

# Vari-Green® Controls

SOLVING VENTILATION CHALLENGES

Greenheck's Vari-Green® Controls have been developed to maximize the efficiency of ventilation systems in a wide variety of applications when used with the Vari-Green motor. By choosing a Vari-Green control with the Vari-Green motor, compatibility issues are eliminated and installation is simplified.

These controls are designed to meet the needs for manual or automated operation in demand controlled ventilation systems.

For your next ventilation project, choose one of the Vari-Green Control options and realize worry free savings.



Greenheck  
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Supporting Green Building  
Initiatives Worldwide

# Vari-Green Controls



**Transformer** provides a 24 volt power source from the existing line voltage at the fan to the motor and controls. It also has two dry auxiliary contacts (one normally open and one normally closed) available to signal a motorized damper or interlock with other devices. The switch will change “states” when the motor is commanded to run. The transformer is factory mounted to the fan eliminating the need for field wiring. Standard with all controls and compatible for use with field-supplied controls.



**Remote Dial or Touch Remote** allows the user to manually adjust a fan's speed from a remote location and mounts to a wall using a 2x4 junction box. The 24VDC transformer, described above, is included with all orders. A wall cover plate is supplied.

- The Touch Remote includes a count down timer to automatically turn the fan off after 10, 30, 60 or 90 minutes.
- Recommended for use in commercial buildings and restaurants.



**Two Speed Control** allows motor RPM (fan speed) to operate between two discreet speeds (A or B). There are two methods for switching between speeds:

1. SPDT switch or relay connected to the dry contact input.
2. Wet voltage (115-230VAC) applied to the digital input terminal with the following logic: Voltage on L1 or L2 = Speed B; Voltage on L1 and L2 = Speed A.

The two speed control includes a 24VDC transformer and accepts an input voltage of 115/208-240V.

- For manual or demand controlled ventilation applications requiring high and low speed operation.
- An accurate test, adjust, balance is possible at both speeds, unlike a traditional two speed motor.
- Recommended for use in schools, restaurants, multi-family structures, and condos.



## Indoor Air Quality – Temperature / Humidity

monitors the temperature and/or relative humidity in a space, and will automatically adjust the ventilation rate to or from a space by increasing or decreasing the speed of the fan.

Both the temperature and humidity set points are field programmable, allowing for quick and easy system adjustment. Heating or cooling mode is also selectable, allowing the fan to be turned on to increase or decrease the temperature to a given area. Control range is 15°—130°F (-10°—55°C) and 0-100% RH. Ventilation is based on the temperature and humidity measurements and assures spaces will not be over or under ventilated.

- For applications where temperature or humidity sensitive electronics are housed, including attics, shop floors, boiler rooms where high moisture and mold growth is a concern or in areas where a comfortable atmosphere is necessary.
- Recommended for use in assisted living facilities, schools, prisons, and buildings constructed of materials that are more sensitive to high moisture levels.



## Indoor Air Quality – VOC

senses the level of Volatile Organic Compounds (VOCs) in a space and automatically adjusts the ventilation rate to the space by increasing or decreasing the speed of the fan based on the level of VOCs present. Ventilating based on the VOC concentration assures the space will not be over or under ventilated. Between 5,000 to 10,000 unique VOCs exist, and Greenheck's VOC sensor reacts to all of them.

- For applications experiencing intermittent human traffic, including bathrooms, conference rooms, classrooms, cafeterias, or any other space where air quality is of concern.
- Recommended for use in schools, office buildings, hotels, and prisons.

**Constant Pressure Control** will reduce energy consumption not only by reducing the speed and the energy used by the fan, but will also reduce the amount of conditioned air that is exhausted.

**Static Pressure (Indoor or Outdoor Installation)**

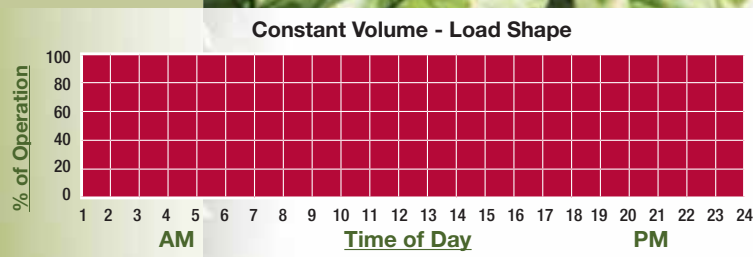
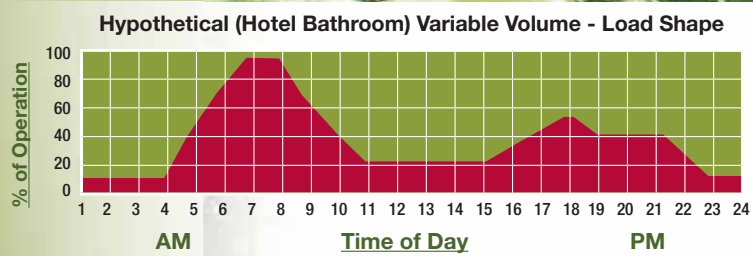
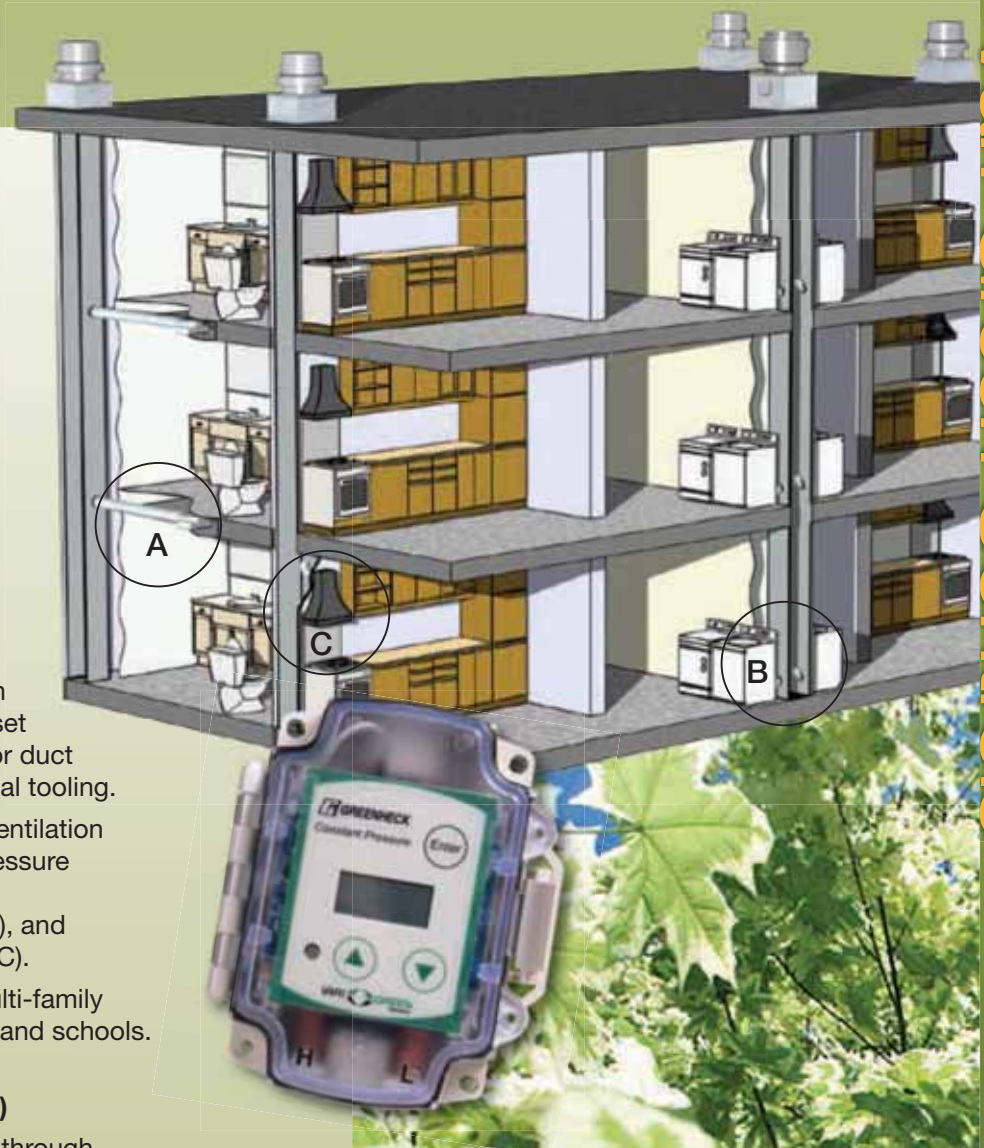
Maintain static pressure within a room or duct. This control will automatically adjust the fan speed to maintain a specified set point. Easily mounts to a wall or duct and does not require any special tooling.

- Use for demand controlled ventilation applications with multiple pressure changes, such as bathroom, exhaust (A), dryer exhaust (B), and residential cooking exhaust (C).
- Recommended for use in multi-family structures, hotels, hospitals, and schools.

**Velocity Pressure (Constant CFM – Indoor Only)**

Maintain a constant CFM level through a duct by monitoring velocity pressure. Controller monitors the air velocity within a duct (CFM) and increases the fan speed when the velocity pressure falls below a specified set point. Two duct pressure taps are included with the control.

- Use for ventilation applications where the airflow needs to remain constant when filters or coils become dirty. A fan running at full speed indicates filter(s) need to be cleaned or replaced.
- Recommended for use in schools, office buildings, hotels, and prisons.



Graphs show how variable volume reduces energy consumption based on use throughout the day

**green** — It's not just what we make.  
It's where we work. How we work. Who we are.

## **Control Specifications**

### **Vari-Green Control - Remote Dial**

Remote Dial shall be a Vari-Green Control specifically designed to provide 0-10 volt DC signal to Greenheck's Vari-Green Motor.

### **Vari-Green Control - Two Speed**

Two speed control shall be a Vari-Green Control specifically designed to allow the Vari-Green Motor to operate at two discrete speeds. Two speed control shall include two dials that may be set at any point between 0 and 10 volts DC and an integral transformer capable of reducing 115/208-240 volt AC power to 24 volt AC power.

### **Vari-Green Control – Indoor Air Quality – Temperature / Humidity**

Control to be a packaged indoor air quality control designed to regulate fan speed based on level of temperature and/or relative humidity in a space. Control shall include a Proportional Integral Derivative (PID) feedback loop and shall have labeled terminal strips for easy wiring. Fan shall be direct drive including an electronic commutation (EC) Vari-Green Motor. Control package shall be Vari-Green Indoor Air Quality – Temperature / Humidity Control.

### **Vari-Green Control – Indoor Air Quality – VOC (Volatile Organic Compound)**

Control to be a packaged indoor air quality control designed to regulate fan speed based on level of VOC concentration in a space. Control shall include a Proportional Integral Derivative (PID) feedback loop and shall have labeled terminal strips for easy wiring. Fan shall be direct drive including an electronic commutation (EC) Vari-Green Motor. Control package shall be Vari-Green Indoor Air Quality – VOC Control.

### **Vari-Green Control – Constant Pressure**

Control to be a packaged constant pressure control designed to regulate fan speed based on demand. Control shall include a Proportional Integral Derivative (PID) feedback loop and shall have all components prewired to labeled terminal strips for easy wiring. System shall include the appropriate pressure tap and preset pressure transducer. Fan shall be direct drive including an electronic commutation (EC) Vari-Green Motor. Control package shall be Vari-Green Constant Pressure Control.

Indoor installations shall include pressure tap (duct or room) and control box with integral pressure transducer.

Outdoor installations shall include duct pressure tap, pressure transducer, and control box. Control box shall be prewired and in a NEMA-3R weather tight enclosure for mounting outdoors near the fans location.

Additional information: Installation Operation Manuals and wiring diagrams are available on [greenheck.com](http://greenheck.com).



*Prepared to Support  
Green Building Efforts*

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