

CARBON DIOXIDE TRANSMITTERS CDT2000 SERIES

Multifunctional, wall mount CO₂ transmitters for building automation systems

The CDT2000 series air quality transmitters are engineered for building automation systems in the HVAC/R industry. The CDT2000 series measures carbon dioxide (CO₂), utilizing the industry standard NDIR measurement principle, and temperature (T). Optional relative humidity (rH) measurement is also available in the same device. The CDT2000 series devices are available with large touchscreen display making the configuration of the device quick and easy.

The CDT2000 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 CO₂ concentration drops to the outside level. CDT2000-DC is a dual channel model with a measuring channel and a reference channel that makes a continuous comparison and the necessary adjustment accordingly. CDT2000-DC is also suitable for buildings that are continuously occupied.

CDT2000 series devices include:

- Separate field configurable output for each measurement parameter (CO₂, rH, T).
- Proportional output options including: voltage (0–10 V, 2–10 V) and current (4–20 mA).

CDT2000 series device options offer:

- 2" x 3" touchscreen display
- Field configurable relay for any of the three parameters
- Modbus configuration



APPLICATIONS

CDT series devices are commonly used to monitor:

- CO₂ and humidity levels in offices, public spaces, meeting rooms and classrooms
- CO₂ levels of return air in ventilation systems
- incoming air and return air humidity levels in ventilation system
- humidity in various industrial applications
- temperatures in HVAC/R environment
- CDT2000-DC 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

| | CDT2000 | | | CDT2000-rH | |
|---|----------------------|--------------|---|-------------------------|--------------|
| Description | Model | Product code | Description | Model | Product code |
| Carbon dioxide transmitter for room | CDT2000 | 301.001.001 | Carbon dioxide and humidity transmitter for room | CDT2000-rH | 301.003.001 |
| - with display | CDT2000-D | 301.001.002 | - with display | CDT2000-rH-D | 301.003.002 |
| - with relay and display | CDT2000-1R-D | 301.001.003 | - with relay and display | CDT2000-1R-rH-D | 301.003.003 |
| - with Modbus configuration and display | CDT-MOD-2000-D | 301.001.004 | - with Modbus configuration and display | CDT-MOD-2000-rH-D | 301.003.004 |
| - with Modbus configuration, relay and display | CDT-MOD-2000-1R-D | 301.001.005 | - with Modbus configuration, relay and display | CDT-MOD-2000-1R-rH-D | 301.003.005 |
| - with dual channel sensor | CDT2000-DC | 301.005.001 | - with dual channel sensor | CDT2000-DC-rH | 301.006.005 |
| - with dual channel sensor and display | CDT2000-DC-D | 301.005.002 | - with dual channel sensor and display | CDT2000-DC-rH-D | 301.006.001 |
| - with dual channel sensor, relay and display | CDT2000-DC-1R-D | 301.005.005 | - with dual channel sensor, relay and display | CDT2000-DC-1R-rH-D | 301.006.002 |
| - with Modbus configuration, dual channel sensor and display | CDT-MOD-2000-DC-D | 301.005.003 | - with Modbus configuration, dual channel sensor and display | CDT-MOD-2000-DC-rH-D | 301.006.003 |
| - with Modbus configuration, dual channel sensor, relay and display | CDT-MOD-2000-DC-1R-D | 301.005.004 | - with Modbus configuration, dual channel sensor, relay and display | CDT-MOD-2000-DC-1R-rH-D | 301.006.004 |

CARBON DIOXIDE TRANSMITTERS

CDT2000 SERIES

SPECIFICATIONS

Performance

Measurement ranges:

CO₂: 400–2000 ppm
Temperature: 0...50 °C

Relative humidity: 0–100 %

Accuracy:

CO₂: ±40 ppm + 2 % of reading, DC model: 75 ppm or 10 % of reading (whichever is greater)

Temperature: <0.5 °C

Relative humidity: ±2...3 % at 0...50 °C and 10–90 % rH

Total error band includes accuracy, hysteresis and temperature effect over 5...50 °C and 10–90% rH.

Technical Specifications

Media compatibility:

Dry air or non-aggressive gases

Measuring units:

ppm, °C and % rH

Measuring element:

CO₂: Non-dispersive infrared (NDIR)

Temperature: Pt1000

Relative humidity: Thermoset polymer capacitive sensing element

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: 99 x 90 x 32 mm

Weight:

150 g

Mounting:

3 screw holes slotted, 3.8 mm

Materials:

Case: ABS

Protection standard:

IP20

Display (Optional)

Touchscreen

Size: 77.4 x 52.4 mm

Electrical connections:

Power supply:

5-screw terminal block

(24 V, GND, CO₂, rH, T)

0.2–1.5 mm² (12–24 AWG)

Relay out:

3-screw terminal block

(NC, COM, NO)

0.2–1.5 mm² (12–24 AWG)

Electrical

Input: 24 VAC or VDC, ±10 %

Current consumption: max 90 mA (at 24 V) +

10 mA for each voltage output or 20 mA for

each current output

CO₂ output signal:

0–10 V, R>1 kΩ

2–10 V, R>1 kΩ

4–20 mA, R<500 Ω

Temperature output signal:

0–10 V, R>1 kΩ

2–10 V, R>1 kΩ

4–20 mA, R<500 Ω

Relative humidity output signal:

0–10 V, R>1 kΩ

2–10 V, R>1 kΩ

4–20 mA, R<500 Ω

Relay out:

SPDT Relay, 250 VAC / 30 VDC / 6 A

Adjustable switching point and hysteresis

Conformance

Meets requirements for CE marking:

EMC Directive 2014/30/EU

RoHS Directive 2011/65/EU

LVD Directive 2014/35/EU

WEEE Directive 2012/19/EU

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



HOW TO GENERATE A MODEL?

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