

## CARBON DIOXIDE TRANSMITTERS CDT-MOD-2000 DUCT SERIES

CO<sub>2</sub> transmitters with temperature output for duct that use Modbus serial communication protocol

The CDT-MOD-2000 Duct series air quality transmitters are engineered for building automation systems in the HVAC/R industry. The CDT-MOD-2000 Duct series measures carbon dioxide (CO<sub>2</sub>), utilizing the industry standard NDIR measurement principle, and temperature (T). Illuminated display ensures easy readability also from a distance. The CDT-MOD-2000 Duct has a screwless lid and an easily adjustable mounting flange that make the installation of the device easy.

The CDT-MOD-2000 Duct series transmitters calibrate themselves automatically using ABC™ logic. The ABC™ logic requires that the space in which the transmitter is used needs to be unoccupied for four hours per day so that the indoor CO<sub>2</sub> concentration drops to the outside level. CDT-MOD-2000-DC Duct is a dual channel model with a measuring channel and a reference channel that makes a continuous comparison and the necessary adjustment accordingly. CDT-MOD-2000-DC Duct is also suitable for buildings that are continuously occupied.



### CDT-MOD-2000 Duct series devices include:

- Separate Modbus output for each measurement parameter (CO<sub>2</sub> and T)
- Mounting flange
- Clear backlit display

## APPLICATIONS

CDT-MOD-2000 Duct series devices are commonly used to monitor:

- CO<sub>2</sub> and temperature levels of incoming and return air in ventilation system
- CDT-MOD-2000-DC Duct series devices can also be used in applications where there is a constant source of carbon dioxide present (for example hospitals and greenhouses)

## MODEL SUMMARY

CDT-MOD-2000		
Description	Model	Product code
Duct mounted carbon dioxide transmitter with Modbus configuration and display	CDT-MOD-2000 Duct-D	302.001.006
- with dual channel sensor	CDT-MOD-2000-DC Duct-D	301.007.003

# CARBON DIOXIDE TRANSMITTERS

## CDT-MOD-2000 DUCT SERIES

### SPECIFICATIONS

#### Performance

##### Measurement ranges:

CO<sub>2</sub>: 400–2000 ppm  
Temperature: 0...50 °C

##### Accuracy:

CO<sub>2</sub>: ±40 ppm + 2 % of reading, DC model: 75 ppm or 10 % of reading (whichever is greater)  
Temperature: <0.5 °C

#### Technical Specifications

##### Media compatibility:

Dry air or non-aggressive gases

##### Measuring units:

ppm and °C

##### Measuring element:

CO<sub>2</sub>: Non-dispersive infrared (NDIR)  
Temperature: NTC10K

##### Calibration:

Automatic self-calibration ABC Logic™ or continuous comparison (DC)

##### Environment:

Operating temperature: 0...50 °C  
Storage temperature: -20...70 °C  
Humidity: 0 to 95 % rH, non condensing

#### Physical

##### Dimensions:

Case: 119 x 100 x 44.7 mm  
Probe: L=188 mm, d=12 mm

##### Mounting:

With flange, adjustable 0...188 mm

##### Weight:

150 g

##### Materials:

Case: ABS  
Cover: PC  
Probe: ABS

##### Protection standard:

IP54

##### Electrical connections:

4 spring loaded terminals

##### Power supply:

(24 V and GND)  
0.2–1.5 mm<sup>2</sup> (12–24 AWG)

##### Modbus RTU:

A and B line  
0.2–1.5 mm<sup>2</sup> (12–24 AWG)

#### Electrical

Supply voltage: 24 VAC or VDC ±10 %  
Current consumption: max 230 mA (at 24 V) + 10 mA for each voltage output

#### Communication

Protocol: MODBUS over Serial Line

Transmission Mode: RTU

Interface: RS485

Byte format (11 bits) in RTU mode:

Coding System: 8-bit binary

Bits per Byte:

1 start bit  
8 data bits, least significant bit sent first  
1 bit for parity  
1 stop bit

Baud rate: selectable in configuration

Modbus address: 1–247 addresses selectable in configuration menu

#### Conformance

Meets requirements for CE marking:

EMC Directive: 2014/30/EU

RoHS Directive: 2011/65/EU

WEEE Directive: 2012/19/EU

**COMPANY WITH  
MANAGEMENT SYSTEM  
CERTIFIED BY DNV GL  
= ISO 9001 = ISO 14001 =**



### HOW TO GENERATE A MODEL?

Example: CDT-MOD-2000 Duct-D	<b>Product series</b>		
	CDT2000	Carbon dioxide transmitter, analog configurations	
	CDT-MOD-2000	Carbon dioxide transmitter, Modbus configuration	
	<b>Calibration</b>		
		ABC logic™, Automatic Background Calibration	
	-DC	Dual channel, for continuously occupied space	
	<b>Mounting</b>		
		Wall mount	
	Duct	Duct mount (not available with relay or relative humidity sensor)	
	<b>Relay (only for wall mount model)</b>		
	-1R	With relay	
		Without relay	
	<b>Relative humidity sensor (only for wall mount model)</b>		
	-rH	With relative humidity sensor	
		Without relative humidity sensor	
<b>Display</b>			
-D	With display		
	Without display		
Model	CDT-MOD-2000	Duct	-D