

H-GUARD-L

CO² Transmitter

OPERATOR'S MANUAL



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H-Guard-L™

CO2 transmitter

Part Number: 65-908 2

User's Manual

Specifications

CO ₂ Sensor	Non-Dispersive Infrared Detector (NDIR)	
Measurement Range	<input type="checkbox"/> 0~2000ppm <input checked="" type="checkbox"/> 0~5000ppm	
Accuracy	±40ppm + 3% of reading @22°C(72°F)	
Calibration	Self-calibration system	
Response Time	<5 minutes for 90% step change at low duct speed	
Warm up time	2 hours (first time) 2 minutes (operation)	
Temp. & RH Sensor	Temperature	Relative Humidity
Sensing element:	Band-gap-senor	Capacitive humidity sensor
Measuring range	-20°C~60°C	0 -100%RH
Accuracy	±0.4°C (25°C)	±3%RH (25°C, 40%-60%RH)
Display resolution	0.1°C	0.1%RH
Stability	±0.1°C per year	±1%RH per year
General Data		
Power supply	24VAC/24VDC	
Consumption	1.8 W max. ; 1.0 W avg.	
LCD display	display CO ₂ + temperature& humidity measurements	
Analog output	1x 0~10VDC or 4~20mA outputs for CO ₂ The analog output can be selectable by jumpers	
Modbus RS485 Interface	RTU, 19200bps, 15KV antistatic protection.	
Operation conditions	0°C~50°C(32~122°F); 0~95%RH, non condensing	
Storage conditions	-20~70°C(-4~158°F)	
Net weight	320g	
IP protection class	IP54 for TGP318 IP40 for TGP318L	
Standard Approval	CE-Approval	
Version	S8_20	

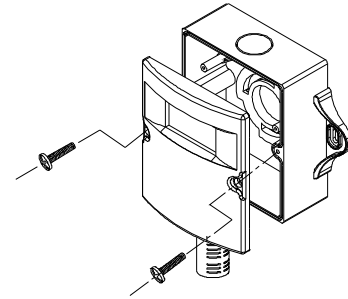


Fig.1

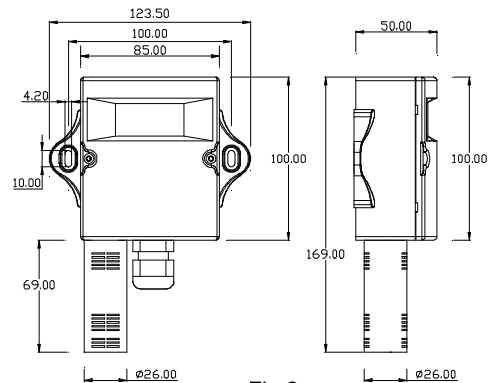


Fig.2



Fig.3

Mounting and Wire Connection

- ◆ Notice the supply power voltage of the transmitter: 24VAC/VDC. Do not install the transmitter on voltages higher than the voltage.
- ◆ Firstly, prepare a flower head screwdriver and open the screw of the transmitter housing. (see [fig.1](#))
- ◆ Mount the wall plate first (see [fig2](#)), Place the transmitter against the wall at desired location; make sure wires can be passed through the notch on the wall plate.
- ◆ Please see [fig3](#), LCD screen display normal working status.
- ◆ Connect wires to terminal strips (see [fig.4](#)). Make sure wiring connection correct and secure.
- ◆ Finally tighten the screw of the transmitter housing to close the cover.

Fig.4

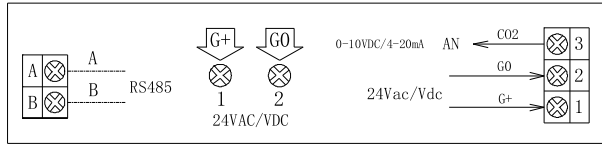
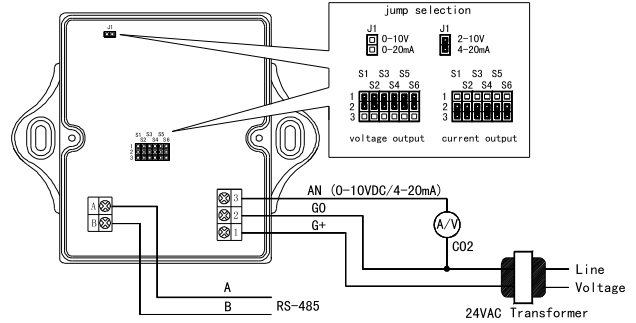


Fig.5



Terminal	Function	Electrical Data
1	G+	Power (+)
2	G0	Power ground (-)
3	AN1(CO2)	Analog output (+)
6	B (RX-)	RS485 interface
7	A (TX+)	

Analog output selection

The default outputs are 0~10VDC, change to the 4~20mA outputs as below steps. The three analog outputs must be kept in same situation, three all voltage analog outputs or three all current analog outputs at the same time. Please see the fig.5

- ◆ Power off and remove the back cover, there is a group of jumper S1~S6 in the middle right of the circuit board. And another group of jumper J1-J3 in the upper left of the circuit board .Connect the up two pins of the S1-S6, and disconnect J1, the analog outputs are 0~10VDC; Connect the down two pins of S1-S6, and connect J1, the analog outputs are 4~20mA.
- ◆ The J2, J3 is just for testing before leaving factory, the default is disconnection. Don not change them!

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
 - a. First use the transmitter, or
 - b. Reuse the 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 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.



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