KCO2 Series Duct Mount Wiring and Calibration Instructions

Locking Set Screws (2x)

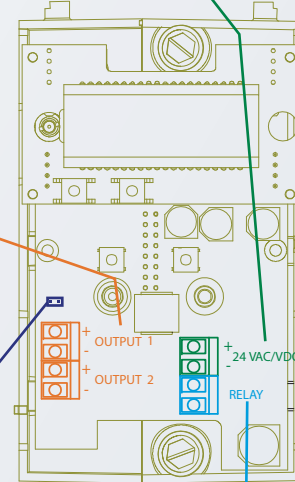CO2 Calibration Gas Port

CO2 Calibration Activation
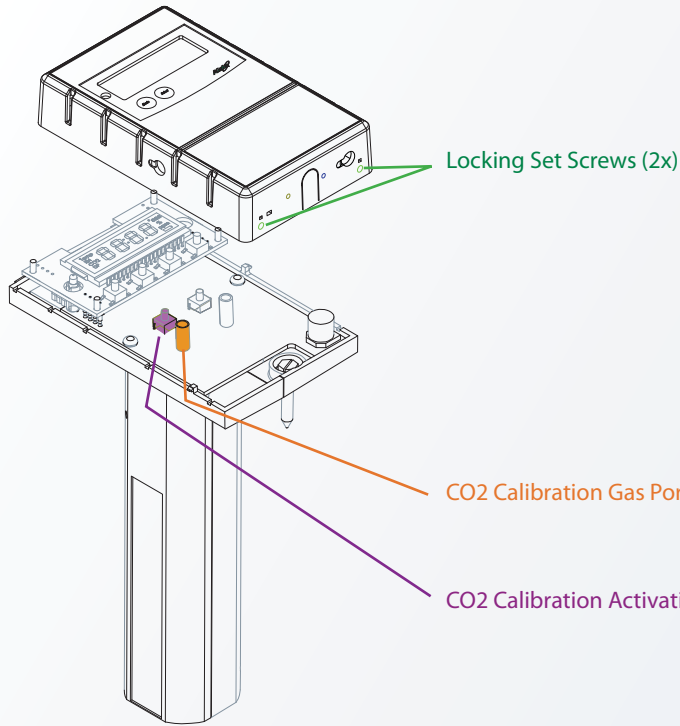
Outputs available in either Voltage (0-10V) or Current (4-20mA)

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

| Relay Sense Jumper | Relay contact state | |
	No alarm	In alarm
OPEN (shorting blaock on only one pin)	OPEN	CLOSED
CLOSED (shorting block on both pins)	CLOSED	OPEN

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

+ OUTPUT 1
+ OUTPUT 2
+ 24 VAC/VDC
RELAY

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

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	
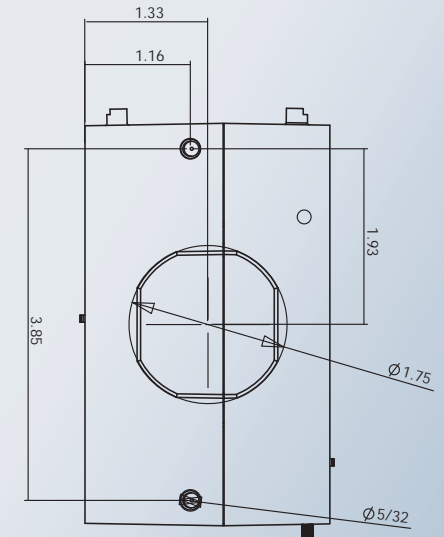
Duct Mounting Drill pattern
(Dimensions in inches)

1.33
1.16
1.93
3.85
Ø 1.75
Ø 5/32

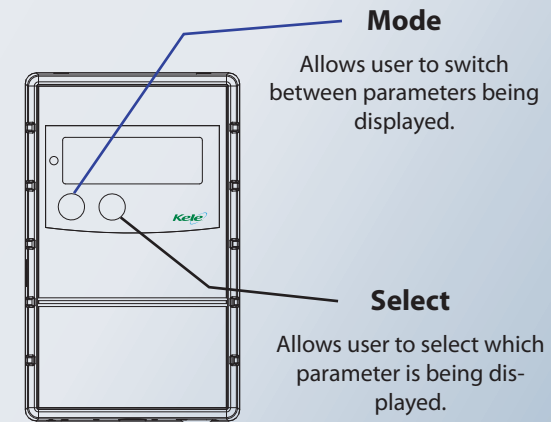
Calibration Kit

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

CO2 Calibration Procedure
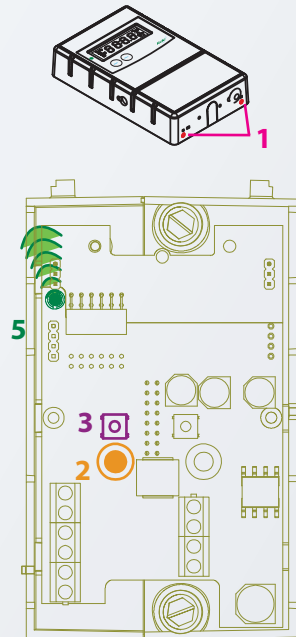
1. Back out set screws along bottom edge of enclosure cover and remove cover.

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)

Mode
Allows user to switch between parameters being displayed.

Select
Allows user to select which parameter is being displayed.

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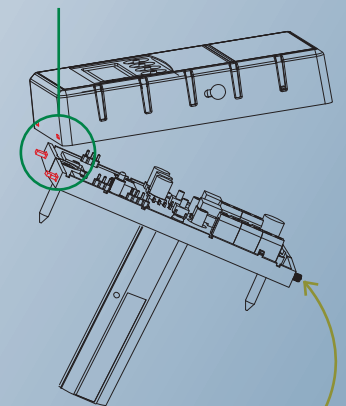
Once lid closed, insert set-screws to lock enclosure. Requires 1/16"Allen Wrench

Introduction

The KCO2 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 KCO2 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 KCO2 simple to operate and maintain.

Displays and Indicators

The KCO2 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 %

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 ^{0}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 $R_{LOOP} < 600\ \Omega$
Storage Temperature	-10 to 60 ^{0}C
Dimensions	4.5 x 2.8 x 0.9 inches

CARBON DIOXIDE SENSOR (CO2)	
Parameter	Value
Operating Principle	Non-dispersive infrared (NDIR)
Gas Sampling Method	Diffusion
Measurement Range	0-2000 ppm
Repeatability	± 20 ppm CO2
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 ^{0}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

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