



## Applications & Features

- CDTH series carbon dioxide (CO<sub>2</sub>) /temperature/ humidity transmitters are designed for monitoring & controlling indoor air quality, temperature and humidity in one unit
- CDTHW is suitable for wall mount and CDTHD is suitable for duct mount
- High performance NDIR digital sensor and circuit, ensure precise measurement and temperature compensation
- Multiple optional RTD or thermistor sensors, compatible with a variety of control systems
- Stable, reliable and fast response
- 15 years of CO<sub>2</sub> sensor life without maintenance
- All electrical terminals are on the inside bottom, avoid any possible destroy to PCB when wiring(CDTHW)
- Digital technology applied, multiple outputs optional, over voltage and reverse polarity protection, high reliability and anti-interference capability
- Large LCD with unit indicator( CDTHW ), display carbon dioxide ( CO<sub>2</sub> ), temperature and humidity alternatively

## Specifications

### Carbon dioxide (CO<sub>2</sub>)

**Sensor:** NDIR sensor, with ABC algorithm\*  
**Sampling Method:** diffusion  
**Accuracy:** (40±3%MV) ppm  
**Response time:** <10s (30cc/min, low airflow)  
**Drift:** <±10ppm/year  
**Range:** 0~2000ppm (measure range 400~2000ppm)  
**Output:** 4~20mA, 0~10V, RS485/Modbus

### Temperature

**Sensor:** Digital, RTD or thermistor, see models  
**Range:** 0~50°C  
**Accuracy:** see accuracy table  
**Output:** 4~20mA, 0~10V, RS485/Modbus or RTD / thermistor

### Relative Humidity

**Sensor:** Digital polymer  
**Range:** 0~100%RH  
**Accuracy:** see accuracy table  
**Hysteresis:** <±1%RH  
**Response time:** <10s (25°C, in slow air)  
**Drift:** <±0.5%RH/year  
**Output:** 4~20mA, 0~10V, RS485/Modbus

**Power supply:** 16~28VAC/16~35VDC

**Load resistance:** ≤500Ω (Current output), ≥2kΩ (Voltage output)

**Display:** Optional LCD Display (CDTHW)

**Display resolution:** 1ppm, 0.1°C, 0.1%RH

**Working environment:** 0~50°C, 0~95%RH (Non-cond.)

**Temp. compensation:** 0~50°C

**Storage temperature:** -20~60°C

**Housing material:** ABS+PC (CDTHW), fireproof ABS (CDTHD)

**Protection:** IP30 (CDTHW), IP65 (CDTHD)

**Weight:** 175g (CDTHW), 416g (CDTHD)

**Approval:** CE

\***ABC algorithm:** Automatic Baseline Correction, it constantly keeps track of the sensor's lowest reading over a few days interval and slowly corrects for any long term drift detected as compared to the expected fresh air value of 400 ppm CO<sub>2</sub>.

## Models

Model	CDTHW	CDTHD	Room CO <sub>2</sub> /T/RH Transmitter Duct mount CO <sub>2</sub> / T/RH Transmitter
<b>CO<sub>2</sub> /Hum. Output</b>		1 C	4~20mA / 0~10VDC RS485/Modbus
<b>Temp. Output</b>		1 3 4 5 6 7 9 A C	4~20mA / 0~10VDC PT1000, ±0.2°C @ 25°C PT100, ±0.2°C @ 25°C NTC20K, ±0.4°C @ 25°C Ni1000, ±0.4°C @ 25°C NTC10K-II, ±0.4°C @ 25°C NTC10K-III, ±0.4°C @ 25°C NTC10K-A, ±0.4°C @ 25°C RS485/Modbus
<b>Display ( CDTHW )</b>		0 1	N/A LCD

1. All products are factory set to 4~20mA as output default, and can be set to 0-10V by jumper on the PCB.

2. See resistance table on page 1 of this catalog.

## Accuracy table for temperature/ humidity

Outputs	CDTHW		CDTHD	
	T (@10~40°C)	RH (@25°C, 20~80%RH)	T (@10~40°C)	RH (@25°C, 20~80%RH)
0~10V DC	<±0.5°C	3%RH	<±0.5°C	3%RH
4~20mA	<±1.0°C	5%RH	<±0.5°C	3%RH
RS485/ Modbus	<±0.5°C	3%RH	<±0.5°C	3%RH
RTD/ thermistor	See models	See models	See models	See models

When select RTD/ thermistor, CDTHW's total error will be 0.5°C more than the accuracy in the models while CDTHD's total error is the same as in the models.