AVC6000

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

Laboratories, Life Sciences, Healthcare

AccuValve® ePI®

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.

Accutrol, LLC • 21 Commerce Drive, Danbury, CT 06810 • 203-445-9991 • www.accutrolllc.com

The Accutrol AVC6000 is an electronically pressure independent AccuValve®. It takes the revolutionary design of the exceptionally low pressure drop AccuValve and builds airflow control into the electronics. The AVC6000 is designed for critical airflow control in laboratories and other specialized areas where fast speed of response and precise airflow measurement is required. The integral native BACnet® MS/TP allows direct communication to the Building Automation System (BAS) where desired.

Features & Benefits

The AVC6000 is designed for critical environment airflow control in laboratories, life science and healthcare facilities where fast speed of response and precise airflow measurement is required. The AccuValve's award winning design incorporates:

Exceptionally Low Pressure Drop

AccuValve's award winning design incorporates a streamlined compression section and a carefully designed static regain section. These features provide lower pressure drop, lower noise level and better flow measurement conditions than any other available technology.

True Airflow Measurement

The integral high accuracy vortex airflow sensing provides high turndown while maintaining accuracies of 5% of reading over the flow range, ensuring precise airflow control.

No Straight Run Requirements

There are no straight duct runs required before or after the valve, making application of the valve very simple. The air compression in the valve provides laminar airflow throughout the airflow range providing repeatable airflow measurement regardless of inlet or outlet conditions.

ASHRAE Standard 90.1 Compliant without need for additional hardware

ASHRAE Standard 90.1 calls for the reset of the static pressure setpoint in VAV systems equipped with DDC controls. The AccuValve design allows the Building Automation System to provide this benefit to the owner without the requirement of any additional hardware or complexity. This is unique to the AccuValve for critical environments.

Simple Layout and Installation

All parts of the AccuValve are accessible from the front of the valve simplifying installation requirements. In addition, the valve can be mounted at any angle and rotated 360°.

Intuitive Insight Software

The AVC6000 also incorporates a simple and intuitive graphical user interface which enables the user to configure the valve for their specific requirements. Accutrol's Insight software, provided free of charge, insures that the owner is not required to contact the manufacturer of the airflow control system when changes are required in the field.

BACnet®

The integral, native BACnet® MS/TP allows direct communication to the Building Automation System (BAS) where desired.

AccuNet® Option

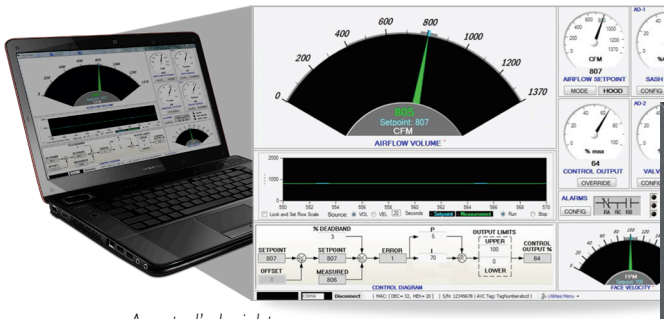
The optional AccuNet high-speed serial bus provides a room level network for summing multiple AccuValve airflow values into a single analog signal representing the total sum of the AccuValve exhaust airflows within the space.

Bluetooth® Configuration Option

The AVC6000 is available with a Bluetooth® configuration option, which alleviates the requirement for a USB connector when accessing the airflow valve via Accutrol's Insight graphical user interface software.

Remote Airflow Monitor Option

The AVC6000 is available with an optional airflow monitor that can be mounted remotely, which displays actual measured airflow.



Accutrol's Insight Software Dashboard

Optional Remote Airflow Monitor

Standard Control Information

Constant Volume Application

- Single set point
- Dry contact input (up to 4 discreet set points determined by 2 dry-contact inputs)
- BACnet® MS/TP programmed set point value
- Airflow output to BAS is available either through hardwired analog output or BACnet MS/TP
- Valve position is available either through hardwired analog output or BACnet MS/TP

Variable Volume Applications

- Analog input (set point received via analog output from another controller)
- BACnet MS/TP programmed set point value
- Airflow output to BAS is available either through hardwired analog output or BACnet MS/TP
- Valve position is available either through hardwired analog output or BACnet MS/TP

Tracking Pair Configurations

- Lead AVC analog output is wired directly to tracking AVC analog input
- Lead AVC setpoint can be pre-programmed at factory as analog input, digital inputs or BACnet MS/TP
- Airflow output to BAS is available either through hardwired analog output or BACnet MS/TP
- Valve position is available either through hardwired analog output or BACnet MS/TP

Fume Hood Control Applications

- The AVC6000 incorporates a selectable Fume Hood Mode, which will configure the AVC to operate as a fume hood controller utilizing the Accutrol Fume Hood Monitor and Accutrol Sash Sensor(s)
- The AVC6000 allows multiple occupancy / set back mode changes through dry contact closures
- Configurable purge mode function
- Configurable alarm functions
- Air flow output to BAS is available either through hardwired analog output* or BACnet MS/TP

  * Recommended hardwired connection when utilizing airflow signal for lab airflow tracking
- Face velocity output to BAS is available either through hardwired analog output or BACnet MS/TP
- Sash position or valve position output to BAS is available either through hardwired analog output or BACnet MS/TP
- Fume hood control specific BACnet MS/TP available read/write points

Additional Accutrol Product Reference

Accutrol AVC Fume Hood Control System

Operating Pressure Selector

Valve Size (mm)	Eng Units	Airflow Range							
		Minimum	Maximum Design Airflow						Maximum
6" (152)	CFM	30	99	143	174	206	230	254	315
	L/S	14	47	67	82	97	108	120	149
	CMH	51	168	243	296	350	391	432	535
8" (203)	CFM	80	252	367	447	528	589	650	800
	L/S	38	119	173	211	249	278	307	378
	CMH	136	428	624	760	897	1000	1104	1359
10" (254)	CFM	120	428	606	733	860	958	1056	1300
	L/S	57	202	286	346	406	452	498	614
	CMH	204	727	1030	1245	1461	1627	1794	2209
12" (305)	CFM	180	591	840	1016	1192	1326	1461	1790
	L/S	85	279	396	479	563	626	690	845
	CMH	306	1004	1427	1726	2025	2253	2482	3041
14" (356)	CFM	250	979	1364	1624	1884	2079	2275	2750
	L/S	118	462	644	766	889	981	1074	1298
	CMH	425	1663	2317	2759	3201	3533	3865	4672
12"x18" (305x457)	CFM	260	1003	1437	1761	2086	2341	2596	3200
	L/S	123	473	678	831	984	1104	1225	1510
	CMH	442	1704	2441	2992	3544	3977	4411	5437
12"x24" (305x610)	CFM	350	1261	1812	2213	2614	2925	3237	4000
	L/S	165	595	855	1044	1234	1381	1528	1888
	CMH	595	2142	3079	3760	4441	4970	5500	6796
12"x36" (305x915)	CFM	520	2005	2875	3523	4172	4681	5191	6400
	L/S	245	946	1357	1663	1969	2209	2450	3020
	CMH	883	3407	4885	5986	7088	7954	8820	10874
12"x48" (305x1220)	CFM	700	2522	3625	4426	5228	5850	6473	8000
	L/S	330	1190	1711	2089	2467	2761	3055	3776
	CMH	1189	4285	6159	7520	8882	9940	10998	13592
Operating Pressure	"W.C.	< 0.01	0.05	0.1	0.15	0.2	0.25	0.3	0.45
	Pa	< 2.5	12.5	25	37.5	50	62.5	75	112.5

BEST ← → GOOD

Optimum Energy Efficiency

* 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

Input Power	24VAC ±20% 50/60Hz 32VA max. for round, 12"x18" and 12"x24" 55VA max. for 12"x36" and 12"x48"
	24VDC ±10% 18W max. for round, 12"x18" and 12"x24" 31W max. for 12"x36" and 12"x48"
Analog Inputs	AI-1, AI-2 and AI-3: (software 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
Digital Inputs	2 dry-contact inputs
Analog Outputs	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
Alarm Relay Output	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
Network Com Port 1	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
Network Com Port 2	AccuNet Internal LAN (optional)
Configuration Port	USB 2.0, Isolated, "C" type connector Optional Bluetooth®
Status Indicators	LED status indicators for Power, Alarm, Analog output, BACnet communications, USB communications and AVC status
Terminal Blocks	2 and 3 position vertical pluggable screw terminal blocks
Electromagnetic Compatibility	2014/30/EU, EMC Directive
	EN61236-1:2013
	2014/53/EU, Radio Equipment Directive
	EN301489-1, V1.9.2:2011
	ETSI EN301489-1, V2.2.0:2017
	ETSI EN301489-3, V1.6.1:2013/V2.1.1:2017
	ETSI EN301489-17, V2.2.1:2012/V3.2.0:2017
Product Safety	2014/35/EU, Low Voltage Directive
	EN61010-1:2010/A1:2019/AC:2019

PERFORMANCE

Accuracy	±5% of reading or 5 CFM (2 L/S; 8 CMH), whichever is greater
Speed of Response	< 1 second (< 2 seconds for standard actuator)
Shut-off Leakage Rate @ 3"wc valve DP	Standard round valves (size 06 through 14) <1.5% FS max.
	Round valves with blade seals (size 08 through 14) <0.5% FS max.
	Standard rectangular valves (size 18 through 48) <2% FS max.
	Rectangular valves with blade seals (size 18 through 48) <1% FS max.
Max. Operating Pressure	3"wc differential pressure across valve
Failure Mode	Fail Last Position or Fail Open/Closed (selectable by model code)

ENVIRONMENTAL

Temperature	
Operating	-20° to 165° F (-29° to 74° C)
	-20° to 375° F (-29° to 190° C) High Temperature 304SS AVC
Storage	-40° to 165° F (-40° to 74° C)
Humidity	0% to 90% non-condensing

MATERIALS OF CONSTRUCTION

Valve Housing	Aluminum (16 Gauge) 304SS (20 Gauge) 316SS (20 Gauge)
Shafts	316SS
Shaft Bearings	Teflon®
Seals	EPDM with aluminum valves Viton with stainless steel valves
Airflow Sensors	Polycarbonate plastic, UL94-VO
	303SS for High Temperature 304SS AVC
Control Module Enclosure	16 Gauge aluminum

Ordering Guides

Please see the following page for Ordering Guides.

AVC6000 AccuValve®
Ordering Guide

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Valve Housing Material

2 = 304SS, 20 Gauge
3 = 316SS, 20 Gauge
4 = Aluminum, 16 Gauge
6 = High Temperature, 304SS, 20 Gauge

Size

06 = 6" Diameter
08 = 8" Diameter
10 = 10" Diameter
12 = 12" Diameter
14 = 14" Diameter
18 = 12"h x 18"w
24 = 12"h x 24"w
36 = 12"h x 36"w
48 = 12"h x 48"w

Options

Blank = No Options
A = AccuNet
F = Flanges
I = Insulation*
S = Tight Shut-off**
W = Wireless Bluetooth® Configuration

*Insulation is not available for High Temperature valves
**Blade seals are standard on all 6" valves

Actuator Type

03 = Fail Last Position (FLP, High Speed)
05 = Fail Open/Close (FSP, High Speed)
07 = Fail Last Position, 2-10v (Standard Speed)

Your representative is: