



Ventostat™ T8100 NS and NSP Series CO₂ 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 CO₂ calibration guarantee when using ABC Logic™.
- Mounting plate with two-piece terminal blocks provide quick, easy wiring.
- Gas permeable, water resistant CO₂ 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 CO₂.
- Sensors are shipped factory calibrated.
- Temperature sensor on all models.
- Modern enclosure with customized branding available.

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Advanced Sensors

Ventostat Specifications

Sensing Method

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

CO₂ Measurement Range

T8100
0 to 2000 ppm (0 ppm = 0 V, 4 mA; 2000 ppm = 10/5V, 20 mA)

CO₂ 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

CO₂ Warm-up Time

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

**CO₂ 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 CO₂ 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 CO₂ output

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