



RESIDENTIAL SYSTEM SOLUTIONS






VentZone® Systems

VentZone® Zoned IAQ with Energy Recovery Kits

PRODUCT
SPECIFICATIONS
& TECHNICAL
DATA

VentZone® Zoned IAQ Kits with Energy Recovery combine a Standard Residential Energy Recovery Ventilator (ERV) with residential Zone Register Terminals (ZRT® - R) for continuous IAQ exhaust and on-demand boost exhaust. Each ZRT® is installed in one bathroom in the house. These kits transfer sensible and latent energy between stale exhaust air and fresh supply air, lowering the load on heat and cooling systems. The 24V ZRT® - Rs in the VentZone system are powered by the HRV, significantly reducing installation costs. Model E190-TRG is ENERGY STAR Qualified (Canada).

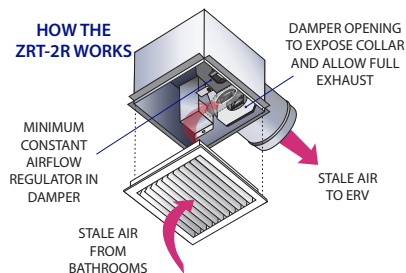
VentZone® Zoned IAQ Kits with Energy Recovery

Part Number	System	Number of Bathrooms	Airflow @ 0.2 in. w.g.	Ventilator	6" ZRT-2-6-24R (24V) 10/20/30 CFM	4" ZRT-2-4-24R (24V) 10/20/30 CFM	4" ZRT-1-4-24R (24V)	20/40/60 Push Button Timer
								
R39 421-24	VZ-IAQ-E150-P2-24V	2	120 CFM	E150-TRG	--	2	--	2
R39 422-24	VZ-IAQ-E150-P2.5-24V	2.5	120 CFM	E150-TRG	--	2	1	3
R39 423-24	VZ-IAQ-E190-P2.5-24V	2.5	183 CFM	E190-TRG	1	1	1	2
R39 424-24	VZ-IAQ-E190-P3-24V	3	183 CFM	E190-TRG	1	2	--	3
R39 425-24	VZ-IAQ-E190-P3.5-24V	3.5	183 CFM	E190-TRG	1	2	1	4
R39 428-24	VZ-IAQ-E190-P4.5-24V	4.5	183 CFM	E190-TRG	1	3	1	5
R39 429-24	VZ-IAQ-E190-P5-24V	5	183 CFM	E190-TRG	1	4	--	5

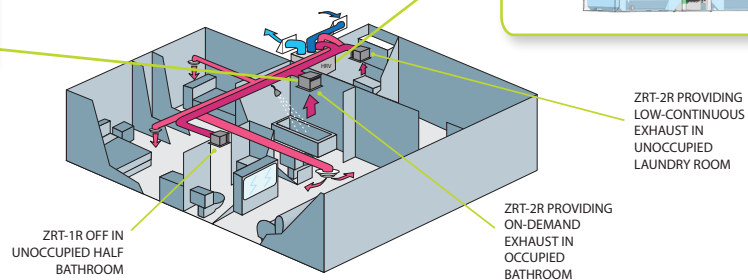
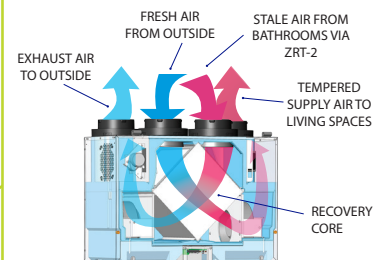
Accessories for VentZone® Kits

Part Number	Description	ZRT-1-6-24R	Digital Multifunction Wall Control	Shipping Weight
R39550-24	ZRT and multi-function wall control	1	1	11lb

HOW THE ZRT-2R WORKS



HOW THE ERV WORKS





STANDARD RESIDENTIAL
E150-TRG
Energy Recovery Ventilator
For VentZone® Systems

PRODUCT
SPECIFICATIONS
& TECHNICAL
DATA



PRODUCT DESCRIPTION

Compact size, large performance – the E150-TRG energy recovery ventilator produces approximately **120 CFM** at 0.20 in.w.g (ESP) and recovers sensible and latent heat through its high-latent-transfer membrane core. The E150-TRG has been thoughtfully engineered for simple installation in apartments, condos, and small houses. The removable collars are top-mounted, which makes the unit both narrow and shallow enough to fit inside standard closets and other tight spaces.

The E150-TRG has two exclusive features. EvacMAX™ provides on-demand boost for maximum ventilation. With FLEXControl, airflow circuits can be calibrated electronically, eliminating the need for resistance-inducing balancing dampers and improving overall efficiency.

KEY FEATURES

- Damage-free packaging protects the unit in transit and makes it easy to remove it from the carton without damaging the collars
- Electronically and independently adjustable supply and exhaust blowers (FLEXControl)
- Gauge ports on the door for fast and reliable airflow readings
- Twist-in collars for easy flex-duct attachment
- Non-dust-loading backward-inclined impellers on totally enclosed motors
- Snap-out motor decks
- Easy access to core and filters for cleaning
- Extremely durable core
- Standard MERV 6 filters
- Multiple low-voltage controller options
- Recirculating defrost collar snaps into pre-punched area of cabinet for ducting flexibility
- Compatible with third-party controls, such as smart thermostats

CASING

Material: Pre-painted 24-gauge galvanized steel
Duct Connections: Ø 5" (Ø 127 mm)
Insulation: Molded EPS
Width: 23-1/8" (587 mm)
Height: 16-3/4" (425 mm)
Depth: 12-3/8" (314 mm)
Weight: 32 lbs (15 kg); Shipping Weight: 40 lbs (18 kg)
Supply Damper: Motorized

MOUNTING

- Suspended by chains with vibration-isolating springs
- Wall-mounting accessory available (P/N: 608575)

RECOVERY CORE

Material: High-Latent-Transfer Enthalpy

BLOWERS

Quantity: 2
Type: Motorized impellers (backward-inclined)

ELECTRICAL REQUIREMENTS

120 VAC, 60 Hz, 1.3 A, 156 W
Cord Set: 48" (1219 mm) with ground

CONTROLS

Low voltage terminal strip (24 VAC) for:

- 20/40/60 Minute Timer (P/N: 611228)
- Digital Multifunction Control (P/N: 611242)

HVAC FAN INTERLOCK

Onboard dry contact connection to allow direct interlock with a forced air system. Ensures proper air distribution during ventilation cycles when air exchanger is connected to forced air system ductwork.

FROST CONTROL

- Automatic timed recirculation, fifth port
- Cycles controlled by a temperature sensor when the outdoor temperature drops below 14°F (-10°C)

FILTERS

Quantity: 2
Type: MERV 6 (P/N: 612409)

WARRANTY

Core Assembly: Limited 2-year warranty
All Other Covered Components: Limited 5-year warranty

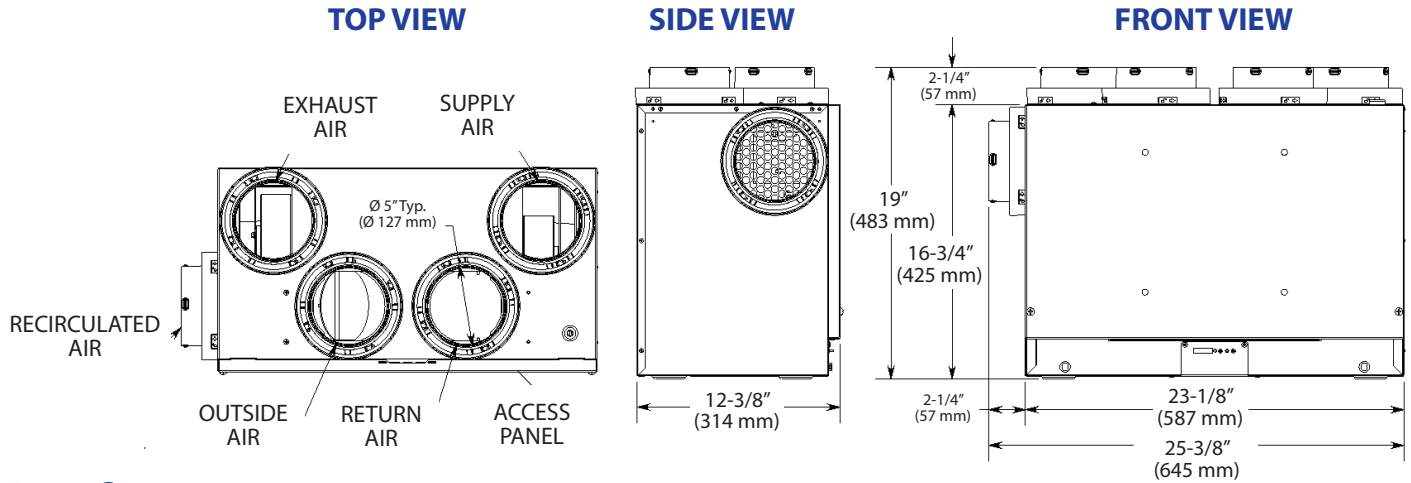
APPROVALS

Meets Standards:

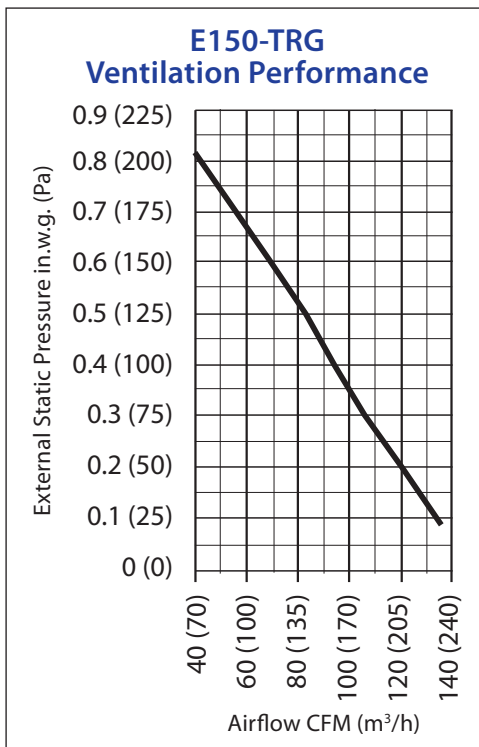
- C22.2 no113 and UL 1812



Dimensions



Performance



Recovery Performance

Outside Air Temperature		Net Airflow		Power Consumed (W)	Sensible Recovery Efficiency	Apparent Sensible Effectiveness	Latent Recovery/ Moisture Transfer	Total Recovery Efficiency
°F	°C	CFM	L/s					
Heating								
32	0	54	26	46	71%	81%	61%	--
32	0	65	31	50	68%	75%	56%	--
32	0	106	50	92	62%	70%	49%	--
-13	-25	50	23	65	61%	78%	56%	--
Cooling								
95	35	51	24	46	--	--	--	54%

Project:		Architect:	
Location:		Engineer:	
Model #:		Contractor:	
Quantity:		Comments:	
Submitted By:			
Date:			



STANDARD RESIDENTIAL E190-TRG Energy Recovery Ventilator For VentZone® Systems

PRODUCT
SPECIFICATIONS
& TECHNICAL
DATA



PRODUCT DESCRIPTION

Compact size, large performance – the E190-TRG energy recovery ventilator produces approximately **165 CFM** at 0.4 in w.g. (ESP) and recovers sensible and latent heat through its high-latent-transfer core. The E190-TRG has been thoughtfully engineered for simple installation in small businesses and spacious houses.

The E190-TRG has two exclusive features. EvacMAX™ provides on-demand boost for maximum ventilation. With FLEXControl, airflow circuits can be calibrated electronically, eliminating the need for resistance-inducing balancing dampers and improving overall efficiency.

KEY FEATURES

- Electronically and independently adjustable supply and exhaust blowers (FLEXControl)
- Gauge ports on the door for fast and reliable airflow readings
- Removable top-mounted collars
- Twist-in collars for easy flex-duct attachment
- Non-dust-loading backward-inclined impellers on totally enclosed motors
- Easy access to core and filters for cleaning
- Durable core with exceptional moisture transfer for more comfort
- Optional high-efficiency filters
- Multiple low-voltage controller options
- Recirculating defrost collar snaps into pre-punched area of cabinet for ducting flexibility
- Compatible with third-party dry contact controls, such as smart thermostats.

CASING

Material: Pre-painted 24-gauge galvanized steel
Duct Connections: Ø 6" (Ø 152 mm)
Insulation: 1" (25 mm) Fiberglass with FSK
Width: 29-5/16" (745 mm)
Height: 19-7/16" (494 mm)
Depth: 15-11/16" (398 mm)
Weight: 50 lbs (23 kg); Shipping Weight: 56 lbs (25 kg)
Supply Damper: Motorized; Exhaust Damper: Gravity

MOUNTING

Suspended by chains with vibration-isolating springs

RECOVERY CORE

Material: High-latent-transfer enthalpy

BLOWERS

Quantity: 2
Type: Motorized impellers (backward-inclined)

ELECTRICAL REQUIREMENTS

120 VAC, 60 Hz, 1.8 A, 216 W
Cord Set: 48" (1219 mm) with ground

CONTROLS

Low voltage (24VAC) for:

- Digital Multifunction Control (P/N 611242)
- 20/40/60 Minute Timer (P/N 611228)

HVAC FAN INTERLOCK

Onboard dry contact connection to allow direct interlock with a forced air system. Ensures proper air distribution during ventilation cycles when air exchanger is connected to forced air system ductwork.

FROST CONTROL

- Automatic timed recirculation, fifth port
- Cycles controlled by a temperature sensor when outdoor temperature drops below 14°F (-10°C)

FILTERS

Quantity: 2
Type: Aluminum (P/N 612261)
Optional: Carbon (P/N 612262), MERV 6 (P/N 612408) or high-efficiency MERV 13 (P/N 612263)

WARRANTY

Core Assembly: Limited 2-year warranty
All Other Covered Components: Limited 5-year warranty

APPROVALS

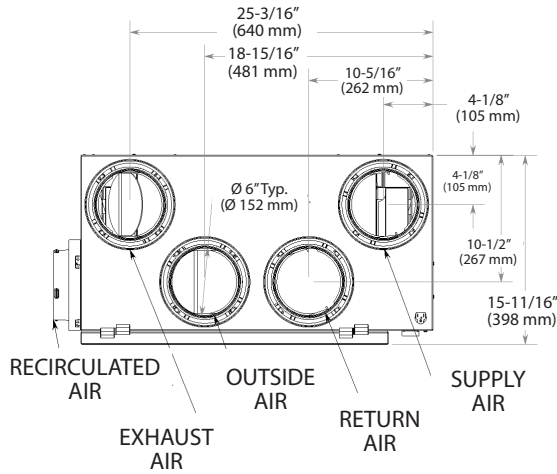
Meets Standards:

- C22.2 no113 and UL 1812
- ENERGY STAR® qualified (Canada)

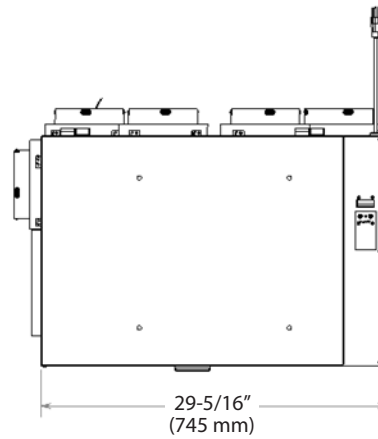


Dimensions

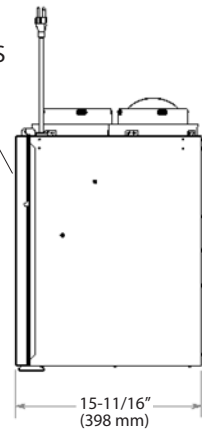
TOP VIEW



FRONT VIEW

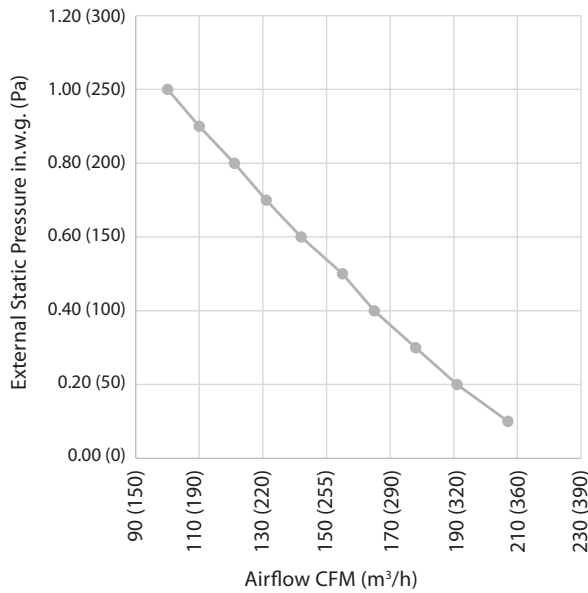


SIDE VIEW



Performance

E190-TRG
Ventilation Performance



Recovery Performance

Outside Air Temperature		Net Airflow		Power Consumed (W)	Sensible Recovery Efficiency	Apparent Sensible Effectiveness	Latent Recovery/ Moisture Transfer	Total Recovery Efficiency
°F	°C	CFM	L/s					
Heating								
32	0	51	24	52	76%	87%	0.69	--
32	0	81	38	62	72%	80%	0.66	--
32	0	119	56	106	67%	75%	0.60	--
-13	-25	74	35	89	60%	79%	0.63	--
Cooling								
95	35	81	38	62	--	--	0.55	56%



Project:		Architect:	
Location:		Engineer:	
Model #:		Contractor:	
Quantity:		Comments:	
Submitted By:			
Date:			



ZRT-R

ZONE REGISTER TERMINALS

AIRFLOW & ZONE CONTROL

Made in
USA

WARRANTY
3 YEARS

Patent
pending



Product Description

Aldes patented Zone Register Terminal (ZRT-R)* are designed to introduce flexibility and demand control to central ventilation systems. The multi-zone ZRT® regulates ventilation without need for individual fans. Each ZRT-R 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.

When used in central systems, the ZRT-1 model provides on-off control for on-demand ventilation. This allows 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 (CAR3) can be installed in the ZRT-1's extended duct collar to place a maximum flow limit on each terminal when activated. The automatic operation of the CAR3 will provide precise balancing to each terminal, compensating for intermittent use of other ZRTs around the building, as well as factors like stack-effect.

The ZRT-2 model is used for combination low-flow continuous 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 (CAR3) directly into the damper assembly. When the ZRT-2 is powered on, the control damper powers open, bypassing the low-flow CAR3 to allow the boost ventilation rate set by the maximum flow CAR3 (when equipped).

Construction

- Gasketed damper blade ensures a tight seal preventing unwanted air leakage and noise in closed position.
- Constructed of 24-gauge galvanized steel housing for durability.
- 24 VAC, 120 VAC, or 230 VAC actuator motor with spring return damper assembly.
- Painted white extruded aluminum grille; blades fixed at 38°.
- Optional CAR3 constant airflow regulator.

Key Features

- Provides on-off control for on-demand ventilation.
- Combination low-flow continuous ventilation and on-demand high-flow spot ventilation using the same central fan system (ZRT-2).
- All access for service through grille; no additional access panel required.

APPLICATIONS

- Occupancy-based control systems for hotels, dormitories and high-rise residential.
- Large and small commercial systems.
- Intermittent ventilation for bathrooms and kitchens.
- ALDES VentZone Systems.

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

How to Specify Aldes: ZRT-R

Step 1: Reference the model code below and performance details within this specifications sheet to select the appropriate ZRT-R.

Step 2: Determine the **SERIES** required for your specific project.

NOTE: The ZRT is available with or without a minimum flow option for application requiring low volume continuous airflows. The minimum flow control equips a CAR3 to provide a balanced minimum airflow rate. Factory calibration of the minimum flow CAR3 is available on request.

Step 3: Select the required **SIZE**.

Step 4: Select the required motor based on available **POWER**.

Step 5: If equipped, select the **MAXIMUM FLOW CONTROL**.

NOTE: The different size models have different airflow ranges. See *Airflow Settings and Performance Data* for additional details. Factory calibration of the maximum flow CAR3 is available on request.

Model Code Example

ZRT-R-2-4-24

PARENT MODEL

Zone Register Terminal

APPLICATION

R: Exhaust

SERIES

1: No Minimum Flow Control
2: With Minimum Flow Control

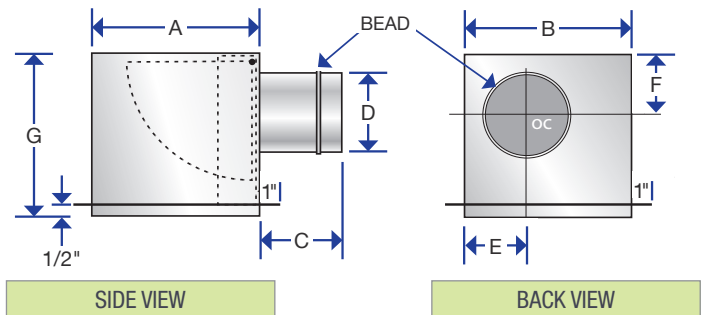
SIZE

4: 8" x 8" Grille w/ 4" collar
6: 10" x 10" Grille w/ 6" collar

POWER

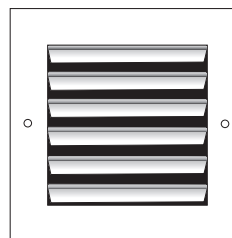
24: 24 V/60Hz
120: 120 V/60Hz
230: 230 V/50Hz

ZRT-R Dimensions



Size	A	B	C	D	E	F	G
4" (100 mm)	8" (203 mm)	8" (203 mm)	4-1/2" (114 mm)	3-7/8" (98 mm)	2-1/2" (64 mm)	3-1/2" (89 mm)	7" (177 mm)
6" (150 mm)	10" (254 mm)	10" (254 mm)	5-1/2" (140 mm)	5-7/8" (149 mm)	3-1/2" (89 mm)	4-1/2" (114 mm)	8-1/2" (216 mm)

EXHAUST GRILLE



*Optional Finishes: anodized or black.
Contact Aldes representatives for additional colors.*

Warranty

The entire unit is guaranteed for 3 years, from date of shipment, against all manufacturing defects, provided the material has been installed & operated per manufacturer's instructions & 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 & limited to the original end user.

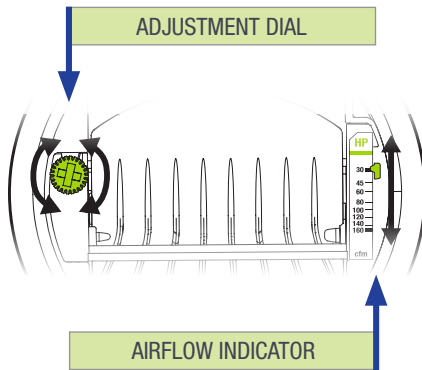
Maintenance

The ZRT-R needs no maintenance when used in normal conditions. If the intended application includes air heavily loaded with grease or dust, access to all components of the assembly is through the removable grille for cleaning.

Control

The ZRT-R is a normally-closed, spring-return damper mechanism which can be powered by any on-off control device(s). When powered, the control damper will fully open. Upon disconnecting the power, the ZRT integral spring will return the damper to the closed position. The included confirmation switch can be used to monitor ZRT status, or power other devices. Any on-off control device(s) will signal the damper to open fully, providing maximum ventilation control.

Optional Constant Airflow Regulator used to regulate airflows to constant levels in response to duct pressure. Use the CAR3 to control for both maximum and minimum flow rates.



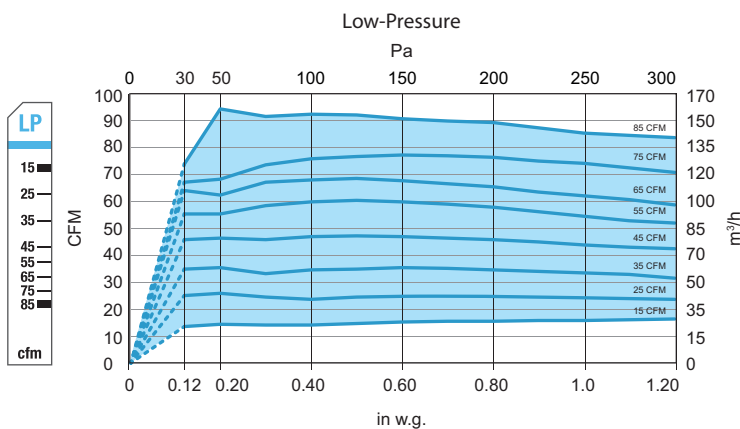
Airflow Settings & Performance Data

When equipped, the CAR3(s) installed in the ZRT can be factory calibrated, or field set as necessary per the specified airflow rates. The ZRT-2 is equipped with a minimum flow low-pressure, 4" CAR3 (model CAR3L4R4) as standard for both the 4" and 6" ZRTs. When equipped, the maximum flow regulator on the 4" ZRT is a low-pressure, 4" CAR3 (model CAR3L4R4), and the 6" ZRT is a low-pressure, 6" CAR3 (model CAR3L6R6).

Airflow rate can be set or adjusted by rotating the dial from either side. The airflow indicator will move to show the selected CFM. The airflow label has multiple defined setpoints, but the unique adjustment mechanism of the CAR3 allows for infinite adjustability between the minimum and maximum limits.

Performance charts found in the specifications sheet reflect this data, with the available range (shaded) and marked setpoints (lines). The CAR3 will maintain the airflow accurately to within +/- 10% of the indicated lines below for each marked setpoint. At the higher airflow rates, the minimum pressure required to achieve the selected airflow may exceed 0.12 in. w.g.

ZRT with CAR3 4" DIAMETER (100 mm)



Recommended Specification

Furnish and install model ZRT-R Zone Register Terminals by ALDES North America. The exhaust terminals shall be of sizes and capacities as scheduled, and located per the drawings. The terminal casing shall be minimum 24-gauge G90 galvanized steel with an integral steel duct collar that allows attachment of both rigid and flexible ducting. The collar shall be sized to allow full insertion of a model CAR3 Constant Airflow Regulator for maximum flow control, but without the regulator extending into attaching duct. All terminals must be listed per UL 507 standards and carry the UL or ETL mark indicating compliance. Each ZRT-R shall include painted aluminum grille and all necessary mounting brackets and hardware.

The primary air volume mechanism shall be a single-blade damper operated by a long-life 24 VAC, 120 VAC, or 230 VAC disconnecting-type drive motor with permanently lubricated bearings and normally closed spring-return closure. When fully open, the damper shall rotate out of the air stream as a single piece. A permanently fixed perimeter gasket seal shall be provided to prevent air noise and leakage at the closed position. The ZRT-R 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 components shall be accessible or capable of being removed for maintenance or cleaning through the grille and without disconnecting the duct.

Where indicated on the drawings or schedule, a minimum airflow CAR3 shall be incorporated into the damper assembly. The control device shall respond to changes in duct pressure to maintain the specified flow rate at a constant level. Mechanical damper stops for balancing are not acceptable. Where a maximum flow is indicated, a CAR3 shall be installed in the terminal's duct collar. Adjustment of airflow setpoint on either the minimum or maximum flow CAR3 shall be possible without removal from the assembly. Installation shall be per all applicable codes and manufacturer's instructions.



RESIDENTIAL HRV/ERV Controls

For Use with VentZone® Systems

PRODUCT
SPECIFICATIONS
& TECHNICAL
DATA

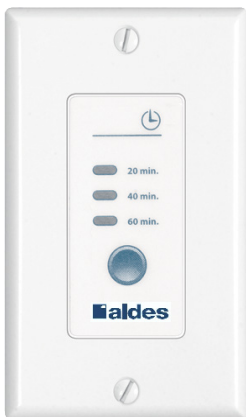
These controls allow you to easily activate a variety of functions at the touch of a button. Each control fits inside any 2" x 4" service box. All controls include retaining screws and a white deco wall plate.

Digital Multifunction Control (P/N 611242)



- Complete control over HRV/ERV:
- Dehumidistat mode
- ECO Mode (low-speed air exchange for 20 minutes of every hour)
- High Occupancy Mode (high-speed air exchange for 1, 2, or 4 hours when more people are in the space)
- Air exchanger maintenance indicator
- Relative humidity display
- 1" x 1" Liquid-crystal display
- Blue LED backlight (configurable as a nightlight)
- Compatible with 20/40/60 Minute Timer (P/N 611228)
- 24 VAC
- Fits inside 2" x 4" service box
- Includes retaining screws and white Decora™-style faceplate

20/40/60 Minute Timer (P/N 611228)



- Activates the HRV/ERV to operate on high-speed mode for 20, 40, or 60 minutes
- Works with Digital Multifunction Control (P/N 611242)
- 24 VAC
- Fits inside 2" x 4" service box
- Includes retaining screws and white Decora™-style faceplate

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