



Venticator - VC2008FD

Carbon dioxide sensor / transmitter

PRODUCT DESCRIPTION

The Venticator, VC2008FD 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 VC2008FD measures the carbon dioxide concentration in the ambient air up to 2,000 ppm and transforms the data into 0-10 V or 4-20mA signals and display the measurement on a LC Display.

VC2008FD helps you save money by decreasing your energy consumption while maintaining a healthier indoor climate!



VC2008FD
IP20 wall housing
with LC display

FEATURES

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

- measurement range: 0 - 2 000 ppm CO₂
or 0 - 5 000 ppm CO₂
- analogue outputs (jumper select):
OUT: 0 - 10 V (= 0 - 2 000 ppm CO₂)
or 4 - 20mA (= 0 - 2 000 ppm CO₂)
- Voltage-free contact pre-set at 800, 1,000 or 8,000ppm (jumper select)
- maintenance-free in normal applications
- non-frill design; cost-optimized for connection to DDCs
- Two different housing options
 - 1) IP20 wall housing
 - 2) IP65 duct housing

APPLICATIONS

VC2008FD is an extremely cost-effective sensor/transmitter for building climate control and other processes where measurement of carbon dioxide concentration is required.

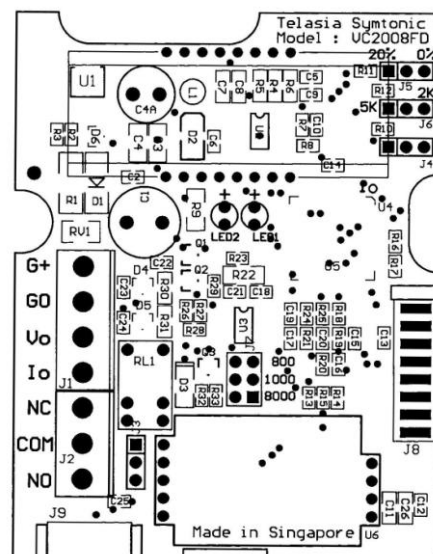
By controlling the ventilation based on actual demand, it helps to reduce energy consumption while maintaining a healthy indoor climate!

The two different housing options and output configurations (current and voltage signal) makes the VC2008FD most suitable for general applications.

CONNECTIONS

Screw terminals

| | | |
|---|------------|--|
| 1 | G+ | 24 V AC/DC (+) |
| 2 | G0 | System ground (-) |
| 3 | Vo | Linear output (+) 0-10 V = 0 - 2 000 ppm CO ₂ |
| 4 | Io | Linear output 4-20mA = 0 - 2 000 ppm CO ₂ |
| 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 VC2008FD unit and for the control system

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VC2008FD technical specification (rev nr: 200908)

General Performance

| | |
|-----------------------------------|--|
| Compliance with | EMC directive 2014/30/EU |
| Operating Temperature Range | 0 - 50 °C |
| Storage Temperature Range | -40 to +70 °C (display model -D: -20 to +70 °C) |
| Operating Humidity Range | 0 to 95% 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 (half-wave rectifier input) |
| Power Consumption | < 1 Watt average |
| Connection screw terminal..... | 7 x 1,5 mm ² for power input (G+, G0), outputs Vo & Io, and relay contacts (NC, NO & COM). |

CO₂ Measurement

| | |
|---|---|
| Sensing method | Infrared (NDIR) wave-guide technology with 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 ² | ± 70 ppm ± 3 % of reading @ 25 °C |
| Annual Zero Drift ² | < ± 10 ppm, normal ventilation application with ABC turn ON |
| Pressure Dependence | + 1.6 % reading per hPa |
| Installation support | Background level calibration adjustment with jumper trigger (bCAL). |

Outputs

Voltage signal terminal CO₂ ³

| | |
|--------------------------------------|---|
| Output measuring range | 0 ~ 2,000ppm or 0 ~ 5,000ppm (jumper selection) |
| Output linear conversion range | 0 -10 VDC for 0 - 2 000 ppm vol. and 4 – 20mA for 0 - 2 000 ppm vol. |
| 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} > 5 kOhm Current output – R _{LOAD} < 500 Ohm |

Relay output

| | |
|----------------------------|--|
| Relay contact setting..... | 800, 1,000 or 8,000ppm (jumper selection) |
| Relay contact rating | isolated N.O. & N.C., 1mA/5V up to 1A, 24V ac/dc |

Options

- **A** option for +/- (30ppm +3% of reading) * *different sensor module is used.*

Housing options

WALL HOUSING (standard)

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

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



VC2008FD



VC2008FD-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.

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