RSA-DCTHA / RSA-DCTHD Carbon Dioxide CO2 Temperature Humidity Transmitter
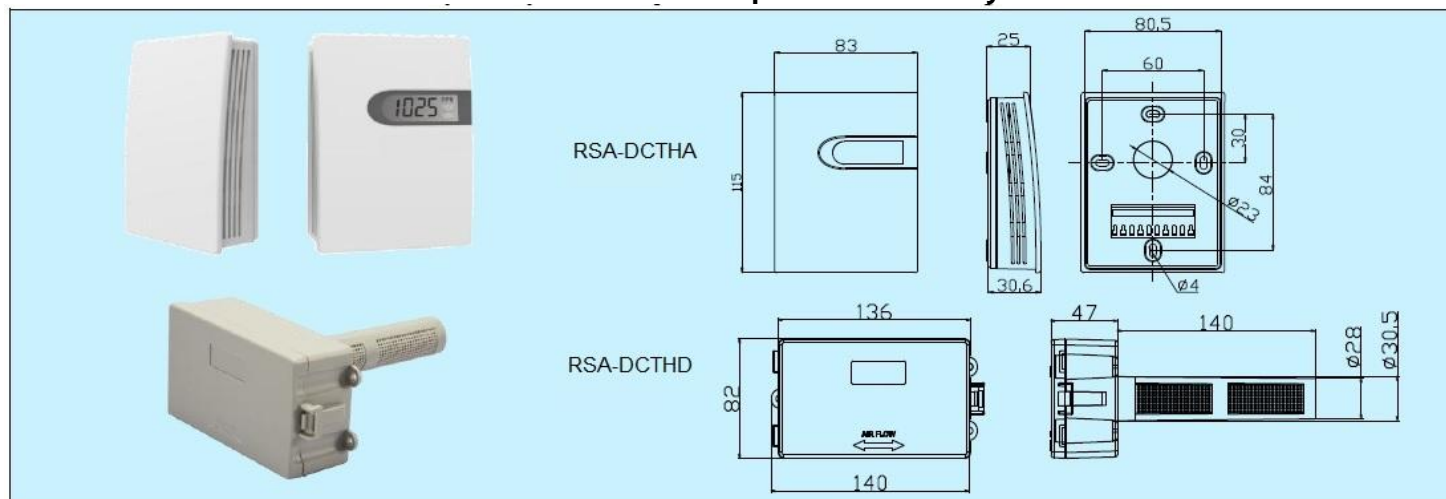
Applications & Features

● RSA-DCTH series carbon dioxide (CO2) /temperature/ humidity transmitters are designed for monitoring & controlling indoor air quality, temperature and humidity in one unit
● RSA-DCTHA is suitable for wall mount and RSA-DCTHD 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 CO2 sensor life without maintenance
● All electrical terminals are on the inside bottom, avoid any possible destroy to PCB when wiring(RSA-DCTHA)
● Digital technology applied, multiple outputs optional, over voltage and reverse polarity protection, high reliability and anti-interference capability
● Large LCD with unit indicator(RSA-DCTHA), display carbon dioxide (CO2), temperature and humidity alternatively

Specifications

Carbon dioxide (CO2)
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 (DCTHA)
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 (RSA-DCTHA), fireproof ABS (RSA-DCTHD)
Protection: IP30 (RSA-DCTHA), IP65 (RSA-DCTHD)
Weight: 175g (RSA-DCTHA), 416g (RSA-DCTHD)
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 CO2.

Models

Model	RSA-DCTHA				Wall mount CO2 / Temp. Transmitter
	RSA-DCTHD				Duct mount CO2 / Temp. Transmitter
CO2 /Hum. Output		1 C			4~20mA/0~10VDC RS485/Modbus
Temp. Output			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
Display (RSA-DCTHA)				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

Outputs	RSA-DCTHA		RSA-DCTHD	
	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, RSA-DCTHA's total error will be 0.5°C more than the accuracy in the models while RSA-DCTHD's total error is the same as in the models.