# TELAIRE®

# Ventostat™ T8100 NS and NSP Series
## $CO_2$ Sensor



## Features

- Patented, Absorption Infrared Gas sensing engine provides high accuracy in a compact low cost package.

- Local temperature adjustments with slide pot and night set override control

- Patented ABC Logic™ self-calibration system eliminates the need for manual calibration in most applications.

- Lifetime $CO_2$ calibration guarantee when using ABC Logic™.

- Mounting plate with two-piece terminal blocks provide quick, easy wiring.

- Gas permeable, water resistant $CO_2$ diffusion filter prevents particulate and water contamination of the sensor.

- Locking screw secures cover and sensor to the mounting bracket for tamper resistance.

- Dual simultaneous analog outputs (V & mA) available for $CO_2$.

- Sensors are shipped factory calibrated.

- Temperature sensor on all models.

- Modern enclosure with customized branding available.

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# Ventostat Specifications

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

## $CO_2$ Measurement Range
T8100
0 to 2000 ppm (0 ppm = 0 V, 4 mA; 2000 ppm = 10/5V, 20 mA)

## $CO_2$ Accuracy
±30 ppm or 3% of the reading shown, whichever is higher *

## 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 (±0.11% per °F)

## Stability
<2% of FS over life of sensor (15 years)

## Pressure Dependence
0.135% of reading per mm Hg

## Certifications
CE and RoHS compliant

## Signal Update
Every 5 seconds

## $CO_2$ Warm-up Time
< 2 minutes (operational)
10 minutes (maximum accuracy)

*$CO_2$ accuracy statement excludes standard gas used for calibration that has an accuracy of 2%. In addition, there is a potential digital to analog error of up to 1%.*

## Operating Conditions
32°F to 122°F (0°C to 50°C)
0 to 95% RH, non-condensing

## Storage Conditions
-40°F to 158°F (-40°C to 70°C)

## Flammability Classification
UL94 5VA

## Thermistor Type
NTC 10 kΩ thermistor

## Thermistor Accuracy
±1°C (15° to 35°C)

## Night Setback Override Button (NS and NSP)
Shorts the thermistor output when depressed

## Slide Potentiometer (NSP Only)
Left (stop) 0k Ohms (±5k Ω)
Center 50k Ohms (±7.5k Ω)
Right (stop) 100k Ohms (±10%)

## ABC Logic™ Self Calibration System
ABC Logic™ (Automatic Background Calibration) self calibration allows the sensor to continually recalibrate itself when the indoor concentrations drop to outside levels while the building is unoccupied. Generally a building must be regularly unoccupied for 4 hours or more for this self-calibration system to operate properly. Under these conditions, ABC Logic™ should maintain sensor calibration over the lifetime of the sensor. The ABC Logic™ should be turned OFF where a building is continuously occupied 24 hours per day, or where there could be significant sources of non-occupant related $CO_2$ such as greenhouses, breweries and other industrial and food processing applications.

## Output
Analog
0 to 5 V, (100 Ω output impedance)
0 to 10 V (100 Ω output impedance) and
4 to 20mA (RL maximum 500 Ω) available simultaneously for $CO_2$ output

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