



# H-Guard<sup>TM</sup>

**CO<sub>2</sub> transmitter**

Part Number: 65-9080

## User's Manual



# H-Guard™

## CO2 transmitter

### User's Manual



#### Specifications

Power supply/ Consumption	24VAC (50/60HZ±10%), 24VDC / 1.6 W Max
Gas sensing element	Carbon Dioxide: Non-Dispersive Infrared Detector (NDIR) with ABC Logic Self Calibration System
CO <sub>2</sub> measuring range	0~2,000ppm
Accuracy@25°C(77°F),2000ppm	±40ppm +3% reading
Response time	<2 minutes for 90% step change
Warm up time for each turning-on	<2 minutes (operational), 10 minutes (maximum accuracy)
Analog output	4~20mA
1x relay output	<240VAC/30VDC 2A switch current (resistance load) Four CO <sub>2</sub> levels selectable to control the relay by jumpers
Operation conditions/ Storage conditions	0~50°C(32~122°F); 0~95%RH non condensing/ -40~70°C(-40~158°F); 0~95%RH non condensing
Net weight/ Dimensions	120g /102mm×90mm×40mm
Mounting standard	65mm×65mm(2"×4") wire box, or hang on a nail
Standard Approval	CE
Version	F2000TSM-CO2-1A1R-ST02_15

#### 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.
- ◆ Following step 1 to 3 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 transmitter on the place where you want to detect CO<sub>2</sub> level. Do not mount it near diffuser or any steam source, in direct sunlight.
- ◆ Mount the wall plate first, there are two dimensions available (see figure 2). Place the transmitter against the wall at desired location; make sure wires can be passed through the notch on the wall plate.
- ◆ Connect wires to terminal strips (see fig.3). Make sure wiring connection correct and secure.
- ◆ Follows the step 4 to step 7 in figure 4 to close the cover.

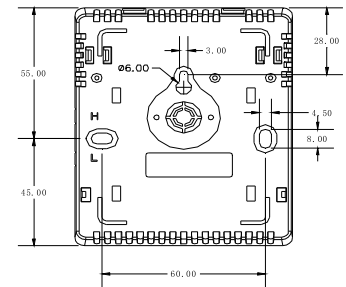


Fig.2 wall plate

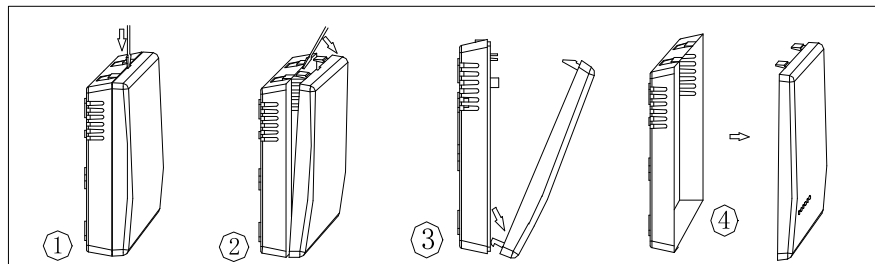
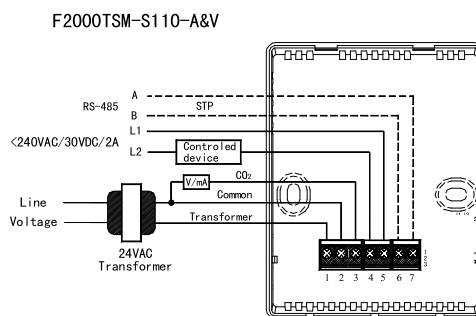


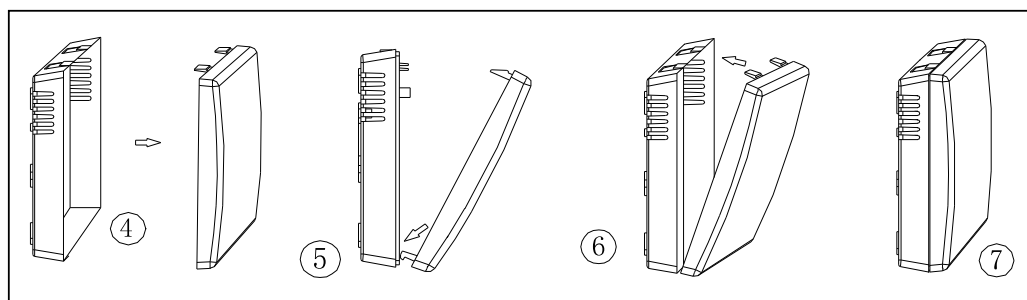
Fig.1 open the cover

Fig.3 wiring diagram



Connection Terminal		Function	Electrical Data
1	G+	Power(+)	24VAC/24VDC +
2	G0	Power ground (-)	24VAC/24VDC
3	OUT	Analog output (+)	4~20 mA
4	Controlled Device	On/Off output	<240VAC/30VDC 2A switch current (resistance load)
5	Common		

Fig.4  
close the cover



### Select CO2 level to control the relay

To open the detector's faceplate after cut of the power, there are 2 jumpers (J5 and J6) on the top of the circuit board and under the CO2 module. Take off the CO2 module, you can select the CO2 level to control the relay on /off by jumpers as below table.

Jumper	CO2 level	Relay on /on
J5-disconnect; J6-disconnect	800ppm	CO2>800ppm,the relay on; CO2 <700ppm,the relay off
J5-connect; J6-disconnect	1000ppm	CO2>1,000ppm, the relay on; CO2 <900ppm,the relay off
J5-disconnect; J6-connect	1200ppm <b>(default)</b>	CO2>1,200ppm, the relay on; CO2 <1,100ppm,the relay off
J5-connect; J6-connect	1400ppm	CO2>1,40ppm, the relay on; CO2 <1,300ppm,the relay off

### Important Instructions:

- 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.
- When first use CO2 transmitter, or reuse CO2 transmitter after a long time unused or 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.

## CONTACT INFORMATION

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