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Calibrating Vaisala HMP45

USDA¹¹USDA**1** Works for me This protocol is published without a DOI.

PDI Test

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ABSTRACT

Calibrating Vaisala HMP45

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<https://protocols.io/view/calibrating-vaisala-hmp45-btwknpw>

KEYWORDS

Calibrating, calibration, Vaisala, HMP45

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MATERIALS TEXT

 [LI610_cal.xls](#) [LI610_calibration_worksheet.xls](#)

1 Clean the sensor



Remove the cap and filter. The filter is like Teflon tape, very fragile. Use DI water and a Q-tip to remove dirt/dust. The filter can usually be unscrewed from inside the cap, if it will not turn while using your finger, then a screwdriver to push it out from the top is a last resort. There is a possibility of damaging the filter and filter frame.



This is a good time to re-tin the connecting wires. Makes install much easier.

After the cap and filter have dried, re-assemble the HMP.
Remove the rubber covering for the "W, D, T" potentiometer screws.



Have a close look at the screw orientation. Use the smallest CSI flat screwdriver or the special Vaisala tool (if you can find one). These screws are sometimes tough to engage. They are also very sensitive, just slightly pushing on the screw will change the output values. I've sometimes had to observe how much change was imparted by my screwdriver pressure and then set to slightly off of 60%, then release the potentiometer and see if it sets on 60% or just off and repeat.

- 2 Setup your chamber, LI610, logger, HMP and thermistors. Connect everything, start prog and Li610. Check the logger to verify the chamber temp and thermistors are working. Insert the HMP into the chamber so that you can access the calibration potentiometers easily. You will be changing the "Dry" and "Temp."

Fill top of radiator with DI water.



Figure 2-3. LI-610 top view, showing location of radiator fill.

Fill the condenser following the instructions in the manual (use DI water only).

Date
SN (factory Vaisala SN)
NSTL SN (sometimes written in marker, "NSTL 01" or "2010-01")
Chamber Temp (Thermistor avg temp)
Li-610 Set Temp 60% RH
21X 60% RH (what is the sensor reading before changing potentiometer)

Now go ahead and change the "Temp" potentiometer to match the average of the thermistors.
Record the new value under "Vaisala Temp"

Next change the "Dry" potentiometer to match the 60% RH in the chamber.
Record the value you were able to set to under the "Adjusted to 60% RH" column. Most of the time it is 59.99 to 60.01.

Now we want to test what it will read at 90% RH. Find the LI-610 setpoint for 90% RH and adjust the Dewpoint Generator. It will take a few minutes to equilibrate. When the sensor reaches a plateau, record the value under "21X 90% RH"

Finish by adding your initials.