



THG03

# CO<sub>2</sub> Temp. & Humidity Transmitter(Indoor)

Gas

[www.eyc-tech.com](http://www.eyc-tech.com)



## Features

- Integrated 3 sensors in 1 device with optional LCD display
- Measuring temperature, humidity and carbon dioxide
- 2 analog outputs or Modbus RS-485
- Optional analog output + RS-485
- Quick easy installation and maintenance due to well designed
- Cost-efficient and reliable
- Data can be logged and transferred to PC via RS-485 function link free software

## Application

Monitoring the air quality in indoor environments / HVAC / Air conditioning / Museums / Greenhouse /  
Testing environments work places / Supermarkets / Data centers / Production warehouses /  
Indoor public / Places to regulate the ventilation system to save energy

## Specification

## Display

Display	LCD module without backlight
Display readout	Double line character (Up : CO <sub>2</sub> ; Down : T & H take turns)
Digit	CO <sub>2</sub> : 4 digits ; T & H : 3 digits & 1 decimal
Digit height	17.84 mm

## Input

CO <sub>2</sub>	NDIR sensor
Temp. & humidity	MEMS sensor

## Measuring range

CO <sub>2</sub>	0 ... 2000 PPM
Temp.	0 ... 50°C
Humidity	0 ... 100%RH(Non-condensing)

## Output

Analog output	0 ... 5 V / 0 ... 10 V / 4 ... 20 mA
Modbus	RS-485
Signal connection	3-wire
Load resistance	Voltage output : $\geq 10 \text{ K}\Omega$ Current output : $< 250 \Omega$
Warm-up time	$< 2 \text{ min}$ ; Stable time 20 min
Temp. influence	T & H : Max. $-0.15\% \text{RH}/^\circ\text{C}$ (0 ... 80°C)
Response time	CO <sub>2</sub> : $t_{90} < 2 \text{ min}$ T & H : $t_{63}(15 \dots 45^\circ\text{C} / 33 \dots 75\% \text{RH}) \leq 10 \text{ sec}$
Sampling time	CO <sub>2</sub> : About 6 sec ; T & H : About 3 sec
Data logger	Via RS-485 by using eyc free software

## Accuracy(at +25°C ; DC 24 V ; 101.3 kPa)

CO <sub>2</sub>	$\pm 40 \text{ PPM} \pm 3\%$ of reading
Temperature	$\pm 0.5^\circ\text{C}$
Humidity	$\pm 5\% \text{RH}$ (30 ... 80% RH)

## Environment

Medium	Air
Operating Temp. / Humid. T&H	0 ... 50°C / 0 ... 100%RH(Non-condensing)
Operating Temp. / Humid. CO <sub>2</sub>	0 ... 50°C / 0 ... 85%RH
Storage temperature	-20 ... +60 °C

## Electrical

Power supply	DC 12 ... 36 V & AC 24 V $\pm 10\%$
Current consumption	DC : 150 mA / AC : 120 mA
Starting current	DC 24 V : 250 mA / DC 12 V : 550 mA AC 24 V : 230 mA / AC 12 V : 250 mA
Electrical connection	Analog & communication : 4P connector

## Installation

Installation	Indoor and Wall mount
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## Protection

IP rating	IP20
Electrical protection	■ Polarity protection ■ Short-circuit

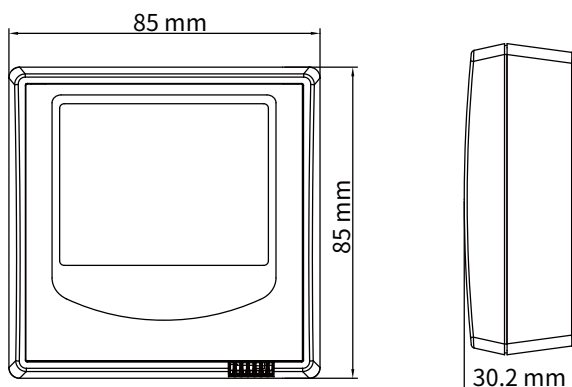
## Certification

CE Certification	Emission EN 61326-1 : 2013 CISPR11 : 2015 Group1 Class B EN 55011 : 2009 / A1 : 2010 Immunity EN 61326-1 : 2013 IEC 61000-4-2 : 2008 IEC 61000-4-3 : 2006+A1 : 2007+A2 : 2010 IEC 61000-4-8 : 2009
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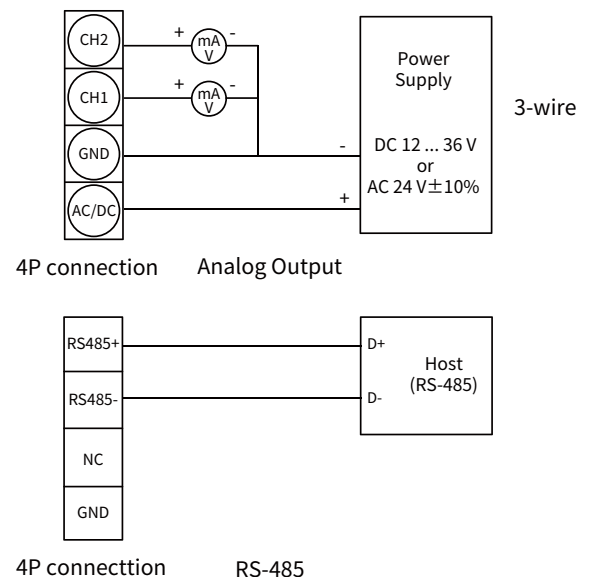
## Material

Housing	PC(PC-110)(UL94V-2)
Weight	100 g

## Dimension



## Diagram



## Ordering Guide

Type	THG03	-	G	T	6	1	-	30	2	-	0	D
CH1 function	Temperature	-	T									
	Humidity	-	H									
	CO <sub>2</sub>	-	G									
	RS-485	-	N									
CH2 function	Temperature			T								
	Humidity			H								
	CO <sub>2</sub>			G								
	RS-485			N								
Output	4 ... 20 mA				1							
	0 ... 10 V				6							
	0 ... 5 V				7							
	RS-485				N							
Power supply	DC 12 ... 36 V					1						
	DC 12 ... 36 V & AC 24 V±10%					3						
Temperature range	0 ... 50°C						-	30				
	No / RS-485						-	00				
CO <sub>2</sub> range	2000 PPM								2			
	No / RS-485								0			
Modbus	Analog									-	0	
	RS-485									-	1	
	RS-485+analog									-	2	
Option	without display											N
	Display											D

## | Additional Option (ILAC / TAF) Test Report |



Additional option: (ILAC / TAF) Test report - Standard calibration laboratory (TAF accreditation: 3032, complying with ISO / IEC 17025)  
TAF has mutual recognition arrangement with ILAC MRA

Project	Measurand level or range
Resistance thermometer	-40°C ... +300°C
Thermocouple thermometer	-20°C ... +300°C

Project	Measurand level or range
Hygrometer	3 basic points (25°C / 30%, 50%, 80%)
	Temperature: 0°C ... 70°C
	Humidity: 10% ... 95%