

AVTECH's Digital Temperature & Air Flow Sensor

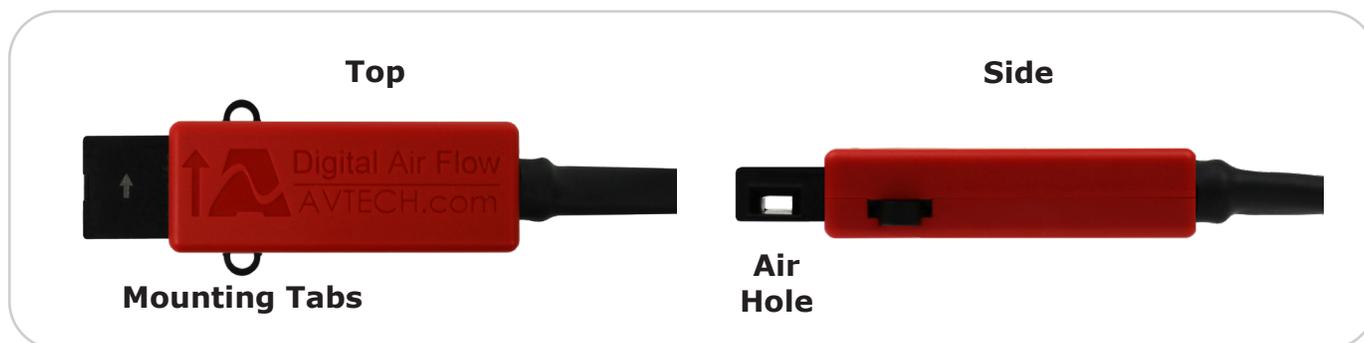
monitors air flow (or lack of air flow) for fans and vents, such as HVAC vents, internal/external server exhaust fans, cooling fans, and dehumidifier fans. When air flows through the sensor, air speed readings are communicated to your Room Alert via a digital sensor port. Simply provide the dimensions of the vent being monitored and Room Alert will calculate the air flow readings for you. This "Plug and Play" sensor additionally provides temperature values accurate to +/- 2° C to your Room Alert.



Digital Temperature & Air Flow Sensor Package Contents

- One (1) Digital Temperature & Air Flow Sensor with built-in 25' RJ-11 cable
- Two (2) 4" L x .1" W zip ties

Digital Temperature & Air Flow Sensor



Air Flow Direction Indicator

In order to measure air speed, your Digital Temperature & Air Flow Sensor must be positioned so that air passes through its hole in the direction marked by the arrows on its enclosure.



Install Your Digital Temperature & Air Flow Sensor



Do not use this sensor in hazardous (classified) locations or life safety applications.

Air speed is not uniform at all points of a duct or vent. For example, numerous factors, such as friction and air direction, cause differences in air speed at the vent's edge compared to its center.

Because of this, we recommend taking multiple air speed readings before permanently mounting your Digital Temperature & Air Flow Sensor. The instructions on the next page show you how.

Step 1: Connect your Digital Temperature & Air Flow Sensor to Room Alert.

1. Run the RJ-11 cable from the vent or duct to your Room Alert. Try to avoid running it near large electromagnetic devices or fluorescent lights, which produce EMI that can interfere with the sensor's readings.



2. Connect the RJ-11 jack on the sensor cable to a digital sensor port on your Room Alert

Step 2: Identify the point of highest air flow.

1. Follow the instructions in the second half of this Installation Note, [Configure Your Digital Temperature & Air Flow Sensor](#) (starting on page 4). Once the sensor has been configured on your device, continue with these steps.
2. Place the sensor in the vent or duct where you wish to measure temperature and air flow.
3. Hold the sensor in place (or temporarily mount it in place) while you observe air speed readings in the device's *Status* page. Check at least three different points on the vent or duct, and note where air speed is the highest—this is where you'll permanently mount the sensor.

Step 3: Mount your Digital Temperature & Air Flow Sensor.

Your Digital Temperature & Air Flow Sensor comes with zip ties that can be used to mount it in place.

1. Mount the sensor at the point of highest air flow. Be sure to position the sensor so that air flows through it in the proper direction.
2. Use zip ties in the sensor's mounting tabs to secure it in place. Shown here is a Digital Temperature & Air Flow Sensor attached to the vent of a fresh air cooling system.



Sensor Features & Specifications

Environment Condition Monitored	Indoor ambient temperature & air flow
Type Of Sensor	Digital
Power Supply	Powered by Room Alert
Sensor Cable Type	RJ-11 (standard straight-through telephone cord)
Included	Yes (built-in)
Length	25'
Maximum Extendible Length	100' total
Temperature Range	-40° F to 185° F (-40° C to 85° C)
Accuracy	+/- 2° C
Resolution	0.03125° C
Air Speed Range	0 f/m to 2952.76 f/m (0 m/s to 15 m/s)
Accuracy	5%
Operating Range	
Operating Temperature	-13 °F to 185 °F (-25 °C to 85 °C)
Operating Humidity	0 to 100% RH, non-condensing
	<i>Exposure to out-of-range conditions for extended periods of time may affect reliability.</i>
Compatible Products	Room Alert 32S, 12S & 3S

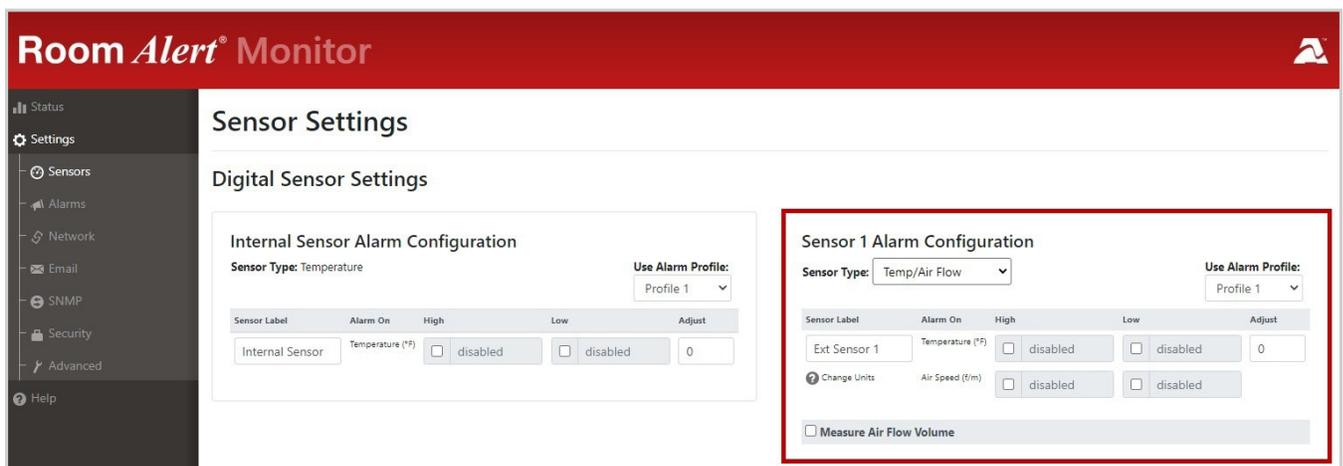
Configure Your Digital Temperature & Air Flow Sensor

Use Room Alert's Built-In Web Interface

Your Room Alert must be on at least the minimum firmware version below to be compatible with the Digital Temperature & Air Flow Sensor. You may download the latest firmware from your account at RoomAlert.com.

- Room Alert 32S, 12S and 3S: v1.6.0

Once your Room Alert is on at least the minimum firmware version, navigate to **Settings** → **Sensors** in the web interface of your Room Alert. The options you see below will vary depending on the model.



1. Scroll to your external digital sensor(s), the total number of which will vary depending on the Room Alert model.
2. Find the digital sensor interface that matches the port you connected your Digital Temperature & Air Flow Sensor to. For example, if you used the first digital port on your Room Alert, look for *Sensor 1 Alarm Configuration*; if you used the second, look for *Sensor 2 Alarm Configuration*, and so on.
3. Notice that your Room Alert automatically detects the digital sensor and inserts a drop-down list in *Sensor Type*, which defaults to *Temp/Humidity*. Select **Temp/Air Flow** to bring up the interface for your Digital Temperature & Air Flow Sensor.
 - You may select **Save Settings** now to start viewing air speed readings in your device's *Status* page, or continue with these steps to configure additional settings.
4. In *Sensor X Label*, you may leave the default, "Ext Sensor X," or enter something more descriptive. Room Alert "S" models accept up to 30 characters, including letters, numbers, spaces, hyphens (-), underscores (_), periods (.) and special characters, like ampersand (&).
5. *Alarm On* automatically populates with the default temperature scale and air speed

Configure Your Digital Temperature & Air Flow Sensor

scale. Please refer to your Room Alert *User's Guide & Reference Manual* to change it.

- To calculate air flow readings, select the **Measure Air Flow Volume** checkbox. Then select the shape of your vent, and enter its dimensions.

The screenshot shows the 'Sensor 1 Alarm Configuration' interface. At the top, 'Sensor Type' is set to 'Temp/Air Flow' and 'Use Alarm Profile' is set to 'Profile 1'. Below this is a table with columns for 'Sensor Label', 'Alarm On', 'High', 'Low', and 'Adjust'. The 'Sensor Label' is 'Ext Sensor 1'. The 'Alarm On' section has two rows: 'Temperature (°F)' and 'Air Flow (CFM)'. Each row has a checkbox and a 'disabled' button. The 'High' and 'Low' columns have 'disabled' buttons. The 'Adjust' column has a text input field with the value '0'. Below the table, there is a section for 'Measure Air Flow Volume' which is checked. It includes a 'Vent Type' dropdown set to 'Rectangular', a 'Height' input field with '3.5' and 'in', and a 'Width' input field with '6' and 'in'.

Sensor Label	Alarm On	High	Low	Adjust
Ext Sensor 1	Temperature (°F)	<input type="checkbox"/> disabled	<input type="checkbox"/> disabled	0
Change Units	Air Flow (CFM)	<input type="checkbox"/> disabled	<input type="checkbox"/> disabled	

Measure Air Flow Volume

Vent Type: Rectangular

Height: 3.5 in

Width: 6 in

- In *High* and *Low*, you may enter values for high and low thresholds for the sensor's temperature and air flow readings. Your Room Alert generates alerts based on those thresholds. On Room Alert "S" models, the High & Low fields are disabled by default. You may enable each field individually by selecting its check box.
- In *Adjust*, you may leave the default, 0, or enter a value to adjust the temperature reading if it differs from a known value at that location. On Room Alert "S" models, you must enable the *Adjust* field by selecting its check box before entering a value.
- In *Use Alarm Profile*, which controls light towers and relays on your Room Alert, you may leave the default, **Profile 1**, or choose another profile from the drop-down menu.
- Select **Save Settings** at the top or bottom of the page. Your Room Alert will automatically reboot and commit your changes.