Software Operation

Your new Brasch CO2 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 ± 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.

CO2 Sensor User Manual

CO₂ SENSOR
BGS-CD-STD
BRASCH
MANUFACTURING COMPANY, INC.
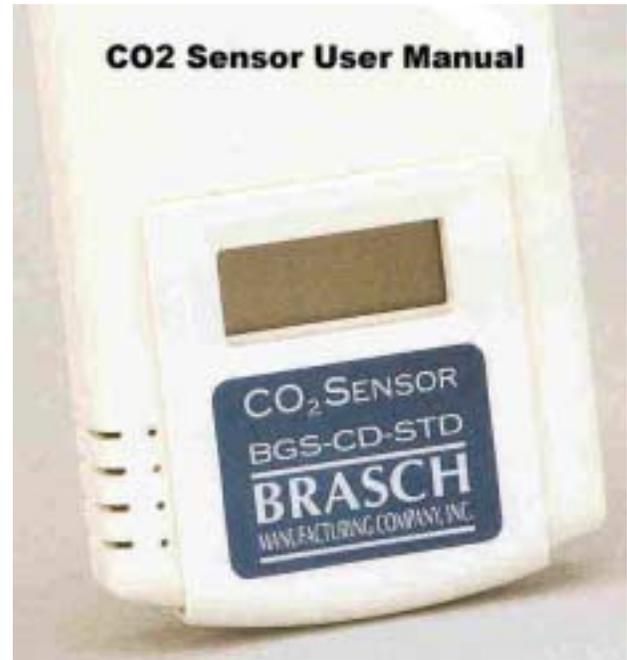
Specifications:

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:
± 10 ppm
Resolution:
± 1 ppm
Accuracy (15º - 32º C.)
0-2000 ppm: ± greater of 50 ppm or 3% of reading, 2000-10000 ppm: ± 5% of reading.
Accuracy (0º - 50º C.)
0-2000 ppm: ± greater of 100 ppm or 5% of reading, 2000-10000 ppm: ± 7% of reading.
Pressure Dependency:
0.13% of reading per mmHg.
Annual Drift:
± 10 ppm (with Auto-Detect), ± 20 ppm (Auto-Detect Off)
Response time 0 - 90% Step Change:
<1 min.
Warm-up time @ 25º C.
<2 min.

Operating Conditions
0º to 50º C. (32º to 122º F.) at 0% to 95% RH, non-condensing.
Storage temperatures
-40º to 70º C. (-40º to 158º 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.
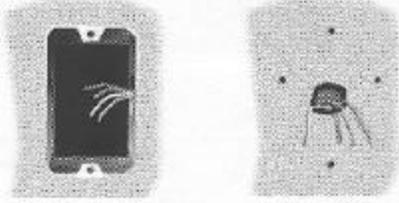**Relay**
Normally Open or Normally Closed. Gold bifurcated, 2A rating. Factory setpoint 1000 ppm, 50 ppm hysteriesis.
Digital Output
RS-232 interface through RJ45 connector (8 pin phone jack)

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.
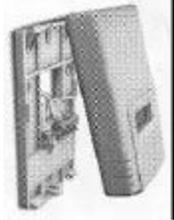
The sensor will now have power.

6. A 2 minute warm-up will take place. After 2 minutes, the sensor will stabilize and display the "**Normal Mode**" (current CO2 readings).
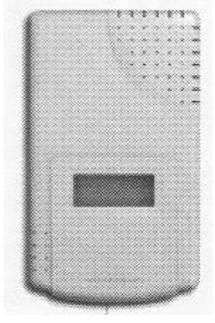
At this point one of nine preset or one custom program can be chosen. Use the charts below to select or modify sensor settings.

5. Finish installation by sliding the cover over the menu keys and secure with the supplied screw.
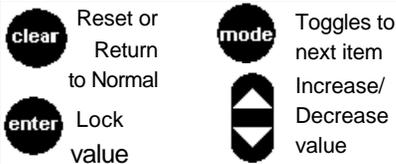
4. Ready for operation.

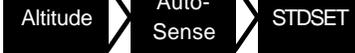## Software Functionality

Non-Standard Edit Mode

NONSTD → From >0 PPM → To >2000 PPM → Scale >Linear → Output >Volts → From V >0 V → To V >0 V → Relay > 1000 PPM → Hysters >50 PPM → Main Menu

Button Functions

clear — Reset or Return to Normal
enter — Lock value
mode — Toggles to next item
▲▼ — Increase/Decrease value

Power Up

Warm up 2 min. → Normal Mode

Green LED will pulse — Displays CO2 PPM

Edit Mode

Press "clear + mode" for 5 seconds

Altitude → Auto-Sense → STDSET

Select from one of 9 presets or press "Increase/Decrease" for NONSTD menu.

Presets

Variables		1	2	3	4	5	6	7	8	9
	Altitude									
	Auto-Sense									
	PPM Range	0-2000	0-2000	0-5000	0-5000	500-1200	500-1200	600-1100	600-1200	500-1000
	Scale	Linear	Linear	Linear	Linear	Linear	Linear	Linear	Linear	Linear
	Output	V	mA	V	mA	V	mA	V	mA	mA
	Output V	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	6-9
	Output mA	4-20	4-20	4-20	4-20	4-20	4-20	4-20	4-20	13.6-18.4
	Relay	1000	1050	1100	1150	1200	1250	1300	900	950
	Hystersis	50	50	50	75	75	75	75	50	50