

## Software Operation

Your new Brasch CO<sub>2</sub> ventilation controller uses state-of-the-art infrared absorption technology, providing a stable, accurate and reliable sensor.

The sensor is also equipped with a built in algorithm that will automatically detect and adjust for any sensor drift, minimizing calibration requirements to every five years.

The controller is shipped with one custom (Non-Standard) and nine preset (Standard) programs. Two additional settings, altitude adjustment and Auto-Detect on/off, may be accessed separately, without regard to mode.

### Altitude Correction & Auto-Detect On/Off

1. Press clear + mode and hold (at least 5 seconds) until the sensor enters the edit mode.
2. The first menu will be the Altitude correction. The adjustment is in  $\pm$  500-ft. increments. Use the Up/Down rocker button to choose the proper setting.
3. Press enter to set the altitude value and then press mode to proceed to Auto-Detect on/off.
4. Use the Up/Down rocker button to select On or Off. (Note: It is recommended that the Auto-Detect feature be left on for best results.)
5. Press enter to set the value and then press mode to return to normal operation.

### Standard and Non-Standard Settings

The Non-Standard setting can be selected and changed at any time after the sensor is powered on. This setting has 7 variables and follows in sequence with the Preset Variable chart. The preset programs cannot be changed.

#### Select a Preset program (from the STDSET menu)

1. Press clear + mode and hold (at least 5 seconds) until the sensor enters the edit mode.
2. Press mode 2 times to locate the "STDSET" menu.
3. Use the Up/Down rocker button to select the desired Preset value (see Preset chart for variable values).
4. Press enter to set selection then press mode to return to normal operation.

#### Enter Custom Settings (from the NONSTD menu).

1. Press clear + mode and hold (at least 5 seconds) until the sensor enters the edit mode.
2. Press mode 2 times to locate the "STDSET" menu.
3. Use the Up/Down rocker button to toggle to the "NONSTD" menu and press enter to select.
4. The menu will cycle through the 7 variables starting with PPM. Use the Up/Down button to change values and the mode button to move to the next variable.
5. Press enter to set selections then press mode to finish.



### Specifications:

**Sensor Type:**

Self-calibrating infrared absorption

**Sample Method:**

Diffusion or flow through (50-100 ml/min)

**Measurement Range:**

0-10,000 ppm (0-2000 ppm factory set)

**Display:**

0-9999 ppm

**Sensitivity:**

$\pm$  10 ppm

**Resolution:**

$\pm$  1 ppm

**Accuracy (15° - 32° C.)**

0-2000 ppm:  $\pm$  greater of 50 ppm or 3% of reading, 2000-10000 ppm:  $\pm$  5% of reading.

**Accuracy (0° - 50° C.)**

0-2000 ppm:  $\pm$  greater of 100 ppm or 5% of reading, 2000-10000 ppm:  $\pm$  7% of reading.

**Pressure Dependency:**

0.13% of reading per mmHg.

**Annual Drift:**

$\pm$  10 ppm (with Auto-Detect),  $\pm$  20 ppm (Auto-Detect Off)

**Response time 0 - 90%****Step Change:**

<1 min.

**Warm-up time @ 25° C.**

<2 min.

**Operating Conditions**

0° to 50° C. (32° to 122° F.) at 0% to 95% RH, non-condensing.

**Storage temperatures**

-40° to 70° C. (-40° to 158° F.)

**Certification**

FCC Part 15 Class B /CE/CA Energy Commission

**Calibration**

Five years

**Power**

18-30 VAC RMS, 50/60 Hz – half wave rectified. 18-42 VDC polarity protected. 1.75 VA maximum average power, 2.75 VA peak power.

**Analog Output**

0-10 VDC (100 ohms output impedance). 4-20 mA (RLmax = 500 ohms). Both outputs simultaneously available.

**Relay**

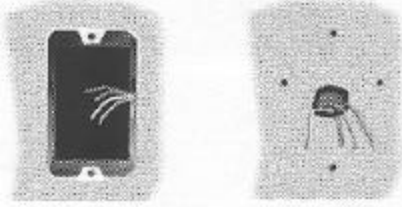
Normally Open or Normally Closed. Gold bifurcated, 2A rating. Factory setpoint 1000 ppm, 50 ppm hysteresis.

**Digital Output**

RS-232 interface through RJ45 connector (8 pin phone jack)

# Installation

**1.** Prepare for installation by using the mounting holes configured for U.S. or European junction boxes.



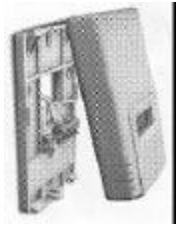
**OR** Use the mounting plate as a template to mark mounting and wiring holes

**2.** Secure the mounting plate to the wall or junction box and make the necessary wire connections.

Terminal Box Designations:  
 1 & 2 Not used  
 3 Relay NO  
 4 Relay Comm  
 5 Relay NC  
 6 4-20 mA out  
 7 Signal Gnd  
 8 0-10 VDC out  
 1 AC/DC+  
 2 AC/Gnd



**3.** Mount the controller on the base by aligning the top clips and then snapping the sensor to the bottom clips.



The sensor will now have power.

**6.** A 2 minute warm-up will take place. After 2 minutes, the sensor will stabilize and display the "Normal Mode" (current CO2 readings).

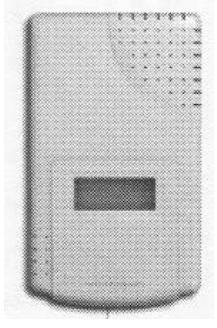
At this point one of nine preset or one custom program can be chosen. Use the charts below to select or modify sensor settings.



**5.** Finish installation by sliding the cover over the menu keys and secure with the supplied screw.



**4.** Ready for operation.

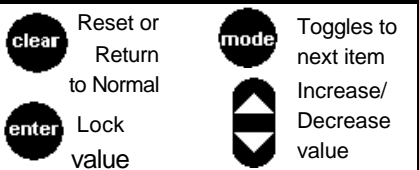


# Software Functionality

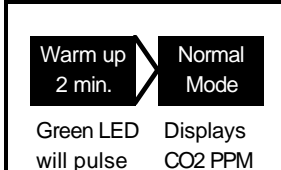
## Non-Standard Edit Mode



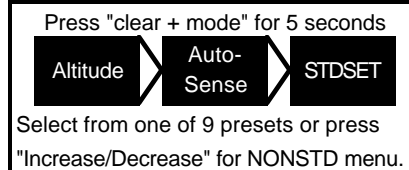
## Button Functions



## Power Up



## Edit Mode



## Presets

|          | 1          | 2      | 3      | 4      | 5      | 6        | 7        | 8        | 9        |           |
|----------|------------|--------|--------|--------|--------|----------|----------|----------|----------|-----------|
| <b>V</b> |            |        |        |        |        |          |          |          |          |           |
| <b>a</b> | Altitude   |        |        |        |        |          |          |          |          |           |
| <b>r</b> | Auto-Sense |        |        |        |        |          |          |          |          |           |
| <b>l</b> | PPM Range  | 0-2000 | 0-2000 | 0-5000 | 0-5000 | 500-1200 | 500-1200 | 600-1100 | 600-1200 | 500-1000  |
| <b>a</b> | Scale      | Linear | Linear | Linear | Linear | Linear   | Linear   | Linear   | Linear   | Linear    |
| <b>b</b> | Output     | V      | mA     | V      | mA     | V        | mA       | V        | mA       | mA        |
| <b>l</b> | Output V   | 0-10   | 0-10   | 0-10   | 0-10   | 0-10     | 0-10     | 0-10     | 0-10     | 6-9       |
| <b>e</b> | Output mA  | 4-20   | 4-20   | 4-20   | 4-20   | 4-20     | 4-20     | 4-20     | 4-20     | 13.6-18.4 |
| <b>s</b> | Relay      | 1000   | 1050   | 1100   | 1150   | 1200     | 1250     | 1300     | 900      | 950       |
|          | Hystersis  | 50     | 50     | 50     | 75     | 75       | 75       | 75       | 50       | 50        |