



part of the Breeze Group 

# OxyCycler AT Series

Bioactive Gas Control for in vivo Research



## Applications:

- Oxidative stress
- Respiratory disease
- Environmental studies
- CO poisoning
- **Many more!**



Scan to read how the OxyCycler AT Series is used in research

## Precision Gas Control

The OxyCycler AT Series allows for the precise control of NO (AT42N, <300ppm), CO (AT42CO, <1000ppm), and NO<sub>2</sub> (AT82NN) for in vivo research.

## Flexible Functionality

The AT Series works with the BioSpherix A-Chamber, and each controller can control up to two chambers at once. Chambers can be controlled independently.

## Safe and Efficient Operation

The AT Series controllers remotely sense gas levels inside the host chamber. Efficient, closed-loop control ensures accuracy without waste, so gas is used only when necessary. Built-in alarms ensure experimental safety.



[www.BioSpherix.com](http://www.BioSpherix.com)



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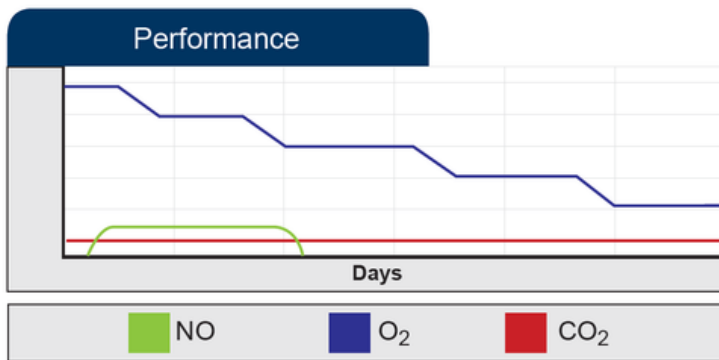
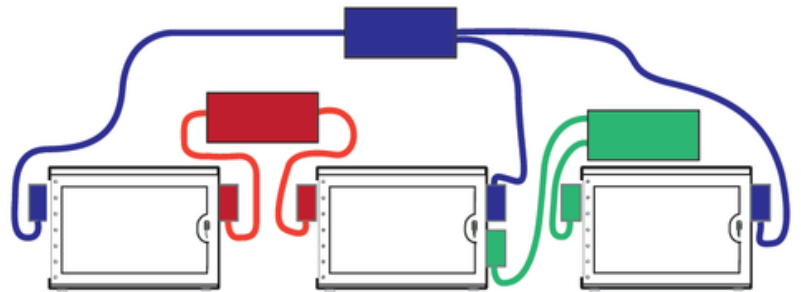
[Youtube.com/@Cytocentric](https://www.youtube.com/@Cytocentric)

# OxyCycler AT Series

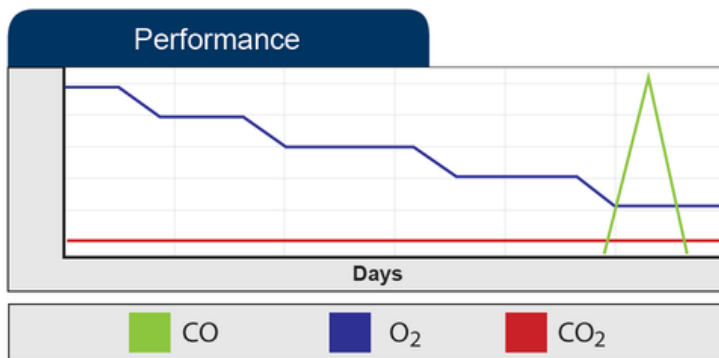
The OxyCycler AT Series is an advanced tool for the safe and precise control of bioactive gases including CO and NO. Used independently, up to two chambers can be regulated per controller.

A PC interface displays and continuously logs data in real time and allows for remote operation.

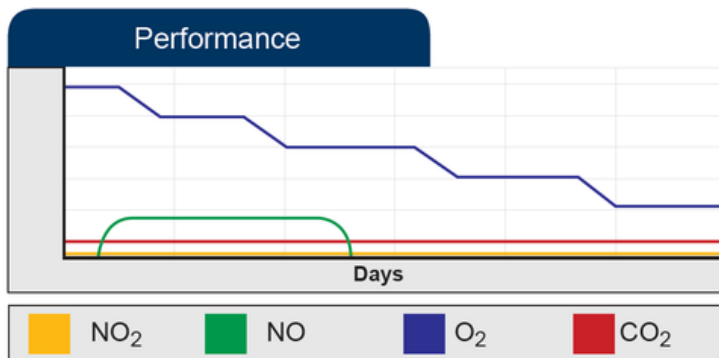
When used alongside the OxyCycler A84XOV (O<sub>2</sub> control) or OxyCycler A42OC (CO<sub>2</sub> and O<sub>2</sub> control), the AT Series controllers provide a comprehensive gas-controlled environment for in vivo exposures.



➔ The **OxyCycler AT42N** offers precise, dynamic control of NO (<300 ppm).



➔ The **OxyCycler AT42CO** offers precise, dynamic control of CO at <1000 ppm.



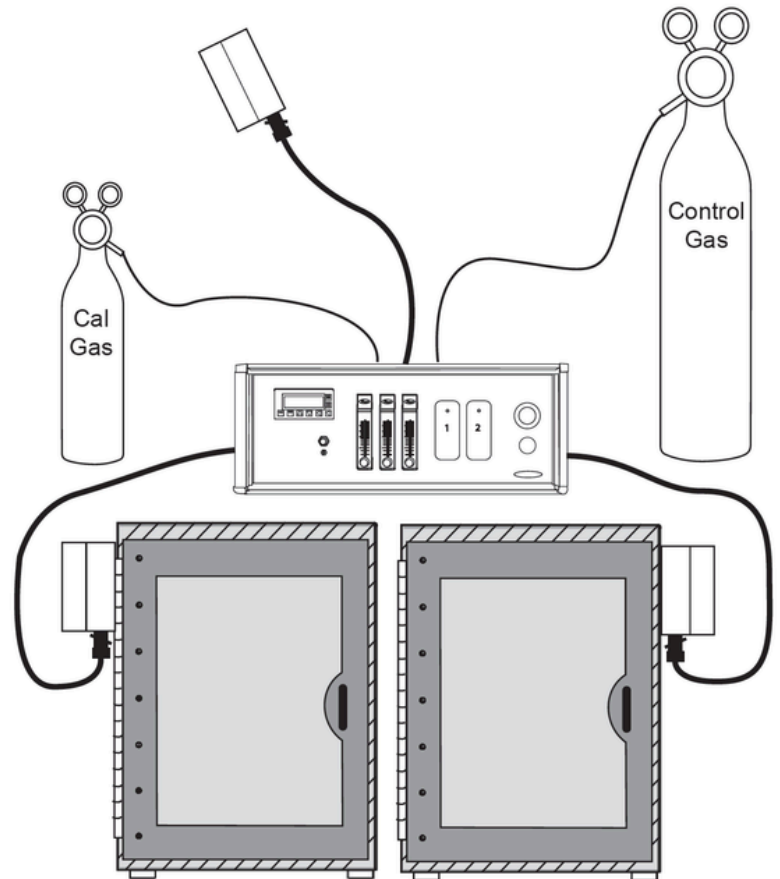
➔ The **OxyCycler AT82NN** offers the most advanced atmospheric control for NO (<300 ppm) research by using NO<sub>2</sub> gas as a limit control.



# OxyCycler AT Series

## Installation

1. Set the AT Series controller on or near A-Chamber and plug it in to standard outlet.
2. Mount each actuator pod to its respective A-Chamber via precut holes and mounting hardware (below).
3. Connect compressed gas supply.
4. Use PC software to change or monitor CO and/or NO levels.



## Safety Considerations



1. Always place gas tanks in a well-ventilated room away from flame or heat sources
2. Do not use gas mixtures that exceed OSHA danger levels
3. Check all tubing for leaks prior to use
4. It is recommended to place the OxyCycler AT Series controllers within a dedicated ventilation system, such as a fume hood.



Visit our YouTube channel for calibration and installation how-to's



[www.BioSpherix.com](http://www.BioSpherix.com)



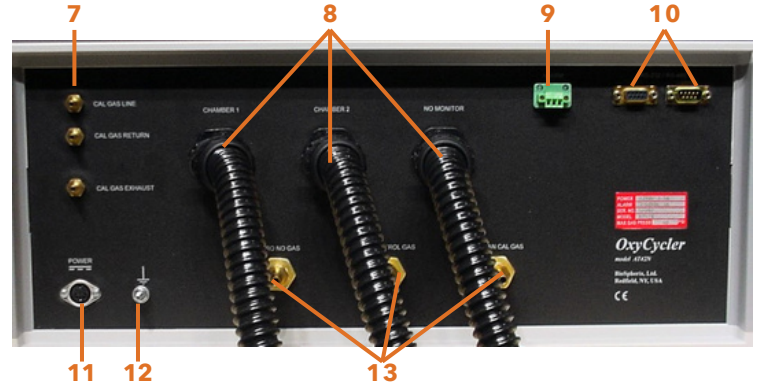
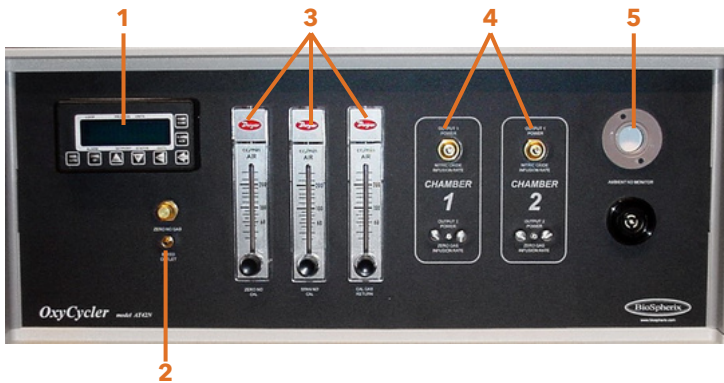
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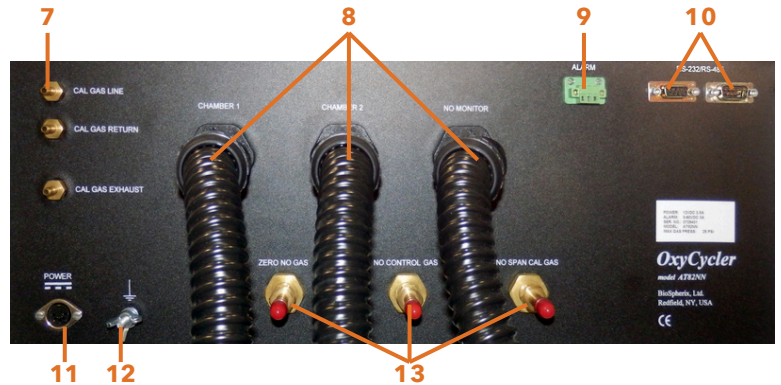
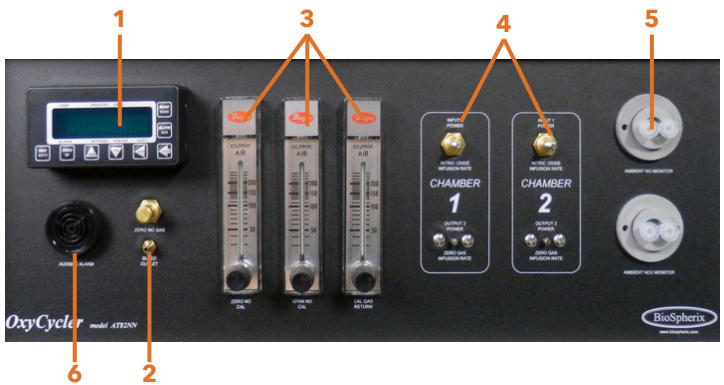
[Youtube.com/@Cytocentric](https://www.youtube.com/@Cytocentric)

# OxyCycler AT Series

## AT42N and AT42CO



## AT82NN



1. Digital Display: Continuously displays current gas level, control status, and alarm status in all chambers. Displays menu items and settings during programming
2. Bleed Valves and Barbs: Bleeds gases out of gas supply lines
3. Calibration Gas Flowmeters: Used for calibration
4. Needle Valves: Sets infusion rate of control gases in each chamber to accommodate different dynamics. Can manually override controller to shut off gas
5. Ambient CO or NO monitor: Detects CO/NO/NO<sub>2</sub> gas and triggers the alarm
6. Alarm: Will sound if ambient CO/NO/NO<sub>2</sub> monitor detects unsafe levels
7. Calibration Gas Inputs
8. Umbilicals: Flexible tubing connects remote actuator/monitor pods to the back panel
9. External Alarm Receptacle: For connection to an additional alarm. When the software alarm activates, the output will sound an external alarm as well
10. Communication Port: 9-pin female D-connector for communications with PC and/or other controllers
11. Power Connection
12. Ground Stud: Protects the controller from electrical damage
13. Supply Gas Hose Inputs: 1/4" ID hose from gas sources pressure rated up to 40 PSIG



# OxyCycler AT Series

## Electrical Requirements

**Electrical Power:** 12 VDC, 6.6AMP

## Physical Specifications

**Weight:** 25 lbs (36 lbs with pods)

**Controller Dimensions:** 9"H x 21.25"W x 19"D

**Sensor Pod Dimensions:** 4.25"H x 7.13"W x 4.25"D

**Remote Alarm Monitor Pod Dimensions:** 4.25"H, 7.13"W, 4.25"D (AT42N, AT82NN); 3.75"H, 3.25"W, 3.75"D (AT42CO)

## Gas Control Performance

**Control Range:** <300ppm NO (AT42N, AT82NN), <1000ppm CO (AT42CO)

**Accuracy:** variable based on calibration

**Resolution:** 1 ppm

**Sensor Types:** electro-galvanic fuel cell (NO, CO)

## Alarms & Safety

**Alarm Output:** external alarm

**Alarm Modes:** 1) process high 2) process low 3) deviation high 4) deviation low 5) deviation band

## Gas Delivery Performance

**Gas Infusion Rate:** 1-25 SCFH

**Gas Consumption:** depends on 1) size and leakiness of host chamber 2) frequency and duration of chamber door openings 3) controller setpoint

## Gas Supply & Compatibility

**Gas Source:** compressed gas tanks, liquid dewar

**Gas Supply:** pressurized NO, CO, CO CAL mix, NO CAL mix

**Gas Supply Line:** 1/4" ID hose pressure rated at 25 PSIG

**Gas Supply Line Pressure:** 0-25 PSIG

**Gas Supply Hose Fitting:** 1/4" ID one-touch fitting

## Umbilical Specifications

**Umbilical Length:** 12' (custom lengths available)

## Operation Parameters

**Host Chamber Temperature:** 0-40°C

**Host Sensor Humidity:** 15 -90%, non-condensing

