



# GAS & SPECIALTY SENSORS

## VOC/INDOOR AIR QUALITY SENSORS

### BA/VOC SERIES

#### DESCRIPTION

Humans exhale Volatile Organic Compounds (VOCs) as well as CO<sub>2</sub>. The BA/BS3 VOC measures these VOCs and serves as an indicator of space occupancy with the same reliability as CO<sub>2</sub> transmitters.

The BAPI Sensor is different from other VOC sensors. Using a calibration algorithm, the sensor value is converted to an output with a high correlation to a CO<sub>2</sub> level.

The sensor also picks up VOCs from other sources such as building materials, perfumes, colognes and furniture off gassing. Using this sensor to ventilate helps to achieve true indoor air quality and not just CO<sub>2</sub> dilution.

The unit is available as a VOC sensor alone or as a combination temperature and humidity sensor. The optional display alternates between the measured values and is field adjustable between °F or °C. An optional three color LED indicates "VOC Level" of Good, Fair or Poor.



BA/BS3F with LED VOC Level Indication



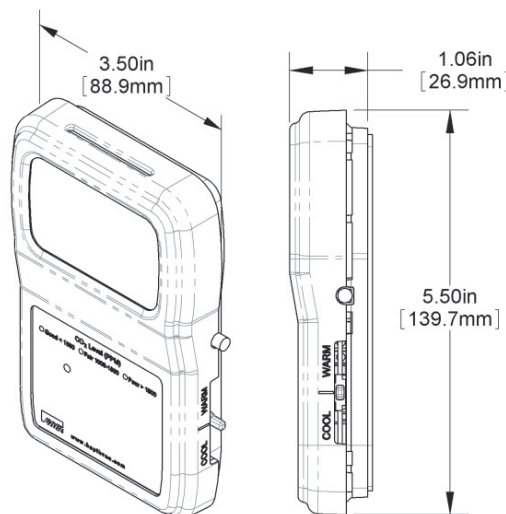
BS3F with Arrow VOC Level Indication



#### FEATURES

- Measures human sourced and environmental VOCs
- Optional display available
- Calibration algorithm for CO<sub>2</sub> correlation
- Output corresponds to 0 to 2000 ppm of CO<sub>2</sub>
- Optional display
- Available with optional temperature and humidity outputs

#### DIMENSIONS

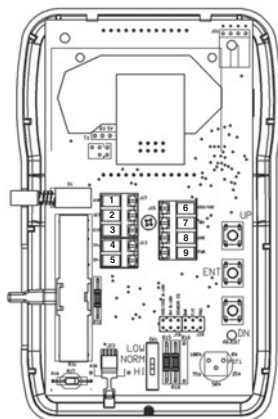


#### SPECIFICATIONS

<b>Supply Voltage</b>	0 to 5 VDC Output Units: 9-35 VDC @ 50 mA Max 0 to 10 VDC Output Units: 15-35 VDC @ 50mA Max
<b>Measurement Range</b>	VOC: 0 to 2,000 CO <sub>2</sub> PPM equivalent RH: 0-100% or 35-70% RH
<b>Accuracy</b>	RH: ±1.8%
<b>Sensing Technology</b>	Humidity: Capacitive Polymer VOC: Micro-machined Metal Oxide Temperature: Thermistor, RTD or Semiconductor
<b>Visual Indication</b>	Good, Green < 1,000 PPM Fair, Yellow = 1,000 to 1,500 PPM Poor, Red > 1,500 PPM
<b>Override</b>	Contact: SPST Sensor: Shorts out direct Temperature sensor (Temp) Setpoint: Contact in parallel, resistive setpoint only
<b>Display</b>	Main Display: 0.76" 4-digit Numeric (Numeric Values) Minor Display: 0.34" 3-digit Alpha-Numeric (PPM, %RH, °F, °C) Occ/Un-occ BAPI Man Icon: (Black=Occupied)
<b>Response Time</b>	Less than 60 seconds
<b>Operating Humidity</b>	0-95% RH non-condensing
<b>Operating Temperature</b>	32 to 122°F (0 to 50°C)
<b>Enclosure Rating</b>	ABS Plastic, Material Rated UL94V-0
<b>Mounting</b>	2" x 4" J-Box or drywall mount (screws provided)
<b>Approvals</b>	RoHS
<b>Warranty</b>	2 years



### WIRING



#### BA/VOC Wiring Diagram

1 (OVR)	Override Output (Dry Contact Switch). When Override switch is pushed this terminal is connected to GND.
2 (SET)	Setpoint output. Referenced to ground.
3 (EXT)	External occupied LCD indicator is activated by logic LOW or ground at this
4-5 (TP+ & TP-)	Temperature Sensor Output (Resistive Output). When a jumper is on J16, TP- is connected to the GND terminal. When the jumper is off of J16, the temperature sensor is floating. (Semiconductor TP+ = +, TP- = -)
6 (CO2/VOC)	Voltage output VOC Signal (0 to 2,000 ppm) referenced to GND
7 (HUM)	Voltage output Humidity Signal referenced to the GND terminal
8 (GND)	To controller Ground [GND or Common]
9 (PWR)	Power, referenced to GND

### ORDERING INFORMATION

<b>BA/ VOC Room Sensor in the BAPI-Stat 3 Style Enclosure</b>	
<b>Temperature Display Mode (Must select one)</b>	
-	Duct Option
BS3F	Temperatures Displayed in °F (Toggle on or off)
BS3C	Temperatures Displayed in °C (Toggle on or off)
BS3X	No LCD Display
<b>VOC Output (Must select one)</b>	
VOC05	VOCs Transmitted as 0 to 2,000 ppm CO2 Equivalent, 0 to 5 VDC output
VOC10	VOCs Transmitted as 0 to 2,000 ppm CO2 Equivalent, 0 to 10 VDC output
<b>Duct Option</b>	
-	Room applications
D-BB	Duct applications - IP66 rated, UV-resistant polycarbonate
<b>Humidity Output (Not Available with Duct Option)</b>	
-	No Humidity Transmitter
H205	-H205 ±2% Humidity Transmitter, 0 to 5 VDC output
H210	-H210 ±2% Humidity Transmitter, 0 to 10 VDC output
H212	-H212 ±2% Humidity Transmitter, 2 to 10 VDC output
<b>Passive temperature Output (Not Available with Duct Option)</b>	
-	No Temperature Output Option
0	100 Platinum RTD, 100Ω @ 0°C, 0.385Ω/°C temp coefficient
1375	1K Platinum RTD, 1,000Ω @ 0°C, 3.75Ω/°C temp coefficient
1	1K Platinum RTD, 1,000Ω @ 0°C, 3.85Ω/°C temp coefficient
102	10K-2 Thermistor, 10,000Ω @ 25°C
103	10K-3 Thermistor, 10,000Ω @ 25°C
20	20K Thermistor, 20,000Ω @ 25°C
<b>Override Configuration (Not Available with Duct Option)</b>	
J	Override as a Separate Output
N	Override in Parallel (//) with Sensor
P	Override in Parallel (//) with Setpoint: NOT available on voltage setpoint models
Z	No Override. (Needed if No Override is required)
<b>VOC Level Indication (Not Available with Duct Option)</b>	
-	No Level Indication
LED	Green/Orange/Red LED Legend for Good, Fair and Poor.
ARW	Black Arrow on Display with legend to Indicate Good, Fair and Poor
BNK	No LED, Arrow Indicators, Legend