

Carbon Dioxide Duct Probe Transmitter TG9XX6X



- ✓ The TG9 is a CO₂ transmitter designed for detection carbon dioxide in air ducts of HVAC systems.
- ✓ The CO₂ sensor uses the Non-Dispersive Infrared Technology (NDIR) with the patented self-calibration system to guarantee the long term stability and up to 15 years life time.
- ✓ Optional temperature and humidity detection with a high accuracy digital combined sensor, it provides a digital interface and outstanding full range linearity.
- ✓ The one or three analog 0-10V or 4~20mA outputs are selectable by jumpers.
- ✓ Modbus RS485 communication interface option.
- ✓ With or without LCD
- ✓ Smart and skillful design for structure, with a special demountable and replaceable filter to avoid pollution and influence of measurement.
- ✓ Provide a split type model with an external sensor probe, 2 meter connection cable, is used in incubators or food stores etc.

Features

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|---|---|
| ◆ Special used to real-time detect CO ₂ concentration in air ducts. | ◆ provide the highest accuracy in full range |
| ◆ NDIR infrared CO ₂ sensor inside with Self-Calibration and up to 15 years lifetime | ◆ White backlit LCD display option can display CO ₂ measurement as well as temperature and RH measurements |
| ◆ Humidity and temperature detection optional | ◆ Providing one or three 0~10VDC or 4~20mA analog outputs |
| ◆ Digital combined temperature and humidity sensor | |

- ◆ Modbus RS485 communication interface optional
- ◆ Smart structure and attractive housing provides you a unique operation feeling
- ◆ Simple and skillful design and installation with a demountable and replaceable filter to provides dust-proof protection
- ◆ Special a 180° rotatable fastness position for the probe can change the direction of air detection.
- ◆ Provides a split type with an external sensor probe for some special applications
- ◆ All housing and probe are IP54 class
- ◆ CE-Approval

Typical Applications

- ◆ HVAC systems of all commercial buildings and residential houses
- ◆ Ventilation control system
- ◆ Plant factories, greenhouses
- ◆ Food stores, incubators
- ◆ Other places where needs real time detection and control CO2 concentration

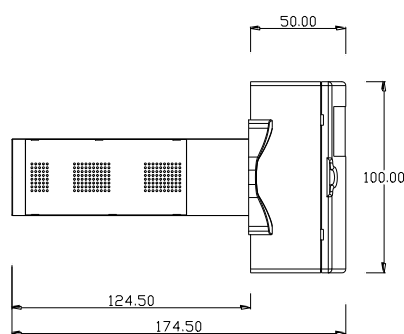
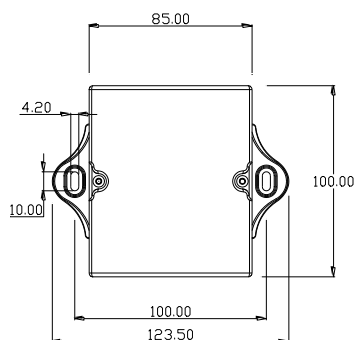
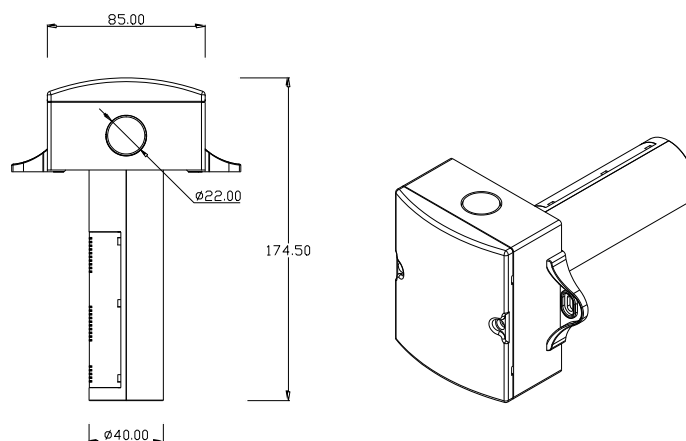
Specifications

CO ₂ Sensor	Non-Dispersive Infrared Detector (NDIR)	
Measurement Range	0~2,000ppm/ 0~5,000ppm /0~50,000ppm (selectable in the order)	
Accuracy	±40ppm + 3% of reading @22°C (72°F)	
Stability	<2% of full scale over the life of the sensor	
Calibration	Self-calibration system	
Response Time	<5 minutes for 90% step change at low duct speed	
Non-linearity	<1% of full scale @22°C (72°F)	
Duct Air Velocity	0~450m/min	
Pressure Dependence	0.135% of reading per mm Hg	
Temperature Dependence	0.2% of full scale per °C	
Warm up time	24 hours (first time) 10 minutes (operation)	
Temperature & Humidity Sensor	Temperature	Relative Humidity
Sensing element:	Band-gap-senor	Capacitive humidity sensor
Measuring range	-20°C~60°C (default) 0~60°C selectable in order	0 -100%RH
Accuracy	±0.4°C (0°C~50°C)	±3%RH (20%-80%RH)
Display resolution	0.1°C	0.1%RH
Stability	±0.1°C per year	±1%RH per year
General Data		
Power supply	24VAC/24VDC	
Consumption	1.8 W max. ; 1.0 W avg.	

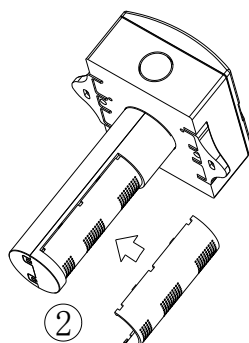
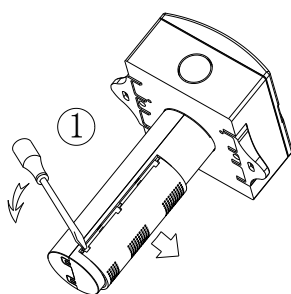
LCD display	White backlit LCD display CO ₂ measurement or CO ₂ + temperature & humidity measurements
Analog output	1x0~10VDC or 4~20mA output for CO ₂ 3x 0~10VDC or 4~20mA outputs for CO ₂ + Temperature +RH The voltage output or current output can be selectable by jumpers
Modbus RS485 Interface	19200bps, 15KV antistatic protection.
Operation conditions	0°C~50°C (32~122°F); 0~100%RH
Storage conditions	0~50°C (32~122°F) / 5~95%RH
Net weight	320g
IP class	IP50 for models without LCD; IP40 for models with LCD
Standard Approval	CE-Approval

Dimensions & Mounting

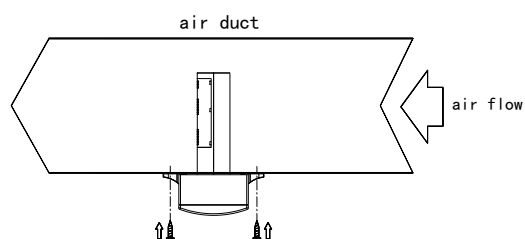
Probe Length	124.5mm
Probe Diameter	Ø40.0mm
Junction Box Size	100X85mm
Junction Box Depth	50.0mm
Installation Holes	100mm



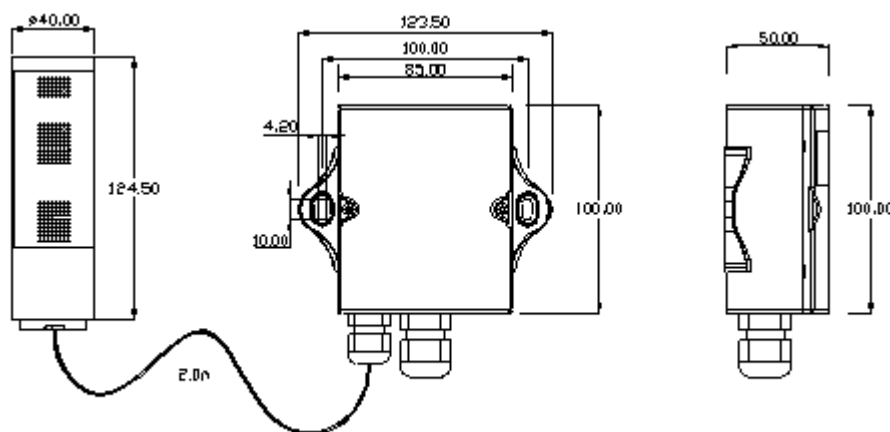
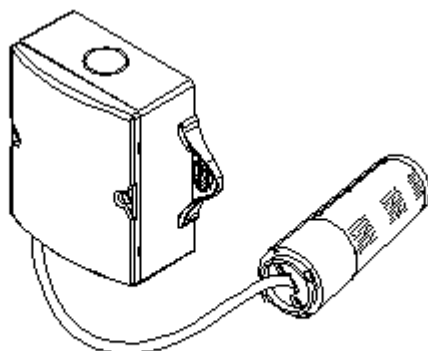
Move the cover of the filter



The air flow direction



Split type: TG5 series



Models Information

Model Name		Description
CO2 Duct Probe Transmitter without LCD	TG9106-02/05/20	1Xanalog output for CO ₂ measurement. -02: CO2 range 0~2000ppm -05: CO2 range 0~5000ppm -20: CO2 range 0~20,000ppm
	TG9116-02/05/20	1Xanalog output for CO ₂ measurement. Modbus RS485 interface
	TG9316-02/05/20	3Xanalog outputs for CO ₂ measurement, and temperature & humidity Modbus RS485 interface
CO2 Duct Probe Transmitter with LCD	TG9116L-02/05/20	1Xanalog output for CO ₂ measurement. LCD display CO ₂ Modbus RS485 interface
	TG9316L-02/05/20	3Xanalog outputs for CO ₂ measurement, and temperature & humidity LCD display CO ₂ and temperature & humidity Modbus RS485 interface

Split CO2 Sensor Probe	TG5106	1Xanalog output for CO ₂ measurement. External CO2 sensor probe with 2m cable. CO2 range: 0~50,000ppm
	TG5016	Modbus RS485 interface. CO2 range: 0~50,000ppm External CO2 sensor probe with 2m cable.
	TG5116	1Xanalog output for CO ₂ measurement. Modbus RS485 interface. External CO2 sensor probe with 2m cable. CO2 range: 0~50,000ppm
	TG5016-TH	CO2+temperature&RH detection. Modbus RS485 interface. CO2 range: 0~50,000ppm External CO2 sensor probe with 2m cable.
	TG5116L	LCD display CO2 measurement. 1Xanalog output. Modbus RS485 interface. External CO2 sensor probe with 2m cable. CO2 range: 0~50,000ppm
	TG5016L-TH	Display CO2+temperature&RH. Modbus RS485 interface. CO2 range: 0~50,000ppm External CO2 sensor probe with 2m cable.

Wiring Diagram

