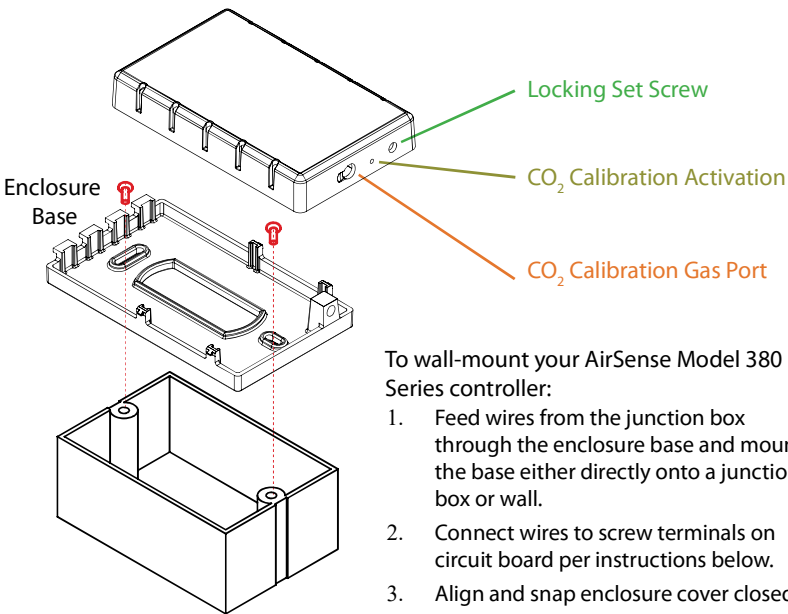


# irSense™ Model 380 Wall Mount Wiring and Calibration Instructions

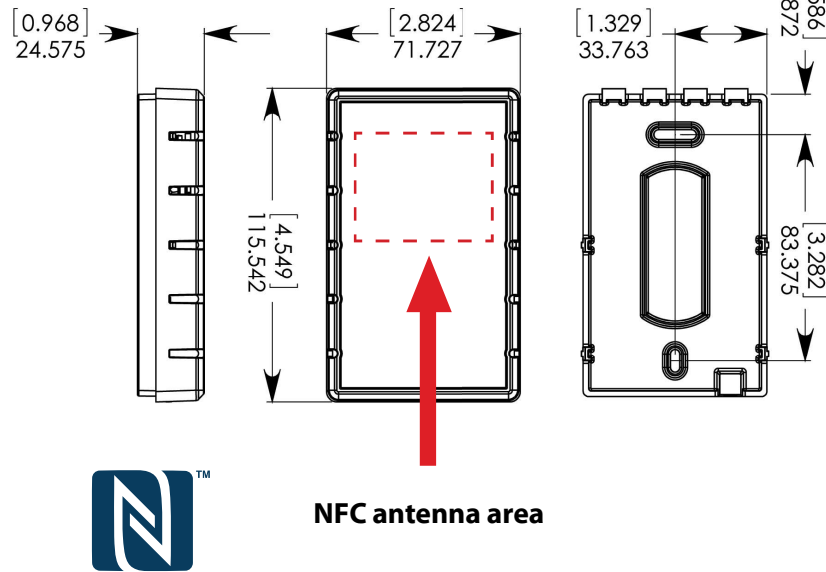
Enclosure Cover



To wall-mount your AirSense Model 380 Series controller:

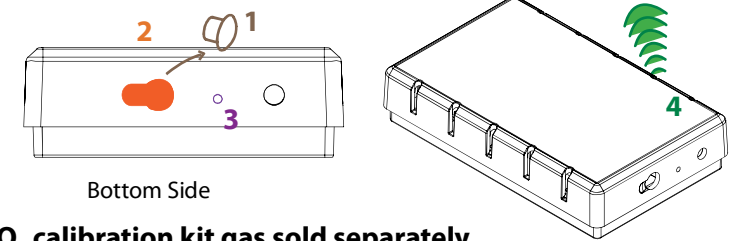
1. Feed wires from the junction box through the enclosure base and mount the base either directly onto a junction box or wall.
2. Connect wires to screw terminals on circuit board per instructions below.
3. Align and snap enclosure cover closed.
4. Back set screw out to secure enclosure.

Junction box is for illustration purposes: not included with M380



The N-Mark is a trademark or registered trademark of NFC Forum, Inc. in the United States and in other countries.

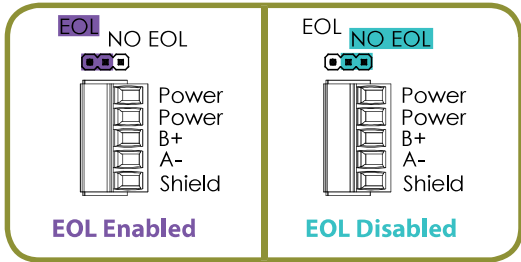
## CO<sub>2</sub> Calibration Procedure



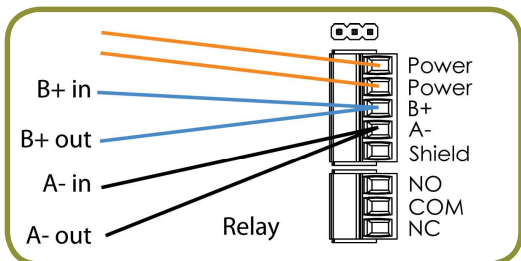
### CO<sub>2</sub> calibration kit gas sold separately

1. Temporarily remove the dust cover from the calibration gas port on the bottom of the enclosure cover.
2. Pass the 1/4" OD calibration gas tube into the 'Calibration Gas Port' and slide onto the fitting inside. Enable calibration gas flow.
3. Allow calibration gas to flow for one minute, then use a 1/16" Allen wrench (or equivalent) to depress the calibration button for 5 seconds until the LED blinks yellow.
4. After 5 minutes the LED will blink green. The calibration process is completed.
5. Press and hold the calibration button to accept and save the calibration. The LED will turn solid green, indicating that calibration is complete. If the calibration process is not confirmed within 5 minutes the unit will abandon the calibration and return to normal operation.
6. Remove calibration gas tube from case and ensure that gas is still flowing. If not the M380 has been mis-calibrated; replace the calibration gas with a new cylinder and repeat the process starting at step 2.

## EOL setting and Power wiring

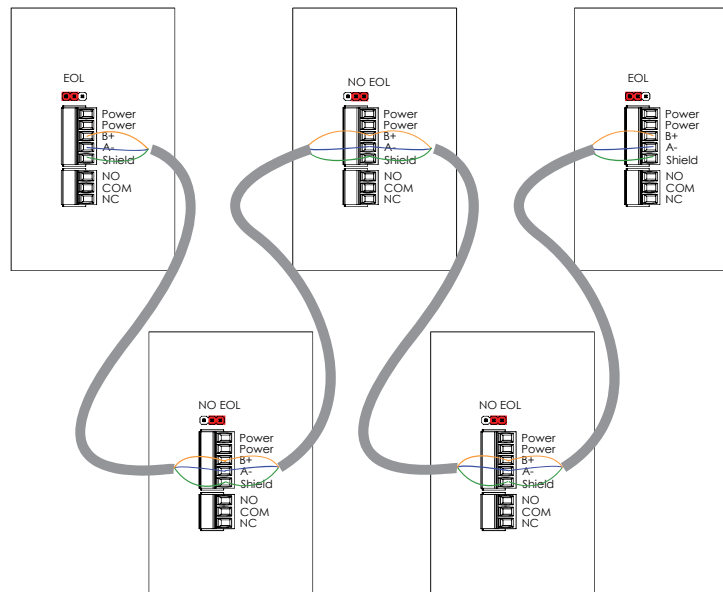


**EOL should only be enabled at the terminal ends of the daisy chain.**

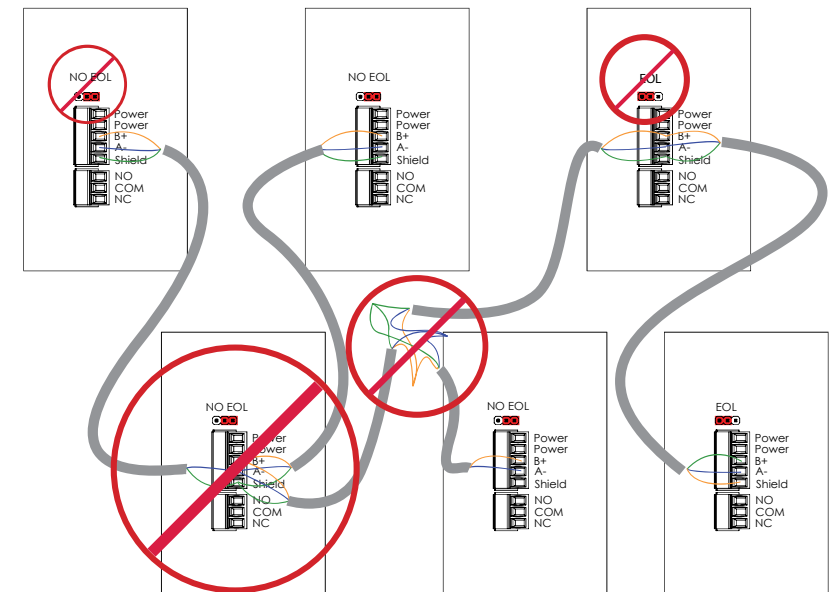


**Connect power connectors to 15-40 VDC or 18-28 VAC RMS. Data lines should be daisy chained as shown.**

## Properly routed network



## Incorrectly routed network





## Carbon Dioxide Sensor

The AirSense Model 380 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 AirSense Model 380 comes configured for a simple one-point calibration procedure and a built-in calibration port that requires no special fittings or adapters make the AirSense Model 380 simple to operate and maintain.

## Displays and Indicators

The AirSense Model 380 Series includes a dual-color LED which illuminates whenever the unit is operating. This LED indicates:

- Green -> CO2 Operational
- Red -> CO2 Sensor error



## Model 380 Specification

Parameter	Value
Communication Protocols	BACnet MS/TP Modbus RTU and ASCII
Supported Baud Rates	9600, 19200, 38400, 76800, 115200
Sensor Operating Principle	Dual-beam non-dispersive infrared (NDIR)
Gas Sampling Method	Diffusion
Measurement Range	0-5000 ppm
Repeatability	± 20 ppm CO <sub>2</sub>
Measurement Accuracy	± 30 ppm ± 2% of reading
Calibration	One point: single gas calibration
Recommended Calibration Interval	5 years
Warm-up Time	Less than 1 minute
Power Requirements	15 - 40 VDC or 18 - 28 VAC RMS
Power Consumption	Less than 2W
Operating Temperature Range	32 - 122 °F (0 - 50 °C)
Operating Humidity Range	5 - 95% RH, non-condensing
Enclosure Dimensions	4.5" x 2.8" x 1.0" (116 x 72 x 25 mm) wall mounting
Enclosure Material	White satin finish, ABS UL 94 V-O flammability rated plastic
Relay	SPDT, dry contact, UL rated, 2A at 24 VDC
Warranty	3-year for sensor, 7-year for electronics

## Configure Network Settings with the NEARcom App

The Model 380 is equipped with NFC technology that allows it to be fully configured using an Apple or Android phone with the free NEARcom app. By briefly holding the phone over the Model 380's NFC antenna area, the network parameters can be inspected and modified. The NEARcom app enables changes to network parameters whether the unit is already installed and operating or completely unpowered and disconnected. The NEARcom app is freely available on either the Apple App Store or Android Play.



## BACnet Objects

Name	Object type	Instance
Device	Device	User configurable (default 483000)
CO2 Reading	Analog Input	1
Enable relay setpoint control	Binary Value	1
Relay setpoint	Analog Value	1
Relay state	Binary Output	1

## Modbus registers (Accessed using function code 3 for reads and function code 6 for writes)

Register	Name	Type	Units	Access Permissions
4001	CO <sub>2</sub> Status	uint16	0 => no errors see manual for other codes	Read
4002	CO <sub>2</sub> Reading	uint16	ppm	Read
4003	Enable relay setpoint control	Bool	enable=1 / disable=0	Read / Write
4004	Relay state	Bool	on=1 / off=0	Read / Write



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