



CD2E



WARNING



HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment.

Failure to follow these instructions can result in death, serious injury or equipment damage.

This product is intended for use in HVAC and building environmental control applications. It is not intended for direct medical monitoring of patients. Read and understand these instructions before installing this product. The installer is responsible for all applicable codes. If this product is used in a manner not specified by the manufacturer, the protection provided by the product may be impaired. No responsibility is assumed by the manufacturer for any consequences arising out of the use of this material.

CD2E

Economy Duct Mount Air Quality Sensor

Product Overview

CD2E is an Economy Duct Mount CO₂ Sensor for monitoring air quality.

This device is an active sensor that converts a measurement into 4-20 mA, 0 to 5 Vdc or 0 to 10 Vdc output.

Product Identification

Model	Description
CD2E	CO ₂ transmitter, analog

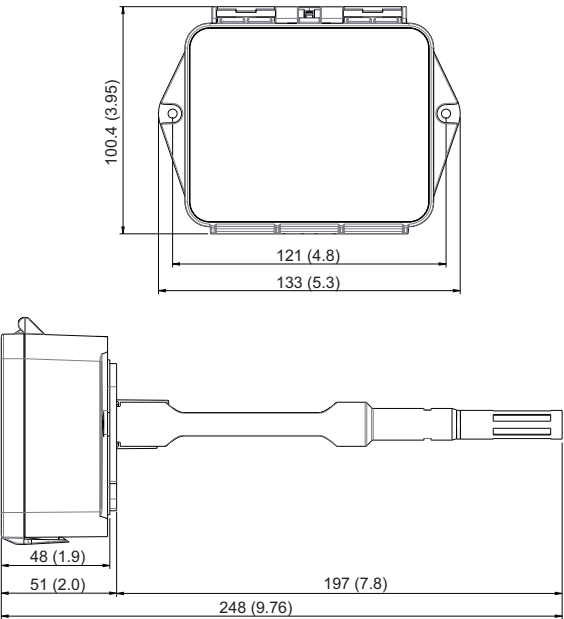
Specifications

OPERATING / STORAGE ENVIRONMENT	
Operating Temp. Range	0 to 50 °C (32 to 122 °F)
Operating Humidity Range	0 to 95% RH (non-condensing)
Storage Temp. Range	-25 to 70 °C (-13 to 158 °F)
Storage Humidity Range	0 to 95% RH (non-condensing)
Power Supply	3-wire volt mode: 20 to 30 Vdc, 24 Vac, 50 to 60 Hz
Output	Selectable 4 to 20 mA, 0 to 5 Vdc, 0 to 10 Vdc
Power Consumption	4 VA at 24 Vac
Tube Length	200 mm
Medium	Neutral gas, air
Housing Material	Polycarbonate; flammability rating UL 94 V0
Mouting Location	For indoor use only. Not suitable for wet locations.
IP Rating	IP65
Protection Class	Class III
CO ₂ SENSOR	
Sensor Type	Non-dispersive infrared (NDIR), diffusion sampling
Output Range	0 to 2000/5000 ppm (selectable)
Accuracy	±30 ppm ±3% of measured value
Repeatability	±20 ppm ±1% of measured value
Response Time	<60 seconds for 90% step change
Calibration	Field calibration support
WIRING TERMINALS	
Terminal Blocks	Screwless terminal block with spring actuator, 16- 24 AWG
WARRANTY	
Limited Warranty	5 years

Specifications

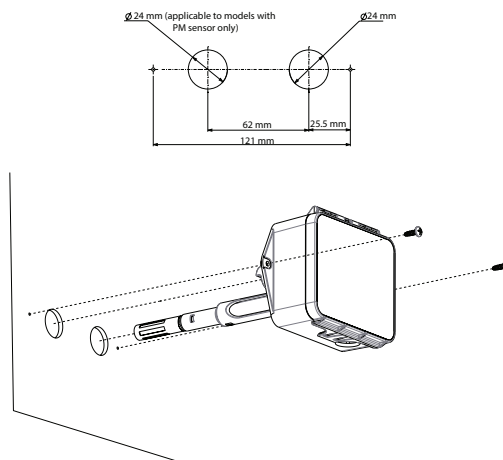
COMPLIANCE INFORMATION	
Agency Approvals	UL 916
	European conformance CE: EN61000-6-2, EN61000-6-3, EN61000 Series, immunity, EN 61326-1
	FCC Part 15 Class A
	REACH, RoHS, RoHS 2 (China), RCM (Australia), ICES-003 (Canada), UKCA (UK)

Dimensions
mm (in.)

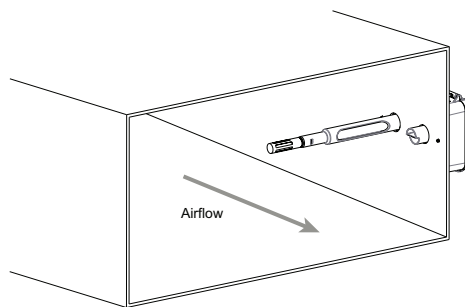


Installation

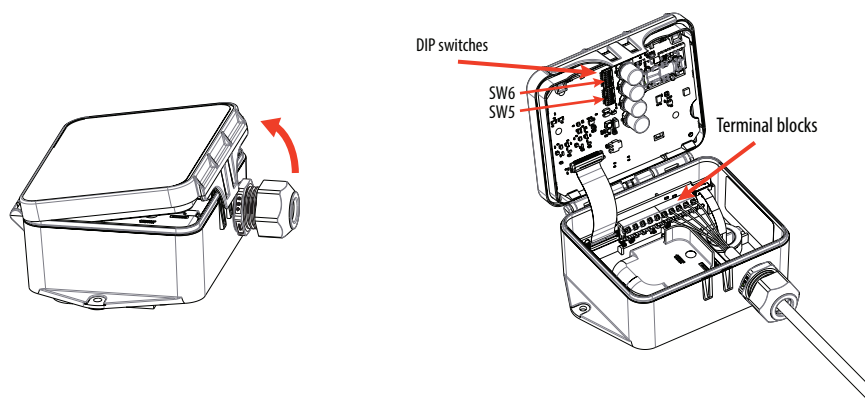
1. Prepare the duct for installation by drilling holes to accommodate the probe tube for CO₂ intake. Ensure the gasket on the back is depressed to prevent leakage between the product and the duct. Do not over-tighten the screws.



2. Ensure the probes are installed in the direction of the air flow. Install the probe in the middle of the duct and away from any restrictions to allow proper air flow.

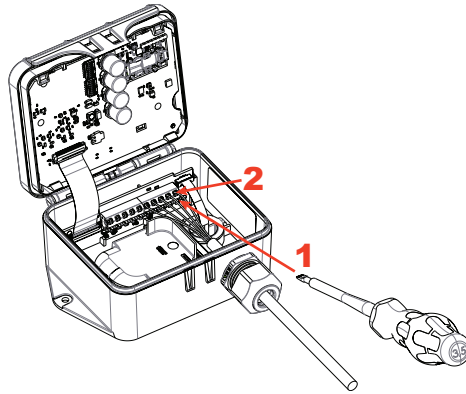


3. Release the latch on the lid to access the DIP switches and terminal block.

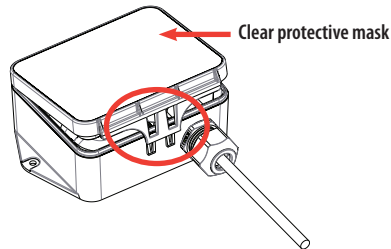


Installation (cont.)

4. Wire the connections per the diagrams in the Wiring section below. This device features spring terminals for screwless termination. Open the terminal point by inserting a screwdriver, then insert the wire above. Release the screwdriver to hold the wire in place. Details on wiring and configuration are contained in the next sections of this document.



5. Secure the latch-on cover in the closed position and remove the clear protective mask on the front label of the device.



Wiring

NOTICE

PRODUCT DAMAGE DUE TO ELECTRO-STATIC DISCHARGE

Circuit boards and components can be damaged by static electricity or electro-static discharge (ESD). Observe the following electro-static precautions when handling this product and cables and components connected to the product.

- Keep static-producing material such as plastic, upholstery, carpeting, etc. out of the immediate work area
- Store the product in ESD-protective packaging when it is not installed in the panel
- When handling the product or a conductive cable/ESD-sensitive component connected to the product, wear a conductive wrist strap connected to ground through a minimum of 1 MΩ resistance
- Do not touch exposed conductors and component leads with skin or clothing

Failure to follow these instructions can result in equipment damage.

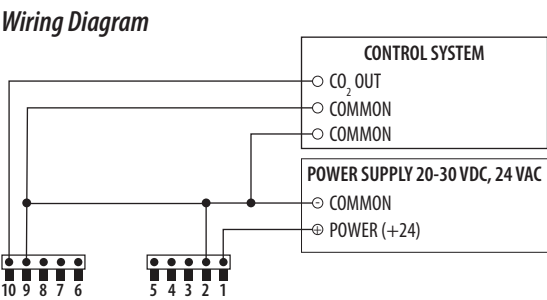
NOTICE

INACCURATE READINGS

- Do not run wiring in the same conduit as AC power wiring. Close proximity to AC power may influence accuracy.

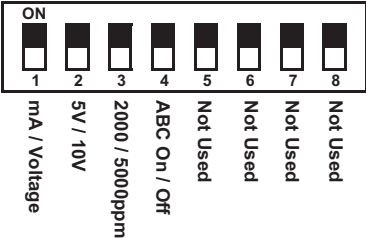
Failure to follow these instructions can result in reduced accuracy.

Wiring (cont.)



Configuration

Set the DIP switches (SW 5). See the Installation section, Step 3 for the location of the DIP switches.



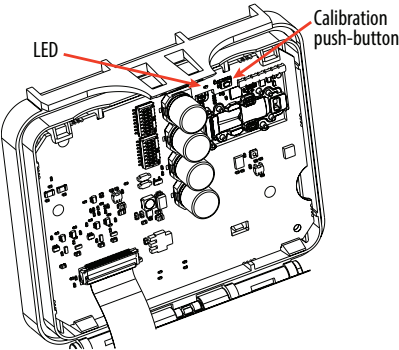
Switch	Function	Description
1	Output mode	ON - 4-20mA output mode enabled OFF - Voltage output mode enabled
2	Voltage output range	ON - 0-5V output range enabled OFF 0-10V output range enabled
3	CO ₂ output range	ON - 0-2000 ppm CO ₂ output range enabled OFF - 0-5000 ppm CO ₂ output range enabled
4	Automatic Baseline Calibration (ABC) for CO ₂	ON - ABC enabled OFF - ABC disabled
5	Not used	Not used
6*	Not used	Not used
7*	Not used	Not used
8	Not used	Not used

CO₂ Sensor Calibration

There are two methods for CO₂ calibration available: 400 ppm baseline calibration and automatic baseline calibration (ABC).

400 ppm Baseline Calibration

400 ppm baseline calibration allows the sensor to be set at 400 ppm. Push and hold the calibration button for 3 to 5 seconds. The LED will flash green. Once the button is released, calibration is complete and the LED switches off.



CO2 Sensor Calibration
(cont.)

Automatic Baseline Calibration (ABC)
The ABC mode addresses the 400 ppm calibration. It allows turning on or off a background correction/recovery mode that will minimize any calibration error that has been caused by shock during handling and transportation or is caused by a long term shift in measurement. The ABC algorithm constantly keeps track of the sensor’s lowest reading over a preconfigured time interval and slowly corrects for any long-term drift detected as compared to the expected fresh air value of 400 ppm. After initial startup, it is expected that the sensor reaches specified accuracy after 7 to 21 days.

China RoHS
Compliance
Information

Environment-Friendly Use Period (EFUP) Table

有害物质 - Hazardous Substances						
部件名称 Part Name	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电子件 Electronic	X	O	O	O	O	O

本表格依据SJ/T11364的规定编制。
O: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。
X: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。
(企业可在此处，根据实际情况对上表中打“X”的技术原因进行进一步说明。)

This table is made according to SJ/T 11364.
O: indicates that the concentration of hazardous substance in all of the homogeneous materials for this part is below the limit as stipulated in GB/T 26572.
X: indicates that concentration of hazardous substance in at least one of the homogeneous materials used for this part is above the limit as stipulated in GB/T 26572

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