RESIDENTIAL VENTILATION GUIDE 2021

SUPPLY VENTILATION

FREE COOLING

BALANCED VENTILATION

COMFORT SOLUTIONS

ACCESSORIES

FOUNDATION VENTING

FIELD CONTROLS

Get all of the Field Controls Reference Guides online at fieldcontrols.com

or contact us at 252.522.3031 or sales@fieldcontrols.com

Contractor Reference Guide

Since 1927, the focus of Field Controls has been the control and movement of air. We lead the industry in venting, combustion, and draft control. For the latest in venting, combustion, and draft control, ask for the Field Contractor Reference Guide, your guide for product information, specifications, installation, wiring, and replacement parts.

Air Treatment Guide

The Air Treatment Guide features the industry's most complete line of IAQ products and solutions. Included in the guide are specifications on media filters, UV air purifiers, and PRO-Cell™ technology, plus wiring diagrams, installation options, and replacement parts.

Healthy Hearth Guide

Field Controls' expertise in air movement and control allowed us to develop the Flue Sentinel® line of products for a home's hearth. Flue Sentinel products operate automatically with any gas log system to ensure proper and safe venting. This guide will introduce you to our full line of hearth options.

Join us online

FORM #4366
2021

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FIELD CONTROLS
Improving Indoor Environments
fieldcontrols.com

Assembled in USA

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FIELD CONTROLS
Improving Indoor Environments

Field Controls Ventilation

Field Controls is focused on the movement of air inside the home. Since 1927, we have been an HVAC leader in combustion and venting of residential appliances. We are also an innovator in comprehensive indoor air quality.

At Field Controls, we consider every home as a system and every central HVAC system as an opportunity to deliver air that is fresh, clean, and pure. Our intent is to provide reliable, practical, and proven ventilation that meets codes and satisfies homeowner expectations for comfort, safety, and energy efficiency.

This guide will introduce you to our full line of ventilation options for home builders and HVAC contractors. Our ventilation solutions meet the needs of every home and are compatible with any HVAC system. Our options range from intelligent Supply Systems using central fan integrated ventilation (CFIV) to Balanced Heat and Energy recovery systems, known as HRV and ERV systems.

We would very much like to talk with you about your applications and help you choose the right combination of products to meet your needs.

Sincerely,

Patrick T. Holleran
President
Field Controls, LLC

Controlled Ventilation

OVERVIEW

The Home Is A System

A home needs to breathe much the way humans do by taking in good air and exhausting bad air. Efforts to make homes more energy efficient — such as weather stripping, sealants, and moisture barriers — have tightened the home, reducing air changes and trapping stale air indoors. Exhaust ventilation, such as bath fans, can make indoor air worse by creating negative pressure and drawing poor or toxic air into the home from the garage or other undesirable locations. Since we spend 90 percent of our time indoors, this compromised air quality can impact our health and safety.

SUPPLY VENTILATION SOLUTIONS

Bedrooms, Bathrooms, Living Room & Home Office

Bad air can enter the home around windows, doors, and electrical outlets and under base mouldings.

COMFORT SOLUTIONS

Laundry Room

Clothes dry faster with balanced ventilation. Fresh air dilutes VOCs.

Kitchen

Fresh air dilutes odors and VOCs and can balance the effects of range hoods.

FOUNDATION VENTILATION SOLUTIONS

Crawl Space & Basement

Negative pressure pulls radon, mold, and other contaminants into the living space.

Better Air For Better Living

Controlled Ventilation Is The Solution

Fresh air is vital for the health of the occupants and the health of the home. New energy efficiency requirements have tightened homes to the point that fresh air ventilation must be managed. Our Supply and Balanced ventilation products are designed to automatically provide fresh air ventilation. Our products comply with ASHRAE 62.2 and Title 24 ventilation standards while improving indoor air quality and comfort in the home.

Types of Ventilation

OVERVIEW

CFIV Supply Ventilation

Our central fan integrated supply ventilation solutions (CFIV) leverage the home's existing HVAC system to distribute fresh air ventilation throughout the home. Additionally, a CFIV takes advantage of existing whole-house filters and air purifiers to clean the incoming air.

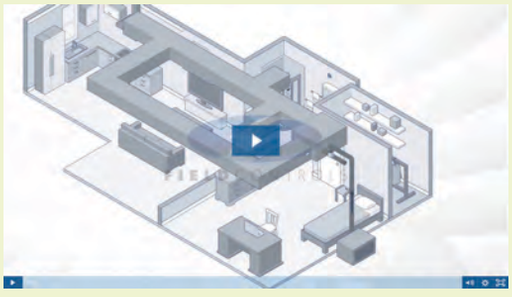
Balanced Ventilation

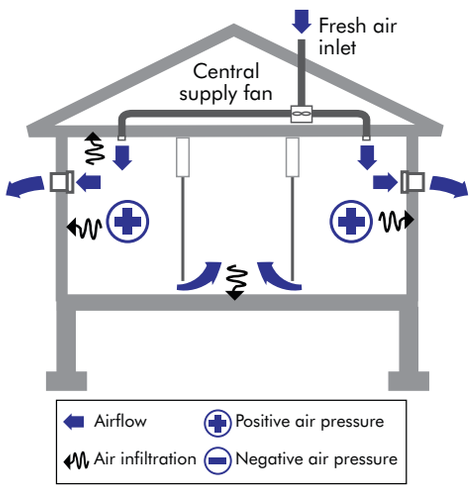
Our balanced ventilation solutions have the added benefits of exchanging heat and energy between the exhaust and supply to temper the air and save energy before it is evenly distributed throughout the home.

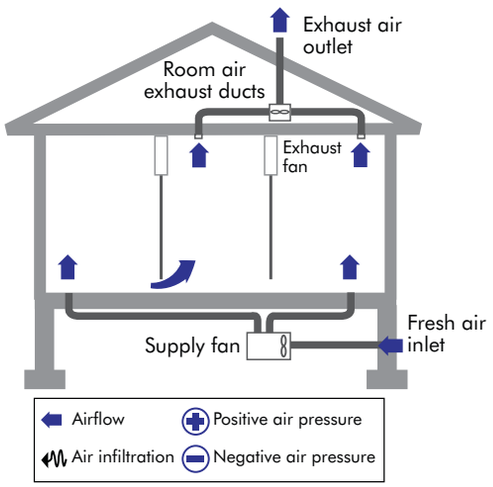
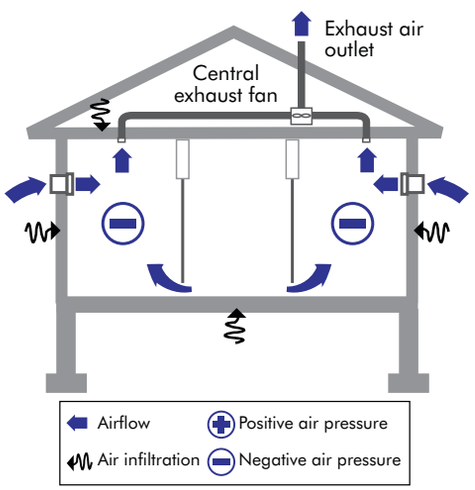
Exhaust Ventilation

Exhaust ventilation systems, like those in bathrooms, remove air from a particular location, and often lead to depressurization in the home. Depressurization means replacement air or make-up air will infiltrate through leaks in the building shell and other uncontrolled sources like the garage, attic, crawl space, or other undesirable locations.

Go to fieldcontrols.com/videos
or our YouTube channel
to learn more about the
Different Types of Ventilation.



OVERVIEW	SUPPLY
	 **Fresh Air Ventilation (FAV)** Uses the central fan to supply outdoor air through a controlled duct
ASHRAE 62.2 Compliant	✓
Efficiency	High
Effectiveness in Controlling Indoor Air Quality	High
Installation Cost	Medium
Controls Source of Fresh Air Intake	✓
Integrates with Existing HVAC Central Fan	✓
Distributes Fresh Air Through Home	✓
Operates Intermittently	✓
Operates Continuously	⊘
Noise Level When Operating	Low
Indoor Humidity Monitoring	✓
Outdoor Temperature Monitoring	✓
Ability to Monitor/Credit Exhausting Air Appliances	✓
Prevents Infiltration During Off Periods	✓
Treats Indoor Air with Use of Media Air Cleaners, UV Air Purifiers, etc.	✓
	

	BALANCED	EXHAUST
		
	HRV and ERV Use an internal fan to supply air into the home while simultaneously exhausting an equivalent amount of incoming air out of the home	**Bath Fans** Use dedicated fan or bath fan to exhaust air from the home
	✓	✓
	Very High	Low
	High	Low
	High	Low
	✓	⊘
	✓	⊘
	✓	⊘
	✓	⊘
	✓	✓
	Low	High
	✓	⊘
	⊘	⊘
	⊘	⊘
	✓	⊘
	✓	⊘
		

Fresh Air Ventilation Control (FAVC)

INTELLIGENTLY MANAGE FRESH AIR

The Fresh Air Ventilation Control (FAVC) effectively manages the central fan to deliver required ventilation. While the setup is simple and intuitive, this new control is brimming with additional capabilities that have contractors and builders truly excited. The control monitors enthalpy conditions and can interface with multiple additional exhaust fans to adjust and deliver ventilation intelligently. It can even respond to the clothes dryer, kitchen exhaust fan, or fireplace to deliver make-up air in the home while preventing overventilation and unnecessary energy cost.

Controls based on timers are inefficient and waste energy since they run on a pre-set time and not actual airflow. Exhaust-only fans, like those in bathrooms and kitchens, can remove stale indoor air but can create negative pressure within the home, which means unhealthy air from undesirable spaces like the crawl space or garage may be introduced. The FAVC is different. It powers the central fan for shorter, more frequent airflow cycles every 30 minutes. The FAVC comes pre-set from the factory and is easily adjusted to the square footage and number of bedrooms of the dwelling.

The FAVC also offers the option of monitoring and/or controlling up to four appliances to evenly balance fresh air ventilation. Appliances include damper, HRV/ERV, HVAC central blower, clothes dryer, kitchen exhaust fan, bath fan, central vacuum, and others.

SUPPLY

Benefits

- Complies with ASHRAE 62.2-2010, 2013, and 2016
- New or existing single- or multi-family operation
- Simple installation
- Smart controller
- Controls three (3) appliances (including ventilation damper)
- Monitors four (4) exhaust fan appliances
- Adjustable airflow dial settings for individual exhaust fan appliances
- Individual heat and cool airflow settings for HVAC central fan
- Inhibits fresh air ventilation based on outside temperature levels and indoor relative humidity setting

Go to fieldcontrols.com/videos or our YouTube channel to learn more about the Fresh Air Ventilation Control.

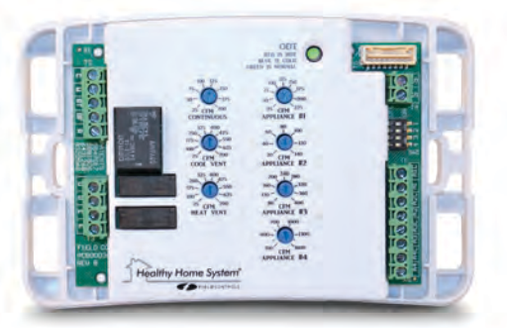
Features

- Factory pre-set settings
- Normal or economy mode of operation
- Multiple climate application mode: Normal, Hot, Cold, or Disabled
- Adjusts ventilation need based on 30-minute time periods
- Simple fresh air ventilation using Fresh Air Damper or HRV/ERV devices
- Monitoring capability [up to four (4) appliances – multiple bath fans, exhaust fans, clothes dryer, range hood, draft-assisted gas log fireplaces, and/or exhaust fan devices]
- Monitoring and control capability
- Built-in selectable enthalpy control
- Temperature sensor located in R/A ductwork
- Compatible with any HVAC system having accessible 24VAC -R, -W, -Y, -G terminals
- Conventional heat/cool HVAC systems
- Heat pump systems
- Hydronic air handlers
- Stand-alone configuration

How It Works

The FAVC continuously monitors return air temperature and relative humidity levels, along with actual outside temperature, to ensure healthier air year-round. To conserve energy, the FAVC runs the fan only when needed, unlike controls based on timers. The FAVC controls the amount of fresh air ventilation, regulates humidity in the winter months, and prevents humid conditions in summer months. The FAVC inhibits mold by limiting condensation. It also reduces corrosion of the heat exchanger. Plus, the climate mode feature allows the FAVC to be customized for warm or cold climates, or economy mode.

When combined with a Fresh Air Damper (FAD), the FAVC will provide fresh air ventilation on a schedule to meet ASHRAE 62.2.



Built-in indoor humidity and temperature sensor works in ducts or in air closets

EXCLUSIVE FAVC FEATURES

APPLIANCE VENTILATION CREDIT

The FAVC can monitor up to four (4) appliances and apply credit from those fans. The FAVC can monitor a variety of fan types and CFM ranges, from bathroom fans and HRVs/ERVs (20-225 CFM) and clothes dryers and standard kitchen range hoods (80-400 CFM) to gas fireplaces and commercial range hoods (100-1600 CFM).

PLENUM PROTECTION & WINTER DEHUMIDIFICATION

The FAVC continuously monitors indoor Relative Humidity in the return plenum to regulate humidity in the winter months, and to prevent humid conditions in the summer months by reducing the ventilation during periods of high dew points. The FAVC also monitors outdoor air temperature. The FAVC inhibits condensation, reducing mold and corrosion of the heat exchanger.

INDOOR TEMPERATURE/HUMIDITY MONITORING

The FAVC has a built-in Indoor Temperature/Indoor Humidity sensor to continuously sense actual return air duct environmental conditions. The FAVC can be installed directly to the return air plenum of the HVAC system, or it can also be installed on the wall in air closet application.

30-MINUTE CYCLE PERIOD

With a 30-minute cycle period, the FAVC introduces fresh air more frequently and regularly, which means the air is more evenly balanced and HVAC system does not have to work hard to catch up with a wide range of temperatures that can occur over a 60-minute time period.

Specifications

Model	Product	Description	Voltage	Amps	Part #
FAVC	Fresh Air Ventilation Control	Interactively works with the thermostat, in conjunction with the HVAC appliance central fan to periodically introduce controlled amounts of fresh air. Fan/Vent ON and OFF delay settings, 30-minute cycle period, unlimited setting for ON and OFF.	20-30	0.07	602600100

Fresh Air Ventilation Control (FAVC)

FEATURES

SUPPLY

Outdoor Temperature Light

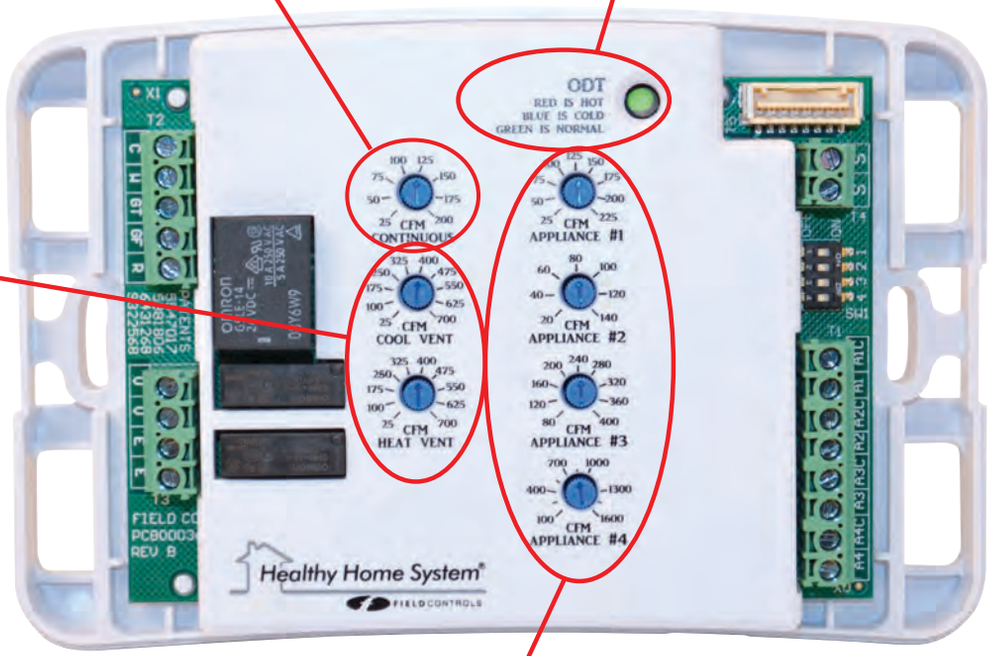
Three color **ODT light** indicates whether outside air temperature meets ventilation requirements or if ventilation will be limited due to temperature or humidity levels. The control continuously monitors ventilation requirements and conditions.

CFM Continuous Dial

The **CFM Continuous Dial** controls the continuous ventilation rate and is factory pre-set at 50 CFM.

CFM Cool/Heat Vent Dial

The **CFM Cool Vent Dial** and **CFM Heat Vent Dial** are each preset at 150 CFM and can be used to set the airflow rate through a Fresh Air Damper or HRV/ERV unit when central fan is running in cooling mode and heating mode.



Optional Appliance Monitoring Controls

Monitoring additional exhaust devices minimizes costly overventilation. Keeping the home more efficient and comfortable.

Appliance Dial	Appliance Type	Appliance CFM	Standard Configuration	Optional Configuration
#1	Bathroom Fan, HRV/ERV Unit	25-225	Offers balanced ventilation by monitoring the appliance and takes credit for ventilation requirement when appliance #1 fan runs	Energy-Saving Mode • Can drive appliance #1 fan in lieu of central fan • Takes credit for ventilation with damper when heating or cooling • Drives appliance #1 fan when additional ventilation is required within the heating/cooling cycle • Gets energy credit when bathroom fan is used (non-ECM central fan blower)
#2	Bathroom Fan	20-140	Monitors appliance #2	
#3	Clothes Dryer, Standard Range Hood	80-400	Passive Make up Air Mode • Opens damper when appliance #3 is on	Active Make-up Air Mode • Turns on central fan and opens damper when appliance #3 runs
#4	Fireplace, Commercial Range Hood	100-1600	Monitors appliance #4	Active Make-up Air Mode • Turns on central fan and opens damper when appliance #4 runs

Fresh Air Ventilation Control (FAVC)

COMPETITIVE COMPARISON

EXCLUSIVE FAVC FEATURES	
APPLIANCE VENTILATION CREDIT	The FAVC can monitor up to four (4) appliances and apply credit from those fans. The FAVC can monitor a variety of fan types and CFM ranges, from bathroom fans and HRVs/ERVs (20-225 CFM) and clothes dryers and standard kitchen range hoods (80-400 CFM) to fireplace and commercial range hoods (100-1600 CFM).
INDOOR TEMPERATURE/HUMIDITY MONITORING	The FAVC has a built-in Indoor Temperature/Humidity sensor to continuously sense actual return air duct conditions. The FAVC can be installed directly to the return air plenum of the HVAC system, or it can also be installed on the wall in air closet application.
PLENUM PROTECTION & WINTER DEHUMIDIFICATION	The FAVC continuously monitors indoor Relative Humidity in the return plenum to regulate humidity in the winter months, and to prevent humid conditions in the summer months by reducing the ventilation during periods of high dew points. The FAVC also monitors outdoor air temperature. The FAVC inhibits condensation, reducing mold and corrosion of the heat exchanger.
30-MINUTE CYCLE PERIOD	With a 30-minute cycle period, the FAVC introduces fresh air more frequently and regularly, which means the air is more evenly balanced and HVAC system does not have to work hard to catch up with a wide range of temperatures that can occur over a 60-minute time period.

	Field Controls FAVC Fresh Air Ventilation Control	APRILAIRE 8120A/8126A LENNOX LVCS	HONEYWELL Y8150	LIPIDEX G2/G2-K	JACKSON SYSTEMS VCS IO-FAV-06
Code Compliance					
ASHRAE 62.2 2010 compliant	✓	✓	✓	✓	⊘
ASHRAE 62.2 2013 compliant	✓	⊘	⊘	✓	✓
ASHRAE 62.2 2016 compliant	✓	⊘	⊘	✓	⊘
ASHRAE CONTINUOUS CFM	✓	⊘	⊘	✓	⊘
Control Features					
CONTROL SETTINGS TYPE/ EASE OF SETUP	Dial Settings/ Simple	Dial Settings/ Simple	Dial Settings/ Simple	Hidden, Menu Driven/Complex	Dial Settings/ Simple
ENERGY-SAVING MODE	✓	⊘	⊘	✓	⊘
COMPATIBLE WITH AN HRV/ERV	✓	✓	✓	⊘	⊘
25% VENTILATION REDUCTION BASED ON OUTDOOR TEMPERATURE	✓	✓	⊘	✓	⊘
REMOTE INPUTS	2	⊘	1	⊘	1
CLIMATE ZONE MODES WITH INHIBIT OPTIONS	4	3	⊘	⊘	⊘
INDOOR HUMIDITY MONITORING	✓	✓	⊘	⊘	⊘
OUTDOOR TEMPERATURE MONITORING	✓	✓	⊘	⊘	⊘
HIGH AND LOW TEMPERATURE LIMITS	✓	✓	⊘	⊘	⊘
PROTECTIVE COVER	✓	⊘	✓	⊘	✓
Damper Features					
DAMPER DESIGN	Stainless with seal	Stainless with seal	Stainless with seal	Stainless with seal	Stainless with seal
DAMPER ACTUATION	Power open Power close	Power open Spring close	Power open Spring close	Power open Spring close	Power open Spring close
DAMPER SIZES AVAILABLE	4" to 20"	6" or 8"	6" only	4" to 10"	6" only

SUPPLY

Fresh Air Damper (FAD)

YEAR-ROUND VENTILATION

The Fresh Air Damper (FAD) is a 24VAC power-open, power-close motorized air damper designed for installation in a fresh air duct connected to an outdoor air intake hood and a duct fan, or the HVAC return plenum, to control the flow of fresh air into the home. The FAD is typically controlled by the FAVC to meet ASHRAE 62.2 and other fresh air ventilation codes and standards, but the FAD may also be used in a stand-alone application for either passive or fan-induced fresh air for ventilation or make-up air applications.

FAD – Fresh Air Damper

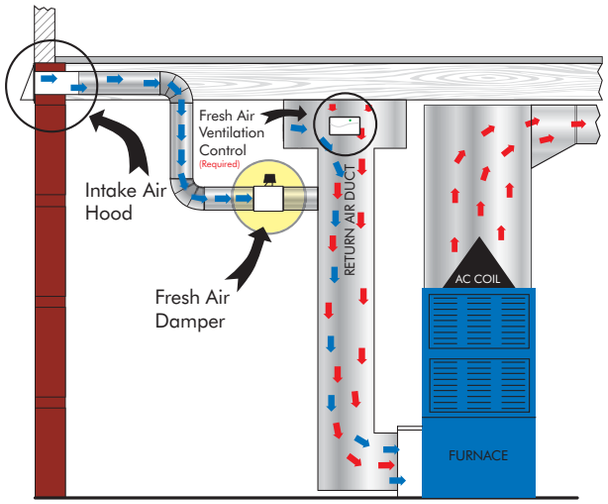
SUPPLY

Features

- Power open, power close
- Very low power requirement and airflow resistance
- Stainless steel body and gate
- Tear-resistant closed-cell foam rubber seal tested 500K+ cycles
- Seal flammability meets FMVSS-302
- Gas Vent Damper motor and circuit board certified 100K+ cycles
- Patented Damper Monitor feature detects and diagnoses failure

Benefits

- Delivers fresh air automatically, year-round
- Creates uniform temperature and humidity throughout the home
- Enhances effectiveness of Media Air Cleaner™ and UV air purifiers
- Can help reduce humidity
- Helps reduce heating and cooling costs



How It Works

The Fresh Air Damper is a motor-driven damper activated by the Fresh Air Ventilation Control. When there is a call for fresh air, the FAVC opens the damper, allowing fresh air to enter the HVAC return. When the FAVC is satisfied, the damper is closed.

Specifications

Model	Product	Description	Voltage	Amps	Watts
FAD-4	Fresh Air Damper	Power open/close, fits 4" duct or pipe	24	0.07	3
FAD-5	Fresh Air Damper	Power open/close, fits 5" duct or pipe	24	0.07	3
FAD-6	Fresh Air Damper	Power open/close, fits 6" duct or pipe	24	0.07	3
FAD-7	Fresh Air Damper	Power open/close, fits 7" duct or pipe	24	0.07	3
FAD-8	Fresh Air Damper	Power open/close, fits 8" duct or pipe	24	0.07	3
FAD-10	Fresh Air Damper	Power open/close, fits 10" duct or pipe	24	0.07	3

HOW TO SIZE A FRESH AIR DAMPER

Select the size of the Fresh Air Damper (FAD) based on the continuous ventilation CFM requirement multiplied by 3 and adjusted for the actual fresh air ductwork installation parameters to allow the FAVC system to operate 10 minutes on every 30 minutes.

Design Method for FAD Sizing

Step 1: Select the continuous ventilation CFM figure according to size of home (in square feet), number of bedrooms, and applicable ASHRAE 62.2 code year using Table 1 or 2 on page 12.

Step 2: Measure static pressure at the return intake (in Inches WC).

Step 3: Calculate equivalent feet of duct between fresh air inlet and the central fan.

- Determine the total equivalent feet for each type of fitting used in the system from Tables 3 and 4 on page 12.
- Calculate the total feet for the straight lengths of pipe.
- Add the equivalent feet of the fittings to the total amount of straight pipe feet. This figure becomes the total equivalent feet of duct length.

Step 4: With the values determined in Steps 1 through 3, use Table 5 on page 13 to select the Fresh Air Damper size. Find your static pressure across the top of Table 5, and match your CFM rate under your static pressure value. Move left to match your equivalent feet of duct, and your damper size will be listed in the far left column. When in doubt, use the next larger damper size. See the example on page 13.

SUPPLY

Rule of Thumb Method

These may be appropriate for homes with average duct runs up to 15 feet with mid-range static pressure. We recommend that you double check your results using the standard method. It's important to size the damper and system to meet ASHRAE 62.2. If you have questions, contact technical service.

1,500 to 2,000 sq. ft. = FAD-6
2,500 to 3,000 sq. ft. = FAD-7
3,000 to 3,500 sq. ft. = FAD-8

Locating the Fresh Air Inlet

ASHRAE recommends that the fresh air intake be located at least 10 feet from any source of pollutants such as auto exhaust, dryer exhaust, exhaust from any fuel-burning appliance, etc. Avoid installation near odor sources such as garbage bins or barbecue grills. A minimum of 3 feet above ground is recommended to avoid ingress of leaf litter, grass clippings, etc. Do not use a crawl space, basement, or attic as a source of intake air. Always be sure to comply with local building code requirements regarding fresh air inlets. Exterior intake hood must be weather resistant and must have a screen with a minimum 1/4 Sq. In. openings to prevent debris, animals, and insects from entering ductwork.

Fresh Air Damper (FAD)

SIZING & SELECTION

SUPPLY

Table 1

Continuous Ventilation Rate in CFM per ASHRAE 62.2-2010 Standard

	Number of Bedrooms					
Sq. Ft.	1	2	3	4	5	6
500	20	28	35	43	50	58
600	21	29	36	44	51	59
700	22	30	37	45	52	60
800	23	31	38	46	53	61
900	24	32	39	47	54	62
1000	25	33	40	48	55	63
1100	26	34	41	49	56	64
1200	27	35	42	50	57	65
1300	28	36	43	51	58	66
1400	29	37	44	52	59	67
1500	30	38	45	53	60	68
1600	31	39	46	54	61	69
1700	32	40	47	55	62	70
1800	33	41	48	56	63	71
1900	34	42	49	57	64	72
2000	35	43	50	58	65	73
2100	36	44	51	59	66	74
2200	37	45	52	60	67	75
2300	38	46	53	61	68	76
2400	39	47	54	62	69	77
2500	40	48	55	63	70	78
2600	41	49	56	64	71	79
2700	42	50	57	65	72	80
2800	43	51	58	66	73	81
2900	44	52	59	67	74	82
3000	45	53	60	68	75	83
3100	46	54	61	69	76	84
3200	47	55	62	70	77	85
3300	48	56	63	71	78	86
3400	49	57	64	72	79	87
3500	50	58	65	73	80	88

Table 2

Continuous Ventilation Rate in CFM per ASHRAE 62.2-2013/2016 Standard

	Number of Bedrooms					
Sq. Ft.	1	2	3	4	5	6
500	30	38	45	53	60	68
600	33	41	48	56	63	71
700	36	44	51	59	66	74
800	39	47	54	62	69	77
900	42	50	57	65	72	80
1000	45	53	60	68	75	83
1100	48	56	63	71	78	86
1200	51	59	66	74	81	89
1300	54	62	69	77	84	92
1400	57	65	72	80	87	95
1500	60	68	75	83	90	98
1600	63	71	78	86	93	101
1700	66	74	81	89	96	104
1800	69	77	84	92	99	107
1900	72	80	87	95	102	110
2000	75	83	90	98	105	113
2100	78	86	93	101	108	116
2200	81	89	96	104	111	119
2300	84	92	99	107	114	122
2400	87	95	102	110	117	125
2500	90	98	105	113	120	128
2600	93	101	108	116	123	131
2700	96	104	111	119	126	134
2800	99	107	114	122	129	137
2900	102	110	117	125	132	140
3000	105	113	120	128	135	143
3100	108	116	123	131	138	146
3200	111	119	126	134	141	149
3300	114	122	129	137	144	152
3400	117	125	132	140	147	155
3500	120	128	135	143	150	158

**ASHRAE 62.2 Standards assume one person for each bedroom, plus one more. If the fan is engaged 20 minutes per hour, multiply this number by 3.*

Table 3

Equivalent Feet for Vent Pipe Fittings

Vent Pipe Fittings	Vent Pipe Diameter							
	3"	4"	5"	6"	7"	8"	9"	10"
Tee	19	25	31	38	44	50	56	63
Y-Connection	10	13	16	20	23	26	29	32
90° Elbow	5	7	9	11	12	14	16	18
45° Elbow	3	4	4	5	6	7	8	9

Table 4

Equivalent Feet for a Reducer/Increaser Pipe Fitting

		Small Pipe Size							
Large Pipe Size		3"	4"	5"	6"	7"	8"	9"	10"
	3"	0							
	4"	2	0						
	5"	4	2	0					
	6"	5	4	2	0				
	7"	6	5	4	1	0			
	8"	7	7	6	3	2	0		
	9"	7	8	7	5	4	2	0	
	10"	8	8	8	6	6	4	2	0
	12"	8	10	10	8	9	8	6	4

Example of Fresh Air Damper Sizing Using the Design Method:

Step 1: *1500 sq. ft. home, 3 bedrooms, ASHRAE 62.2-2010 Standards. From Table 1, continuous ventilation required is 45 CFM. For damper sizing, multiply continuous ventilation value by 3 equates to 135 CFM for Fresh Air Damper size.*

Step 2: *Static pressure in the return is 0.15 inches WC (measured).*

Step 3: *Ductwork system design consists of:*

- *From Table 3, two 6" diameter 45° elbow (10 equivalent feet)*
- *10 feet of straight 6" smooth diameter ductwork (10 equivalent feet),*
- *The system has 20 equivalent feet of smooth duct (10 feet + 10 feet = 20 feet)*

Step 4: *From Table 5, the 6" Fresh Air Damper delivers 136 CFM in smooth duct at 30 equivalent feet and would be the appropriate damper for this system.*

Table 5

Damper Airflow Based on Pressure Measurement (in CFM)

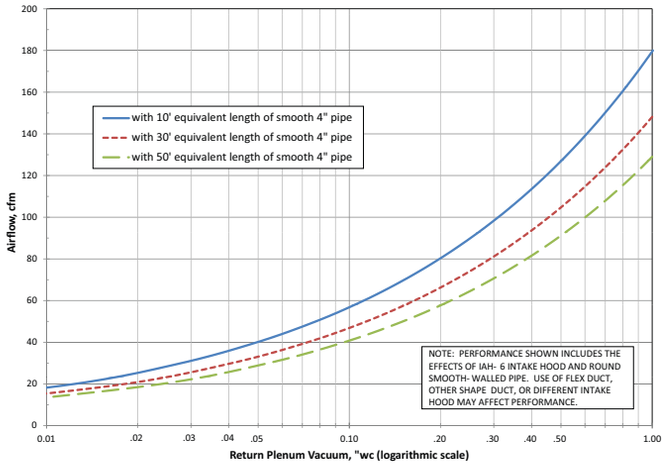
Return Air Static Pressure ("WC)		0.05*		0.1*		0.15		0.2	
Damper & Intake Hood	Equivalent Feet of Duct Length	Smooth	Flex	Smooth	Flex	Smooth	Flex	Smooth	Flex
4" FAD Damper	10	40	32	57	45	70	56	80	64
	30	33	26	47	37	57	46	66	53
	50	29	23	41	33	50	40	58	46
5" FAD Damper	10	67	54	95	73	117	94	135	108
	30	56	45	80	64	97	78	113	90
	50	49	39	70	56	85	68	99	79
6" FAD Damper	10	90	72	128	102	157	126	181	145
	30	79	63	111	89	136	109	157	126
	50	71	57	100	80	122	98	141	113
7" FAD Damper	10	154	123	218	174	266	213	308	246
	30	129	103	183	146	224	179	258	207
	50	113	91	160	128	196	157	227	181
8" FAD Damper	10	174	139	246	197	301	241	348	278
	30	154	123	218	174	267	214	308	246
	50	140	112	197	158	242	194	279	223
10" FAD Damper	10	262	210	371	297	454	363	525	420
	30	239	191	338	270	414	331	478	382
	50	221	177	312	250	383	306	442	354

** .05 are new modulating appliance parameters. 0.1 are the traditional appliances. Once the design gets out of range, additional electrical consumption begins to take place.*

Fresh Air Damper (FAD)

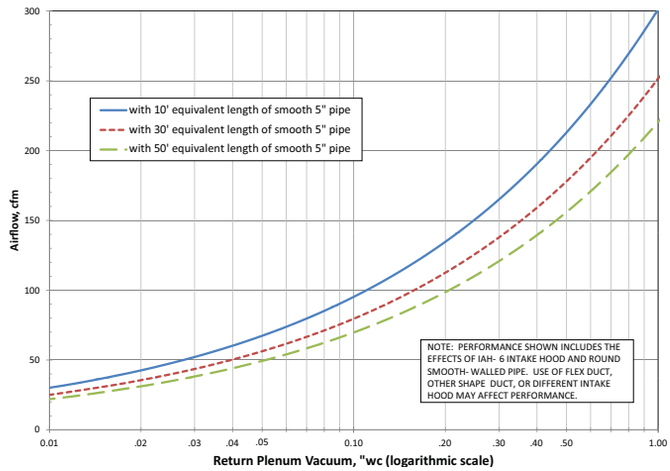
PERFORMANCE CHARTS

FAD-4 Performance: IAH-4 Intake Air Hood, FAD-4 Damper, and 4" Duct

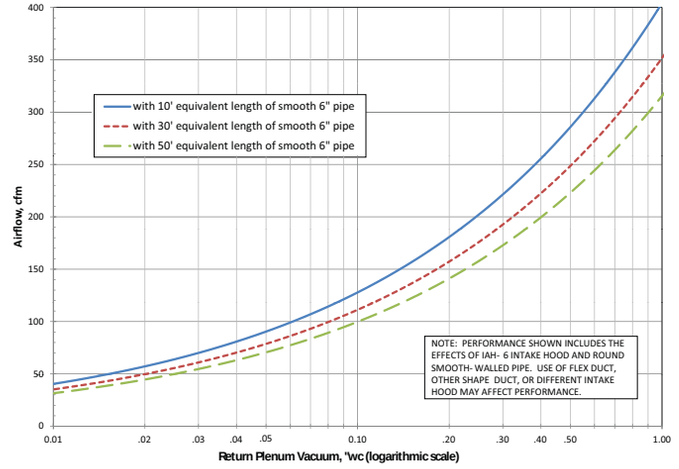


SUPPLY

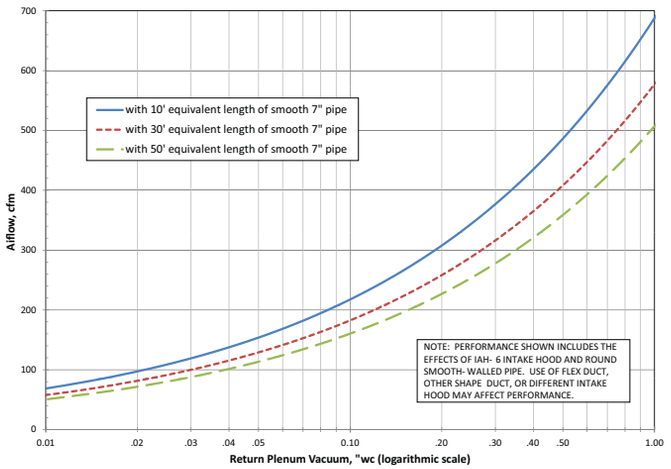
FAD-5 Performance: IAH-6 Intake Air Hood, 6-5 Reducer, FAD-5 Damper, and 5" Duct



FAD-6 Performance: IAH-6 Intake Air Hood, FAD-6 Damper, and 6" Duct

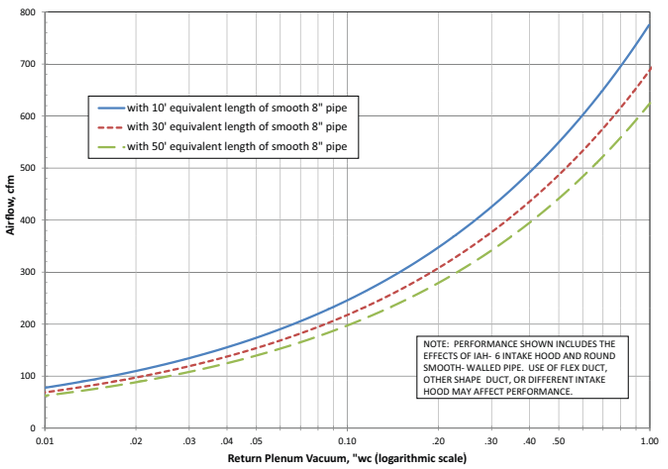


FAD-7 Performance: Generic 8" Intake Air Hood, 8-7 Reducer, FAD-7 Damper, and 7" Duct

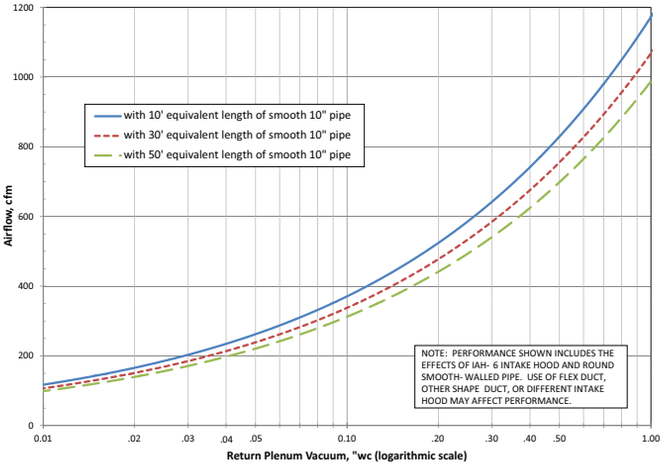


SUPPLY

FAD-8 Performance: Generic 8" Intake Air Hood, FAD-8 Damper, and 8" Duct



FAD-10 Performance: Generic 10" Intake Air Hood, FAD-10 Damper, and 10" Duct



Fresh Air Ventilation System (FAV)

DAMPER AND CONTROL COMBO

The Fresh Air System™ (FAV) from Field Controls meets ASHRAE 62.2 standards by delivering fresh air automatically and efficiently. The FAV includes proven components for simple, reliable, fresh air delivery for improved indoor air quality.

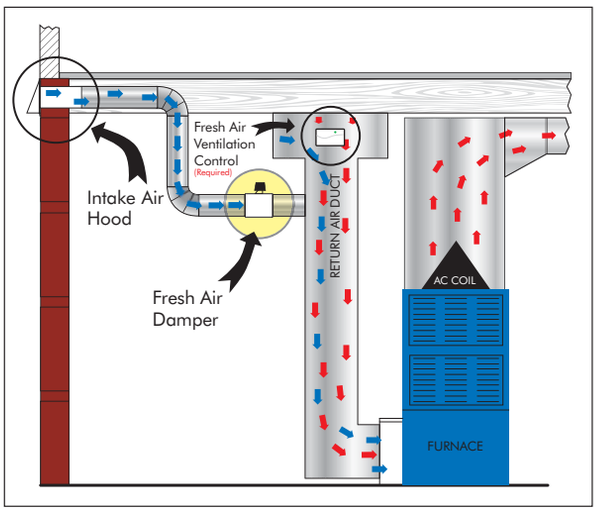
FAD

FAVC

Features

- Utilizes the central fan to supply outdoor air through a controlled duct
- Operates intermittently
- Automatic Fresh Air Damper (FAD) prevents infiltration during off periods

SUPPLY



Benefits

- Delivers fresh air automatically, year-round
- Creates uniform temperature and humidity throughout the home
- Enhances effectiveness of Media Air Cleaner™ and UV air purifiers
- Can help reduce humidity
- Helps reduce heating and cooling costs

How It Works

The Fresh Air System (FAV) is a motor-driven damper activated by the Fresh Air Ventilation Control (FAVC). When there is a call for fresh air, the control opens the damper, allowing fresh air to enter the HVAC return. When the control is satisfied, the damper is closed.

Specifications

Model	Product	Description	Voltage	Amps	Watts
FAV-4	FAVC and FAD	Motorized, stainless steel, power open/close in 15 sec. increments, fits 4" duct or pipe	24	0.07	3
FAV-5	FAVC and FAD	Motorized, stainless steel, power open/close in 15 sec. increments, fits 5" duct or pipe	24	0.07	3
FAV-6	FAVC and FAD	Motorized, stainless steel, power open/close in 15 sec. increments, fits 6" duct or pipe	24	0.07	3
FAV-7	FAVC and FAD	Motorized, stainless steel, power open/close in 15 sec. increments, fits 7" duct or pipe	24	0.07	3
FAV-8	FAVC and FAD	Motorized, stainless steel, power open/close in 15 sec. increments, fits 8" duct or pipe	24	0.07	3
FAV-10	FAVC and FAD	Motorized, stainless steel, power open/close in 15 sec. increments, fits 10" duct or pipe	24	0.07	3

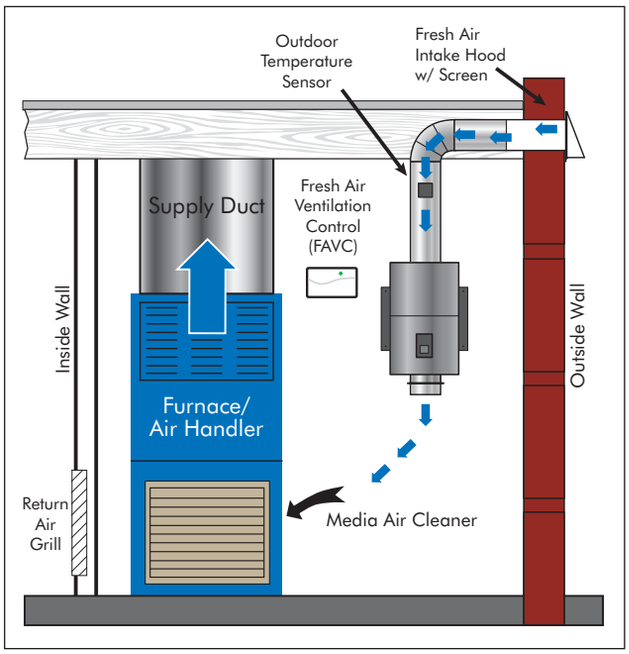
Fresh Air Power Ventilator (FAPV)

PROVIDE FRESH AIR FOR ANY APPLICATION

The FAPV (Fresh Air Power Ventilator) is an inline duct-connected fan that provides fresh outdoor air to meet indoor ventilation code requirements and occupant preferences.

The FAPV may be set up to run either continuously or to run intermittently as controlled by a fresh air ventilation controller such as the Field Controls model FAVC (Fresh Air Ventilation Control). The FAPV includes an electronic speed control with a readily accessible Off switch that may be used to meet either the continuous ventilation rate or equivalent intermittent ventilation rate as required by fresh air ventilation standards such as ASHRAE 62.2. When set up for intermittent ventilation, the speed control feature may also be used to reduce the outdoor airflow rate and help meet the minimum return temperature requirements of HVAC systems.

The FAPV includes a MERV 6 washable air filter, as well as an internal slot for easy slide-in installation of a standard-sized 10" x 10" x 2" air filter. Also included is a passive airflow-operated backdraft damper, which may be required by code for installation of a ventilation system air inlet duct.



SUPPLY

How It Works

Fresh outdoor air is brought in through an outdoor intake air hood and ducted into the ventilator, which discharges the fresh air either by duct connection to HVAC ductwork or directly into the space to be ventilated, such as a mechanical closet.

Specifications

Model	Product	Description	Power Supply	Watts (max speed)	Amps (max speed)	Temperature Range	Control Voltage (optional)	Airflow Range	Filtration
FAPV-180AC	FAPV	Fresh Air Power Ventilator	115 VAC, 60 Hz	85W	0.90Aw	-22° to 140°F Ambient Outdoor Temperature	24VAC	30 to 220 CFM @ 0.20 Static Pressure	MERV 6, Washable, UL-900 Rated

Better Control in Any Environment

The Fresh Air Ventilation Control (FAVC) can monitor up to four exhaust fan appliances like a bathroom fan, range hood, clothes dryer, and other fan exhaust devices. Our C-Sensor and P-Sensor send a signal back to the FAVC, which can then adjust fresh air intake. Each sensor works independently or in concert with the others to monitor environmental changes, providing increased or decreased ventilation as needed.

Current Sensor

The C-Sensor senses the operation of air-exhausting devices, such as range hoods, clothes dryers, bathroom fans, central vacuum systems, etc. It acts as a switch to provide a 24VAC input signal to the Fresh Air Ventilation Control, which then operates the Fresh Air Damper (FAD) and activates the HVAC central fan. Fresh, outside air is then drawn into the house, providing make-up air for the exhausting device(s).

The C-Sensor may also be used in a stand-alone make-up air system to control a 24V Fresh Air Damper.

Pressure Sensor

The P-Sensor senses a change in air pressure within the exhaust duct of an exhausting device, such as a kitchen range hood, clothes dryer, central exhaust system, etc. It transmits a signal to a make-up air system, such as the Fresh Air Ventilation Control ventilation system, in order to provide make-up air for the exhausting device. The P-Sensor may also be used in a stand-alone passive make-up air system to control a 24V Fresh Air Damper that is ducted to the outdoors/exterior of the structure.

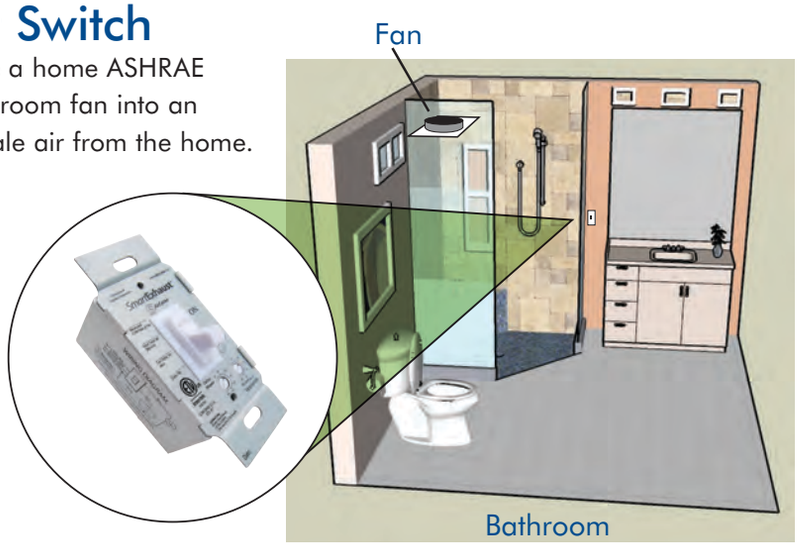
SUPPLY

Specifications

Model	Product	Description	Voltage	Watts	Part #
C-Sensor	Current-Sensing Make-Up Air Sensor Damper Control	Senses the operation of air-exhausting devices and acts as a switch to provide a 24VAC input signal to the FAVC Ventilation Control, which then operates the Fresh Air Damper and activates the HVAC central fan.	24	3	46676500
P-Sensor	Pressure-Sensing Make-Up Air Sensor Damper Control	Senses a change in air pressure within the exhaust duct of an exhausting device and sends a signal to a make-up air system, such as the FAVC in order to provide make-up air for the exhausting device.	24	3	46676500

The SmartExhaust™ Smart Switch

The easiest, most cost-efficient way to help make a home ASHRAE 62.2 compliant. The SmartExhaust turns the bathroom fan into an automatic exhaust system that helps eliminate stale air from the home.



Features

- Makes standard bathroom fans ASHRAE 62.2 compliant
- Microprocessor technology provides precise ventilation times
- Fan runs every hour for set ventilation period
- Controls the fan and the light in one switch
- Helps prevent mold and mildew
- Helps meet ventilation codes

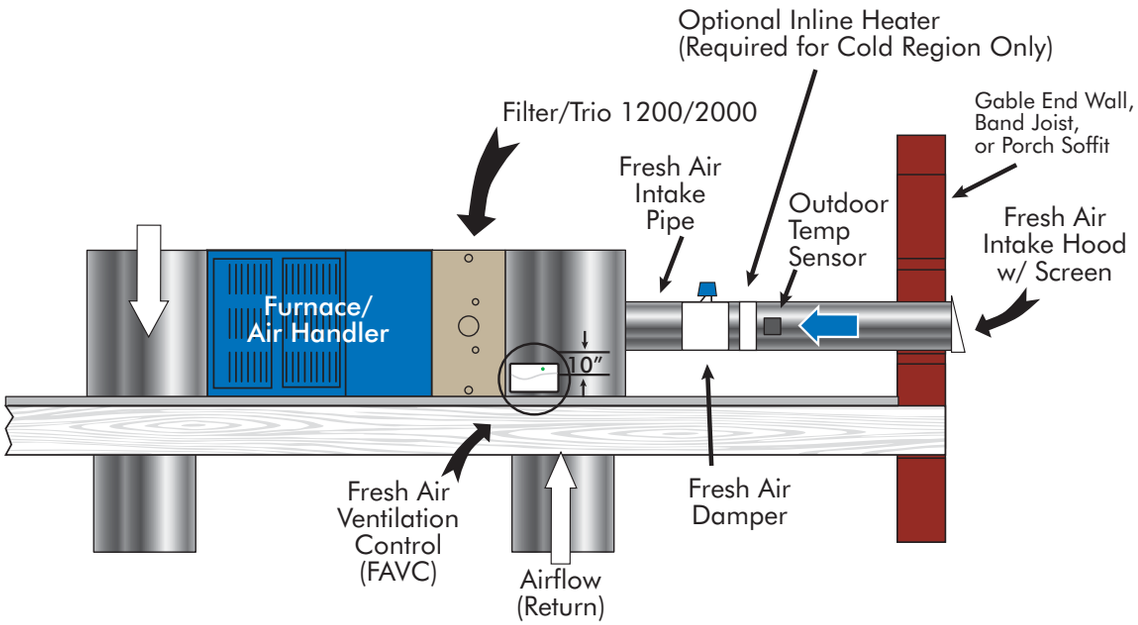
Specifications

Model	Product	Description	Voltage	Watts	Part #
SEC	SmartExhaust™	Programmable control for exhaust fans	120	—	46591000

Fresh Air Ventilation Control (FAVC)

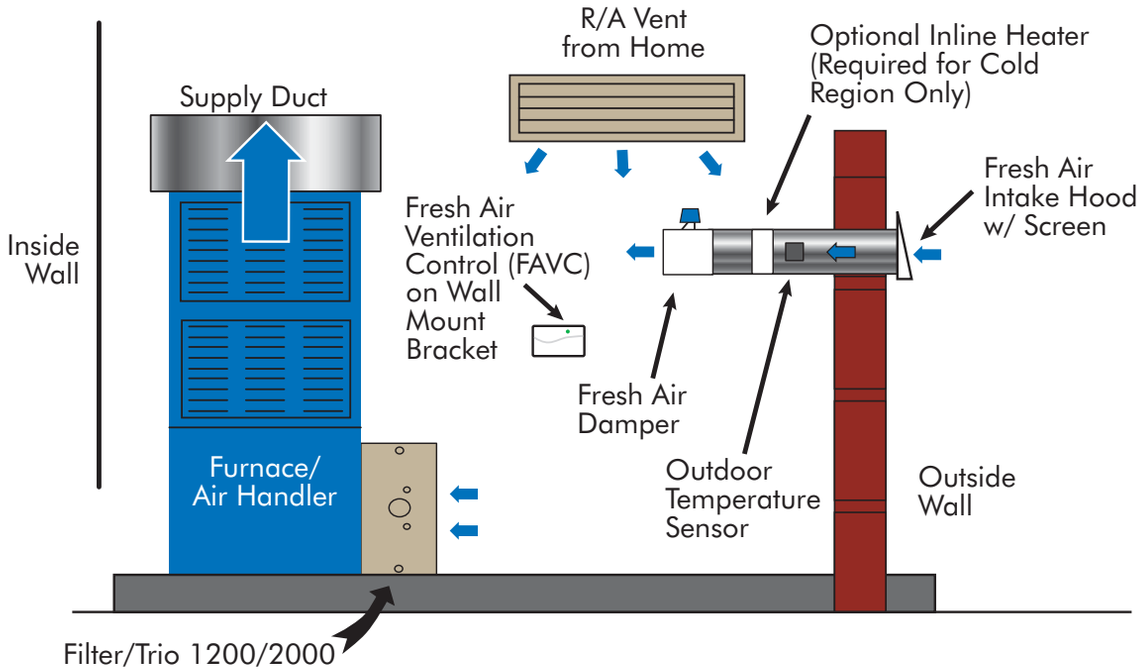
INSTALLATION OPTIONS

Attic/Horizontal Air Handler Installation



SUPPLY

Return Air Closet Installation

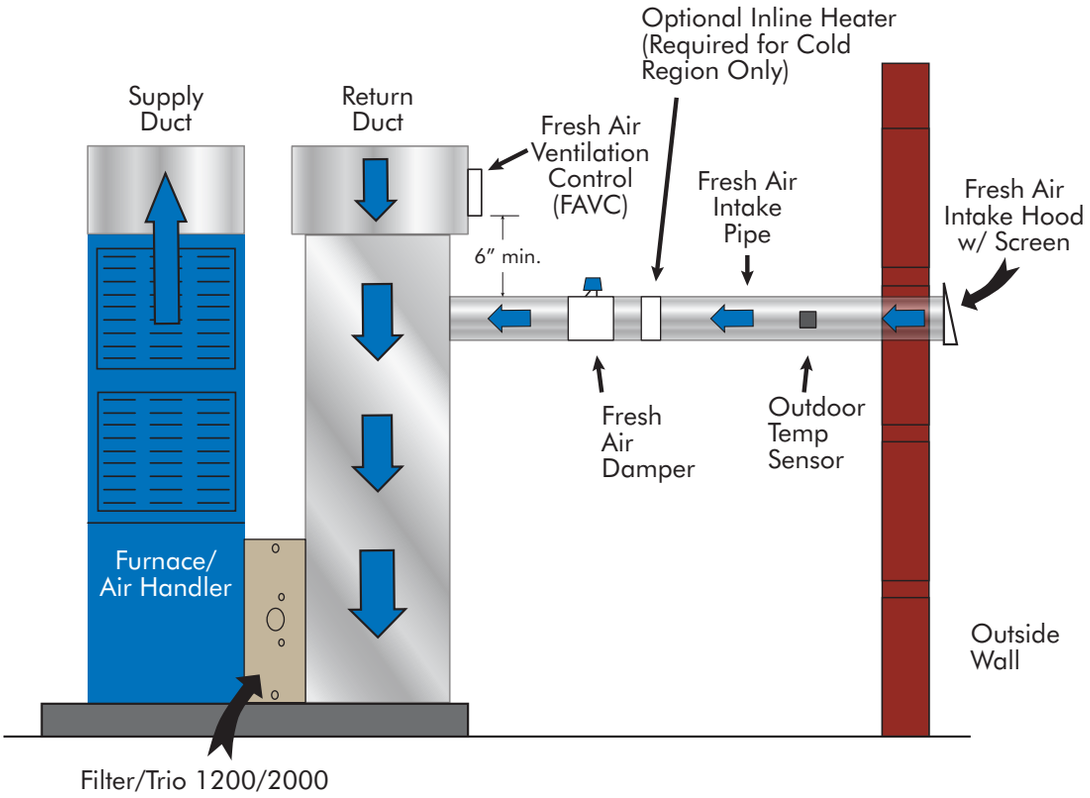


Fresh Air Ventilation Control (FAVC)

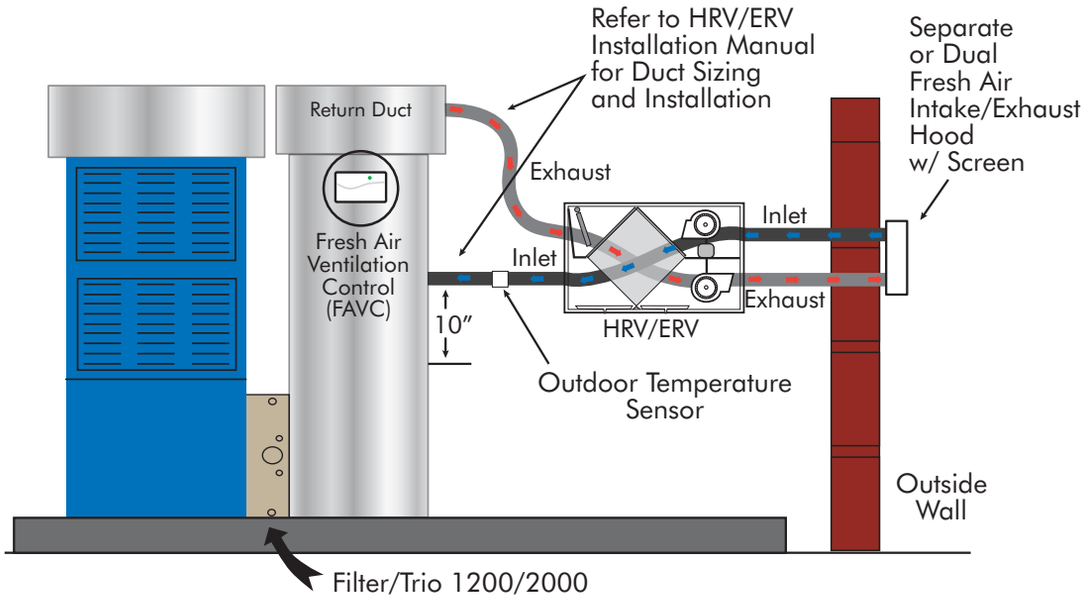
INSTALLATION OPTIONS

SUPPLY

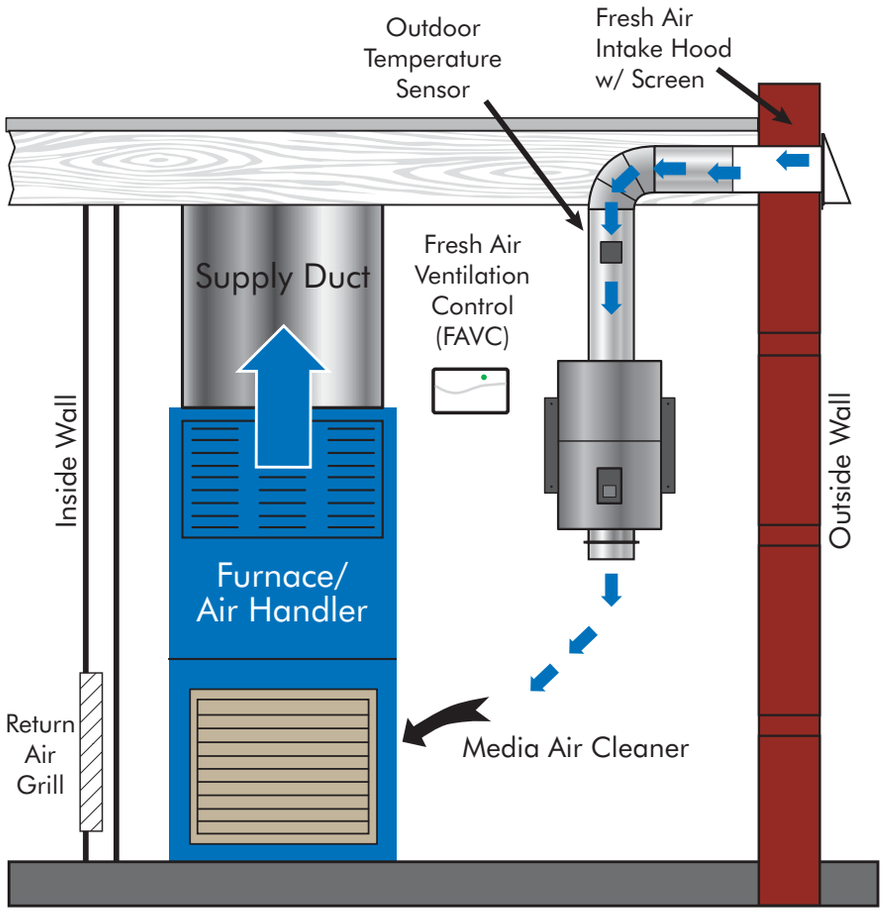
Basement/Vertical Air Handler Installation



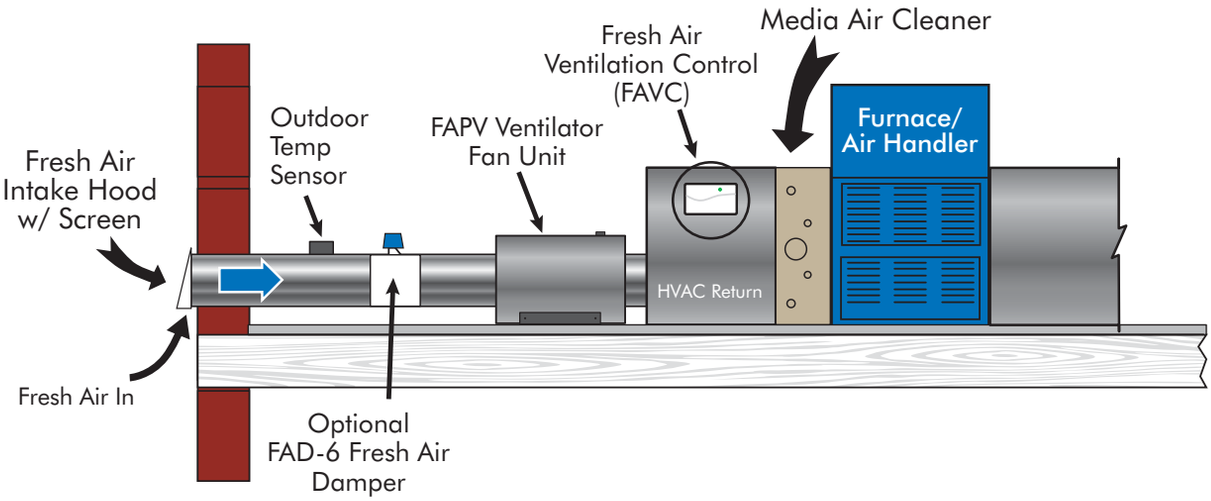
HRV/ERV Components



Installation Option 1



Installation Option 2



NOTE: Duct Insulation not shown.
*FAVC must be mounted per FAVC Installation Instructions.
** FAD-6 is recommended if FAPV is ducted to return plenum.

HRV/ERV Systems

BALANCED FRESH AIR SOLUTION

BALANCED

Field Controls Heat Recovery Ventilators (HRVs) and Energy Recovery Ventilators (ERVs) are balanced ventilation systems and have the lowest operating cost of ventilation options. The purpose of an HRV or an ERV is to deliver fresh air into your home. Our systems are designed for optimal ventilation and quiet, dependable operation.

HRV/ERV systems offer a balanced approach to fresh air, maximum energy efficiency, and additional benefits like humidity control. HRV systems are recommended for colder climates, and ERV systems are recommended for hot, humid climates. These units can operate independently or be integrated into a ducted forced air system and work 24/7 to ensure fresh air changes up to eight times per day.

FC200HRV
FC200ERV

FC150HRV
FC150ERV

FC80HRV
FC80ERV

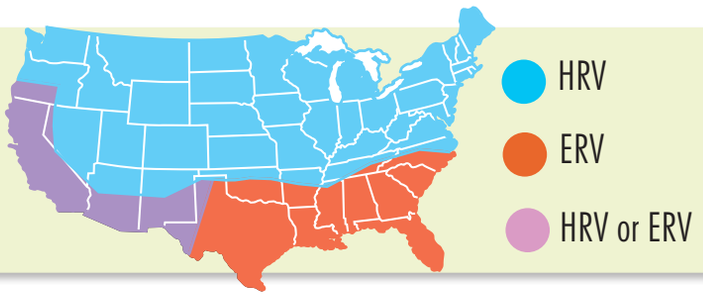
Field Controls HRV or ERV system models range from 40 CFM to 250 CFM to ensure energy efficiency with optimal effectiveness.

Benefits

- Automatically replaces stale air with fresh air
- Meets or exceeds ventilation standard ASHRAE 62.2
- Requires little maintenance
- Reduces energy consumption

Efficient in Any Climate

The HRV is ideal for colder Northern climates. The ERV is designed for the hot, humid Southern climates. Either can be used in the Southwest and California, depending on local conditions.



Combine an FAVC...

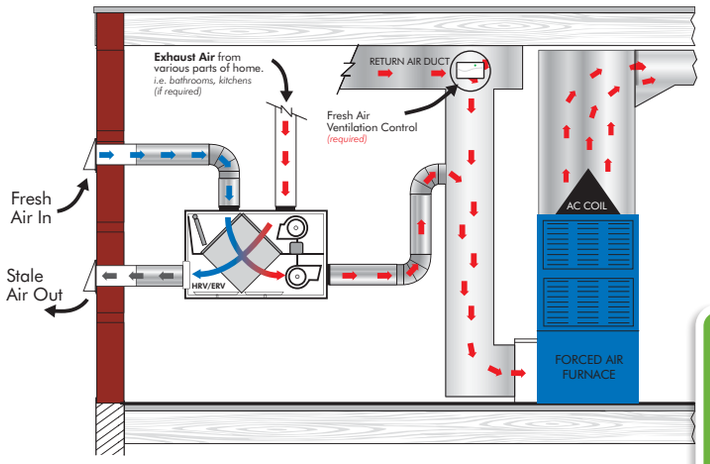
The exhaust appliance monitoring and controlling capabilities of the Fresh Air Ventilation Control (FAVC) mean it is compatible with HRV and ERV systems as well as bathroom fans, clothes dryers, kitchen range hoods, or gas log fireplaces.

How It Works

The fans of an HRV will pull fresh air into a home while simultaneously exhausting stale air from the home. In most installations, the fresh air is delivered to the living room and bedrooms while the stale air is removed from bathrooms, laundry rooms, and sometimes the kitchen.

Both the fresh air stream and the stale air stream flow through the HRV. The System Core allows some of the heat from the warmer air stream (the stale air in winter, the fresh air in summer) to be transferred to the cooler air stream. In winter, the system "recovers" some of the heat that would have otherwise been exhausted. This heat transfer occurs without any mixing of the two air streams.

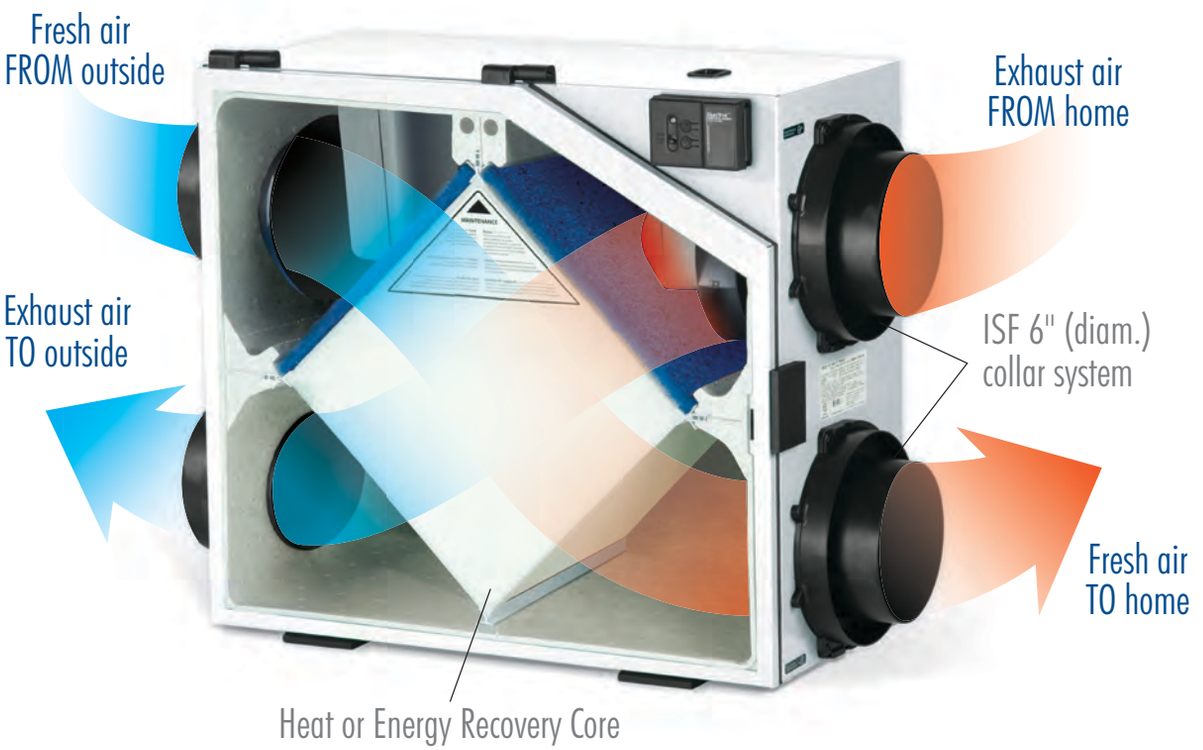
An ERV does everything that an HRV does. In addition, an ERV allows some of the moisture in the more humid air stream (usually the stale air in winter and the fresh air in summer) to be transferred to the air stream that is dryer. This transfer of moisture – called enthalpy transfer – occurs with very little mixing of the two air streams.



HRV/ERV

BALANCED

Go to fieldcontrols.com/videos or our YouTube channel to learn more about the HRV and ERV Systems.



HRV/ERV Systems

FEATURES, MODELS & SPECS

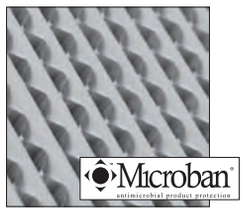
BALANCED

Field Controls Heat Recovery Ventilators (HRVs) and Energy Recovery Ventilators (ERVs) feature high-quality components that are designed for optimum airflow and performance.

DuoTrol™ Balancing System

Silent and economical. By reducing motor speed to balance the unit, you avoid the noise that would be produced by balancing dampers. In addition with this technology, the unit will consume less energy.

Enthalpy Core (ERV)



Advanced Heat and Humidity Exchanger superior to existing paper-based cores, dPoint's ERV Core is manufactured from a durable polymer membrane that enables energy recovery systems to increase their total efficiency, operate in extreme climates, and ensure the cleanest air possible.

ISF™ 5" Oval Collar System with integrated balancing taps

Quick and simple to install thanks to our revolutionary collar system. The 5" (diam.) oval collar system enables you to manipulate duct within your reach and then insert the system by sliding it in place for a better and quicker installation and balancing.

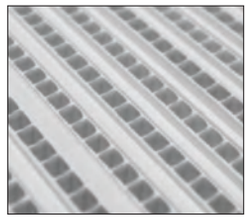
High-Performance Engineered Motor

All Field Controls products are designed with high-performance, reliable motors for your comfort and peace of mind. Factory-sealed and dynamically balanced, our motors are maintenance-free for years to come.

SPM™ Attachment System

The entire line of Field Controls HRV/ERV products is designed for installation by a single person. Single Person Mounting will enable you to save time and effort by offering you a variable attachment system.

Polypropylene HRV Core



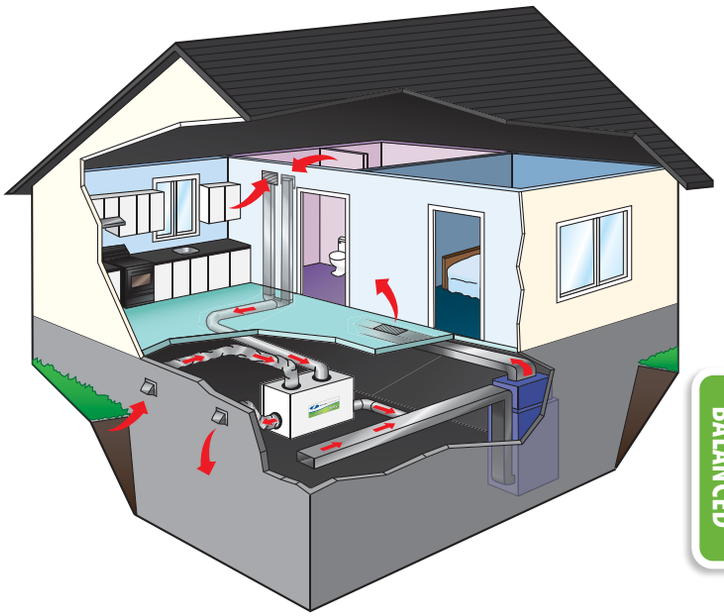
Designed to maximize airflow and performance, the core is constructed from a composite of polypropylene materials that allows latent heat transfer from one airstream to another while preventing cross-contamination.

Specifications

Model	Product	Dimensions (inches)	Airflow CFM					Effectiveness @ 32° F	Voltage	Amps	Hz	Watts
			.1	.2	.3	.4	.5					
FC80HRV	Heat Recovery Ventilator	22 H x 19.8 W x 14.6 D	99	93	83	75	65	72%	120	0.85	60	66
FC150HRV	Heat Recovery Ventilator	29.5 H x 22.5 W x 11.4 D	193	178	163	150	133	75%	120	1.5	60	142
FC200HRV	Heat Recovery Ventilator	29.5 H x 22.5 W x 16.5 D	248	229	218	200	181	71%	120	1.5	60	142
FC80ERV	Energy Recovery Ventilator	22 H x 19.8 W x 14.6 D	105	97	92	80	73	74%	120	0.85	60	66
FC150ERV	Energy Recovery Ventilator	29.5 H x 22.5 W x 11.4 D	207	189	187	159	148	76%	120	1.5	60	142
FC200ERV	Energy Recovery Ventilator	29.5 H x 22.5 W x 16.5 D	244	225	208	188	173	81%	120	1.5	60	142

Sizing the Ductwork

It is the responsibility of the installer to ensure all ductwork is sized and installed as designed to ensure the system will perform as intended. The amount of air (CFM) that an HRV/ERV will deliver is directly related to the total external static pressure (ESP) of the system. Static pressure is a measure of resistance imposed on the blower by length of ductwork plus the number of fittings used in the ductwork.



Delivered Air Temperature from HRV

Outdoor Temperature + Effectiveness x (Indoor Temperature – Outdoor Temperature) = Delivered Air Temperature

Indoor Temperature = 70° F
Outdoor Temperature = 32° F

FC200HRV Example:
74% Effectiveness @ 32° F
32° F + (.74 x 38) = 60° F

FC80HRV Example:
88% Effectiveness @ 32° F
32° F + (.88 x 38) = 65° F
A huge difference versus open window/draft ventilation

Determine Your Ventilation Requirements

Good air quality is based in part on the capacity of the home's ventilation system. Residential ventilation requirements are determined by ASHRAE 62.2. Look to your local code for specific ventilation requirements.

Usually, the HRV/ERV capacity is measured in CFM (Cubic Feet per Minute) or L/s (Liters per Second) of fresh air being distributed in the living space. The Room Count Calculation or the Air Change per Hour Method will show you how to determine your ventilation needs.

A. Room Count Calculation

LIVING SPACE	NUMBER OF ROOMS	CFM (L/S)		CFM REQUIRED
Master Bedroom	_____	x 20 cfm (10 L/s)	=	_____
With Basement	_____	x 20 cfm (10 L/s)	=	_____
Single Bedroom	_____	x 10 cfm (5 L/s)	=	_____
Living Room	_____	x 10 cfm (5 L/s)	=	_____
Dining Room	_____	x 10 cfm (5 L/s)	=	_____
Family Room	_____	x 10 cfm (5 L/s)	=	_____
Recreation Room	_____	x 10 cfm (5 L/s)	=	_____
Other	_____	x 10 cfm (5 L/s)	=	_____
Kitchen	_____	x 10 cfm (5 L/s)	=	_____
Bathroom	_____	x 10 cfm (5 L/s)	=	_____
Laundry Room	_____	x 10 cfm (5 L/s)	=	_____
Utility Room	_____	x 10 cfm (5 L/s)	=	_____
	TOTAL ventilation requirement (add last column)		=	_____

1 CFM = 0.47189 L/s
1 L/s = 3.6 m3/hr

B. Air Change per Hour (ACH) Method

TOTAL cu. ft. X 0.35 per hr = total
Take total and divide by 60 to get CFM

Example: A 25' x 40' house with basement
1,000 Sq. ft. x 8' high x 2 (1st floor + basement) = 16,000 cu. ft.
16,000 cu. ft. x 0.35 ACH = 5,600 cu. ft.
5,600 cu. ft. / 60 Minutes = 93.3 CFM
93.3 CFM IS YOUR VENTILATION NEED

HRV/ERV Systems

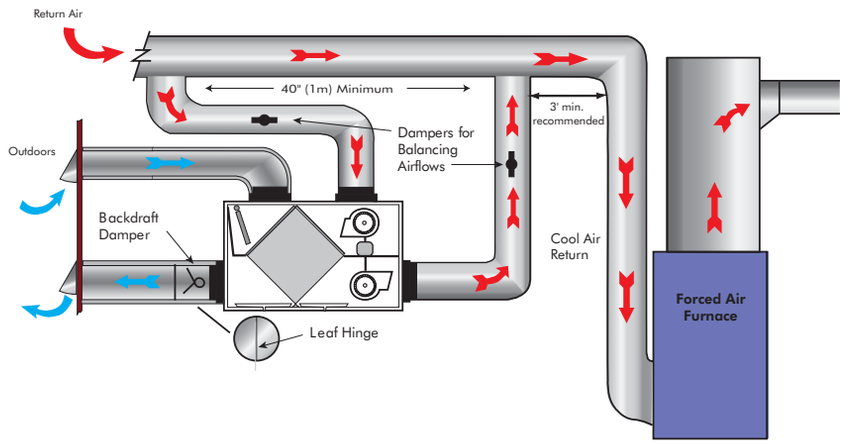
INSTALLATION OPTIONS

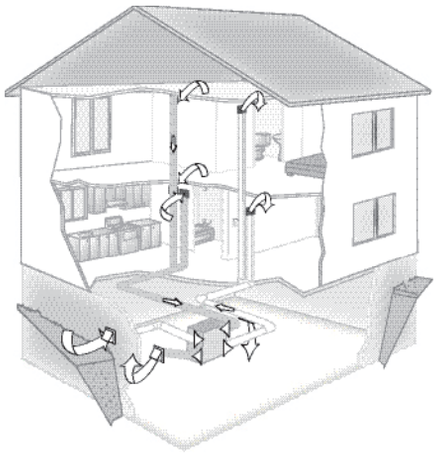
BALANCED

Simplified Independent System Installation

This application uses a devoted duct system for the supply and the exhausting of stale air accumulated in the home.

The Simplified Installation draws stale air from the cold air return duct of the air handler/furnace and introduces an equal amount of fresh air farther downstream into the cold air return. The air handler/furnace blower must be running when the unit is operating for this system to be effective. Installation of fresh air grilles is recommended in all bedrooms and living areas. Exhaust the stale air from the bathroom, kitchen, and laundry room.





IMPORTANT: For optimal performance of your HRV or ERV, the installation of an optional 6" round galvanized backdraft damper is required on the fresh air-to-home ductwork.

Partially Dedicated Installations (exhaust at the source and supply in the return)

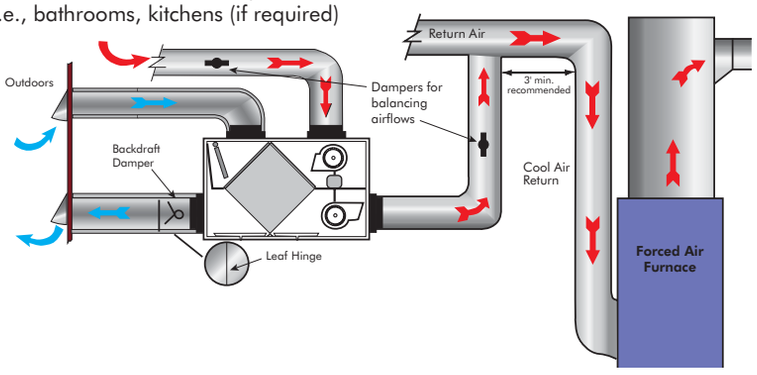
This installation draws stale air from specific points in the house and introduces an equal amount of fresh air into the cold air return. Stale air ducts should be installed in areas of the home where the poorest indoor air quality exists (bathrooms and kitchen). Each location with a stale air duct should have a timer to initiate high-speed ventilation. The air handler/furnace blower should be running when the HRV is operating to evenly distribute the fresh air throughout the house.

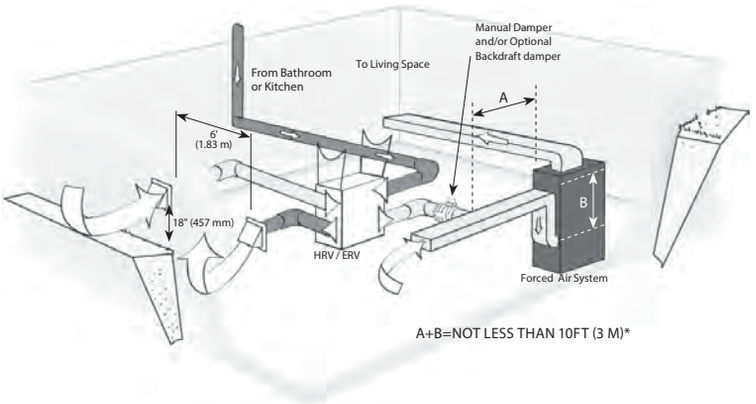
This application uses a devoted duct system for the exhausting of stale air accumulated in the home. The fresh air is dumped into the return air duct and is distributed through the home by the existing supply air ductwork of the forced air system.

Make sure when using this application that your fresh air duct connection to the forced air system return air duct is not less than 10ft (3m) upstream of the return plenum connection to the forced air system. Check with your local code or the forced air system's manufacturer. The HRV and forced air system must be in continuous mode to achieve maximum comfort and to avoid cross-contamination.

NOTE: Dwellings with multiple forced air systems require one HRV/ERV per system. Ensure the unit runs in conjunction with forced air system.

EXHAUST AIR from various parts of home, i.e., bathrooms, kitchens (if required)

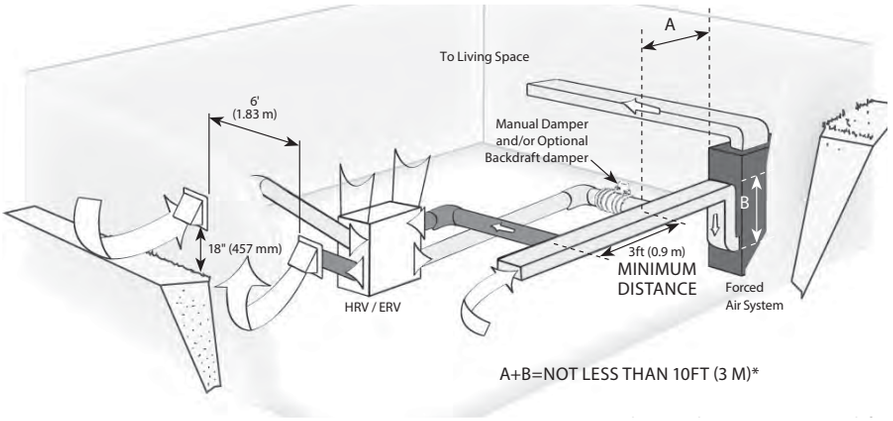




Exhaust and Supply in the Return Installations

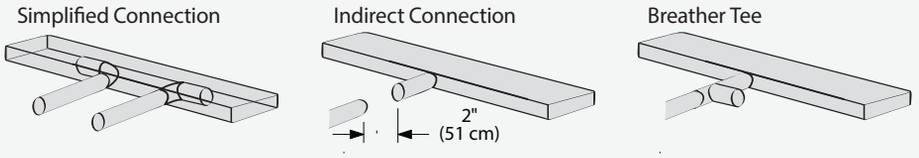
When using this application, make sure that there is a minimum of 3 feet (0.9 m) between the fresh air and exhaust air connections of the HRV/ERV in the return air duct.

Make sure when using this application that your fresh air duct connection to the forced air system return air duct is not less than 10 ft (3 m) upstream of the return plenum connection to the forced air system. Check with your local code or the forced air system's manufacturer. The HRV and forced air system must be in continuous mode to achieve maximum comfort and to avoid cross-contamination. NOTE: Dwellings with multiple forced air systems require one HRV/ERV per system. Ensure the unit runs in conjunction with forced air system.



IMPORTANT: The duct bringing outdoor air to the return air plenum must be equipped with a manual damper to balance the outdoor airflow.

** For minimum distance between return and forced air system, check with your local building codes and forced air system manufacturer. IMPORTANT: Building and combustion appliance installation codes do not allow return air grilles or openings such as "breather tee" or indirect connections in an enclosed room that is susceptible to spillage of combustion appliances.*

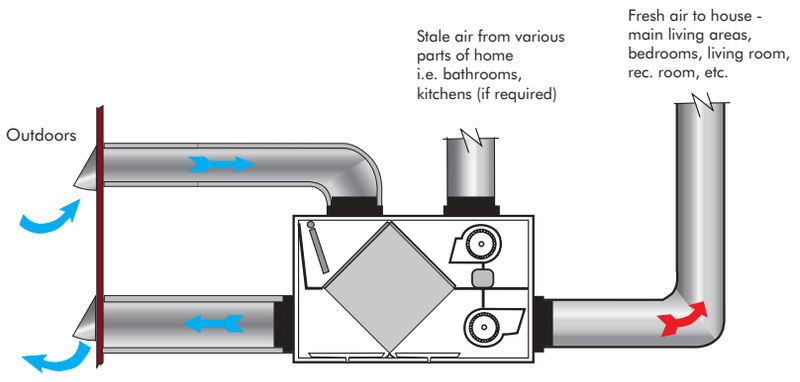


Fully Dedicated Installations

The Fully Dedicated Installation draws stale air from specific points in the house and delivers fresh air to specific locations of the house. This system is not connected to an air handler/furnace. Stale air ducts should be installed in areas of the home where the poorest indoor air quality exists (bathrooms and kitchen). Each location with a stale air duct should have a timer that will initiate high-speed ventilation. Fresh air ducts should be installed in all bedrooms and living areas, excluding bathrooms, kitchen, and utility areas.

Grilles should be located high on a wall or in ceiling locations. Grilles that diffuse the air comfortably are recommended.

Special care should be taken in locating grilles if the floor is the only option available. Areas such as under baseboard heaters will help to temper the air. Optional inline duct heaters are available for mounting in the supply ductwork to add heat if required.

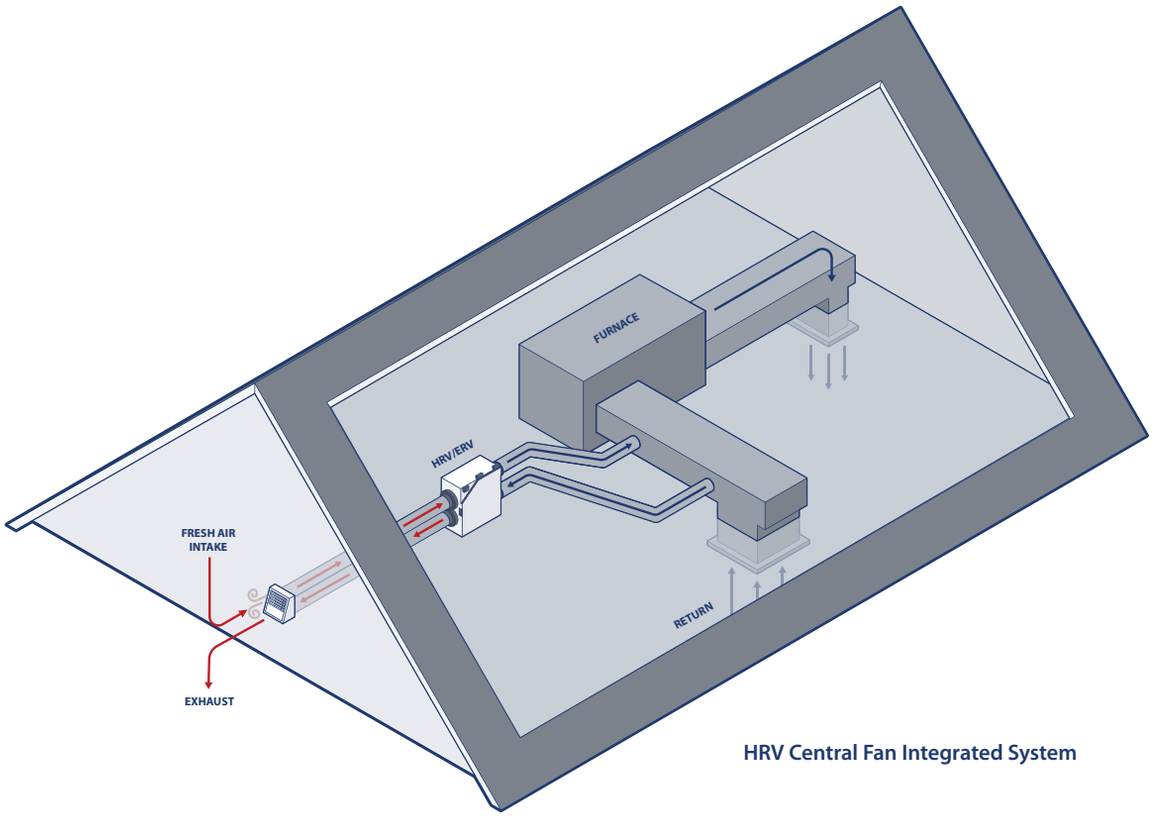


Fully Dedicated System
A stand-alone HRV/ERV system not connected to a forced air system. Stale air is drawn from key areas of the home (bathroom and kitchen) while fresh air is supplied to main living areas.

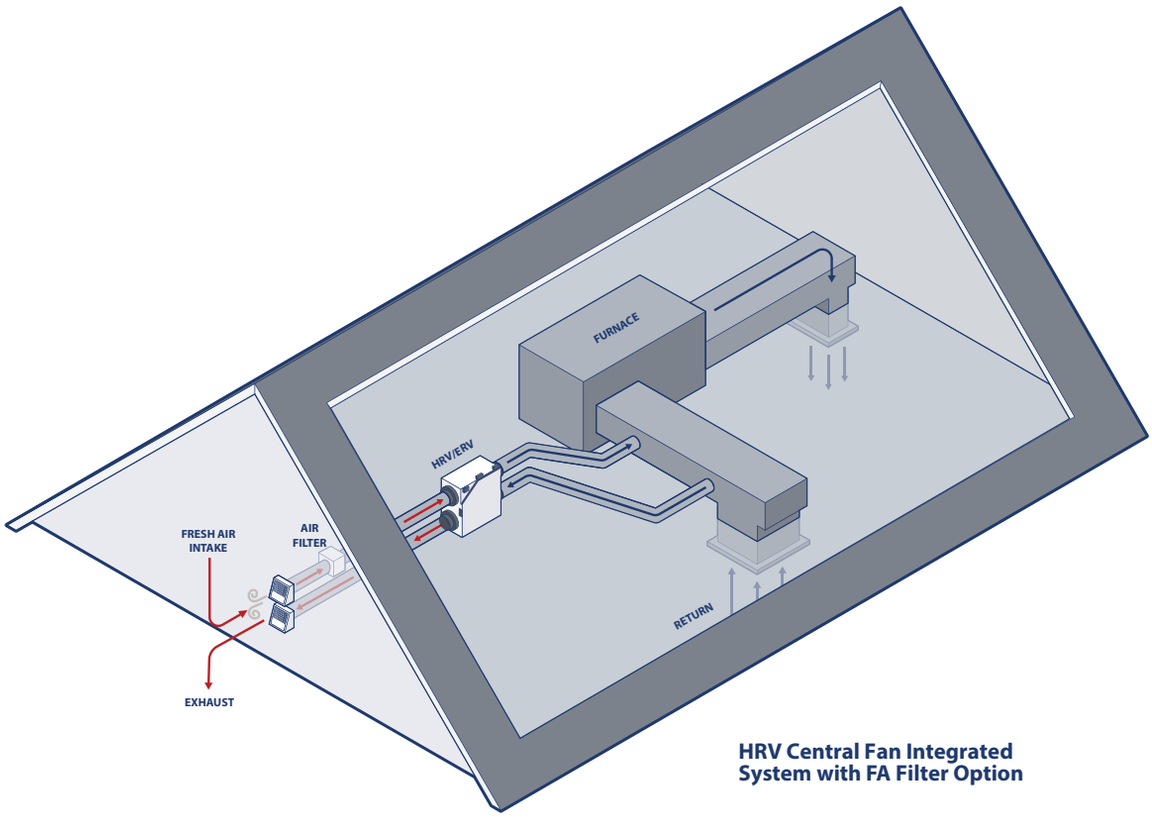
HRV/ERV Systems

INSTALLATION OPTIONS

BALANCED



HRV Central Fan Integrated System



HRV Central Fan Integrated System with FA Filter Option

Make-Up Air System (MAS)

DEPRESSURIZATION SOLUTION

Efforts to make your home more energy efficient prevent fresh air from entering the home and can lead to compromised air quality and appliance inefficiency. Weather stripping, caulk, sealants, and moisture barriers such as Tyvek® tighten the home, reducing air changes, which can lock stale air inside. Exhaust ventilation like bathroom fans and exhausting appliances like clothes dryers, range hood fans, and gas fireplaces can create negative pressure, causing heating appliances to take more time to do their jobs and wasting energy.

These problems can be solved with the installation of a Make-Up Air System (MAS). The MAS delivers fresh air automatically, improving indoor air quality and appliance efficiency and saving energy.

Includes Intake Air Hood IAH-6

BALANCED

Features

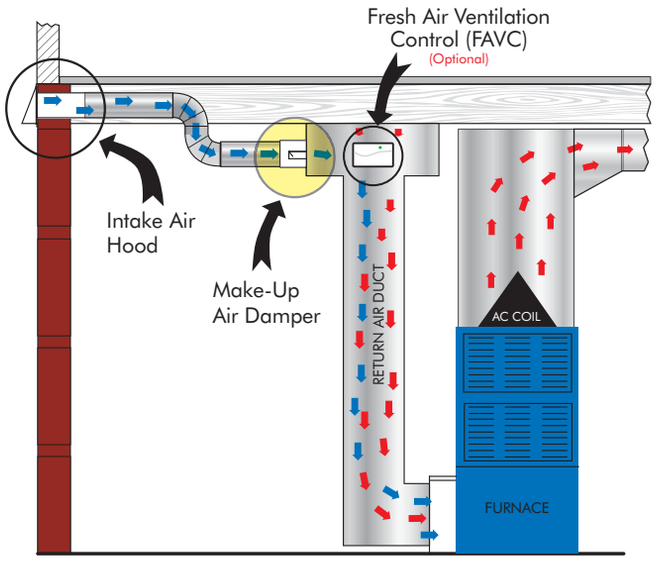
- Adjustable gate provides precise airflow control
- Pressure-activated
- Easy to read airflow gauge
- No electricity required
- 24-gauge aluminum coated steel
- Corrosion-resistant and paintable
- Intake air hood included
- Quiet operation

When to use the MAS

- To improve appliance efficiency
- To improve Indoor Air Quality
- To conserve energy
- To increase fresh air changes
- To replace air exhausted by bathroom fans, clothes dryers, range hood fans, and other exhaust devices

How the MAS works

The Make-Up Air System connects the HVAC system to the outside to allow controlled amounts of fresh air to enter the system when needed. The system automatically senses pressure changes and a need for airflow and opens to bring a precise, metered amount of fresh air into the air handler. Here, the cold air is tempered as it mixes with warm air in the return duct. The air is then heated and distributed through the home via the central duct system. When the need for air is fulfilled, the system closes to prevent further air infiltration. The system must be installed by a qualified heating and air conditioning professional and is adjustable for homes from 1,000 to 4,000 square feet. It does not require any electricity or maintenance.



Specifications			
Model	Product	Description	Part #
MAS-1	Make-Up Air System	MUA Device w/6" Intake Air Hood	46231900

VentCool® Is A Better Way to Cool Your Home

Now, there is a way to cool your home that uses less energy than traditional air conditioning, reduces overall energy costs, and provides a reliable source for clean, fresh air ventilation throughout the home. Our VentCool free-cooling whole-house fans are available in three series: Tahoe, Summit, and Vista. All series feature models in a range of sizes and configurations.

Save on Air Conditioning Costs

The benefits of free cooling begin with dramatic energy savings. VentCool Whole House Fans **use up to 90% less energy** than running compressor-based air conditioning units. As the cooler air circulates through the home, it cools the structure and everything in it. With thermal mass cooling, the air conditioning isn't needed until later in the day. This translates into less use of the air conditioning system and significant cost savings.

VentCool® Fans Qualify for Energy Credits

The Department of Energy reports that whole house fans are the most cost effective way to cool your home. Many state and local codes provide energy credits, discounts, or other incentives for whole house fans. VentCool models can be used to comply with 2016 Title 24 Part 6. Homeowners take note: VentCool fans are on the HERO list of eligible energy-savings products.

Free Cooling Benefits

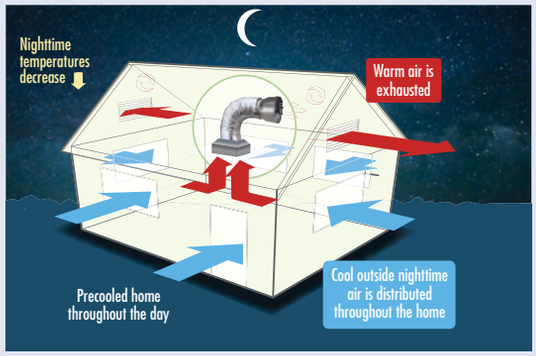
- Free cooling mode uses up to 90% less energy than air conditioning mode
- Provides up to 30 air changes per hour depending on fan selection and size of house
- A precooled house greatly reduces air conditioning use during the day
- Rated and tested to Home Ventilation Institute Standard HVI-916
- Can be used to comply with 2016 Title 24 Part 6
- Eligible for Home Energy Renovation Opportunity (HERO) financing program

Designed for Fast, Easy Installation

All VentCool Whole House Fans come complete and are installed from inside the attic. Plus, they are designed to fit between the joists to ease installation. There is no need to cut joists when installing the damper box since they all fit 16" on center. Installation is simple. Contractors and builders will find installation is fast so there is less time spent on the job site. Homeowners who are handy do-it-yourselfers can easily install a VentCool fan themselves.

What Is Free Cooling?

VentCool® Whole House Fans replace warm/stale inside air with cool/fresh outdoor air. The process is called Thermal Mass Cooling. Fresh, cool nighttime air is brought in from outdoors to precool the house and its contents. Free cooling is a great way to reduce energy costs, because the air conditioning compressor is not used. Plus, it increases fresh air ventilation and enhances indoor air quality.



Whole House Fans

TAHOE SERIES AND SUMMIT SERIES S-CLASS

Go to fieldcontrols.com/videos or our YouTube channel to learn more about the VentCool Whole House Fans.

LIMITED 15 YEAR WARRANTY

TAHOE™ Series

T2 model

Tahoe Series Whole House Fans are high-performance, energy-saving residential cooling systems.

- 5 models
- Broad menu of airflow capacities to meet design requirements
- AirLoc™ Gravity Damper
- PSC motor

Tahoe™ Features

PSC Motor

Economical and reliable Permanent Split Capacitor (PSC) motors that operate on up to 90% less energy than traditional air conditioning.

Wall Mounted Speed Control

2-speed wall-mount control with an 8-hour timer to set the desired operation period. Optional Wi-Fi™ capability.

SUMMIT™ Series S-Class

Summit Series S-Class Whole House Fans are powerful, energy-efficient, quiet-performing residential cooling systems.

- 5 models
- Broad menu of airflow capacities to meet design requirements
- AirLoc™ Gravity Damper
- ECM motor

Summit S-Class Features

ECM Motor

Highly efficient Electronically Commutated Motors (ECM) that operate at an optimally low CFM/watt draw consuming up to 90% less energy than traditional air conditioning.

Wall Mounted Digital Control

WTT 3-speed wall-mount control digital 12-hour timer temperature controls. Optional RTT remote timer or temperature control. Optional Wi-Fi upgrade available.

Tahoe and Summit S-Class Shared Features:

AirLoc™ Gravity Damper

Exclusive AirLoc™ Gravity Damper, a precise sealing system component designed for a secure seal to isolate the attic from the living space when operation of whole house fan is not desired.

Acoustic Silencer Duct

7 feet of insulated flexduct designed for quieter sound operation.

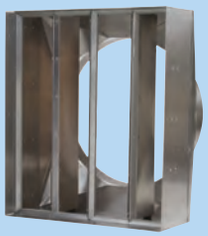
Decorative Intake Grille

White cube core design easily removed for cleaning.

Whole House Fans

SUMMIT AND VISTA SERIES

SUMMIT™ Series



Summit Series Whole House Fans are energy-efficient, quiet-performing residential cooling systems. Summit Series features the AirLoc™ Gravity Damper, a precise sealing system component designed for a secure seal to isolate the attic from the living space.

- 2 models
- Select menu of airflow capacities to meet design requirements
- AirLoc™ Gravity Damper
- ECM motor

VISTA™ Series

Vista Series Whole House Fans are powerful, energy-efficient, quiet-performing residential cooling systems. Vista Series features the PowerSeal™ Motorized Damper, an Insulated R-49 drive seal system designed for a secure, precise, and insulated seal between the attic and the living space.

- 4 models
- Select menu of airflow capacities to meet design requirements
- PowerSeal™ Motorized Damper
- ECM motor

Features

ECM Motor

Highly efficient Electronically Commutated Motors (ECM) that operate at an optimally low CFM/watt draw, consuming up to 90% less energy than traditional air conditioning.

Wall-Mounted Speed Control

10-speed wall mount control with an 8-hour timer to set desired operation period. Optional remote control.

Acoustic Silencer Duct

7 feet of insulated flexduct designed for quieter sound operation.

Decorative Intake Grille

White cube core design easily removed for cleaning.

Go to fieldcontrols.com/ventcool
to use our online Whole House Fan Sizing Calculator.
Just enter house sq. ft. and ceiling height.

Fan Model Selection

Perform a simple measure-and-calculate method to select the proper VentCool Whole House Fan model. Determine the house square footage (sq. ft.), and multiply by the ventilation cooling Fan CFM factor. Choose from Active, Effective, or Rapid ventilation cooling equations below to determine Whole House Fan top speed capacity. Go to the Fan Airflow (GROSS) CFM column, and match your result to the corresponding VentCool Model. The most commonly applied CFM Factor is 2 CFM per sq.ft. for Effective Ventilation Cooling.

- Active Ventilation Cooling: House Square Footage (Sq. Ft.) x 1.5 = Fan CFM
- Effective Ventilation Cooling: House Square Footage (Sq. Ft.) x 2.0 = Fan CFM
- Rapid Ventilation Cooling: House Square Footage (Sq. Ft.) x 2.5 = Fan CFM

NOTE: Homes with many rooms that have high vaulted ceilings will increase the need for CFM capacity. For high-ceiling homes (10 ft. plus), it is recommended that you use a CFM Factor of 2.5 - 3 per sq.ft.

FREE COOLING

Tahoe Series with AirLoc™ Gravity Damper

Model	Fan Airflow (GROSS) CFM Sizing 2 CFM/sqft	HVI-916 std. Title 24 (NET) CFM Sizing 1.5 CFM/sqft	Watts	CFM/Watts	Efficiency Watts/CFM	Sound Level (dBA)@5ft.	Digital Speed Control Timer or Temperature	Voltage	Acoustical Silencer Duct	Rough Opening (inches)	Grille Dimensions (inches)	Damper Blade R-Value	Attic Venting* (sq. ft.)	Open Window† (sq. ft.)
VentCool-T2	2369	1,932	295	6.55	0.15	54	2spd/12hr	120v	16" x 7ft	14.5 x 22.5	16.5 x 24.5	R-5	3.86	3.86
VentCool-T3	3339	2,759	350	7.88	0.13	53	2spd/12hr	120v	18" x 7ft	14.5 x 22.5	16.5 x 24.5	R-5	5.52	5.52
VentCool-T4	4590	3,640	430	8.47	0.12	56	2spd/12hr	120v	20" x 7ft	14.5 x 30.5	16.5 x 32.5	R-5	7.28	7.28
VentCool-T5	5902	4,123	630	6.54	0.15	59	2spd/12hr	120v	20" x 7ft	14.5 x 30.5	16.5 x 32.5	R-5	8.25	8.25
VentCool-T6.5	5951	4,631	778	5.95	0.17	60	4spd/12hr	120v	(2) 16" x 7ft	14.5 x 36.5	16.5 x 38.5	R-5	9.26	9.26

Summit Series S-Class with AirLoc™ Gravity Damper

Model	Fan Airflow (GROSS) CFM Sizing 2 CFM/sqft	HVI-916 std. Title 24 (NET) CFM Sizing 1.5 CFM/sqft	Watts	CFM/Watts	Efficiency Watts/CFM	Sound Level (dBA)@5ft.	Digital Speed Control Timer or Temperature	Voltage	Acoustical Silencer Duct	Rough Opening (inches)	Grille Dimensions (inches)	Damper Blade R-Value	Attic Venting* (sq. ft.)	Open Window† (sq. ft.)
VentCool-S2	2576	2,078	210.4	9.87	0.10	54	3 spd/12 hr	120v	16" x 7ft	14.5 x 22.5	16.5 x 24.5	R-5	4.16	4.16
VentCool-S3	2740	2,210	203.6	10.85	0.09	53	3 spd/12 hr	120v	18" x 7ft	14.5 x 22.5	16.5 x 24.5	R-5	4.42	4.42
VentCool-S4	4522	3,647	383.3	9.51	0.11	56	3 spd/12 hr	120v	20" x 7ft	14.5 x 30.5	16.5 x 32.5	R-5	7.29	7.29
VentCool-S5	5224	4,213	657.9	6.40	0.16	61	3 spd/12 hr	120v	20" x 7ft	14.5 x 30.5	16.5 x 32.5	R-5	8.43	8.43
VentCool-S6.5	6056	5,680	638	8.90	0.11	60	3 spd/12 hr	120v	(2) 16" x 7ft	14.5 x 36.5	16.5 x 38.5	R-5	11.36	11.36

Summit Series with AirLoc™ Gravity Damper

Model	Fan Airflow GROSS CFM Sizing 2 CFM/sqft	HVI-916 std. Title 24 NET CFM Max Airflow Sizing 1.5 CFM/sqft	Watts	CFM/Watts	Efficiency Watts/CFM	Sound Level (dBA)	Speed/ Timer	Voltage	Acoustic Silencer Duct	Rough Opening (inches)	Grille Dimensions (inches)	Damper Blade R-Value	Attic Venting* (sq. ft.)	Open Window† (sq. ft.)
VentCool-3.4	4,230	3,342	292	11.45	.09	52	10spd/12hr	120v	20" x 7ft	22.5 x 26.5	24.5 x 28.5	R-5	6.7	13.4
VentCool-4.9	6,048	5,202	850	6.12	.16	60	10spd/12hr	120v	20" x 7ft	22.5 x 26.5	24.5 x 28.5	R-5	10.4	20.8

Vista Series with PowerSeal™ Insulated Motorized Damper

Model	Fan Airflow GROSS CFM Sizing 2 CFM/sqft	HVI-916 std. Title 24 NET CFM Max Airflow Sizing 1.5 CFM/sqft	Watts	CFM/Watts	Efficiency Watts/CFM	Sound Level (dBA)	Speed/ Timer	Voltage	Acoustic Silencer Duct	Rough Opening (inches)	Grille Dimensions (inches)	Damper Blade R-Value	Attic Venting* (sq. ft.)	Open Window† (sq. ft.)
VentCool-1.7	1,981	1,713	157	10.91	.09	55	2spd/12hr	120v	—	14.5 x 22.5	16.5 x 24.5	R-47	3.4	6.8
VentCool-2.5	3,614	3,253	321	10.13	.10	60	10spd/12hr	120v	20" x 7ft	14.5 x 22.5	16.5 x 24.5	R-49	6.5	13.0
VentCool-3.5	4,354	3,440	298	11.54	.09	52	10spd/12hr	120v	20" x 7ft	22.5 x 26.5	24.5 x 26.5	R-49	6.9	13.8
VentCool-5.0	6,220	5,350	825	6.48	.15	61	10spd/12hr	120v	20" x 7ft	22.5 x 26.5	24.5 x 26.5	R-49	10.7	21.4

**Adequate attic ventilation must be available for the fan to operate efficiently. Recommended 1 sq. ft. of net free ventilation area per 500 CFM of fan airflow.*
† Windows must be opened to safely and effectively operate the fan. Recommended 1 sq. ft. of open windows per 250 CFM of fan airflow.
NOTES: Fan Airflow CFM method of test is derived by measurements with test equipment in accordance with AMCA International.
Home Ventilation Institute (HVI-916) Standard CFM method of test and results are recognized by CA Title 24 for use in Residential New Construction (RNC) home modeling evaluations by energy consultants and builders.

The Comfort Problem

Multi-level homes find discomfort due to uneven temperatures from the heating and cooling system. Rising heat, sun exposure, and windows can cause the living and bedroom (sleeping) areas to be uncomfortably warm or uncomfortably cool.

The upper-level sleeping area of a two-story home during the summer cooling season will feel too warm. The lower-level living area during the winter heating season will feel too cool. The sleeping area and living area of a single-story home can be too warm or too cool, depending on exposure.

In two-story homes, upstairs sleeping area feels too warm during the summer.

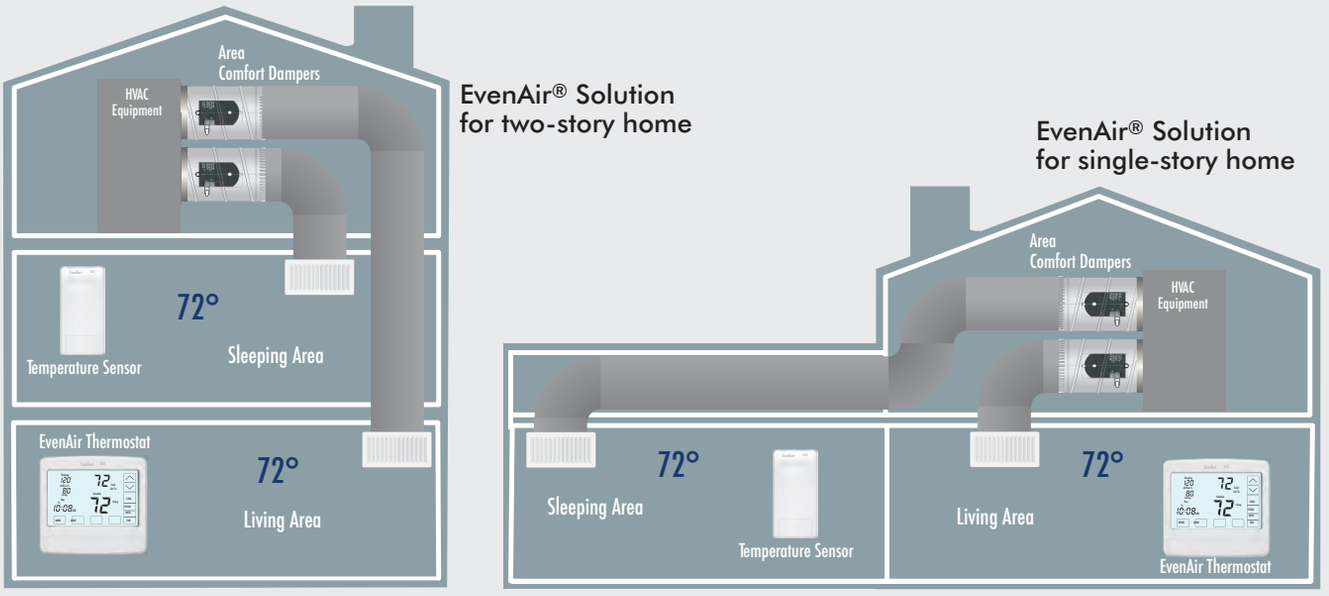
In single story homes, living areas with sun exposure feel too warm during the summer.

The EvenAir® Solution

The EvenAir® Whole House Comfort Control System works with your heating and cooling appliances to bring temperature balance to your home. EvenAir® system thermostat monitors the sleeping area and living area temperatures. The comfort control automatically adjusts the system airflow. Uniform air delivery balances temperatures for a comfortable home.

The EvenAir® installation is simple. Your contractor will install an EvenAir® system thermostat where your existing thermostat is located. A temperature sensor is installed in the sleeping area. Area Comfort Dampers that control the airflow to the sleeping area and living area will be installed in your ductwork.

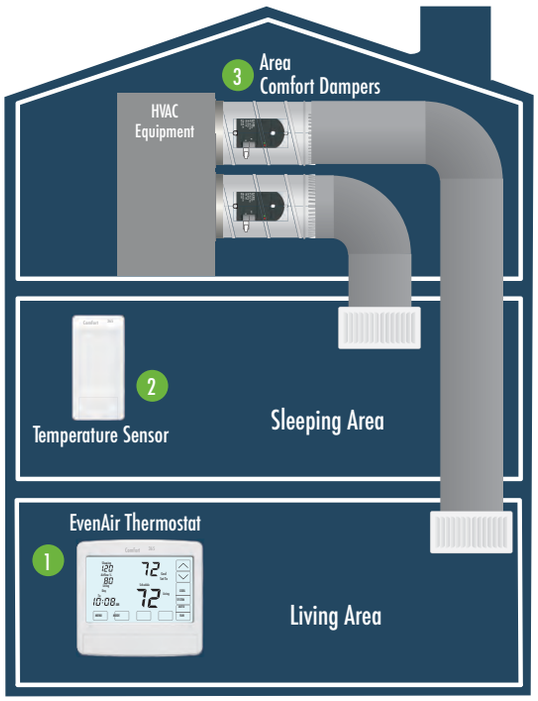
Single- and Two-Story Home Solutions



How It Works

1. *An EvenAir® thermostat monitors the temperature in two locations (sleeping area and living area) to maintain even temperature throughout the home.*
2. *The second temperature sensor, located in the sleeping area, is checked every 2 minutes during heating and cooling modes.*
3. *When the temperatures differ by more than 2 degrees,* airflow is automatically adjusted. Each EvenAir damper is adjusted by 2% in the appropriate direction to increase airflow where it is needed. This modulates air delivery to balance temperature throughout the home.*

**Factory set at 2 degrees, adjustable from 0 to 5 degrees.*



Premium Whole-House Comfort

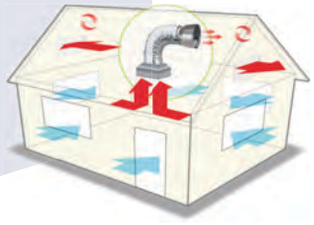
Take the EvenAir® Comfort Control System to the next level of whole house comfort by integrating whole house ventilation, fresh air control and humidity control — all controlled using your EvenAir® Thermostat.

FRESH AIR CONTROL

In many states, fresh air ventilation is required to meet building codes for new construction or to obtain energy tax credits in existing homes. The EvenAir® thermostat, along with a Fresh Air Damper, can meet these requirements by delivering fresh air automatically and efficiently.

WHOLE HOUSE VENTILATION

Whole house fan control brings in cool outdoor air, reducing energy costs and enhancing indoor air quality. The EvenAir® thermostat controls whole house ventilation either manually using a one- to 12-hour timer set at the thermostat or by true temperature control for total comfort and convenience.



HUMIDITY CONTROL

The EvenAir® thermostat displays the humidity level and controls a humidifier and/or dehumidifier for a more comfortable home during the heating and cooling season.

EvenAir®

COMPONENTS

	Model #	Description
EvenAir® Wired Thermostats		
		Programmable Wired Thermostat with airflow control for gas/electric or heat pump equipment with 2H/1C or 1H/2C.
	T21WF	Programmable Wired Thermostat with airflow control for gas/electric or heat pump equipment with 2H/1C or 1H/2C, Wi-Fi Enabled.
EvenAir® Communicating Thermostats		
	T32CV	Programmable Communicating Thermostat with airflow control and vent mode, for all equipment.
	T32CVH	Programmable Communicating Thermostat with airflow control and 62.2 ventilation, humidity and whole house fan control, for all equipment.
	T32CVHW	Programmable Communicating Thermostat with airflow control and 62.2 ventilation, humidity and whole house fan control, for all equipment. Wi-Fi Enabled
EvenAir® Wiring Hubs and Plug-in Radio Module		
	H32	Wiring Hub for gas/electric equipment, conventional or dual fuel heat pump with 3H/2C.
	H32FH	Wiring Hub for gas/electric equipment, conventional or dual fuel heat pump with 3H/2C, Fresh Air Damper output, humidifier output, DSBK terminal for dehumidification and output for whole house fan control.
	ER1	eLink Plugin Radio Module. Plugs into wiring hub and is required when using wireless sensors.
EvenAir® Temperature Sensors		
	TS51	Wired Temperature Sensor for the sleeping area. Single-sensor installation.
	TS52	Wired Temperature Sensor for the sleeping area. Dual-sensor installation.
	TS5L	Wireless Temperature Sensor for the sleeping area. Single- or dual-installation. Battery powered.
	TS3	Outdoor Temperature Sensor. Required when dual fuel heat pumps are used or for inhibiting 62.2 ventilation.
EvenAir® Area Comfort Dampers		
	RBD/W	Round, Motorized Area Comfort Damper, 3-Wire.
	RBD/PP	Round, Motorized Area Comfort Damper, Plug & Play (includes 25 ft cable)
	MBD/W	Rectangular, Motorized Area Comfort Damper, 3-Wire.
	MBD/PP	Rectangular, Motorized Area Comfort Damper, Plug & Play (includes 25 ft cable)

Optional Accessories		
	T6F	Wireless, Battery-Powered Remote Controller for Whole House Fan.

Go to fieldcontrols.com/videos or our YouTube channel to learn more about EvenAir®.

Residential Steam Humidifier

The humidifier that works when you need it

The Field Controls Residential Steam Humidifier operates when there is a call for humidity, not just when there is a call for heat. This means maximum comfort for the homeowner. It is also designed for optimum efficiency with an onboard system that automatically performs routine maintenance and monitors operations for maximum safety.

S2000

Automatic Maintenance

The automatic flush system drains the humidifier every 24 hours of operation. This is a preventative maintenance mode that keeps the pan clean and the water fresh. Since the pan refills only when there is a call for humidity, the pan is empty during the summer months. This prevents stagnant water and the problems associated with other types of humidifiers. The S2000 can output up to 16 gallons of water per day, and the S2020 can output up to 23 gallons per day.

Information Is Power

The S2000 and S2020 steam humidifiers have a built-in computer chip to ensure maximum efficiency, accuracy, reliability, and safety. The easy-to-read LEDs on the unit communicate operation and trouble-shooting information.

Features

- Interlocking wiring for fan control
- LEDs for system readout
- Replaceable sacrificial anode
- Optional water filter
- Copper heating element for improved durability

Benefits

- Humidifies without a call for heat
- Compatible with all forced air heating systems
- Most effective cure for dry homes
- 100% guaranteed fresh water
- Water is allowed to cool before draining, reducing risk of scalding if servicing
- Reduced clogging because tank does not drain from the bottom
- Works with heat pumps and geothermal systems

COMFORT

Sizing the humidifier for your home

1. **Calculate the total cubic feet of your home**
   * Total home square feet x Average ceiling height
   Note: Include the basement
2. **Calculate humidity load requirement in pounds per hour (lbs/hr)**
   * Total cubic feet of your home x Preferred indoor RH% factor (see table)
   * Multiply result by 1.05 for each fireplace
3. **Converting (lbs/hr) to gallons per day (gpd)**
   * Humidity load (lbs/hr) x 2.88 Factor = Gallons per day (gpd)

Source: Residential Humidity Load Made Easy; Scheurich, Dean, 12/23/09 et al.

Example

1. 2,500 sq ft x 8 ft ceiling height = 20,000 cubic ft
2. 20,000 cubic ft x 0.00021 (RH% Factor for 45% humidity @ 68°) = 4.2 lbs/hr
3. 4.2 lbs/hr x 2.88 = 12.096 (gpd)

Indoor Air Temp °F	Preferred Indoor RH% Factor			
	35%	40%	45%	50%
68°	0.00015	0.00018	0.00021	0.00024
70°	0.00017	0.00020	0.00023	0.00026
72°	0.00019	0.00022	0.00025	0.00028

** Factors based on 0.5 air changes per hour (ACH)*

Specifications

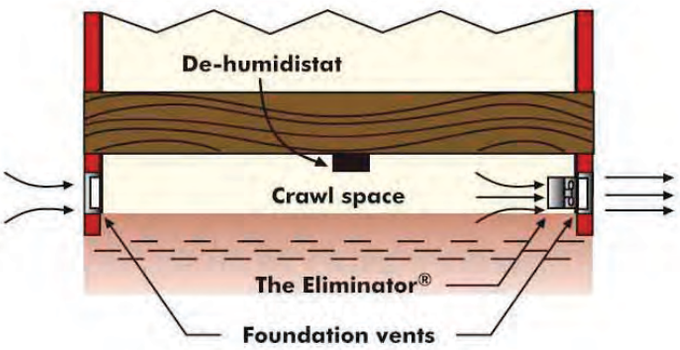
Model	Output Capacity	Max coverage area (sq. ft.)	Voltage	Watts	Amps	Hz	Plenum Opening (inches)	Weight (Lbs.)	Humidistat Included
S2000	16 Gal./Day	2,400	120 VAC	1.4	11.6	–	6 x 6	9	Yes
S2020	23 Gal./Day	3,200	220 VAC	2.0	8.5	–	6 x 6	9	Yes

Eliminator® Foundation Vent Fan

Helps Eliminate Moisture, Mold and Radon Gas from Crawl Spaces.

The Eliminator Foundation Vent Fan is a motorized fan designed to circulate fresh air in a home or building crawl space to eliminate cancer-causing radon gas and reduce moisture that can lead to mold formation and termite infestation. It is wired for automatic operation when the temperature exceeds 50°F. An optional de-humidistat activates the fan when the humidity exceeds the owner-determined setting (20% to 80%) in conjunction with the built-in temperature control.

What is a crawl space fan? A crawl space is designed to circulate fresh outdoor air underneath homes and porches. Excessive humidity levels in crawl spaces can cause premature rotting of support columns, joists, floors, and beam supports. Humidity can promote fungus growth and increased termite activity. Humidity may also cause plumbing failures due to rust and corrosion. Constant operation of a crawl space fan also helps vent radon gases, treated wood off-gassing, and other odors that can migrate into living areas.



Radon gas is a radioactive gas that is considered to be a health hazard affecting indoor air quality worldwide. Radon gas is the second most common cause of lung cancer in the United States. One in 15 homes in the U.S. has a high level of radon.

According to a study by the Mayo Clinic, nearly all chronic sinus infections are a result of mold. Since up to 40% of the air we breathe in the home can come from the crawl space, mold in the crawl space means mold in the home. The EPA recommends keeping humidity levels in the crawl space to 40%–50% to reduce the likelihood of mold formation.

Excess moisture in a crawl space can have serious consequences. Not only can it lead to mold formation, it also increases termite potential and can increase the potential for rot in floor joists, cross members, and subflooring. Moisture level in wood should be less than 20%. In high-humidity areas, that number can easily exceed 30%. To maintain safe moisture levels, experts recommend a plastic moisture barrier on the ground in combination with a vent fan such as the Eliminator.

SPECIFICATIONS

PART #	MODEL	Voltage	Amps	Cubic ft. per min.	Housing Material	# of units req.	Temp. Switch Operation	De-humidistat (Optional)	Mounting Plate Dimen.
46264901	EL-1	120VAC	0.6	100CFM	Galv. Steel	1 per 1000 sq. ft. of crawl space	Above 50°F	Above 50°F	Adj. from 20% - 80%

FAPV Replacement Parts

Part #	Model #	Description
8000108700	FA-M6F	Prefilter, FAPV
46274100	Motorized Fan CAS-3, 4	Motorized Impeller
04312200	KBWC-14	Electronic Speed Control
46161400	24V-DPDT	24VAC Relay
46256300	Capacitor CAS-3, 4	8-microfarad Motor Capacitor

HRV/ERV Accessories

Part #	Model	Description
602600100	**FAVC**	Fresh Air Ventilation Control w/Enthalpy & Temp Sensor
46634200	**HHSC+**	Healthy Home System Control Plus - IAQ Fan Management Control
46676600	**C-Sensor**	MUA / Ventilation Current Sensor
46676500	**P-Sensor**	MUA / Ventilation Pressure Switch
46590504	**FAD 4**	4" Fresh Air Damper
46590505	**FAD 5**	5" Fresh Air Damper
46590506	**FAD 6**	6" Fresh Air Damper
46590507	**FAD 7**	7" Fresh Air Damper
46590508	**FAD 8**	8" Fresh Air Damper
46590510	**FAD 10**	10" Fresh Air Damper
60510010010	**EHC1**	Digital Ventilation Control, 7 operating modes
60510010011	**EHC1.5**	Digital Ventilation Control, 12 operating modes
60510010030	**RD1**	Residential Basic de-humidistat for Field Controls HRV and ERV units
60510010031	**RD4P**	Residential Deluxe de-humidistat for Field Controls HRV and ERV units
60510010050	**T-3**	Timer 20/30/60, push button timer
60510010070	**R2-VH4**	Outdoor Vent Hood: Two - 4" hoods and 1/4" mesh screen
60510010071	**R2-VH5**	Outdoor Vent Hood: Two - 5" hoods and 1/4" mesh screen
60510010072	**R2-VH6**	Outdoor Vent Hood: Two - 6" hoods and 1/4" mesh screen
60510010075	**MTX-HD**	Single Port Vent hood for Field Controls HRV and ERV units
46612805	**VT0110**	5" Diffuser, replaces EAG5 and EAG4
46612806	**VT0111**	6" Diffuser, replaces EAG6

HRV/ERV Replacement Filters

FLTR-80KIT	HRV/ERV Replacement Filter Kit for FC80
FLTR-150KIT	HRV/ERV Replacement Filter Kit for FC150
FLTR-200KIT	HRV/ERV Replacement Filter Kit for FC200

Accessories and Replacement Parts

VENTCOOL AND EVENAIR

TAHOE™ Series Accessories

Part #	Model #	Description
602601402	TWC-15	Two-Speed 8hr Timer Wall Mount Control (T2 through T5)
602601406	TWC-6	Four-Speed 8hr Timer Wall Control (T6)
602602600	WHF-WC	WHF-WC VentCool EvenAir Wireless Control and Remote (Tahoe Series Only)
580011306	TS3	Outdoor Temperature Sensor

Wireless Remote Control WLM

SUMMIT™ S - Class Series Accessories

Part #	Model #	Description
580011801	FC3JF	Fan Control
580011702	WTT	Digital Wall Timer Temperature and Speed Control with 50-foot RJ12 Cable
580011550	PNP50	RJ12 50-foot Cable
580011704	WLM-RTT	Remote Timer Temperature and Speed Control
580011705	WFM	Wi-Fi Module to interface with WTT Digital Wall Control to add Wi-Fi
580011703	iM3	Wi-Fi Switch Mod Assy - No install of WTT Wall Ctl. (App Smart Phone Control)
602601141	IT22G	Egg Crate Intake Air Grille, 22"x16"
602601142	IT30G	Egg Crate Intake Air Grille, 30"x16"
602601143	IT36G	Egg Crate Intake Air Grille, 36"x16"

Wi-Fi Wall Control WTT

Smart Phone Control

SUMMIT™ VISTA™ Series Accessories

Part #	Model #	Description
60510003134	VSC10	10-Speed Wall Mount Control
60510003116	SSC2	Two-Speed Control (Model 1.7)
60510003145	VC-RC	Remote Control
60510003146	VC-RCT	Remote w/ CAT-5 Cable, Receiver, Transmitter
601010224	CONE-C	FAN24-A005 Cone Collar Assembly (Models 3.4, 3.5, 4.9, and 5.0)

EvenAir® Parts

Part #	Model #	Description
580011401	AMT	Modulating 3-Wire Actuator
580011402	AMJ	Modulating Plug & Play Actuator. Includes 25ft Cable.
580011405	IS	Idler Shaft for A80MT & A80MJ Actuators
580011406	DS	Drive Shaft for A80MT & A80MJ Actuators
580011410	TSRC	Wireless, Battery-Powered Remote Controller

STEAM HUMIDIFIERS		
Model S2000	DESCRIPTION	PART NO.
2120	120 Volt Heater Assembly	094021A0201
2240	240 Volt Heater Assembly	094021A0202
2001	24 Volt Solenoid Valve Assembly	094021A0203
2002	Thermistor Probe Assembly	094021A0205
2003	Water Level Probe Assembly	094021A0204
2010	120V Circuit Board Assembly	094021A0206
2011	200V Circuit Board Assembly	094021A0207
2006	Drain Valve Assembly	094021A0208
2007	Tank Baffle	094021A0209
2008	Insulation Kit	094021A0210
WH-100	Water Hammer Arrester *Used to eliminate pipe noise.*	090478A0001
Z-100	Replacement sacrificial anode. *Lasts one full season.*	090421A0211
2009	Under Duct Tank Enclosure	090421A0156
APD	Air Proving Device *Proves airflow before engaging heating element. A split core current sensing relay will monitor on/off status of any blower motor. Insures humidifier operates only when your fan is functioning.*	090558A0001
WC-25	Steam Treatment Water Filter Cartridge *Helps reduce mineral buildup. Lasts for one heating season.*	094021A1122
IDB	Internal Duct Bracket *Permanent mounting bracket makes servicing quicker and easier.*	094021A2040
UDB	Under Duct Permanent Mounting Bracket *Makes servicing quicker and easier.*	094021A2041
46645200	Bimetallic Thermal Cutoff *Electrical safety device that interrupts electric current in case of overload. Opens at a high temperature and recloses when the temperature drops.*	46617003 46617001 *(prior to 7/2015)*
072000	Humidistat Control *Automatic Humidistat adjusts the indoor Relative Humidity (RH)% based on the outdoor temperature. Wall mount or duct mount. Can be used in Automatic or Manual mode for RH setting. Outdoor air sensor included.*	094021A0001
DHS	Drain Hose Kit	094024A0001

120 or 240 Volt Heater Assembly

24 Volt Solenoid Valve Assembly

Thermistor Probe Assembly

Water Level Probe Assembly

120 or 200V Circuit Board Assembly

Drain Valve Assembly

Tank Baffle

Insulation Kit

Water Hammer Arrester

Replacement Sacrificial Anode

Under Duct Tank Enclosure

Air Proving Device

Steam Treatment Water Filter Cartridge

Internal Duct Bracket

Under Duct Permanent Mounting Bracket

Bimetallic Thermal Cutoff

Humidistat Control

PARTS

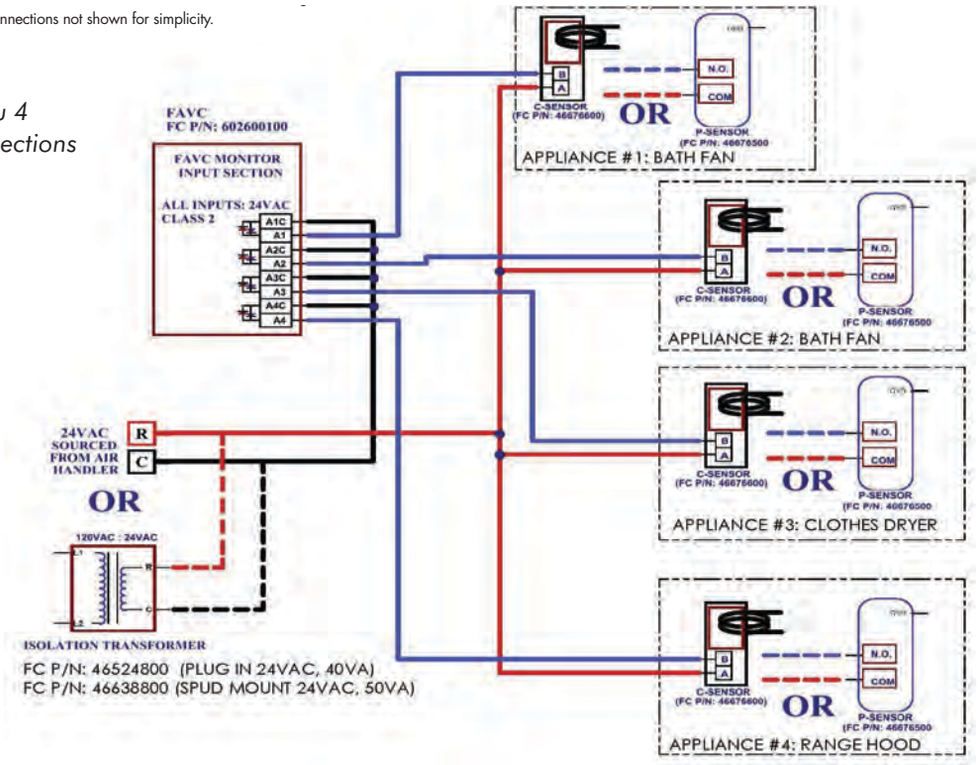
Wiring Diagrams

FOR FAVC

HVAC, Thermostat, Outdoor Sensor Wiring and FAD/HRV/ERV

Connections not shown for simplicity.

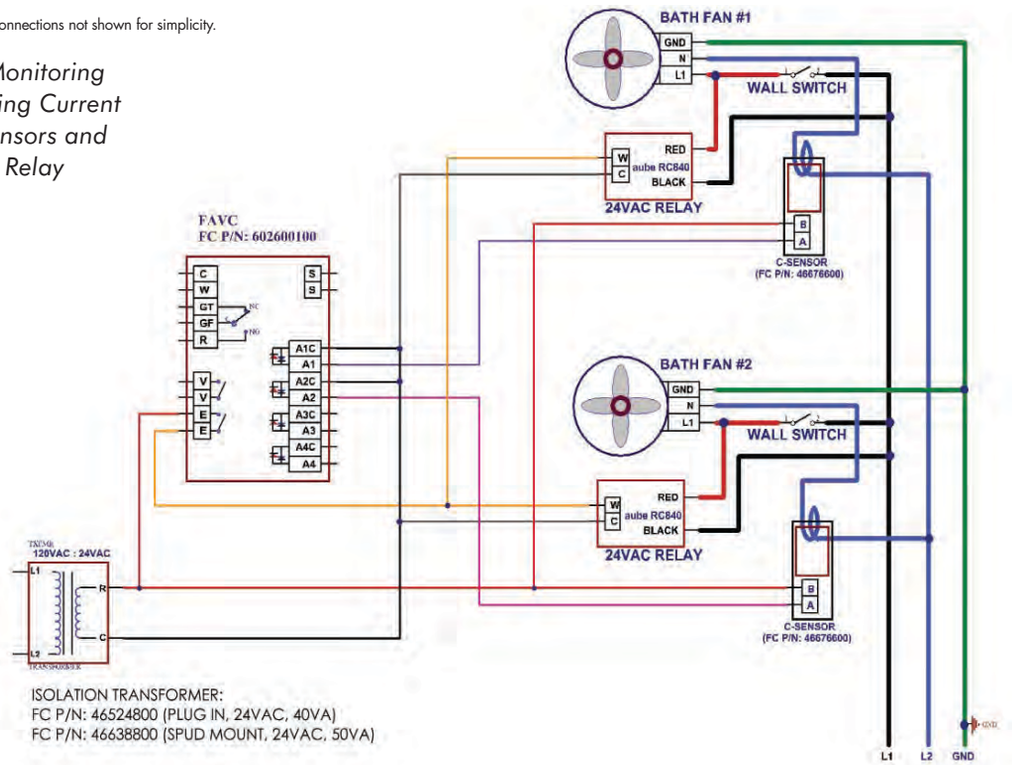
Appliances 1 thru 4 Monitoring Connections using Current or Pressure Sensors



HVAC, Thermostat, Outdoor Sensor Wiring and FAD/HRV/ERV

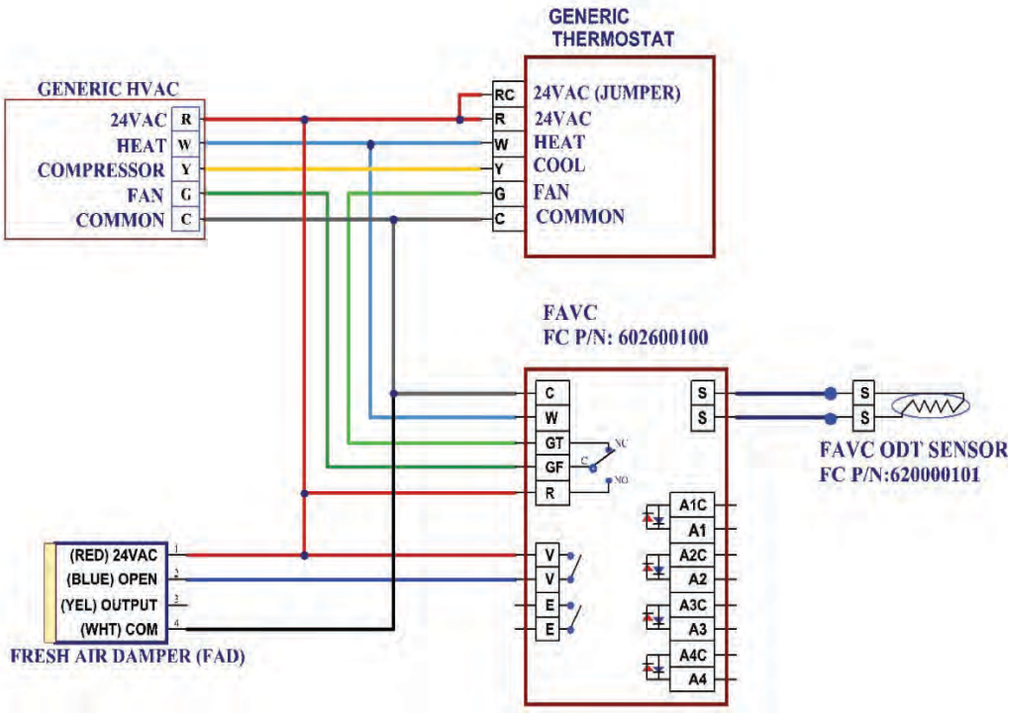
Connections not shown for simplicity.

Control and Monitoring Appliances using Current or Pressure Sensors and External Aube Relay

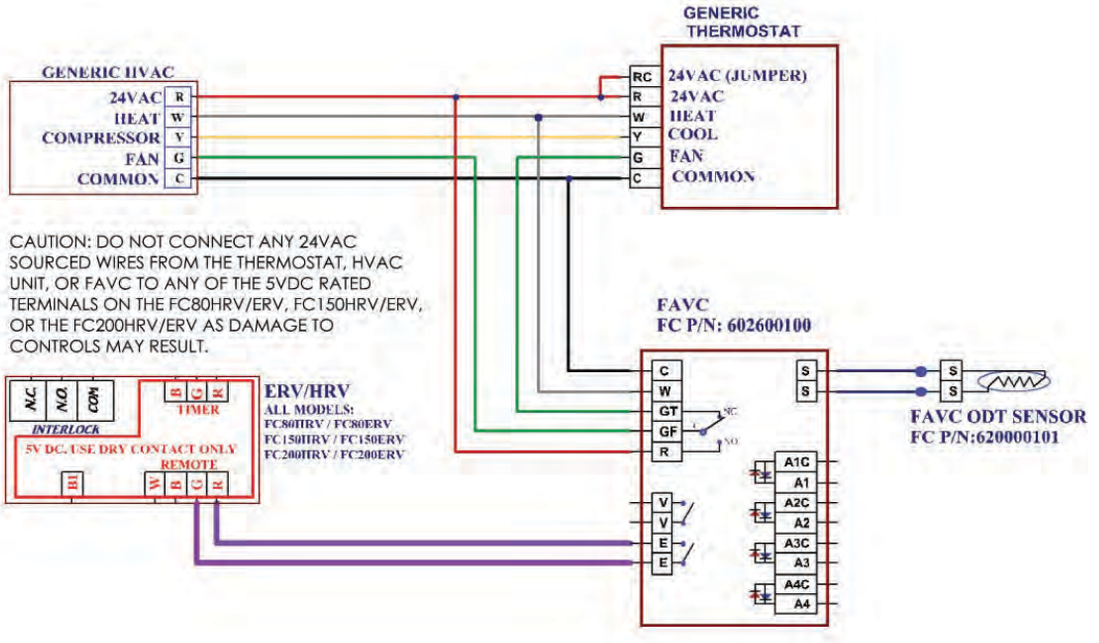


WIRING

Thermostat, Air Handler, FAVC, ODT Sensor and Fresh Air Damper



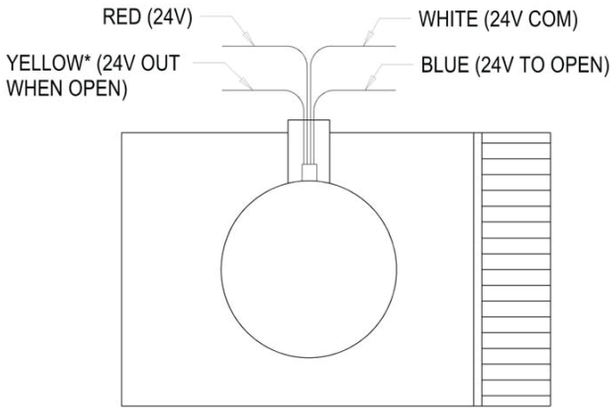
Thermostat, Air Handler, FAVC, ODT Sensor and HRV/ERV Device



WIRING

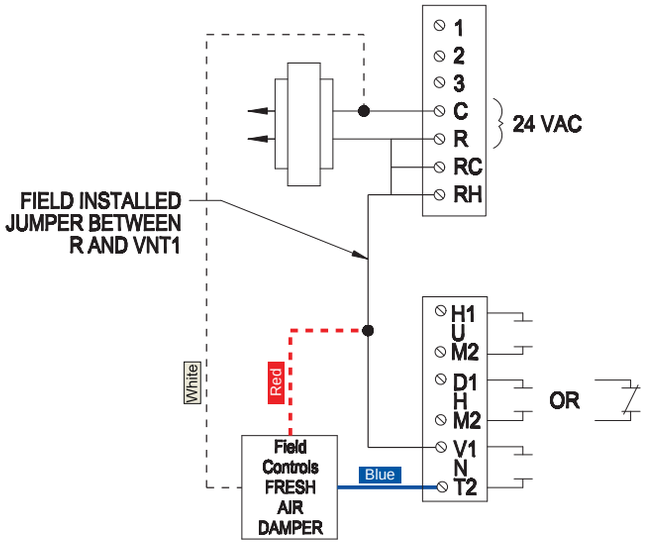
Wiring Diagrams

FOR FAD/FAV

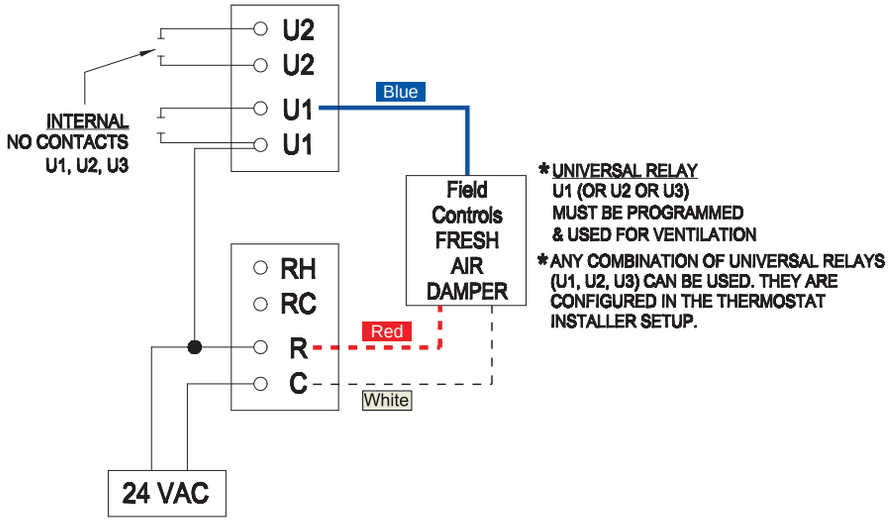


*4 WIRE HARNESS ONLY, INCLUDED WITH FAVC CONTROL

FAD to Honeywell® VisionPro® Total Home Comfort System

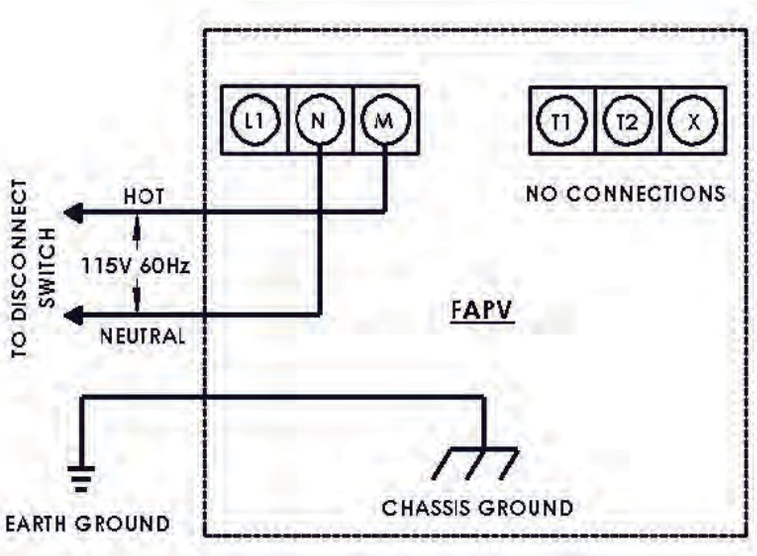


FAD to Honeywell® THX9321/9421 Prestige IAQ and RF EIM

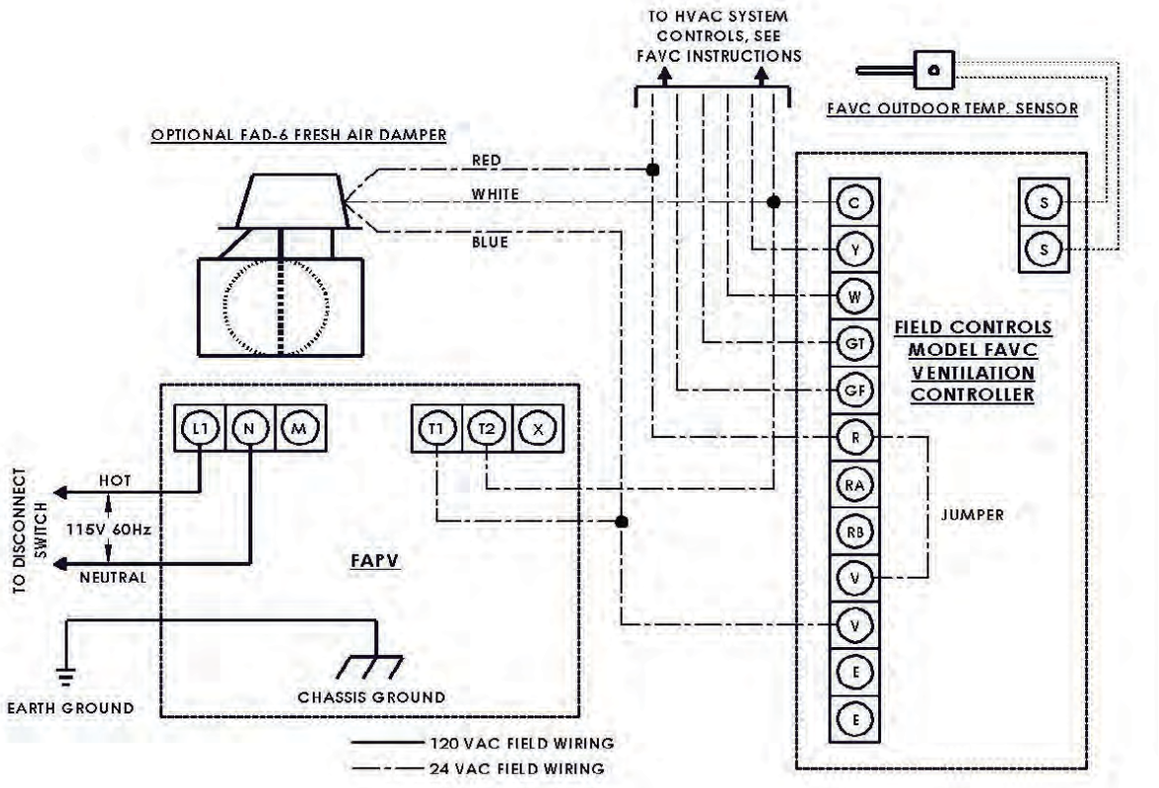


WIRING

For Continuous (Stand-Alone) Operation



For Intermittent Operation as Controlled by a 24VAC-output Ventilation Controller



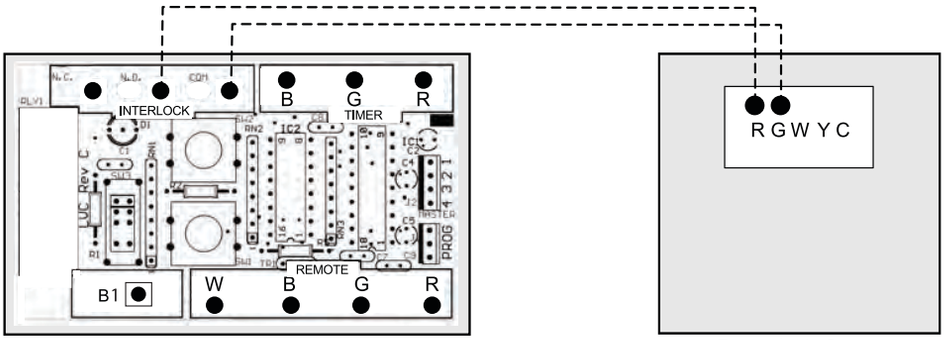
Wiring Diagrams

FOR HRV/ERV

STANDARD FORCED AIR WIRING DIAGRAM

STANDARD FORCED AIR INTERLOCKING WIRING

A relay is normally used when tying a ventilation system to the forced air distribution system. Our control system's is equipped with an internal relay that will activate the forced air system' ventilator when there is a demand from the HRV/ERV. The control system will activate the INTERLOCK relay during the following modes: Continuous, Override, Recirculation and Defrost. (See wiring diagram, Figure 15.1)



Low Voltage HRV Controller

Forced Air System

Legend: -------- Field Installed Low Voltage

ALTERNATE FORCED AIR WIRING DIAGRAM

ALTERNATE FORCED AIR INTERLOCKING WIRING

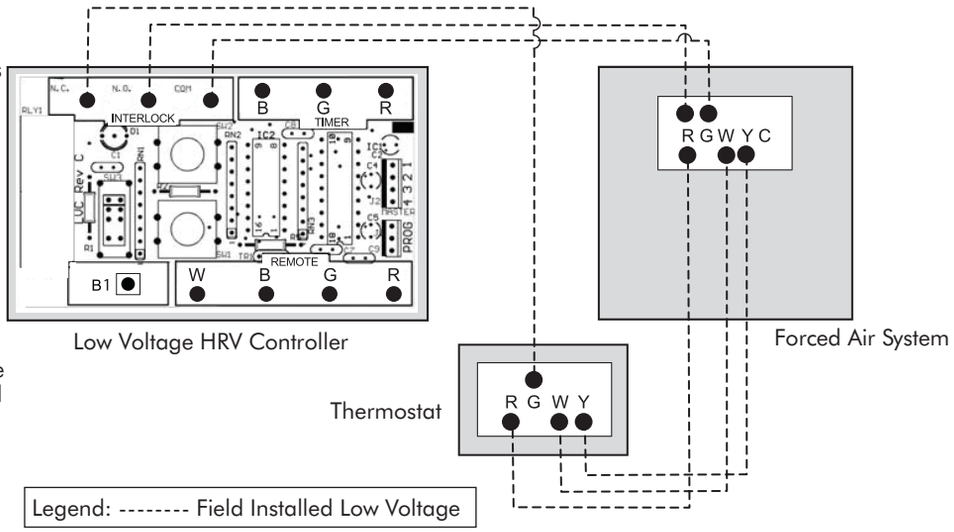
Some forced air system thermostats will activate the cooling system when tied using the Standard forced air interlocking wiring.

If you have identify this type of thermostat you must proceed with the Alternate Forced Air Wiring.

LOCATING THE WIRING DIAGRAM

NOTE: Wiring Diagram for the entire line of HRV/ERV models are placed on the back of each exhaust motor bracket.

CAUTION: Thermostats that control A/C system must use the Alternate Interlock Wiring Diagram.



Low Voltage HRV Controller

Forced Air System

Thermostat

Legend: -------- Field Installed Low Voltage

*Before tying the HRV/ERV to a forced air system, always refer to system's manual or manufacturer.

WIRING

RD1 (2 wires)

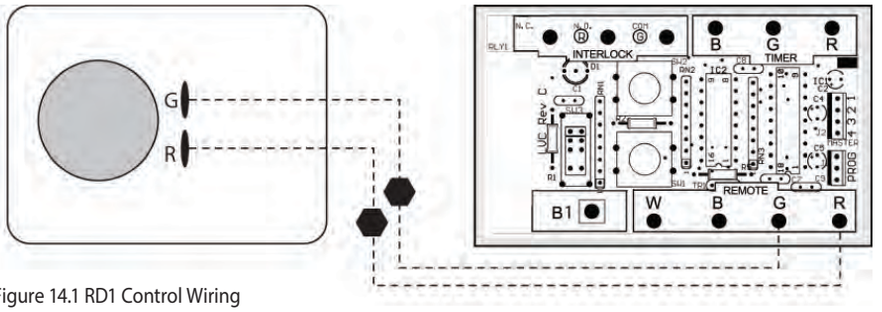


Figure 14.1 RD1 Control Wiring

RD4P (4 wires)

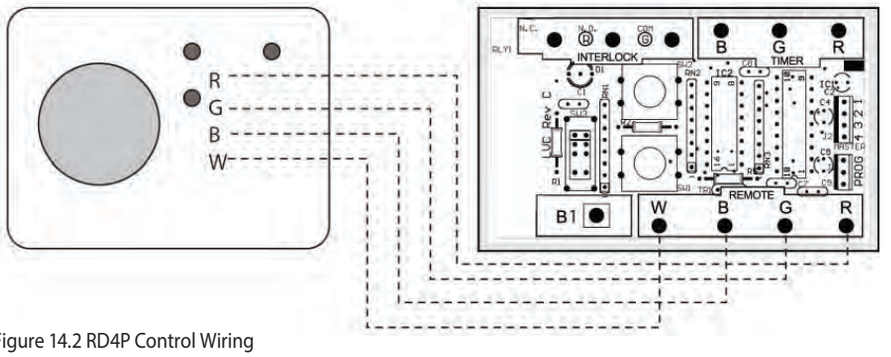


Figure 14.2 RD4P Control Wiring

T-3 TIMER

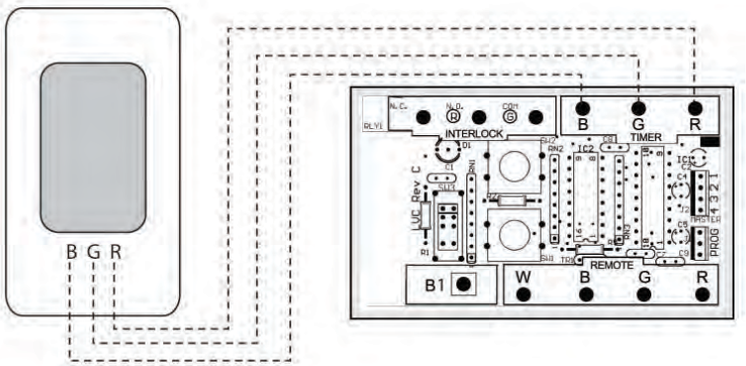


Figure 14.3 T-3 Control Wiring

EHC 1.0, EHC 1.5

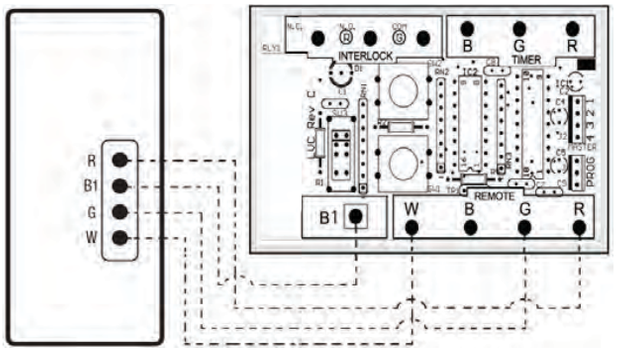


Figure 14.4 EHC Control Wiring

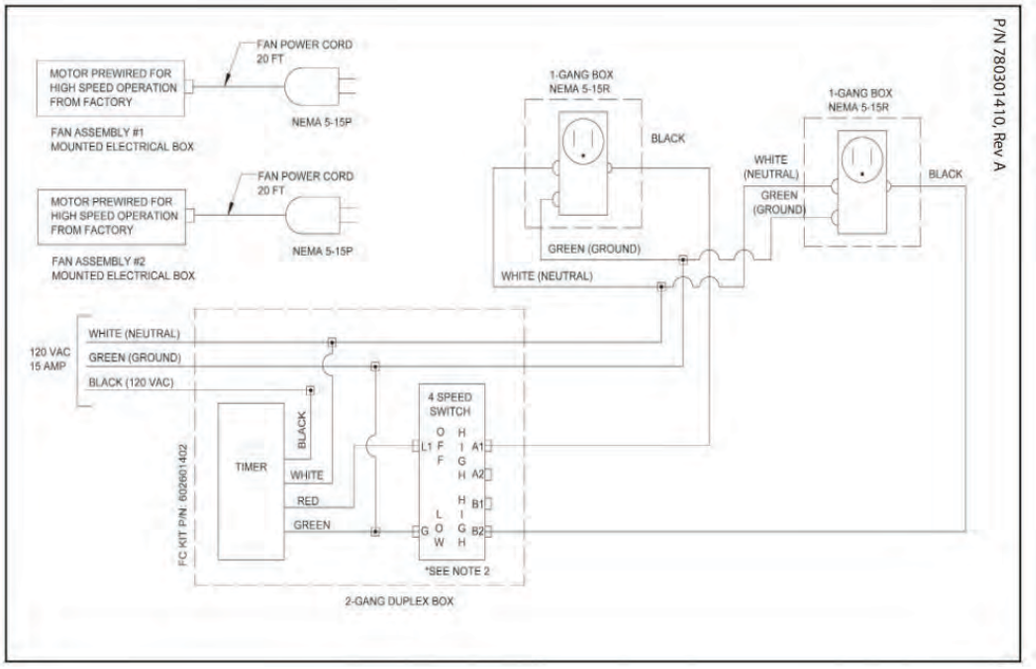
Legend: -------- Field Installed Low Voltage

WIRING

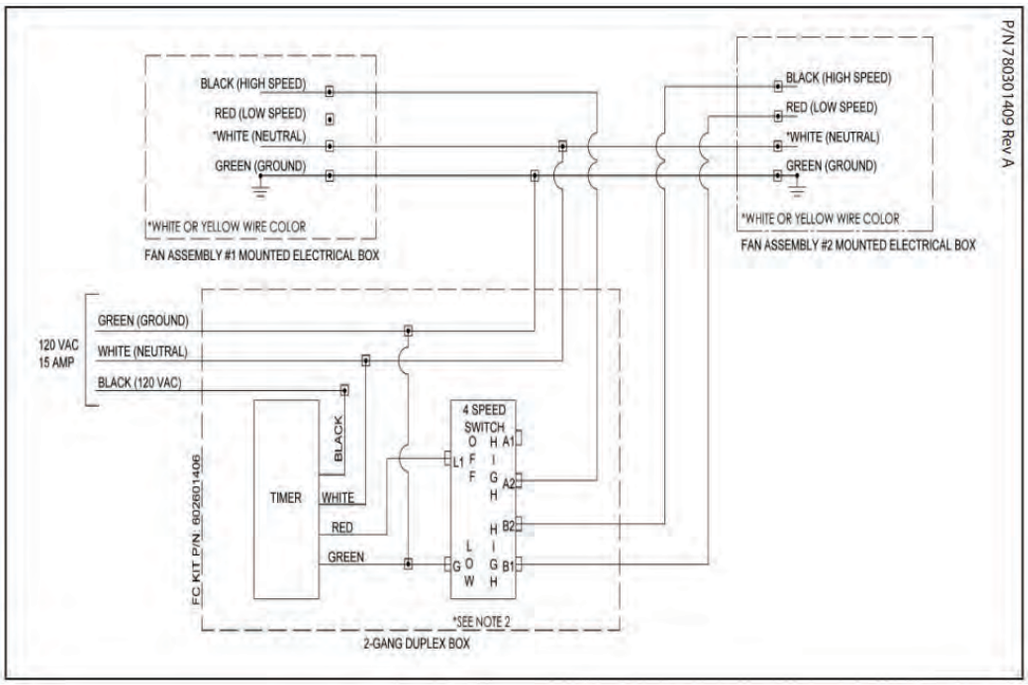
Wiring Diagrams

FOR VENTCOOL

VentCool Tahoe 4-Speed Control Switch Using Fan Power Cord



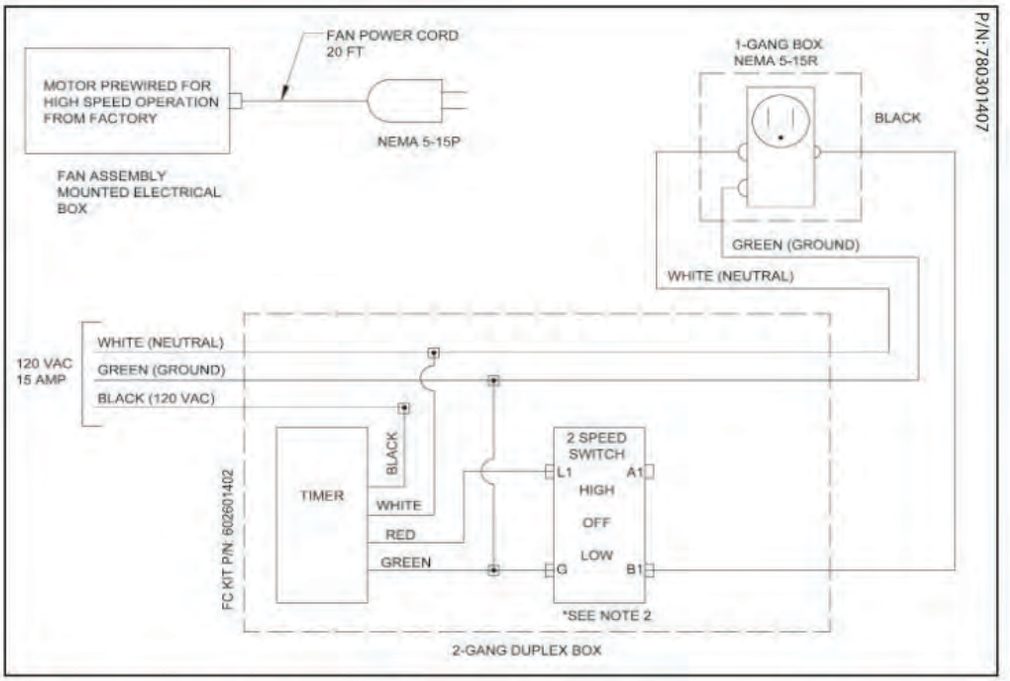
VentCool Tahoe 4-Speed Control Switch Hardwired to Fan



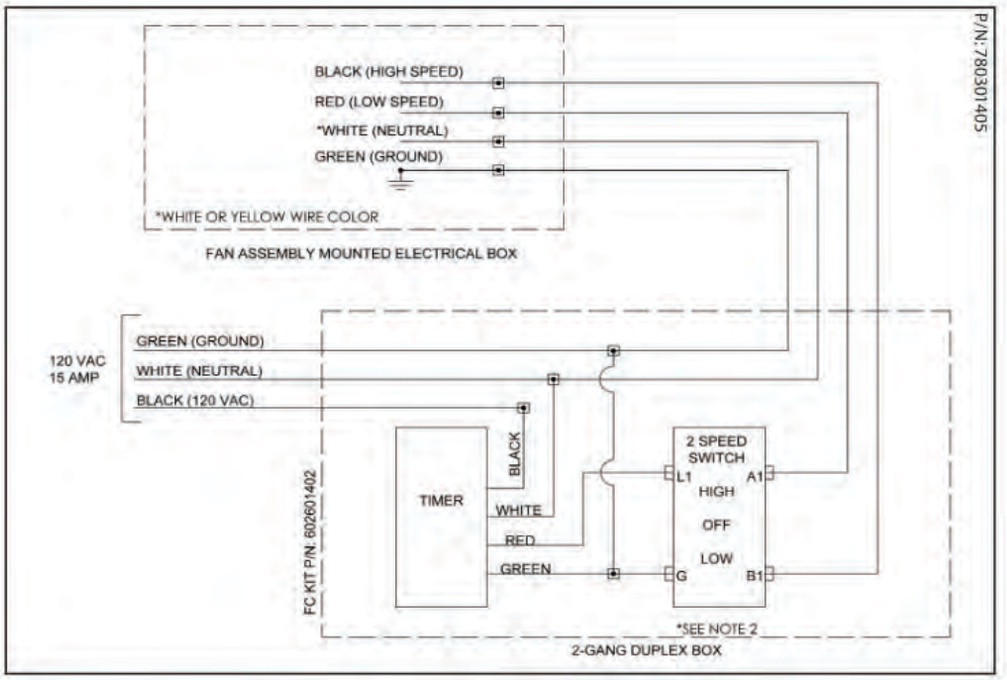
WIRING

FIELD CONTROLS
Improving Indoor Environments

VentCool Tahoe T2-T5 Models with 2-Speed Control Using Fan Power Cord



VentCool Tahoe T2-T5 Models with 2-Speed Control Hardwired to Fan Assembly

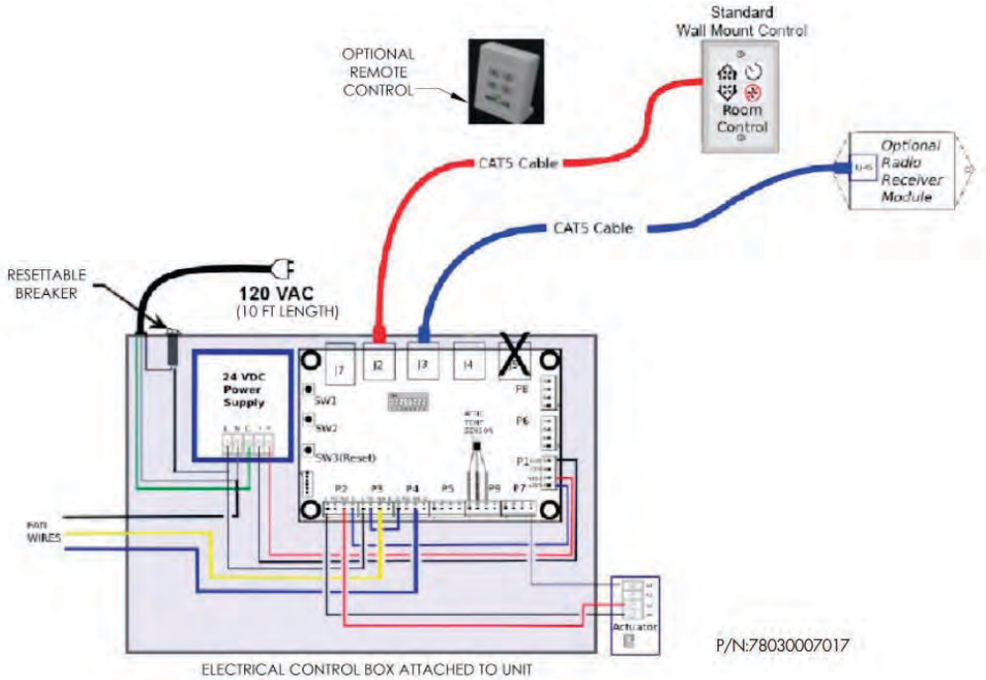


WIRING

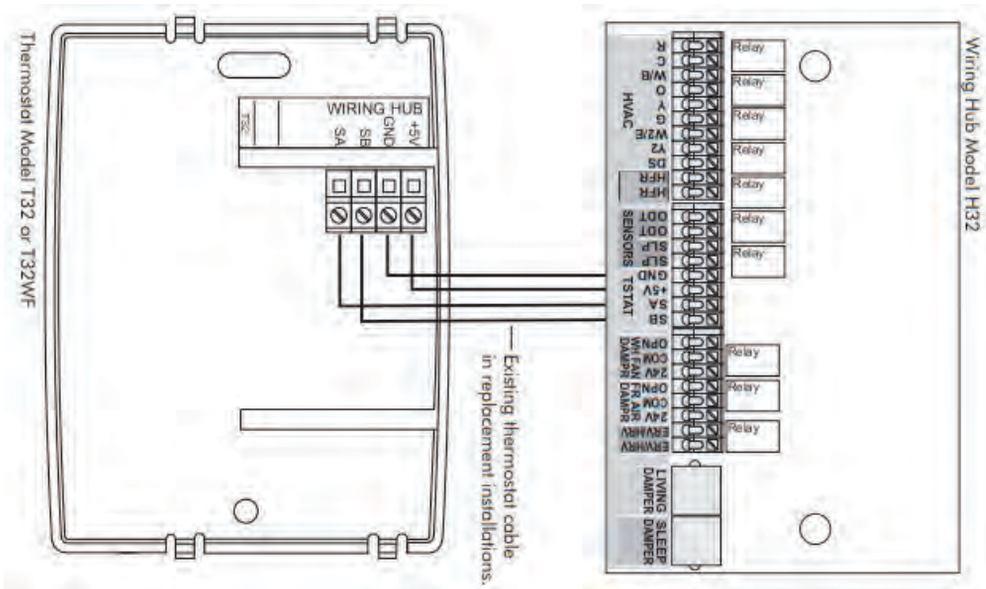
Wiring Diagrams

FOR VENTCOOL

VentCool Vista 1.7

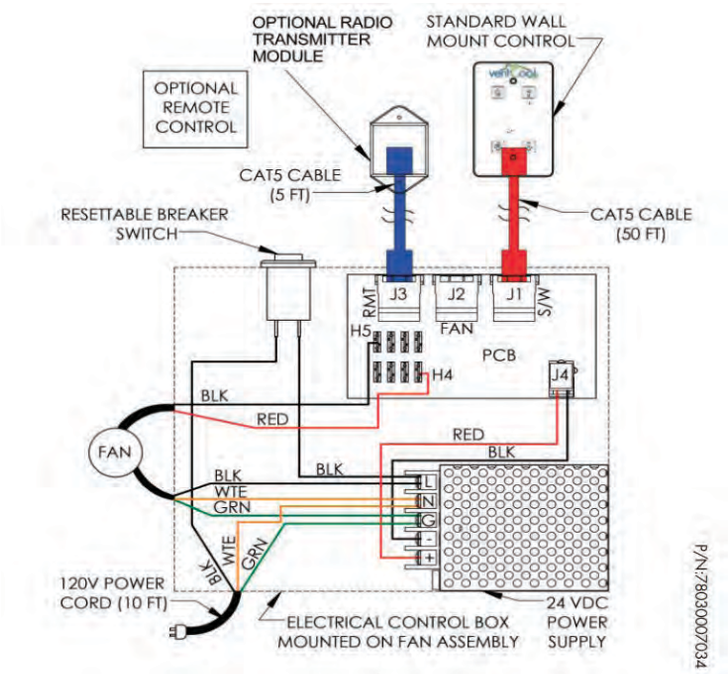


VentCool Vista 1.7

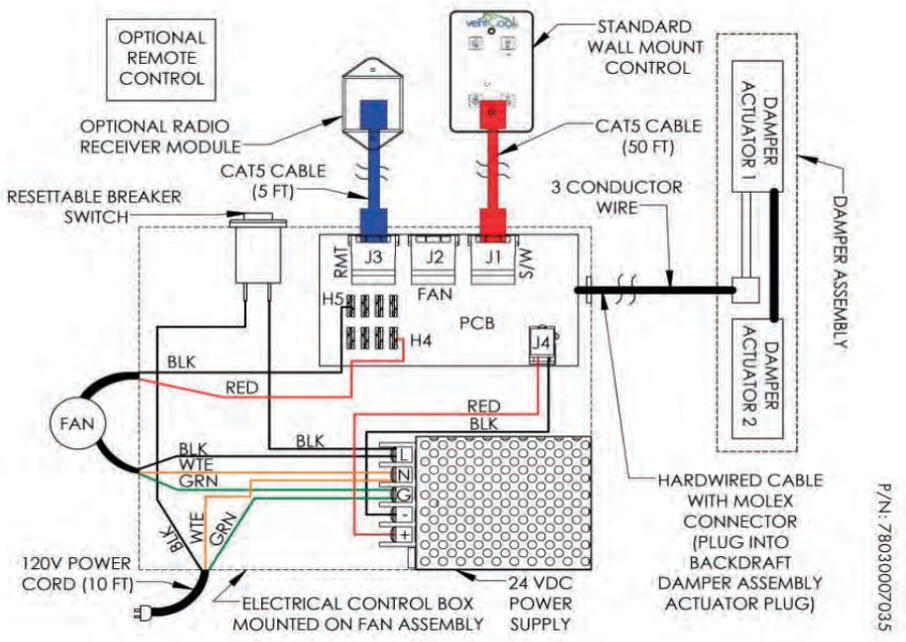


WIRING

VentCool 2.4, 3.4 & 4.9



VentCool Vista 2.5, 3.5 & 5.0



WIRING

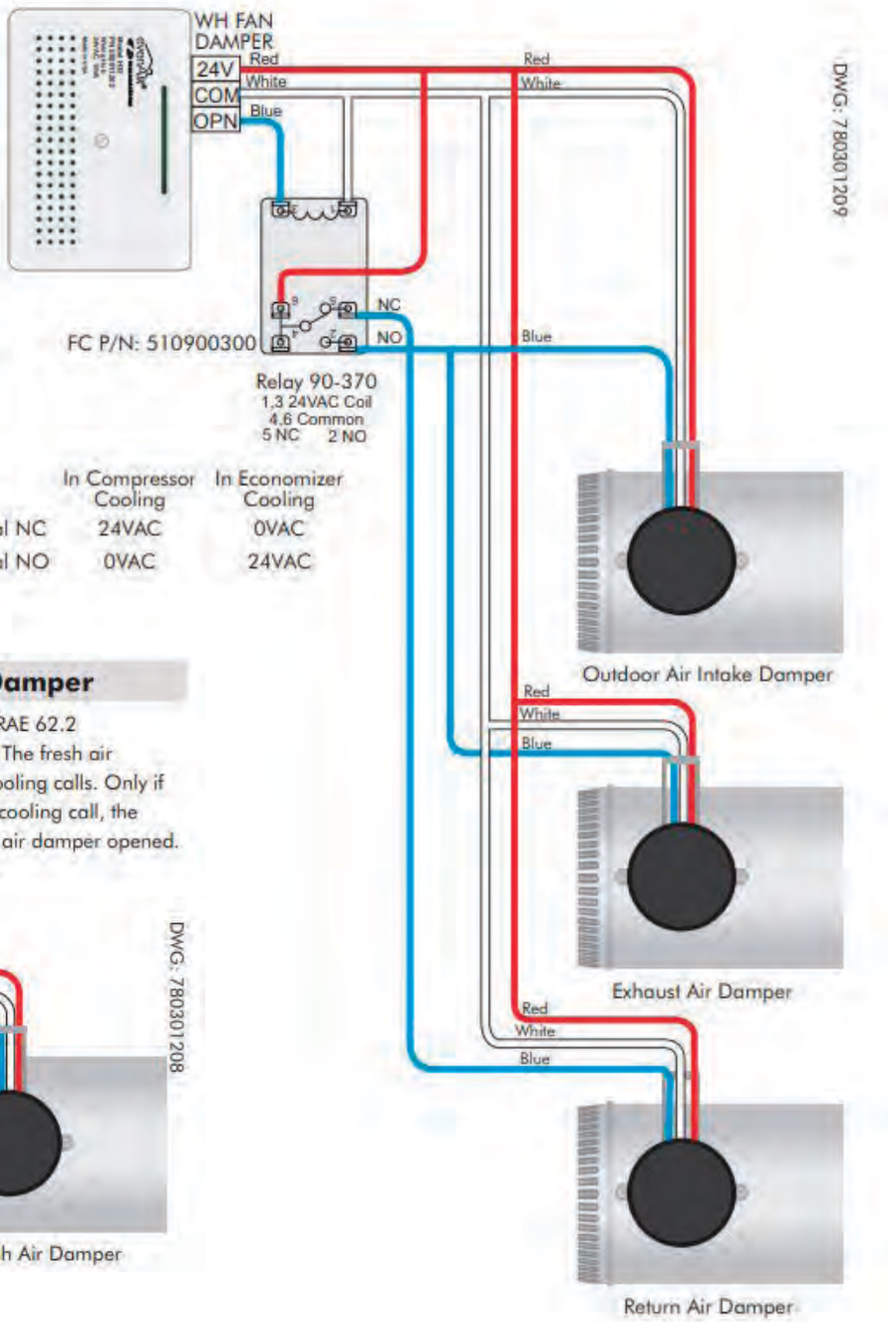
Wiring Diagrams

FOR EVENAIR

EvenAir Damper Wiring Diagram

Three dampers can be installed to provide Economizer cooling using the equipment fan. In compressor cooling, the Exhaust Air and the Outdoor Air Intake Dampers are closed and the Return Air Damper is open.

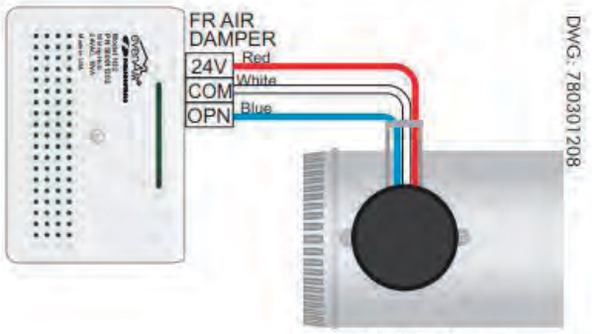
When the system is in ECool and the Economizer is activated, the Outdoor Air Intake and Exhaust Air Dampers open, the Return Air Damper closes and the equipment fan is activated. Windows do not have to be open because outdoor air is drawn in thru the Outdoor Air Intake Damper.



	In Compressor Cooling	In Economizer Cooling
Relay terminal NC	24VAC	0VAC
Relay terminal NO	0VAC	24VAC

Wiring Diagram, Fresh Air Damper

A fresh air damper can be used to meet ASHRAE 62.2 requirements to bring in fresh air each hour. The fresh air required is first fulfilled during heating and cooling calls. Only if the fresh air minutes exceed the heating and cooling call, the indoor fan (G) will be activated and the fresh air damper opened. Options 20 to 25 control fresh air operation.



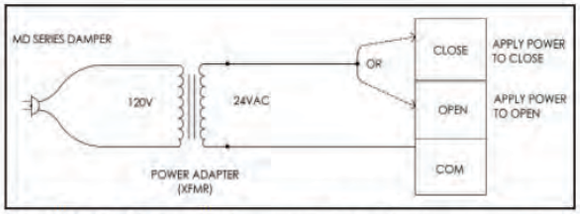


FIGURE 3: MD with Thermostat via 3 wire connection

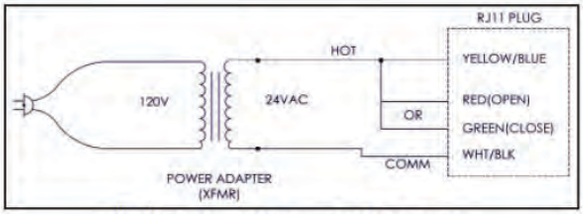
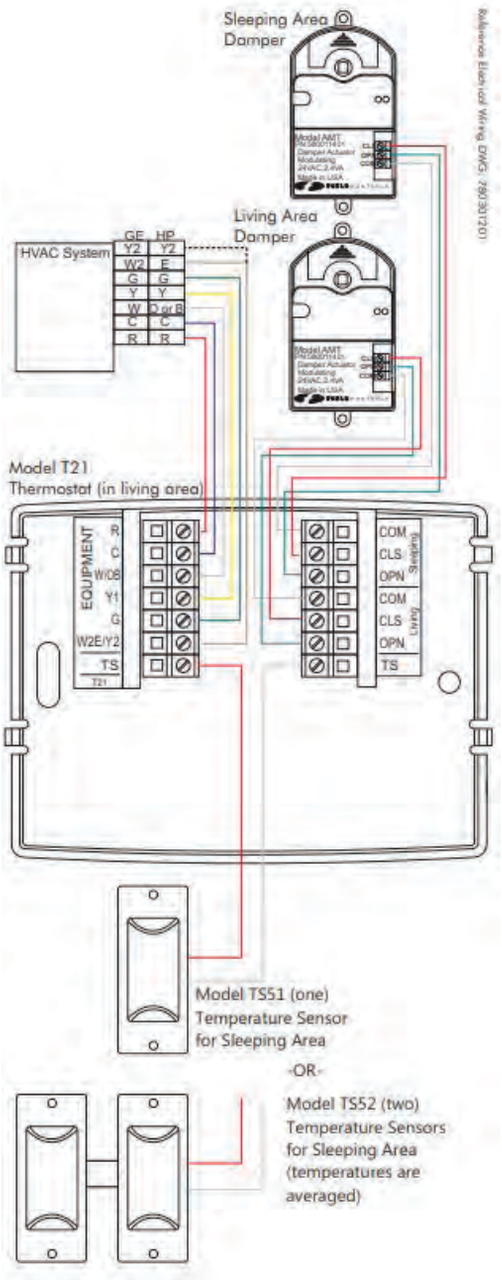


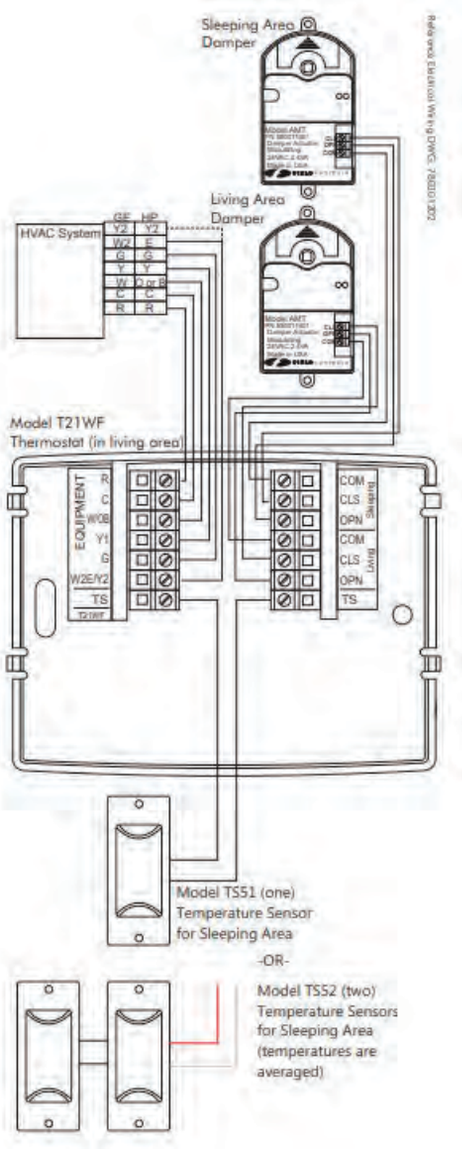
FIGURE 4: MDP with RJ11 Cable

WIRING

EvenAir T21



EvenAir T21WF

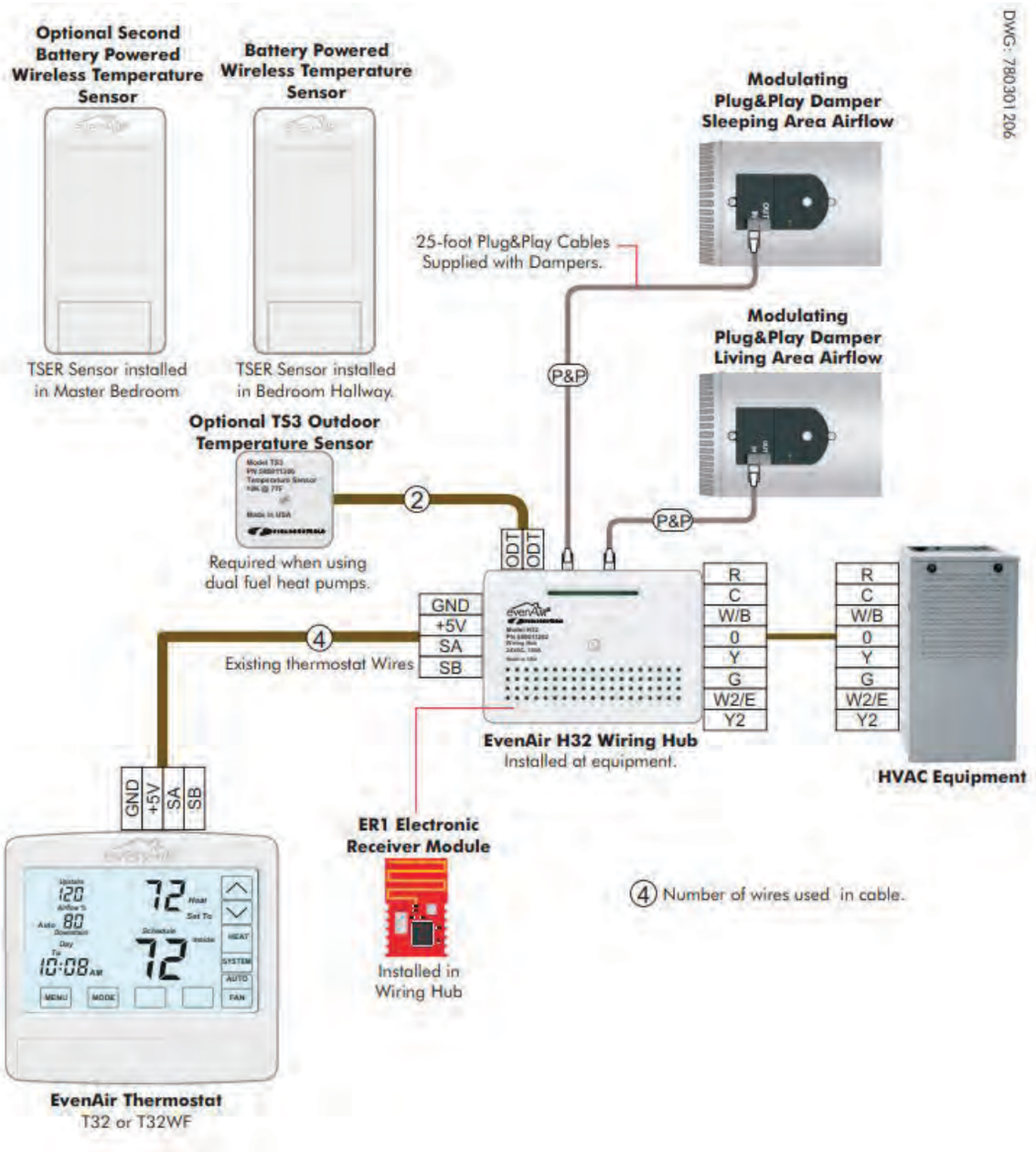


WIRING

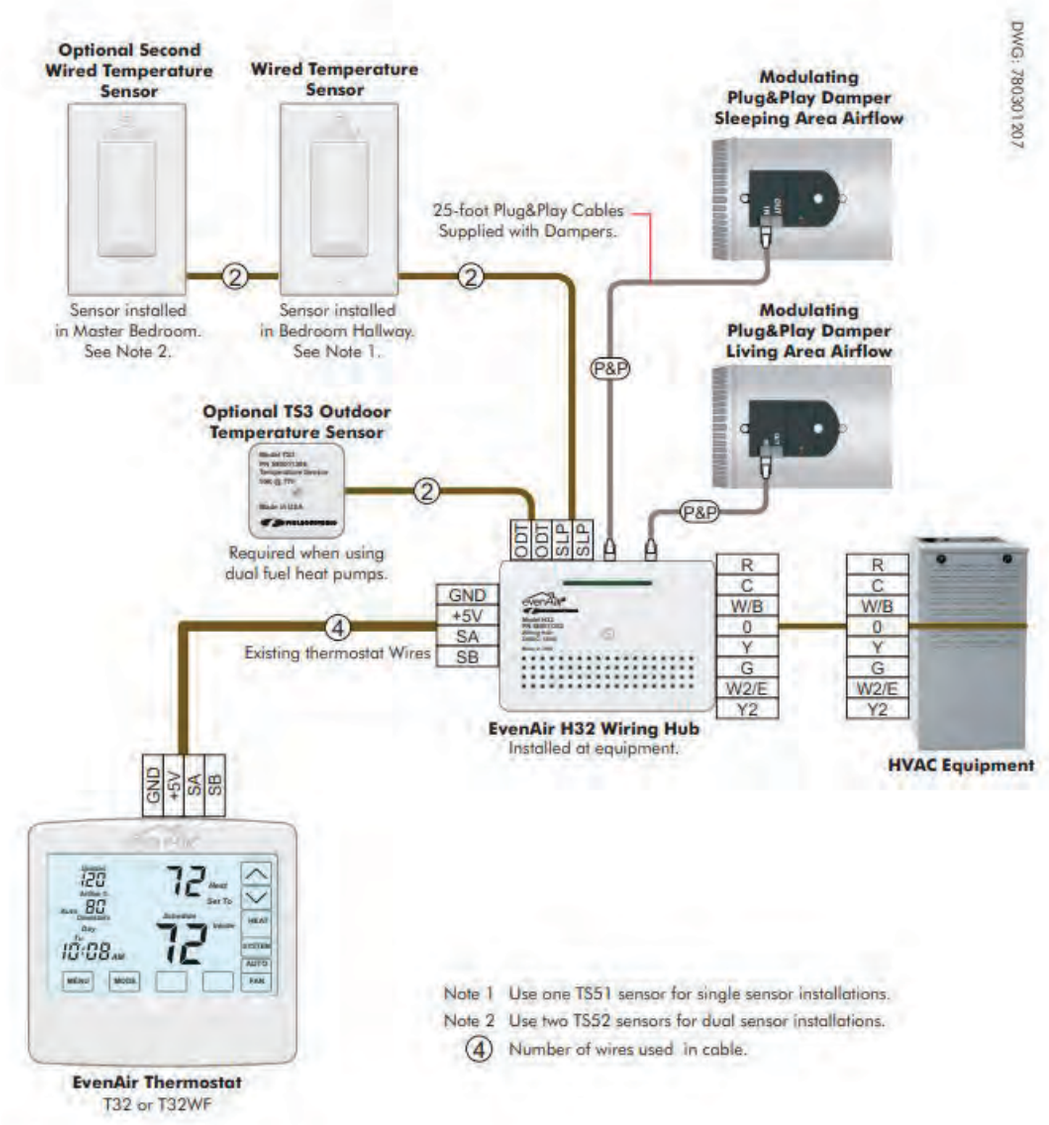
Wiring Diagrams

FOR EVENAIR

EvenAir T32 or T32WF



WIRING

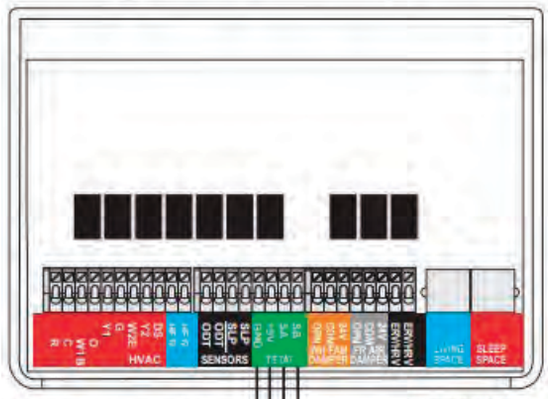

DWG: 780301207
Optional Second Wired Temperature Sensor
Wired Temperature Sensor
Modulating Plug&Play Damper Sleeping Area Airflow
25-foot Plug&Play Cables Supplied with Dampers.
Sensor installed in Master Bedroom. See Note 2.
Sensor installed in Bedroom Hallway. See Note 1.
Modulating Plug&Play Damper Living Area Airflow
P&P
Optional TS3 Outdoor Temperature Sensor
Required when using dual fuel heat pumps.
ODT
ODT
SLP
SLP
GND
+5V
SA
SB
Existing thermostat Wires
R
C
W/B
O
Y
G
W2/E
Y2
EvenAir H32 Wiring Hub
Installed at equipment.
HVAC Equipment
EvenAir Thermostat
T32 or T32WF
Note 1 Use one TS51 sensor for single sensor installations.
Note 2 Use two TS52 sensors for dual sensor installations.
④ Number of wires used in cable.

WIRING

Wiring Diagrams

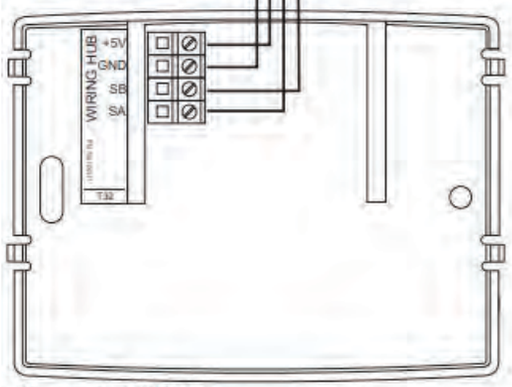
FOR EVENAIR

T32 Terminal	Wire Color	Wiring Hub Terminal	Function
5V	Red	5V	24VAC Power
GND	White	GND	Common
SA	Blue	SA	Signal A
SB	Yellow	SB	Signal B



Wiring Hub H32

Existing thermostat cable in replacement installations.

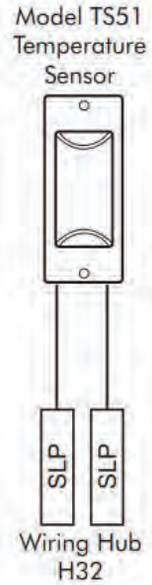


Thermostat Model T32

H32 Terminal	Wire Color	Sensor Terminal	Function
ODT	White	SNR	Thermistor
ODT	Red	SNR	Thermistor

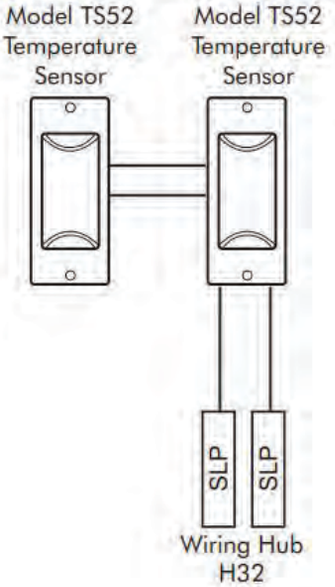
Wiring Hub H32

Single Temperature Sensor



Wiring Hub H32

Dual Temperature Sensors



Wiring Hub H32

WIRING

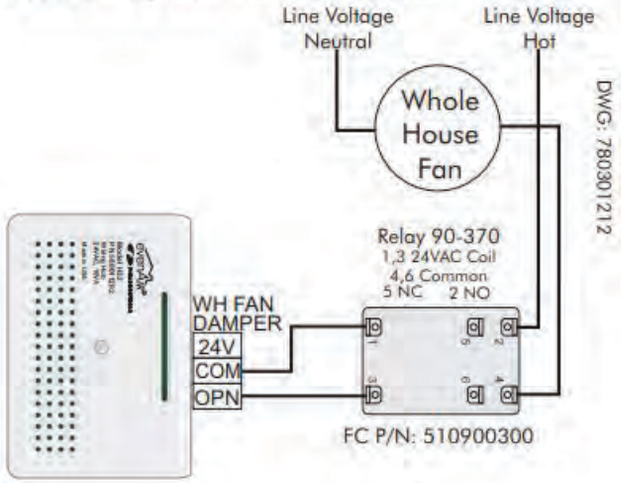
Wiring Diagram, Whole House Fan

A relay (White Rogers 90-370) can in installed within the electrical box on the whole house fan and controlled by the Wiring Hub. The Wiring Hub applies 24 VAC to the OPN terminal that activates the external relay that controls line voltage to the whole house fan. The whole house fan can be timer or temperature controlled using the Options below.

Windows must be open to allow outdoor air to enter the home.

⚠ Warning!

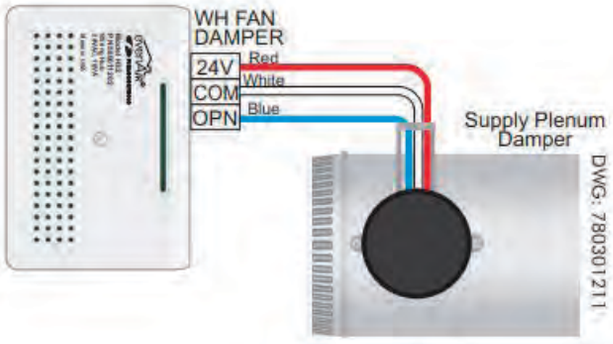
Turn power off before wiring. The relay must be installed within a UL conforming electrical enclosure to prevent electrical shock.



Wiring Diagram, Whole House Ventilation Using Damper and Equipment Fan

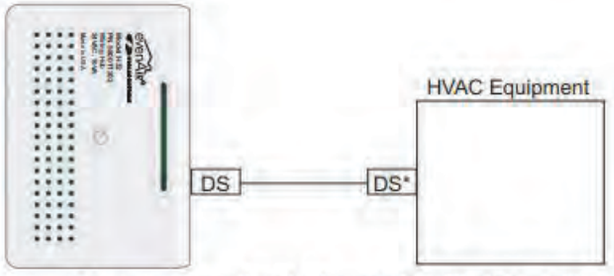
A damper can be installed on the supply air plenum and the equipment fan is used to bring cool outdoor air into the home and exhaust the return air into the attic. When the ECool mode is selected the damper opens and the equipment fan is activated based on temperatures or a built-in timer.

Windows must be open to allow outdoor air to enter the home.



Wiring Diagram, De-Humidification

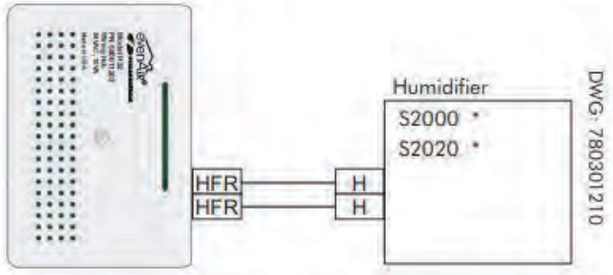
Some HVAC equipment is supplied with an input terminal that forces the equipment fan into low speed to extract more moisture from the air during cooling calls. The equipment terminal can be designated as DS, BK, ODD or DHUM. The Wiring Hub DS terminal is normally 24 VAC and goes to 0VAC when de-humidification is active. Option 42 turns de-humidification On or Off.



* Equipment terminal can be designated DS, BK, ODD or DHUM

Wiring Diagram, Humidifier

Dry relay contacts (HFR and HFR) are provided for controlling a humidifier. A call for humidification is only made during a heating call if Option 40 is set to On. If Auto RH mode is set to On using Option 41, the Outdoor Temperature Sensor must be installed. In Auto mode, the RH setpoint is automatically decreased at outdoor temperatures below 35F.



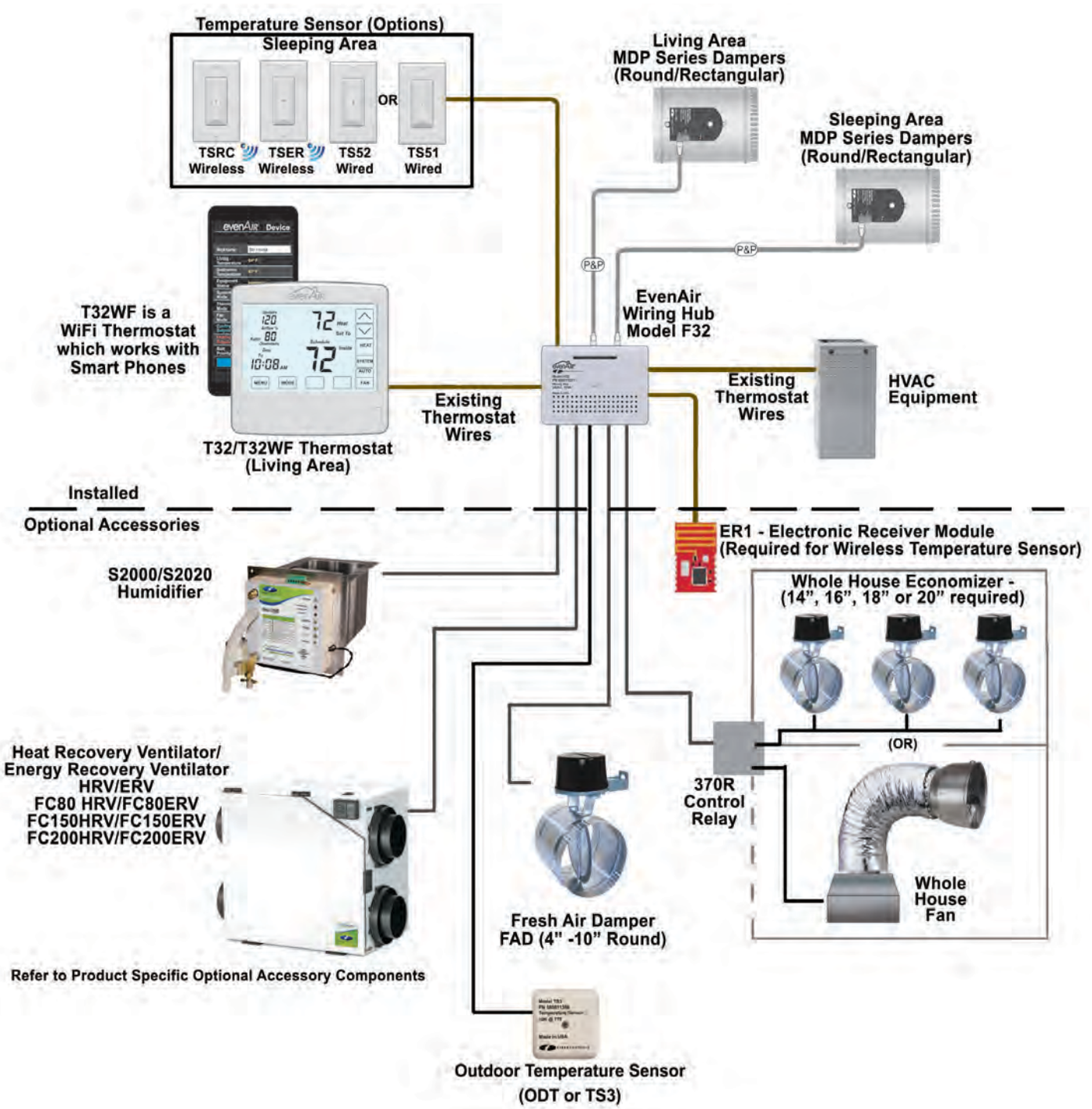
* Models S2000 and S2020 are Field Controls humidifier products.

WIRING

Wiring Diagrams

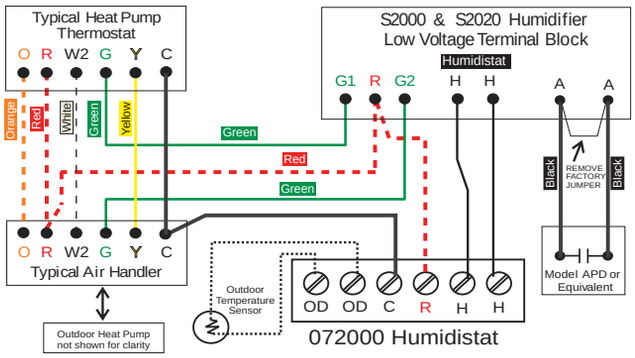
FOR EVENAIR

EvenAir AOR Package



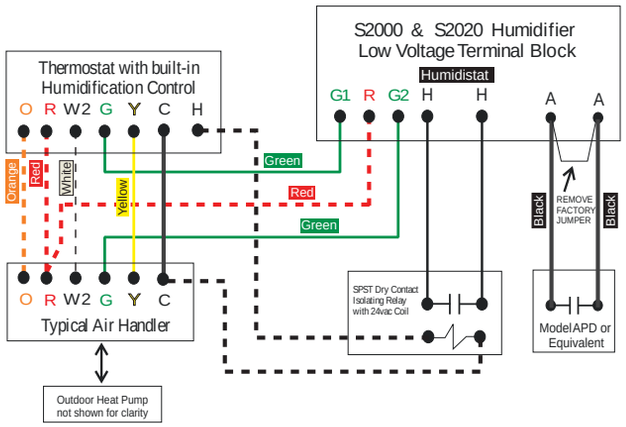
WIRING

Heat Pump System and Steam Humidifier with 072000 Humidistat

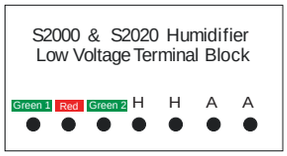


Refer to the 072000 Technical Bulletin

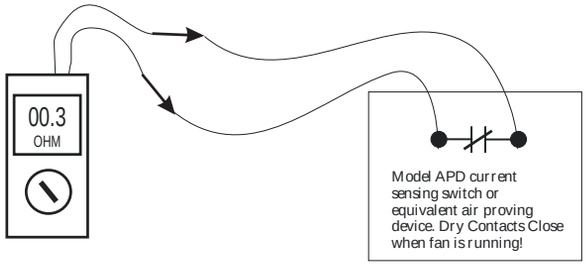
Heat Pump System and Steam Humidifier with Combo Thermostat/Humidstat and Isolating Relay



S2000 & S2020 Humidifier Low Voltage Terminal Block



Disconnect the wires from the “A” terminals and check the device & circuit with a reliable ohm meter. Check continuity when the fan is off and when it is running.

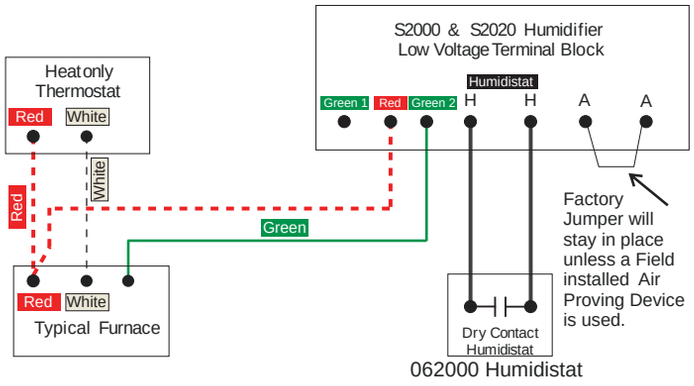


WIRING

Wiring Diagrams

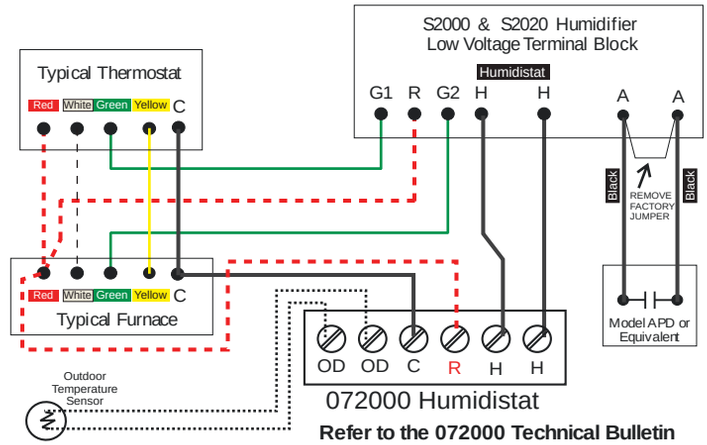
FOR STEAM HUMIDIFIER

Heat Only System and Steam Humidifier with Standard Dry Contact Humidistat



062000 Humidistat

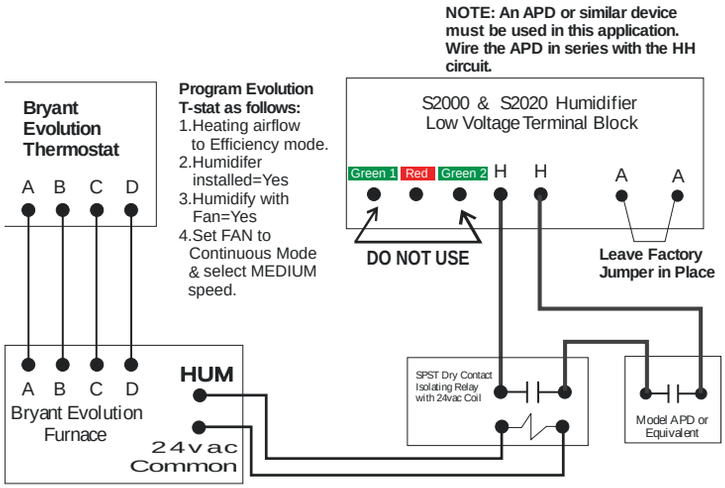
Conventional Heat & Cool System and Steam Humidifier with 072000



072000 Humidistat

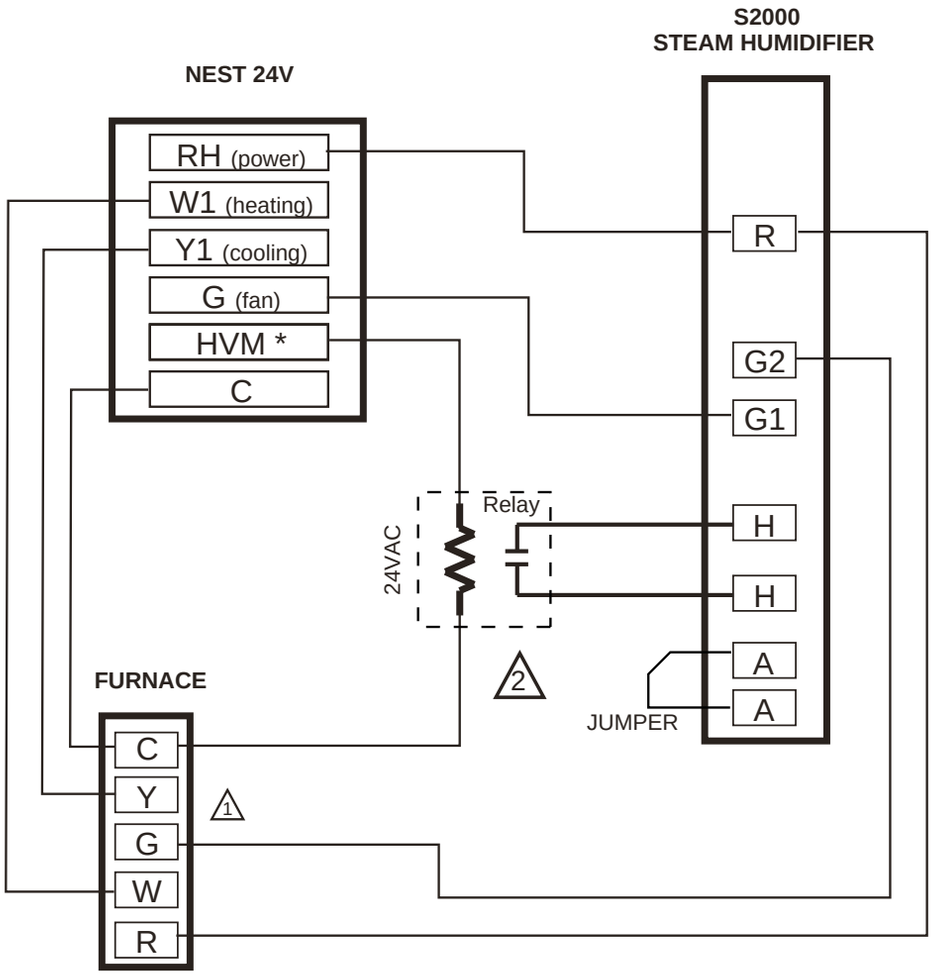
Refer to the 072000 Technical Bulletin

Bryant/Carrier Evolution/Infinity Variable Speed Heat/Cool System



WIRING

FIELD CONTROLS
Improving Indoor Environments



1 EQUIPMENT WIRING NOT SHOWN FOR CLARITY. EQUIPMENT MAY VARY FROM WHAT IS SHOWN

2 MODEL OAS -- OUTSIDE AIR SENSOR (OPTIONAL)

WIRING

Notes

Notes