

Product Bulletin

4GS

Carbon Dioxide Sensor

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- 0-2000 ppm, field adjustable to 0-5000 ppm
- Indoor Air Quality
- Non-Dispersive Infrared sensor
- Dual lamp Virtual Reference™
- Field selectable outputs & relay points
- Proven history & high quality

The 4GS is part of our gas sensor family for low CO₂ concentrations (0-2000 ppm field adjustable to 0-5000 ppm), typically used for indoor air quality applications. It uses a very proven, discriminating non-dispersive infrared (NDIR) sensor with a second lamp acting as a reference channel for improved longer term stability. The most common application is monitoring of

room or return air and interfacing to an economizer that varies fresh air intake. This can allow for up to 30% energy savings and a healthier air environment. The 4GS has a reputation for ease of calibration (none on installation, then only every 3 years), high quality and reliability. Calibration, scale, output mode and relay points are all easily adjustable with our handheld 2 push button

"CAL-B-Key" interface. No PC interface needed. The 4GS is available in a small attractive ready-to-wall-mount case with optional display and/or relay. Texas Instruments, well known technology leader, has designed and manufactured HVAC/R sensors and controls for more than 40 years. For CO₂ concentrations over 5000 ppm see our 9GS.

Product Specification

| | |
|--------------------------------------|---|
| Sensing Method | Non Dispersive Infrared (NDIR) |
| Sampling Mode | Diffusion and/or pump capability |
| Range | 0-2000 to 0-5000 ppm (selectable in 100ppm increments with CAL-B-Key) |
| Accuracy (@25°C, 760mm Hg) | +/-75 ppm if 0-1500ppm: +/-5% if > 1500ppm: |
| Pressure Effect | 0.19% of reading per mm Hg |
| Repeatability | +/-16ppm |
| Warm-up | <90 seconds |
| Response Time | <20 seconds to 63% of step change @500 ml/min flow rate |
| Calibration | <ul style="list-style-type: none"> • None needed on install • Zero and span recommended each 3 yrs • Easy in field with CAL-B-Key |
| Output | <ul style="list-style-type: none"> • 0-10V dc standard, (1K ohm impedance) • User selectable to 0-5V dc with CAL-B-Key • User selectable to 4-20mA with jumper (500 ohm max.) • Liquid crystal display optional (2 line, alphanumeric, ppm & CAL-B-key display) • Relay optional (see below) |
| Relay Trip Points | Shipped as 1000 ppm (user selectable in 100 ppm increments with CAL-B-Key; resets 100 ppm below trip) |
| Relay Rating | 10-500 mA @ 24 Vac or 30 V dc |
| Input Power | 24V ac/dc, <3W |
| Temperature Ranges | 0°C to +50°C (operating) -40°C to +70°C (storage) -20°C to +70°C (storage, display) |
| Humidity Range | 5-95%, non-condensing |
| Case | 3.84" x 3.84" x 1.10" (ABS, UL94V0) |

Calibration Parts

| Part # | Description |
|---------------|--|
| CAL-A-0-5 | (All bottles are disposable, high pressure, requiring regulator) Small zero bottle 100% Nitrogen, (17 liters for about 5 cal) |
| CAL-A-800-5 | Small span bottle 800ppm CO ₂ , (17 liters for about 5 cal) |
| CAL-A-0-35 | Large zero bottle 100% Nitrogen, (105 liters for about 35 cal) |
| CAL-A-800-35 | Large span bottle 800ppm CO ₂ , (105 liters for about 35 cal) |
| CAL-A-Reg-5 | Regulator for small bottles. |
| CAL-A-Reg-35 | Regulator for large bottles. |
| CAL-A-Tube | 6' tubing with adapter for regs. |
| CAL-A-Case-5 | Carrying case for two small bottles, regulator, tubing and interface Keypad (Cal-B-Key). |
| CAL-A-Case-35 | Same, but for 2 large bottles |
| CAL-B-Key | Interface keypad and cable for scale changes and calibration. |
| CAL-B-Kit-5 | Complete kit for about 5 cal, incl. carrying case. |
| CAL-B-Kit-35 | Same, but for about 35 cal. |

Part Numbers

4GS-1

- standard, 0-2000ppm
- no display, no relay

4GS-2-xxxx

- the first "x" = 2 for 0-2000ppm (standard), or 5 for 0-5000ppm
- add a "C" if want a Case
- add a "D" if want a Display
- add an "R" if want a Relay

Optional Accessories

| Part # | Description |
|-------------------|--|
| 4GS-DM-Kit | Duct mount kit with aspiration box, venturi tube and hardware. |
| 4GS-PT-Kit | Pilot tube kit with pilot tube, vinyl tubing, filter and hardware. (For air velocity >200 ft/min.) |
| CAL-B-Key | Interface keypad and cable for scale changes and calibration. |

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