RADONTEC

Humidity Sensor Manual

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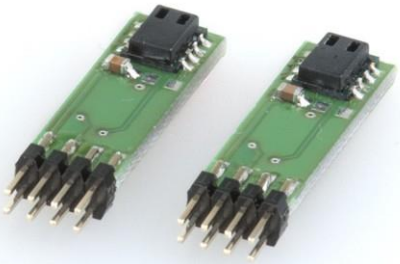

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1 Foreword

The humidity sensor can be used to upgrade the AlphaAir Freshbox 25 in the Basic and with Radon sensor versions.

2 Installation

If you ordered your unit at the same time as humidity sensors, you can skip this chapter, as the sensors have then already been installed in the unit by the manufacturer.

2.1 Static charge

The sensors are not overly sensitive to static charge. Nevertheless, we recommend that you discharge any static charge on your body by touching a grounded object, e.g. faucet, radiator or similar, before unpacking the sensors.

2.2 Differentiation upper / lower sensor

Even if the small sensors look very similar, they differ in the internal coding of the bus interface. For a better distinction the upper sensor carries a red, and the lower one a green dot-shaped marking.

2.3 Preparation of the slots

All units of the AlphaAir Freshbox 25 series are already prepared for the use of the sensors. While a temperature sensor is inserted as standard at the top right of the heat exchanger (sealed with sealing compound), there are still two empty slots to the left of the heat exchanger. It is possible that older devices still have two thin white stickers above them, which cover the slots. You can insert the feet of the sensors through these. To do this, first stroke your finger over the white foil several times with light pressure so that the openings of the slots underneath are visible.

2.4 Inserting the sensors

If you look at the sensors on their small carrier PCBs, you will see that the actual sensor sits in a black plastic housing on the PCB.

When plugging in the following, the upper sensor points to the right (red dot to the left) and the lower sensor points to the left (green dot to the right).

It is best to use a flashlight to poke the feet of the sensor board exactly into the contact openings underneath when the illumination is good. This should be done as straight as possible and without much force. Push the small circuit board into the slot as far as it will go.

Two small paper filters are included in the delivery. These are pushed over the sensors and provide protection against the finest dust particles, which would shorten the service life. The response time against humidity, however, is only extended by a few seconds by the filters, which does not affect the function.

3 Firmware Update

We always keep the latest software available for you on our website. If your device is running with a firmware lower than 1644000B.hex, you have to do the update in any case, so that the sensors are processed. The installation of the update is also recommended if the software version offered for download is newer than your previously installed version.

For this purpose, download the offered ZIP file from our product page for the humidity sensor and follow the instructions contained therein.

4 Operating modes

If you purchase your humidity sensors at the same time as the device and do not specify an installation location (e.g. unoccupied basement, bedroom, bathroom, etc.), the operating mode is set by the manufacturer to the comfort mode for common living spaces. The device is pre-programmed in such a way that it is allowed to regulate independently, depending on the humidity values, around the clock between level 4 (min. basic ventilation) and level 10 (full power e.g. in case of humid room air). In a bedroom, a night setback to level 3 would be provided between 9:00 p.m. and 9:00 a.m. without any further requests.

4.1 Selection of the operating mode

There are three operating modes:

a) Without humidity control
b) Cellar mode (maximum dehumidification)
c) Comfort mode

The most convenient way to set the mode is via our Windows tool ("System" tab) but it is also possible to change directly via the control panel on the device itself by pressing and holding the power button for a longer time:

Without humidity control	approx. 15 seconds on Power (1 long tone)
Basement mode	approx. 20 seconds on power (2 long tones)
Comfort mode	approx. 25 seconds on power (3 long tones)

For safe acceptance of the selected mode, the device should then be switched on/off 1x.

Read in a later chapter how to also define the upper and lower performance limit (basic/intensive ventilation) when activating a humidity mode!

4.2 Mode without humidity control

In this mode, the device operates purely manually or time-controlled and ignores any sensors that may have been inserted. If you remove the sensors one day, please set the device back to this mode.

4.3 Basement mode

This mode is used to dehumidify rooms and to protect them from the entry of humidity caused by ventilation (e.g. sultry outside air in summer). Fully automatically, the unit compares the absolute humidity of the incoming fresh air with the room air.

In case of humid outdoor air, a reduced basic ventilation or the complete shutdown of the unit can be defined.

If the unit is to switch off completely in the event of humid outdoor air (level FN = 0), it will only start up briefly twice an hour and "sniff" to see whether the outdoor air has become drier in the meantime. Only if it has become drier than the room air in the meantime (hysteresis can be parameterized in expert settings), the device will continue to ventilate intensively. Otherwise, it goes back to "sleep" for 30 minutes (this value can also be set).

4.4 Comfort mode

In contrast to the cellar mode, this mode is not only about drying a room. Rather, comfort includes exactly the right ratio of humidity, matching the room temperature.

Since this mode can also be combined with the timer, it is suitable for all occupied rooms, from the bathroom to the bedroom. In addition to automated humidity protection, the focus here is on the well-being of the occupants.

4.5 Fixing the output

During a humidity-controlled operating mode, the unit will automatically adjust its output depending on the selected parameters. This also happens if a power was previously selected manually at the wedge-shaped power selection area. If you want to suspend the automatic control and fix a stage manually, press the desired power for about 3 seconds until

the unit emits 2 acoustic signals. The level is now fixed and will not adjust automatically. All three LEDs on the circuit board light up. To release the fixation, it is sufficient to press again (approx. 0.5 sec) on the power selection area, so that the device emits a sound signal.

5 Function text and activation

After you have installed your new sensors and the software update has been applied, you probably want to test your sensors for function.

5.1 Triggering the self-test (factory settings are set)

FDo not perform this step if you have already ordered the device with pre-assembled and pre-parameterized sensors. Otherwise, the desired settings will be lost and you will have to set them again yourself!

Since firmware 1329000C.hex, the self-test no longer starts automatically after the device has been disconnected from the power supply. Instead, it continues to run afterwards at the last selected power.

To trigger the self-test, stay on the power key for approx. 9 seconds until the device has emitted 4 beeps. Then release the power key.

As soon as you have released the key, the device will emit a short tone. The 4 sensor slots are then tested for function in sequence:

Exhaust air (bottom right) - Fresh air (top right) - Exhaust air (top left) - Supply air (bottom left).

The tones differ as follows:

Short tone: sensor present and ready for use
Long tone: Sensor not present or not detected

So, in the usual configuration with one temperature sensor (frost protection) and two humidity sensors, the sound signals would sound as follows: long - short - short - short.

Note that due to the bus system, the self-test cannot check whether the sensors have been plugged into the correct slot (sensor with red dot on top, green dot on bottom).

After the sound signals, the upper frost protection motor, the right fresh air motor and the left exhaust air motor are tested before the device ends the self-test with 3 sound signals.

5.2 Triggering the self-test (without resetting the factory settings)

For device boards from Rev. 1.2 (recognizable by two buttons below the USB socket and a blue voltage socket in the upper area), the self-test can also be triggered as follows without resetting the device to factory settings. The test can therefore also be performed on pre-parameterized devices without deleting the settings.

First switch off the device via the left power key. Open the door and place your finger on the upper reddish button below the USB socket without pressing first. Now press and hold the tip from the wedge-shaped power selection area on the device door (control panel). To be sure in the range of the tip (and not accidentally too far to the left) we recommend to press about 5 mm to the right of the tip. The first 10 mm to the right of the tip will work. While holding down here, briefly press the reddish button on the board (for about 0.5 - 1 second). A short beep follows, after which you can also release the tip from the wedge. The self-test sequence is carried out as described in 5.1.

5.3 Activating and testing the humidity mode

During the self-test, the device is reset to factory settings (time-controlled mode), so that the cellar mode or comfort mode must now be activated first.

The following steps can be performed very comfortably and in combination with a timer, provided that you use our free

Windows tool (download in the support section of our homepage).

In a humidity controlled mode, there are two power limits (upper/lower) that the device can choose between depending on the humidity conditions. For example, in humid weather it should only run at level 3 (basic ventilation) and in dry weather it should run at level 8. These two values are entered via the control panel as follows:

First, assign the upper power limit (factory setting level 10) to the timer button. To do this, switch on the unit and select the desired intensity, e.g. approx. level 8, on the wedge-shaped power selection area. Then press and hold the timer key for approx. 6 seconds until the unit has emitted 3 beeps. You have now assigned the desired power to the key.

Now let the unit run at the basic ventilation level (in humid weather) e.g. approx. level 3. If you want the unit to switch off completely in humid weather (only available in basement mode) and only sniff briefly at regular intervals to see if the outside air has become drier, then switch the unit off using the power button.

Now stay on the power button for approx. 20/25 seconds (cellar mode/comfort mode) until the long tones (according to the table above) were heard. At this moment the two parameters are stored in the device (current power as basic ventilation in humid weather or sufficiently dry room air and power of the timer button as intensive ventilation in dry weather or humid room air).

Switch the unit off/on 1x and set it via the power selection range to a low level

e.g. minimum. If you now breathe gently into the upper exhaust air slots directly on the device for 1-2 minutes, you will notice that the device increases its performance due to the simulated high room humidity.

Conversely, if you breathe into the upper fresh air intake on the outside wall (if accessible) when the unit is operating at a higher output, the unit will reduce its output after 1-2 minutes.

6 Maintenance and care

Coarse dirt on the paper filters can be wiped off carefully. Depending on the environmental conditions, the filters may need to be replaced after a few years.

Please do not immerse the sensor in liquids and do not try to clean the openings mechanically with pointed objects.

7 Support and Contact

7.1 Troubleshooting/FAQ

You will find answers to the most frequently asked questions on our website:

https://www.radontec.de

7.2 Contact Us

Should you have any further questions or require further help and technical support, please do not hesitate to contact us.

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