



CO2 ROOM

Sensor with Temperature, Setpoint & Override

The ACI Carbon Dioxide Room Series (A/CO2-R2) monitors the carbon dioxide (CO2) levels in commercial, school, and office-type environments. The concentration of CO2 is a strong indication of the overall indoor air quality. The A/CO2 Series is based on a single beam, non-dispersive infrared technology and is a cost-efficient solution for measuring carbon dioxide levels for building climate control. In addition, ABC software eliminates the need for manual calibration. Carbon Dioxide concentration is measured up to 2,000 ppm and is converted into proportional analog outputs. The factory default outputs are 0-10 VDC (Output 1) and 4-20 mA (Output 2), whereas 0-5 VDC is field selectable via integral dip switches. Thermistor temperature outputs, along with setpoint and override, are available as options for this configuration as well. Please see the order grid for the available sensor options. The A/CO2-R2 Series provides data which can be used in conjunction with a Building Automation System or Demand Control Ventilation to

decrease energy consumption while creating a healthier indoor climate.

Applications: Schools, Office Buildings, Auditoriums, Gymnasiums, Shopping Malls, Theatres, Demand Control Ventilation & Economizers

The CO2 Room Series are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site.

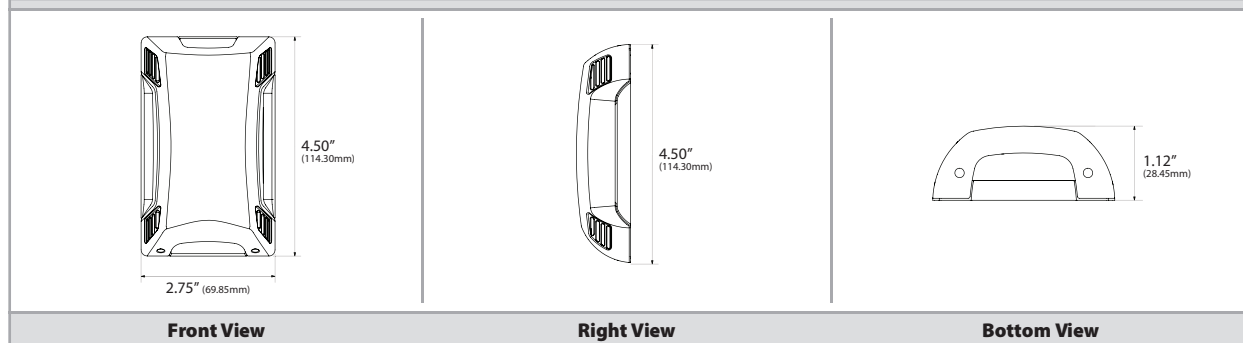
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC +/-20%, 50/60 Hz (half-wave rectifier) 16.5-40 VDC maximum
Power Consumption:	3 VA for 24 VAC, 3W for 24 VDC (peak); <0.9W (average)
Sensing Technology:	Single beam infrared sensing technology (NDIR)
Sensing Method:	Diffusion
Measurement Range Default:	0 to 2,000 ppm
Extended CO2 Ranges:	Up to 10,000 ppm (factory set)
CO2 Accuracy¹:	+/- 40 ppm and +/- 3% of reading (@ 15-35°C; 20-70% RH and 101.3 kPa)
Extended Range Accuracy:	+/- 30 ppm and +/- 5% of reading
CO2 Output Signal:	Output 1: 0-5 VDC or 0-10 VDC (Default) Output 2: 4-20 mA (500 Ohm load maximum)
Fail Safe:	Polarity protected
Pressure Dependence:	+ 1.6% reading per kPa (deviation from standard pressure 101.3 kPa)
Response Time:	≤ 2 minutes, diffusion
Warm-Up Time:	< 1 Minute (@ full specs < 15 minutes)
Temperature Output Range:	Various (See Ordering Grid)
Temperature Accuracy:	+/- 1°F (+/- 0.6°C)
Operating Temperature Range:	32 to 122°F (0 to 50°C)
Operating Humidity Range:	0 to 95%, non-condensing
Connections Wire Size:	Screw Terminal Blocks 16 (1.31 mm ²) to 26 (0.129 mm ²) AWG
Terminal Block Torque Rating:	0.5 Nm (minimum); 0.6 Nm (maximum)
Enclosure:	ABS, Plastic, White, UL94-HB
Sensor Coverage Area:	7,500 sq. ft maximum
Mounting Height:	4-6 ft
Sensor Life²:	> 15 years (typical)
Calibration³:	ABC algorithm (Automatic Baseline Correction)
Product Dimensions:	(H) 4.50" (114.30 mm) x (W) 2.75" (69.85 mm) x (D) 1.12" (28.45 mm)
Product Weight:	0.230 lbs (0.104 kg)
Agency Approvals:	EMC Directive 2014/30/EC RoHS Directive 2011/65/EU

Note 1: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note 2:** In normal indoor air quality (IAQ) applications | Corrosive environments are excluded | **Note 3:** Building CO2 levels must drop to 400 ppm some time during the week for ABC to work properly | If the building is occupied 24 hours / day, ABC must be turned off



DIMENSIONAL DRAWING



STANDARD ORDERING

Model #	Item #	Description
A/CO2-R2	144220	CO2 Room (0-5 VDC, 0-10 VDC, 4-20 mA Outputs)

CUSTOM ORDERING

Model # Example:

A/CO2

R250

CP

A01G

5

MODEL

A. Sensor Series No Selection Required	A/CO2	A/CO2
B. Configuration Select One (1)	R2 = Room R20 = Room with Override* R2S = Room with Set Point R2SO = Room with Set Point and Override	
C. Temperature Sensor Options Select One (1)	---- (None) 1.8K 3K AN (Type III) AN-BC CP (Type II) 10K-E1 CSI 20K 100KS	
D. Slidepots** Select One (1)	Direct Acting (Range in Ohms) A01 = 0 to 100K A02 = 0 to 20K A03 = 0 to 10K A06 = 4.75K to 24.75K A07 = 10K to 30K A08 = 1K to 11K A09 = 0 to 2K A10 = 0 to 1K A11 = 2.05K to 3.05K A12 = 0 to 400 A16 = 0 to 5K A18 = 10K to 15K A20 = 6.19K to 26.19K A26 = 866 to 1,266 A29 = 7.87K to 27.8K Reverse Acting (Range in Ohms) A04 = 1051.1 to 51.1 A14 = 10K to 0 A24 = 9.5K to 1K	
E. Setpoint Indication Select One (1)	G5 = BLUE/RED (R2 Enclosure)	

Note 1: Override options is Dry Contact (Separate Input) only. Short Sensor is not available by jumpers, only field wiring.

Note 2: Other Setpoint configurations are available. Please contact ACI.

ACCESSORIES ORDERING

Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration

Note: Contact ACI's Technical Support for custom calibration ranges