

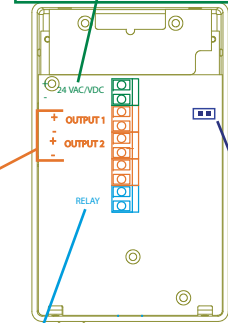
Outputs available in either Voltage (0-10V) or Current (4-20mA)

Not all outputs are used on every unit. See table below for output assignments.

All '-' terminals are electrically connected, but isolated from power supply.

Output	Sensors
Output 1	CO2
Output 2	RH

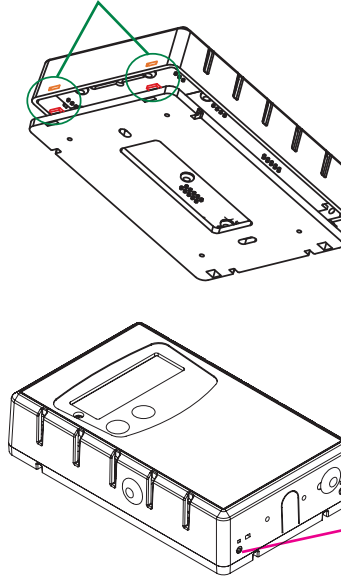
Power input  
18-30 VDC  
18-28 VAC  
(polarity matters for VDC only)



Relay is optional and may not be present (dry contact rated 24 VAC, 2A max)

Relay Sense Jumper	Relay contact state	
	No alarm	In alarm
<b>OPEN</b> (shorting block on only one pin)	OPEN	CLOSED
<b>CLOSED</b> (shorting block on both pins)	CLOSED	OPEN

Align top and bottom latch and snap closed



Warning And Alarm Indication		
Sensors	Warning level LED is YELLOW relay actuates (if equipped)	Alarm level LED is RED beeper sounds (if equipped)
CO2	1000 ppm	2000 ppm
RH	No warning or alarm indication	

Analog Output Scaling			
Sensors	CO2 ppm	RH %	
Current Output	4 mA	0	0
	12 mA	1000	50
	20 mA	2000	100
Voltage Output	0 Volts	0	0
	5 Volts	1000	50
	10 Volts	2000	100

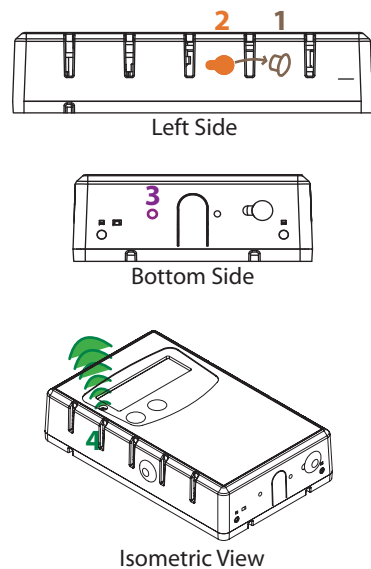
Once lid closed, insert set-screws to secure enclosure cover.  
Requires 1/16" Allen wrench.

**Calibration-Kit**



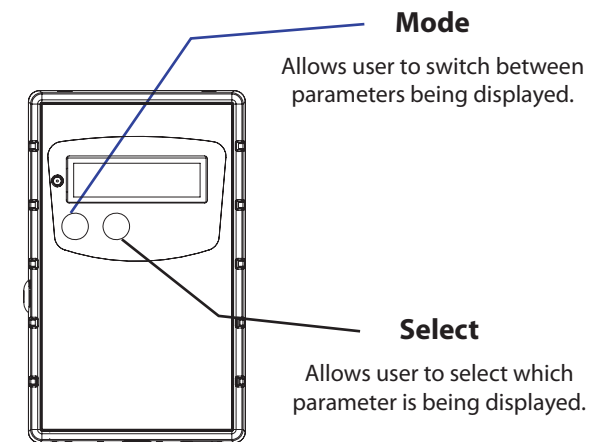
Your sensor comes factory-calibrated and does not need to be calibrated upon initial installation. Calibration kits are available.

**CO2 Calibration Procedure**



1. Temporarily remove dust cover from left side of enclosure cover.
2. Place 2000 PPM CO2 calibration gas tube in side port and slide onto the fitting inside. Turn on gas.
3. Allow calibration gas to flow for one minute, then use a 1/16" allen wrench (or equivalent) to depress switch (inside hole 3 at left) for 5 seconds. LED will blink **yellow**.
4. After **5 minutes** the LED will **blink green**. The calibration process is completed.
5. Press and hold switch (labeled 3 at left) to accept calibration. The LED will turn **solid green** after only a few seconds, indicating that calibration is complete.
6. At this point it is safe to turn off gas and remove gas tubing from calibration port.
7. When calibration is complete, replace dust cover on gas calibration port.

**Liquid Crystal Display (if equipped)**



Models reporting only CO2 (with out RH option) will not be equipped with 'Mode' and 'Select' buttons.

## Introduction

The 350CO2 Series is a non-dispersive infrared analyzer for measuring environmental CO2 concentration in ventilation systems and indoor living spaces. Its measurement range of 0 - 2000 ppm (parts per million; 1000 ppm = 0.1%) covers the range required to monitor compliance with ASHRAE or other ventilation efficiency standards. The 350CO2 comes configured for:

- Wall or duct-mounting;
- Voltage or 4-20mA outputs

Options include:

- No or NC relay;
- Liquid-Crystal Display (LCD);
- Alarm;
- RH sensor

A simple one-point calibration procedure and a built-in calibration port that requires no special fittings or adapters make the 350CO2 simple to operate and maintain.

## Displays and Indicators

The 350CO2 Series includes a single tri-color LED on the front panel which illuminates whenever the unit is operating. This LED indicates:

- **Green** -> all sensor/s at normal levels
- **Yellow** -> one or more sensors at Warning levels
- **Red** -> one or more sensors at Alarm level
- **Blinking Red** -> one or more sensors have failed

The display option adds a 4 digit liquid crystal display (LCD) to the front panel. The display shows the measured:

- CO2 concentration in parts per million (ppm)
- Relative Humidity in %



CARBON DIOXIDE SENSOR (CO2)	
Parameter	Value
Operating Principle	Non-dispersive infrared (NDIR)
Gas Sampling Method	Diffusion
Measurement Range	0-2000 ppm (Other ranges available by request)
Repeatability	± 20 ppm CO2
Measurement Accuracy	± 30 ppm ± 2% of reading
Recommended Calibration Interval	5 years
Warm Up Time	Less than 1 minute
Power Requirements	18 - 30 VDC or 18 - 28 Vrms AC
Operating Temperature Range	0 - 50 °C
Operating Humidity Range	0 - 99% RH, non-condensing
Voltage Output (linear)	0 - 10 VDC full-scale standard
Optional Current Output (linear)	4-20 mA R <sub>LOOP</sub> < 600 Ω
Calibration	ONE Point : Single-button calibration (Patented)
Dimensions	4.5 x 2.8 x 0.9 inches

RELATIVE HUMIDITY SENSOR (RH)	
Parameter	Value
Operating Temperature	0 to 50 °C
Humidity Operating Range	0 to 99 % RH
Recovery time after 150 hours of condensation	10 Seconds
Humidity Hysteresis	± 1 % RH
Recommended Calibration Interval	Does not need calibration



**irSense**  
Professional Series

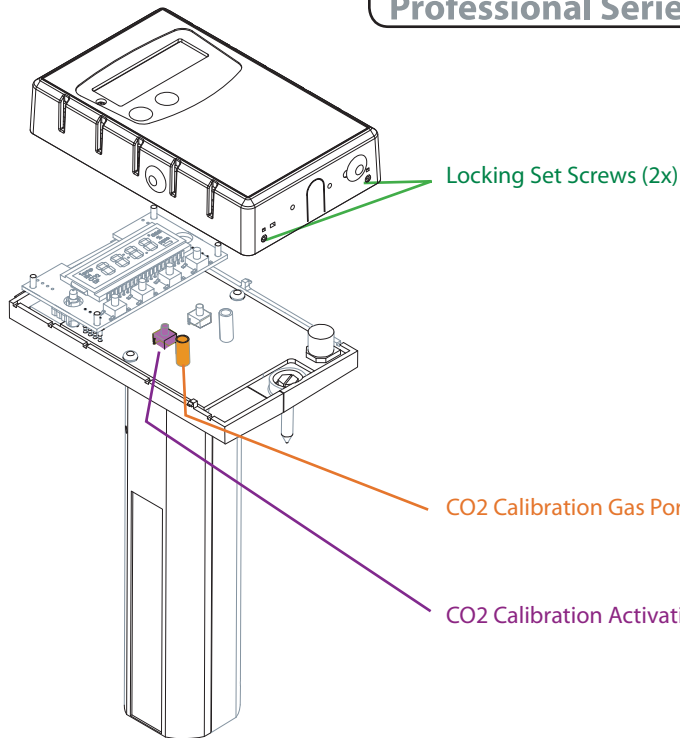
WALL MOUNT      DUCT MOUNT

Proudly  
 MADE IN USA

**Model 350**  
Infrared Carbon Dioxide Sensor



# Model 350 CO2 Duct Mount Wiring and Calibration Instructions



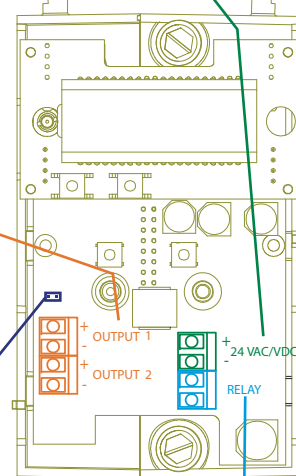
Outputs available in either Voltage (0-10V) or Current (4-20mA)

Not all outputs are used on every unit. See table below for output assignments.

All '-' terminals are electrically connected, but isolated from the power supply.

Output	Sensors
Output 1	CO2
Output 2	RH

Power input  
18-30 VDC  
18-28 VAC  
(polarity matters for VDC only)

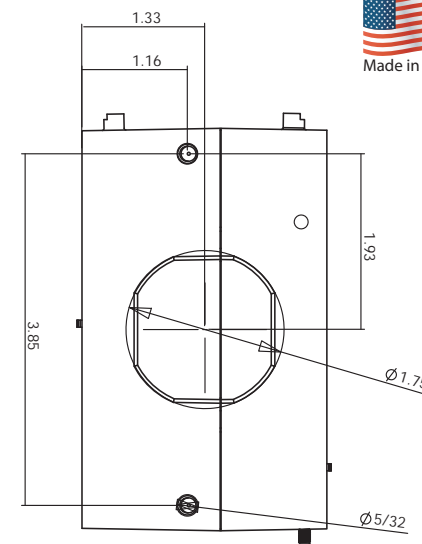


A dry contact relay is optional and may not be present (rated 24 VAC, 2A max).

Relay Sense Jumper	Relay contact state	
	No alarm	In alarm
<b>OPEN</b> (shorting block on only one pin)	OPEN	CLOSED
<b>CLOSED</b> (shorting block on both pins)	CLOSED	OPEN

Analog Output Scaling			
Sensors	CO2 ppm	RH %	
Current Output	4 mA	0	0
	12 mA	1000	50
	20 mA	2000	100
Voltage Output	0 Volts	0	0
	5 Volts	1000	50
	10 Volts	2000	100

Warning And Alarm Indication		
Sensors	Warning level LED is YELLOW relay actuates (if equipped)	Alarm level LED is RED beeper sounds (if equipped)
CO2	1000 ppm	2000 ppm
RH	No warning or alarm indication	



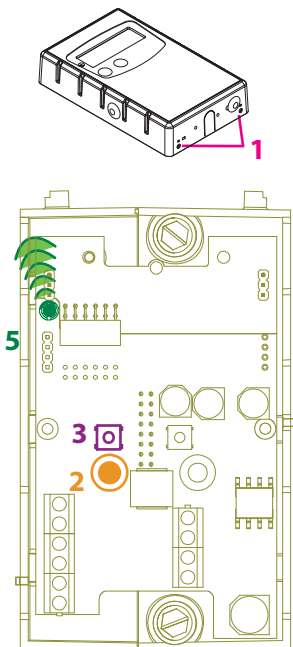
**Duct Mounting  
Drill pattern**  
(Dimensions in inches)

## Calibration Kit



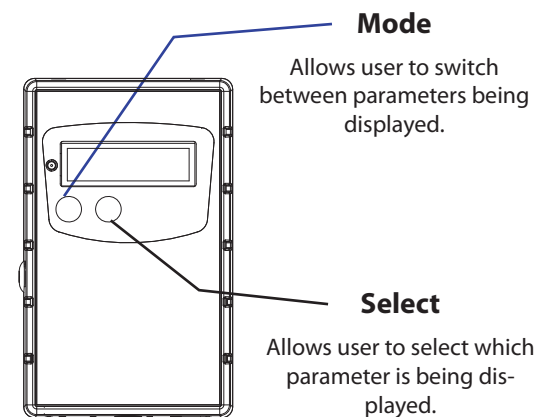
Your sensor comes factory-calibrated and does not need to be calibrated upon initial installation. Calibration kits are available.

## CO2 Calibration Procedure



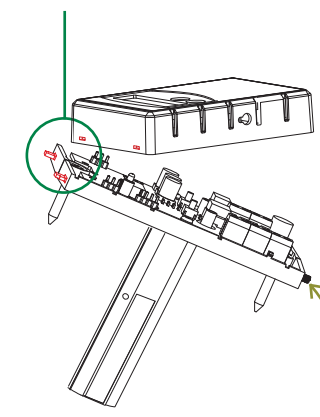
1. Back out set screws along bottom edge of enclosure cover and remove cover.
2. Remove dust cover from left-most post. Connect 2000 PPM CO2 calibration gas. Turn on gas and allow to flow one minute before proceeding to step 3.
3. Press 'CO2 CAL' switch for 5 seconds. LED will blink yellow.
4. After 5 minutes the LED will blink green, indicating that the calibration process is completed.
5. Press and hold the 'CO2 CAL' switch (3 at left) to accept calibration. The LED will turn solid green after only a few seconds.
6. At this point it is safe to turn off gas and remove the gas tubing from the calibration port.
7. When calibration is complete, replace dust cover on gas calibration port.

## Liquid Crystal Display (if equipped)



Models reporting only CO2 (with out RH option) will not be equipped with 'Mode' and 'Select' buttons.

Align top and bottom latch and snap lid closed



Once lid closed, insert set-screws to lock enclosure. Requires 1/16" Allen Wrench

## Introduction

The 350 Series is a non-dispersive infrared analyzer for measuring environmental CO<sub>2</sub> concentration in ventilation systems and indoor living spaces. Its measurement range of 0 - 2000 ppm (parts per million; 1000 ppm = 0.1%) covers the range required to monitor compliance with ASHRAE or other ventilation efficiency standards. The 350 comes configured for:

- Wall or duct-mounting;
- Voltage or 4-20mA outputs

Options include:

- NO or NC relay;
- Liquid-Crystal Display (LCD);
- Audible alarm;
- RH sensor

A simple one-point calibration procedure and a built-in calibration port that requires no special fittings or adapters make the 350 simple to operate and maintain.

## Displays and Indicators

The 350 Series includes a single tri-color LED on the front panel which illuminates whenever the unit is operating. This LED indicates:

- **Green** -> all sensor/s at normal levels
- **Yellow** -> one or more sensors at Warning levels
- **Red** -> one or more sensors at Alarm level
- **Blinking Red** -> one or more sensors have failed

The display option adds a 4 digit liquid crystal display (LCD) to the front panel. The display shows the measured:

- CO<sub>2</sub> concentration in parts per million (ppm)
- Relative Humidity in %

Overall Specification	
Parameter	Value
Power Requirements	18 - 30 VDC or 18 - 28 Vrms AC
Power Consumption	2.5 VA (with out VOC sensor)
	4 VA (with VOC sensor)
Operating Temperature Range	0 - 50 °C
Operating Humidity Range	0 - 99% RH, non-condensing
Voltage Output (linear)	0 - 10 VDC full-scale standard
Optional Current Output (linear)	4-20 mA R <sub>LOOP</sub> < 600 Ω
Storage Temperature	-10 to 60 °C
Dimensions	4.5 x 2.8 x 0.9 inches

CARBON DIOXIDE SENSOR (CO <sub>2</sub> )	
Parameter	Value
Operating Principle	Non-dispersive infrared (NDIR)
Gas Sampling Method	Diffusion
Measurement Range	0-2000 ppm (Other ranges available by request)
Repeatability	± 20 ppm CO <sub>2</sub>
Measurement Accuracy	± 30 ppm ± 2% of reading
Recommended Calibration Interval	5 years
Warm Up Time	Less than 1 minute
Calibration	ONE Point : Single-button calibration (Patented)

RELATIVE HUMIDITY SENSOR (RH)	
Parameter	Value
Operating Temperature	0 to 50 °C
Measurement Range	0 to 99 % RH
Recovery time after 150 hours of condensation	10 Seconds
Humidity Hysteresis	± 1 % RH
Recommended Calibration Interval	Does not need calibration



**irSense**  
Professional Series



**Model 350**  
Infrared Carbon Dioxide Sensor



7401 SW Capitol Highway • Portland, OR 97219 USA • Toll free: (877) 468-6337 • Fax: (503) 246-6747 • [www.dcs-inc.net](http://www.dcs-inc.net)