



TSM-CO2-S series    TSM-CO2-L series

## CARBON DIOXIDE DETECTOR

Model: F2000TSM-CO2 Series

CE Approval

### □ Features

- ◆ Real-time detecting CO<sub>2</sub> level.
- ◆ NDIR infrared CO<sub>2</sub> module inside with four CO<sub>2</sub> detection range selectable.
- ◆ CO<sub>2</sub> sensor has Self-Calibration Algorithm and 15 years lifetime
- ◆ Wall-mounting
- ◆ Providing one analog output with voltage or current selectable
- ◆ 0~10VDC/4~20mA selectable easily via jumpers
- ◆ Special "L" series with 6 lights indicates CO<sub>2</sub> level and makes CO<sub>2</sub> level show clearly.
- ◆ Provide a special model with a on/off relay output with a touch button to operate a fan control.
- ◆ Design for HVAC, ventilation systems, offices, or other public places.
- ◆ Modbus RS485 communication interface optional: 15KV antistatic protection, independent address setting
- ◆ CE-Approval
- ◆ For duct probe CO<sub>2</sub> transmitter, and CO<sub>2</sub>+Temp.+ RH 3 in 1 transmitter, please see our other products.

### □ Specifications

Gas detected	Carbon Dioxide (CO <sub>2</sub> )
Sensing element	Non-Dispersive Infrared Detector (NDIR)
Accuracy@25°C (77°F),2000ppm	±40ppm + 3% of reading or ±75ppm (whichever is greater)
Stability	<2% of FS over life of sensor (15 yr typical)
Calibration interval	ABC Logic Self Calibration System
Response time	<2 minutes for 90% step change
Warm up time	2 hours (first time) 2 minutes (operation)
CO <sub>2</sub> measuring range	0~2,000ppm / 0~5,000ppm selectable in orders 0~20,000ppm / 0~50,000ppm just for TSM-CO2-S series
Sensor life	Up to 15 years
Power supply	24VAC/24VDC
Consumption	1.5 W max. ; 0.8 W avg.
Analog outputs	0~10VAC or 4~20mA selectable by jumpers
Relay output	1X2A switch load Four set points selectable by jumpers

6 LED lights (just for TSM-CO2-L series) From left to right: Green/Green/Yellow/Yellow/Red/Red	1 <sup>st</sup> green light on as CO2 measurement ≤ 600ppm 1 <sup>st</sup> and 2 <sup>nd</sup> green lights on as CO2 measurement > 600ppm and ≤ 800ppm 1 <sup>st</sup> yellow light on as CO2 measurement > 800ppm and ≤ 1,200ppm 1 <sup>st</sup> and 2 <sup>nd</sup> yellow lights on as CO2 measurement > 1,200ppm and ≤ 1,400ppm 1 <sup>st</sup> red light on as CO2 measurement > 1,400ppm and ≤ 1,600ppm 1 <sup>st</sup> and 2 <sup>nd</sup> red lights on as CO2 measurement > 1,600ppm
Modbus interface	Modbus RS485 interface 9600/14400/19200(default)/28800 or 38400bps (programmable selection), 15KV antistatic protection.
Operation conditions	0~50°C (32~122°F); 0~95%RH, non condensing
Storage conditions	0~50°C (32~122°F)
Net weight	180g
Dimensions	100mm×80mm×28mm
Installation standard	65mm×65mm or 2"×4" wire box
Approval	CE-Approval

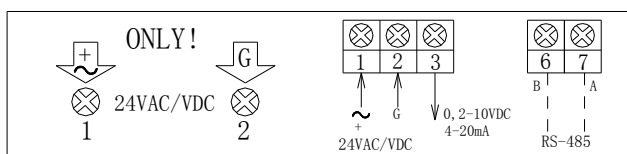
□ **Models Guide**

Type	Model	Description
CO2 Detector (1xanalog, 1Xon/off output)	<b>F2000TSM-CO2-S100-V/A-02</b>	1Xanalog output, CO2 range: 0~2,000ppm
	<b>F2000TSM-CO2-S100-V/A-05</b>	1Xanalog output, CO2 range: 0~5,000ppm
	<b>F2000TSM-CO2-S100-V/A-20</b>	1Xanalog output, CO2 range: 0~20,000ppm
	<b>F2000TSM-CO2-S100-V/A-50</b>	1Xanalog output, CO2 range: 0~50,000ppm
	<b>F2000TSM-CO2-S110-V-02</b>	1X0~10V output and 1xon/off output CO2 range: 0~2000ppm
CO2 Detector (1xanalog output, Modbus RS485 interface)	<b>F2000TSM-CO2-S101-V/A-02</b>	1Xanalog output, Modbus RS485 communication.
	<b>F2000TSM-CO2-S101-V/A-05</b>	1Xanalog output, Modbus RS485 communication
	<b>F2000TSM-CO2-S101-V/A-20</b>	1Xanalog output, Modbus RS485 communication.
	<b>F2000TSM-CO2-S101-V/A-50</b>	1Xanalog output, Modbus RS485 communication.
CO2 Detector with 6 indicator lights	<b>F2000TSM-CO2-L101-N-02/05</b>	6 lights indicate CO2 measurements range, Modbus interface
	<b>F2000TSM-CO2-L100-V/A-02/05</b>	6 lights indicate CO2 measurements range, 1x analog output
	<b>F2000TSM-CO2-L101-V/A-02/05</b>	6 lights indicate CO2 measurements range, 1x analog output, Modbus RS485 interface
	<b>F2000TSM-CO2-L110-V-02</b>	CO2 transmitter and indication, 1x 0~10VDC output, 1X n/off output with a touch button. CO2 range: 0~2000ppm
	<b>F2000TSM-CO2-L110-N-02</b>	6 lights indicate CO2 measurements range, 1x relay output
	<b>F2000TSM-CO2-L111-N-02</b>	6 lights indicate CO2 measurements range, 1x relay output, Modbus interface

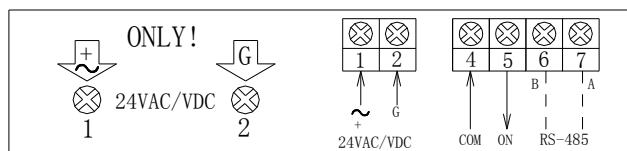
Accessories	Power adaptor-E	Plug-in power adapter, Input: 100~240VAC ; Output: DC 24V/ 240mA. European plug
	Power adaptor- A	Plug-in power adapter, Input: 100~240VAC; Output: DC 24V 240mA. American plug

**Wiring Diagram**

For F2000TSM-CO2-S series  
F02 F2000TSM-CO2-L100/L101-V/A



for F2000TSM-CO2-L series except L00/L101-V/A



**Mounting**

