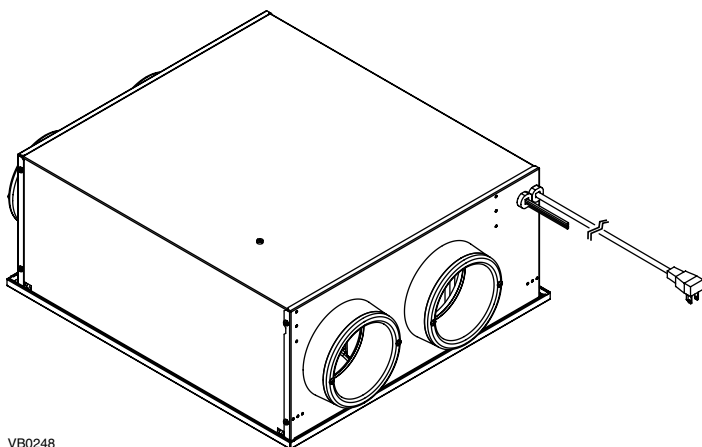




Part no. ERVS100S



VB0248

The Broan ERVS100S is an effective, balanced ventilation solution featuring integrated humidity sensing to limit ventilation during periods of excessive outdoor humidity, thus contributing to a more comfortable indoor environment. This energy recovery ventilator (ERV) provides a supply of fresh, filtered air to the home while exhausting the stale polluted air, thus improving the overall indoor air quality.

- Compact, low profile platform that can be mounted in a ceiling cavity featuring a pre-painted white access door that can blend into the interior space;
- Power cord ready design;
- Integrated humidity sensor limiting the ventilation during periods of excessive outdoor humidity, contributing to a comfortable living indoor environment;
- Integrates with existing forced-air furnace ducting for easy installation but runs independently to limit energy consumption related to ventilation;
- Built-in damper on fresh air supply port to prevent outdoor air infiltration when the unit is turned off;
- Integrated control to easily set the unit at installation with an optional external wall control to boost the unit to high speed.

Product balancing

The ERVS100S is equipped with 2 high static pressure blowers and is factory balanced. Once installed, the ERVS100S will remain balanced (within a 10% total difference between the exhaust and supply airflows) when the static pressure difference between the exhaust and the supply remains below 0.2 in. w.g.

No balancing dampers are required when this condition is met.

Repairs and maintenance

All parts requiring maintenance can be removed in less than 5 minutes allowing easy access for repairs. The PSC motors are permanently lubricated.

Warranty

The BROAN™ ERVS100S is protected by a 5-year warranty on parts only. The energy recovery core is covered by a 5-year warranty, with the original proof of purchase.

Filters

- 2 washable filters, 20 PPI
- MERV 8 optional filters, part V21030.

Defrosting system

Unit performs a negative defrost during 10 minutes every 20 minutes when outdoor temperature is below 14°F, and 10 minutes every 10 minutes below -4°F.

Energy Recovery Core

Material: Polymerized paper

Type: Cross flow

Warranty: 5 years

Accessories

- Broan VTYIK1 Tandem Termination
- Broan V14695 Metal Tandem Termination
- Broan VB20W 20-Minute Override Wall Control

Requirements and standards

- Complies with UL 1812 standard applicable to ducted Heat Recovery Ventilators;
- HVI certified;
- Airflow and energy recovery performance tested in accordance with CSA C439 standard.
- Compliant with Prop 65

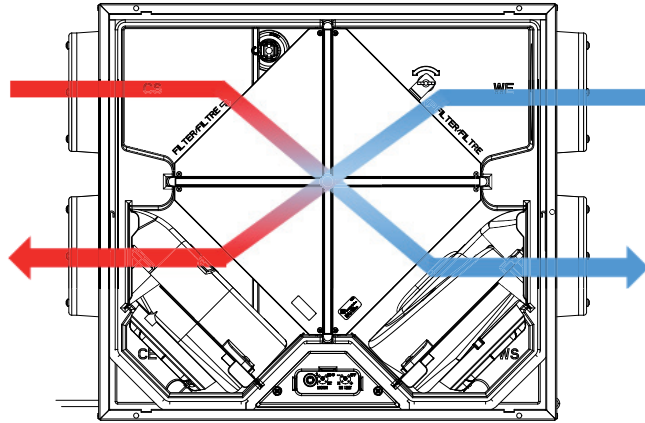
Project:	Remarks
Location:	
Part no.:	
Qty.:	
Submitted by:	
Date:	



Performance in hot and humid climate

Supply air from outdoors
82°F @ 74% RH

Exhaust to outdoors
79°F @ 63% RH



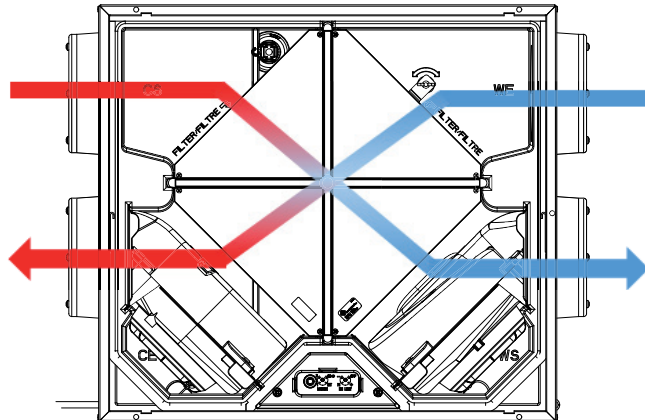
Exhaust from home
75°F @ 50% RH

Supply to home
78°F @ 67% RH

Performance in hot and dry climate

Supply air from outdoors
106°F @ 30% RH

Exhaust to outdoors
94°F @ 36% RH



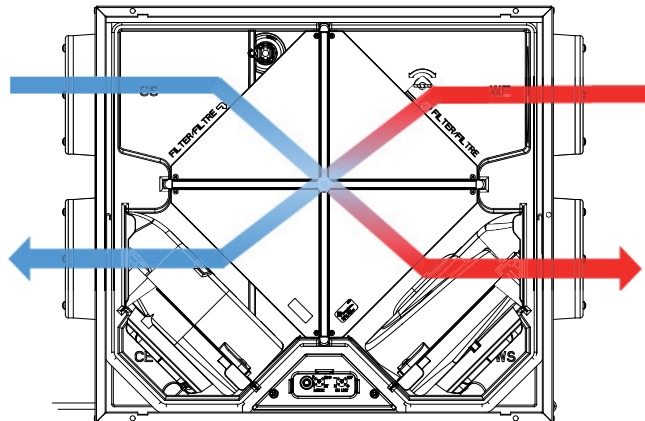
Exhaust from home
75°F @ 50% RH

Supply to home
87°F @ 44% RH

Performance in winter season

Supply air from outdoors
32°F @ 30% RH

Exhaust to outdoors
45°F @ 36% RH



Exhaust from home
75°F @ 50% RH

Supply to home
63°F @ 40% RH

Performance values calculated at 64 CFM

Specifications

Part number: ERVS100S

Total assembled product weight: 37 lb.

Insulated round ports: 6" diameter

Built-in magnetic backdraft damper to close outdoor fresh air supply when the unit is turned off

Energy recovery core:

- Type cross flow

- Media membrane: Polymerized paper

Core filters: 2 washable filters 20 PPI

Optional MERV 8 filter kit, part no. V21030

Housing material: galvanized steel

Door and door frame material: White pre-painted steel

Insulation material: Molded Expanded polystyrene, UL certified for Energy recovery ventilators requirements

Supply and exhaust blower motors:

- PSC motors

- Protection type: Thermally protected

Installation brackets: included with the unit, allow attic, flush to ceiling and under-ceiling installations. Unit must be installed with the door facing upward or downward. **No vertical installation allowed.**

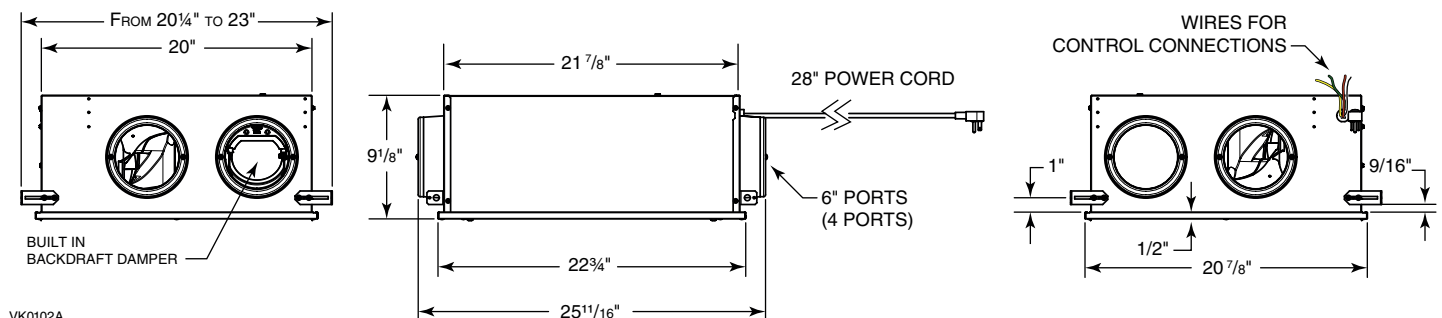
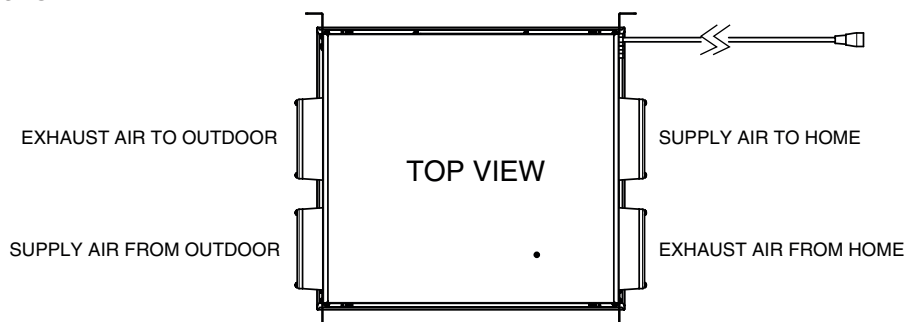
Unit electrical characteristics

- Power cord 28" with 3-prong plug

Volts	Frequency	Ampere	Watts
120	60 hz	0.9	105

Low voltage connections for optional controls energized by unit

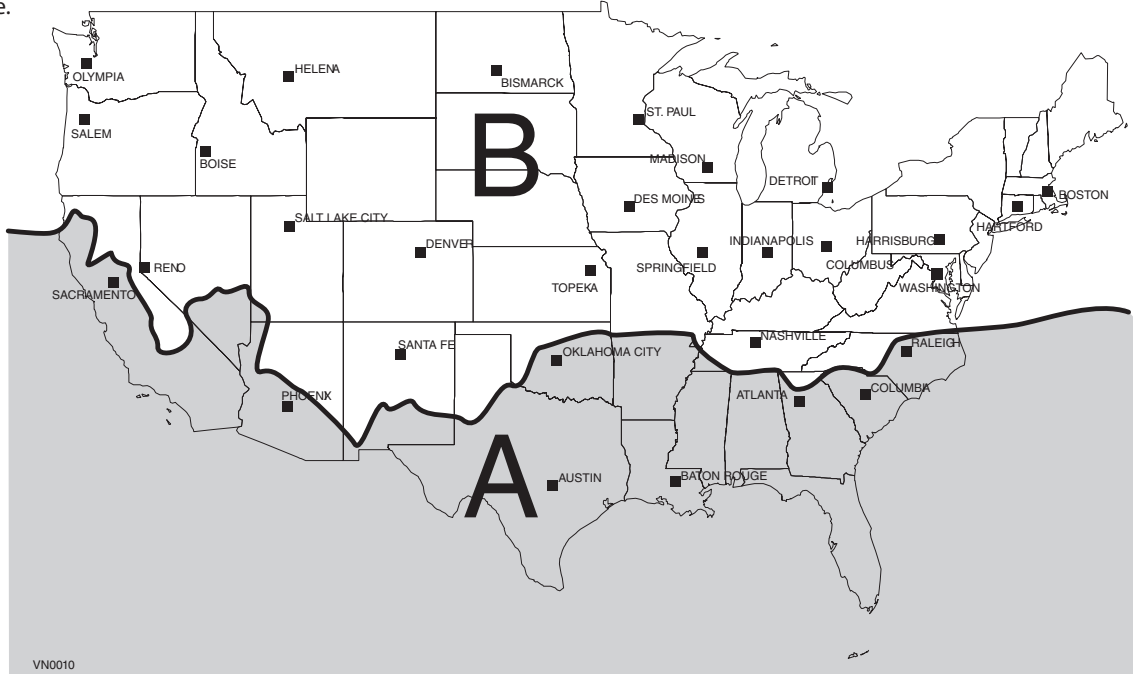
Dimensions



VK0102A

Safe Installation Zone

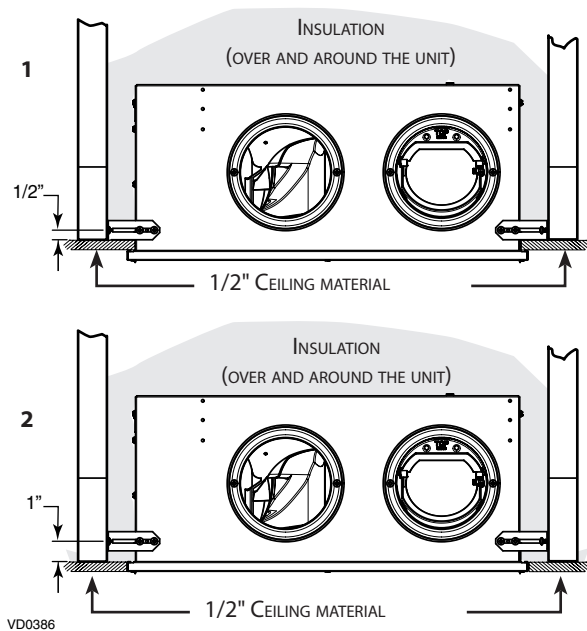
This unit is designed for installation where the outdoor temperature is above 14°F throughout the year (zone **A** on map below). For units installed in zone **B**, they must be installed in conditioned space or in the ceiling with a surrounding sealed enclosure, see section 3.1.3 of the installation and user guide.



Installation (please refer to the installation and user guide for complete details)

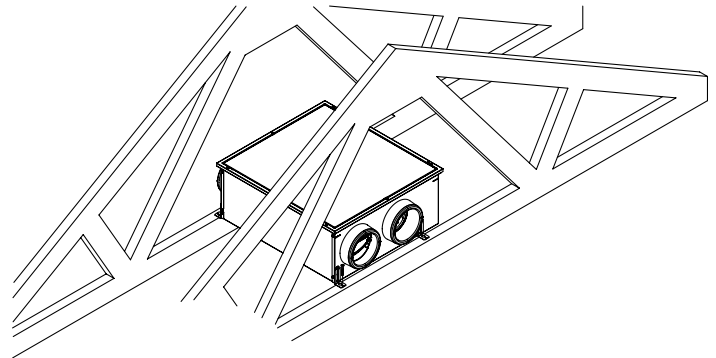
Positioning the unit

Installation in the ceiling (option 1 and 2)

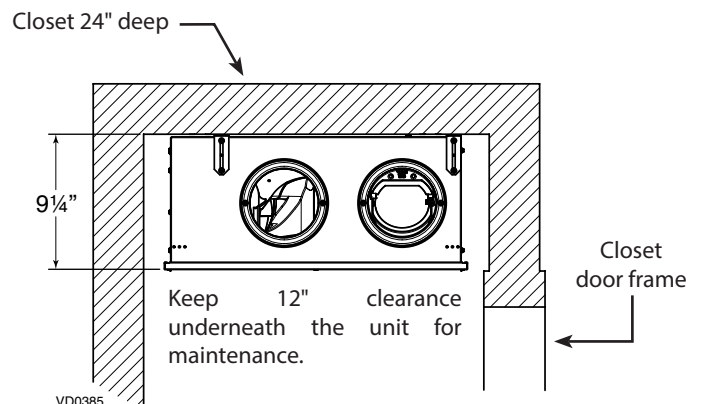


Refer to Installation and User guide for more details on installation in zone B with a surrounding sealed enclosure.

Installation in attic over the insulation (climate zone A only)



Installation under ceiling (in a living area)

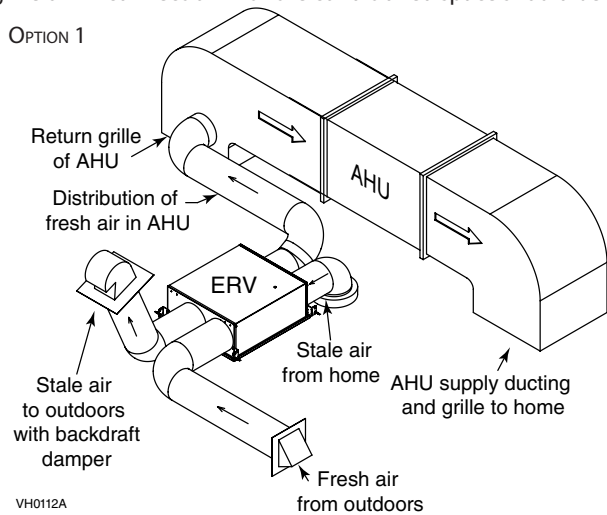


Combining with an AHU

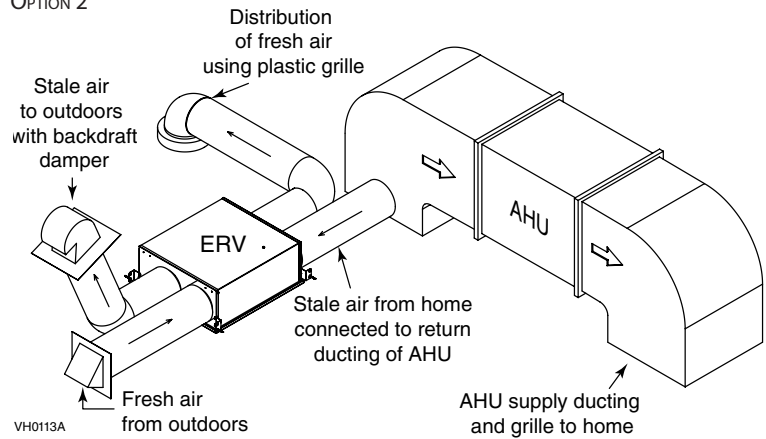
Recommended configurations

Option 1 - When the distribution of fresh air from the ERV is connected to the return of an AHU (such as in the image below, on the left), static pressure where the fresh air from the ERV enters the AHU return ducting must be below 0.15 in.w.g. to ensure proper functioning of the built-in fresh air damper. If return duct static pressure exceeds the 0.15 in.w.g. threshold, an indirect connection combined with a supplemental return grille or "T" connection with the conditioned space should be used. See the User and Installer guide for more details.

OPTION 1



OPTION 2

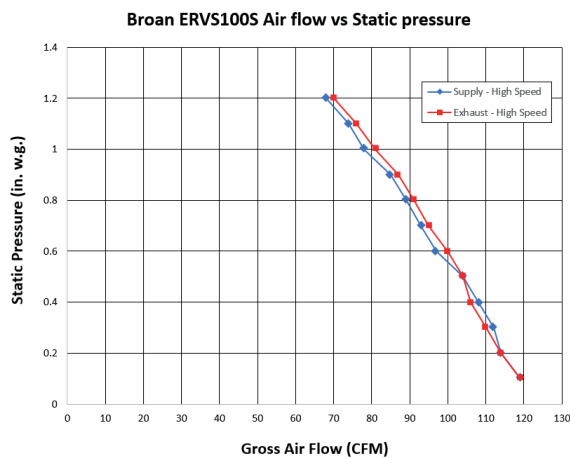


Energy performance ERVS100S

	Supply Temperature	Net Air Flow	Power Consumed	Sensible Recovery Efficiency	Adjusted Sensible Recovery Efficiency	Latent Recovery/Moisture Transfer	Total Recovery Efficiency	Adjusted Total Recovery Efficiency
	°F	CFM	Watts	%	%		%	
Cooling	95	64	46			0.45	48	51
	95	106	105			0.35	38	41
Heating	32	64	46	66	70	0.51		
	32	106	105	60	66	0.42		

Ventilation performance

NOTE: All specifications are subject to change without notice.



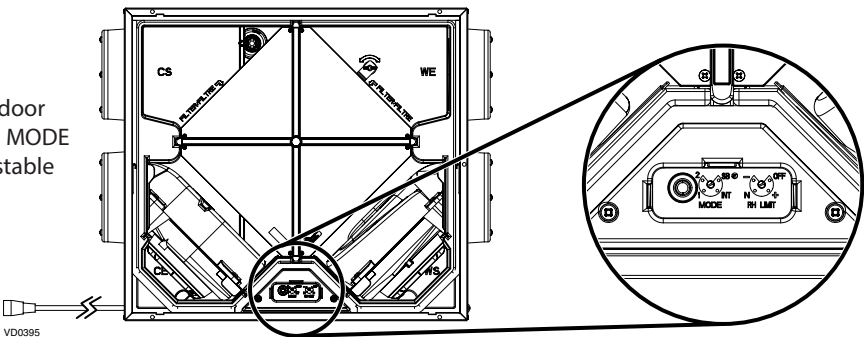
Airflow curves are not certified by HVI.

Ext. Static Pressure (Pa)	Ext. Static Pressure (in. wg)	Net Supply Airflow (L/s)	Net Supply Airflow (cfm)	Gross Airflow Supply (L/s)	Gross Airflow Supply (cfm)	Gross Airflow Exhaust (L/s)	Gross Airflow Exhaust (cfm)
25	0.1	54	114	56	119	56	119
50	0.2	53	112	54	114	54	114
75	0.3	51	108	53	112	52	110
100	0.4	49	104	51	108	50	106
125	0.5	47	100	49	104	49	104
150	0.6	45	95	46	97	47	100
175	0.7	43	91	44	93	45	95
200	0.8	41	87	42	89	43	91
225	0.9	39	83	40	85	41	87
250	1.0	36	76	37	78	38	81
275	1.1	34	72	35	74	36	76
300	1.2	31	66	32	68	33	70

Note: In high speed, account for an increase in static pressure of proximately 0.2 in. w.g. when installed with the Broan VTYIK1 Tandem transition, depending on installation.

Mode and RH Adjustable Controls Location

Remove the door to access the MODE and RH adjustable controls.



Control
Ventilation modes

POSITION	MODE	DESCRIPTION
SB*	Standby	Unit is off. Unit can be activated in high speed by the VB20W 20-minute push-button control, if applicable
INT	Intermittent	Unit works 20 minutes per hour in low speed. Unit can be activated in high speed by the VB20W 20-minute push-button control, if applicable.
1	Low Speed	Unit runs at 65 cfm. Unit can be activated in high speed by VB20W 20-minute push-button, if applicable.
2	High Speed	Unit runs at 105 cfm. Unit can be activated in high speed by the VB20W 20-minute push-button control, if applicable.

*Factory setting

Relative humidity limit

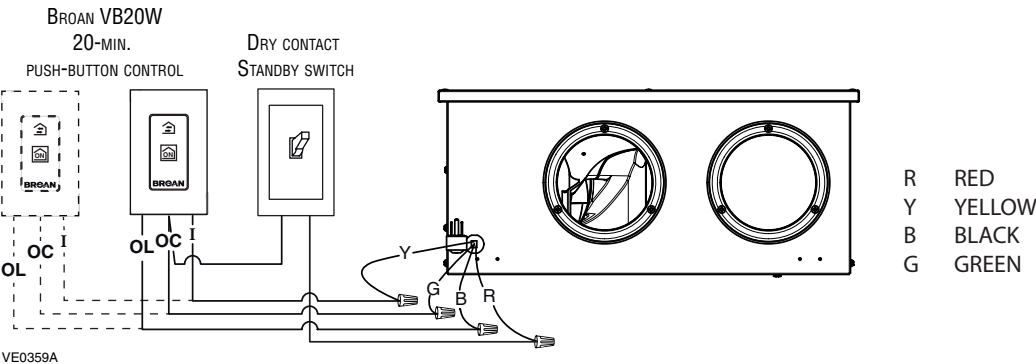
The ERVS100S monitors the outdoor air conditions (temperature and humidity level) every 10 minutes with a built-in sensor. When the outdoor conditions are above the set limits, the unit will limit the ventilation to 10 minutes per hour and come back to its previous setting when the conditions get back to the set limit. The accepted RH limit varies in function of the outdoor conditions and can be adjusted to 4 different positions:

Position	Description	RH* limit of distributed air	
		Outdoor temp. <73°F	Outdoor temp. ≥73°F
OFF	Relative humidity limit is deactivated.	-	-
+	Higher relative humidity limit.	Up to 60%	Up to 80%**
N	Factory set relative humidity limit.	Up to 55%	Up tp 75%**
-	Lower relative humidity limit.	Up to 50%	Up to 70%**

* The RH limit of distributed air is calculated at 75°F.
** When the outdoor temperature is equal or above 73°F, the maximum relative humidity level accepted is higher considering that the air conditioning will partly dehumidify the incoming fresh air after it is distributed and mixed with the conditioned indoor air.

Optional controls wiring

- Broan VB20W 20-minute push-button control: Activates 105 cfm speed in all ventilation modes (recommended when the unit exhausts from a bathroom).
- Dry contact standby switch: Unit remains powered on, but is put on Standby mode when the switch is turned on.



This connection allows the operation of VB20W push-button controls even if the dry contact standby switch is turned off.