

# SBA-5

## CO<sub>2</sub> Gas Analyzer

*For Users Who Demand Accuracy, Reliability And Long Term Stability*

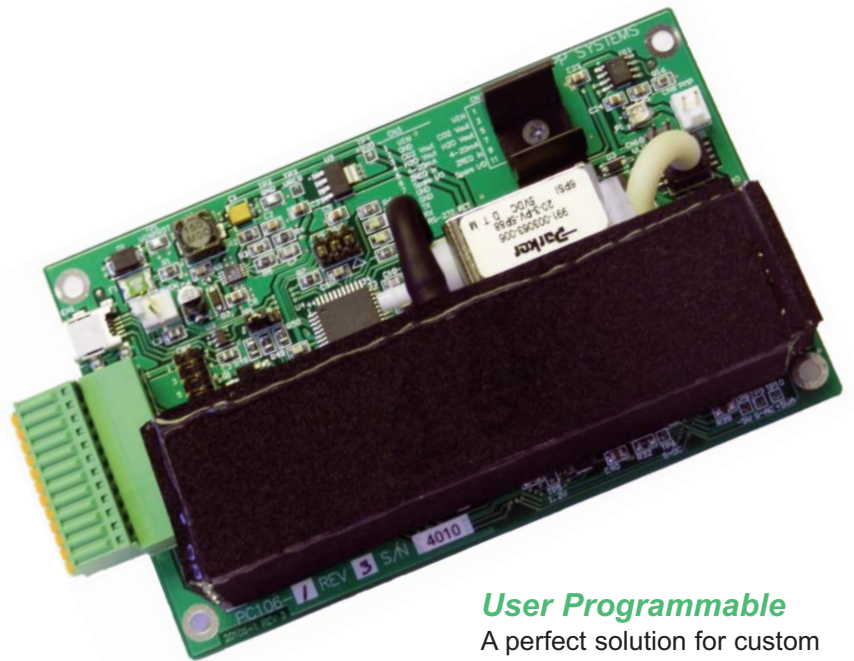
Since 1984, PP Systems has been manufacturing high quality CO<sub>2</sub> infrared gas analyzers for customers worldwide. The **SBA-5** is designed for OEM applications and customers that demand a high degree of accuracy and stability with minimal maintenance.

### Calibration

The design of the **SBA-5** ensures an inherent calibration stability that has been confirmed by over 25 years experience in gas analysis technology. The **SBA-5** features a non-dispersive, infrared measurement technique coupled with microprocessor based signal processing resulting in precise measurement of CO<sub>2</sub>. Our innovative "Auto-Zero" technology and insulated, thermostatically controlled optical bench ensures fast warm-up, long term stability, accuracy and analyzer calibration. It also minimizes the effects of sample cell contamination, IR source aging, changes in detector sensitivity and pre-amplifier gain.

### Measurement Ranges

The **SBA-5** can be supplied with two different optical benches calibrated specifically to the range that you require. One bench is optimized for measurement ranges of CO<sub>2</sub> up to 30,000 ppm and another optimized for ranges between 30,000-100,000 ppm. For users that want to recalibrate the gas analyzer to a new level, this can easily be achieved as long as it is within the range for that particular optical bench.



### User Programmable

A perfect solution for custom applications

### System Features

- High precision CO<sub>2</sub> gas analyzer
- No factory or field calibration required
- Multiple ranges up to 100,000 ppm CO<sub>2</sub> (10%)
- Accuracy: < 1% of span concentration over calibrated range
- Automatic pressure and temperature compensation
- Dynamic or static measurement capability
- Operation from 6-18 VDC power supply
- Low power consumption
- Analog and digital output
- Small footprint (7.5 cm W x 12 cm L x 3.5 cm H) and lightweight
- Low cost



**SBA-5 with enclosure**  
(Accessories sold separately)

### For Use In:

- Environmental control rooms
- Growth chambers
- Incubators
- Soil CO<sub>2</sub> efflux
- FACE sites
- CO<sub>2</sub> sequestration
- Animal/insect respiration
- Fruit storage
- Breweries
- Ambient air monitoring
- CO<sub>2</sub> leakage
- Indoor air quality and safety
- Industrial monitoring
- Oceanography
- Bioremediation studies
- Atmospheric studies

*Trusted and Tested  
Technology*

**PP**  
SYSTEMS

# SBA-5 CO<sub>2</sub> Gas Analyzer

## User Programmable

The SBA-5 operating modes, functions and user-settable parameters can be accessed via the digital I/O (USB or RS232) using a simple text based command structure with a generic terminal emulator such as hyperterminal. On board firmware is also field upgradeable for new system features or functions via the USB port.

## Optional Accessories

### Sampling Pump

A miniature air sampling pump can be supplied for use with the SBA-5 for continuous sampling.

### Humidity Sensor

A digital humidity sensor can be included for accurate measurement of %RH and expressed as H<sub>2</sub>O vapor pressure (mb).

### Absorber Column

An absorber column can be connected up to the SBA-5 for convenient "Auto-Zero" of the analyzer ensuring long term accuracy, stability and calibration. Self-indicating soda lime can also be supplied if required.

### Enclosure

The **SBA-5** can be supplied simply as a sensor fitted onto a printed circuit board or it can be packaged into a lightweight, rugged, anodized, aluminum enclosure.

## Solutions For Our OEM Customers

Since 1984, PP Systems has partnered up with many OEM customers offering custom solutions that meet a wide variety of applications. Our CO<sub>2</sub> gas analyzers have the enviable reputation for being high quality, reliable, stable, accurate and versatile. If you have a requirement for an accurate CO<sub>2</sub> gas analyzer that requires minimal maintenance, feel free to contact one of our experienced gas analysis experts directly or you can contact us through our network of over 40 distributors worldwide. We look forward to working with you.

## Technical Specification

### Analysis Method

Non-dispersive infrared, configured as an absolute absorptiometer with microprocessor control of linearization.

### CO<sub>2</sub> Measurement Ranges

0-1,000 ppm (umol mol<sup>-1</sup>) / 0.1%  
0-2,000 ppm (umol mol<sup>-1</sup>) / 0.2%  
0-5,000 ppm (umol mol<sup>-1</sup>) / 0.5%  
0-10,000 ppm (umol mol<sup>-1</sup>) / 1%  
0-20,000 ppm (umol mol<sup>-1</sup>) / 2%  
0-30,000 ppm (umol mol<sup>-1</sup>) / 3%  
0-50,000 ppm (umol mol<sup>-1</sup>) / 5%  
0-100,000 ppm (umol mol<sup>-1</sup>) / 10%

Custom ranges up to 100,000 ppm upon request. Measurements are automatically corrected for temperature and pressure.

### Pressure Compensation Range

80-115 kPa

### Accuracy

<1% of span concentration over the calibrated range but limited by the accuracy of the calibration gas mixture.

### Linearity

<1% throughout the range.

### Stability

Automatic zero at regular intervals corrects for sample cell contamination, source and detector aging and pre-amplifier gain changes.

### Gas Flow Rate Through Analyzer

Range: 100-1,000 cc/min (Maximum)  
We recommend 200-500 cc/min.

### Calibration

User programmable calibration (if required)

### Analog Output

Dual 0-5V linear (CO<sub>2</sub> and H<sub>2</sub>O)  
4-20 mA (CO<sub>2</sub> only)

### Digital Interface

RS232 (Header and terminal block)  
USB (Mini Type B)

### Sensor Input

1 sensor input channel (0-1V)

### Power Supply

6-18 VDC

### Power Consumption

8 W (warm-up)  
1-3 W (normal operation and dependent on ambient temperature)

### Gas Connections

Two barbed fittings (inlet and exhaust) for use with 1/8" (.125") ID tubing

### Electrical Connections

USB (Mini Type B)  
12 Pin pluggable terminal block  
2 Pin power input  
0.1" Header (12 pin)

### PCB Type

FR4

### Operating Temperature Range

-20°C to +50°C

### Relative Humidity Range

0-95% RH, non-condensing

### Dimensions

7.5 cm W x 12 cm L x 3.5 cm H (SBA-5 PCB only)  
8 cm W x 13 cm L x 4.5 cm H (SBA-5 with enclosure)

### Weight

0.2 kg (SBA-5 PCB only)  
0.4 kg (SBA-5 with enclosure & pump)

### Optional Accessories

- Sampling pump (Part No. STD105)
- Absorber column (Part No. STD509)
- Humidity sensor (Part No. STD547)
- Enclosure (AGA407 or AGA408)
  - Includes SBA-5

PP Systems is continuously updating its products and reserves the right to amend product specifications without notice.

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Distributor

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