



AT-VLD-04ND-A1

Manual

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Specifications

Carbon Dioxide Sensor	Non-Dispersive Infrared Detector (NDIR) ABC Logic Self Calibration Algorithm
CO ₂ measuring range	0~2,000ppm
Accuracy@22°C(72°F)	±60ppm +3% of reading
Stability	<2% of full scale over the life of the sensor
Non linearity@22°C(72°F)	<1% of full scale
Response time	<2 minutes for 90% change
Duct Air Velocity	0~450m/min
Pressure Dependence	0.135% of reading per mm Hg
Temperature Dependence	0.2% of full scale per °C
Warm up time	2 hours (first time) 2 minutes (operation)
Power supply	24VAC (50/60HZ±10%), 24VDC
Consumption	3.5 W max. ; 2.5 W avg.
Analog output	1 x 0~10VDC (default) or 4~20mA output for CO ₂ (The voltage output or current output can be selectable by jumpers)
Operation conditions	-10~50°C(14~122°F); 0~95%RH, non condensing
Storage conditions	0~50°C(32~122°F)/ 5~80%RH
Net weight	320g
Standard Approval	CE
IP class	IP50
Version	V. A027

Mounting and Wire Connection

- ◆ Notice the supply power voltage of the transmitter: 24VAC. Do not install the transmitter on voltages higher than marked on the transmitter.
- ◆ Firstly, prepare a flower head screwdriver and open the screw of the transmitter housing. (see fig.1)
- ◆ Open the underside bigger notch for pass through connecting wires (see fig.2)
- ◆ Connect wires to terminal strips (see fig.3). Make sure wiring connection correct and secure.
- ◆ Place the probe of the transmitter into air duct. Please note the direction of the filter and the air flow is opposite. (see fig.4).
- ◆ The sense probe can be replaced. (see fig.5).
- ◆ Place the transmitter against at desired location and fixed;.
- ◆ Finally tighten the screw of the transmitter housing to close the cover.

Fig.1

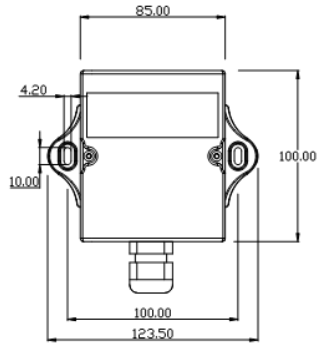
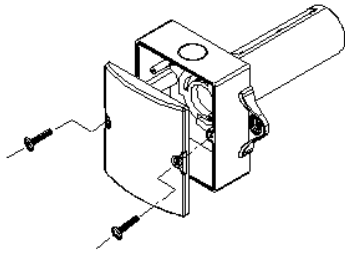


Fig.2

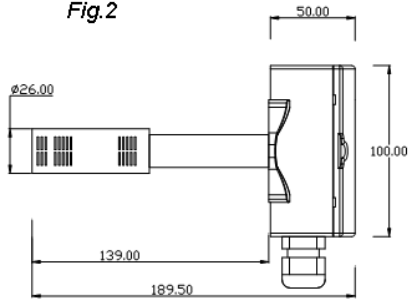


Fig.3

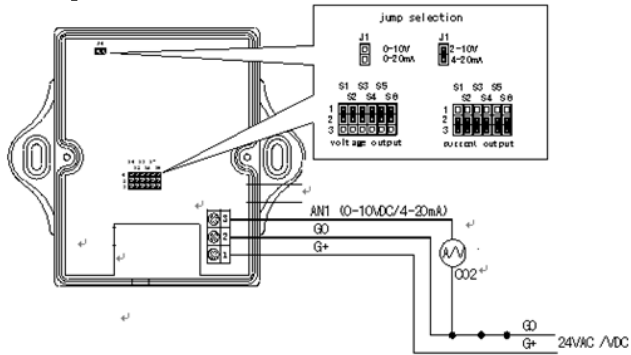
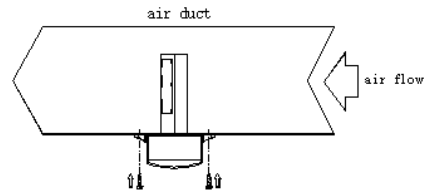
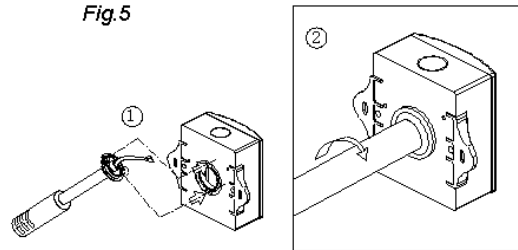


Fig.4



Connection Terminal	Function	Electrical Data
1	G+	Power (+)
2	G0	Power ground (-)
3	OUT	Analog output (+)
		24VAC/24VDC +
		24VAC/24VDC
		0-10VDC(default)/4-20MA
		=0~2000ppm

Fig.5



Important Instructions:

1. Don't shake or hit the transmitter too much in shipment or in mounting to protect the internal infrared CO₂ sensor from any damage and excursion of infrared receiver.
2. When open the cover of the transmitter, you'll see one small PCB board which is CO₂ module mounted on a bigger PCB board. Don't move the CO₂ module in order not to cause any damage to the CO₂ sensor.
3. When
 - a) First use CO₂ transmitter, or
 - b) Reuse CO₂ transmitter after a long time unused or
 - c) CO₂ measurement is proved to be incorrect (by comparing with the measurement of other accurate CO₂ products, or put the transmitter outdoors and its measurement is away from the range of 350ppm~450ppm, which is the normal ambient CO₂ level range.)

Then let ABC Logic™ Self Calibration System work as follows:

Keep the CO₂ transmitter energized for at least 2 days to let CO₂ sensor's ABC Logic™ self-calibration system operate properly. After more than 2 days' calibration, if the measurement (indicated by the analog output) of the CO₂ transmitter still exceeds over the accuracy, you need to let it self-calibrated for a longer time. Here's the typical 14-day calibration solution: During a 14-day period, place the CO₂ transmitter twice in outdoors or unoccupied places where CO₂ level is around 400ppm. Each time let it be there for more than 4 hours and then check the CO₂ measurement via the analog output. If the CO₂ measurement is in its accuracy limit, it indicates the measurement is right.

Notice:

- a) Use of cellular telephones or radio transceivers with two feet of the sensor during calibration process could cause sensor interference, calibration errors and affect sensor accuracy. Please refrain from using these devices during sensor calibration.
- b) When checking the analog output, please avoid breath out directly to the CO₂ transmitter. It's better to connect the output terminals with the Extending Wires with length of more than 1 meter. When the CO₂ transmitter becomes stable after more than 10 minutes turning-on, check the analog output through the extending wires.