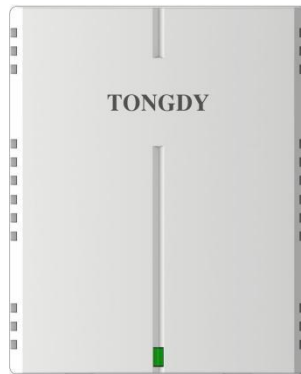# Tongdy

Tongdy Sensing Tech.

Carbon Monoxide Detector and Controller

Product No: TSP-CO

Applications

- Underground parking lots
- BMS systems
- Monitoring and warning CO and smoking
- All ventilation control systems

Features

- Real-time monitoring air carbon monoxide concentration and temperature
- Industrial class structure design for housings, which arefirm and durable
- High quality Japanese carbon monoxide sensor inside, up to 5 years lifetime
- Modbus RTU or BACnet -MS/TP communication optional
- OLED display optional
- Three-color light indicates three CO ranges
- Buzzer alarm for setpoint
- Sensor coverage up to 30 meters radius subject to air movement.
- 1x 0-10V or 4-20mA analog linear output for CO measured value
- One or two on/off relay outputs to control a fan or a fan and alarm
- 24VAC/VDC power supply
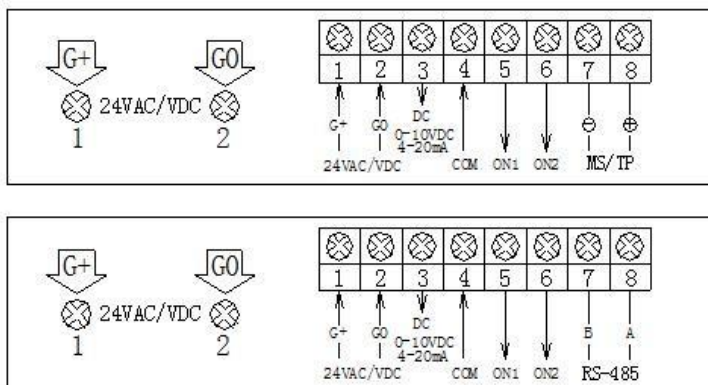
Typical Applications

- Underground parking lots

- BMS systems

- Monitoring and warning carbon monoxide and smoking
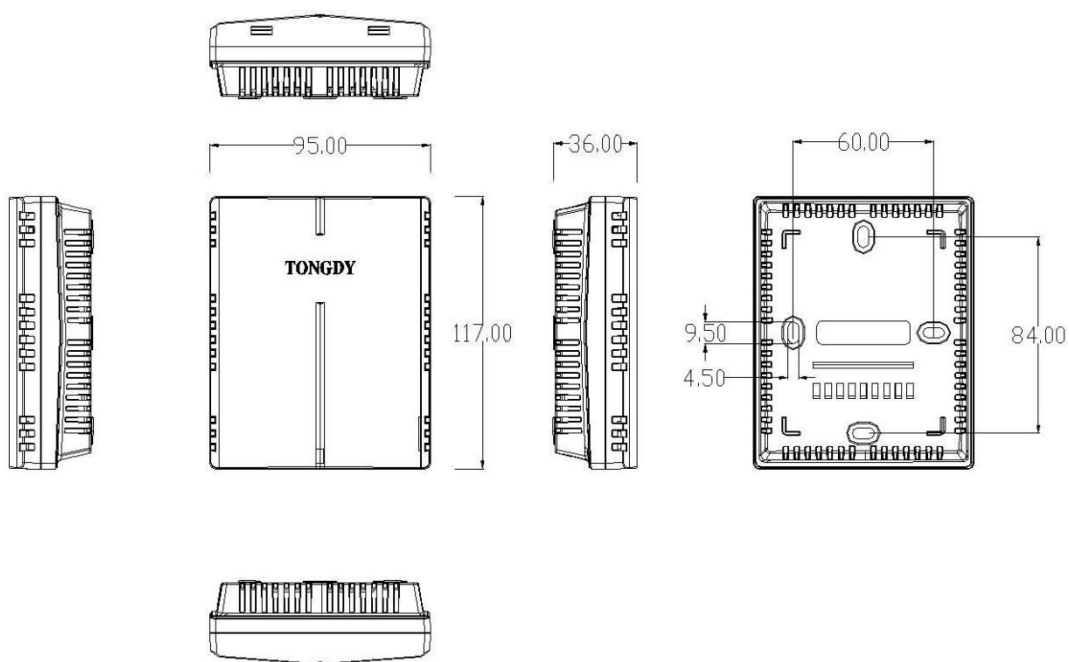
- All ventilation control systems

Specifications

Parameters	
Power Supply	24VAC/VDC
Power Consumption	2.8W
Connection Standard	Wire cross-sectional area<1.5mm^2
Operating Environment	-5-50℃（0-50℃ for TSP-DXXX）, 0~95%RH
Storage Environment	-5-60℃/ 0~95%RH,non-condensing
Dimension/Net Weight	95mm(W)*117mm(L)*36mm(H) / 280g
Manufacturing Standard	ISO 9001
Housings and IP class	PC/ABS fire-proof material; IP30 protection class
Design Standard	CE-EMC Approval
Sensor	
CO Sensor	Japanese Electrochemical CO Sensor
Sensor Lifetime	Up to 5 years and replaceable
Warm Up Time	60 minutes(First use),1 minute(daily use)
Response Time(T90)	<130 seconds
Signal Refreshing	One second
CO Range (Optional)	0-100ppm(Default)/0-200ppm/0-300ppm/0-500ppm
Accuracy	<±1 ppm + 5% of reading (20℃/ 30~60%RH)
Stability	±5% (over 900 days)
Temperature Sensor	Capacitive sensor
Measuring Range	-5℃-50℃
Accuracy	±0.5℃ (20~40℃)

Display Resolution	0.1℃
Stability	±0.1℃/year
Outputs	
LCD Display(Optional)	OLED screen, display real-time measured values with CO & Temp or CO, Temp & RH. (LCD display is required for models with relay outputs)
Analog Output	1x0-10VDC/4-20mA linear output for CO measured value
Analog Output Resolution	16Bit
Relay Dry Contact outputs	One or two on/off relay outputs, max current 5A (230VAC/30VDC), One relay is for CO concentration by controlling a fan. Two relays are for CO concentration by controlling two stage fan(default), or for CO and temperature control.
RS485 Communication (Optional)	.Modbus RTU,　　Communication Baud:9600bps(Default) .BACnet MS/TP,　Communication Baud:9600bps(Default） 15KV anti-static protection
Indicating light	Green: normal work with flashing every 5 seconds Red : when CO reaches alarm setpoint
Buzzer Alarm	When CO concentration exceeds the alarm setpoint, the buzzer will ring
Alarm Standards	
Audible alarm and CO set point	Chinese Standard: GB15322 European Standard: EN50291 (Default） American Standard: UL2034
Calibration Functions （Follow-up Supply ）	
DIP Switches	Used for zero calibration mode setting
Sensor air chamber Accessories	Connect windpipe, cover the air chamber to make zero calibration

Wiring Diagram

Dimension and Mounting

Models Guide

Models		Descriptions
CO Transmitter	TSP-CO-B100	1x0~10V / 4~20mA analog output for CO value
	TSP-CO-B101	1x0~10V / 4~20mA analog output for CO value with Modbus RS485 interface
	TSP-CO-B102	1x0~10V / 4~20mA analog output for CO value with BACnet interface
	TSP-CO-B001	Modbus RS485 interface
	TSP-CO-B002	BACnet interface
CO Detector (with OLED)	TSP-CO-D010	1x relay output for CO value
	TSP-CO-D020-T	2x relay outputs for CO (default) Can be preset 2x relay outputs for CO and temperature
	TSP-CO-D110	1x relay output , and 1x0~10V / 4~20mA analog output for CO value

	TSP-CO-D101	1x0~10V / 4~20mA analog output for CO value with Modbus RS485 interface
	TSP-CO-D102	1x0~10V / 4~20mA analog output for CO value with BACnet interface

Notice:

1.All models with -T suffix mean this model has temperature measuring

2.Suffix CO range selection for all models:

-001:   0~100ppm

-002:   0~200ppm

-003:   0~300ppm

-005:   0~500ppm