



# Cage Rack Valve AVC6000

US Patents 6,991,177 & 7,543,759

*Specially Made for Vivarium Cage Racks*



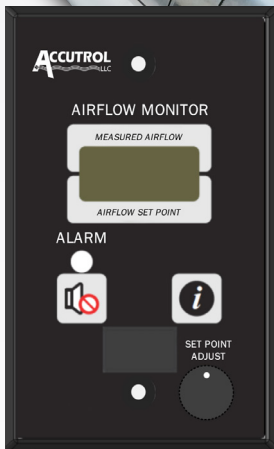
## Innovative features for the AVC6000!

- Intuitive Graphical User Interface Dashboard
- Software Selectable I/O
- BACnet® is Software Selectable (no dip switches)
- Bluetooth® Configuration Optional
- AccuNet® High-speed, Room-level Network Optional

## Plus, these standard AccuValve features...

- Exceptionally Low Pressure Drop
  - Design System Pressure – as low as 0.05" (12.5 Pa)
- Electronic Pressure Independence
- Fast Speed of Response
- True Airflow Feedback
- No Straight Run Requirements
- Linear Control Response
- High Accuracy and Turndown
- Can be Mounted in Any Position
- Native BACnet® MS/TP
- 5-Year Manufacturer Warranty

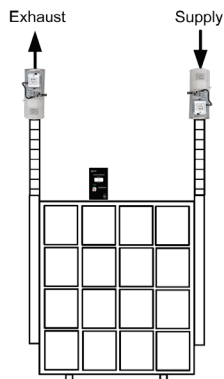
Manufactured in the USA.



Optional Airflow Monitor

The Accutrol AVC6000 is an electronically pressure independent AccuValve®. It takes the revolutionary design of the exceptionally low pressure drop AccuValve and incorporates airflow control into the electronics. The AVC6000 is equipped with Native BACnet® MS/TP allowing direct communication to the Building Automation System (BAS) where desired.

The AVC6000 provides true airflow measurement to ensure proper airflow into and out of vivarium cage racks. Instead of guessing whether the proper flows are being maintained, the AVC6000 ensures that they are. The valves come standard with BACnet communication, which enables airflows to be monitored and alarmed at the BAS front end. An optional airflow monitor is also available with local alarming and set point adjustment right at the display. The airflow monitor can be mounted conveniently in the area of the cage rack.



### Know Your Airflow Rates

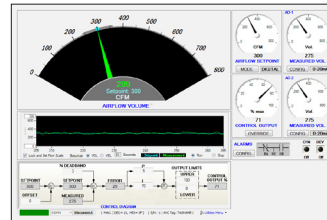
Vivarium cage racks are a large investment for a research facility. Knowing the airflow rates is critical to protect that investment. It is imperative that the environment within each rack is maintained at proper volumetric airflow rates.

### True Airflow Sensing

The AccuValve cage rack valve provides true airflow sensing and an airflow controller built in to provide a technologically advanced electronic pressure independent airflow control system. In addition, the controller includes native BTL listed BACnet enabling your BAS to read and trend airflow rates and many other parameters at the front end. This allows you to effectively manage your system to ensure its proper operation.

### Optional Airflow Monitor

The AVC6000 is also available with an optional airflow monitor that can be mounted in the vivarium. This shows the airflow set point as well as actual measured airflow. The monitor can be provided with a set point adjustment so changes can be made without accessing the valve.



### Intuitive Insight Software

If changes need to be made to the controller you can use Accutrol's Insight software to access the controller through a simple, user-friendly interface.

### Overview

- Designed for critical environments
- Measures true airflow
- No straight-run requirement
- Exceptionally low pressure drop operation
  - Design system pressure - as low as 0.05" (12.5 Pa)
- High accuracy and turn-down with linear response
- Can be mounted in any position
- Controller/Actuator can be in an inverted position
- Integral access port
- No maintenance required
- 5-year manufacturer warranty standard

### Benefits

- Plug and play for cage rack
- True closed-loop airflow control
- Airflow set point and value available at front end via BACnet MS/TP
- Optional local airflow monitor with alarm
- Demand based static pressure reset control "ready"
- Meets ASHRAE STD 90.1 without additional hardware
- Each rack can be set up as tracking pair
- USB user interface for field configuration
- Bluetooth® Configuration Optional
- Intuitive graphical user interface dashboard
- Pass-through leakage < 4 CFM at 3" across valve

## Compare Technologies

Key Criteria	AccuValve®	Compact Cage Rack Venturi
Pressure drop	<0.3" Maximum; typically < 0.2"	>0.6" Minimum; typically >1.25"
Accuracy (airflow)	+/-5% of reading or 5 CFM	+/-10% of reading or 5 CFM
Active airflow measurement	✓	✗
Closed loop control	✓	✗
Local airflow monitor available	✓	✗
Local alarm capable	✓	✗
Available in SS construction	✓	✗
Native BACnet®	✓	✗
Operates without straight duct runs	✓	✓
Built in inspection door	✓	✗
Can be mounted in any plane	✓	✗
ASHRAE static pressure reset ready	✓	✗
Critical parts out of the air stream	✓	✗
Up to date electronic control	✓	✗
Bluetooth® Configuration Optional	✓	✗

***Don't risk your vivarium investment with outdated mechanical valves.  
The AccuValve Cage Rack Valve delivers sustainable, 21<sup>st</sup> century design.***

## Operating Pressure Selector

Valve Size (mm)	Eng Units	Airflow Range								
		Minimum	Maximum Design Airflow							Maximum
6" (152) without reducers	CFM	30	69	143	174	206	230	254	315	330
	L/S	14	33	67	82	97	108	120	149	156
	CMH	51	117	243	296	350	391	432	535	561
Operating Pressure	"W.C.	< 0.01	0.025	0.1	0.15	0.2	0.25	0.3	0.45	
	Pa	< 2.5	6.25	25	37.5	50	62.5	75	112.5	



\* Minimum operating pressure when tested in accordance with ANSI/ASHRAE 130-2008

**For further assistance in making your AccuValve selections, please refer to the AccuValve Selection Guide for Operating Pressure. An AccuValve selection tool for iPhone, iPad and Android devices is also available to assist with AccuValve selections.**

## Specifications

### ELECTRICAL

<b>Input Power</b>	24VAC ±20% 50-60Hz, 32 VA max. 24VDC ±10%, 18W max.
<b>Analog Inputs</b>	AI-1, AI-2 and AI-3 (jumper configurable)
Voltage	0-10VDC range, 100K ohm impedance
Current	0-20mA range, 500 ohm impedance
Resistance	20K ohm range, 500uA current source AI-2 and AI-3 also include 100K ohm range, 100uA current source 12-bit resolution
<b>Digital Inputs</b>	2 dry-contact inputs
<b>Analog Outputs</b>	AO-1 and AO-2: (software configurable) 0-20mA, 4-20mA, 0-10v, 2-10v, 0-5v or 1-5v 12-bit resolution V-out capable of driving 1K ohm load
<b>Alarm Relay Output</b>	DPDT, NC/NO contacts, rated load 1A @ 30VDC or 0.3A @ 125VAC Max. operating voltage = 125VAC or 60VDC Max. carry current = 1A Max. switching capacity = 37VA, 30W
<b>Network Com Port 1</b>	EIA 485 2-wire BACnet MS/TP Full Master Node State Machine Data rates 9600, 19200, 38400, 57600, 76800 and 115200 Software provided for setting the MAC address ¼ Unit load receiver input impedance Network bias and EOL termination not provided within the AVC
<b>Network Com Port 2</b>	AccuNet Internal LAN (optional)
<b>Configuration Port</b>	USB 2.0, Isolated, "C" type connector Optional Bluetooth®
<b>Status Indicators</b>	LED status indicators for Power, Alarm, Analog output, BACnet® communications, USB communications and AVC status
<b>Terminal Blocks</b>	2 and 3 position vertical pluggable screw terminal blocks

### PERFORMANCE

<b>Accuracy</b>	±5% of reading or 5 CFM (2 L/S; 8 CMH), whichever is greater
<b>Speed of Response</b>	< 2 seconds
<b>Shut-off Leakage Rate @ 3"wc Valve DP</b>	< 4 CFM (1.9 L/S; 6.8 CMH) without reducers
<b>Max. Operating Pressure</b>	3"wc (750 Pa) Differential pressure across valve
<b>Failure Mode</b>	Fail Last Position

### ENVIRONMENTAL

<b>Temperature</b>	
Operating	0° to 150° F (-18° to 66° C)
Storage	-40° to 150° F (-40° to 66° C)
<b>Humidity</b>	0% to 90% non-condensing

### MATERIALS OF CONSTRUCTION

<b>Valve Housing</b>	16 Gauge aluminum (Standard) 304SS (Optional)
<b>Shafts</b>	316SS
<b>Shaft Bearings</b>	Teflon®
<b>Seals</b>	EPDM with aluminum valves; Viton with stainless steel valves
<b>Airflow Sensors</b>	Polycarbonate plastic, UL94-VO
<b>Control Module Enclosure</b>	16 Gauge aluminum

## Ordering Guides

Please see the following page for Ordering Guides.

### AVC6000 Cage Rack AccuValve® Ordering Guide

AVC 6  0 6 - 0 7 -

**Valve Housing Material**

- 2 = 304SS, 20 Gauge
- 4 = Aluminum, 16 Gauge

**Size (see diagram below)**

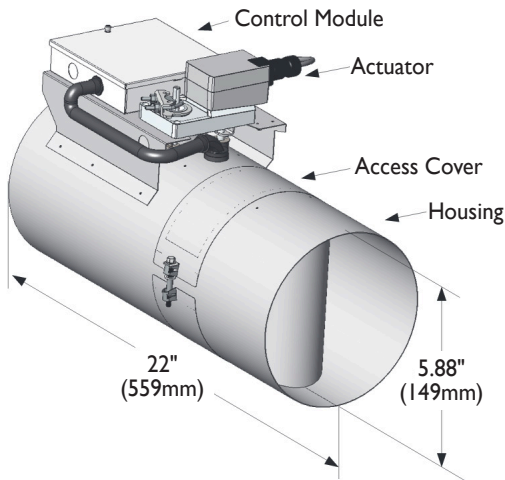
- 06 = 6" Diameter

**Actuator Type**

- 07 = Fail Last Position 2-10V (standard speed)

**Options**

- Blank = No Options
- F = Flanges
- I = Insulation



### AFM Cage Rack Remote Airflow Monitor Ordering Guide

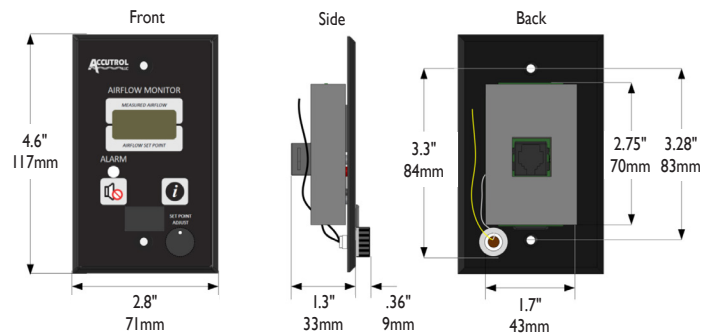
AFM  -

**Model**

- 2 = AVC Air Flow Monitor and Alarm
- 3 = AVC Air Flow Monitor and Alarm with Setpoint Adjustment

**Cable**

- 000 = No Cable
- 025 = 25' Plenum Rated Cable
- 050 = 50' Plenum Rated Cable
- 075 = 75' Plenum Rated Cable
- 100 = 100' Plenum Rated Cable



### Duct Transition Ordering Guide

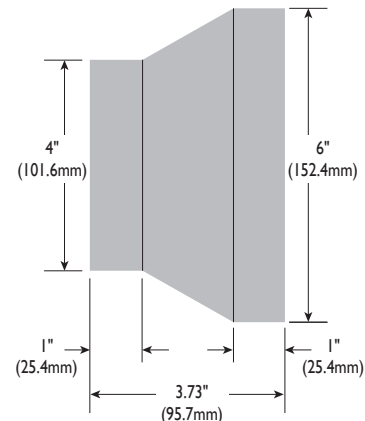
T 1  - 0 6 - 0 4

**Material**

- 1 = Galvanized
- 2 = 304SS

**Valve Side**

**Duct Side**



Your representative is:

