



Motors & Controls | Product Guide |



LOREN COOK COMPANY

# INTRODUCTION



Cook has developed a complete line of electronically commutated (EC) and permanent magnet (PM) motors and controls that make it simple to provide demand-based control of fans for a wide variety of applications.



## ESSENTIAL ADVANTAGES



### READY TO RUN

Vari-Flow motors are pre-wired & pre-programmed from factory



### EQUIPPED WITH

Air Balance Kit on all external control packages



### COST SAVINGS

maximized by combining Vari-Flow motors and controls



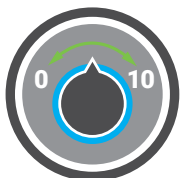
### APPLICATION-SPECIFIC

control packages available for pressure, humidity, temperature, CO<sub>2</sub>, VOC control and more!



### GREATER EFFICIENCY

across entire RPM range



### CONVENIENT

remote manual or automatic adjustability

## EXTRA BENEFITS

- ▶ Vari-Flow EC and PM motors provide superior part-load performance.
- ▶ Maximum potential for savings is reached when Vari-Flow motors and controls are combined.
- ▶ Each Cook fan provided with Vari-Flow motors and ordered with external signal capability will be supplied with a Vari-Flow Air Balance Kit.
- ▶ The entire offering of Vari-Flow motors and controls is integrated in Compute-A-Fan to simplify the selection process.



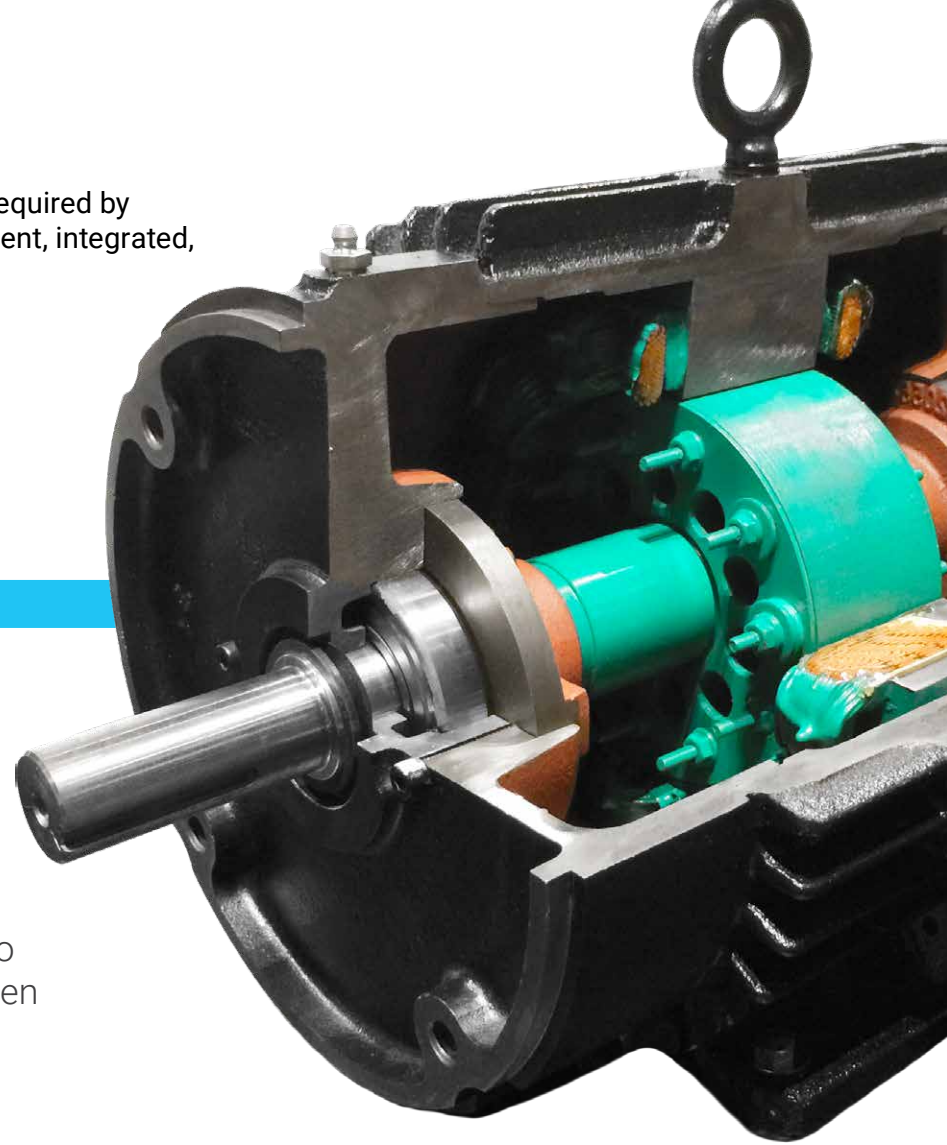
# DEFINING VARI-FLOW



The Vari-Flow family of motors and controls provides smart solutions required by today's energy-conscious designers. When combined, they create efficient, integrated, and simple air movement solutions.

## WHAT IS VARI-FLOW?

Vari-Flow blends ultra-efficient EC & PM motors and application-specific controllers to meet the efficiency needs of demand-based ventilation systems. Vari-Flow motors, by themselves, are more efficient than NEMA Premium Efficiency motors. When paired with Vari-Flow controls, it allows the fan to operate at precisely the correct speed for even greater energy savings.



# VARI-FLOW MOTORS



Vari-Flow motors provide superior part-load performance. Cook determines and selects your appropriate motor type based on the product, application, HP and performance.

## STANDARD EC



- ▶ Provides basic functions and features along with outstanding performance and efficiency
- ▶ On-board potentiometer provides simple adjustment with a flat head screwdriver
- ▶ Internal/external control is triggered by 24V control signal
- ▶ Offered up to 3/4 HP

## PRE-PROGRAMMED EC



- ▶ Programmed from the factory to meet fan and application needs
- ▶ User interface with LED display shows RPM and percent of full load for precise speed adjustment
- ▶ User interface can be mounted up to 16" from fan
- ▶ Simple two-wire connection for external control
- ▶ Offered up to 1 HP

## PRE-PROGRAMMED PM



- ▶ Offers the most functions and features of any of the Vari-Flow motors
- ▶ Comes equipped with a compatible and easy to use motor controller
- ▶ All PM packages come pre-programmed and pre-wired for easy start-up
- ▶ Built-in remote on/off capabilities
- ▶ Offered up to 30 HP





# AIR BALANCE KIT



The Vari-Flow Air Balance Kit (VFABK) integrates and simplifies the installation, and enhances the function of Vari-Flow motors and controls.

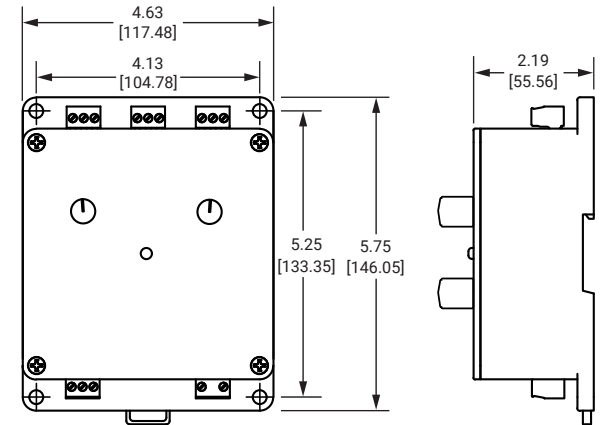
## PRODUCT

## DESCRIPTION

## DIMENSIONS



- ▶ Provides a convenient point to set the speed range over which the Vari-Flow motor will operate
- ▶ Contains an integral 24V control transformer which is required for all other Vari-Flow controls
- ▶ Incorporates a speed control to facilitate field air balancing as well as a Hand-Stop-Auto control that allows selection of operating modes from 'stopped,' to manual, to fully automatic control
- ▶ Label clearly indicates where and how each component is connected
- ▶ Provides convenient terminals for landing Vari-Flow motors and controls as well as auxiliary control of motor operated dampers
- ▶ Provides a means for remote on/off control
- ▶ Status indicated by a tricolor LED light
- ▶ Provided with all Vari-Flow controls (except two-speed controller)



# 2-SPEED CONTROLLER



The Vari-Flow 2-Speed Controller (VF2SC) allows the setting of two separate motor speeds and switching between these speeds by an external control device.

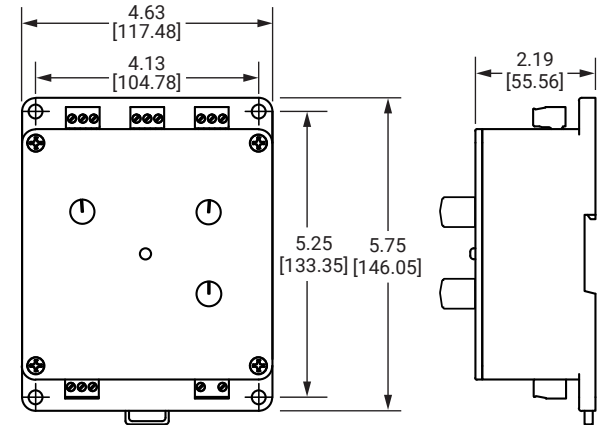
## PRODUCT

## DESCRIPTION

## DIMENSIONS



- ▶ Two speed control dials individually set 0–10V signals which are then selected via an external switch, relay or control system input
- ▶ Contains an integral 24V control transformer
- ▶ Equipped with A-B-Stop-Auto switch which is used to set the two fan speeds, accept an external selection signal or stop the control signal to the motor
- ▶ Most common application of this type of control is occupied/unoccupied control
- ▶ Provides convenient terminals for landing Vari-Flow motors and controls as well as auxiliary control of motor operated dampers
- ▶ Provides a means for remote on/off control
- ▶ Status indicated by a tricolor LED light



# PRESSURE CONTROLLER



The Vari-Flow Pressure Controller (VFPC) addresses a wide variety of pressure-based applications. This controller is compact and easy to set up.

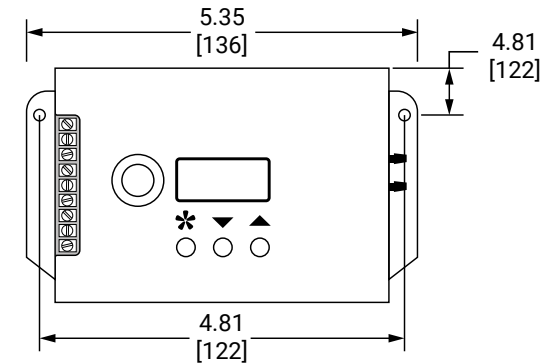
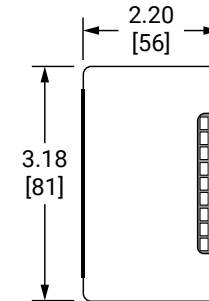
## PRODUCT

## DESCRIPTION

## DIMENSIONS



- ▶ Modulates fan speed via a 0-10VDC output signal to a Vari-Flow motor to maintain a constant static or differential pressure at a given set point in a duct, a space or between areas
- ▶ Available in 1, 2 or 5 inch pressure ranges
- ▶ Setup configured via pushbutton menu and digital readout
- ▶ Monitoring capability achieved through dry contact set points
- ▶ NEMA 1 enclosure



# CUSTOM PRESSURE CONTROL SYSTEM



The Vari-Flow Custom Pressure Controller (VFCPC) provides customizable pressure control.

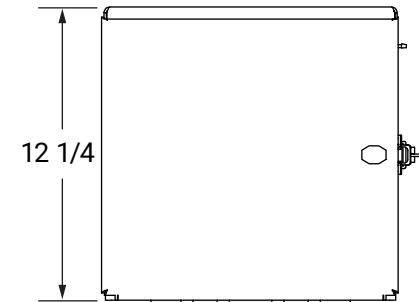
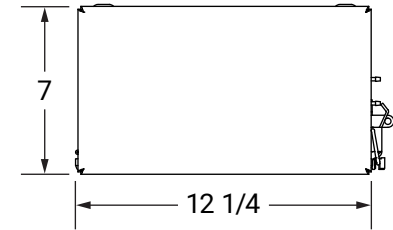
## PRODUCT

## DESCRIPTION

## DIMENSIONS



- ▶ Modulates fan speed via a 0-10VDC output signal to a Vari-Flow motor to maintain a constant static or differential pressure at a given set point in a duct, a space or between areas
- ▶ Pressure ranges customizable
- ▶ Simple set-up/connections
- ▶ NEMA 3R enclosure





# REMOTE SPEED CONTROLLER



The Vari-Flow Remote Speed Controller (VFRSC) allows the speed of a Vari-Flow motor to be manually adjusted and set from a location other than the fan.

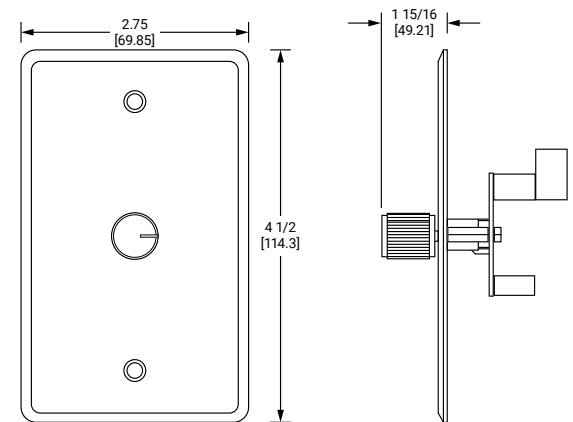
## PRODUCT



## DESCRIPTION

- ▶ Outputs a 0-10VDC signal, used by all Vari-Flow motors
- ▶ Allows simple adjustment of fan speed based on percent of motor RPM range
- ▶ Mounts to a 2 x 4 standard junction box via stainless steel cover plate

## DIMENSIONS



# TEMPERATURE CONTROLLER



The Vari-Flow Temperature Controller (VFTC/VFTC-N) is used to modulate fan speed based on temperature set point.

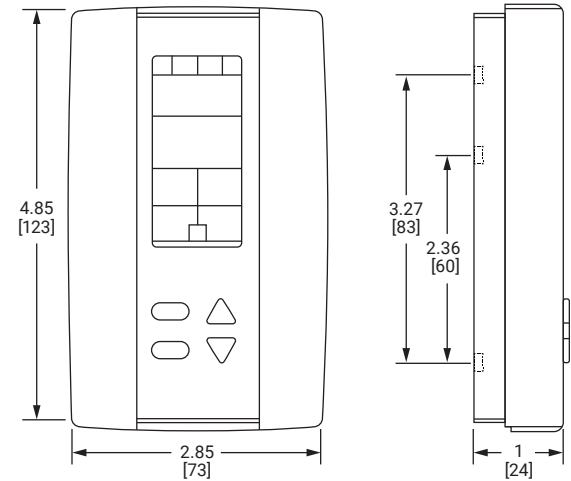
## PRODUCT



## DESCRIPTION

- ▶ Modulates fan speed via a 0-10VDC output signal to a Vari-Flow motor
- ▶ Setup configured via a pushbutton menu and digital readout
- ▶ Monitoring capability achieved through dry contact set points
- ▶ BACnet or Modbus network-compatible (N-model)
- ▶ Wall-mounted

## DIMENSIONS



# HUMIDITY CONTROLLER



The Vari-Flow Humidity Controller (VFHC/VFHC-N) is used to modulate fan speed based on relative humidity set point.

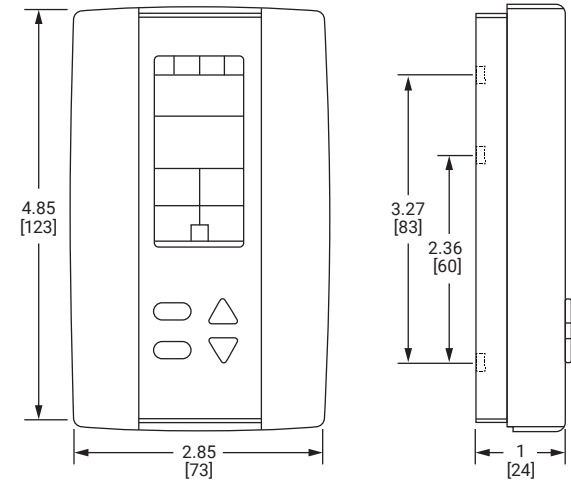
## PRODUCT



## DESCRIPTION

- ▶ Modulates fan speed via a 0-10VDC output signal to a Vari-Flow motor
- ▶ Simultaneously operates to both relative humidity and temperature set points
- ▶ Setup configured via a pushbutton menu and digital readout
- ▶ Monitoring capability achieved through dry contact set points
- ▶ BACnet or Modbus network-compatible (N-model)
- ▶ Wall-mounted

## DIMENSIONS



# CO<sub>2</sub> CONTROLLER



The Vari-Flow CO<sub>2</sub> Controller (VFCO2/VFCO2-N) is used to modulate fan speed to maintain a preset CO<sub>2</sub> concentration in a space over a range of 400–2000 ppm.

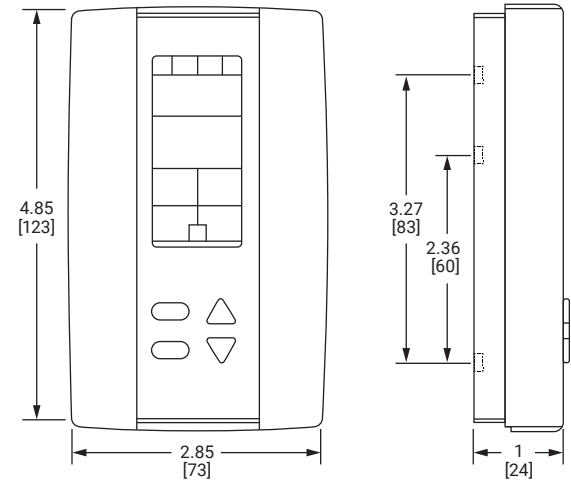
## PRODUCT



## DESCRIPTION

- ▶ Modulates fan speed via a 0-10VDC output signal to a Vari-Flow motor
- ▶ Simultaneously operates to any combination of CO<sub>2</sub>, temperature and relative humidity set points
- ▶ Setup configured via a pushbutton menu and digital readout
- ▶ Monitoring capability achieved through dry contact set points
- ▶ BACnet or Modbus network-compatible (N-model)
- ▶ Wall-mounted

## DIMENSIONS



# VOC CONTROLLER



The Vari-Flow VOC Controller (VFVOC/VFVOC-N) modulates fan speed to maintain a preset VOC level over a range of 0–1000 ppb.

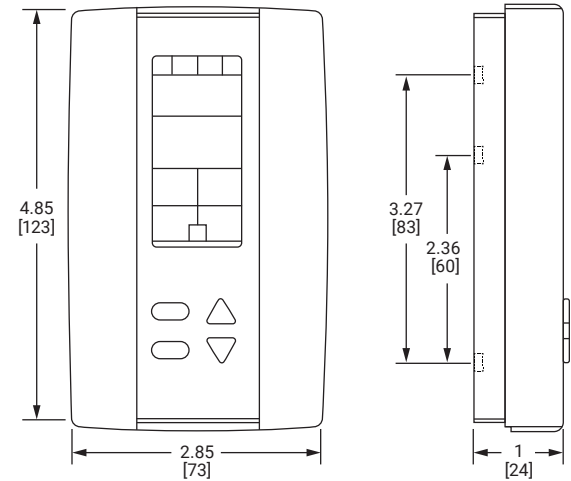
## PRODUCT



## DESCRIPTION

- ▶ Modulates fan speed via a 0-10VDC output signal to a Vari-Flow motor
- ▶ Simultaneously operates to any combination of VOC, CO<sub>2</sub>, temperature and relative humidity set points
- ▶ Setup configured via a pushbutton menu and digital readout
- ▶ Monitoring capability achieved through dry contact set points
- ▶ BACnet or Modbus network-compatible (N-model)
- ▶ Wall-mounted

## DIMENSIONS



# SIMPLIDRIVE™ CONTROLLER



The Vari-Flow SimpliDrive comes mounted, wired and programmed from the factory. SimpliDrive allows for easy demand-based control of the fan.

## PRODUCT

## DESCRIPTION

## AVAILABILITY



- ▶ Fan-mounted Speed Control
- ▶ Motorized Damper Control
- ▶ External Signal Capable
- ▶ NEMA 1/IP20 Enclosure
- ▶ Soft Start
- ▶ Built-in Motor Protection
- ▶ Remote On/Off
- ▶ Compatible with all Vari-Flow Controls

### Optional

- ▶ PM Compatible
- ▶ BACnet/Modbus communication
- ▶ Bluetooth interface
- ▶ NEMA 4X/IP66 Enclosure
- ▶ Integral Service Switch

It is available on the following fans up to 15 HP:

- ▶ ACEB
- ▶ ACRUB
- ▶ ACWB





