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NOTES



TRIA TEK makes every effort to inform our customers of any product improvements or changes through its website: www.triatek.com and/or customer notices. However, due to continuous product improvement and development, TRIATEK reserves the right to change product specifications without notice. Therefore, please contact TRIATEK Technical Support for any questions or concerns you may have on the latest product improvements.

Legal Notice:

This Installers Guide is provided as an industry service by TRIATEK to aid installers in the installation of its products in the field. While every effort has been made to ensure the accuracy of the contents of this manual TRIATEK disclaims any warranty or liability for any damages, injury or harm resulting from the installation of its products in the field resulting from any errors in this guidebook. By using this guidebook, installer agrees to indemnify and hold harmless TRIATEK for any damages including incidental or consequential that occur as a result of utilizing this guidebook. Installer accepts complete responsibility for the safety of its employees during installation and agreed to take every reasonable precautionary safety measure for its employees and persons under its control.

TRIA TEK makes no warranty of any kind with regard to this publication, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

TRIA TEK reserves the right to change product, system options or features, or the information contained in this publication. This publication contains proprietary information, which may not be reproduced without the written consent of TRIATEK.

Deviation from the specifications contained in this manual can result in product damage, additional site work, delays in system installation and additional installation charges.

Contractors are advised to contact TRIATEK Technical Support for any questions or concerns it may have concerning site specific conditions or anomalies that may preclude using the specifications contained in this manual.

Contractor agreed to comply with all applicable local, state, federal and administrative laws and regulations and to ensure that all OSHA, NFPA and other agency recognized safety codes are followed.

About Triatek:

Company Background

Founded in 1985, TRIATEK of Norcross GA has grown to become one of the preeminent manufacturers of Building Automation Systems (BAS) in the world. The founding partners of TRIATEK have combined experiences in the industry of over 75 years and have used such expertise to conceive, develop and produce products that are state of the art, forward thinking, patentable, and highly relevant to solving and addressing many of the safety and energy management issues prevalent in the industry today.

TRIA TEK was among the first, and continues to be a pioneer, in developing products that are interoperable with other building automation systems and products and, as such, has positioned itself at the forefront of the industry's inexorable move towards integrated systems. As part of its continuous improvement process, TRIATEK continues to innovate existing products and develop new products that will add to its core business and fulfill its mission to be the preeminent supplier of airflow controls for laboratory and medical applications.

Nature of Business

Based in Norcross, GA, TRIATEK has been manufacturing laboratory airflow controls since 1989 and has over 1500 laboratory and hospital installations throughout the world. TRIATEK offers the most comprehensive line of laboratory airflow control products in the marketplace including: fume hood airflow controllers, sash position controllers, volumetric offset controllers, room pressure controllers, venturi valves, blade dampers, electric actuators, pneumatic actuators, lighting controls, and the most integration options with BAS companies through LON, BACnet, Modbus, Johnson Controls N2 direct connect, and other custom drivers. These options enable TRIATEK to supply its customers with a unique solution configured for the specific needs of its facility and customer needs rather than attempting to "force" a particular method of control on the customer. TRIATEK manufactures all of its products from its headquarters facility in Norcross, GA and goes to market through exclusive manufacturer's agents, BAS contractors, and other entities worldwide.

Most TRIATEK products can be integrated with all of the major BAS manufacturers to provide facility managers, specifiers, contractors and end users with maximum design flexibility to meet their own unique needs and applications. With over 3000 installations worldwide and comprehensive experiences in providing solutions and applications for every conceivable kind of environment, TRIATEK has made a name for itself as the one-stop shop for any building owner or facility

ABOUT TRIATEK

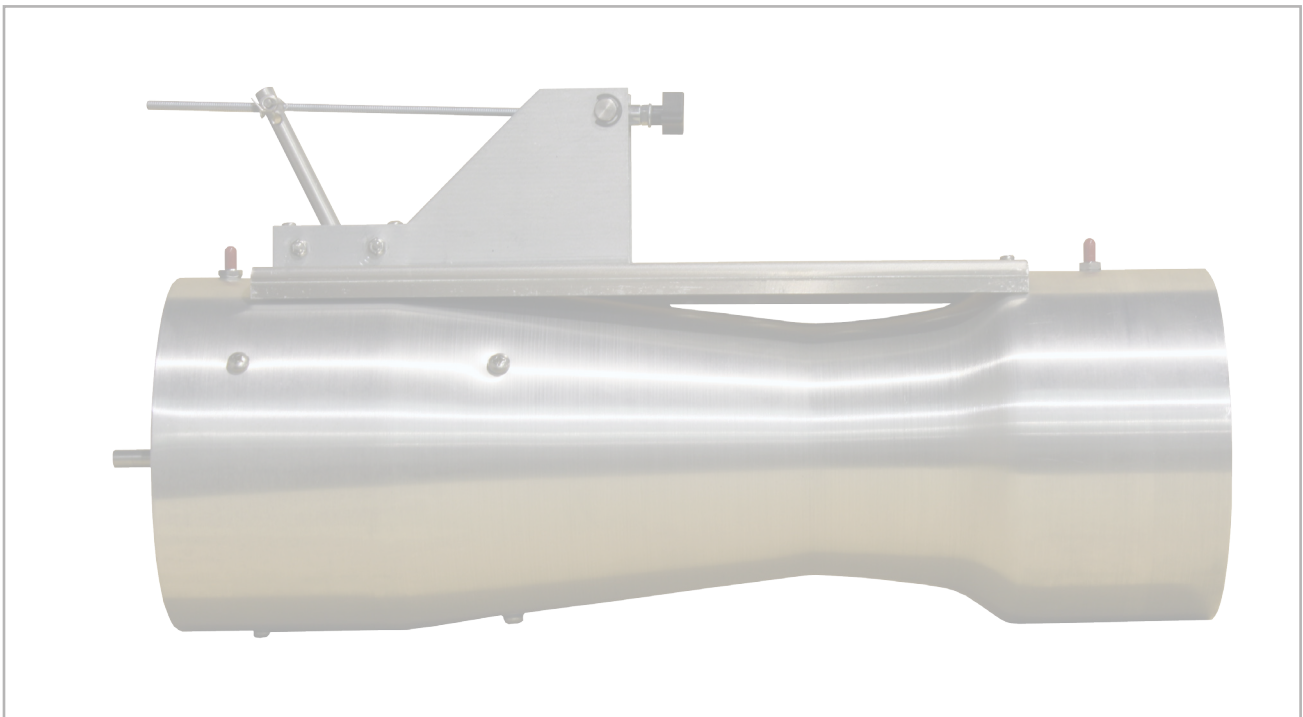
manager that needs building automation products for their facility.

Warranty

All TRIATEK products are fully warranted for two years (third year available) and are factory tested and programmed before they are shipped (unless required in the field) worldwide from the TRIATEK manufacturing facility. TRIATEK supports its products through its home office and authorized distributors worldwide.

Technical Support

Factory telephone support for all TRIATEK products are provided from 8AM-5PM EST Monday through Friday at 888-242-1922. Complete product information is available from our web site 24 hours a day at: www.triatek.com.



Damage Claims

1. Thoroughly examine all components and units as soon as they are received. If damaged, write a complete and detailed description of the damage on the face of the freight bill. The carrier's agent must verify the inspection and sign the description.
2. Immediately notify the delivering carrier of damage or loss. This notification may be given either in person or by telephone. Written confirmation must be mailed within 48 hours. Carriers are reluctant to make adjustments for damaged merchandise unless inspected and reported promptly.
3. Risk of loss, or damage to merchandise remains with the buyer. It is the buyer's responsibility to file a claim with the carrier involved.

Return Shipping

For the parts return procedure, please contact TRIATEK Technical Support or Customer Service for Return Authorization and assistance.

Wiring

If controls have been factory mounted, a wiring diagram will be included with the unit indicating the factory mounted components. For field wiring of sensors and other components or accessories please refer to the controls contractor's documentation for all wiring information.

Controls

For information concerning controls, components sequence of operation or otherwise; please refer to the documentation provided by the controls contractor.

Product Modification

No field modifications are to be made to any TRIATEK valve body or assembly at any time without prior written consent of TRIATEK. Contact TRIATEK Technical support regarding any questions on this issue. Changes or modifications will void the warranty as well as the user's authority to operate the equipment.

Product Removal from Ductwork

Due to the variety of site designs and methods of field installation; removal of any TRIATEK Venturi Valve from a site that is engaged in active site operation must have prior approval from TRIATEK. Contact TRIATEK Technical support for guidance and methods of removal.

Application

TRIATEK Venturi Valves are intended for indoor installation only.

FCC Compliance for Digital Valves

This equipment complies with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual (product data sheets and wiring diagrams), may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.



CONTRACTOR RECOMMENDATIONS

Installation Checklist

Data

- Project Information
- Submittals
- Manuals for Product

Tools

- Wire Strippers
- Flat Screw Driver Set with Various Size Larger Drivers
- Phillips Screw Driver with Various Size Larger Drivers
- Small Vise Grips
- Channel Locks
- Needle Nose Pliers
- Crescent Wrench
- Pocket knife
- Nut Driver Set
- Butane or Electric Soldering Iron
- Fine Tip Markers

Adherents

- Solder
- Electrical tapes
- Duct tape
- Foil Tape
- ASHRAE approved duct sealant

Electronics & Components

- Cell Phone
- Digital Camera
- Flashlight
- Digital Volt Meter
- DC and AC Voltmeter
- DC and AC Ameter
- Resistance Measurement with Tone
- Extra Terminal Connectors
- Wire Labels

Safety

- Ladder(s)
- Arrest Harness
- Safety Glasses
- Hardhat
- Steel Toed Shoes



PRODUCT DESCRIPTIONS

VV Series Venturi Air Valves Fume Hood & Room Pressure Control Applications

The TRIATEK Venturi valve is pressure independent. The variable volume valve maintains a desired air volume independent of the static pressure in the duct. As the static pressure increases, the internal spring compresses to maintain a constant volume of air. Likewise, as the static pressure decreases, the internal spring expands and moves the cone to increase the annular area, thus maintaining a constant volume.

The Venturi Valve will control air flow for supply and return or exhaust ducts based on CFM of flow set by the positioning lever. This valve flow is constant based on specific lever positions. Flow control using the Venturi is linear over most of its control range.

The VV Series Venturi Air Valves come in several standard sizes from 6 inches to 14 inches in diameter. Venturi valves can be ganged to meet additional flow requirements.

Where sound is an issue in high pressure conditions, TRIATEK has a model available with sound attenuation.

Horizontal and vertical applications are available; vertical applications and flow direction must be confirmed and verified at time of order.

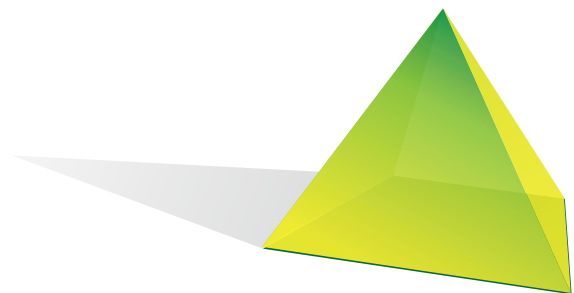
Micro Precision Venturi Valves Cage Rack Applications

Combines a factory- calibrated, field adjustable flow rate setting with a mechanical, pressure-independent flow regulator to meet the unique requirements of ventilated cage rack connections to building ventilation systems. Flow rate controller assembly is factory-calibrated to a precise constant volume flow setpoint.

Easy-to-use manual setting mechanism allows simple field adjustments of the airflow setpoint to modify the cage rack flows as required. Self-balancing pressure independent operation the cage rack valve automatically compensates for system static pressure fluctuations to maintain airflow at the setpoint.

Simple operation - the valve requires no electrical power or pneumatics to operate, nor any flow probes.

TRIATEK valves maintain a constant airflow over a range of 0.6 to 3 inches of water gauge static pressure across the valve.



PRODUCT SPECIFICATIONS

Construction

- Spun Aluminum or Stainless Steel valve body with continuous welded seam
- Aluminum Thickness: 0.060"
- Stainless Steel Thickness: .040"
- Stainless Steel Shaft and Struts

Valve bodies

- Uncoated Aluminum
- 316 Stainless Steel
- Aluminum with Corrosion-resistant Baked Phenolic Coating
- Composite Teflon® shaft bearings
- Spring grade stainless steel spring
- Flame/smoke rating 25/50. Density is 2.0 lb/ft³ (32.0 kg/m³)

Operating Range

- 32-125° F (0-50° C) ambient
- 10-90% non-condensing RH
- Valve Stroke Range approximately 35°

Sound

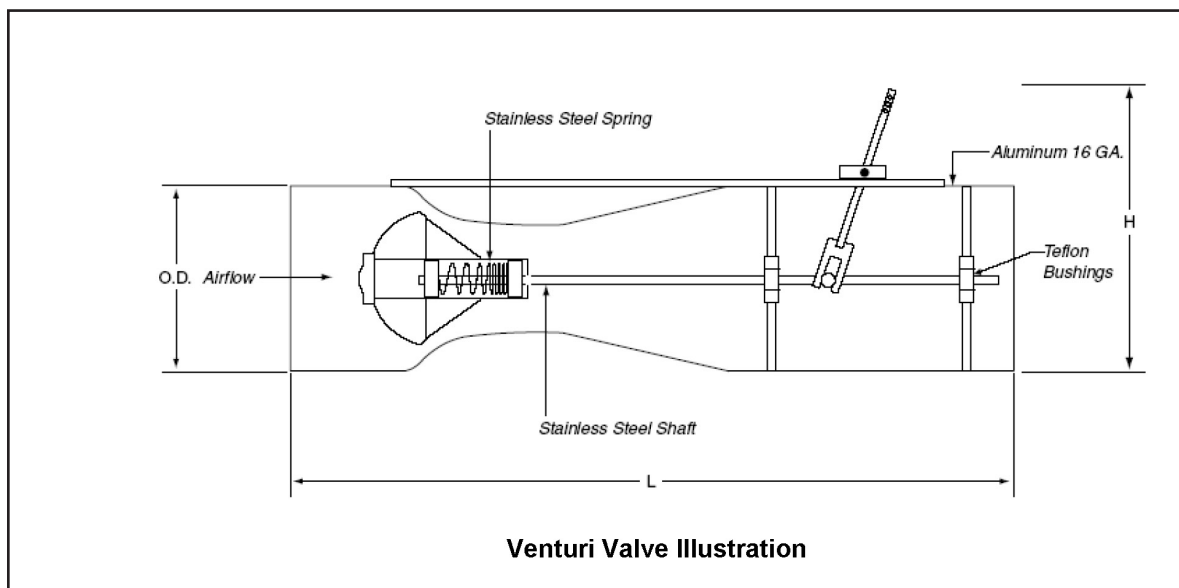
- Designed for low sound power levels to meet or exceed ASHRAE (ANSI) noise guidelines.

Performance

- Pressure independent over a 0.6"-3.0" w.c (150-750 Pa) drop across the valve on medium pressure VV Series Venturi Air Valve and VVCR Series Cage Rack Venturi Air Valve.
- Volume control accurate to $\pm 5\%$ of airflow command signal
- No additional straight duct runs needed before or after valve
- Response time to change in command signal: <1 second
- Response time to change in duct static pressure: <1 second

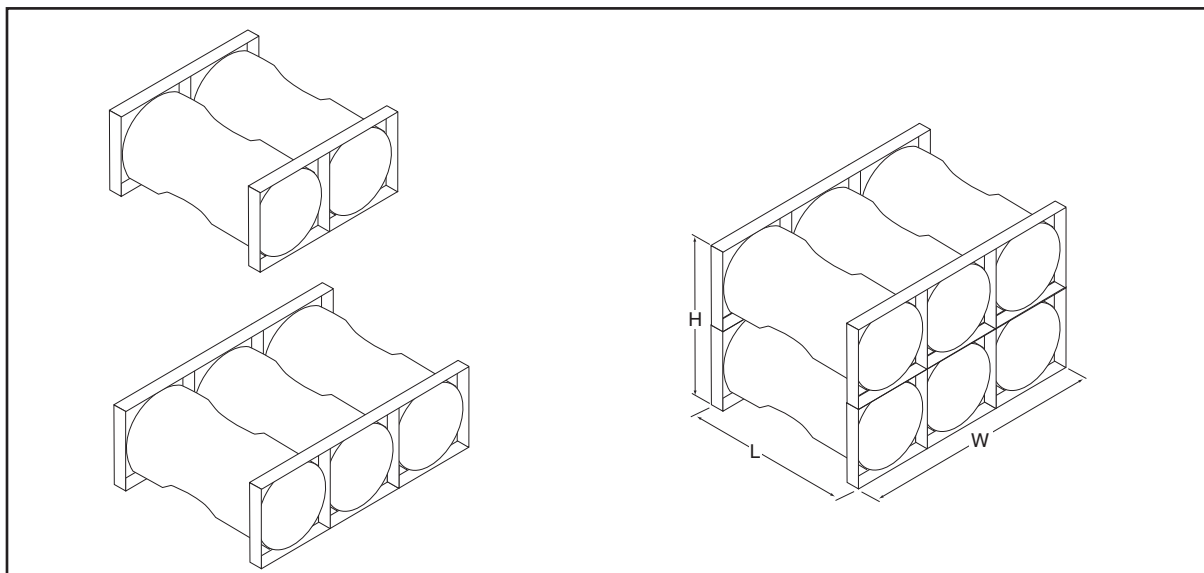


SINGLE VALVE DIMENSIONS & FLOW DATA



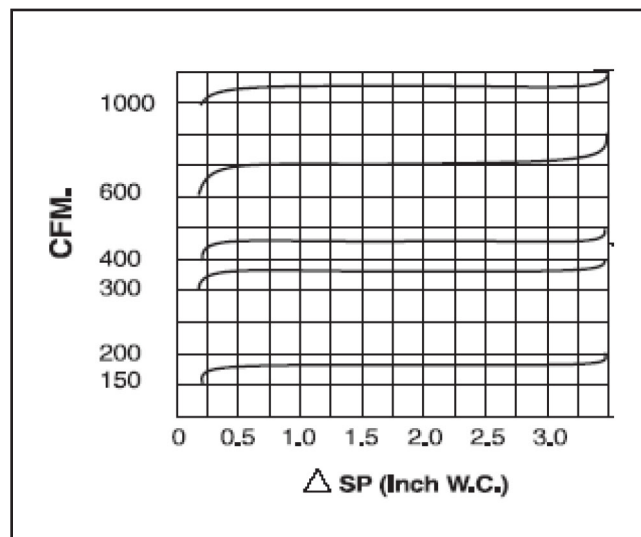
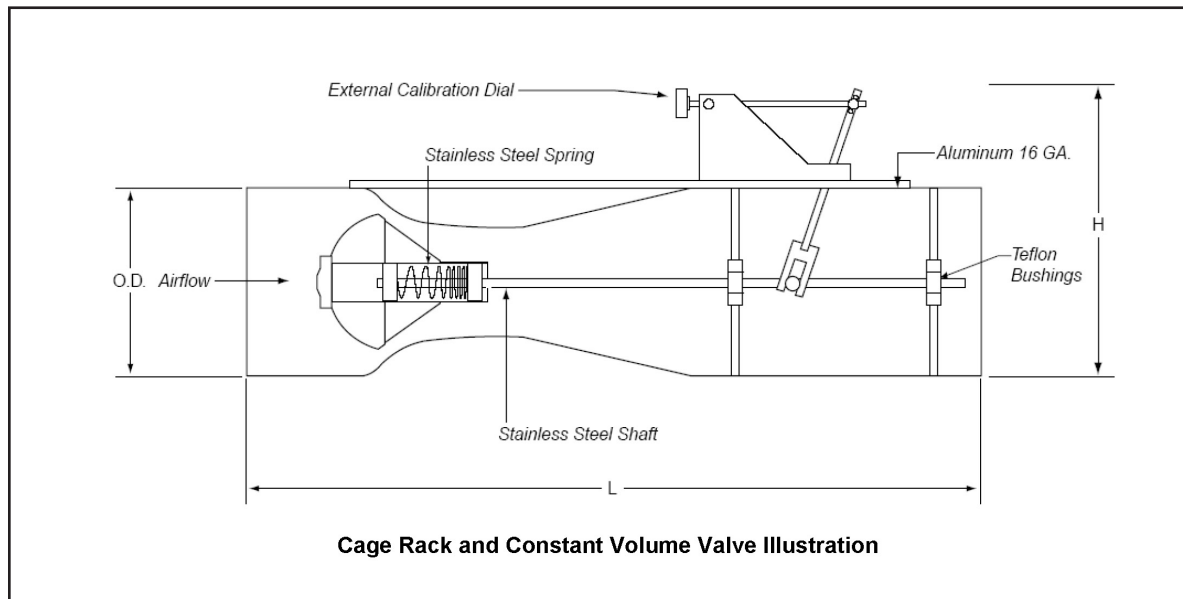
Individual Valves							
Unit Size	Inside Diameter	Outside Diameter	Length	Height	Med. Pressure Min./Max Flow	Low Pressure Min./Max Flow	Shutoff Min/Max Flow
6"	5.75" 146 mm	5.875" 149 mm	19.50" 495 mm	12.00" 305 mm	30-250 cfm 14-118 ltr/sec	30-200 cfm 14-94 ltr/sec	Contact Triatek For More Information
8"	7.75" 197 mm	7.875" 200 mm	23.00" 584 mm	14.00" 356 mm	35-700 cfm 17-331 ltr/sec	35-500 cfm 17-142 ltr/sec	Contact Triatek For More Information
10"	9.75" 248 mm	9.875" 251 mm	26.00" 660 mm	16.00" 406 mm	50-1000 cfm 24-473 ltr/sec	50-550 cfm 24-472 ltr/sec	0-850 cfm 0-401 ltr/sec
12"	11.63" 295 mm	11.750" 298 mm	26.75" 679 mm	17.50" 445 mm	90-1500 cfm 42-709 ltr/sec	90-1050 cfm 42-708 ltr/sec	0-1100 cfm 0-519 ltr/sec
14"	13.63" 346 mm	13.750" 349 mm	30.00" 762 mm	21.00" 533 mm	175-2100 cfm 83-993 ltr/sec	175-1400 cfm 83-991 ltr/sec	Contact Triatek For More Information

GANGED VALVE DIMENSIONS & FLOW DATA



Ganged Valves (valves can be ganged together in any combination up to 6 valves)							
Unit Size	# of Modules	Length	Width	Height	Med. Pressure Min./Max Flow	Low Pressure Min./Max Flow	Shutoff Min/Max Flow
10"	2	30.00" 762 mm	22.60" 574 mm	11.45" 291 mm	100-2000 cfm 47-944 ltr/sec	100-1100 cfm 94-944 ltr/sec	0-1700 cfm 0-802 ltr/sec
	3	30.00" 762 mm	33.75" 857 mm	11.45" 291 mm	150-3000 cfm 71-1416 ltr/sec	150-1650 cfm 71-1416 ltr/sec	0-2550 cfm 0-1203 ltr/sec
	4	30.00" 762 mm	22.60" 574 mm	23.00" 584 mm	200-4000 cfm 94-1888 ltr/sec	200-2200 cfm 188-1888 ltr/sec	0-3400 cfm 0-1604 ltr/sec
	6	30.00" 762 mm	33.75" 857 mm	23.00" 584 mm	300-6000 cfm 41-2832 ltr/sec	300-3300 cfm 82-2832 ltr/sec	0-5100 cfm 0-2406 ltr/sec
12"	2	31.00" 787 mm	26.75" 679 mm	13.50" 343 mm	180-3000 cfm 85-1410 ltr/sec	180-2100 cfm 84-1416 ltr/sec	0-2200 cfm 0-1038 ltr/sec
	3	31.00" 787 mm	40.00" 1016 mm	13.50" 343 mm	270-4500 cfm 127-2115 ltr/sec	270-3150 cfm 127-2124 ltr/sec	0-3300 cfm 0-1557 ltr/sec
	4	31.00" 787 mm	26.75" 679 mm	27.12" 689 mm	360-6000 cfm 170-2820 ltr/sec	360-4200 cfm 168-2832 ltr/sec	0-4400 cfm 0-2076 ltr/sec
	6	31.00" 787 mm	40.00" 1016 mm	27.12" 689 mm	540-9000 cfm 254-4230 ltr/sec	540-6300 cfm 154-4248 ltr/sec	0-6600 cfm 0-3114 ltr/sec
14"	2	34.00" 864 mm	32.25" 819 mm	16.00" 406 mm	350-4200 cfm 165-1987 ltr/sec	350-2800 cfm 186-1982 ltr/sec	Contact Triatek For More Information
	3	34.00" 864 mm	48.30" 1227 mm	16.00" 406 mm	525-6300 cfm 248-2980 ltr/sec	525-4200 cfm 248-2973 ltr/sec	Contact Triatek For More Information
	4	34.00" 864 mm	32.25" 819 mm	32.00" 813 mm	700-8400 cfm 331-3973 ltr/sec	700-5600 cfm 331-3964 ltr/sec	Contact Triatek For More Information
	6	34.00" 864 mm	48.30" 1227 mm	32.00" 813 mm	1050-12600 cfm 497-5960 ltr/sec	1050-8400 cfm 596-5946 ltr/sec	Contact Triatek For More Information

CAGE RACK VALVE DIMENSIONS & FLOW DATA



ACTUATION CHOICES

ACT-FA-8001 Fast Acting Damper Actuator

The TRIATEK ACT-FA-8001 is a microprocessor based actuator with conditioned feedback. The unit utilizes brushless DC motor technology and operates on a 24 VAC nominal power supply. These models deliver a minimum of 50 in. lb. or 5.6 Nm. torque at rated voltage and are designed for fume hood applications. The ACT-FA-8001 motor is equipped with auto stroking and zero & span features. Auto stroking means that the maximum stroke of the actuator may be field limited to anywhere between 45 and 90 degrees while still maintaining a full throttling range of 2-10 VDC. The zero and span may also be field set to adjust the control response of the motor to a portion of the 2-10 VDC input signal. This allows for the sequencing of the several motors off the same input signal.

Once the actuator has been programmed with the required parameters, the information is permanently stored in the unit's memory. Due to the fact that the microprocessor is supported by nonvolatile memory (E square prom) and internal feedback, the motor will not have to re-stroke to "find itself" on start up or following a power outage or following subsequent repositioning with the clutch. The 2-10 VDC analog signal may be externally wired with a 500 ohm resistor to respond to 4- 20 mA. Similarly, the feedback signal which is 4-20 mA may be externally wired to produce a 2-10 VDC signal. A 500 ohm resistor is supplied with each unit to accomplish this if required. The ACT-FA-8001 is equipped with an emergency operating device that powers the actuator at its full rated torque to its selected safety position when power fails.



Electrical

Power Supply	22-26 VAC or 28-32 VDC
Maximum Power Consumption	20 VA at 25 VAC
Wire Size	18 AWG Minimum
Electrical Connections	One 5/8 in./15.9 mm Knock Out One 7/8 in./22.2 mm Knock Out Screw Terminals
Feedback Potentiometer	4-20 mA Output 2-10 VDC When Externally Wired with a 500 ohm Resistor (Supplied)
Control Signal	2-10 VDC 4-20 mA When Externally Wired with a 500 ohm Resistor (Supplied) Zero & Span Adjustable

Mechanical

Torque	50 in. lb. or 5.6 Nm. at Rated Voltage
Angle of Rotation	0-90°, Mechanically Adjustable
Direction of Rotation	Reversible
Stroke Time	~22ms/Degree of Rotation
Typical Control	10° to 30° Stroke
Shipping Weight	Approx. 3 lb. or 1.4 kilos
Enclosure	
Electronics	UL Recognized QMFZ2 Fire Rated 94V-0
Gear Train	Die Cast Zinc With A Steel Base

Environmental

Ambient Temperature	0° to 140° F or -18° to 60° C
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ACTUATION CHOICES

TCP-3153 Pneumatic Actuator

The TCP-3153 Pneumatic Actuator is a multipurpose positioning device used primarily for operating ventilating dampers in response to the output signals of a pneumatic controller or electro-pneumatic transducer. The TCP-3153 can be used with dampers up to a maximum area of 16 square feet for proportional volume control and 25 square feet for two position actuation provided that the torque requirements are compatible with the specific application.

The TCP-3153 is a UL component recognized for use on UL classified 555/555S smoke and combination fire/ smoke dampers which have been tested and approved to a degradation temperature of 250°F (121°C).

Materials

Construction Body Die-cast Aluminum, Diaphragm - Synthetic Elastomer
Stroke 2 inches (76 mm)

Control Air Pressure

..... 0-20 psig for HVAC
..... 20 psig (137KPa) minimum for safety damper functions
..... 30 psig (205 KPa) maximum w/out pilot

Air Connections

1/8" NPT straight barbed fittings for 5/32" or 1/4" O.D. polytubing (furnished) compression fitting for 1/4" O.D. copper tubing (optional)
Ambient Operating Conditions -20° to 150°F (-29° to 66°C)
Effective Diaphragm Area 15 inch² (97 cm²)
TCP-3153-S 8.5 lbs.

TCP-1030 Pneumatic Actuator

The TRIATEK TCP-1030 and TCP-1130 Series 3" Pneumatic Damper Actuators are designed to position automatic air dampers in pneumatically controlled systems. The units may be used for gradual or two position applications. Models are available with either post or right angle bracket mounting. Right angle models are shipped with crank arms for either 1/2" or 3/8" damper shafts. Either style is available with a factory mounted positive positioner. Actuators with positive positioners include an 8 to 13 psi internal spring and a 5 psi span spring. A 10 psi spring may be ordered separately.

Material

Body Glass-filled nylon, UL 94 HB (Nylatron GS63-13)
Diaphragm Neoprene
Piston Glass-filled nylon, UL 94 HB (Nylatron GS63-13)
Shaft CRS with nickel plating
Bearings Glass-filled nylon, UL 94 HB (Nylatron GS63-13)
Weight 3.5 lbs. (1.58kg)
Effective Area 7 inches² (45cm²)
Stroke 3 in. (76 mm)

Control Signal Connection

..... 3/16" (5mm) fitting for 1/4" (6mm) O.D. polyethylene tubing

Control Signal Pressure Input

..... 0-20 psig (138 kPa) operating
..... 30 psig (207 kPa) maximum
See note under Temperature Limits

Temperature Limits

Operating -20° to 180°F (-29° to 82°C)
Shipping -40° to 180°F (40° to 82°C)

NOTE: *If application requires operation near maximum temperature AND maximum pressure, install a tubing restraint at the actuator connection.*

INSTALLATION PROCEDURES

1. Read complete guidebook and all installation procedures prior to installation.
2. Unpack the valve from the shipping container in the area where it will be mounted.
3. **Verify that the tag number on the valve matches schedule.**
4. **Never carry a valve by the linkage, cone bracket, or any other control component that is mounted onto or into the valve body.**
5. The central cone shaft extends out of the valve body outlet opening when in its full open position. **Do not stand a Venturi Valve on outlet opening side when it is in the full open position.**
6. Verify the size, flow range and orientation of the valve by comparing the data on the valve label to the specifications listed on the schedule or architectural drawings. Valve O.D. dimensions are sized to fit inside standard spiral and flexible duct.
7. Install all Pressure Independent valves horizontally or vertically based on submittals, drawings and specifications.
8. Be sure to install valve so that air flow direction corresponds to the arrow on valve, i.e., from short cylindrical section to longer cylindrical section. Verify the cone direction by checking the label mounted on the valve and comparing the arrow on the label to the direction of cone. The cone should move freely forward and back in the direction that the arrow is pointing.
9. Before mounting the valve to the ductwork, once again verify the direction of flow within the duct and align the valve accordingly.
10. Install a hanger stock to support the ductwork within 12 in. (305 mm) of the valve connection. Install valve into duct after hanger stock is in place.
11. To ensure precise operation, always make sure the valve is level after mounting.
12. Allow a minimum of 14 in. (356 mm) of free unobstructed space around the valve for access. In general, the valve may be installed in a 360° rotation within the duct; the actuator and linkage position

is not affected whether it is up, down or sideways. However, for future maintenance, adjustment or potential condensation issues it is recommended that the linkage be positioned facing down.

13. It is recommended that single body horizontal hood valves should be installed so that the pivot arm is located at the 3 and 9 o'clock position. Never mount the pivot arm at the 12 or 6 o'clock position. It is also recommended that the valve should be installed to allow for the best access to the actuator or linkage in the event that future adjustments are required.

14. Access to the valve must be provided for possible future changes requiring re-setting of air flow. Allow 5.75" (146 mm) of unobstructed space in the duct on valve's outlet side for the shaft to reach the maximum flow position.

15. When equipped with an electric actuator, 24VAC separate from the controller is needed to power it. See wiring instructions provided for the actuator.

16. Sheet metal screws should not exceed 3/4" length and should not be located more than 1" from either end of valve.

17. Air at inlet is high pressure and care should be taken to assure a tightly sealed duct connection. The outlet air is low pressure and the sealing procedure should conform to that used on low pressure ductwork.

18. Use ASHRAE approved duct sealant on all valve / duct connections (or flange gaskets for circular flanges). Do not use a sealant that prevents valve removal.

19. I.D. and calibration tags should not be removed



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PART NO _____

SERIAL NO _____

VALVE NO _____

CFM RANGE _____

VDC													
CFM													

TO CHANGE MOTOR SETTING: Adjust minimum and maximum stops so that center of control rod is aligned with dial number corresponding to the minimum and maximum CFM required.



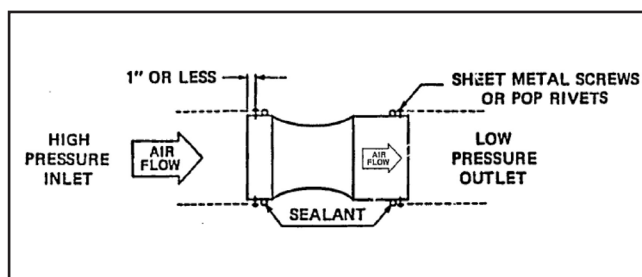
AIR FLOW

INSTALLATION PROCEDURES

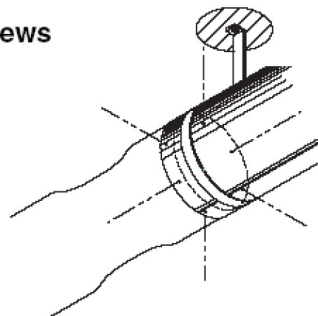
Follow the appropriate installation diagram.

NOTE:

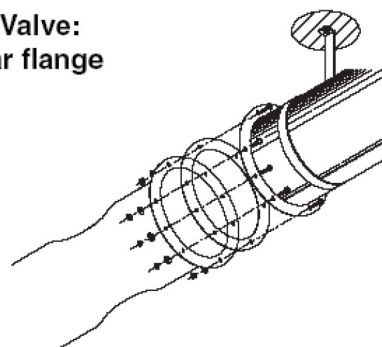
Unless specifically ordered for a particular job TRIATEK, Inc. does not provide screws, fasteners, duct sealant, hanger stocks, companion flanges, or gaskets.



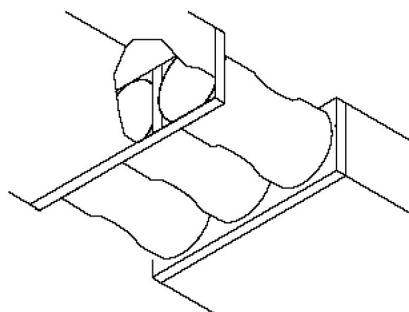
**Single Valve:
Sheetmetal screws**



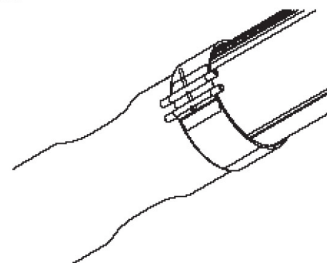
**Single Valve:
Circular flange**



**Multiple Valve Body:
Slip-type flange**



**Single Valve:
Drawband**



UVM INSTALLATION PROCEDURES

Universal Valve Module Installation

Overview

Because the VV Venturi Valves equipped with the Universal Valve Module (UVM) are capable of being used with most any controller or for any BAS, wiring such units requires a slightly different approach. UVM equipped valves all use 0-10V or RS485 signals from the controller and translates these signals into a pre-determined flow position or percentage position for any given valve. Therefore, a valve that is capable of a 2500 max flow would only be open at 1250 CFM if voltage sent from the controller to the UVM is at 50% or 5V. The UVM is also capable of producing a 0-10V output signal as feedback of the valve CFM or valve position.

An eight position DP switch is also provided on the UVM board itself and allows for a selection of percentage or CFM input interpretation, percentage or CFM representation of the OUTPUT signal and NORMAL or REVERSE operation. Contact the Triatek factory before making any adjustments to these DP switches as they come pre-configured from the factory for most applications.

Installation

1. The controller and valve are pre-wired at the factory and require a 24VAC supply capable of 25VA or more and a 0-10V set point signal.
2. Valve calibration information is stored internally on the controller itself at the factory for the valve shipped with the UVM. Therefore, no additional calibration should be necessary in the field. CFM curve adjustments can be done in the field but is not recommended. UVM Configuration Software (not included) is required to make any curve adjustments.
3. Once wired and the power is connected, the actuator will initially move to the 0 or 100% position and the controller should generate a control signal based on the input set point voltage.
4. In its minimal configuration, the UVM requires a 24VAC supply and a 0-10V control signal. Additionally, a 0-10V output signal can be used to monitor the actual CFM the value is regulated to. The UVM can also optionally take in a digital signal from a DI switch indicating the presence or absence of air in the valve. If enabled and inactive, the flow output signal will indicated "0".

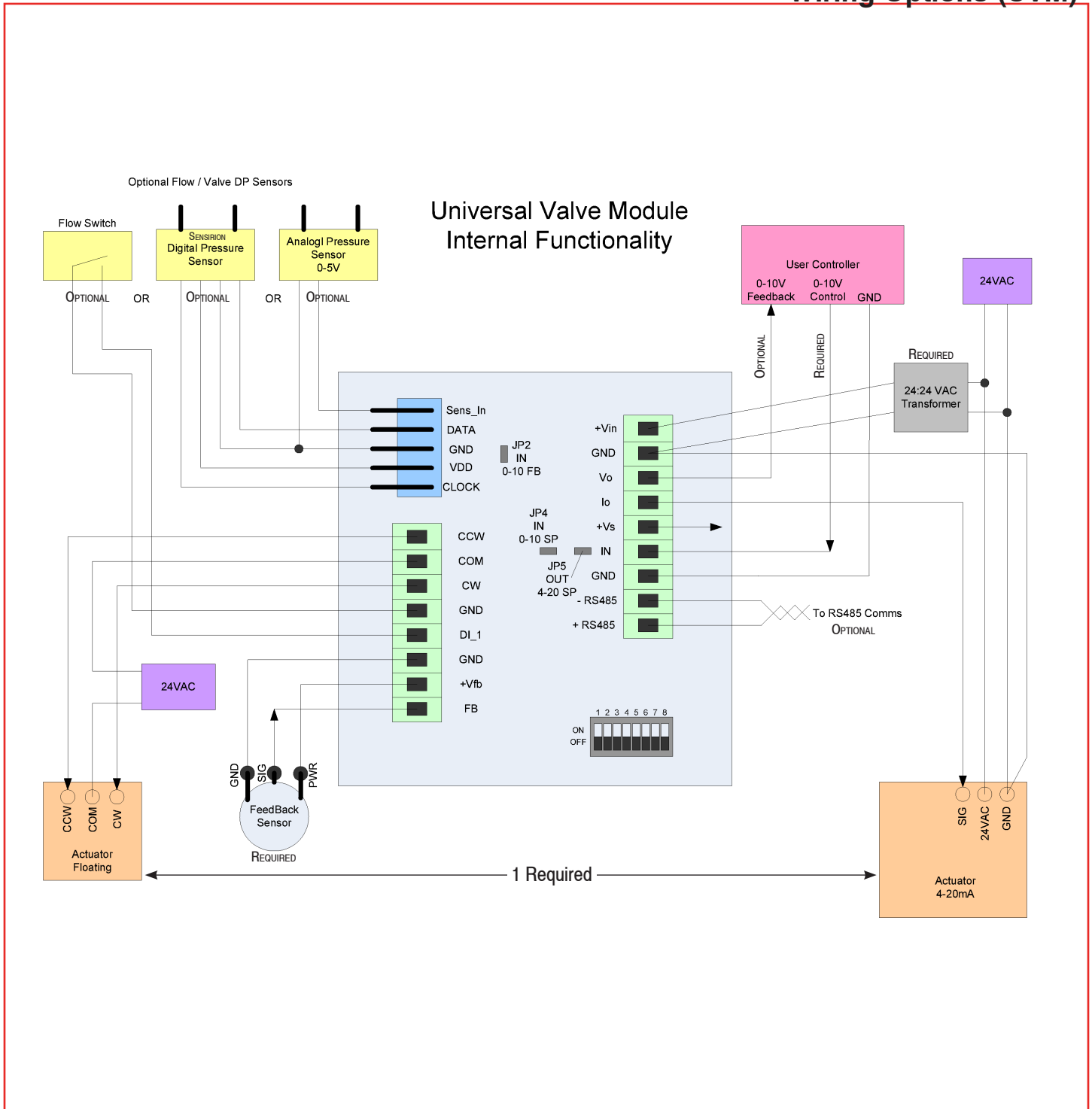


Optionally, the analog pressure sensor can be used to detect the DP across the valve and indicate flow when above a specific pressure value. To use these features, internal options need to be enabled by UVM Configuration Software.

5. RS485 communications require a special program to allow adjustments of specific parameters and settings including the valve CFM curve. Contact Triatek for more information when using RS485 communications or for the program necessary to use RS485 communications. Note....If RS485 communications will not be employed, this cable may be left disconnected.

UVM INSTALLATION PROCEDURES

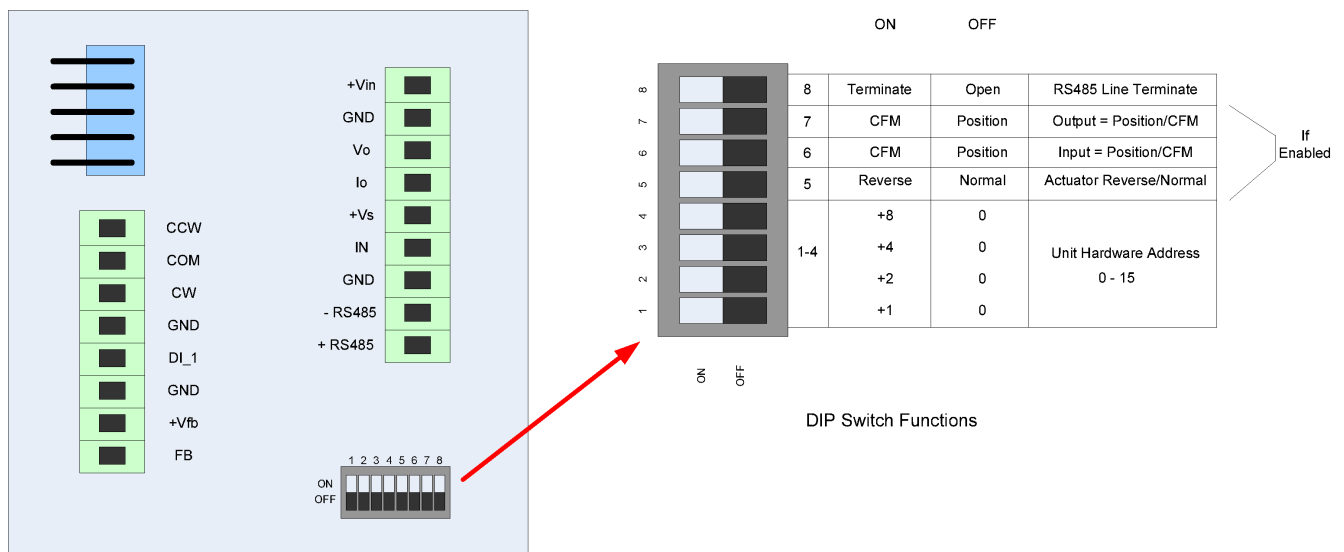
Wiring Options (UVM)



UVM INSTALLATION PROCEDURES

Dip Switch Settings

Universal Valve Module DIP Switch Functions

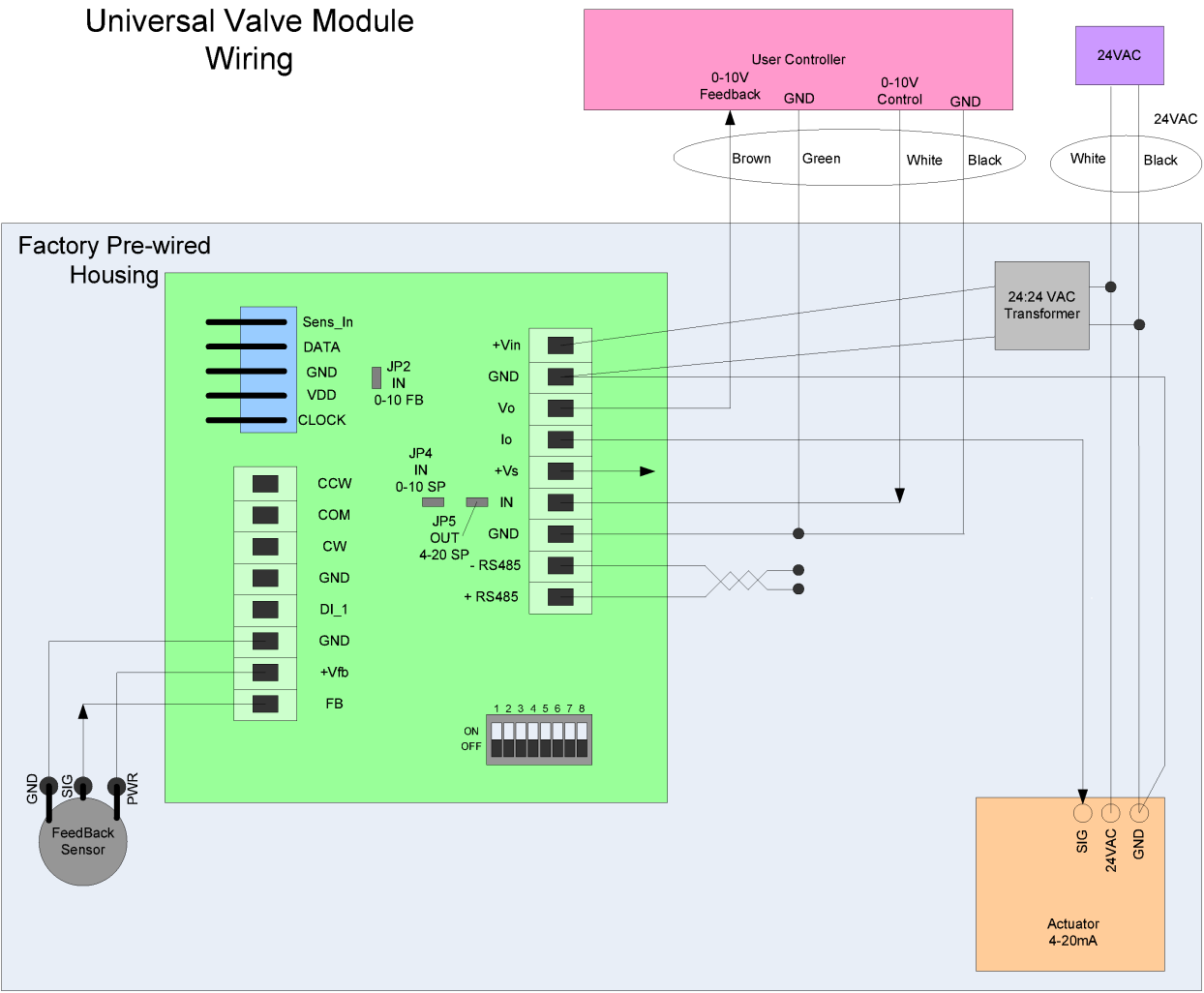


Note : DIP Switch function (other than address and termination) can be disabled by internal software setting/selection

UVM INSTALLATION PROCEDURES

Minimum Wiring Requirements

Universal Valve Module
Wiring



TROUBLESHOOTING

The following is to be used as a guide for potential resolution of a site issue. Please contact TRIATEK Technical Support for additional assistance should the solution not be obtained from this guide.

Problem 1:

Fume hood monitor in alarm; Room pressurization problem.
Low static pressure across valve (<0.6"wc; 150Pa)

Possible Causes A:

1. Too many sashes open at one time.
2. Sash open beyond maximum allowable position.
3. Blocked or kinked pressure switch tubing.

Possible Solutions A:

- a. Contact HVAC service maintenance contractor to inspect, verify and correct.
- b. Review operator sash movement.

Possible Causes B:

1. Incorrect valve position.
2. Valve is not responding to input signal.
3. Loss of pneumatics.
4. Mechanical linkage is disconnected.
5. Loss of power or electrical control signal.
6. Broken sash cable.
7. Monitor calibrated incorrectly.
8. Incorrect wiring terminations.

Solutions B:

- a. Contact HVAC service maintenance contractor to inspect, verify and correct.
- b. Contact TRIATEK Technical Support for assistance.

Problem 2:

Temperature control issues.

Possible Causes A:

1. Reheat system issues.
2. Thermostat malfunction.
3. Air handler malfunction.
4. Water valve response issues.

Solutions B:

- a. a. Contact HVAC service maintenance contractor to inspect, verify and correct.

Problem 3:

Valve Banging

Possible Cause A:

1. Fluctuation in pressure that is out of acceptable design range.
2. Lack of Bypass damper control.
3. Slow response to duct pressure control.

Solutions A:

- a. Adjust Bypass damper control.
- b. Install fast acting actuators; flow probes and VAV control; integrate into stand alone lab control.
- c. Contact HVAC service maintenance contractor for inspection, verification and correction.

NOTE: Exposing ANY Venturi Valve to excessive pressures that are outside of the range of specification may require the valve to be recalibrated and recertified at factory; potential damage to the valve may also occur.

Problem 4:

Monitor indicates normal operation, but actual face velocity or flow has been measured high or low.

Possible Cause A:

1. Low or high static pressure.

Solutions A:

- a. Verify at least 0.6" w.c (150Pa) across valve.
- b. Connect a Magnahelic gauge across the valve taps.
- c. For hood valves, check voltage at TB-16 at fume hood monitor (>10V=low static).
- d. Contact TRIATEK Technical Support for assistance.

SERVICE & MAINTENANCE**Manual Setting Changes**

1. Whenever possible shut down the fan. High pressure systems exert considerable force on a control rod, making adjustments with a system running is difficult.
2. Use an NIST traceable flow measuring device to determine flow for valve adjustment.
3. Loosen locking nut and move control rod to the new position relative to the desired flow adjustment.
4. Retighten locking nut.

Electronic or Pneumatic Operator Setting Changes

1. Contact TRIATEK Technical Support for Assistance.

Routine Maintenance

1. Periodic servicing such as lubrication or parts replacement is not required. Proper installations and field startup will ensure that the valves will provide years of ongoing operation.
2. In light of the occupational hazards involved with treating patients confined to isolation rooms, or bio hazardous laboratories although not required it is recommended that a hospital or research lab room be inspected, re-certified, maintained and recalibrated if necessary, at least once per year.
3. Ensure compliance with any owner or regulatory requirements that may mandate specified periods of inspection, maintenance and/or re-calibration.

Replacement Parts

Replacement parts are available; please be aware that replacement of some components may require factory recalibration and certification prior to installation. Contact TRIATEK Technical Support or Customer Service for assistance in ordering.

TRIATEK supports its products through its home office and authorized partners worldwide. Factory telephone support for all TRIATEK products is provided from 8AM to 7PM EST Monday through Friday.

WEB: Complete product information is available from our web site 24 hours a day at: www.triatek.com

MAIN NUMBER: 770-242-1922

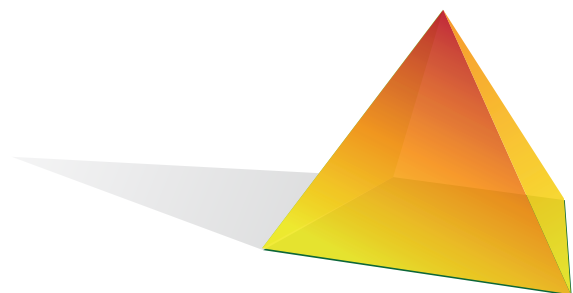
FAX: 770-242-1944

CUSTOMER SERVICE & SALES: 888-242-1922

TECHNICAL SUPPORT 8AM-7PM EST

Eastern U.S.: 888-242-1922

Western U.S.: 888-242-1922



TRIATEK, located in Norcross Georgia, has an extensive network of manufacturer's representatives located throughout North America to service you. Our helpful, experienced sales team can provide solutions for your Laboratory Controls, Medical Controls, HVAC Controls, and Industrial Instrumentation needs. Call **770-242-1922** or visit our website at: **www.triatek.com** for more information or to find an agent near you.



Triatek has been a pioneer in controllers since its origins back in the 1980's. Today, Triatek has the most complete line of controllers and monitors in the industry - the latest of which use full color touchscreens. Additionally, Triatek is unique in that the company engineers and sells both venturi valves and controllers or monitors. In other words, Triatek is the one company that can be turned to for a complete air pressure solution.



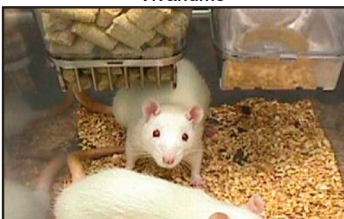
Laboratories



Classrooms



Vivariums



Hospitals

