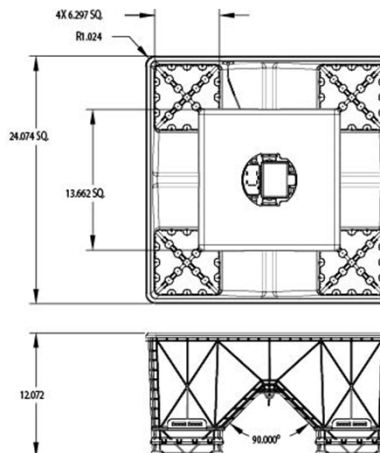




# Series SAH SMART Air Hood™

## Specifications - Installation and Operating Instructions



The Series SAH SMART Air Hood™ is designed to measure air flow from HVAC air ducts and diffusers for balancing. The SAH is lightweight, rugged, and ergonomically designed for easy use and maneuverability. The interface is Wi-Fi direct to the UHH2 handheld and can transmit up to 200 yards (183 m). The unit includes an on/off switch and LEDs to alert when the unit is connected, transmitting, and when the battery is running low in order to avoid recording inaccurate measurements. The SAH SMART Air Hood™ is durable and easily stores in the included travel case.

### INTRODUCTION



**WARNING** Do not use the UHH2/hood unit for liquid or gas mixtures other than air. No responsibility will be taken by Dwyer Instruments, Inc. for any resulting damage to the unit or to the operators if it is used with corrosive or dangerous or explosive gas mixtures. When using the UHH2/hood to check air flow at ceiling diffusers, make certain that you can raise and hold the unit safely during use. This instrument is not classified as flameproof or intrinsically safe; therefore, it must not be used where an explosion hazard may exist. The unit is not authorized for use on life support applications.

**Note:** Observe standard safety procedures when working on ladders and scaffolding. Also, ensure the unit does not become caught in moving machinery or on sharp objects.



**CAUTION** If stored under conditions outside normal operating range, allow the unit to stabilize at room conditions before use.

- Owing to its size and shape, take care when carrying the assembled unit from place to place.
- Avoid people and nearby equipment.
- Avoid objects that may damage the capture hood.
- Turn the instrument off before storage or transportation and remove the batteries if storing for long periods of time.
- Avoid subjecting the capture hood sensing grid to excessive loading during use or assembly. Any air flow other than through the calibrated sensing holes, such as any hair-line cracks, will seriously affect the sensitivity.
- A damaged sensing grid must be replaced. It cannot be repaired.
- Take care when fitting different sized canvas hoods of the protruding pins at the capture hood.
- Do not disassemble the sensing grid from the capture hood. The retaining structure is specifically designed to accommodate loading due to normal operation.
- Under low humidity conditions, static electric charges may be encountered. These can be avoided by applying a suitable anti-static solution.

SPECIFICATIONS	
<p><b>VOLUME FLOW</b>  <b>Service:</b> Air.  <b>Units:</b> CFM, l/s, m<sup>3</sup>/h.  <b>Range:</b> 30 to 2000 CFM.  <b>Accuracy for Any Diffuser &gt; 50 CFM:</b> ±3% of reading ±10 CFM.  <b>Resolution:</b> 1 CFM</p> <p><b>TEMPERATURE</b>  <b>Units:</b> °F, °C, K.  <b>Range:</b> 40 to 140°F (4.4 to 60°C).  <b>Accuracy:</b> ±1.8°F (±1°C).  <b>Resolution:</b> 0.01°C</p> <p><b>RELATIVE HUMIDITY</b>  <b>Range:</b> 5 to 95%, non-condensing.  <b>Accuracy:</b> ±5% of reading (no calibration required)  <b>Resolution:</b> 0.04% RH.</p>	<p><b>ABSOLUTE PRESSURE</b>  <b>Units:</b> mbar, Pa.  <b>Range:</b> 10 to 2000 mbar.  <b>Accuracy @ 25°C:</b> ±2% of reading (between 300 and 1100 mbar).  <b>Resolution:</b> 0.016 mbar  <b>Power Requirements:</b> 3.7 V MH12210 lithium ion battery, included, user replaceable or (4) 1.5 V AA alkaline batteries, not included, user replaceable.  <b>Dimensions:</b> 15" x 24" x 24" (381 mm x 610 mm x 610 mm).  <b>Weight:</b> 5.5 lb (2.5 kg)  <b>Agency Approvals:</b> CE, FCC.</p>

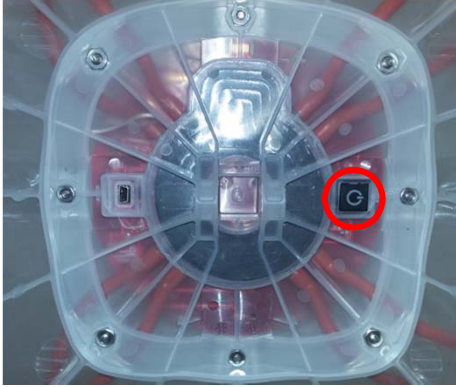
### INCLUDED WITH THE SAH SMART AIR HOOD™

- Base unit with 2' x 2' (600 mm x 600 mm) opening
- UHH2 handheld
- Storage/carrying case
- 12' (3.66 m) extension pole
- 3' (0.91 m) extension pole
- UHH2 pole attachment
- Pole pins (Pack of 3)
- Charging cable and block for SMART Air Hood™
- Charging cable and block for UHH2
- 1' x 4' hood with assembly pack

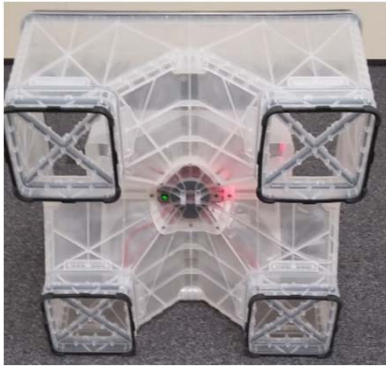
**SETTING UP**

**Powering the Unit**

The SMART Air Hood™ is ready to use directly out of the box. No assembly process is required. The unit can be powered on by pushing the power button.



Once the SMART Air Hood™ is on, blue and red lights blink intermittently. This blinking pattern means that the SAH is not connected to its corresponding handheld device.



Power on the handheld device by pushing the power button like any other smartphone.

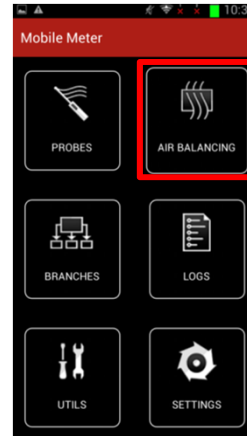


**Connecting to the SMART Air Hood™**

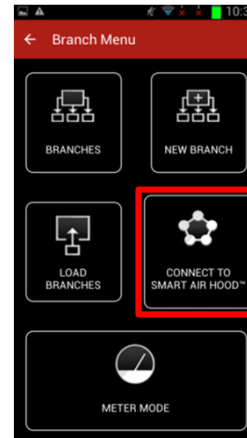
Once the handheld device is on, access the Mobile Meter® app by tapping on the screen where the icon is located.



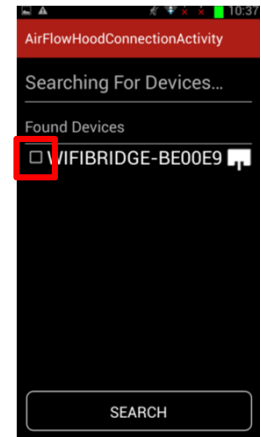
The following screen appears offering multiple options. The Mobile Meter® app is a tool designed to read from several Dwyer devices. To use the SMART Air Hood™, tap on the AIR BALANCING button to access the Branch Menu.



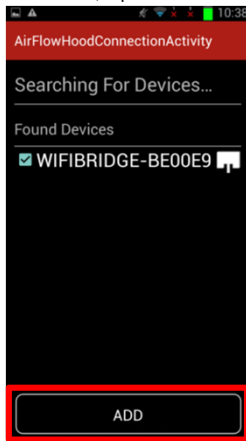
In the following screen, several options are available to the SMART Air Hood™. To continue with the connection, tap on the CONNECT TO SMART AIR HOOD button.



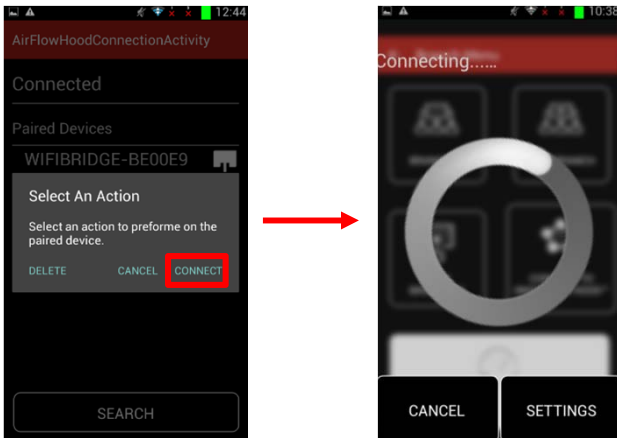
To connect to the SMART Air Hood™, tap the SEARCH button to locate it, and tap on the empty square of the found SMART Air Hood™ device.



Once the device has been selected, tap on the ADD button.



After adding the device, tap on the selected device. The following window pops up with the option to DELETE, CANCEL, or CONNECT. Tap on CONNECT so the handheld device can access data from the SMART Air Hood™, after which a waiting screen will show up and the red and blue LED lights will blink fast.

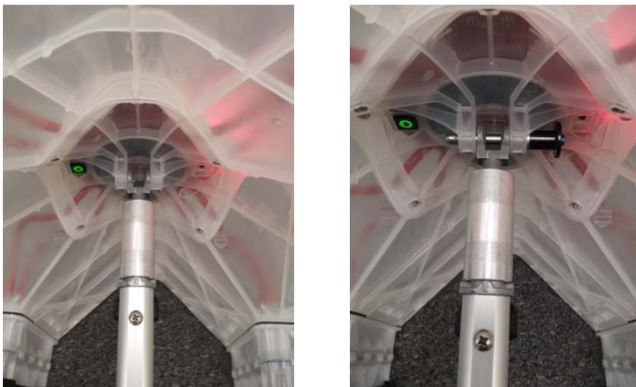


Once the connection has been successful, the blue and red LED lights will remain on. Press the back/return button to exit from the *Air Flow Hood Connection Activity* screen of the handheld device to return to the *Branch Menu*.

**Assembling Accessories**

Once the handheld device is connected to the SMART Air Hood™, the hood has to be placed on a diffuser in order to measure flow. A pole and pin are required to reach and place the SMART Air Hood™ on a diffuser.

The pole comes with an adapter that assemble to the SMART Air Hood™ using a pin. Position the pole in order to be concentric to the hole in the mounting fixture of the SMART Air Hood™. Place the pin through the holes in order to lock the pole to the SMART Air Hood™.



Attach the QUAD LOCK device on the handheld and the pole.



Once the handheld is attached to the pole, the SMART Air Hood™ is now ready for use.

**OPERATION**

**Placing the SMART Air Hood™ on a Diffuser**

Place the SMART Air Hood™ on the diffuser and assure that there are no leaks. Make sure to check every side and corner of the SMART Air Hood™ and verify that it's sealing the diffuser.

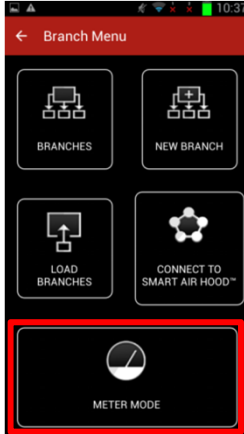


Once the SMART Air Hood™ is placed correctly, press the pole button to adjust the pole length so it reaches the floor supporting the hood itself. If the SMART Air Hood™ is not secure in place, readjust the pole length until it is more rigid.

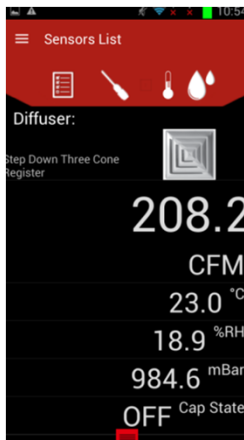


**Measuring Flow**

Once the SMART Air Hood™ is placed and supported by the pole, airflow can be viewed on the handheld by tapping METER MODE.



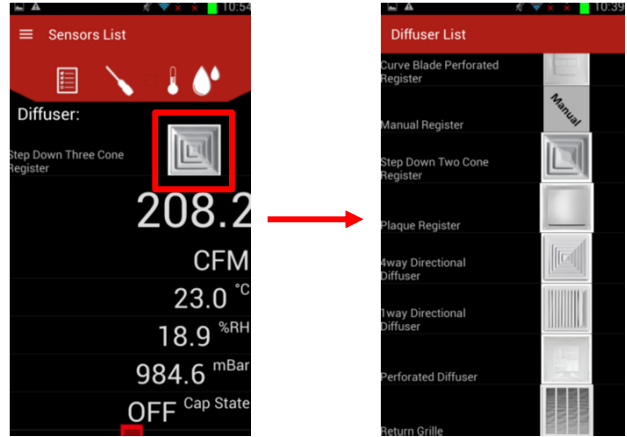
The following screen shows airflow measurements using the default Diffuser. Note that the default diffuser is *Step Down Three Cone Register*. In addition to measuring flow, barometric pressure, relative humidity, and air temperature can also be measured.



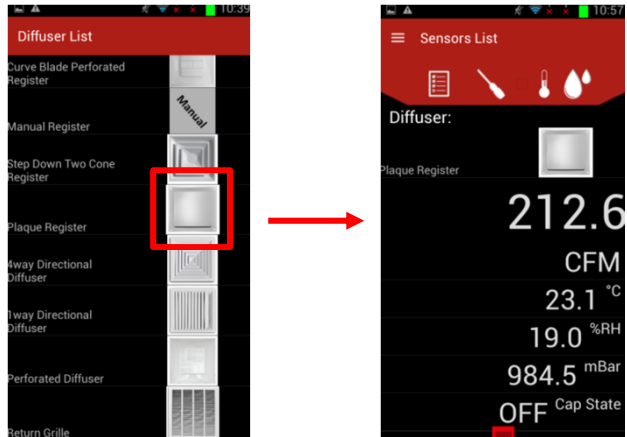
In order to read flow accurately, the correct diffuser style must be selected. To determine the diffuser style, look through the translucent body of the SMART Air Hood™ or remove the SMART Air Hood™ from the diffuser. In the below example, airflow is being measured from a *Plaque Register* diffuser style.



In order to change from Step Down Three Cone Register diffuser style, simply tap on the diffuser icon. The following screen will appear, showing the entire library of diffuser styles.



Tap on the appropriate icon to select that diffuser style, which in this example is the *Plaque Register*. Now the *Plaque Register* diffuser style is selected assuring accurate flow measurements.



**DO WE NEED MORE INFORMATION ABOUT ACTUALLY TAKING THE MEASUREMENTS HERE?**



## FCC/INDUSTRY CANADA NOTICE

### NOTICE

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and receiver
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### NOTICE

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause harmful interference;
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

### WARNING

Pursuant to FCC 15.21 of the FCC rules, changes or modifications not expressly approved by Dwyer Instruments, Inc. may void the user's authority to operate the equipment.

## RF NOTICE

### NOTICE

This product complies with FCC OED Bulletin 65 and Industry Canada's RSS-102 radiation exposure limits set forth for an uncontrolled environment.

### NOTICE

This Class B digital apparatus complies with Canadian ICES-003.

### WARNING

The antenna used for this transmitter must maintain a separation of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

### AVIS

Cet appareil est conforme à Industrie Canada une licence standard RSS exonérés (s).

Son fonctionnement est soumis aux deux conditions suivantes:

1. Cet appareil ne doit pas provoquer d'interférences,
2. Cet appareil doit accepter toute interférence reçue, y compris les interférences pouvant provoquer un fonctionnement indésirable de l'appareil.

### AVIS

Ce produit est conforme aux limites d'expositions aux rayonnements définies pour un environnement non contrôlé du Bulletin 65 FCC OET et RSS-102 Industry Canada.

## MAINTENANCE

Some simple routine maintenance after each use will ensure that the instrument will function correctly for many years.

- Remove any moisture droplets using a clean, absorbent cloth/paper before disassembling and storing the unit.
- Remove the battery if the unit is to be stored, unused for an extended period of time.
- Always store and transport the unit carefully. Store in dry conditions.
- DO NOT immerse the instrument in water.
- DO NOT use abrasive cleaning products on the hood. The instrument can be wiped clean with a damp cloth.
- DO NOT use abrasive cleaning products on the Pitot tube grid, which may block or damage the grid. The grid may be CAREFULLY wiped clean with a cloth. Ensure Pitot tube holes are not contaminated with moisture.
- DO NOT use abrasive cleaning products that may damage the grid, or may leave a residue in or around the holes.
- Check periodically for damage or any visible cracks.
- Take care to not damage or obscure the calibrated holes in the tubes. This can seriously affect the measurements obtained.

Capture hood fabric can be wiped clean with a damp cloth, if necessary, and moisture droplets dried with an absorbent cloth/paper. Periodically, wash in cool water using a mild detergent. Drip dry, ensuring it cannot become caught in any sharp objects.

The fabric used is impermeable, tough, and very resistant under normal use. In the event that the fabric becomes worn or torn, replace the fabric hood immediately. A damaged hood will seriously affect the measurements taken.

Anti-static solution can be applied to the instrument by using a clean, lint-free cloth and carefully rubbing it over the instrument case and window.

**Note:** This is normally only necessary when working in low humidity conditions.

## REPAIR

The Series SAH SMART Air Hood™ is not field serviceable and is not possible to repair the unit. Field repair should not be attempted and may void warranty.

## WARRANTY/RETURN

Refer to "Terms and Conditions of Sale" in our catalog and on our website. Contact customer service to receive a Return Goods Authorization number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.

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