

In-Duct Transmitter of CO₂ and VOCs



Applications

- BAS systems
- Ventilation control system
- Green buildings
- HVAC systems



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Product No: TG9-XX82

- Real time detection in-duct air quality (carbon dioxide and VOCs) as well as detection air temperature and relative humidity
- Smart sensor probe with extendable probe may be easily installed into any air duct
- With the water-proof and porous film around the sensor probe
- Up to 3 analog linear outputs for 3 measurements
- Modbus RS485 interface for 4 measurements
- With or without LCD display
- CE-approval

Features

- Designed for real time detecting in-duct air quality including CO₂ and VOCs as well as temperature & humidity.
- NDIR infrared CO₂ sensor with special Self Calibration and up to 15 years' lifetime. It makes CO₂ measurement more accurate and reliable.
- Mix gases sensor with high sensitivity for VOCs from new furniture, wall coverings, office equipment, cleanser etc. and other pollutants from smoking and cooking etc.
- Combined temperature and humidity digital sensor provides a high accuracy measurement in full range.
- Provide up to 3 analog outputs (0~10VDC or 4~20mA or 0~5VDC) for CO₂, air quality (VOC) and temperature or relative humidity.
- Modbus RS485 interface with outputs for CO₂, temperature, humidity and air quality (VOC).
- Optional LCD display real-time measurements of CO₂, air quality (VOC), temperature and relative humidity.
- Extendable probe is applied for more air duct systems
- 24VAC/VDC power supply.
- EU standard and CE-approval.

Detection Focus

Carbon Dioxide (CO₂)

- High quality NDIR CO₂ sensor with up to 15 year lifetime
- ABC self-calibration technology guarantees reliable CO₂ measurement
- CO₂ range: 0~2000ppm or 0~5000ppm
- Rapid response, high stability and consistency

Mix Gases including VOC(VOCs or TVOC)

VOCs sensor is a mix gases sensor with high sensitivity for VOC (kinds of volatile pollutant gases) such as ammonia, toluene, formaldehyde and cigarette smoke, alcohol, H₂S, and carbon monoxide. So it is very suitable to detector the general indoor air quality in real time and long term. It responds quickly to any change of the concentration of such gases.

- TVOC should display six levels but no VOC actual number.
- Semi-conduct mix gases sensor with 5~7 years life time
- High sensitive to volatile gases like ammonia, toluene, formaldehyde, cigarette smoke, alcohol, H₂S, etc.

Temperature and humidity

Switzerland digital temperature/humidity sensor in with high accuracy and stability. It also has compensation to CO₂ and VOCs measurements .

Typical Applications

- BAS and BMS
- Ventilation control systems
- Green buildings
- HVAC systems

Specifications

Monitoring parameters	CO ₂	VOCs	Temperature	Relative humidity
Sensing element	Non-Dispersive Infrared Detector (NDIR)	Semiconductor mix gases sensor	Digital combined temperature and humidity sensor	
Measuring range	0~2000ppm(default) 0~5000ppm (selectable in the order)	0~30ppm	0°C~50°C (32°F~122°F) (default)	0~100%RH
Display Resolution	1ppm	5ppm	0.1°C	0.1%RH
Accuracy@25°C(77°F)	±50ppm + 3% of reading	-----	±0.4°C (0°C~50°C)	±3%RH (20%-80%RH)
Life time	15 years (normal)	5~7 years	10 years	
Calibration cycle	ABC Logic Self Calibration	-----	-----	-----
Response Time	<2 minutes for 90% change	<1 minute (for 10ppm hydrogen, 30ppm ethanol) <5 minute (for a cigarette) in 20m ² room	<10 seconds to reach 63%	
Warm up time	2 hours (first time) 2 minutes (operation)			
Electrical Characteristics				
Power supply	24VAC/VDC			
Consumption	3.5 W max. ; 2.5 W avg.			
Analog Outputs	Two or three analog outputs 0~10VDC(default) or 4~20mA (selectable by jumpers) 0~5VDC (selected at place the order)			
Modbus RS485 interface	RS-485 with Modbus protocol, 19200bps rate, 15KV antistatic protection, independent base address			
Conditions of Using and Mounting				



Operation conditions	0~50°C (32~122°F); 0~95%RH, non condensing
Storage conditions	0~50°C (32~122°F) / 5~95%RH
Weight	320g
Installation	Fixed on the air duct with 100mm installation hole size
IP class of the housing	PC/ABS IP50 for models without LCD; IP40 for models with LCD
Standard	CE-Approval

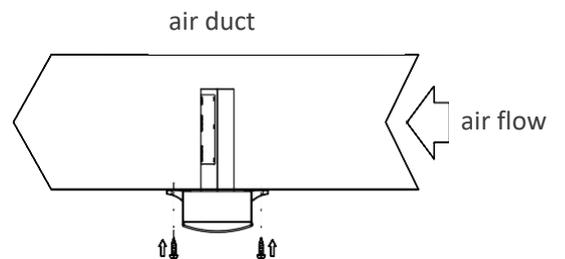
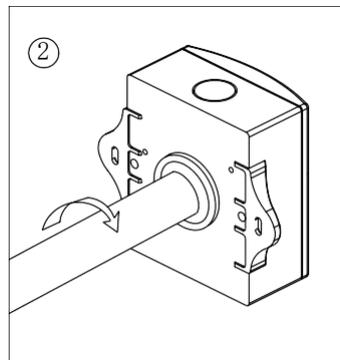
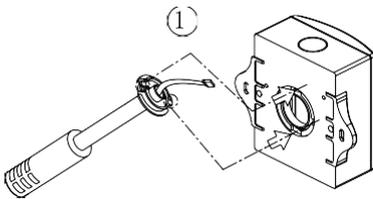
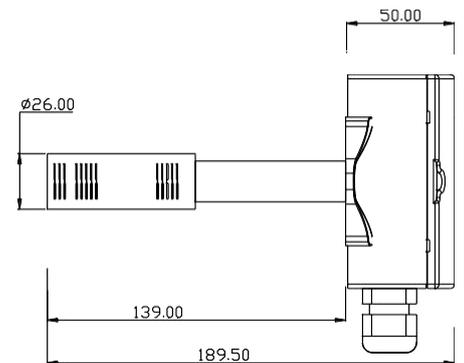
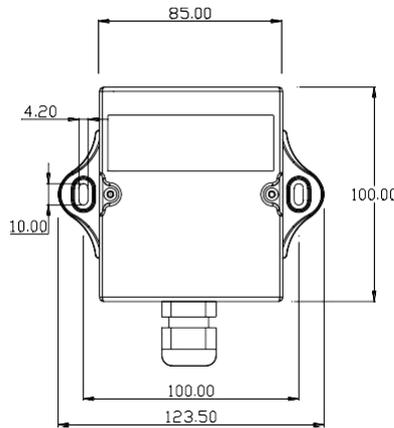
Dimensions & Mounting

Duct mounted

Probe Length 139.00mm
can be extended
to 139+70mm

Probe Diameter Ø26.00mm

Installation Holes 100mm



Install or move the probe

Models Information

TG9- X 1 8 2 L - Y 02/05 E - Tab

X: analog output

3- 3Xanalog outputs for CO2 + Air Quality (VOC) + Temp. /RH (selectable by jumpers)

2- 2xanalog outputs for CO2 + Air Quality (VOC)

0- no analog output

1: Modbus interface

L: LCD display

No **L** indicates no LCD

Y: Analog output type

A- 4~20mA (selectable via jumpers)

V- 0~10VDC (default)

V5- 0~5VDC (order description)

02/05: CO2 measurement range

02- 0~2000ppm (default)

05- 0~5000ppm

E: extended duct probe up to 209mm

No **E** indicates the standard probe length of 139mm

Tab: temperature scaling

T05: 0°C~50°C(32°F~122°F) default

T06: 0°C~60°C(32°F~140°F)

Without the item option indicates no output for temperature measurement.

Wiring Diagram

