

Carbon Dioxide (CO₂) Gas Transmitters

Specifications subject to change without notice. | USA 111206 | Page 1 of 3



I-M308

DESCRIPTION

Wall and duct mounted transmitters provide a voltage (0-(5)10 V) or current (4-20 mA) signal, representing 0-2,000 or 0-5,000 ppm Carbon Dioxide (CO₂) concentration.

Infrared sensing technology provides high accuracy and outstanding long-term stability.

APPLICATION

To economically sense the concentration of Carbon Dioxide (CO₂) in air for a wide variety of commercial applications, such as demand-controlled ventilation in buildings, schools, theaters, etc., and transmit to any compatible electronic analog controller, DDC/PLC control or automation system in accordance with ASHRAE standards.

FEATURES

- *Non-dispersive infrared (NDIR) sensing technology*
- *0-2,000 or 0-5,000 ppm CO₂ (other ranges on request)*
- *0-(5)10 VDC or 4-20 mA output*
- *Tri-color LED (normal/warning/alarm)*
- *Highly efficient 24 VAC/VDC powered*
- *Executive-style room housing; mounts to wall or standard 2x4 electrical box*
- *Convenient screw terminal connections*
- *Simple one-button, single-point calibration*
- *5-year calibration interval*



SPECIFICATIONS

Electrical		Warm-up time		Less than 1 minute
Power supply	18-28 VAC, 18-30 VDC	LED Display		
Power consumption		- green		< 1000 ppm
- voltage out	0.75 VA avg, 2 VA peak	- yellow		> 1000 ppm
- current out	1.4 VA avg, 4 VA peak	- red		> 2000 ppm
Sensor Performance		Environmental		
Gas detected	Carbon Dioxide (CO ₂)	- temperature		50°F to 122°F (10°C to 50°C)
Sensor element	Non-dispersive infrared (NDIR)	- humidity		0 to 95% RH, non-condensing
Gas sampling method	Diffusion	Physical		
Range	0-2000 ppm CO ₂ 0-5000 ppm CO ₂	Enclosure		High impact plastic, ABS, UL 94 V0
Accuracy	± 30 ppm, plus 2% of reading	- material		White
Repeatability	± 20 ppm	- color		Snap-on, w/ locking screw for 3/32" Allen wrench
Response time	3 min. (typical)	- cover		
Altitude dependence	Calibrated for sea level, adjustable to altering altitude levels by performing one gas auto calibration	Dimensions		
Calibration		- wall		4.5 x 2.8 x 0.9 in. (114 x 72 x 24 mm)
- adjustment	Span only, zero adjustment automatically self-tuned	- duct		4.7 x 2.8 x 0.9 in. (120 x 72 x 24 mm)
- time	2-3 minutes, typical	Wire connection		Probe 6.3 in. (161 mm)
- re-cal interval	(5) Five years	Wire size		(4) Four screw terminals
Sensor life expectancy	10 years, normal service	Weight		22-16 AWG
Type of Control		- wall		0.25 lb (0.11 kg)
General	Continuous proportional analog sensor signal output			
Analog output				
- voltage	0-(5)10 VDC			
- current	4-20 mA, R _{LOOP} < 600 Ω			

SPECIFICATIONS

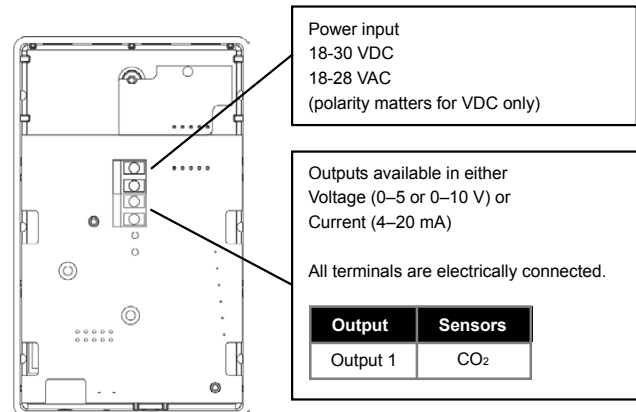
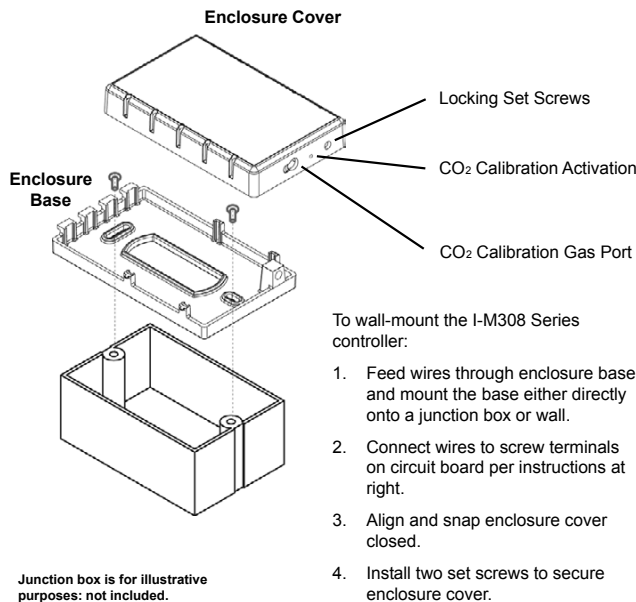
- duct	0.44 lb (0.19 kg)
Installation	
- wall	Surface mount or junction box, 4 to 6 feet above floor (1.2 to 1.8 m)
Warranty	1 year material and workmanship

ORDERING INFORMATION

I-M308WV	Wall mount, 0-10 VDC, 0-2000 ppm CO ₂
I-M308WC	Wall mount, 4-20 mA, 0-2000 ppm CO ₂
I-M308DV	Duct mount, 0-10 VDC, 0-2000 ppm CO ₂
I-M308DC	Duct mount, 4-20 mA, 0-2000 ppm CO ₂
Optional	
I-M308..-5K	0-5000 ppm range
I-M308.V-5V	0-5 VDC output

INSTALLATION & CALIBRATION

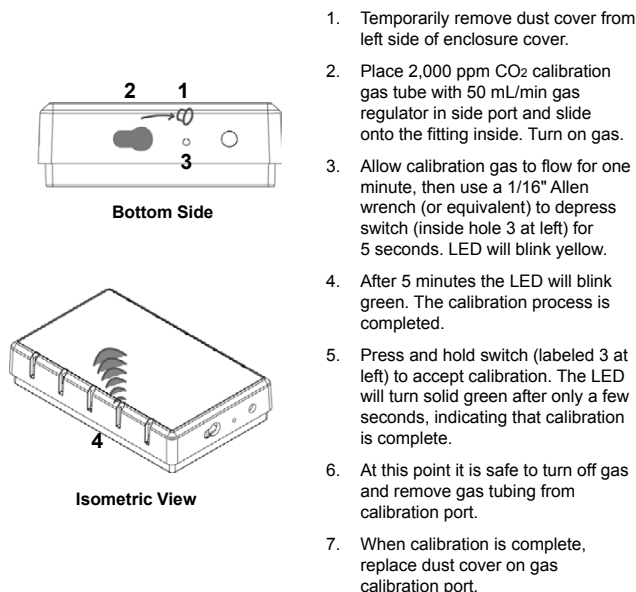
Wall Mount



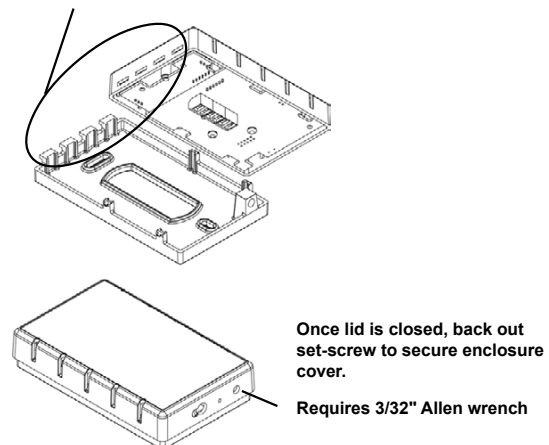
Recommended

- Twisted, shielded wire
- Mount 4-6 ft (1.2-1.8 m) above floor

Calibration Procedure

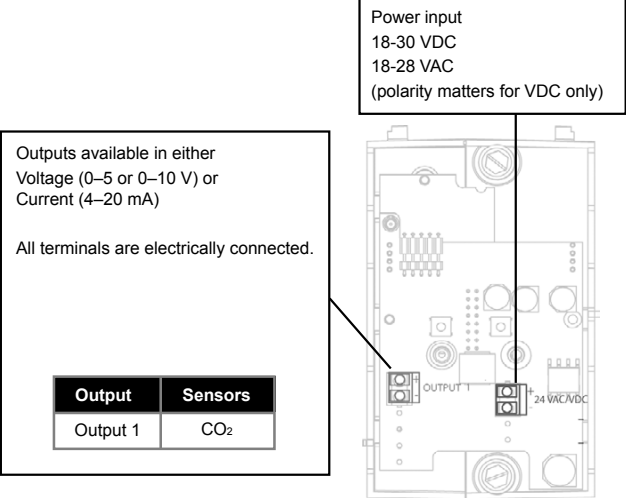
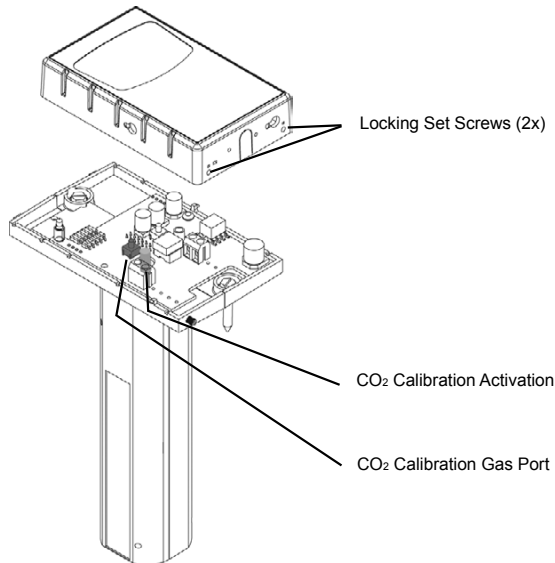


Align top and bottom latch and snap closed.

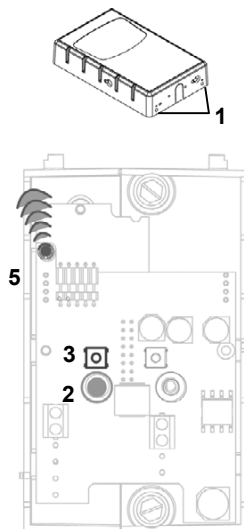


INSTALLATION & CALIBRATION

Duct Mount

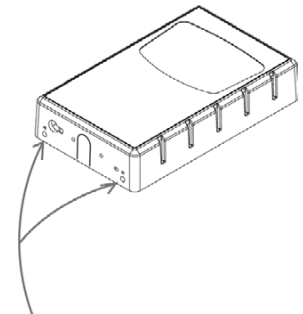
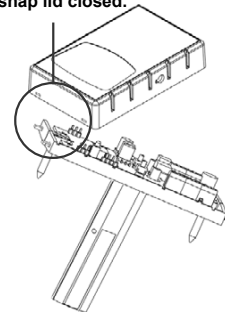


Calibration Procedure



1. Back out set screws along bottom edge of enclosure cover and remove cover
2. Remove dust cover from left-most post. Connect 2,000 ppm CO₂ calibration gas with 50 mL/min gas regulator. 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 'CO₂ CAL' switch (labeled 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 gas tubing from the calibration port.
7. When calibration is complete, replace dust cover on gas calibration port.

Align top and bottom latch and snap lid closed.



Once lid is closed, insert set-screws to lock enclosure.

Requires 1/16" Allen wrench

