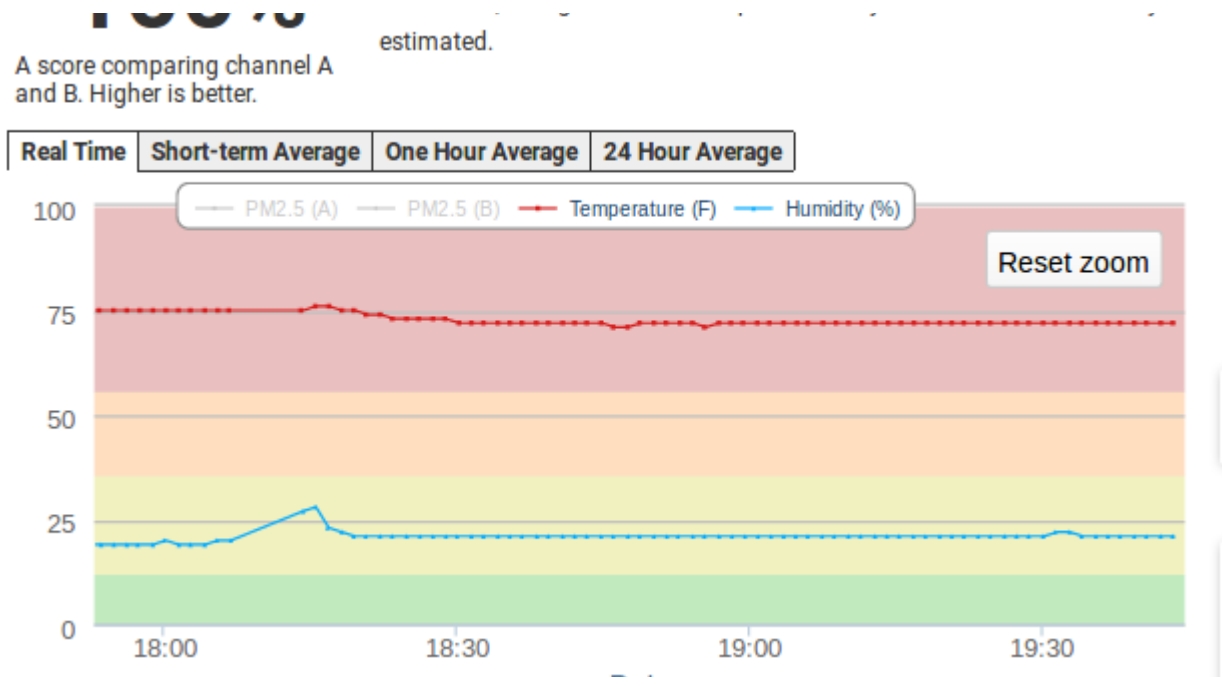
Dennis and Dave met at 18:00 today to do the removal. Power was disconnected and with the screw removed and the grey retaining ring slowly removed; the electronics package came out in one piece like this:



After messing around we reconnected the housing screw through the ring and into the steel bracket and threaded a velcro loop strap through which then was reattached to the hangar where the

instrument had been just before. Power was restored by plugging in the micro usb cable. The unit went back online without incident.

Here's a screenshot of the real time temperature and relative humidity graph.



The bump or dip at about 18:15 is pretty clear, temperature down from 75° F to 72° and relative humidity up from 19% to 21%. Happened right away. The plan is to let it run for a few days to get daily figures and compare them before and after. Some irregularity is due to inside conditions with routine domestic activities.