

Wall Mount Specifications

Sensing Method

- Non-dispersive infrared (NDIR) absorption
- Gold-plated optics
- Patented ABC Logic self calibration algorithm

CO₂ Measurement Range

T8100/T8300 - Single Channel
0 to 2000 ppm
0 ppm = 0 V, 4 mA

T8200 - Dual Channel
0 to 2000 ppm
0 ppm = 0 V, 4 mA

CO₂ Accuracy

T8100/T8300 - Single Channel

- 400-1250 ppm ± 30 ppm +3% of reading, whichever is greater*, **
- 1250-2000 ppm $\pm 5\%$ of reading + 30ppm *, **

T8200 - Dual Channel

- 75 ppm or 10% of reading (whichever is greater)

*Tolerance based on span gas of $\pm 2\%$

** ABC Logic not deactivated

Power Supply Requirements

18-30 VAC RMS, 50/60 Hz, or 18 to 42 VDC, polarity protected

Power Consumption

Typical 0.7 W at nominal voltage of 24V AC RMS

Temperature Dependence

0.2% FS per °C

Stability

T8100/T8300 - Single Channel
<2% of FS over life of sensor (15 years)

T8200 - Dual Channel
<5% of FS or <10% reading annual over life of sensor (10 years)

Pressure Dependence

0.135% of reading per mm Hg

Warranty

24 months on mechanical defects
Calibration - lifetime warranty for T8100 and T8300 series

Certifications

CE and RoHS compliant

Signal Update

Every 5 seconds

CO₂ Warm-up Time

- < 2 minutes (operational)
- 10 minutes (maximum accuracy)

Operating Conditions

- 0°C to 50°C
- 0 to 95% RH, non-condensing

Storage Conditions

-40°C to 70°C

Flammability Classification

UL94 5VA

Thermistor Type

NTC 10 K Ω thermistor

Thermistor Accuracy

$\pm 1^\circ\text{C}$ (15° to 35°C)

RH Sensing Element

Capacitive polymer sensor

RH Range

0% to 99% RH (non-condensing)

RH Accuracy (25°C)

$\pm 2.5\%$ RH (20 to 80% RH)
 $\pm 3.5\%$ RH (<20% and >80% RH)

Active Temperature Accuracy

$\pm 0.8^\circ\text{C}$ @ 22°C

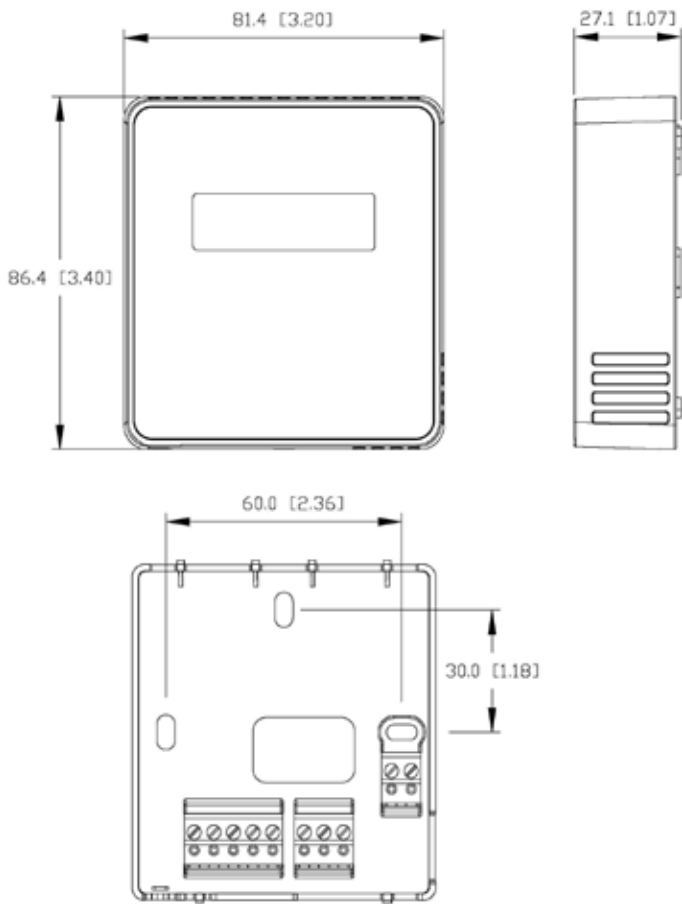
Active Temperature Range

0 to 50°C

Output

Analog

- 0 to 10 V (100 Ω output impedance) and
- 4 to 20mA (R_L maximum 500 Ω) available simultaneously
- Digital to Analog error $\pm 1\%$



Ventostat wall mount dimensions

Sensor Accuracy & Field Calibration

CO₂ ABC Logic Self Calibration

T8100 and T8300 single channel sensors employ the patented ABC (Automatic Background Calibration) Logic self-calibration system. ABC Logic virtually eliminates the need for manual calibration in applications where the indoor CO₂ level drops to outside levels during unoccupied periods (e.g. during evening hours). ABC Logic is a special software routine in the sensor that remembers the background readings for 14 consecutive evenings, calculates if there is a sensor drift, and then corrects for it.

With ABC Logic enabled, the sensor will typically reach its operational accuracy after 25 hours of continuous operation at a condition that is exposed to ambient reference levels. Sensors will maintain accuracy specifications with ABC Logic enabled, given that it is at least three times in 14 days exposed to the reference value and this reference value is the lowest concentration to which the sensor is exposed.

Note: Applies when used in typical indoor ambient air. Consult GE if other gases or corrosive agents are part of the application environment.

CO₂ Calibration Guarantee

GE is serious about minimizing maintenance, so each single-channel sensor (T8100/T8300) comes with a lifetime calibration guarantee. And each dual channel sensor has a two-year calibration guarantee (T8200).

Calibration Interval

For T8100 and T8300 series, no calibration is required due to ABC Logic. For T8200 series, annual calibration is recommended for the best accuracy. However, most applications using T8200 series could extend the calibration interval. For the humidity sensor, no calibration is required. Replacement humidity sensors are available. If a Telaire 8000 series single channel sensor drifts out of calibration range, it can be sent back to Telaire for a free factory calibration. Further information on the guarantee is available on our website.

T8200 – Dual Channel

The T8200 dual channel sensor can be described as a CO₂ channel that measures gas concentration and a reference channel that measures the sensor signal intensity. The dual channel sensor performs periodic self-calibrations using the reference channel. The self-calibrations are approximately every 24 hours. During the self-calibration the sensor ppm reading is frozen, it will not react to changing CO₂. The calibration time is adjustable but nominally two minutes.

GE recommends periodic gas calibration depending on the application accuracy requirements. While the reference channel corrects for changes over time, a field calibration using nitrogen gas or alternatively ambient calibration will immediately restore the highest level of accuracy. Refer to the calibration manual for details.