AIR QUALITY


BAPI
Carbon Monoxide Sensor
Nitrogen Dioxide Sensor
VOC Level (PPM)
CO2 Level (PPM)

Raise your hand if you think
AIR QUALITY matters.

Why use VOC ventilation instead of CO_2?

What is VOC and how is it measured?

VOCs or Volatile Organic Compounds, evaporate from substances, such as cleaning products, adhesives, paints, new carpets, copiers and printers to building materials and furnishings. VOCs are also emitted from humans and animals in their breath, sweat and directly from their skin.

BAPI's VOC sensor offers the best of both worlds. It allows for ventilation based on occupancy equivalent to a CO_2 sensor as well as air contaminants. The BAPI unit does this because it has been optimised for demand controlled ventilation. Using a calibration algorithm, the sensor value is converted to an output with a high correlation to a CO_2 level. This lets you use ASHRAE's more popular and straight forward occupancy-based VRP (Ventilation Rate Procedure) schedule.

VOCs are known to cause eye, nose and throat irritations, headache, drowsiness, dizziness, nausea, difficulty concentrating and fatigue; all summarised under the term SBS (Sick Building Syndrome). The importance of detecting the presence of VOCs in indoor air goes beyond these immediate health concerns. People judge the quality of the air not just by how it feels (temperature and humidity), but also by how it smells. If your building solely relies on a CO_2 sensor you are not achieving true air quality.

Case Study:

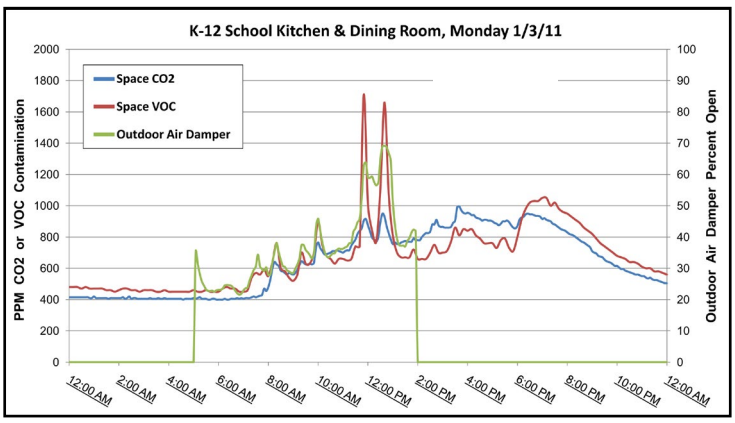
This research was taken in a kitchen and dining area of a public school in Wisconsin. This is a multi-purpose area with breakfast, lunch, and after school studies in the day, and athletic practices, exercise classes and meetings in the evenings.

The open percentage of the outdoor air damper is controlled by the VOC sensor output through a PID control loop from 5 a.m. to 2 p.m. when the space is considered "occupied". The outside air damper is closed during the unoccupied period, and ventilation is accomplished by diffusion from the adjacent hallways. At 7am, the VOC sensor picks up the breakfast cooking aromas and activities. The CO_2 sensor climbs a shortly after as the students arrive to eat. The VOC sensor has slightly. higher readings than the CO_2 sensor during breakfast and the morning breaks because the VOCs from the food are added to the VOCs generated by the people. This is also seen at lunch time when the food is being cooking and generates lots of VOCs which are added to the VOCs from the students and staff. The BAPI sensor will allow these additional VOCs to be ventilated away while the CO_2 sensor will not.

At 2:30pm, students arrive for "After School Studies" so the VOCs and CO_2 rise a little during this period. There is a community meeting at 6pm. Notice how the VOCs track slightly below the CO_2 during the "After School Study" period when it is mostly kids in the room. Then the VOCs track slightly above the CO_2 during the community meeting period when it is mostly adults in the room. This is because adults use more perfumes and colognes than kids, and therefore generate more VOCs.

Whether it's kids or adults in the room, and whether they're studying or eating, the chart proves that the VOC sensor output directly correlates to occupancy in the room and can easily be set up for Demand Controlled Ventilation.

To read the complete study visit www.bapihvac.co.uk/resource-library



Contact us to learn how you can achieve true indoor air quality

BAPI-STAT "QUANTUM PRIME" VOC ROOM SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Achieves true indoor air quality, not just CO_2 dilution
- Optional display, temperature and humidity sensing, temperature setpoint adustment and override
- Output is correlated to a CO_2 value allowing you to ventilate using ASHRAE's CO_2-based VRP algorithm
- Traffic light status indication

5 YEAR WARRANTY

Humans respirate Volatile Organic Compounds (VOCs) as well as CO_2. The BAPI sensor measures these VOCs and indicates when a space is occupied just as well as a CO_2 sensor. The advantage of the VOC sensor is that it measures air contaminants from other sources besides respiration, such as building materials, cleaners, perfumes, furniture and carpet off-gassing.

A further benefit is that it requires no additional work on your part. That's because the sensor converts the VOC reading to a CO_2 equivalent level. This lets you use ASHRAE's CO_2-based VRP schedule to ventilate.

SPECIFICATIONS

POWER: (No AC Power)
0 to 10 VDC output units:
15 to 35 VDC @ 50 mA max (15 VDC recommended)

SENSING ELEMENTS:
Humidity: Capacitive Polymer, ±2% RH accuracy
VOCs: Micro-machined metal oxide

MOUNTING:
Universal backplate (screws provided)

VOC DETECTION RANGE:
0 to 2,000 CO_2 ppm equivalent

START-UP TIME:
15 minutes

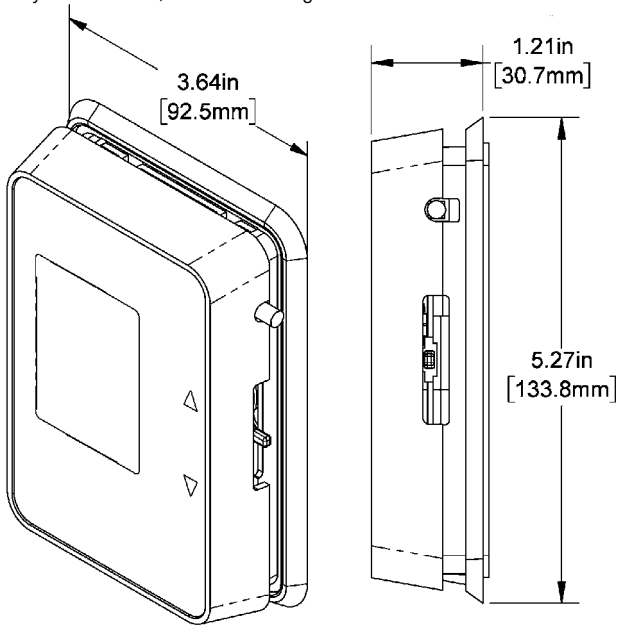
RESPONSE TIME:
Less than 2 minutes

ENCLOSURE MATERIAL & RATING:
ABS Plastic, UL94 V-0

TEMP SENSING ELEMENT & ACCURACY:
10K-2 Thermistor: ±0.2°C (0 to 70°C)
10K-3 Thermistor: ±0.2°C (0 to 70°C)
10K-4 Thermistor: ±0.2°C (0 to 70°C)
1K RTD: ±0.12% at 0°C (385 curve)

LED VOC LEVEL INDICATOR:
Good, Green < 1,000 ppm
Fair, Yellow = 1,000 to 1,500 ppm
Poor, Red > 1,500 ppm

ENVIRONMENTAL OPERATING RANGE:
Temperature: 0 to 50°C
Humidity: 0 to 95% RH, non-condensing



AIR QUALITY

ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/AQP60C-D-B-B-1-C10-J	Display/10K-2 Therm./Temp Setpoint: 10 to 32°C/%RH: 0 to 100%/VOC: 0 to 2,000ppm CO2 Equiv./Override	€ 533.60
BA/AQP60C-D-C-B-1-C10-J	Display/10K-3 Therm./Temp Setpoint: 10 to 32°C/%RH: 0 to 100%/VOC: 0 to 2,000ppm CO2 Equiv./Override	€ 533.60
BA/AQP60C-D-V-B-1-C10-J	Display/10K-4 Therm./Temp Setpoint: 10 to 32°C/%RH: 0 to 100%/VOC: 0 to 2,000ppm CO2 Equiv./Override	€ 533.60
BA/AQP60C-D-A-B-1-C10-J	Display/1K Plat. RTD/Temp Setpoint: 10 to 32°C/%RH: 0 to 100%/VOC: 0 to 2,000ppm CO2 Equiv./Override	€ 539.60
BA/AQP60X-D-B-B-X-XX-X	No Display/10K-2 Thermistor/%RH: 0 to 100%/VOC: 0 to 2,000ppm CO2 Equiv./No Setpoint & No Override	€ 493.50
BA/AQP60X-D-C-B-X-XX-X	No Display/10K-3 Thermistor/%RH: 0 to 100%/VOC: 0 to 2,000ppm CO2 Equiv./No Setpoint & No Override	€ 493.50
BA/AQP60X-D-V-B-X-XX-X	No Display/10K-4 Thermistor/%RH: 0 to 100%/VOC: 0 to 2,000ppm CO2 Equiv./No Setpoint & No Override	€ 493.50
BA/AQP60X-D-A-B-X-XX-X	No Display/1K Platinum RTD/%RH: 0 to 100%/VOC: 0 to 2,000ppm CO2 Equiv./No Setpoint & No Override	€ 499.50

NOTE: *Temperature Setpoint, %RH Measurement and VOC Measurement all have 0 to 10V Output*

VOC DUCT & HARSH ENVIRONMENT SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Achieves true indoor air quality
- Output is correlated to a CO_2 value allowing you to ventilate using ASHRAE's CO_2-based VRP algorithm
- Ventilated BAPI-box for harsh environments and BAPI-box with aspiration tube for ducts

5 YEAR WARRANTY

Humans respirate Volatile Organic Compounds (VOCs) as well as CO_2. The BAPI sensor measures these VOCs and indicates when a space is occupied just as well as a CO_2 sensor. The advantage of the VOC sensor is that it measures air contaminants from other sources besides respiration, such as building materials, cleaners, perfumes, furniture and carpet off-gassing.

A further benefit is that it requires no additional work on your part. That's because the sensor converts the VOC reading to a CO_2 equivalent level. This lets you use ASHRAE's CO_2-based VRP schedule to ventilate. The unit is also available with total VOC output (TVOC) of 0 to 2,500 ppb. This is often needed to meet 3rd party building certifications that require separate CO_2 and VOC readings.

AIR QUALITY

SPECIFICATIONS

POWER: (Half-wave rectified)
12 to 24 VDC, 35 mA max
18 to 24 VAC, 4 VA max

VOLTAGE OUTPUT:
0 to 10 VDC > 10KΩ impedance

VOC SENSING ELEMENT:
Micro-machined metal oxide

CO2e UNIT DETECTION RANGE:
0 to 2,000 ppm CO_2 Equivalent

TVOC UNIT DETECTION RANGE:
0 to 2,500 ppb

START-UP TIME:
15 minutes

RESPONSE TIME:
Less than 60 sec (after start-up time)

ENVIRONMENTAL OPERATING RANGE:
Temperature: 0 to 50°C
Humidity: 0 to 95% RH, non-condensing

WIRING:
3 wires, 16 to 22 AWG

ENCLOSURE MATERIAL & RATING:
Polycarbonate, UL94 V-0, Duct Unit IP66 rated-enclosure

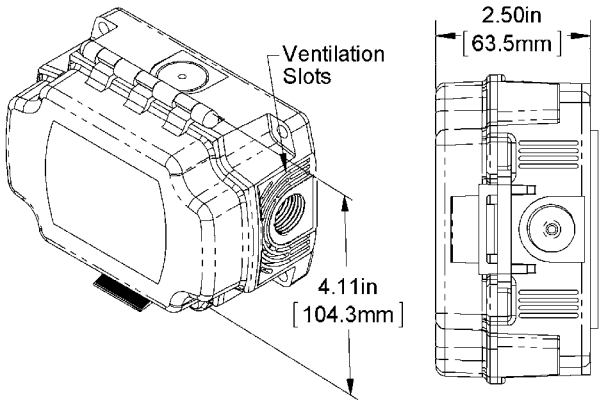
COVER LEDs:
Good, Green < 1,000 ppm
Fair, Yellow = 1,000 to 1,500 ppm
Poor, Red > 1,500 ppm

APPLICATION NOTE:

Common VOCs Detected By BAPI's VOC Sensor

Learn more about Volatile Organic Compounds and what can be detected by our VOC sensors.

Visit www.bapihvac.com/application_note to learn more.



ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/VOC10-D-BB	Duct VOC Sensor/0 to 10V Output/0 to 2,000ppm CO_2 Equivalent Range/IP66 BAPI-Box	€ 419.80
BA/VOC10-V-BB	Harsh Environment VOC Sensor/0 to 2,000ppm CO_2 Equivalent Range/Ventilated BAPI-Box	€ 478.40
BA/TVOC10-D-BB-BNK	Duct TVOC Sensor with Aspiration Tube, 0-10 V, 0 to 2500ppb, IP66 BAPI-Box	€ 419.80
BA/TVOC10-V-BB-BNK	Harsh Enviroment TVOC Sensor with Ventilated BAPI-Box, 0-10 V, 0 to 2,500 ppb	€ 478.40

BAPI-STAT "QUANTUM" VOC/TVOC ROOM SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Field-Selectable 0 to 5 or 0 to 10 VDC Output
- Available with a CO_2 Equivalent Output (CO2e) or a Total VOC Output (TVOC)

Humans respirate Volatile Organic Compounds (VOCs) as well as CO_2. The BAPI sensor measures these VOCs and indicates when a space is occupied just as well as a CO_2 sensor. The advantage of the VOC sensor is that it measures air contaminants from other sources besides respiration, such as building materials, cleaners, perfumes, furniture and carpet off-gassing.

A further benefit is that it requires no additional work on your part. That's because the sensor converts the VOC reading to a CO_2 equivalent level. This lets you use ASHRAE's CO_2-based VRP schedule to ventilate.

The unit is also available with total VOC output (TVOC) of 0 to 2,500 ppb. This is often needed to meet 3rd party building certifications that require separate CO_2 and VOC readings.

5 YEAR WARRANTY

SPECIFICATIONS

POWER: (Half-wave rectified)
12 to 24 VDC, 35 mA max
18 to 24 VAC, 4 VA max

CO2e UNIT DETECTION RANGE:
0 to 2,000 ppm CO_2 Equivalent

TVOC UNIT DETECTION RANGE:
0 to 2,500 ppb

SELECTABLE OUTPUT:
0 to 5 or 0 to 10 VDC > 4KΩ impedance

SENSING ELEMENT:
Micro-machined metal oxide

WIRING:
3 wires, 16 to 22 AWG

ENVIRONMENTAL OPERATING RANGE:
Temperature: 0 to 50°C
Humidity: 5 to 95% RH, non-condensing

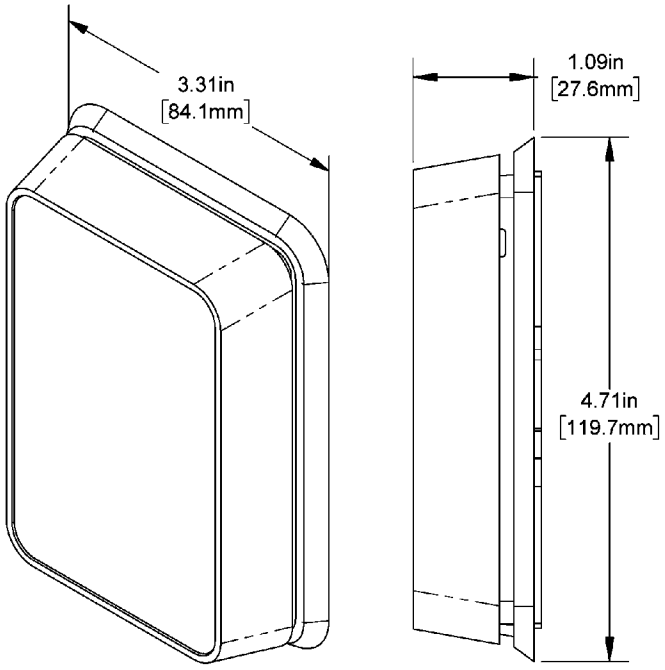
ENCLOSURE MATERIAL & RATING:
ABS Plastic, UL94 V-0

START-UP TIME:
15 minutes

RESPONSE TIME:
< 60 seconds (after start-up time)

MOUNTING:
Universal backplate (screws provided)

LED VOC LEVEL INDICATOR: (not available in TVOC models)
Good, Green < 1,000 ppm
Fair, Yellow = 1,000 to 1,500 ppm
Poor, Red > 1,500 ppm



ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/BQX60-B	VOC Sensor/0 to 10V Output/0 to 2,000ppm CO_2 Equivalent (CO2e) Range/LED Status Indicators	€ 366.35
BA/BQX60-T-B-BNK	TVOC Sensor/0 to 10V Output/0 to 2,500ppb VOC (TVOC) Range/No Status LEDs	€ 366.35

BAPI-STAT "QUANTUM PRIME" CO_2 ROOM SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Automatic barometric pressure and temperature compensation
- Does not require annual calibration, and suitable for 24/7 application
- Traffic light status indication
- Set up time less than 15 mins

5 YEAR WARRANTY

Even low quantities of CO_2 can have a negative effect on your health. Because of this, it is vital that you have the right sensor for your application. So when choosing your next CO_2 sensor ensure that it is accurate, reliable & provides continuous self-calibration (no annual visits to re-calibrate) as this will guarantee accurate measurements time after time.

BAPI's award winning CO_2 sensor is guaranteed to work at any altitude and in any weather conditions, it will detect CO_2 within two minutes of operation and is suitable for 24-7 occupancy, it doesn't just monitor but will measure and control your environment.

SPECIFICATIONS

POWER FOR 0 TO 10 VDC OUTPUTS:
15 to 35 VDC @ 240 mA (15 to 24 VDC recommended)

SENSING ELEMENTS:
CO_2: Dual Channel Non-Dispersive Infrared (NDIR)
Humidity: Capacitive Polymer ±2% RH accuracy

TEMPERATURE SENSING ELEMENT & ACCURACY:
10K-2 Thermistor: ±0.2°C (0 to 70°C)
10K-3 Thermistor: ±0.2°C (0 to 70°C)
10K-4 Thermistor: ±0.2°C (0 to 70°C)
1K RTD: ±0.12% at 0°C (385 curve)

ENVIRONMENTAL OPERATING RANGE:
Temperature: 0 to 50°C
Humidity: 0 to 95% RH, non-condensing

ENCLOSURE MATERIAL & RATING:
ABS Plastic, UL94 V-0

CO_2 DETECTION RANGE:
0 to 2,000 ppm

START UP TIME:
Less than 2 minutes

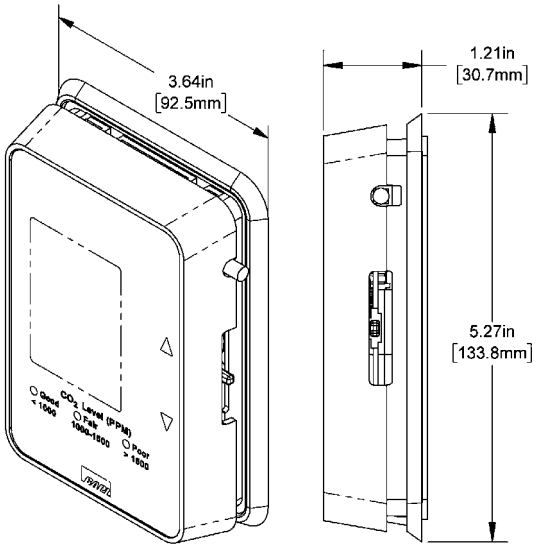
RESPONSE TIME:
Less than 2 minutes for 90% step change typical (after start-up)

CO_2 DRIFT STABILITY:
<5% of full scale over life of product

CO_2 ACCURACY:
400 to 1,000 ppm: ±75 ppm or >1,000 ppm: ±10% of reading

MOUNTING:
Universal backplate (screws provided)

LED CO_2 LEVEL INDICATOR:
Good, Green < 1,000 ppm
Fair, Yellow = 1,000 to 1,500 ppm
Poor, Red > 1,500 ppm



ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/AQP60C-D-B-B-1-C10-J	Display/10K-2 Thermistor/Temp Setpoint: 10 to 32°C/%RH: 0 to 100%/Dual Channel CO_2: 0 to 2,000ppm/Override	€ 533.60
BA/AQP60C-D-C-B-1-C10-J	Display/10K-3 Thermistor/Temp Setpoint: 10 to 32°C/%RH: 0 to 100%/Dual Channel CO_2: 0 to 2,000ppm/Override	€ 533.60
BA/AQP60C-D-V-B-1-C10-J	Display/10K-4 Thermistor/Temp Setpoint: 10 to 32°C/%RH: 0 to 100%/Dual Channel CO_2: 0 to 2,000ppm/Override	€ 533.60
BA/AQP60C-D-A-B-1-C10-J	Display/1K Platinum RTD/Temp Setpoint: 10 to 32°C/%RH: 0 to 100%/Dual Channel CO_2: 0 to 2,000ppm/Override	€ 539.65
BA/AQP60X-D-B-B-X-XX-X	No Display/10K-2 Thermistor/%RH: 0 to 100%/Dual Channel CO_2: 0 to 2,000ppm/No Setpoint & No Override	€ 493.95
BA/AQP60X-D-C-B-X-XX-X	No Display/10K-3 Thermistor/%RH: 0 to 100%/Dual Channel CO_2: 0 to 2,000ppm/No Setpoint & No Override	€ 493.95
BA/AQP60X-D-V-B-X-XX-X	No Display/10K-4 Thermistor/%RH: 0 to 100%/Dual Channel CO_2: 0 to 2,000ppm/No Setpoint & No Override	€ 493.95
BA/AQP60X-D-A-B-X-XX-X	No Display/1K Platinum RTD/%RH: 0 to 100%/Dual Channel CO_2: 0 to 2,000ppm/No Setpoint & No Override	€ 500.00

NOTE: *Temperature Setpoint, %RH Measurement and CO2 Measurement all have 0 to 10V Output*

BAPI-STAT "QUANTUM" CO_2 ROOM SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Automatic barometric pressure and temperature compensation
- Does not require annual calibration, and suitable for 24/7 application
- Traffic light status indication
- Set up time less than 15 mins

The BAPI-Stat "Quantum" CO_2 Sensor is an accurate and reliable way of incorporating demand controlled ventilation into a building's HVAC strategy. It measures the CO_2 in ranges of 0 to 2,000, 0 to 5,000, 0 to 10,000 or 0 to 50,000 ppm with a field selectable output of 0 to 5 or 0 to 10 VDC.

The Dual Channel (DCD) "24/7" unit has been optimized for continuously occupied areas and features a three-point calibration process for enhanced stability, accuracy and reliability.

5 YEAR WARRANTY

SPECIFICATIONS

POWER:
12 to 24 VDC, 240 mA
18 to 24 VAC, 12 VA peak

SENSING ELEMENTS:
Dual Channel Non-Dispersive Infrared (NDIR)

FIELD SELECTABLE VOLTAGE OUTPUT:
0 to 5 or 0 to 10 VDC

TERMINATION:
3 Terminals, 16 to 22 AWG

ENVIRONMENTAL OPERATING RANGE:
Temperature: 0 to 50°C
Humidity: 0 to 95% RH, non-condensing

ENCLOSURE MATERIAL & RATING:
ABS Plastic, UL94 V-0

CO_2 DETECTION RANGE:
0 to 2,000 ppm

START UP TIME:
Less than 2 minutes

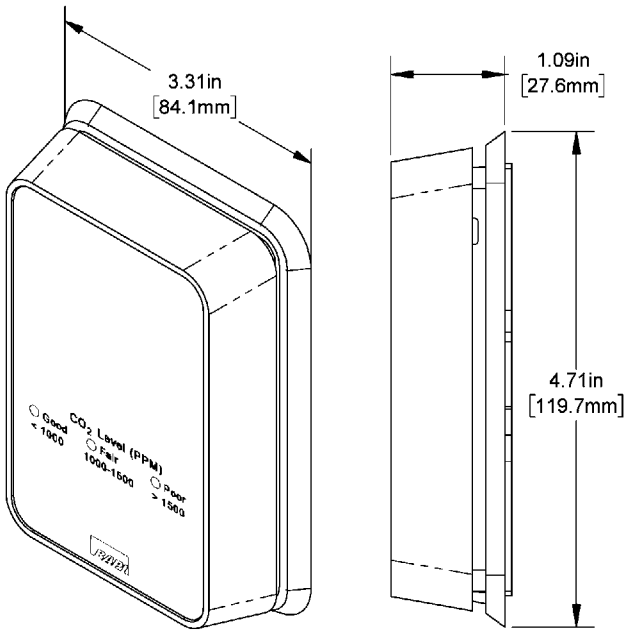
RESPONSE TIME:
Less than 2 minutes for 90% step change typical (after start-up)

MOUNTING:
Universal backplate (screws provided)

CO_2 DRIFT STABILITY:
<5% of full scale over life of product

CO_2 ACCURACY:
400 to 1,000 ppm: ±75 ppm or >1,000 ppm: ±10% of reading

LED CO_2 LEVEL INDICATOR:
Good, Green < 1,000 ppm
Fair, Yellow = 1,000 to 1,500 ppm
Poor, Red > 1,500 ppm



AIR QUALITY

ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/AQX60-D	BAPI-Stat "Quantum" Dual Channel CO_2 Sensor/0 to 10V Output/0 to 2,000ppm Range	€ 392.25

CO_2 DUCT AND HARSH ENVIRONMENT SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Automatic barometric pressure and temperature compensation
- Does not require annual calibration, and suitable for 24/7 application
- Traffic light status indication
- Set Up time less than 15 mins

The BAPI CO_2 Duct Sensor is an accurate and reliable way of incorporating demand controlled ventilation. It measures CO_2 in ranges of 0 to 2,000 ppm with a field selectable output of 0 to 5 or 0 to 10 VDC.

The Duct unit samples duct air using an aspiration tube. The Harsh Environment unit features a ventilated BAPI-Box and is ideal for areas such as outdoor air plenums, equipment rooms, green houses and warehouses. The CO_2 level is indicated as "Good, Fair or Poor" by three LEDs on the front of the unit. If it reaches the top of the PPM range, the red LED will begin to flash.

5 YEAR WARRANTY

SPECIFICATIONS

POWER:
12 to 24 VDC, 240 mA
18 to 24 VAC, 12 VA peak

FIELD SELECTABLE VOLTAGE OUTPUT:
0 to 5 or 0 to 10 VDC

TERMINATION:
3 Terminals, 16 to 22 AWG

ENVIRONMENTAL OPERATING RANGE:
Temperature: 0 to 50°C
Humidity: 0 to 95% RH, non-condensing

ENCLOSURE MATERIAL:
Polycarbonate

CO_2 DETECTION PPM RANGE:
0 to 2,000 ppm

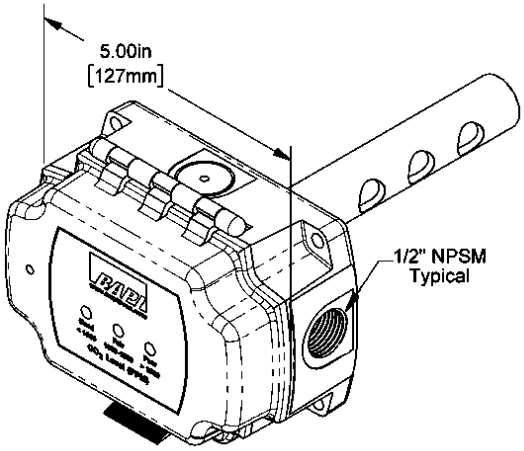
START UP TIME:
Less than 2 minutes

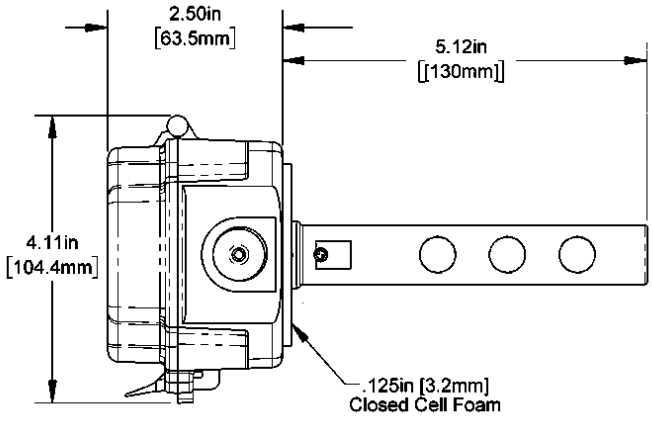
RESPONSE TIME:
Less than 2 minutes for 90% step change typical (after start-up)

CO_2 DRIFT STABILITY:
<5% of full scale over life of product

CO_2 ACCURACY:
75 ppm or 10% of reading (whichever is greater)

LED CO_2 LEVEL INDICATOR:
Good, Green < 1,000 ppm
Fair, Yellow = 1,000 to 1,500 ppm
Poor, Red > 1,500 ppm





ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/DCD10-D-BB	Duct Dual Channel CO2 Sensor/0 to 10V Output/0 to 2,000ppm Range/IP66 BAPI-Box	€ 405.15
BA/DCD10-V-BB	Harsh Environment Dual Channel CO2 Sensor/0 to 10V Output/0 to 2,000ppm Range/Ventilated BAPI-Box	€ 474.15

CARBON MONOXIDE DUCT & HARSH ENVIRONMENT SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Field Replaceable Electrochemical Sensor with Self-Test
- Large Display and Two Independent Alarm Contacts
- Field Selectable Ranges and Outputs
- Certificate of Calibration Included with Sensors and Replacement Modules

BAPI's Carbon Monoxide Sensor offers enhanced electrochemical sensing with outstanding accuracy even at low concentrations. The Duct unit samples duct air using an aspiration tube. The Harsh Environment unit features a ventilated BAPI-Box and is ideal for car parks, equipment rooms and warehouses.

The sensor has field selectable CO ranges of 0 to 100, 0 to 200, 0 to 300 and 0 to 500 ppm. It also has field selectable outputs of 0 to 5, 1 to 5, 0 to 10, 2 to 10 VDC and 3-wire 4 to 20 mA output. Two independent SPDT alarm contacts switch at field selectable CO concentrations of 25, 35, 50, 100 and 200 ppm. The field replaceable sensor element lasts approximately 7 years and is self tested daily.

5 YEAR WARRANTY

SPECIFICATIONS

POWER:
18 to 28 VAC, 7.2 VA max
18 to 40 VDC, 180 mA max

FIELD SELECTABLE RANGES:
0 to 100, 0 to 200, 0 to 300 & 0 to 500 ppm

ALARM RELAYS:
2 Independent, Dry SPDT (Form C)
2 Amps at 24 VAC/DC, Resistive
140 VA Inrush, 48 VA Holding at 24 VAC

FIELD WIRING TERMINALS:
Pluggable Screw Terminals, 14 to 24 AWG

RESPONSE TIME:
<80 seconds from 10% to 90% of range

ALARM RELAY SETPOINTS:
25, 35, 50, 100 or 200 ppm

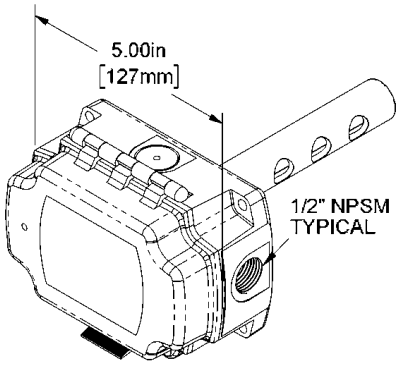
ALARM TIMER:
0, 1, 5 & 10 minutes

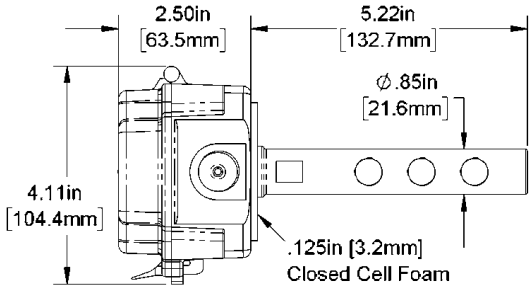
SENSOR ELEMENT LIFE:
7 years typical

FIELD SELECTABLE OUTPUTS:
3-wire 4 to 20 mA
0 to 5, 1 to 5, 0 to 10, 2 to 10 VDC

ACCURACY:
<200 ppm = ±3% FS, 0 to 50°C
201 to 500 ppm = ±5% FS, 10 to 50°C

ENVIRONMENTAL OPERATING RANGE:
Temperature: -10 to 50°C
Humidity: 5 to 95% RH, non-condensing





ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/CO-D-BB	"Duct CO Sensor with Aspiration Tube, Field Selectable Outputs and Ranges, IP66 BAPI-Box"	€717.20
BA/CO-V-BB	Harsh Environment CO Sensor with Ventilated BAPI-Blue Box, Field Selectable Outputs and Ranges	€775.80
BA/COS	Factory Calibrated Replacement CO Module	€215.50

CO HARSH ENVIRONMENT WITH OPTIONAL BACNET SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Field Replaceable Electrochemical Sensor with Self-Test
- Optional BACnet MS/TP Output of CO, Temp and Humidity
- Field Selectable Voltage Outputs

5 YEAR WARRANTY

BAPI's Carbon Monoxide Harsh Environment Sensor offers enhanced electrochemical sensing with outstanding accuracy at low concentrations. It features a ventilated BAPI-Box and is ideal for parking ramps, equipment rooms and warehouses.

The sensor has a CO range of 0 to 500 ppm with field selectable outputs of 0 to 5, 1 to 5, 0 to 10 and 2 to 10 VDC. It includes optional humidity measurement with one of the above voltage outputs, and temperature via a 10K-2, 10K-3 or 20K Thermistor. The CO, temperature and humidity outputs are also available via BACnet MS/TP.

SPECIFICATIONS

POWER:

0 to 5 or 1 to 5 VDC output
9 to 40 VDC, 10 mA max
12 to 28 VAC, 1.4 VA max

0 to 10 or 2 to 10 VDC output
12 to 40 VDC, 10 mA max
12 to 28 VAC, 14 VA max

BACnet output
9 to 40 VDC, 35 mA max
12 to 28 VAC, 1.7 VA max

CO MEASUREMENT RANGE:

0 to 500 ppm

FIELD WIRING TERMINALS:

Flying Leads, 20 AWG

RESPONSE TIME:

<80 seconds from 10% to 90% of range

SENSOR ELEMENT LIFE:

7 years typical

FIELD SELECTABLE VOLTAGE OUTPUTS:

0 to 5, 1 to 5, 0 to 10 and 2 to 10 VDC

CARBON MONOXIDE SENSOR ACCURACY

<200PPM = ±3% FS, 32 to 122°F (0 to 50°C)
201 to 500ppm = ±5%FS, 50 to 122°F (10 to 50°C)

ENVIRONMENTAL OPERATING RANGE:

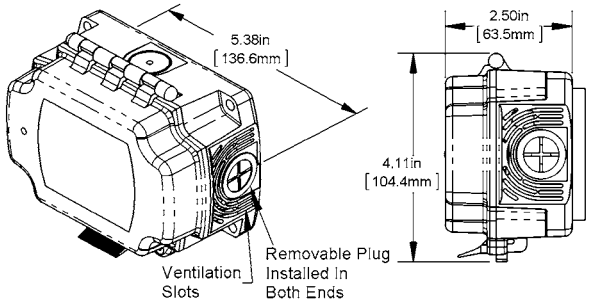
Continuous: 32 to 122°F (0 to 50°C); 5 to 95% RH, noncondensing
Intermittent: -40 to 131°F (-40 to 55°C); 5 to 95% RH, noncondensing

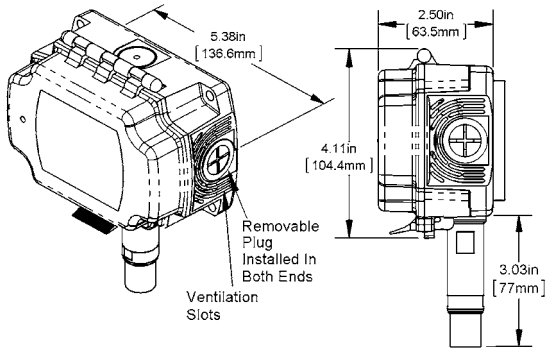
HUMIDITY SENSOR ACCURACY:

±2% RH (20% to 80%) @ 25°C, Fully Compensated

TEMP SENSING ELEMENT & ACCURACY:

10K-2 Thermistor: ±0.2°C (0 to 70°C)
10K-3 Thermistor: ±0.2°C (0 to 70°C)
10K-4 Thermistor: ±0.2°C (0 to 70°C)
1K RTD: ±0.12% at 0°C (385 curve)





ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/BBV-CO	Harsh Environment CO Sensor	€ 297.40
BA/BBV-COV-102-H	Harsh Environment CO Sensor with 10K-2 Thermistor Temp and %RH	€ 384.45
BA/BBV-COV-103-H	Harsh Environment CO Sensor with 10K-3 Thermistor Temp and %RH	€ 384.45
BA/BBV-COV-20-H	Harsh Environment CO Sensor with 20K Thermistor Temp and %RH	€ 384.45
BA/BBV-COBN	Harsh Environment CO Sensor with BACnet Output	€ 421.50
BA/BBV-COBN-H	Harsh Environment CO Sensor with Temp, %RH and BACnet Output	€ 502.55

CARBON MONOXIDE ROOM SENSOR

Air Quality Sensor

- 0 to 40 ppm CO measurement range
- 30 ppm CO relay trip level with audible alarm
- Field selectable 0 to 5 V, 0 to 10 V or 4 to 20 mA output
- BAPI-Stat 4 enclosure with LED status indication

The BAPI Carbon Monoxide Room Sensor features a BAPI-Stat 4 Style Enclosure with Green/Red Status LED. It has a 0 to 40 ppm CO measurement range with a 30 ppm relay/audible alarm trip level. The relay is field selectable for normally closed or normally open, and the CO output level is field selectable for 0 to 5V, 0 to 10V or 4 to 20mA.

The Green/Red LED indicates unit status of Normal, Alarm, Trouble/Service or Test. The side pushbutton places the unit into Test status to verify audible alarm and LED operation.

5 YEAR WARRANTY

SPECIFICATIONS

POWER SUPPLY:
24 VAC/VDC, 1.0 VA max

AUDIBLE ALARM:
75 dB at 10 feet

RELAY OUTPUT:
Form "C", 0.1 A , 30 VDC, Jumper selectable for Normally Closed or Open

CO MEASUREMENT RANGE:
0 to 40 ppm

RELAY/ALARM TRIP LEVEL:
30 ppm CO

JUMPER SELECTABLE ANALOG OUTPUT:
0 to 5 VDC, 0 to 10 VDC or 4 to 20 mA

CO SENSOR TECHNOLOGY:
Electrochemical

ENVIRONMENTAL OPERATING RANGE:
Temperature: 4.4 to 37.8°C
Humidity: 15 to 95% RH

SENSOR LIFE:
7 years typical

RESPONSE TIME:
15 seconds typical

SENSOR OVERLOAD LEVEL:
5,000 ppm CO

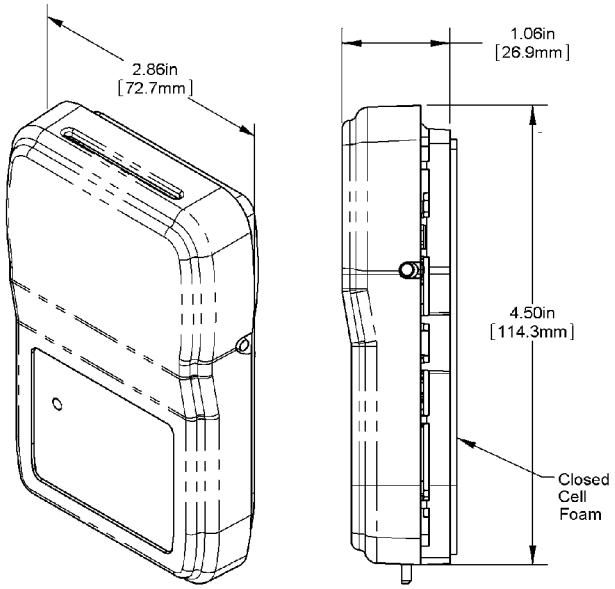
LED BEHAVIOR:

Normal Status
Green LED illuminated, Red LED flashes every 30 seconds indicating that the alarm is powered

Alarm Status
Green LED extinguished, flashing Red LED and audible alarm

Trouble/Service Status
Green LED illuminated, Red LED flashes twice and horn "beeps" once every 30 seconds

Test Status
Green LED illuminated, one chirp, then Red LED flashes 4 to 5 times followed by 2 alarm signals



ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/CO-B4	0 to 40ppm, Status LED, Audible Alarm, 4 to 20mA, 0 to 5V, 0 to 10V	€ 387.95

NITROGEN DIOXIDE DUCT & HARSH ENVIRONMENT SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Field replaceable electrochemical sensor
- Two independent alarm contacts
- Field selectable NO_2 ranges and outputs
- Sensor element is tested daily

BAPI's Nitrogen Dioxide Harsh Environment Sensor offers enhanced electrochemical sensing with outstanding accuracy even at low concentrations. The Duct unit samples duct air using an aspiration tube. The Harsh Environment unit features a ventilated BAPI-Box and is ideal for car parks, equipment rooms and warehouses.

The sensor has field selectable NO_2 ranges of 0 to 2.5, 0 to 5, 0 to 7.5 and 0 to 10 ppm. It also has field selectable outputs of 0 to 5, 1 to 5, 0 to 10 and 2 to 10 VDC as well as a 3-wire 4 to 20 mA output. Two independent SPDT alarm contacts switch at field selectable NO_2 concentrations of 1.0, 2.5, 5.0, 7.5 and 10.0 ppm.

5 YEAR WARRANTY

SPECIFICATIONS

POWER:
18 to 28 VAC, 7.2 VA max
18 to 40 VDC, 180 mA max

FIELD SELECTABLE RANGES:
0 to 2.5 ppm • 0 to 5.0 ppm
0 to 7.5 ppm • 0 to 10.0 ppm

ACCURACY:
±5.0% of full scale

ALARM RELAYS:
2 Independent, Dry SPDT (Form C)
2 Amps at 24 VAC/DC, Resistive
140 VA Inrush, 48 VA Holding at 24 VAC

FIELD WIRING TERMINALS:
Pluggable Screw Terminals, 14 to 24 AWG

RESPONSE TIME:
<80 seconds from 10% to 90% of range

ALARM RELAY SETPOINTS:
1.0, 2.5, 5.0, 7.5 or 10 ppm

ALARM TIMER:
0, 1, 5 & 10 minutes

FIELD SELECTABLE ANALOG OUTPUTS:
3-wire 4 to 20 mA
0 to 5 VDC, 1 to 5 VDC
0 to 10 VDC, 2 to 10 VDC

LIFETIME:
7 years typical

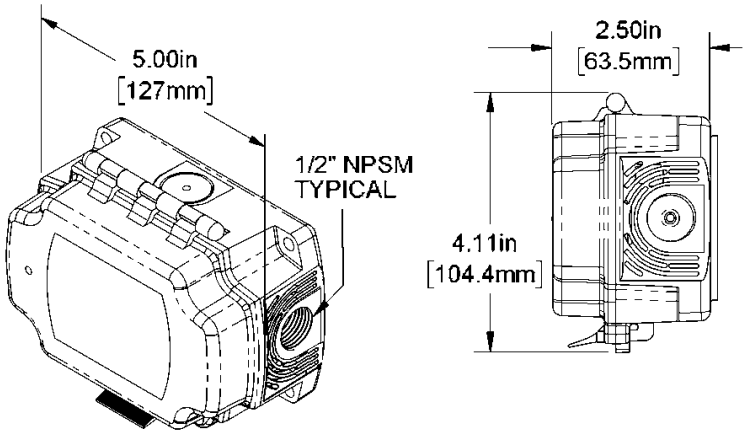
ENVIRONMENTAL OPERATING RANGE:
Temperature:-10 to 50°C
Humidity: 5 to 95% RH, non-condensing

APPLICATION NOTE:

Gas Sensor Coverage Area and Mounting

Learn how to properly place and mount BAPI's air quality sensors to ensure proper coverage and operation.

Visit www.bapihvac.com/application_note to learn more.



ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/NO2-V-BB	Harsh Environment NO_2 Sensor with Ventilated BAPI-Blue Box, Field Selectable Outputs and Ranges	€ 1,008.55
BA/NO2-D-BB	Duct NO_2 Sensor with Aspiration Tube, Field Selectable Outputs and Ranges, IP66 BAPI-Box	€ 948.20
BA/NO2S	Factory Calibrated Replacement NO_2 Module	€ 491.35

BAPI-STAT "QUANTUM" PARTICULATE SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Field selectable particulate size of PM1.0, PM2.5 and PM10
- Field selectable outputs of 0 to 5 V, 0 to 10 V and 4 to 20 mA
- Laser-based, light scattering particle sensing with 10 year expected lifetime.

The BAPI-Stat "Quantum" Particulate Sensor is an accurate and reliable way of continuously monitoring the concentration of particles in a room. Laser-based sensors provide the highest accuracy for commercial applications and will measure particle concentrations from 0 to 1,000 µg/m³. Comes with a 60mm mounting base to fit European style junction boxes.

5 YEAR WARRANTY

SPECIFICATIONS

POWER: (Half-wave rectified)
7 to 40 VDC (4 to 20 mA output)
7 to 40 VDC or 12 to 28 VAC (0 to 5 VDC output)
15 to 40 VDC or 15 to 28 VAC (0 to 10 VDC output)

POWER CONSUMPTION:
75 mA max @ 24 VDC • 3 VA max @ 24 VAC

LOAD RESISTANCE:
VDC output 4K Ω min

SENSING ELEMENT:
Laser-based, Light Scattering

SENSING ELEMENT LIFE:
10 years typical

MOUNTING:
Universal backplate (screws provided)

CONCENTRATION RANGE:
0 to 1,000 µg/m³

WIRING:
3 wires, 16 to 22 AWG

RESPONSE TIME:
<6 seconds

ACCURACY AT 25°C:

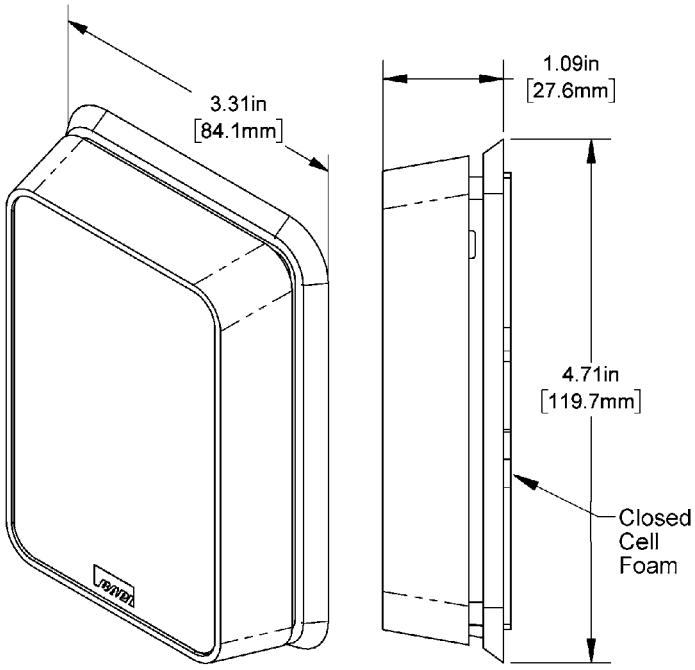
	0 to 100 µg/m³	100 to 1,000 µg/m³
PM1.0	±25 µg/m³	±25% of reading
PM2.5	±15 µg/m³	±15% of reading
PM10	±25 µg/m³	±25%of reading

ENVIRONMENTAL OPERATING RANGE:
Temperature: -20 to 70°C
Humidity: 0 to 95% RH, non-condensing

ENCLOSURE MATERIAL & RATING:
ABS Plastic, UL94 V-0

FIELD SELECTABLE PARTICULATE SIZE:
PM1.0 ≤ 1.0 µm in diameter
PM2.5 ≤ 2.5 µm in diameter
PM10 ≤ 10 µm in diameter

FIELD SELECTABLE OUTPUT:
4 to 20 mA, 0 to 5 V, 0 to 10 V



ORDERING

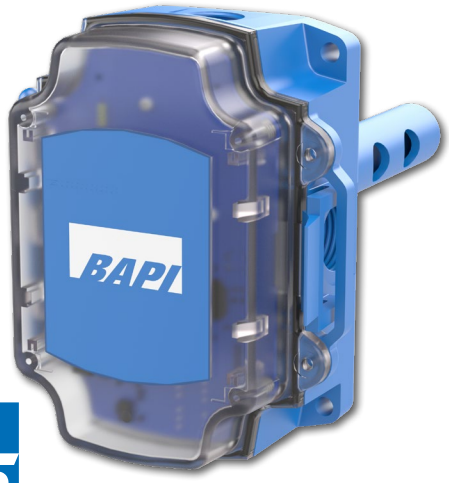
PART NUMBER:	DESCRIPTION:	PRICE:
BA/CQX60	BAPI-Stat "Quantum" Particulate Sensor with Field Selectable Particulate Size and Output	€ 409.50

DUCT PARTICULATE SENSOR

Air Quality Sensor

ANOTHER ORIGINAL

- Field selectable particulate size of PM1.0, PM2.5 and PM10
- Field selectable outputs of 0 to 5 V, 0 to 10 V and 4 to 20 mA
- Laser-based, light scattering particle sensing with 10 year expected lifetime.



The BAPI-Box Duct Particulate Sensor is an accurate and reliable way of continuously monitoring the concentration of particles in a duct. The duct unit samples duct air using an aspiration tube.

Laser-based sensors provide the highest accuracy for commercial applications and will measure particle concentrations from 0 to 1,000 µg/m³.

5 YEAR WARRANTY

AIR QUALITY

SPECIFICATIONS

POWER: (Half-wave rectified)
7 to 40 VDC (4 to 20 mA output)
7 to 40 VDC or 12 to 28 VAC (0 to 5 VDC output)
15 to 40 VDC or 15 to 28 VAC (0 to 10 VDCoutput)

POWER CONSUMPTION:
75 mA max @ 24 VDC • 3 VA max @ 24 VAC

LOAD RESISTANCE:
VDC output 4K Ω min

SENSING ELEMENT:
Laser-based, Light Scattering

SENSING ELEMENT LIFE:
10 Years Typical

CONCENTRATION RANGE:
0 to 1,000 µg/m³

WIRING:
3 wires, 16 to 22 AWG

RESPONSE TIME:
<6 Seconds

ACCURACY AT 25°C ±5°C:

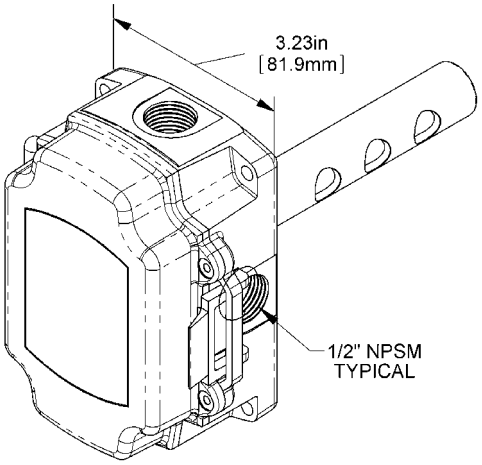
	0 to 100 µg/m³	100 to 1,000 µg/m³
PM1.0	±25 µg/m³	±25% of reading
PM2.5	±15 µg/m³	±15% of reading
PM10	±25 µg/m³	±25%of reading

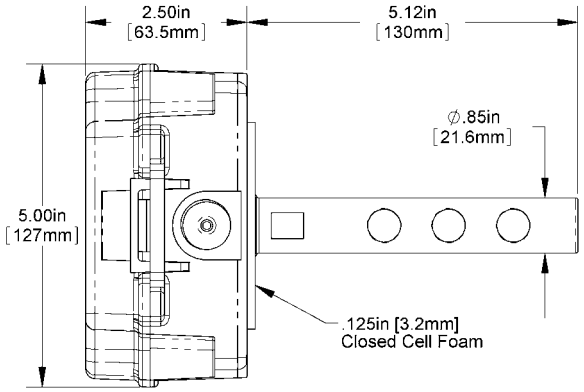
ENVIRONMENTAL OPERATING RANGE:
Temperature: -20 to 70°C
Humidity: 0 to 95% RH, non-condensing

ENCLOSURE MATERIAL & RATING:
UV-resistant polycarbonate, UL94 V-0

FIELD SELECTABLE PARTICULATE SIZE:
PM1.0 ≤ 1.0 µm in diameter
PM2.5 ≤ 2.5 µm in diameter
PM10 ≤ 10 µm in diameter

FIELD SELECTABLE OUTPUT:
4 to 20 mA, 0 to 5 V, 0 to 10 V





ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/PM-D-BB	Duct Particulate Sensor, Field Selectable PM Size (PM1.0, PM2.5, or PM10) and Output (4-20mA, 0-5V, or 0-10V)	€ 646.50

REFRIGERANT LEAK DETECTOR

Air Quality Sensor

- Detects most modern refrigerants
- Area monitoring for leaks and spills
- Provides a voltage output
- Automatic temperature compensation for increased accuracy

The BAPI Refrigerant Leak Detector is an area monitor that detects a wide range of refrigerants. It is not intended for critical ppm measurements nor life safety applications. The sensor is temperature compensated for improved detection of leaks and spills. The output voltage increases as the concentration of the refrigerant increases in the space.

5 YEAR WARRANTY

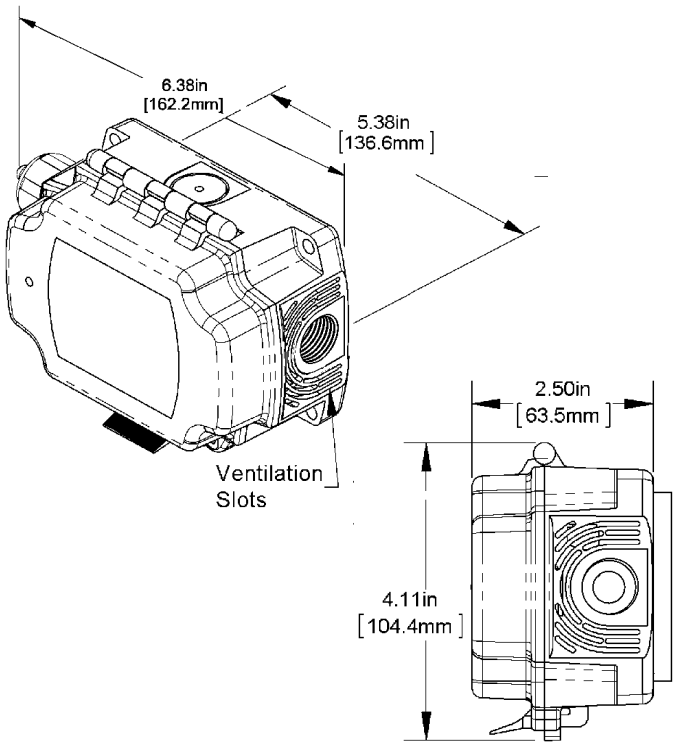
SPECIFICATIONS

POWER SUPPLY:
9 to 40 VDC at 120 mA max
19 to 32 VAC at 5 VA

OUTPUT IMPEDANCE:
680 Ohms

OUTPUT VOLTAGE:
0.5 to 4.8 VDC

ENVIRONMENTAL OPERATING RANGE:
Temperature: 0 to 60°C



Refrigerants Detected

The BAPI Refrigerant Leak Detector is an area monitor that detects over 100 different refrigerants. It is not intended for critical ppm measurements nor life safety applications.

The sensor is temperature compensated for improved detection of leaks and spills. The output voltage increases as the concentration of the refrigerant increases in the space.

Refrigerants
R-22(A1)
R-32 (A2L)
R-125 (A1)
R-134a (A1)
R-1234yf (A2L)
R-1234ze (A2L)

Refrigerant Blends	
R-404a (A1)	R-452a (A1)
R-407c (A1)	R-452b (A2L)
R-407f (A1)	R-454a (A2L)
R-410a (A1)	R-454b (A2L)
R-424a (A1)	R-454c (A2L)
R-434a (A1)	R-455a (A2L)
R-447a (A2L)	R-466a (A1)
R-448a (A1)	R-507 (A1)
R-449a (A1)	R-513a (A1)
R-450a (A1)	

For a full list of refrigerants detected, please visit www.bapihvac.com.

ALSO AVAILABLE:

Sealant Filled Connectors

BAPI's Sealant Filled Connectors (SFC) contain a moisture-excluding sealant which encapsulates the electrical connection protecting it from moisture and oxidation.

See page 68 to learn more.

ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/RLD	Refrigerant Leak Detector, IP66 BAPI-Box, Blue	€ 400.85
BA/RLD-W	Refrigerant Leak Detector, IP66 BAPI-Box, White	€ 400.85
BA/RLD-EL	Replacement Element	€ 51.70

NOTE: *Grey shaded items follow the Buy and Resale Multiplier.*

CO_2 CALIBRATION KIT

Air Quality Sensor

- Calibrates and verifies proper operation of all BAPI CO_2 room and duct sensors

CO_2 Sensor Calibration Kit

BAPI's CO_2 Sensor Calibration Kit verifies the proper operation and calibrates all of BAPI's room and duct CO_2 sensors.

Two calibration gas concentrations are required to perform a complete calibration*. Purchase the single point gas at a CO_2 concentration of 400 to 800 PPM, and the span gas at 1,000 to 1,200 PPM. Only one regulator is required because it can be swapped between gas cylinders.

BAPI's CO_2 Sensor Calibration Kit consists of the following:

- A software CD containing the test software and cable drivers
- A communications cable that connects a computer to the BAPI CO_2 sensor
- A funnel used as a gas shroud
- A length of tubing to connect the funnel to the test gases
- Rubber bands to secure the funnel to the BAPI CO_2 sensor
- Shunt jumpers to place the BAPI CO_2 sensor into test mode

*Note: A single point gas may not be required. If the ambient CO2 concentration is known, stays stable at ±10 PPM for at least 10 minutes and is in the range of 350 to 800 PPM, you may perform the single point accuracy check and calibration without any test gas.

CO_2 Sensor Calibration Kit with Optional Case (shown with customer supplied gas cylinders)

5 YEAR WARRANTY

ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/CO2-KIT	CO_2 Sensor Calibration Kit	€ 133.60
BA/CO2-KIT-C	CO_2 Sensor Cal. Kit with Case	€ 517.25
BA/CO2-C	Empty Case with Foam Cutouts	€ 392.25

VOC VERIFICATION KIT

Air Quality Sensor

The VOC Sensor Verification Kit allows a known VOC sample to be generated and applied to a BAPI room or duct VOC sensor. The sample tests the dynamic range of the sensor to see if the sensor element is working correctly.

The kit consists of a plastic bottle and a 60mL syringe and a comprehensive set of instructions. The customer has to supply 70% minimum Isopropyl Alcohol.

5 YEAR WARRANTY

ORDERING

PART NUMBER:	DESCRIPTION:	PRICE:
BA/VOC-KIT	VOC Sensor Verification Kit	€ 15.50