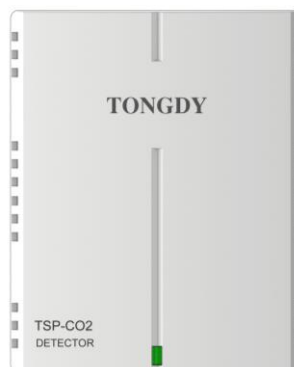


Carbon Dioxide Detector

—A powerful monitor and controller

Model#: ESTSP-CO2 Series



- A new carbon dioxide detector with powerful functions
- Perfect CO2 transmitter/controller
- Temperature and RH detection is optional
- NDIR infrared CO2 sensor with patented self calibration
- One or two 0~10VDC/4~20mA linear outputs for CO2 or CO2/Temp.
- PID control output selectable for CO2 measurement
- LED light selectable between 3-color mode and working mode
- RS485 communication interface with Modbus or BACnet optional
- Optional OLED screen displays measurements
- One relay output optional for a ventilator or a CO2 generator
- Buzzer alarm provided for the models with relay
- CE approval

■ Features

- ◆ Design for real time measuring ambience carbon dioxide and temperature and relative humidity
- ◆ NDIR infrared CO₂ sensor inside with special Self Calibration. It makes CO₂ measurement more accurate and more reliable.
- ◆ Up to 10 years lifetime of CO₂ sensor
- ◆ Provide one or two 0~10VDC/4~20mA linear output for CO₂ or CO₂/temp.
- ◆ PID control output can be selected for CO₂ measurement
- ◆ One passive relay output is optional. It can control a fan or a CO₂ generator. The control mode is easily selected.
- ◆ The 3-color LED indicates three CO₂ level ranges
- ◆ Optional OLED screen displays CO₂/Temp/RH measurements
- ◆ Buzzer alarm for the relay control model
- ◆ RS485 communication interface with Modbus or BACnet protocol
- ◆ 24VAC/VDC power supply
- ◆ CE-approval

■ Specifications

General Data	
Power supply	24VAC/VDC ± 10%
Consumption	3.5 W max. ; 2.0 W avg.
Analog outputs	One 0~10VDC/4~20mA for CO ₂ measurement

	Two 0~10VDC/4~20mA for CO2/Temperature measurements PID control output is selectable		
Relay output	One passive relay output (max.5A) with the control mode selection (control a fan or a CO2 generator)		
RS485 interface	Modbus protocol or BACnet protocol, 4800/9600(default)/19200/38400bps; 15KV antistatic protection, independent base address.		
LED light selectable	<table border="1"> <tr> <td>3-color mode (default) Green: ≤1000ppm Orange: 1000~1400ppm Red: >1400ppm Red flashing: CO2 sensor faulty</td> <td>Working light mode Green on: working Red flashing: CO2 sensor faulty</td> </tr> </table>	3-color mode (default) Green: ≤1000ppm Orange: 1000~1400ppm Red: >1400ppm Red flashing: CO2 sensor faulty	Working light mode Green on: working Red flashing: CO2 sensor faulty
3-color mode (default) Green: ≤1000ppm Orange: 1000~1400ppm Red: >1400ppm Red flashing: CO2 sensor faulty	Working light mode Green on: working Red flashing: CO2 sensor faulty		
OLED Display	Display CO2 or CO2/temp. or CO2/Temp./ RH measurements		
Operation condition	0~50°C; 0~95%RH, non condensing		
Storage condition	-10~60°C, 0~80%RH		
Net Weight / Dimensions	190g /117mm(H)×95mm(W)×36mm(D)		
Installation	wall mounting with 65mm×65mm or 2"×4" wire box		
Housing and IP class	PC/ABS fireproof plastic material, protection class: IP30		
Standard	CE approval		
Carbon Dioxide			
Sensing element	Non-Dispersive Infrared Detector (NDIR)		
CO ₂ measuring range	0~2000ppm (default) 0~5000ppm (selected in the advanced setup)		
CO ₂ Accuracy	±60ppm + 3% of reading or ±75ppm (whichever is greater)		
Temperature dependence	0.2% FS per°C		
Stability	<2% of FS over life of sensor (10 year typical)		
Pressure dependence	0.13% of reading per mm Hg		
Calibration	ABC Logic Self Calibration Algorithm		
Response time	<2 minutes for 90% step change typical		
Signal update	Every 2 seconds		
Warm-up time	2 hours (first time) / 2 minutes (operation)		
Temperature and RH (option)			
Temperature sensor (selectable)	Digital integrated temperature and humidity sensor SHT, or NTC thermistor		
Measuring range	-20~60°C/-4~140F (default) 0~100%RH		
Accuracy	Temp.: <±0.5°C@25°C RH: <±3.0%RH (20%~80%RH)		

■ Models Guide

TSP - CO2 - A X Y Z - T/TH - P

A: OLED display with buttons

- D- with OLED and buttons (for Y=1)
- B- no OLED and buttons

X: analog output

- 0- no analog output
- 1- 1x analog output (for CO2)
- 2- 2x analog output (for CO2 & Temp.)

Y: relay output

- 0- no relay output
- 1- 1x relay output

Z: communication interface

- 0- no communication interface
- 1- Modbus RS485 interface
- 2- BACnet protocol (will be soon)

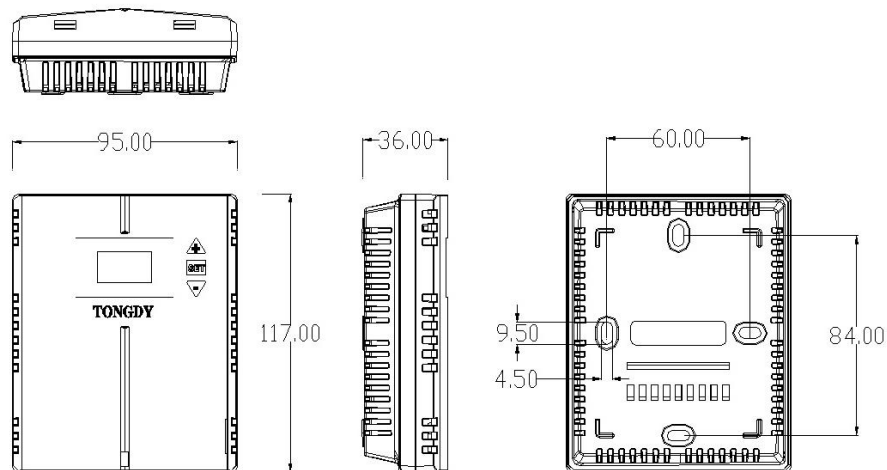
T/TH: temperature and RH option

- T- temperature detection
- TH- temperature & RH detection
- No T/TH suffix indicates no temperature or/and RH detection

P: type of analog output

- V- 0~10VDC output (default)
- A- 4~20mA output
- P- PID output

■ Mounting and Dimensions



■ Wiring Diagram

