



WSVX

Water Source Heat Pump



Vertical

1.5 thru 5 Tons



R454B

NOMENCLATURE

WSVX 024 D 2 L C F T 0 0 0 0 0 000 F

MODEL

WSVC - R454B VERTICAL
 WSVX - R454B VERTICAL ECM
 WSHC - R454B HORIZONTAL
 WSHX - R454B HORIZONTAL ECM

CAPACITY

E06 - 6,000 Btuh (WSHC/WSHX Low Profile 11")
 E09 - 9,000 Btuh (WSHC/WSHX Low Profile 11")
 E12 - 12,000 Btuh (WSHC/WSHX Low Profile 11")
 009 - 9,000 Btuh
 012 - 12,000 Btuh
 018 - 18,000 Btuh
 024 - 24,000 Btuh
 030 - 30,000 Btuh
 036 - 36,000 Btuh
 040 - 40,000 Btuh
 042 - 42,000 Btuh
 048 - 48,000 Btuh
 060 - 60,000 Btuh

REVISION

D - R454B Initial Release

VOLTAGE

2 - 208-230V/1Ph/60Hz (PSC)
 3 - 265V/1Ph/60Hz (PSC)
 6 - 208-230V/1Ph/60Hz (ECM)
 7 - 265V/1Ph/60Hz (ECM)
 E - 208-230V/3Ph/60Hz (PSC)
 F - 460V/3Ph/60Hz (PSC) (WSHC/WSHX) (Does not include 11" Unit)
 M - 208-230V/3Ph/60Hz (ECM)
 N - 460V/3Ph/60Hz (ECM) (WSHC/WSHX) (Does not include 11" Unit)

RETURN LOCATION

L - Left Hand
 R - Right Hand

HEAT EXCHANGER

C - Copper
 N - Cupro-Nickel

WATER CIRCUIT OPTIONS

F - Front

FACTORY

F - First Co.

OPTION

000 - None

INSULATION

0 - Fiberglass Standard Insulation
 A - Closed Cell Foam
 B - Foil Faced Insulation
 C - Compressor Jacket
 S - Closed Cell + Compressor Jacket

REHEAT

0 - None

CONTROLS

0 - Standard Controls
 A - Standard with Service Switch

FILTER TYPE

0 - 1" Throwaway Standard
 A - 2" MERV 8
 B - 2" MERV 11
 C - 2" MERV 13
 D - 4" MERV 11
 E - 4" MERV 13
 F - 4" MERV 14
 G - 1" MERV 8
 H - 1" MERV 11
 J - 1" MERV 13
 K - Permanent + 4" MERV 11
 L - Permanent + 4" MERV 13
 M - Permanent + 4" MERV 14

FILTER FRAME

0 - 1" 2-Sided (WSHC/WSHX E06,E09, E12 Low Profile 11")
 1 - 1" 4-Sided (WSHC/WSHX E06,E09, E12 Low Profile 11")
 2 - 1" + 2" 4-Sided (WSHC/WSHX E06,E09, E12 Low Profile 11")
 0 - 1" + 2" 2-Sided (WSVC/WSVX/WSHC/WSHX 009-060)

SUPPLY AIR LOCATION

E - End
 S - Straight
 T - Top (Vertical Only)

WSVX

WATER SOURCE HEAT PUMP

The **WSVX** includes many standard features found only in higher priced products, plus a number of unique features including:

- Having the **smallest footprint** of any product in its class ensures a perfect fit when replacing older models in tight closets, even the 036 model is only 21.5 wide by 21.5 deep.
- **Blower assemblies are field-reversible** 180 degrees (except model 040). This option can improve airflow when the units are installed in closets with very little room for supply plenums.
- Optional **Vacated Premises Control (VPC)** kit with reset feature: Ensures that the unit will operate a minimum of one or two hours per day during extended periods of unoccupancy. This option also includes an automatic reset feature. If a fault occurs, the system will shut down, but then automatically reset every 24 hours. If the same fault exists each day, the unit will lockout on the fourth day and have to be manually reset.
- **Superior insulation:** Fully insulated with $\frac{3}{4}$ " Tuf-Skin RX™, which offers greater sound absorption and better thermal efficiency. The insulation has a special acrylic coating formulated with an EPA registered anti-microbial agent.
- **Removable discharge flange:** Provides additional installation clearance.
- **Tool-less filter rack installation:** Can be installed after the unit is in the closet, providing additional installation clearance.
- State-of-the-art **Digital Control Module**

ADDITIONAL STANDARD FEATURES

- 100% factory tested
- R-454B Refrigerant - All units operate with environmentally friendly R-454B refrigerant.
- Non-corrosive Thermoplastic Condensate Pan- sloped for positive drainage
- High and low pressure service ports
- Refrigerant filter-dryer
- Panel-mounted FPT water connections - No back-up wrench needed.
- Removable panels for service
- 50 VA transformer
- 1" in throwaway filter

OPTIONAL FEATURES

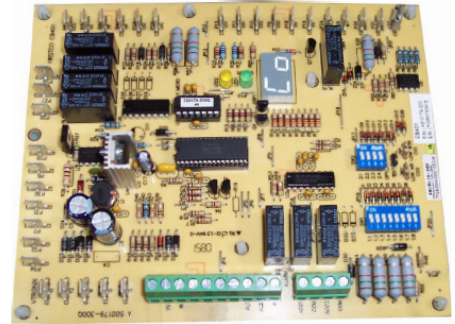
- Cupronickel coaxial heat exchanger
- Vacated premises control
- E-Coated air coil corrosion protection
- Compressor cover: A heavy duty, insulated, compressor cover that reduces unwanted compressor noise (must be field installed on the WSVX unit before the unit is installed in the closet).
- Part No. K3821332 (fits WSVX18-42)
- Part No. K4251 (fits WSVX48/60)
- Evaporator temperature sensor

DIGITAL CONTROL MODULE

Controls unit operation and monitors all safety controls. *(Patent Pending)*

STANDARD FEATURES

- Digital Diagnostic Display - A two-digit display indicates either the current operational mode or a fault code
- 24V Status LED - Green light indicates 24V power to the control module
- VPC (Vacated Premises Control) - Allows the unit to operate for one to two hours per day (total) during extended periods of unoccupancy (requires optional kit).
- Nuisance Trip Protection - Unit will attempt to start up to three times with a fault signal. If the fault continues, the unit locks out.
- Condensate Overflow Lockout
- High and Low Pressure Controls
- Water Coil Low Temperature Protection
- Over / Under Voltage Protection
- Random Re-start Timer
- Anti-short Cycle Timer
- Test Mode With LED Indicator - Speeds up control timers for service personnel
- Alarm Relay - Activated if the unit locks out
- Conformal Coating (both sides) for humidity and condensation protection



Electronic Control Module



Thermoplastic Drain Pan

DIP SWITCHES (FIELD SELECTABLE SETTINGS)

- 5 Second Compressor Delay - Blower starts before the compressor, which helps attenuate compressor start up sound.
- 45 Second Blower-off Delay - Increases cooling efficiency.
- Dehumidification Mode - Selects low speed fan operation for increased humidity removal.
- VPC Switch - Selects one or two hour daily operation (requires optional kit)
- Lower Water and Air Coil Temperature Cutout Options - Optional 10°F. cutouts for applications where water temperature is below 50°F. (requires antifreeze solution).
- Two Accessory Relays - The relays can cycle with the fan or compressor. In addition, relay number one can be configured for use with slow opening water valves (60 second pre-compressor initialization) and relay number 2 can be configured for a 30 second post fan delay.



Optional Vacated Premises Selector Switch
(Kit# 9WS01)

WARNING AVERTISSEMENT ADVERTENCIA
Cancer and Reproductive Harm
Cancer et Troubles de l'appareil reproducteur
Cáncer y Daño Reproductivo

ELECTRICAL DATA

MODEL NUMBER	VOLTAGE	COMPRESSOR		BLOWER		MIN. CIRCUIT AMPACITY	MAX. CIRCUIT PROTECTION
		RLA	LRA	FLA	HP		
WSVX018	208/230V-1-60	9.0	56.3	2.8	1/3	15	20
	265V-1-60	7.1	43	2.6	1/3	12	15
WSVX024	208/230V-1-60	10.9	62.9	2.8	1/3	17	25
	265V-1-60	9.0	54.0	2.6	1/3	14	20
WSVX030	208/230V-1-60	12.8	67.8	4.6	1/2	21	30
	265V-1-60	11.2	60	3.6	1/2	18	25
WSVX036	208/230V-1-60	15.4	83.9	4.6	1/2	24	35
	265V-1-60	13.5	72	3.6	1/2	21	30
	208/230V-3-60	10.4	73	4.6	1/2	18	25
	460V-3-60	5.8	38	2.1	1/2	10	15
WSVX040	208/230V-1-60	19.2	123.9	4.6	1/2	29	45
	208/230V-3-60	13.5	88	4.6	1/2	22	30
WSVX042	208/230V-1-60	19.2	123.9	4.6	1/2	29	45
	208/230V-3-60	13.5	88	4.6	1/2	22	30
	460V-3-60	6.0	44.0	2.1	1/2	10	15
WSVX048	208/230V-1-60	19.6	130	7.6	1	33	50
	208/230V-3-60	13.7	83.1	7.6	1	25	35
	460V-3-60	6.2	41.0	4.0	1	12	15
WSVX060	208/230V-1-60	24.4	144.2	7.6	1	39	60
	208/230V-3-60	16.0	110.0	7.6	1	28	40
	460V-3-60	7.8	52.0	4.0	1	14	20

Data is subject to change. Please verify current information on www.firstco.com.

PERFORMANCE DATA

PERFORMANCE DATA - AT STANDARD OPERATING CONDITIONS						
MODEL	CFM	GPM	WATER LOOP (entering Water Temperature)			
			85 Deg.F		70 Deg.F	
			COOLING	EER	HEATING	COP
WSVX018	550	5.0	17,110	14.1	21,210	4.30
WSVX024	745	6.1	23,620	14.4	28,260	4.30
WSVX030	930	9.0	28,250	14.2	33,120	4.40
WSVX036	950	10.0	33,350	14.1	42,510	4.40
WSVX040	970	10.1	37,320	13.2	46,620	4.30
WSVX042	1280	10.5	40,980	14.2	48,120	4.50
WSVX048	1400	12.5	47,600	14.1	54,480	4.30
WSVX060	1760	15.5	56,590	14.42	70,000	4.30

Note: Tabulated performance data is at noted entering water temperature and entering air conditions of 80 degree DB / 67 degree WB for cooling and 70 degree DB for heating at 208V CFM.

PERFORMANCE DATA						
MODEL	CFM	GPM	WATER LOOP (entering Water Temperature)			
			86 Deg.F		68 Deg.F	
			COOLING	EER	HEATING	COP
WSVX018	550	5.0	17,000	14.0	21,000	4.30
WSVX024	745	6.1	23,400	14.2	28,000	4.30
WSVX030	930	9.0	28,000	14.0	32,800	4.30
WSVX036	950	10.0	33,000	14.0	42,100	4.30
WSVX040	970	10.1	36,900	13.0	46,100	4.30
WSVX042	1280	10.5	40,500	14.0	47,500	4.40
WSVX048	1400	12.5	47,100	14.0	53,800	4.30
WSVX060	1760	15.5	56,000	14.0	69,300	4.30

Note: Tabulated performance data is at noted entering water temperature and entering air conditions of 80.6 degree DB / 66.2 degree WB at 208V CFM.

Data is subject to change. Please verify current information on www.firstco.com.

BLOWER DATA

MODEL NUMBER	FAN SPEED	MOTOR TERMINAL NO.	CFM vs EXTERNAL STATIC PRESSURE (inches of water)					
			0.1	0.2	0.3	0.4	0.5	0.6
WSVX018	HIGH STATIC	4	---	---	720	690	640	580
	HIGH	3	620	590	540	500	460	---
	LOW	2	540	490	450	390	360	---
WSVX024	HIGH STATIC	4	---	---	1000	930	850	750
	HIGH	3	790	760	720	690	650	---
	LOW	2	630	590	540	500	460	---
WSVX030	HIGH STATIC	4	---	---	1050	960	890	---
	HIGH	3	970	950	920	890	850	---
	LOW	2	820	780	750	720	690	---
WSVX036	HIGH STATIC	4	---	---	1040	970	910	---
	HIGH	3	1050	1020	990	940	870	---
	LOW	2	920	890	860	830	790	---
WSVX040	HIGH STATIC	4	---	---	1140	1110	1080	---
	HIGH	3	1080	1050	1030	990	960	---
	LOW	2	950	920	890	860	820	---
WSVX042	HIGH STATIC	4	---	---	1460	1430	1400	1340
	HIGH	3	1370	1340	1310	1280	1250	---
	LOW	2	1060	1030	1000	960	920	---
WSVX048	HIGH STATIC	4	---	---	1840	1820	1790	1740
	HIGH	3	1530	1500	1470	1440	1410	---
	LOW	2	1190	1160	1130	1100	1070	---
WSVX060	HIGH STATIC	4	---	---	1950	1920	1890	1840
	HIGH	3	1880	1860	1840	1820	1790	---
	LOW	2	1530	1500	1470	1440	1410	---

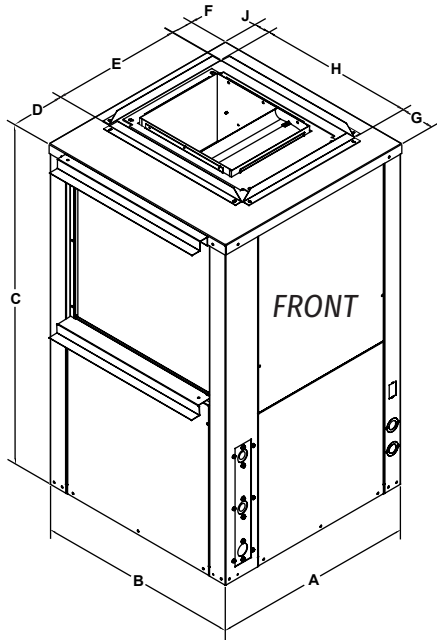
All models factory wired for speed taps 1, 2 and 3.

Note:

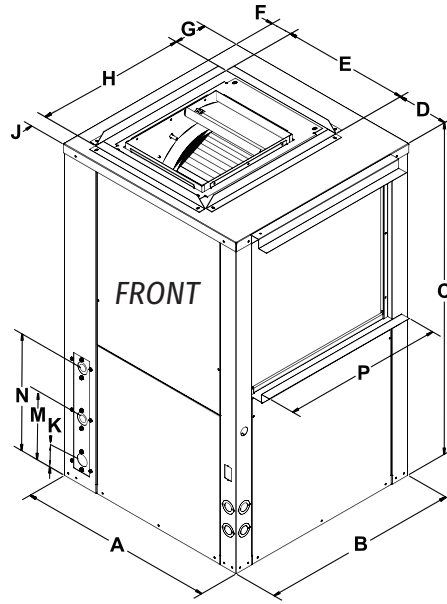
For superior dehumidification in the summer, all models operate at a slightly lower speed for a maximum of ten minutes before shifting to a higher speed. An optional "High" speed is available for higher static applications.

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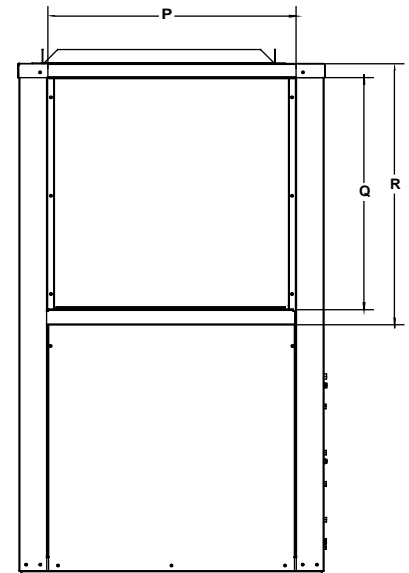
DIMENSIONAL DATA



LEFT HAND UNIT



RIGHT HAND UNIT



SIDE VIEW

MODEL NUMBER	A	B	C	D	E	F	G	H	J	K	M	N	P	Q	R	Condenser Water Connections	Condensate Connections	Nom. Filter Size	Ship WT.
	Width	Depth	Height		Duct			Duct		Water In	Condensate Drain	Water Out	R/A Duct Flange Width	R/A Duct Flange Height	Filter Rack Height				
WSVX018	21.50	21.50	36.25	5.62	13.75	2.25	3.63	16.25	1.75	2.50	7.00	12.50	17.50	16.00	18.00	3/4" F.P.T.	3/4" F.P.T.	18 X 20 X 1	205
WSVX024	21.20	21.50	36.25	5.62	13.75	2.25	3.63	16.25	1.75	2.50	7.00	12.50	17.50	16.00	18.00	3/4" F.P.T.	3/4" F.P.T.	18 X 20 X 1	215
WSVX030	21.50	21.50	39.25	5.62	13.75	2.25	3.63	16.25	1.75	2.50	7.00	12.50	17.50	18.00	20.00	3/4" F.P.T.	3/4" F.P.T.	20 X 20 X 1	230
WSVX036	21.50	21.50	39.25	5.62	13.75	2.25	3.63	16.25	1.75	2.50	7.00	12.50	17.50	18.00	20.00	3/4" F.P.T.	3/4" F.P.T.	20 X 20 X 1	230
WSVX040	21.50	21.50	39.25	5.62	13.75	2.25	3.63	16.25	1.75	2.50	7.00	12.50	17.50	18.00	20.00	3/4" F.P.T.	3/4" F.P.T.	20 X 20 X 1	250
WSVX042	21.50	26.00	43.25	5.00	15.75	0.75	5.00	16.25	4.75	2.50	7.00	12.50	22.00	22.00	24.00	3/4" F.P.T.	3/4" F.P.T.	24 X 24 X 1	265
WSVX048	26.00	26.00	43.25	7.12	17.75	1.25	6.25	17.75	2.12	2.75	6.25	10.75	22.00	28.00	28.00	1" F.P.T.	3/4" F.P.T.	24 X 30 X 1	305
WSVX060	26.00	26.00	43.25	7.12	17.75	1.25	6.25	17.75	2.12	2.75	6.25	10.75	22.00	28.00	28.00	1" F.P.T.	3/4" F.P.T.	24 X 30 X 1	325

NOTES:

1. Right Hand and Left Hand return air is determined by facing the front of the unit.



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