GS-CDR Series

Room CO_2 Sensors

Overview

The GS-CDR Series are room carbon dioxide gas detectors. These devices provide precision measurement of CO_2 gas. The GS-CDR series uses a highly accurate and reliable Nondispersive Infrared (NDIR) sensor combined with state-of-the-art digital linearization and temperature compensated circuitry in an attractive, low profile enclosure for room applications to monitor room CO_2 levels. A linear analog signal output of 4-20 mA, 0-5 or 0-10 Vdc is provided for connection to a building automation system. Optional features such as temperature sensor, setpoint adjustment, manual override and adjustable relay output are available.

Applications

- Used for demand controlled ventilation (DCV)
- Used for monitoring air quality
- Used in greenhouses

Features & Benefits

- Economical
- Models with adjustable range
- Menu driven set-up
- Guaranteed 5 year calibration interval
- Accurate carbon dioxide monitoring for increased comfort

Accessories

GS-CDCAL	CO_2 calibration kit - no gas
GS-CDFCAL	Factory calibration certificate
GS-CDNIST	NIST calibration certificate

Note: Calibration certificates must be purchased at the time of purchasing the relative sensors.

Model Selection

		GS-	CD	R	02K	X	X	X	X	X
Sensor	CD = Carbon dioxide									
Mounting Style	R = Room									
Sensing Range	02K = 0-2000ppm 20K = 0-20000ppm									
Display Option	D = Display									
Temperature Sensor Option	T = Temperature sensor (10kΩ, Type II thermistor)									
Setpoint Option	S = Temperature setpoint adjustment									
Override Option	O = Override switch (momentary)									
Relay Option	R = Relay output									

Product Specifications

Environmental

Operating Temperature	0°C to 50°C; 32°F to 122°F
Storage Temperature	0°C to 70°C; 32°F to 158°F
Relative Humidity	0 to 95% Non-condensing

Sensor

Sensor Life Span	15 years typical
Sensor Coverage Area	100 m^2
Sensor Life Span	15 years typical
Pressure Dependence	0.13% of reading per mm Hg
Altitude Correction	Programmable from 0-5000ft via keypad
Response Time	<2 minutes for 90% step change typical
Range	GS-CDR02K: 0-2000 ppm, GS-CDR20K: 0-20000 ppm
Accuracy	GS-CDR02K ± 30 ppm +3% (Auto Cal On), GS-CDR20K ± 75 ppm or 10% reading
Sensor Type	GS-CDR02K Non-Dispersive Infared (NDIR), GS-CDR20K Dual Channel NDIR

Enclosure

Material	White ABS
Dimensions	See figure
Shipping weight	0.3 lbs (136 g)
Enclosure Ratings	IP30 (NEMA 1)

LCD Display

Resolution	1ppm CO_2
Size	1.4’’W x 0.6”H (35mmx15mm)
Backlight	Enable or disable via keypad

Electrical

Dissipation Factor	2.2mW/K
Max Power @ 25°C (77°F)	75mW
Thermal Time Constant	Less than 10s
Protection Circuitry	Reverse voltage & overvoltage protected
Power Supply	20-28 VAC/DC
Consumption	100 mA max @ 24 VDC 185mA max at 24VDC (With all options)

Optional Items

Relay Contact Ratings	Form A contact (N.O), 2 Amps @ 140 VAC, 2 Amps @ 30 Vdc
Relay Trip Point	Programmable 500-2000 ppm
Relay Hysteresis	Programmable 25-200 ppm
Optional Override	Front panel momentary push-button N.O., SPST, 50 mA @12 Vdc
Optional Setpoint	Front panel slide pot resistive output, 0-10 K standard

Product Specifications

Temperature Sensor

Type[1]	10kΩ NTC thermistor, Type 2
Accuracy	±0.2°C; ±0.36°F

Agency Approvals

Material[2]	UL94-VB

1. Temperature sensor type stated is standard. Other temperature sensor types are available.
2. All materials and manufacturing processes comply with the RoHS directive

Dimensions