



CDD 24S



CDD 24HTL

## Features

- Measuring CO<sub>2</sub> levels in air ducts
- As option Humidity + Temperature outputs
- Providing one or three 0-10 Vdc or 4-20mA analogue outputs
- LCD display as option and can display CO<sub>2</sub> + Humidity + Temperature measurements
- 3-color backlit LCD gives the CO<sub>2</sub> level more clearing and alarm function
- Modbus RS485 compatible interface makes usage and test more convenient
- Fifteen years lifetime, calibrate themselves to local background levels
- Attractive housing based on smart structure provide you a unique operation feeling
- Easy and skillful design and installation with a take-down and replacing filter to provides dust-proof protection
- Special made a 180° rotatable fastness position for the probe can change the direction of air detection

## Ordering

Type no.	Description
----------	-------------

### Carbon Dioxide (CO<sub>2</sub>) Transmitter for Duct Mounting

- |                  |   |
|------------------|---|
| <b>CDD 24S</b>   | selectable CO <sub>2</sub> output 0-10 Vdc or 4-20 mA, 0-2000 ppm and Modbus RS485 interface  |
| <b>CDD 24HT</b>  | selectable CO <sub>2</sub> output 0-10 Vdc or 4-20 mA, 0-2000 ppm and Modbus RS485 interface, selectable Humidity output 0-10 Vdc or 4-20 mA selectable Temp. output 0-10 Vdc or 4-20 mA                  |
| <b>CDD 24L</b>   | selectable CO <sub>2</sub> output 0-10 Vdc or 4-20 mA, 0-2000 ppm and Modbus RS485 interface with LCD display   |
| <b>CDD 24HTL</b> | selectable CO <sub>2</sub> output 0-10 Vdc or 4-20 mA, 0-2000 ppm and Modbus RS485 interface, selectable Humidity output 0-10 Vdc or 4-20 mA selectable Temp. output 0-10 Vdc or 4-20 mA with LCD display |

## Technical data

### CO2 sensor

<b>Type</b>	Non-Dispersive Infrared Detector (NDIR)
<b>Measurement range</b>	0-2000 ppm, on request 0-5000 ppm
<b>Accuracy</b>	±40 ppm +3% of reading at +22°C
<b>Stability</b>	<2% of full scale over the life of the sensor (15 years typical).
<b>Calibration</b>	Self-calibration system.
<b>Response time</b>	< 5 minutes for a 90% step change at low duct speeds.
<b>Non-linearity</b>	<1% of full scale at +22°C
<b>Duct air velocity</b>	0 to 450 meter/min.
<b>Pressure dependence</b>	0.135% of reading per mm of mercury
<b>Temp dependence</b>	0.2% of full scale per °C
<b>Warm-up time</b>	24 hours (first time) 10 minutes (operation)

### Humidity and Temperature

<b>Sensing element</b>	
Humidity	Capacitive humidity sensor
Temp.	Bap-gap-sensor
<b>Measuring range</b>	
Humidity	5-95% RH
Temp.	0°C to +50°C
<b>Accuracy</b>	
Humidity	±3% RH ( (25°C, 40%-60% RH)
Temp.	±4°C (25°C)
<b>Stability</b>	
Humidity	±1% RH per year
Temp.	±0.1°C per year
<b>Display resolution</b>	
Humidity	±0.1% RH
Temp.	±0.1°C

## Technical data

### General

<b>Power supply</b>	24 Vac/dc
<b>Consumption</b>	1.2 W max. ; 0.8 W avg.
<b>LCD display</b>	3-color backlit Display CO2 measurement or CO2+Humidity+Temperature measurement
<b>Analog output (s)</b>	1 x 0-10 Vdc or 4-20 mA for CO2 3 x 0-10 Vdc or 4-20 mA for CO2+Humidity+Temperature The voltage output and the current output can be selectable by jumpers
<b>Modbus RS485</b>	19200bps, 15KV antistatic protection
<b>Operating conditions</b>	
Humidity	0 to 95% RH, non-condensing
Temp.	0°C to +50°C
<b>Storage conditions</b>	-20°C to +70°C
<b>Weight</b>	240 g
<b>IP class</b>	IP54
<b>Approval</b>	CE approval

### Description

The CDD 24 is a duct CO2 transmitter series designed to be installed in HVAC return air ducts.

The CO2 sensing element 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.

CDD 24 duct probe transmitter offers temperature and humidity option. The high accuracy temperature and humidity combined sensor provide a digital interface and outstanding full range linearity.

The one or three analog 0-10 Vdc or 4-20mA outputs are selectable by jumpers. Modbus RS485 communication interface is provided.

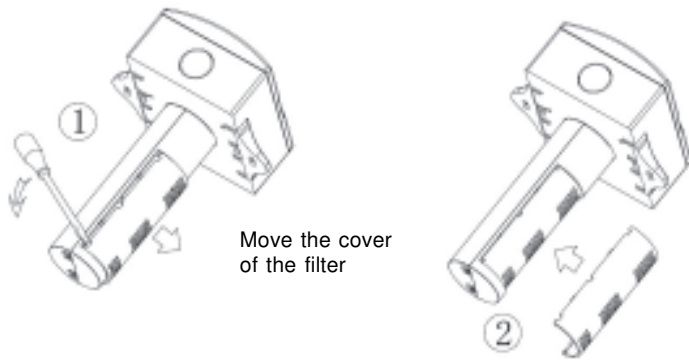
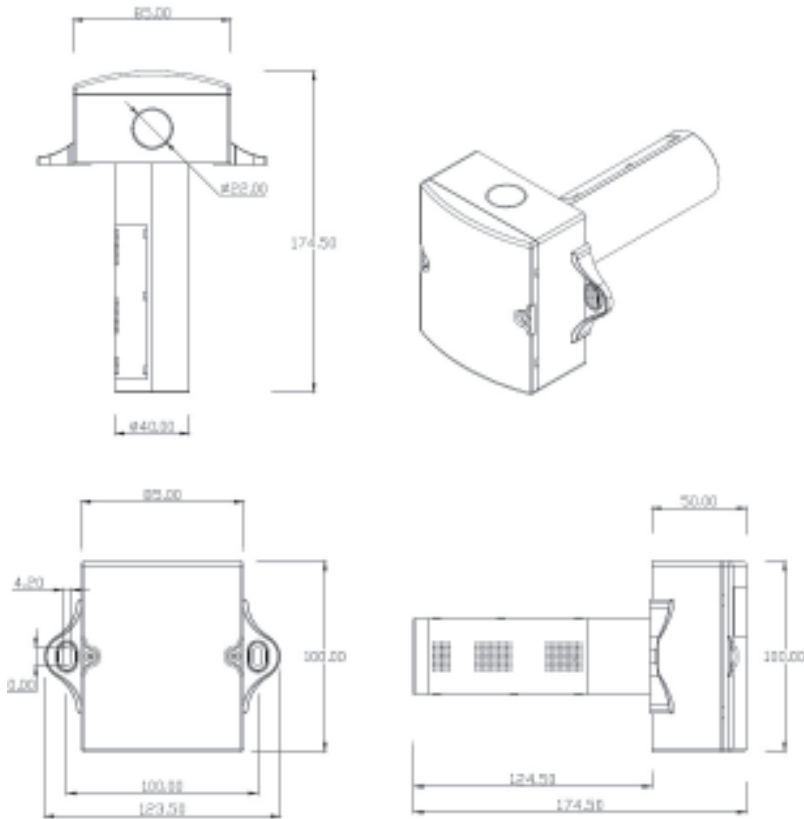
Optional LCD can display all measurements and is usable easily in more applications. Unique 3-color backlit LCD provides more clear indication and an alarm function.

CDD 24 offers simplicity in design and installation with special the take-down filter to avoid pollution and influence of measurement.

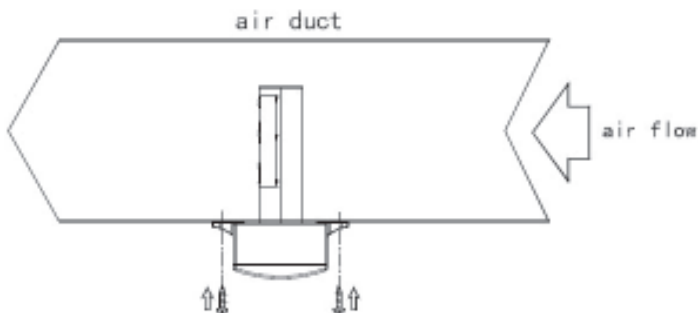
### Typical applications

- Building management for office areas and residentials
- Ventilation control systems

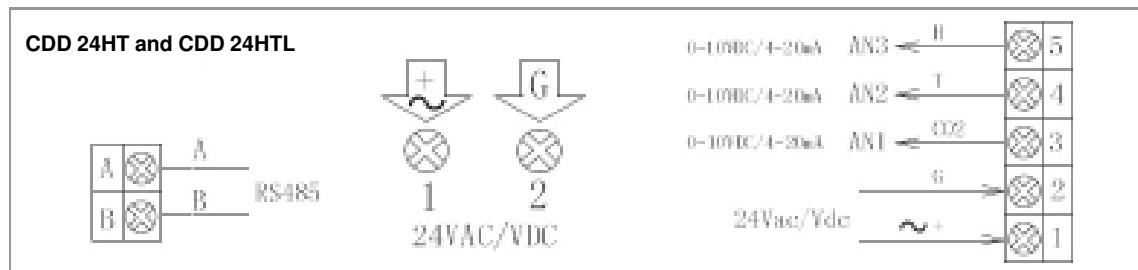
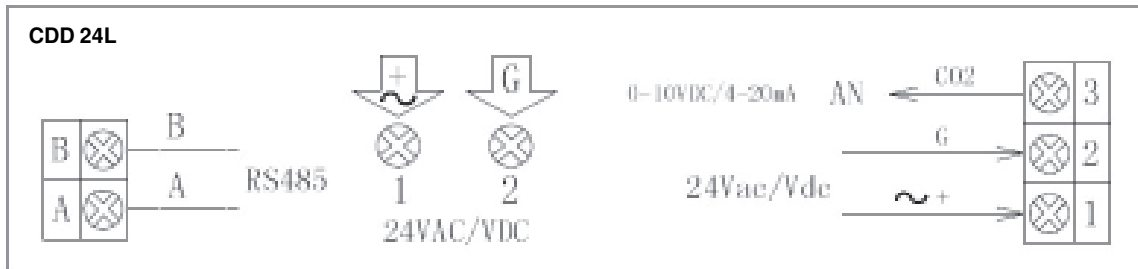
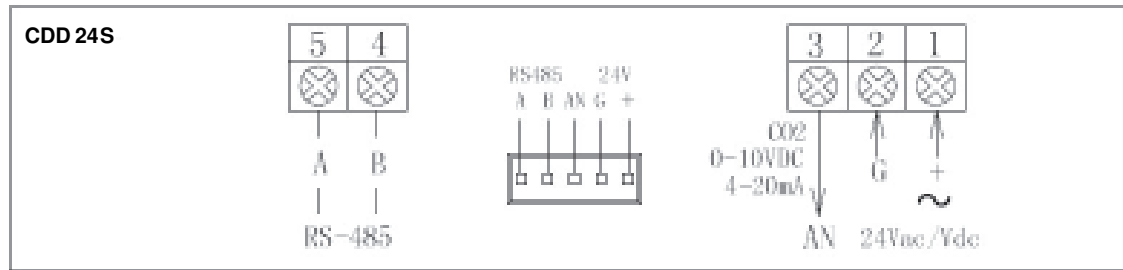
**Dimensions**



**Mounting**



**Wiring**



Note: 3-wires for both 4-20 mA and 0-10 Vdc outputs.

**Analog output selection**

The default outputs are 0-10 Vdc, change to the 4-20mA outputs as below steps.  
The three analog outputs must be kept in same situation,  
three all voltage analog outputs or three all current analog outputs at the same time.

Power off and remove the back cover, there is a group of jumper S1-S6 in the middle right of the circuit board.  
And another group of jumper J1-J3 in the upper left of the circuit board.  
Connect the up two pins of the S1-S6, and disconnect J1, the analog outputs are 0-10 Vdc;  
Connect the down two pins of S1-S6, and connect J1, the analog outputs are 4-20mA.

The J2, J3 is just for testing before leaving factory, the default is disconnection. Don not change them!

We reserve the right to make changes in our products without any notice which may effect the accuracy of the information contained in this leaflet.