RESIDENTIAL SYSTEM SOLUTIONS

VentZone® Systems

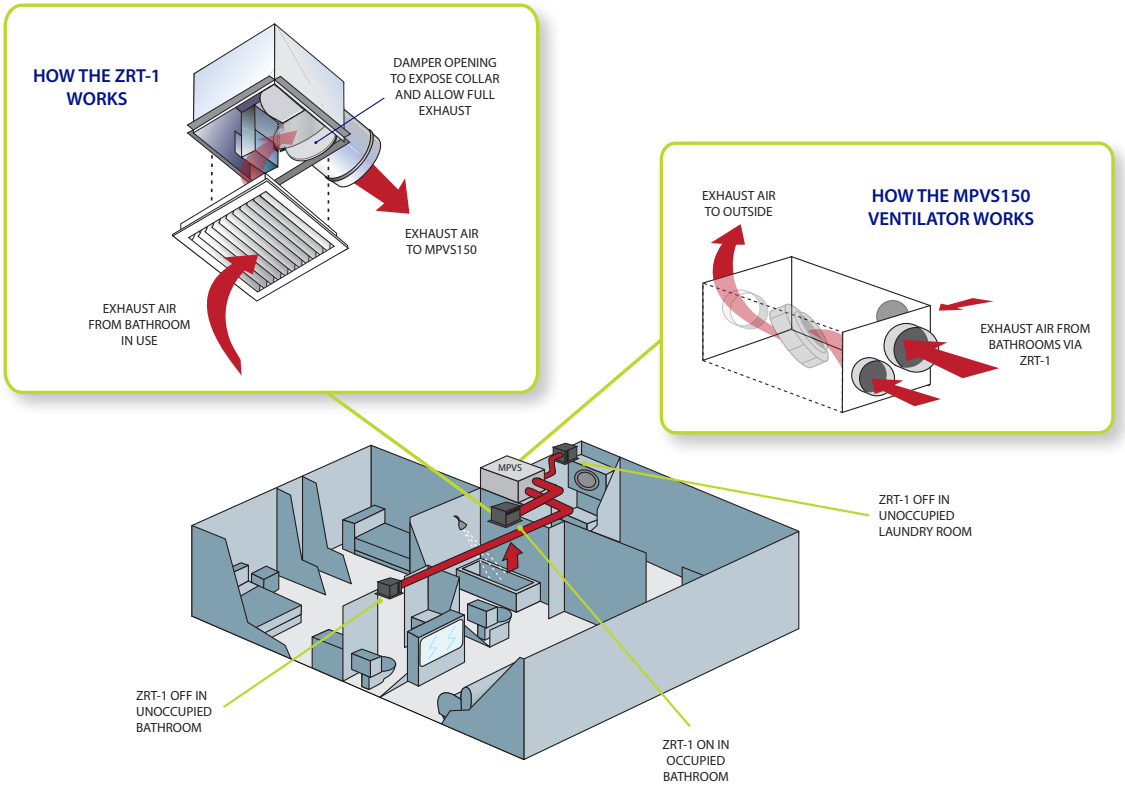
VentZone® VZ Zoned Intermittent Bath Exhaust Kits

PRODUCT SPECIFICATIONS & TECHNICAL DATA

American Aldes VentZone® Systems VZ Zoned Bath Exhaust Kits are the most advanced zoned central exhaust ventilation kits on the market. The combination of an ENERGY STAR rated MPVS150 ventilator and Zone Register Terminals (ZRT-1) provides powerful-yet-silent zone controlled exhaust ventilation from bathrooms that are in use. VZ kits allow for the use of a quiet, high-efficiency fan, and they reduce the load that other central ventilation systems put on heating and cooling systems because they do not ventilate all bathrooms simultaneously – only the one in use. Each VZ kit can support 2-5 bathrooms, and an expansion kit is available for up to 3 additional bathrooms.

VentZone® Systems – VZ Zoned Intermittent Bath Exhaust Kits

Part Number	Kit	Number of Bathrooms	Ventilator	6" ZRT-1 (120 VAC)	4" ZRT-1 (120 VAC)	4" x 4" x 4" Wye
						
39 100	VZ-2	2	MPVS150/614	1	1	--
39 101	VZ-3	3	MPVS150/624	1	2	--
39 102	VZ-4	4	MPVS150/634	1	3	--
39 103	VZ-5	5	MPVS150/634	1	4	1



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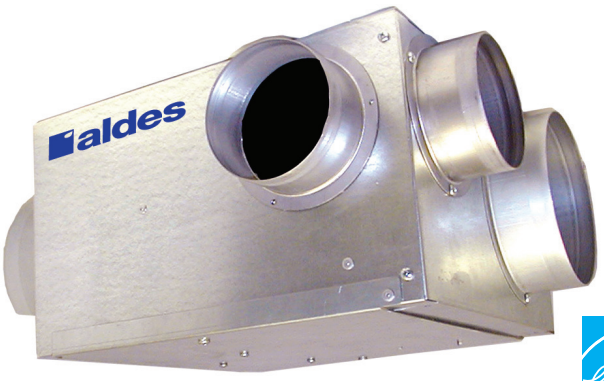
VENTERGY® SERIES FANS

MPVS150 & MPVS200

Multi-Port Exhaust Ventilators

PRODUCT SPECIFICATIONS & TECHNICAL DATA



ENERGY STAR

VENTERGY® SERIES FANS

Ventergy® Series Multi-Port Ventilators (MPVS) are highly versatile, continuous-duty rated fan units for residential and light commercial applications. They meet ENERGY STAR efficiency criteria for low energy consumption. The most popular use for the fan is central exhaust ventilation of bathrooms, kitchens, laundry rooms, and other rooms where humidity is a controlling factor since the fan has a single exhaust discharge duct directly to the outdoors.

The principal advantage of the MPVS is the elimination of standard noisy bath fans, with the benefits of quiet operation and reduced penetrations to the exterior of the building. With the increasingly tight construction of energy-efficient buildings, there is a growing need for mechanical ventilation for indoor air quality. These fans are designed to serve this purpose by providing effective bathroom ventilation with the ability to run intermittently or continuously. The quiet, energy-efficient, permanent-split-capacitor type of external-rotor motor has permanently sealed bearings that provide many years of maintenance-free performance.

CONSTRUCTION

The MPVS is constructed of heavy-gauge galvanized steel to prevent corrosion caused by moisture. The cabinet is internally lined with acoustic, closed-cell foam insulation that acts as a vapor barrier. This allows for installation directly above living spaces or in unheated plenum spaces without concern for noise or condensation.

FAN AND MOTOR

The fan motor is an energy-efficient, permanent-split-capacitor type of external-rotor design. Totally sealed to protect against moisture and contaminants, it is approved for use to remove steam and moisture in kitchen and bath areas. The motor incorporates permanently lubricated and sealed bearings and automatic-reset thermal-overload protection. It is designed and certified for continuous duty or intermittent operation.

The fan uses a backward-inclined impeller design that prevents dust from collecting on the blades. Each fan is statically and dynamically balanced in the factory to eliminate vibration and ensure quiet operation. The entire motor and fan assembly is mounted on a drop-down hinged access panel for simple service and inspection, and it can be removed from the fan without disassembling the duct connections.

CONTROLS

The fans can be operated manually or automatically by a programmable timer or dehumidistat. They may also be operated in conjunction with a variable speed control.

LOCATING AND INSTALLING THE FAN

The compact dimensions and versatile mounting options permit installation above drop ceilings, between ceiling joists, or within a small soffit location. The fan can be installed horizontally or vertically.

ACCESSORIES

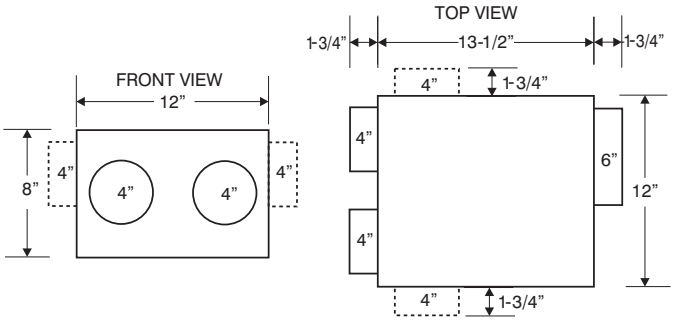
Accessories are available to accommodate two-to-eight bathrooms. Accessories are included only when ordered as a VentZone® VZ Zoned Intermittent Bath Exhaust Kit, a VentZone® IAQ Continuous Exhaust Ventilation Kit, or a Multi-Port Bath Fan Kit (MBFK).

The airflow rates can be set with manually adjustable grilles, such as Aldes Algrilles, or with pre-set Aldes Constant Airflow Regulators (sold separately) and fixed grilles with large free area.

PERFORMANCE

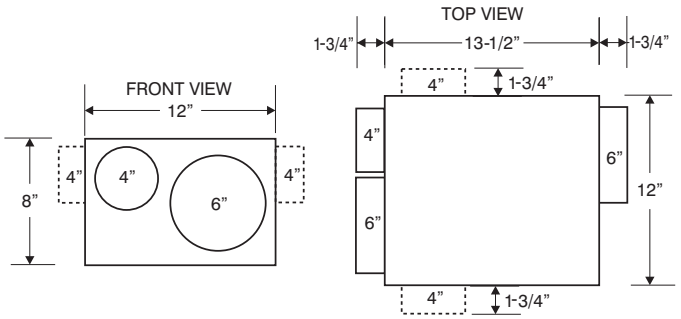
Fan airflow and energy performance shall be tested in accordance with HVI procedures.

DIMENSIONS & DUCT CONFIGURATIONS 414, 424, 434



NOTE: Location(s) of field-installed 4" side-tap collar(s) shown as dashed lines.

DIMENSIONS & DUCT CONFIGURATIONS 614, 624, 634



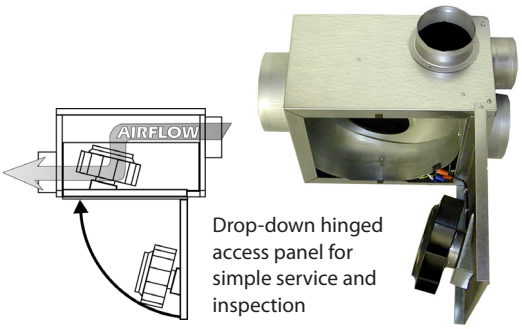
NOTE: Location(s) of field-installed 4" side-tap collar(s) shown as dashed lines.

Performance

ELECTRICAL AND AIRFLOW PERFORMANCE*											
Model	Watts at 0.2" Ps	CFM vs. Static Pressure									ENERGY STAR Certified
		0"	0.2"	0.4"	0.6"	0.8"	1.0"	1.2"	1.4"	1.6	
MPVS150	39.9	212	172	133	101	71	49	17	--	--	✓
MPVS200	62.5	287	257	227	198	168	136	100	65	24	✓

*Certified airflow rating at 0.2" w.g. is derated from actual test results per HVI Certification procedure 920.
NOTE: Performance shown does not reflect use of optional balancing devices.

ELECTRICAL DATA
MPVS150: 115 V, 60 Hz, 41 W, 0.34 A, 2200 RPM
MPVS200: 115 V, 60 Hz, 59 W, 0.53 A, 2960 RPM
Above ratings are intended for sizing electrical wiring only. Actual consumption will be lower.



Drop-down hinged access panel for simple service and inspection

Typical Specification

MULTI-PORT EXHAUST FAN
American ALDES Ventilation Corporation, Florida (1-800-255-7749). ALDES model MPVS150 or MPVS200.

GENERAL
The fan shall be continuous-duty type with a backward-inclined centrifugal blower housed in a multi-port enclosure specifically designed for residential and commercial use. The fan shall be safety tested per UL standards and bear the agency listing certified mark, and be approved for use over cooking areas and tub/shower enclosures when used with GFCI branch circuiting. The fan must meet ENERGY STAR performance criteria for energy efficiency and bear the ENERGY STAR mark.

CONSTRUCTION
The housing shall be of a minimum 22-gauge steel with a G90 galvanized coating or baked enamel paint finish. All interior surfaces of the housing shall be lined with non-porous, closed-cell foam insulation to allow installation above ceilings and in unheated spaces without concern for condensation or absorption of water. The unit shall not exceed 8-1/2" in total height and 14-1/2" in width to allow mounting within ceiling/floor joist spaces. The blower shall be external-rotor motor centrifugal type with backward-inclined impeller blades. The motor and blower assembly shall be mounted on a drop-down hinged access panel so as to permit removal from the housing without disassembly of the ducting connections. The intake duct connections shall be dimensioned so as to accept constant airflow regulators with a secure fit. The intake duct dimensions shall be nominal 4" or 6" depending on model. The discharge duct dimension shall be nominal 6" round. The fan housing and intake duct collar(s) shall be designed to allow removal and repositioning in the field to accommodate different installation requirements. Mounting brackets shall be provided for attachment to the fan housing, allowing vertical or horizontal installations.

MOTOR
The motor shall be direct-drive, external-rotor, high-efficiency, PSC type with permanently lubricated and sealed ball bearings. The motor shall have automatic thermal-overload protection and must be totally sealed to protect against contaminants and moisture. Naturally vented air-over motors are not acceptable.

ELECTRICAL
The fan shall operate on 115V, 50/60 Hz, and single-phase current. The motor shall be listed for use with a solid-state speed control.

CONSTANT AIRFLOW REGULATORS
When specified, each return air intake collar shall accommodate an integral constant airflow control device that operates on duct system pressures and maintains specified airflow rates over a range of 0.2" to 0.8" Ps w.g. Devices shall be calibrated at the factory to the specified airflow rates. The devices shall be field installed in the appropriate duct connections. The device shall not exhaust any air to the outside during operation.

WARRANTY

The entire unit is guaranteed for three (3) years, from date of shipment, against all manufacturing defects, provided the material has been installed and operated per manufacturer's instructions and under normal conditions. Warranty is limited to the repair or replacement of the material upon its return freight paid to our factory. This warranty is not transferable and is limited to the original end user.

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AIRFLOW & ZONE CONTROLS

ZRT®

Zone Register Terminals

PRODUCT SPECIFICATIONS & TECHNICAL DATA

GENERAL

American Aldes patented* Zone Register Terminals (ZRT®) are designed to introduce flexibility and on-demand control to central ventilation systems. Used in both large and small systems, the ZRT® zonally regulates ventilation without the need for individual fans. Each ZRT® is a combination grille, register box, control damper, and optional flow regulator(s). This unique combination provides up to four different control schemes without the need for expensive pneumatic, electronic, or DDC control systems. To ensure the proper calibration of the damper assembly, do not exceed 1.0 in. w.g. (250 Pa) of differential pressure across the damper door.

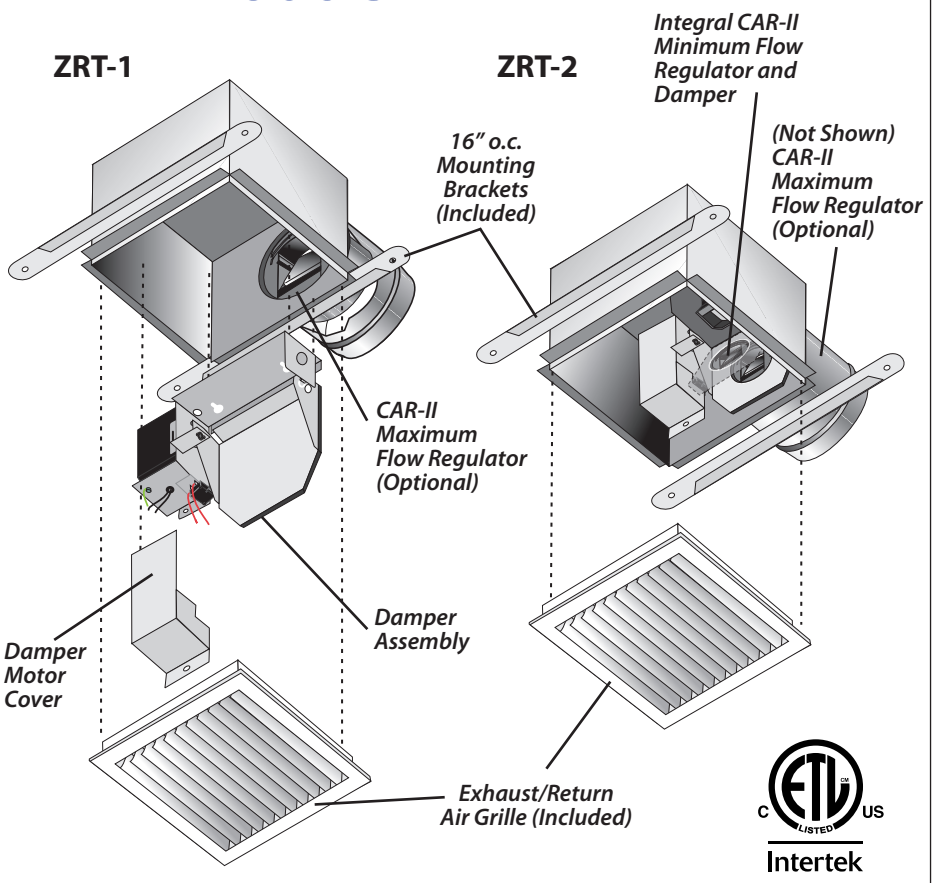
By replacing static grilles in large central exhaust systems, the ZRT-1 model provides on-off control for on-demand ventilation. This allows central fan downsizing and promotes energy savings by minimizing necessary fan horsepower and ventilation-induced heating and cooling loads on the building. The optional Constant Airflow Regulator (CAR-II) can be installed in the ZRT-1's extended duct collar to place a maximum flow limit on each terminal. The automatic operation of the CAR-II will prevent noise and excessive energy consumption caused by over-ventilation, as well as fluctuations in airflow rates as total system pressure varies.

The ZRT-2 model can be used for combination low-flow indoor air quality ventilation and on-demand high-flow spot ventilation using the same central fan system. This is achieved by integrating a minimum Constant Airflow Regulator (CAR-II) directly into the damper sub-assembly. With the damper completely closed, the factory-calibrated CAR-II will still allow steady, low-continuous ventilation during fan operation (consult the CAR-II specifications sheet for sizing and specifying information). When other ZRT® are opened for on-demand control of spot ventilation, the closed ZRT-2 will maintain the specified low-continuous rate through the minimum CAR-II. By opening the ZRT-2's control damper, the low-flow CAR-II is removed from the air stream, allowing either controlled (optional using a second CAR-II) or full maximum-boost ventilation.

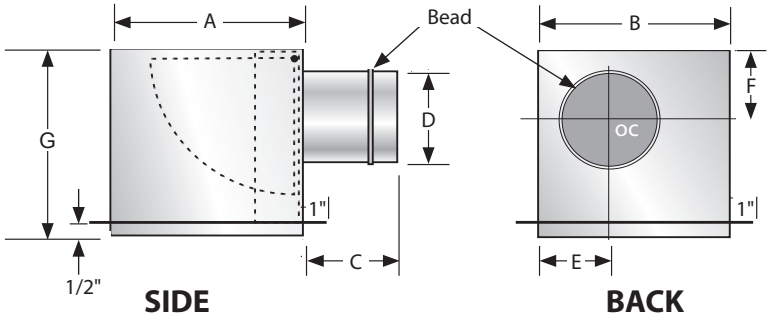
The ZRT® can activate fans used in smaller central exhaust ventilation systems. Through

*U.S. Pat. No. 7,766,734

ZRT® Models



ZRT® Dimensions



SIZE	A	B	C	D	E	F	G
4"	8"	8"	4-1/2"	3-7/8"	2-1/2"	3-1/2"	7"
6"	10"	10"	5-1/2"	5-7/8"	3-1/2"	4-1/2"	8-1/2"

the use of an integral damper end-switch, the ZRT® can trigger the remote fan to start. This provides the distinct advantage of allowing the fan to only ventilate specific spaces when called upon, without the need for separate fans in each space. This is especially important in residential bath exhaust applications using popular in-line and multi-port fans, where low noise and a single exterior vent penetration are desired.

The ZRT® is available with wireless communication relays that respond to occupancy-based control systems for applications such as hotels, dormitories, apartments, etc. These communication relays are available from American Aldes or the room control manufacturer, but they are always installed by American Aldes*.

CONSTRUCTION

The ZRT® is constructed of a heavy-gauge galvanized steel housing for durability. Units are designed for installation in all ceiling types, with an overall height that allows location between floors using 10-inch or larger joist construction. The extended duct collar allows for simple attachment to rigid or flexible ducting, and insertion of an optional Constant Airflow Regulator (CAR-II) for maximum flow control. An integral steel mounting flange assembly encapsulates the ceiling opening and allows for simple attachment of American Aldes white all-aluminum flush-mount exhaust/return grilles. Contact factory to request custom grilles.

The damper assembly is provided with a long-life 24 VAC or 120 VAC actuator motor with spring return. An optional damper end-switch is available to allow signaling of a remote fan to activation. The gasketed tight-seal damper blade prevents air leakage and noise in the closed position. A solid one-piece damper that pivots on permanently lubricated bearings is used to support the blade assembly and to prevent deflection caused by motor torque and exposure to air velocity. The entire damper assembly can be installed or removed from below the register box without disconnecting the duct or removing the box from the ceiling.

CONTROL

The ZRT® can be activated using a variety of control options, including wireless communication relays*, on-off or timer switches, dehumidistats, occupancy sensors, or time-clock switches. Any on-off control device(s) will signal the damper to open fully, providing maximum ventilation control. Upon disconnecting the power, the ZRT's integral spring will return the damper blade to its normally closed position.

A Zone Terminal Fan Control Center (model ZTC) is available for use with up to (8) 24 VAC ZRT®.

Airflow control for both maximum and minimum flow rates is achieved using optional, integral, dynamic Constant Airflow Regulators (CAR-II). The CAR-II is an automatic modulating orifice that regulates airflows to constant levels in response to duct pressure. They require no additional power supply and are ideally suited for use in zone-controlled systems where duct pressures can fluctuate in response to the opening and closing of dampers.

MAINTENANCE

The ZRT® needs no maintenance when used in normal conditions. If the intended application includes air heavily loaded with grease or dust, a filtered grille is recommended.

Reading the Model Code

OPTIONAL MAXIMUM CFM
10, 15, 20, 25, 30, 35, 40, 45, 50, or 60 (4" models)
75, 90, 105, 125, 140, 160, or 175 (6" models)

OPTIONAL MINIMUM CFM†
10, 15, 20, 25, or 30 (4" models)
10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 75, 90, or 105 (6" models)

MODEL
ZRT = Zone Register Terminal

MOTOR VOLTAGE
24 = 24 VAC
120 = 120 VAC

Example	ZRT	-	2	-	4	-	24	MAX	-	60	/	20	WCA

WIRELESS COMMUNICATION OPTIONS
"Blank" = None
WCA* = Wireless communication relay provided and installed by Aldes
FMA* = Communication relay provided by others and installed by Aldes
WCOSG = Stand-alone occupancy sensor and communication relay by Aldes
WCWS = Stand-alone wireless wall switch and communication relay by Aldes

SERIES
1 = No Minimum Flow Control
2 = With Minimum Flow Control

MAXIMUM FLOW CONTROL
"Blank" = No Maximum Flow Control
MAX = With Maximum Flow Control

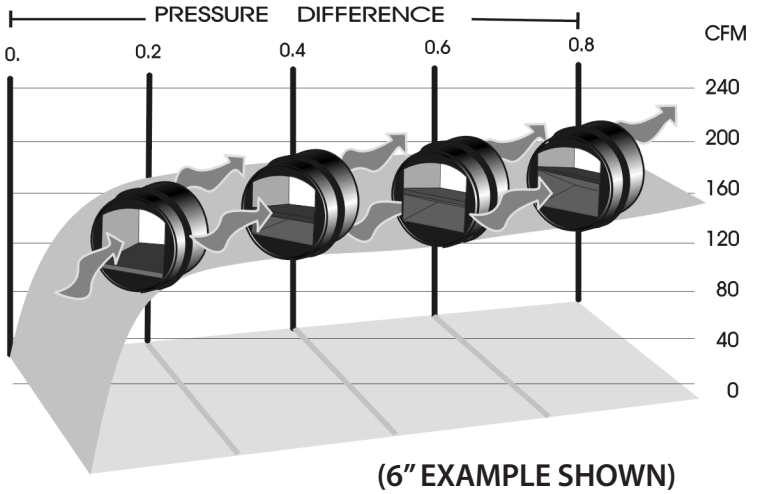
SIZE
4 = 8" x 8" w/4" collar
6 = 10" x 10" w/6" collar

†Minimum setpoint must be lower than maximum setpoint

*Wireless communication relays by Telkonet®, InnCom®, or Magnum Energy Solutions™ only.
Contact factory for availability of controls by others.

How the CAR-II Works

Constant airflow is achieved by controlling the free area through the device. At minimum static pressure, the aero-wing is parallel to the air stream. As the static pressure increases, the aero-wing lifts, reducing the amount of free area through the regulator. At the same time, higher static pressure increases the air velocity resulting in CONSTANT AIRFLOW. This occurs regardless of pressure differences in the range of 0.2 to 0.8 in. w.g. (50 to 200 Pa). The air velocity in the duct is in the range of 60 to 700 ft/min. (0.3 to 3.5 m/s).

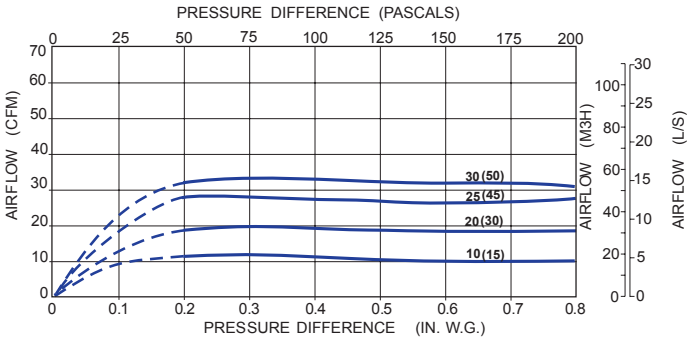


(6" EXAMPLE SHOWN)

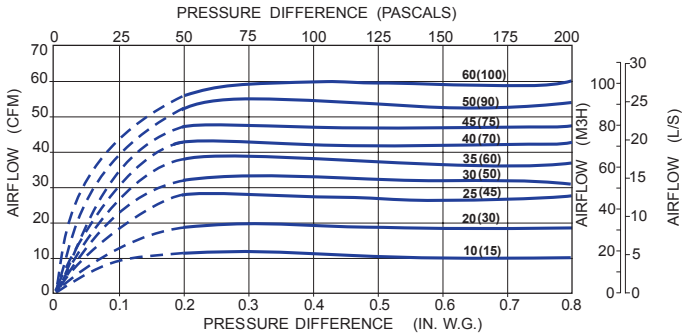
ZRT® Airflow Regulator Performance

Performance curves reflect airflow measurements taken at 68°F (20°C) at 1 atmosphere pressure. The CAR-II is capable of maintaining constant airflow within +/- 10% of scheduled flow rates (15% for units 15 CFM or less) within the operating range of 0.2 to 0.8 in. w.g. differential pressure.

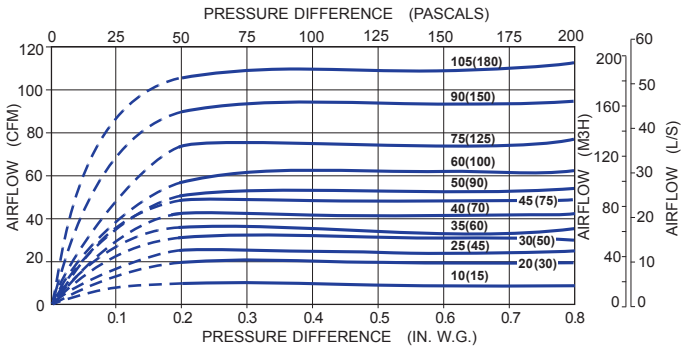
ZRT-2-4 – Minimum Flow Control



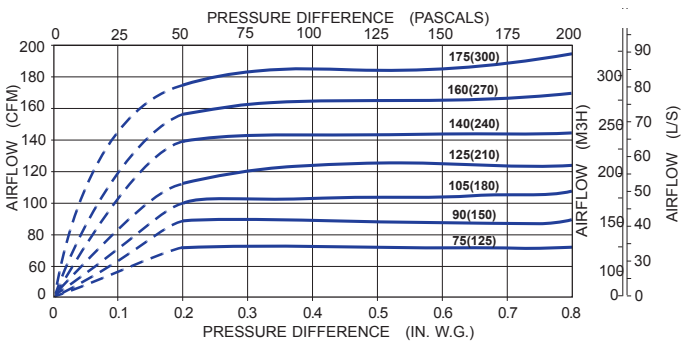
ZRT-1-4 or ZRT-2-4 – Maximum Flow Control



ZRT-2-6 – Minimum Flow Control



ZRT-1-6 or ZRT-2-6 – Maximum Flow Control



ZRT® Acoustic Performance

	AIRFLOW			0.2 in. w.g. (50 Pa)			0.4 in. w.g. (100 Pa)			0.6 in. w.g. (150 Pa)			0.8 in. w.g. (200 Pa)		
	CFM	m^3/h	L/s	Lw-dB(A)	Lw - NR	Lw-NC	Lw-dB(A)	Lw - NR	Lw-NC	Lw-dB(A)	Lw - NR	Lw-NC	Lw-dB(A)	Lw - NR	Lw-NC
Damper Closed w/4" Minimum Flow Control	10	15	4	24	22	21	28	25	24	31	28	26	34	30	29
	20	30	8	25	22	21	30	25	24	34	29	27	37	31	30
	25	45	13	27	24	22	32	26	25	35	30	28	38	32	31
	30	50	14	28	24	22	33	27	25	36	30	28	39	32	31
	35	60	17	31	28	26	37	33	30	38	33	31	42	36	35
	45	75	21	32	28	26	37	33	30	39	34	32	42	37	36
	50	90	25	32	29	26	38	34	31	40	34	33	44	40	38
	60	100	28	34	30	27	39	34	32	41	35	34	43	41	39
Damper Open w/6" Maximum Flow Control	75	130	36	31	27	25	34	32	31	39	36	35	42	39	38
	90	150	42	33	28	27	37	34	33	41	37	35	45	39	38
	105	180	50	34	28	27	40	35	33	44	38	36	46	40	39
	125	210	59	34	29	28	40	36	34	42	37	35	44	38	37
	140	240	67	35	30	28	41	37	34	44	38	36	47	40	39
	160	270	76	37	31	29	43	38	35	45	39	38	49	43	41
	175	300	84	38	32	30	44	39	36	46	41	39	50	44	42

Typical Specification

Furnish and install model ZRT® Zone Register Terminals by American ALDES Ventilation Corporation or approved equal. The exhaust terminals shall be of sizes and capacities and at locations scheduled on the drawings. The terminal casing shall be minimum 24-gauge G90 galvanized steel with an integral duct collar that allows attachment of both rigid and flexible ducting. The collar shall be sized to allow full insertion of a model CAR-II Constant Airfow Regulator for maximum flow control, but without the regulator extending into attaching duct. All terminals must be listed per UL standards and carry the UL or ETL mark indicating compliance. Each ZRT® shall include all necessary mounting brackets and hardware.

The primary air volume mechanism shall be a single-blade damper operated by a long-life 24 VAC or 120 VAC disconnecting-type drive motor with normally closed spring-return closure. When fully open, the damper shall rotate out of the air stream on a solid one-piece damper that pivots on permanently lubricated bearings. A permanently fixed perimeter gasket seal shall be provided to prevent air noise and leakage at the closed position. The ZRT® must be capable of overcoming a minimum of 1.0 in. w.g. (250 Pa) of differential pressure across the damper door. The entire damper assembly and all operable parts shall be capable of being removed from the terminal housing from below without disconnecting duct or removing the housing.

Where indicated on the drawings or schedule, a minimum CAR-II airflow modulating control device shall be incorporated into the damper assembly. The control device shall respond to changes in duct pressure to maintain specified flow rates at a constant level. The minimum CAR-II shall be calibrated at the factory. Mechanical damper stops are not acceptable. Where a maximum flow is indicated on the drawings and/or schedule, a model CAR-II Constant Airflow Regulator shall be installed in the terminal's duct collar. VAV terminal units with analog electronic or direct digital controls may be used as an alternative. Installation shall be per all applicable codes and manufacturer's instructions.

WARRANTY

The entire unit is guaranteed for three (3) years, from date of shipment, against all manufacturing defects, provided the material has been installed and operated per manufacturer's instructions and under normal conditions. Warranty is limited to the repair or replacement of the material upon its return freight paid to our factory. This warranty is not transferable and is limited to the original end user.

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Wyes

4″ - 10″

DIMENSIONAL DATA			
PART NUMBER	DIA. A	DIA. B	DIA. C
93 081	4″	3″	3″
93 082	4″	4″	4″
93 087	5″	4″	4″
93 083	5″	5″	5″
93 086	6″	4″	4″
93 085	6″	5″	5″
93 084	6″	6″	6″
93 090	8″	8″	8″
93 091	8″	6″	6″
93 094	10″	10″	10″
93 095	10″	8″	8″

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