



Venticator - VC2008T

Carbon dioxide sensor / transmitter

PRODUCT DESCRIPTION

The VentiCator, VC2008T is a simple, low cost, state-of-the-art, maintenance-free infrared carbon dioxide transmitter for installation in the climate zone or in the ventilation duct.

The VC2008T measures the carbon dioxide concentration in the ambient air up to 2,000 ppm and transforms the data into 0-10 V and 4-20mA output signals.

VC2008T helps you save money by decreasing your energy consumption while maintaining a healthier indoor climate!



VC2008T
IP20 wall housing
without display



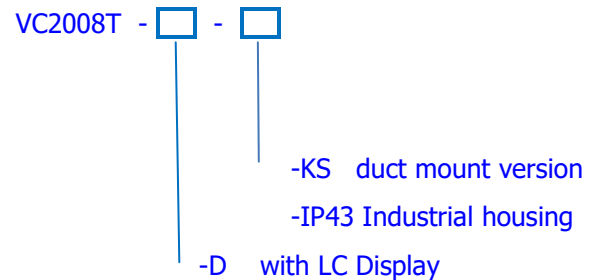
VC2008TD
Wall type without LC
Display

FEATURES

Using patented state-of-the-art non-dispersive infrared (NDIR) wave-guide technology and offers reliable measurements

- Low power consumption
- Optional LC Display
- two analogue outputs (Voltage or current):
CO₂ (Out1) : 0 - 10 V or 4 – 20mA
T (Out2) : 0 - 10V (= 0 - 50 °C)
- Voltage free relay contact preset at 800, 1,000 or 8,000ppm (jumper select).
- Maintenance-free in normal HVAC & IAQ applications
- Measurement range: 0 – 2,000 or 0 – 5,000ppm CO₂ (jumper select)
- Built-in Automatic Background Calibration (ABC) features (ON/OFF jumper select)
- Simple linear transmitter or a one-to-one P-controller (jumper select)
- Two different housing options:
1) IP43 industrial wall housing
2) IP65 duct housing

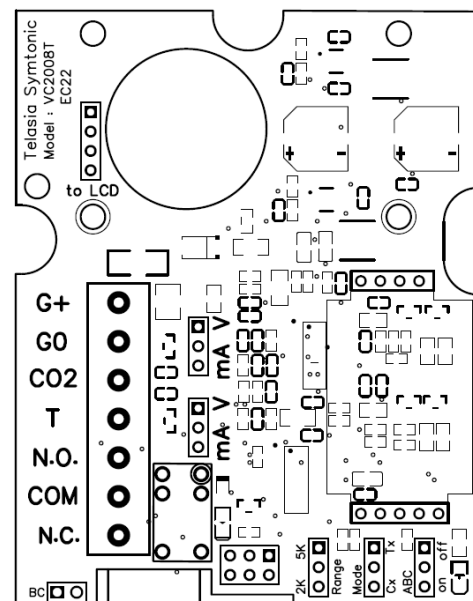
Model Selections



CONNECTIONS

Screw terminals

1	G+	24 V AC/DC (+)
2	G0/M	System ground (-)
3	CO₂	0-10 V or 4 – 20mA = 0 – 2,000 (5,000) ppm CO ₂
4	T	0-10 V or 4 – 20mA = 0 – 50 °C
5	NO	Normally opened contact of relay output
6	COM	Common contact of relay output
7	NC	Normally closed contact of relay output



Power supply has to be connected to G+ and G0. G0 is considered as system ground. If the analogue output is connected to a controller the same ground reference has to be used for the VC2008T unit and for the control system

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VC2008T technical specification (rev nr: 221013)

General Performance

Compliance with	EMC directive 2014/30/EU (pending)
Operating Temperature Range	0 - 50 °C
Storage Temperature Range	-40 to +70 °C
Operating Humidity Range	0 to 85% RH (non-condensing)
Operating Environment	residential, commercial and industrial spaces ¹
Warm-up Time	< 1 min. (@ full specs < 15 minutes)
Sensor Life Expectancy	> 15 years
Maintenance Interval	no maintenance required ²

Electrical

Power Input	24 VAC/VDC ±20%, 50/60 Hz (min. 14.5VDC), (Half-wave rectification)
Power Consumption	< 0.3 Watt average & < 0.5W with relay ON.
Connection screw terminal	7 x 1.5 mm ² for power input (G+, G0), voltage outputs (CO ₂ & T), and relay contacts (NC, NO & COM).

CO₂ Measurement

Sensing method	Non-dispersive infrared (NDIR) technology with IR LED source & Automatic Background Calibration (ABC) and passive gas diffusion (no moving parts)
Response Time (T _{1/e})	< 10 sec. @ 30 cc/min. flow rate < 2 min. diffusion time
Repeatability	± 20 ppm ± 1 % of reading
Accuracy ^{1,2}	± 30 ppm ± 3 % of reading
Annual Zero Drift ²	< ± 10 ppm; normal ventilation application with ABC turn ON
Pressure Dependence	+ 1.6 % reading per kPa
Installation support	background level calibration adjustment jumper trigger (BC). Enable or Disable Automatic Background Calibration (ABC ON/OFF select)

Temperature Measurement

Sensing method	Thermistor
Measuring range	0 - 50 °C
Accuracy	± 0.75 °C (measured with voltage output only and relay off ⁴)

Outputs

Voltage signal terminal CO₂ ³

CO ₂ linear conversion range	0 -10 VDC or 4 – 20mA for 0 - 2 000 or 5 000 ppmvol. (jumper select)
T linear conversion range	0 -10 VDC or 4 – 20mA for 0 – 50 °C.
D/A resolution	10 bits, 10 mV or 0.016mA
D/A conversion accuracy	± 2 % of reading ± 50 mV
Electrical characteristics	Voltage output - R _{OUT} < 100 Ohm, R _{LOAD} > 10 kOhm Current output – R _{LOAD} < 500 Ohm

Relay output

Relay contact setting	pre-set at 8,000, 1,000 or 800ppm (jumper select, default @ 8,000ppm)
Relay contact rating	isolated N.O. & N.C., 1mA/5V up to 1A, 24V ac/dc

Housing options

WALL HOUSING (standard)

Dim.: 110 x 80 x 27 mm (H x W x D)
Protection class: IP20
Material : ABS FR
60 mm holes separation for European standard J-box & 82mm US J-box.



VC2008T



VC2008TD

DUCT HOUSING (model –KS)

Dim.: 142 x 84 x 46 mm (H x W x D)
Duct probe length: 140 mm
Protection class: IP65
Material : ABS FR



VC2008T-KS

Note 1: The SO₂ enriched environments are excluded.

Note 2: In normal IAQ applications (@ NTP). Accuracy is defined after minimum 3 weeks of continuous operation.
The tolerance of the span calibration gas (2 % unless otherwise requested) and test gas adds to the total uncertainty.

Note 3: The specifications are valid for the output load connected to ground G0. Other outputs and measurement ranges are available per request.

Note 4: Current output & relay triggering consumes extra power and creates self-heating resulting in higher temperature errors.

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