H-Guard™ CO2 Transmitter

Part #: 65-9080

User Manual

Specifications

Power supply	24VAC/24VDC±10%
Consumption	1.0 W Max
Gas sensor	Carbon Dioxide: Non-Dispersive Infrared Detector (NDIR) ABC Logic Self Calibration (default: effective)
CO_2 measuring range	0～2,000ppm
Accuracy@25℃(77℉),2000ppm	±40ppm +3% reading
Warm up time for each turning-on	48 hours (first time), 2 minutes (operation)
Dry contact output	<240VAC/30VDC 2A switching current (resistance load), Four CO2 levels selectable to control the relay by jumpers
Analog output	4~20mA
Storage conditions	-40~70℃(-40~158℉) , 0~95%RH, non condensing
Operation conditions	0~50℃(32~122℉); 0~95%RH, non condensing
Net weight/ Dimensions	180g/100mm(H)×80mm(W)×24mm(D)
Installment standard	65mm×65mm(2"×4") wire box, or hang on a nail
Approval	CE
Version	F2000TSM-CO2-88_1A1R-9900_61

Mounting and Wire Connection

- Notice the supply power voltage of the detector: 24VAC. Do not install the detector on voltages higher than marked on the detector.
- Following step 1 to 4 in figure. 1 to remove the cover. First, prepare a flat head screwdriver and put it deep inside of the hole on the top of the transmitter housing following step 1.

  Then slant the screwdriver and open the cover gently following step 2. Do not mount it near diffuser or any steam source, in direct sunlight.
- Mount the wall plate first, dimensions see *fig. 2*. there are two dimensions available. If there is mounting box, please follow step 5 to 8 in *fig. 3*; if there's no mounting box, please follow step 5 to 8 in *fig. 4.*
- Connect wires to terminal strips (see *figure 5*), or you can put in the power adaptor to the socket of the indicator instead of connecting terminal 1, 2. make sure wiring connection correct and secure. Following step 4 to step 1 in *figure 1* to close the cover.

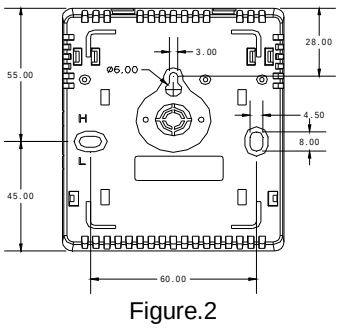


Figure.2

Figure.1

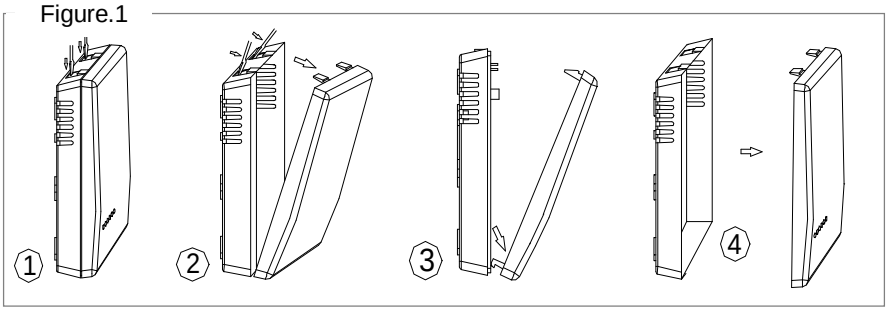


Figure.5

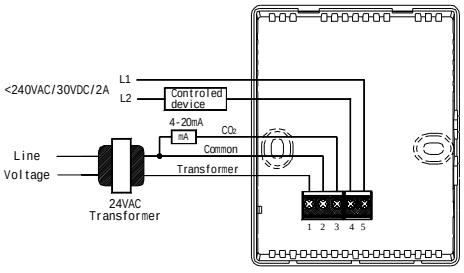


Figure.3

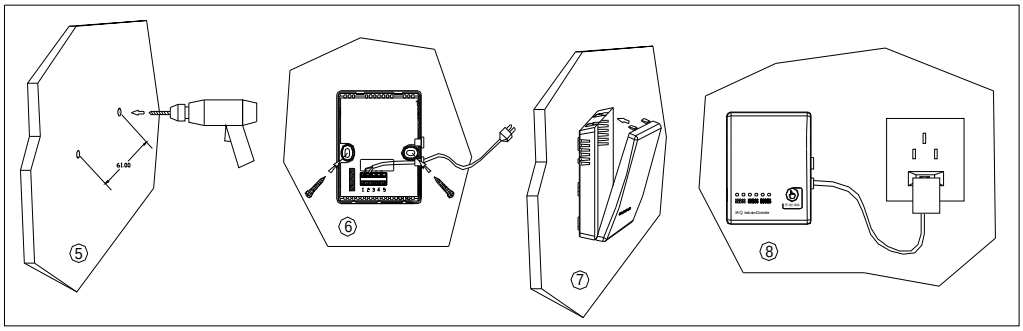
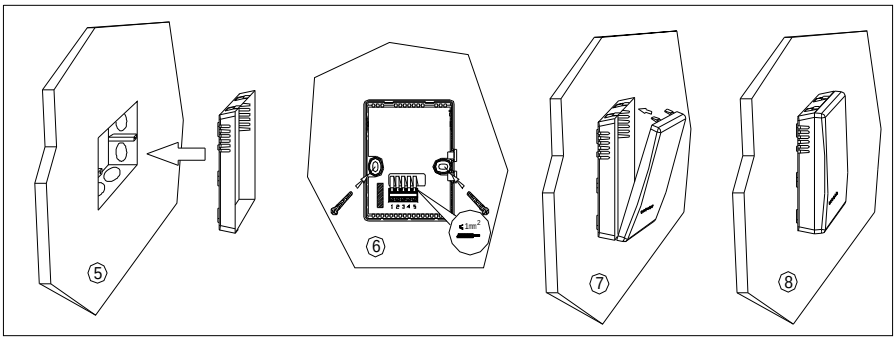


Figure.4



Select CO2 level to control the Relay

To open the controller's faceplate, there are 2 jumpers (J4 and J5) on the right bottom of the circuit board. We can select the CO2 level to control the relay on /off by jumpers.

Connection Terminal		Function	Electrical Data
1	G+	Power (+)	24VAC/24VDC +
2	G0	Power ground (-)	24VAC/24VDC
3	OUT	Analog output (+)	4~20mA =0~2000ppm (CO2)
4	ventilator	Relay output	<240VAC/30VDC 2A switching current (resistance load)
5	Common		

Jumper	CO2 level	The relay turns on /turns off
J4-disconnect; J5-disconnect	800ppm	CO2>800ppm,the relay on; CO2 <700ppm,the relay off
J4-connect; J5-disconnect	1000ppm	CO2>1,000ppm, the relay on; CO2 <900ppm,the relay off
J4-disconnect; J5-connect	1200ppm **(default)**	CO2>1,200ppm, the relay on; CO2 <1,100ppm,the relay off
J4-connect; J5-connect	1400ppm	CO2>1,400ppm, the relay on; CO2 <1,300ppm,the relay off

Important Instructions

1. Don't shake or hit the CO2 indicator/controller too much in shipment or in mounting to protect the internal infrared CO2 sensor from any damage and excursion of infrared receiver.
2. 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 Tongdy's 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 continuously 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. That's because people's breath influences CO2 level.

	Jumpers setup for 4-20mA output (Default)	Jumpers setup for 0-10 output
J1	CONNECTED	DISCONNECTED
J2	DISCONNECTED	DISCONNECTED
J3	DISCONNECTED	DISCONNECTED
S1	UPPER POSITION	LOWER POSITION
S2	UPPER POSITION	LOWER POSITION

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