

cps[®]

IAQPRO SmartAir™ Professional Indoor Air Quality Meter

Download App Now



CPS Link™



Version 4.3 or
higher

OWNER'S MANUAL (English)

CPS'link™ Wireless Technology
Patent #9,043,161

 Bluetooth[®]   **ICES-003**

CONTENTS

GENERAL SAFETY INSTRUCTIONS	3
OVERVIEW	3
FEATURES/BENEFITS	4
IAQPRO LAYOUT	5
SPECIFICATIONS	5
QUICK START INSTRUCTIONS	7
AIR QUALITY READINGS (Issues, Causes, Solutions)	11
APP SCREENS (IAQPRO + CPS Link)	13
TROUBLESHOOTING GUIDE	15
WARRANTY	17
CPS LOCATIONS	17

GENERAL SAFETY INSTRUCTIONS

Please read, follow and understand the contents of this entire manual, with special attention given to Warning statements.

FOR USE BY PROFESSIONAL OPERATORS ONLY.

WARNING: The SmartAir is NOT a life-safety device and does NOT provide absolute values for all indoor airborne solids, liquids or gases that may be detected. It does NOT replace the capability of existing Smoke Alarms, Carbon Monoxide Alarms, Heat Detectors or any other dedicated life safety devices intended for use in residential or commercial environments.

The SmartAir does NOT provide audible alarms for CO₂, VOC's, PM_{2.5}, PM₁₀, Relative Humidity, Temperature, Building Pressure or Dew Point.

STORAGE NOTE: THIS DEVICE IS A PRECISION INSTRUMENT AND IT IS STRONGLY RECOMMENDED TO ALWAYS STORE IT INSIDE UNDER NORMAL TEMPERATURE AND HUMIDITY CONDITIONS. **If the IAQPRO has been stored in temperature extremes, it must be placed indoors, unplugged in NORMAL TEMPERATURE AND HUMIDITY conditions for 6 to 8 hours before being powered ON.**

OVERVIEW

The SmartAir is a compact, professional, SmartAir instrument for measuring various aspects of indoor air quality. After placement on an interior residential surface, detailed air quality data can be obtained by pairing this meter to a mobile device running the CPS Link app. The app will summarize air quality conditions and send a homeowner friendly report with recommended solutions (if problems found). Technicians may enter repair costs into the report by using their paired smart device.

Technicians may then review this report on screen, or print or e-mail the report as a PDF. The SmartAir is great for documenting the quality of indoor air, and recommending additional products or services that technicians can provide to resolve indoor air quality problems.

FEATURES/BENEFITS

FEATURES	BENEFITS
No Buttons, Controls or Calculations	Extremely simple operation
Light bar	Intuitive color bar provides air quality status (ranging from Green/Good to Red/Severe)
IAQPRO Paired To Mobile Device - With CPS Link app	Mobile device provides information about indoor air quality and will create a customizable, user friendly report showing an analysis by the internal sensors
VOC Sensor - Detects Volatile Organic Compounds	If a value is in a Moderate to Severe range, the CPS Link app will recommend one or more remedial solutions
Combustible And Non - Combustible Gas Sensor	
Particulate Matter Sensor - Detects particles $\leq 2.5 \mu$ and $2.5 \leq 10 \mu$	
Environmental Sensor - Reads indoor temperature, relative humidity and building pressure	Determines if temperature, relative humidity or building pressure are within the indoor comfort zone as specified by ANSI/ASHRAE Standard 55.
Customizable Reports	Technician can enter prices to complete any repairs (Recommended Solutions)
Export Test Data	Technician can save, print or e-mail

IAQPRO LAYOUT

Protective carrying case



USB to USB C Cable



120VAC
Adapter Plug

FRONT VIEW



Air Exhaust

Light Bar

Air Intake

BACK VIEW



USB C Cable

SPECIFICATIONS

Product Specifications

Wireless Transmission Range	Up to 150 ft (46 m) Direct line of sight
Size/Weight	5"H (12.7cm), 3.5" (9cm) Dia., [0.65 Lb (0.3 kg)]
Power Cord	6.6 Ft. (2 m)
USB Power Cord Adapter (AC)	✓
Protective Carrying Case	EVA semi-rigid shell, with internal compartments
Agency Approvals	FCC (Tested and found to be compliant with FCC 47 CFR Part 15B: 2017, ISED ICES-003: Issue 06 (2016).
CE Approvals	EMC (Electromagnetic Compatibility Emissions) EN: EN 61326-1 2013 Basic Level EN 55011: 2009/A1:2010 EN 61000-3-2:2014 EN 61000-3-3:2013 EN 301 489-1 V2.1.1(2017-02) EN 301 489-17 V3.1.1(2017-02)
Warranty	1 year
Geotag Feature	Time, Date, Location

SPECIFICATIONS (CONT'D)

Sensor Specifications				
Air Quality Factor	Measurement	Accuracy	Operating Range	Minimum Time To Acquire Accurate Data*
Temperature	Temperature	$\pm 2.3^{\circ}\text{F}$ ($\pm 1.3^{\circ}\text{C}$)	$32^{\circ}\text{F} \sim 122^{\circ}\text{F}$ ($0 \sim 50^{\circ}\text{C}$) $10 \sim 95\%$ r.H., $120 \sim 441$ in.WC ($300 \sim 1100$ hPa)	Immediate
Pressure	Static Pressure	± 0.100 in.WC (± 0.25 hPa)		
Dew Point	Dew Point Temperature	$\pm 2.3^{\circ}\text{F}$ ($\pm 1.3^{\circ}\text{C}$) $\pm 5\%$ Of Reading		
Humidity	Relative Humidity	$\pm 5\%$ of Reading		
tVOC's	Total Volatile Organic Compounds	$\pm (50 \text{ ppb} + 15\%)$	$32^{\circ}\text{F} \sim 122^{\circ}\text{F}$ ($0 \sim 50^{\circ}\text{C}$) $10 \sim 95\%$ r.H., $120 \sim 441$ in.WC ($300 \sim 1100$ hPa) $0 \sim 60,000$ ppb	5 Minutes To 60 Minutes
CO ₂	Carbon Dioxide	$\pm (100 \text{ ppm} + 3\% \text{ Of Reading})$	$32^{\circ}\text{F} \sim 122^{\circ}\text{F}$ ($0 \sim 50^{\circ}\text{C}$) $10 \sim 95\%$ r.H., $120 \sim 441$ in.WC ($300 \sim 1100$ hPa) $0 \sim 5,000$ ppm	3 Minutes
PM _{2.5}	Fine Particulate Matter	$\pm 25 \mu\text{g}/\text{m}^3$ for $< 100 \mu\text{g}/\text{m}^3$; $\pm 25\%$ for $> 100 \mu\text{g}/\text{m}^3$	$32^{\circ}\text{F} \sim 122^{\circ}\text{F}$ ($0 \sim 50^{\circ}\text{C}$) $10 \sim 95\%$ r.H., $120 \sim 441$ in.WC ($300 \sim 1100$ hPa) $0 \sim 1,000 \mu\text{g}/\text{m}^3$	Immediate
PM ₁₀	Particulate Matter			

* After being powered ON. If stored in temperature extremes, let SmartAir adjust (unplugged) to indoor temperature for 6~8 hours. See Quick Start Guide or Owner's Manual for additional use instructions.

SPECIFICATIONS (CONT'D)

Color Range Values					
Levels	GOOD (Green)	SATISFACTORY (Yellow)	MODERATE (Dark Yellow)	POOR (Orange)	SEVERE (Red)
PM2.5 (µg/m3)	(0~30 µg/m3)*	(31~60 µg/m3)*	(61~90 µg/m3)*	(91~250 µg/m3)*	(>250 µg/m3)*
PM10 (µg/m3)	(0~50 µg/m3)*	(51~100 µg/m3)*	(101~250 µg/m3)*	(251~430 µg/m3)*	(>430 µg/m3)*
CO2 (PPM)	(0~599 ppm)**	(600~999 ppm)**	(1000~2499 ppm)**	(2500~4999 ppm)**	(>5000 ppm)**
tVOC's (PPB)	(0~149 ppb)***	(150~299 ppb)***	(300~449 ppb)***	(450~600 ppb)***	(>600 ppb)***

*Per World Health Organization; **Per Engineering Toolbox; ***Per U.S. EPA.



QUICK START INSTRUCTIONS

SETTING THE tVOC SENSOR BASELINE (time required approximately 24 hrs., 5 mins)

- User must set the tVOC sensor baseline PRIOR TO INITIAL USE.
- Follow instructions below or connect unit to CPS Link App for online guidance.
- Unit does NOT need to be connected to app during the initial 24 hrs. time period (Step 1 - 2).
- Unit must be connected to CPS Link app to complete Step 3.

Step 1: (Time required for this step – 24 hrs.) Select a secure location **INDOORS**, plug unit into power source to turn ON and allow it to run for 24 consecutive hours. Light bar will initially turn RED, then alternate Green/Red during this time period.

Step 2: (Time required for this step - approximately 5 mins) Relocate the unit to a secure, dry location **OUTDOORS** with access to power (do not locate in direct sunlight). It is OK to disconnect the unit from the INDOOR power source while relocating it to the OUTDOOR location. Power unit ON and wait for 5 mins.



QUICK START INSTRUCTIONS (CONT'D)



Step 3: Open the CPS Link App on your smart device and select the IAQPRO icon to connect unit. Once connected, online guidance screens will appear prompting completion of Step 1 & 2 above. Swipe right to advance to the SET BASELINE screen. Press the SET BASELINE option to save tVOC baseline and complete setup.

CONDUCT AN INDOOR AIR QUALITY TEST

The tVOC sensor requires a stabilization period when powered ON (the light bar will flash Green/Yellow during this process). The stabilization period can last between 5 to 60 minutes depending on the combination of storage conditions and time (minutes, days, weeks) the unit was powered OFF. Unit can be powered ON during travel between jobs to minimize jobsite stabilization time using available automobile USB power connections or other readily available portable power devices.

- a. For more accurate readings and to generate an Indoor Air Quality Test Report, start a 30-minute test (default setting).
 - Choose the “TESTS” icon (upper right of screen), then.
 - Choose the “Air Quality” option (lower left of screen).
 - Choose a “Standard Test” (30 minutes) or “Custom Test”.
 - If “Standard Test” selected, touch “Start Test” button to begin. A new screen will appear, and the timer counts backwards from 30 minutes.
 - To conduct a test shorter or longer than 30 minutes, select “Custom Test.” Enter the desired test period (minimum of 5 min to a maximum of 23 hrs, 59 mins, 59 seconds), then press “Start Test”.
- b. The light bar on the SmartAir housing will display a color indicating the range (see chart at right) within which the highest reading for ONE of these values (PM 2.5, PM 10, tVOC or CO2) is found.
- c. For more detailed information about any item being measured, see the Information Section in the app.
- d. Users are encouraged to pair the SmartAir to a mobile device using the CPS Link app for more detailed information about the quality of indoor air.

GREEN	Good
YELLOW	Satisfactory
DARK YELLOW	Moderate
ORANGE	Poor
RED	Severe

QUICK START INSTRUCTIONS (CONT'D)



CREATING A CUSTOMIZED REPORT AND PROPOSAL (JOB)

The SmartAir is a compact, professional, Indoor Air Quality monitor used for measuring various aspects of indoor air (temperature, static pressure, dew point, relative humidity, volatile organic compounds, carbon dioxide, and particulate matter PM2.5 and PM10). After placement on an interior residential surface, detailed air quality data can be obtained by pairing this meter to a mobile device running the CPS Link app. The app will summarize air quality conditions and send a homeowner a friendly report with recommended solutions (if problems found). Technicians may enter repair costs into the report by using their paired smart device.

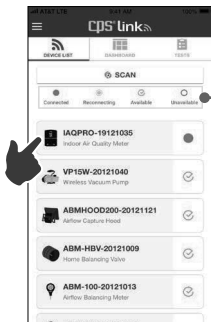
Technicians may then review this report on screen, print or email the report as a PDF. The SmartAir is great for documenting the quality of indoor air and recommending additional products or services that technicians can provide to resolve indoor air quality problems.

- a. **Generating a Customizable Report and Proposal** - after running an indoor air quality test choose view results at the bottom of the dashboard.
- b. A screen will appear showing the “Air Quality Issues.” Choose “Continue” at the bottom. This will take you to the “Causes and Solutions” screen.
- c. A screen will appear showing the “Causes and Solutions.” Here you can fill in your information (Contractor Information) if you have not already done so in the “Profile” section found under the Main Menu.
- d. Next you can either select a customer or enter a new customer's information by choosing the “Select Customer” button. (Customers can be entered under the Main Menu / Tools / My Customers. To enter a new customer, select “ADD NEW” in the bottom right corner).
- e. **Customize Causes and Solutions** – By choosing the  icon next to a cause or solution you can add in custom causes and solutions not included in CPS Link.
- f. **Enter Pricing for Services** – You can choose a solution by clicking the circle next to that solution which will add a  icon next to that solution and enable you to enter a price for that product and/or service.
- g. **Saving and Sending out Proposal** - Once you have entered your pricing information choose “Continue” located at the bottom. This will bring up your proposal. At the bottom of the proposal you can choose to email or view the proposal. It also gives you the option to choose “Done” which will save the proposal to your “Job” folder under the main menu so you can view or send it at a later date.

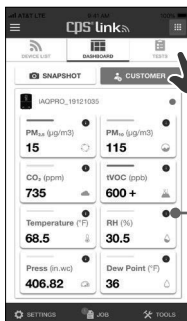
QUICK START INSTRUCTIONS (CONT'D)



Connection
status indicator



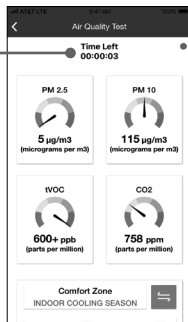
Device Selection Screen
(Step 3)



Dashboard Screen
(Starting An Air Quality Test)

Touch for more information
about an air quality factor

Test countdown timer



Air Quality Tests In Progress

AIR QUALITY READINGS (Issues, Causes, Solutions)



Indoor Air Quality Issues	Potential Causes	Recommended Solutions	Recommended Indoor Levels
Hot or Cold Temperatures in Rooms	Unbalanced HVAC System	Install Home Balancing Kit in all supply grilles	The World Health Organization recommends 64 °F (18 °C)
	Building Envelope Excessive Leaking	Perform blower door test Perform leak inspection of all potential leak sources (windows, doors, chimney, wall insulation)	
	Missing or Damaged Insulation	Perform thermal imaging inspection to determine sources of insufficient insulation	
High Humidity Level	Return and/or Supply Duct Leaks	Perform leak inspection and repair all leaks in ductwork	OSHA recommends 20–60% relative humidity.
	Oversized AC Unit/Short Cycling	Calculate appropriate equipment size and adjust accordingly	
	Building Envelope Excessive Leaking	Perform blower door test Perform leak inspection of all potential leak sources (windows, doors, chimney, walls insulation)	
High PM_{2.5} (0-2.5 microns)	Dirty Ductwork	Clean and sanitize ducts	US EPA recommends an average <12 µg/m ³ or less per day over duration of 1 year.
		Add whole home UV/anti-bacterial system	
	Organic Growth on Coils/in Air Handler	Clean and sanitize cooling coils, condensate drain pan/lines and interior of air handler cabinet	
		Add UV light and antimicrobial tabs to condensate drain pan	
	Return Duct Leaks, Contaminate Infiltration	Perform leak inspection and repair all leaks in ductwork	
High PM_{10.0} (2.5-10.0 microns)	Poor Filtration	Add return filters with MERV rating (≥ 12)	US EPA 24-hour standard <65 µg/m ³ based on the 3-year average of the annual 98th percentile concentrations.
		Add local HEPA filtration to remove particles > 3 microns	

AIR QUALITY (Issues, Causes, Solutions) Cont'd

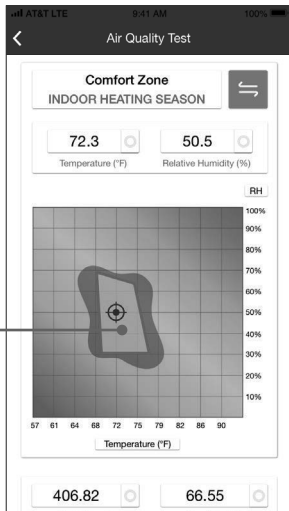
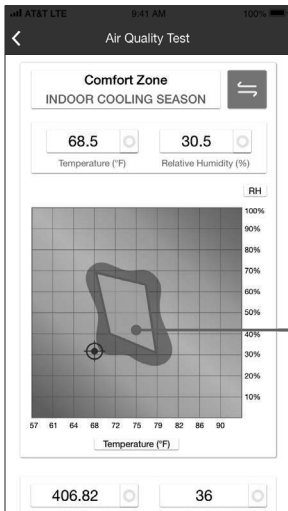


Indoor Air Quality Issues	Potential Causes	Recommended Solutions	Recommended Indoor Levels
High tVOC Level	VOC Contaminants	Remove contaminants inside home or garage	No federally enforceable limits, but 50 ~ 325 ppb are thought to be acceptable, but recommended to not exceed 500 ppb.
	The U.S. EPA reports that on average, 60% of VOC's enter the home through an attached garage	Improve ventilation inside home or garage	
		Add garage ventilation fan to exhaust/create negative pressure	
		Seal garage/mud door from home	
	Mechanical equipment issues	Inspect gas appliances and heaters for leaks	
High CO2 Level	Insufficient returns	Add or increase size of return registers in bedrooms	350-1,000 ppm is typical level in occupied spaces with good air exchange.
	Inadequate ventilation	Add ERV (Energy Recovery Ventilation) or HRV (Heat Recovery Ventilation) to exchange stale air with fresh air	
High Or Low Building Pressure	Negative air pressure in summer	Inspect windows, doors or other openings in the building envelope for air leaks	Slightly positive +.02-in. to +.03-in. WC. can make a huge difference in building comfort and efficiency.
	Negative air pressure in winter		
	Positive air pressure in summer		
	Positive air pressure in winter		
High Or Low Dew Point	In the summer, condensation forms on ducts, air diffusers, walls or ceilings	Ensure AC system is proper size (tons) and functioning properly. Check ductwork or building envelope for leaks. Determine if insulation missing	OSHA recommends 24 to 60 °F (−4.5 to 15.5 °C)
	In the winter, condensation forms inside exterior walls		

APP SCREENS (IAQPRO + CPS Link)



Area inside BLUE or RED trapezoid shape indicates Indoor Comfort Zone (for Cooling or Heating Seasons) as specified by ANSI/ASHRAE Standard 55



Icon indicates room temperature and humidity being measured

Determine if your temperature and humidity readings are within the Cooling or Heating Comfort Zone (trapezoid) shown above.

APP SCREENS (IAQPRO + CPS Link)



Causes and Solutions

PM 2.5 (0-2.5 microns) + -

Dirty Duct Work + ▲

Clean and Sanitize ducts ✓ \$199.00

Add whole home UV/Anti-bacterial system ✓ \$495.00

Organic Growth on Coils / In Air Handler + ▲

Clean and Sanitize cooling coils, condensate drain ✓ \$0.00

"00"

1 2 3 4 5 6 7 8 9 0

- / : ; () € & @ "

+= . , ? ! ' < >

ABC space return

Use Pop-Up Keypad to Enter Prices for Air Quality Solutions

Company logo and contact information can be added to appear in all reports

Causes and Solutions

BentAir HVAC

DATE REPORT 06/05/2019 TIME REPORT 10:46:46 AM

INVOICE NUMBER 00001

Contractor Information

John Smith
Contractor Name*

6780 Collins Ave, Miami, FL 33141
Address

305 323 7363 7475092704
Phone Number Work Order

mike.fisher@gmail.com
E-mail Address

SELECT CUSTOMER

PM 2.5 (0-2.5 microns) + -

Dirty Duct Work + ▲

Clean and Sanitize ducts ✓ \$199.00

Convenient Billable Air Quality Remediation Costs

TROUBLESHOOTING GUIDE

Problem	Possible Solution
Light Bar	
Light bar doesn't turn on	Ensure power cord plugged into wall outlet that is receiving power.
What do light bar colors indicate?	See label on back of SmartAir housing for color explanations (or see # 3b in Quick Start Instructions above) Flashing Red- SmartAir is in start up mode. Alternating Green/ Red- SmartAir sensor baseline not set up. See "Set tVOC Sensor Baseline" instructions. Alternating Green/Yellow- Wait 5 to 60 minutes for tVOC sensor to warm up
CPS Link App	
CPS Link App crashes	Ensure mobile device is Bluetooth compatible, and Bluetooth setting ON in mobile device Delete the CPS Link app from your mobile device. Then reinstall the latest CPS Link app (from App Store or Google Play) on your mobile device
Can't pair phone or tablet to SmartAir	From App Store or Google Play, download the latest CPS Link app on your mobile device and pair it to the SmartAir. Mobile device must be ≤ 150 ft (46m) from CPS SmartAir Reset SmartAir by unplugging and plug in. Then pair to mobile device
Remote Operation	
Can't connect with mobile device	Mobile device must be ≤ 100 ft (30m) from SmartAir (direct line of sight) Charge mobile device battery
Low Or High Temperature Or Humidity Readings	If SmartAir has been stored in temperature extremes, it must be placed indoors, inplugged in NORMAL TEMPERATURE AND HUMIDITY conditions for 6~8 hours before being powered ON.

APP SCREENS Cont'd

Connection Status

How do I know when the SmartAir is paired to my mobile device?

A blue dot is visible in the upper right corner of the Performance Screen or Test Screen

VOC sensor doesn't seem to provide accurate readings

User must set tVOC Sensor Baseline PRIOR TO INITIAL USE (See Quick Start Instruction Guide)

If the SmartAir is turned OFF after conducting tests at various locations on a jobsite, the VOC sensor will need to warmup each time after being powered OFF. The warmup period may last 5 to 60 minutes (depending on the amount of time the SmartAir was turned off). See Quick Start Guide or Owner's Manual for detailed instructions.
