



# Product Data

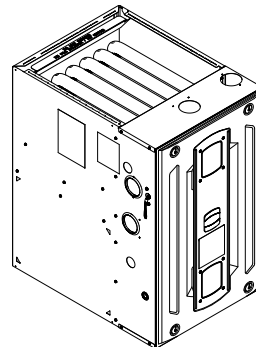
## Upflow/ Horizontal Left/Right, Dedicated Downflow Two Stage Condensing Gas Fired Furnace

Upflow, Convertible to  
Horizontal Right or  
Horizontal Left

S9V2B040U3VSAB  
S9V2B060U3VSAB  
S9V2B080U4VSAB  
S9V2C100U4VSAB  
S9V2D120U5VSAB

Downflow Only

S9V2B080D4VSAB  
S9V2C100D4VSAB



*Note: Graphics in this document are for representation only. Actual model may differ in appearance.*



# General Features

## NATURAL GAS MODELS

Central Heating furnace designs are certified by the American Gas Association for both natural and L.P. gas. Limit setting and rating data were established and approved under standard rating conditions using American National Standards Institute standards.

## SAFE OPERATION

The Integrated System Control is a solid state device which continuously monitors for presence of flame when the system is in the heating mode of operation. Dual solenoid combination gas valve and regulator provide additional safety.

## QUICK HEATING

Durable, cycle tested, heavy gauge **tubular stainless steel primary heat exchanger** quickly transfers heat to provide warm conditioned air to the structure. **Low energy power vent blower**, to increase efficiency and provide a positive discharge of gas fumes to the outside.

## BURNERS

Multiport Inshot burners will give years of quiet and efficient service. All models can be converted to **L.P. gas** with LP conversion kit.

## INTEGRATED SYSTEM CONTROL

Exclusively designed operational program provides total control of furnace limit sensors, blowers, gas valve, flame control and includes self diagnostics for ease of service. Also contains dry contacts for EAC and HUM.

## ENERGY EFFICIENT OPERATION

Furnace is certified by the manufacturer to leak 1% or less of nominal air conditioning CFM delivered when pressurized to .5" water column with all inlets, outlets, and drains sealed.

## AIR DELIVERY

The variable speed blower motor has sufficient airflow for most heating and cooling requirements and will switch from heating to cooling speeds on demand from room thermostat.

## SECONDARY HEAT EXCHANGER

The S-Series furnace has a special type 29-4C™ stainless steel secondary heat exchanger to reclaim heat from flue gases which would normally be lost.

## STYLING

**Heavy gauge steel and "wrap-around" cabinet construction** is used in the cabinet with baked-on enamel finish for strength and beauty. Every orientation has at least two venting options. There are no knockouts on cabinet.

## FEATURES AND GENERAL OPERATION

The S-Series furnace utilizes a Silicon Nitride Hot Surface Ignition system, which eliminates the waste of a constant burning pilot. The integrated system control lights the main burners upon a demand for heat from the room thermostat. Complete front service access.

- a. Low energy power venter
- b. Vent proving pressure switches.



## Features and Benefits

### **97.0% AFUE ACROSS ALL MODELS**

Meets utility rebates

Lowers utility bills

### **ELECTRICALLY EFFICIENT**

Efficient airflow design reduces electrical energy use

### **34 INCH TALL**

Lighter, easier to move and fit into tight spaces like short basements or tight closets

Works great with larger, high-efficiency coils

No knockouts

### **3-WAY MULTI-POISE / DEDICATED DOWNFLOW**

5 SKU's — Upflow / Horizontal Left / Horizontal Right

2 SKU's — Downflow

Added application flexibility and reduction in specification errors

### **AIRFLOW**

At least 400 CFM/ton at 0.5 in. H<sub>2</sub>O external static pressure; setup airflow options down to 290 CFM/ton

### **REGULATORY**

All models are air tight; 1% or less air leakage as per ASHRAE 193

Open vestibule design provides a full 34" high open vestibule

### **VARIABLE SPEED DRAFT INDUCER MOTOR**

Increased efficiency

### **DIMENSIONS**

Widths are industry standard: 17.5", 21", and 24.5"

Depth remains approximately 28"

Cabinet will be compatible with industry standard coils, as well as, other accessories

### **INTEGRATED FURNACE CONTROL**

Setup / Status / Diagnostics / Digital Display

No dip switches

Last six errors stored

Dry contact EAC and HUM connections

All Molex connections; no spade terminals

Low voltage labeled above and below

Rain shield over IFC keeps condensate off the control

### **TUBULAR STAINLESS STEEL PRIMARY HEAT EXCHANGER**

### **29-4C STAINLESS STEEL SECONDARY HEAT EXCHANGER**

Stainless steel is a more durable, corrosive-resistant material than aluminumized steel

Integrated rail system for easy access if required

Reduces or eliminates need for baffles



## Features and Benefits

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### **VORTICA II BLOWER, DESIGNED EXCLUSIVELY FOR THE S-SERIES FURNACE**

Improved airflow efficiency

Durable, easy to clean, two piece housing

Single piece belly band/ motor arm assembly

Blower deck has full-length rails for easy removal and replacement, regardless of poise

### **THREE-WAY MULTI-POISE (UPFLOW, HORIZONTAL LEFT AND RIGHT) PLUS DEDICATED DOWNFLOW**

Easier to specify

Shipped ready to install (no kits required)

Every model has at least two venting options

When in horizontal, trap extends only about 2"

Barbed fitting on trap at hose connection and on cabinet transition for hose has barbed fitting and clamps at both ends for leak resistance.

Vent table improvements including longer vent lengths; 2" pipe can be used up to 100K



# Accessories

**Table 1. Accessories**

Model Number	Description	Use with
BAYHANG	Horizontal Hanging Kit	All Upflow Furnaces
BAYVENT200B	Sidewall Vent Termination Kit	All Furnaces
BAYVENTCN200B	Sidewall Vent Termination Kit (Canada —CPVC)	All Furnaces
BAYAIR30AVENTA	Concentric Vent Kit	All Furnaces
BAYAIR30CNVENT	Concentric Vent Kit (Canada — CPVC)	All Furnaces
BAYREDUCE	Reducing Coupling (CPVC)	All Furnaces
BAYLIFTB	Dual Return Kit (B size extension)	B Cabinet Upflow Furnaces
BAYLIFTC	Dual Return Kit (C size extension)	C Cabinet Upflow Furnaces
BAYLIFTD	Dual Return Kit (D size extension)	D Cabinet Upflow Furnaces
BAYBASE205	Downflow Subbase	All Downflow Furnaces
BAYFLTR206	Filter Access Door Kit (Downflow only)	All Downflow Furnaces
BAYSF1165AA <sup>(a)</sup>	1" SlimFit Box with MERV 4 Filter	All Upflow Furnaces
BAYLPSS400*	Propane Conversion Kit with Stainless Steel Burners	All Furnaces
BAYMFGH200B	Manufactured/Mobile Housing Kit	All Furnaces
BAYHALT250	High Altitude Pressure Switch Kit	S9V2B040U3VSA
BAYHALT251	High Altitude Pressure Switch Kit	S9V2B060U3VSA
BAYHALT252	High Altitude Pressure Switch Kit	S9V2B080U4VSA, S9V2B080D4VSA, S9V2C100D4VSA
BAYHALT253	High Altitude Pressure Switch Kit	S9V2C100U4VSA
BAYHALT254	High Altitude Pressure Switch Kit	S9V2D120U5VSA
BAYCNDTRAP2	Inline Condensate Trap Kit used with Special Venting on 2" Vent Pipe	All Furnaces
BAYCNDTRAP3	Inline Condensate Trap Kit used with Special Venting on 3" Vent Pipe	All Furnaces

<sup>(a)</sup> Airflow greater than 1600 CFM requires dual returns



# Product Specification

MODEL	S9V2B040U3VSAB (a)	S9V2B060U3VSAB (a)	S9V2B080U4VSAB(a)	S9V2C100U4VSAB (a)
<b>TYPE</b>	Upflow/Horizontal	Upflow/Horizontal	Upflow / Horizontal	Upflow/Horizontal
<b>RATINGS (b)</b>				
1st Stage Input BTUH (ICS)	26,000	39,000	52,000	65,000
1st Stage Capacity BTUH	25,639	38,271	50,960	64,036
2nd Stage Input BTUH	40,000	60,000	80,000	100,000
2nd Stage Capacity BTUH (ICS) (c) (d)	39,141	57,838	78,400	96,362
1st Stage Temp. Rise (Min.-Max.)	25 - 55	25 - 55	30 - 60	25 - 55
2nd Stage Temp. Rise (Min.-Max.)	30 - 60	35 - 65	35 - 65	35 - 65
AFUE (%)	97.0	97.0	97.0	97.0
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT	DIRECT
Diameter — Width (In.)	11 X 8	11 X 8	11 X 8	11 X 10
No. Used	1	1	1	1
Speeds (No.)	Variable	Variable	Variable	Variable
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table
Motor HP	1/2	1/2	3/4	3/4
RPM	Variable	Variable	Variable	Variable
Volts/Ph/Hz	120 / 1 / 60	120 / 1 / 60	120 / 1 / 60	120 / 1 / 60
FLA	5.7	5.7	8.0	8.0
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal	Centrifugal
Drive — No. Speeds	Direct - VS	Direct - VS	Direct - VS	Direct - VS
Motor HP — RPM	1/50 - 5000	1/50 - 5000	1/50 - 5000	1/50 - 5000
Volts/Ph/Hz	33-110 / 3 / 60-180	33-110 / 3 / 60-180	33-110 / 3 / 60-180	33-110 / 3 / 60-180
FLA	1.0	1.0	1.0	1.0
<b>FILTER — Furnished?</b>	No	No	No	No
Type recommended	High Velocity	High Velocity	High Velocity	High Velocity
Hi Vel. (No.-Size-Thk.)	1 — 16x25 — 1 in.	1 — 16x25 — 1 in.	1 — 16x25 — 1 in.	1 — 20x25 — 1 in.
<b>VENT PIPE DIAMETER — Min (in.)</b> (e) (f)	2 Round	2 Round	2 Round	2 Round
<b>HEAT EXCHANGER</b>				
Type — Fired	409 Stainless Steel	409 Stainless Steel	409 Stainless Steel	409 Stainless Steel
— Unfired	29-4C Stainless Steel	29-4C Stainless Steel	29-4C Stainless Steel	29-4C Stainless Steel
Gauge (Fired)	20	20	20	20
<b>ORIFICES — Main</b>				
Nat. Gas Qty. — Drill Size	2- 45	3 - 45	4 - 45	5 - 45
LP Gas Qty. — Drill Size	2- 56	3 - 56	4 - 56	5- 56
<b>GAS VALVE</b>	Redundant - Two Stage	Redundant - Two Stage	Redundant - Two Stage	Redundant - Two Stage
<b>PILOT SAFETY DEVICE</b>				
Type	120 V SiNi Igniter	120 V SiNi Igniter	120 V SiNi Igniter	120 V SiNi Igniter
<b>BURNERS — Type</b>	Multiport Inshot	Multiport Inshot	Multiport Inshot	Multiport Inshot
Number	2	3	4	5
<b>POWER CONN. — V/Ph/Hz (g)</b>	120 / 1 / 60	120 / 1 / 60	120 / 1 / 60	120 / 1 / 60
Ampacity (In Amps)	7.9	7.9	11.2	10.8



## Product Specification

MODEL	S9V2B040U3VSAB (a)	S9V2B060U3VSAB (a)	S9V2B080U4VSAB(a)	S9V2C100U4VSAB (a)
Max. Overcurrent Protection (Amps)	15	15	15	15
<b>PIPE CONN. SIZE (in.)</b>	1/2	1/2	1/2	1/2
<b>DIMENSIONS</b>	H x W x D	H x W x D	H x W x D	H x W x D
Uncrated (In.)	34 x 17-1/2 x 28-3/4	34 x 17-1/2 x 28-3/4	34 x 17-1/2 x 28-3/4	34 x 21 x 28-3/4
Crated (In.)	35-1/2 x 19-1/2 x 30-7/8	35-1/2 x 19-1/2 x 30-7/8	35-1/2 x 19-1/2 x 30-7/8	35-1/2 x 23 x 30-7/8
<b>WEIGHT</b>				
Shipping (Lbs.)/Net (Lbs.)	122/114	127/119	135/127	154/144

(a) Meets Energy Star

(b) Use high altitude pressure switch kits above 4000'. For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level. For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.

(c) Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3 — latest edition.

(d) Based on U.S. government standard tests.

(e) Refer to the Vent Length Table in the Installer's Guide.

(f) All S9V2-VS furnace models have a vent outlet diameter that equals 2 in.

(g) The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

MODEL	S9V2D120U5VSAB (a)	S9V2B080D4VSAB(a)	S9V2C100D4VSAB (a)	
<b>TYPE</b>	Upflow/Horizontal	Downflow	Downflow	
<b>RATINGS (b)</b>				
1st Stage Input BTUH (ICS)	78,000	52,000	65,000	
1st Stage Capacity BTUH	76,668	50,960	63,950	
2nd Stage Input BTUH	120,000	80,000	100,000	
2nd Stage Capacity BTUH (ICS) (c) (d)	113,145	78,400	95,833	
1st Stage Temp. Rise (Min.-Max.)	35-65	30 - 60	25 - 55	
2nd Stage Temp. Rise (Min.-Max.)	40-70	35 - 65	35 - 65	
AFUE (%)	97.0	97.0	97.0	
<b>BLOWER DRIVE</b>	DIRECT	DIRECT	DIRECT	
Diameter — Width (In.)	11 X 10	11 X 8	11 X 10	
No. Used	1	1	1	
Speeds (No.)	Variable	Variable	Variable	
CFM vs. in. w.g.	See Fan Performance Table	See Fan Performance Table	See Fan Performance Table	
Motor HP	1	3/4	3/4	
RPM	Variable	Variable	Variable	
Volts/Ph/Hz	120 / 1 / 60	120 / 1 / 60	120 / 1 / 60	
FLA	10.5	8.0	8.0	
<b>COMBUSTION FAN — Type</b>	Centrifugal	Centrifugal	Centrifugal	
Drive — No. Speeds	Direct - VS	Direct - VS	Direct - VS	
Motor HP — RPM	1/50 - 5000	1/50 - 5000	1/50 - 5000	
Volts/Ph/Hz	33-110 / 3 / 60-180	33-110 / 3 / 60-180	33-110 / 3 / 60-180	
FLA	1.0	1.0	1.0	
<b>FILTER — Furnished?</b>	No	No	No	
Type recommended	High Velocity	High Velocity	High Velocity	
Hi Vel. (No.-Size-Thk.)	1 — 24x25 — 1 in.	2 — 14x20 — 1 in.	2 — 16x20 — 1 in.	
<b>VENT PIPE DIAMETER — Min (in.)</b> (e) (f)	3 Round	2 Round	2 Round	
<b>HEAT EXCHANGER</b>				
Type — Fired	409 Stainless Steel	409 Stainless Steel	409 Stainless Steel	



## Product Specification

MODEL	S9V2D120U5VSAB (a)	S9V2B080D4VSAB(a)	S9V2C100D4VSAB (a)	
— Unfired	29-4C Stainless Steel	29-4C Stainless Steel	29-4C Stainless Steel	
Gauge (Fired)	20	20	20	
<b>ORIFICES — Main</b>				
Nat. Gas Qty. — Drill Size	6 - 45	4 - 45	5 - 45	
LP Gas Qty. — Drill Size	6- 56	4 - 56	5- 56	
<b>GAS VALVE</b>	Redundant - Two Stage	Redundant - Two Stage	Redundant - Two Stage	
<b>PILOT SAFETY DEVICE</b>				
Type	120 V SiNi Igniter	120 V SiNi Igniter	120 V SiNi Igniter	
<b>BURNERS — Type</b>				
	Multiport Inshot	Multiport Inshot	Multiport Inshot	
Number	6	4	5	
<b>POWER CONN. — V/Ph/Hz (g)</b>				
	120 / 1 / 60	120 / 1 / 60	120 / 1 / 60	
Ampacity (In Amps)	13.9	11.2	10.8	
Max. Overcurrent Protection (Amps)	15	15	15	
<b>PIPE CONN. SIZE (in.)</b>				
	1/2	1/2	1/2	
<b>DIMENSIONS</b>				
	H x W x D	H x W x D	H x W x D	
Uncrated (In.)	34 x 24-1/2 x 28-3/4	34 x 17-1/2 x 28-3/4	34 x 21 x 28-3/4	
Crated (In.)	35-1/2 x 26-1/2 x 30-7/8	35-1/2 x 19-1/2 x 30-7/8	35-1/2 x 23 x 30-7/8	
<b>WEIGHT</b>				
Shipping (Lbs.)/Net (Lbs.)	167/156	135/127	154/144	

(a) Meets Energy Star

(b) Use high altitude pressure switch kits above 4000'. For U.S. applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level. For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.

(c) Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3 — latest edition.

(d) Based on U.S. government standard tests.

(e) Refer to the Vent Length Table in the Installer's Guide.

(f) All S9V2-VS furnace models have a vent outlet diameter that equals 2 in.

(g) The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.





# Heating and Cooling Airflow Tables

Table 2. S9V2B040U3VSAB Heating Airflow

S9V2B040U3VSAB Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
1st Stage Capacity = 25,639								
2nd Stage Capacity = 39,141								
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	468	CFM	468	452	437	421	406
			Temp. Rise	49	51	54	56	58
			Watts	27	58	90	121	152
	Medium Low	598	CFM	552	600	647	694	741
			Temp. Rise	43	39	36	32	28
			Watts	41	76	112	147	183
	Medium (a)	634	CFM	583	635	687	739	791
			Temp. Rise	39	36	33	30	27
			Watts	48	83	118	153	189
	High	1008	CFM	930	905	879	853	828
			Temp. Rise	25	25	26	27	27
			Watts	125	178	232	285	339
Heating 2nd Stage	Low	650	CFM	633	636	639	643	646
			Temp. Rise	57	57	57	56	56
			Watts	48	92	135	179	223
	Medium Low	830	CFM	760	786	813	840	866
			Temp. Rise	48	46	45	43	41
			Watts	82	132	182	232	282
	Medium (a)	880	CFM	792	817	842	867	892
			Temp. Rise	44	44	43	43	42
			Watts	94	142	189	237	284
	High	1400	CFM	1337	1269	1200	1132	1063
			Temp. Rise	27	29	31	32	34
			Watts	335	376	417	458	499

(a) Factory Setting.



## Heating and Cooling Airflow Tables

Table 3. S9V2B040U3VSAB Cooling Airflow

S9V2B040U3VSAB Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter										
Cooling	Unit Outdoor	Airflow Setting (CFM/ton)	External Static Pressure							
				0.1	0.3	0.5	0.7	0.9		
Cooling	1.5 Ton	Cooling 450	CFM	675	675	675	675	675		
		CFM/Ton	Watts	47	81	121	166	215		
		Cooling 420	CFM	630	630	630	630	630		
		CFM/Ton	Watts	40	72	111	154	202		
		Cooling 400	CFM	600	600	600	600	600		
		CFM/Ton	Watts	36	67	105	147	193		
		Cooling 370	CFM	555	555	555	555	555		
		CFM/Ton	Watts	30	60	96	136	181		
		Cooling 350	CFM	525	525	525	525	525		
		CFM/Ton	Watts	27	56	90	130	174		
		Cooling 330	CFM	495	495	495	495	495		
		CFM/Ton	Watts	24	51	85	124	167		
		Cooling 310	CFM	465	465	465	465	465		
		CFM/Ton	Watts	21	48	80	118	161		
		Cooling 290	CFM	435	435	435	435	435		
		CFM/Ton	Watts	19	44	76	113	155		
		Cooling	2.0 Ton	Cooling 450	CFM	900	900	900	900	900
				CFM/Ton	Watts	94	137	186	240	298
Cooling 420	CFM			840	840	840	840	840		
CFM/Ton	Watts			79	120	166	218	273		
Cooling 400	CFM			800	800	800	800	800		
CFM/Ton	Watts			70	109	154	204	258		
Cooling 370	CFM			740	740	740	740	740		
CFM/Ton	Watts			58	95	138	185	236		
Cooling 350	CFM			700	700	700	700	700		
CFM/Ton	Watts			51	86	127	173	223		
Cooling 330	CFM			660	660	660	660	660		
CFM/Ton	Watts			44	78	118	162	211		
Cooling 310	CFM			620	620	620	620	620		
CFM/Ton	Watts			38	71	109	152	199		
Cooling 290	CFM			580	580	580	580	580		
CFM/Ton	Watts			33	64	101	142	188		
Cooling	2.5 Ton			Cooling 450	CFM	1125	1125	1125	1125	1125
				CFM/Ton	Watts	167	219	278	341	408
		Cooling 420	CFM	1050	1050	1050	1050	1050		
		CFM/Ton	Watts	139	188	244	304	368		
		Cooling 400	CFM	1000	1000	1000	1000	1000		
		CFM/Ton	Watts	123	170	223	281	343		
		Cooling 370	CFM	925	925	925	925	925		
		CFM/Ton	Watts	100	145	195	250	308		
		Cooling 350	CFM	875	875	875	875	875		
		CFM/Ton	Watts	87	129	178	230	287		
		Cooling 330	CFM	825	825	825	825	825		
		CFM/Ton	Watts	121	160	205	254	308		
		Cooling 310	CFM	775	775	775	775	775		
		CFM/Ton	Watts	101	139	182	229	281		
		Cooling 290	CFM	725	725	725	725	725		
		CFM/Ton	Watts	88	123	164	210	260		
		Cooling	3.0 Ton <sup>(a)</sup>	Cooling 450	CFM	1350	1350	1350	1298	1198
				CFM/Ton	Watts	272	334	402	440	450
Cooling 420	CFM			1260	1260	1260	1260	1198		
CFM/Ton	Watts			226	284	348	417	450		
Cooling 400	CFM			1200	1200	1200	1200	1198		
CFM/Ton	Watts			198	254	315	381	450		
Cooling 370	CFM			1110	1110	1110	1110	1110		
CFM/Ton	Watts			161	213	271	333	399		
Cooling 350	CFM			1050	1050	1050	1050	1050		
CFM/Ton <sup>(a)</sup>	Watts			139	188	244	304	368		
Cooling 330	CFM			990	990	990	990	990		
CFM/Ton	Watts			119	166	219	277	338		
Cooling 310	CFM			930	930	930	930	930		
CFM/Ton	Watts			102	146	197	252	311		
Cooling 290	CFM			870	870	870	870	870		
CFM/Ton	Watts			86	128	176	229	285		

<sup>(a)</sup> Factory Setting

## Heating and Cooling Airflow Tables

**Table 4. S9V2B060U3VSAB Heating Airflow**

<b>S9V2B060U3VSAB Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter</b>				<b>1st Stage Capacity = 38,220 2nd Stage Capacity = 58,800</b>				
<b>Heating</b>	<b>Airflow Setting</b>	<b>Target Airflow</b>		<b>External Static Pressure</b>				
				<b>0.1</b>	<b>0.3</b>	<b>0.5</b>	<b>0.7</b>	<b>0.9</b>
Heating 1st Stage	Low	632	CFM	660	658	656	654	652
			Temp. Rise	53	53	53	53	54
			Watts	48	85	121	157	193
	Medium Low (a)	814	CFM	860	856	852	848	844
			Temp. Rise	41	41	42	42	43
			Watts	91	128	164	200	236
	Medium	893	CFM	900	899	898	897	896
			Temp. Rise	39	39	39	39	39
			Watts	110	147	183	219	255
	High	1027	CFM	1068	1061	1054	1047	1041
			Temp. Rise	33	33	33	33	33
			Watts	165	202	239	276	313
Heating 2nd Stage	Low	800	CFM	851	843	835	826	818
			Temp. Rise	64	64	64	64	64
			Watts	81	127	172	218	264
	Medium Low (a)	1030	CFM	1092	1075	1057	1039	1022
			Temp. Rise	49	50	50	51	52
			Watts	157	209	262	314	366
	Medium	1130	CFM	1132	1128	1124	1119	1115
			Temp. Rise	47	47	48	48	48
			Watts	201	255	308	362	416
	High	1300	CFM	1280	1281	1282	1283	1283
			Temp. Rise	42	42	42	42	42
			Watts	319	365	410	456	502

(a) Factory Setting.



# Heating and Cooling Airflow Tables

**Table 5. S9V2B060U3VSAB Cooling Airflow**

S9V2B060U3VSAB Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
Cooling	Unit Outdoor	Airflow Setting (CFM/ton)	External Static Pressure					
				0.1	0.3	0.5	0.7	0.9
Cooling	1.5 Ton	Cooling 450	CFM	675	675	675	675	675
		CFM/Ton	Watts	46	81	121	165	212
		Cooling 420	CFM	630	630	630	630	630
		CFM/Ton	Watts	40	72	111	153	200
		Cooling 400	CFM	600	600	600	600	600
		CFM/Ton	Watts	36	67	105	146	192
		Cooling 370	CFM	555	555	555	555	555
		CFM/Ton	Watts	30	60	96	137	182
		Cooling 350	CFM	525	525	525	525	525
		CFM/Ton	Watts	27	56	91	131	175
		Cooling 330	CFM	495	495	495	495	495
		CFM/Ton	Watts	24	52	86	126	170
		Cooling 310	CFM	465	465	465	465	465
		CFM/Ton	Watts	21	48	82	121	164
		Cooling 290	CFM	435	435	435	435	435
		CFM/Ton	Watts	19	45	78	116	160
Cooling	2.0 Ton	Cooling 450	CFM	900	900	900	900	900
		CFM/Ton	Watts	92	135	184	236	291
		Cooling 420	CFM	840	840	840	840	840
		CFM/Ton	Watts	78	118	164	214	267
		Cooling 400	CFM	800	800	800	800	800
		CFM/Ton	Watts	69	108	153	201	253
		Cooling 370	CFM	740	740	740	740	740
		CFM/Ton	Watts	57	94	136	183	232
		Cooling 350	CFM	700	700	700	700	700
		CFM/Ton	Watts	50	86	126	171	220
		Cooling 330	CFM	660	660	660	660	660
		CFM/Ton	Watts	44	78	117	161	208
		Cooling 310	CFM	620	620	620	620	620
		CFM/Ton	Watts	38	71	109	151	197
		Cooling 290	CFM	580	580	580	580	580
		CFM/Ton	Watts	33	64	101	142	187
Cooling	2.5 Ton	Cooling 450	CFM	1125	1125	1125	1125	1125
		CFM/Ton	Watts	164	216	273	334	399
		Cooling 420	CFM	1050	1050	1050	1050	1050
		CFM/Ton	Watts	137	186	240	298	359
		Cooling 400	CFM	1000	1000	1000	1000	1000
		CFM/Ton	Watts	121	168	220	276	335
		Cooling 370	CFM	925	925	925	925	925
		CFM/Ton	Watts	99	143	192	245	302
		Cooling 350	CFM	875	875	875	875	875
		CFM/Ton	Watts	86	128	175	227	281
		Cooling 330	CFM	825	825	825	825	825
		CFM/Ton	Watts	74	115	160	209	262
		Cooling 310	CFM	775	775	775	775	775
		CFM/Ton	Watts	64	102	146	193	244
		Cooling 290	CFM	725	725	725	725	725
		CFM/Ton	Watts	54	91	133	178	228
Cooling	3.0 Ton <sup>(a)</sup>	Cooling 450	CFM	1350	1350	1350	1296	1218
		CFM/Ton	Watts	267	329	395	431	452
		Cooling 420	CFM	1260	1260	1260	1260	1218
		CFM/Ton	Watts	222	279	342	409	452
		Cooling 400	CFM	1200	1200	1200	1200	1200
		CFM/Ton	Watts	195	250	310	374	441
		Cooling 370	CFM	1110	1110	1110	1110	1110
		CFM/Ton	Watts	158	210	266	327	390
		Cooling 350	CFM	1050	1050	1050	1050	1050
		CFM/Ton <sup>(a)</sup>	Watts	137	186	240	298	359
		Cooling 330	CFM	990	990	990	990	990
		CFM/Ton	Watts	118	164	216	272	330
		Cooling 310	CFM	930	930	930	930	930
		CFM/Ton	Watts	100	145	194	247	304
		Cooling 290	CFM	870	870	870	870	870
		CFM/Ton	Watts	85	127	174	225	279

<sup>(a)</sup> Factory Setting

## Heating and Cooling Airflow Tables

**Table 6. S9V2B080U4VSAB Heating Airflow**

<b>S9V2B080U4VSAB Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter</b>				<b>1st Stage Capacity = 50,960 2nd Stage Capacity = 78,400</b>				
<b>Heating</b>	<b>Airflow Setting</b>	<b>Target Airflow</b>		<b>External Static Pressure</b>				
				<b>0.1</b>	<b>0.3</b>	<b>0.5</b>	<b>0.7</b>	<b>0.9</b>
Heating 1st Stage	Low	864	CFM	860	849	838	827	816
			Temp. Rise	54	55	56	57	58
			Watts	87	125	163	200	238
	Medium Low	907	CFM	907	893	879	865	852
			Temp. Rise	51	52	53	54	54
			Watts	97	135	174	212	251
	Medium <sup>(a)</sup>	958	CFM	957	930	903	876	849
			Temp. Rise	49	50	51	52	53
			Watts	112	153	194	234	275
	High	1051	CFM	1042	1015	989	962	936
			Temp. Rise	45	46	47	47	48
			Watts	140	182	225	267	310
Heating 2nd Stage	Low	1200	CFM	1211	1206	1201	1197	1192
			Temp. Rise	60	60	60	60	60
			Watts	196	248	300	352	404
	Medium Low	1260	CFM	1258	1261	1263	1265	1268
			Temp. Rise	58	57	57	57	57
			Watts	215	271	326	381	436
	Medium <sup>(a)</sup>	1330	CFM	1307	1303	1299	1296	1292
			Temp. Rise	55	55	55	55	55
			Watts	260	312	364	416	468
	High	1460	CFM	1431	1412	1393	1374	1355
			Temp. Rise	50	51	52	52	53
			Watts	334	390	445	501	557

<sup>(a)</sup> Factory Setting.

**Table 7. S9V2B080D4VSAB Heating Airflow**

<b>S9V2B080D4VSAB Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter</b>				<b>1st Stage Capacity = 50,960 2nd Stage Capacity = 78,400</b>				
<b>Heating</b>	<b>Airflow Setting</b>	<b>Target Airflow</b>		<b>External Static Pressure</b>				
				<b>0.1</b>	<b>0.3</b>	<b>0.5</b>	<b>0.7</b>	<b>0.9</b>
Heating 1st Stage	Low	864	CFM	780	776	772	768	764
			Temp. Rise	60	60	61	61	61
			Watts	94	135	176	216	257
	Medium Low	907	CFM	807	811	814	818	822
			Temp. Rise	57	57	58	58	58
			Watts	101	151	201	252	302
	Medium <sup>(a)</sup>	958	CFM	862	862	862	861	861
			Temp. Rise	54	54	54	54	54
			Watts	117	168	219	271	322
	High	1051	CFM	990	987	985	982	979
			Temp. Rise	47	47	48	48	48
			Watts	151	203	256	308	360
Heating 2nd Stage	Low	1200	CFM	1111	1104	1096	1088	1081
			Temp. Rise	66	66	66	66	66
			Watts	204	260	317	373	429
	Medium Low	1260	CFM	1193	1201	1209	1217	1225
			Temp. Rise	59	59	59	59	59
			Watts	232	296	360	424	488
	Medium <sup>(a)</sup>	1330	CFM	1217	1217	1216	1215	1215
			Temp. Rise	58	58	58	58	59
			Watts	273	335	396	457	518
	High	1460	CFM	1239	1235	1231	1228	1224
			Temp. Rise	57	57	58	58	58
			Watts	362	428	495	562	629

<sup>(a)</sup> Factory Setting.



## Heating and Cooling Airflow Tables

**Table 8. S9V2B080U4VSAB / S9V2B080D4VSAB Cooling Airflow**

S9V2B080U4VSAB / S9V2B080D4VSAB Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
Cooling	Unit Outdoor	Airflow Setting (CFM/ton)		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Cooling	2.5 Ton	Cooling 450	CFM	1125	1125	1125	1125	1125
		CFM/Ton	Watts	155	205	259	316	376
		Cooling 420	CFM	1050	1050	1050	1050	1050
		CFM/Ton	Watts	130	177	228	282	340
		Cooling 400	CFM	1000	1000	1000	1000	1000
		CFM/Ton	Watts	115	160	209	262	317
		Cooling 370	CFM	925	925	925	925	925
		CFM/Ton	Watts	94	136	183	233	286
		Cooling 350	CFM	875	875	875	875	875
		CFM/Ton	Watts	82	122	167	216	267
		Cooling 330	CFM	825	825	825	825	825
		CFM/Ton	Watts	71	110	153	199	249
		Cooling 310	CFM	775	775	775	775	775
		CFM/Ton	Watts	61	98	139	184	233
Cooling 290	CFM	725	725	725	725	725		
CFM/Ton	Watts	52	87	127	171	218		
Cooling	3.0 Ton	Cooling 450	CFM	1350	1350	1350	1350	1350
		CFM/Ton	Watts	252	311	374	440	508
		Cooling 420	CFM	1260	1260	1260	1260	1260
		CFM/Ton	Watts	209	265	324	386	451
		Cooling 400	CFM	1200	1200	1200	1200	1200
		CFM/Ton	Watts	184	237	294	354	416
		Cooling 370	CFM	1110	1110	1110	1110	1110
		CFM/Ton	Watts	150	199	253	309	369
		Cooling 350	CFM	1050	1050	1050	1050	1050
		CFM/Ton	Watts	130	177	228	282	340
		Cooling 330	CFM	990	990	990	990	990
		CFM/Ton	Watts	112	156	205	258	313
		Cooling 310	CFM	930	930	930	930	930
		CFM/Ton	Watts	95	138	185	235	288
Cooling 290	CFM	870	870	870	870	870		
CFM/Ton	Watts	81	121	166	214	265		
Cooling	3.5 Ton	Cooling 450	CFM	1575	1575	1575	1575	1575
		CFM/Ton	Watts	383	452	524	599	676
		Cooling 420	CFM	1470	1470	1470	1470	1470
		CFM/Ton	Watts	317	382	449	520	593
		Cooling 400	CFM	1400	1400	1400	1400	1400
		CFM/Ton	Watts	278	339	404	472	542
		Cooling 370	CFM	1295	1295	1295	1295	1295
		CFM/Ton	Watts	225	282	343	407	473
		Cooling 350	CFM	1225	1225	1225	1225	1225
		CFM/Ton <sup>(a)</sup>	Watts	194	248	306	367	431
		Cooling 330	CFM	1155	1155	1155	1155	1155
		CFM/Ton	Watts	166	218	273	331	392
		Cooling 310	CFM	1085	1085	1085	1085	1085
		CFM/Ton	Watts	141	190	242	298	356
Cooling 290	CFM	1015	1015	1015	1015	1015		
CFM/Ton	Watts	119	165	215	268	324		
Cooling	4.0 Ton <sup>(a)</sup>	Cooling 450	CFM	1800	1784	1746	1665	1581
		CFM/Ton	Watts	555	619	665	674	681
		Cooling 420	CFM	1680	1680	1680	1665	1581
		CFM/Ton	Watts	458	531	608	674	681
		Cooling 400	CFM	1600	1600	1600	1600	1600
		CFM/Ton	Watts	400	470	543	619	697
		Cooling 370	CFM	1480	1480	1480	1480	1480
		CFM/Ton	Watts	323	388	456	527	600
		Cooling 350	CFM	1400	1400	1400	1400	1400
		CFM/Ton	Watts	278	339	404	472	542
		Cooling 330	CFM	1320	1320	1320	1320	1320
		CFM/Ton	Watts	237	295	357	421	488
		Cooling 310	CFM	1240	1240	1240	1240	1240
		CFM/Ton	Watts	201	255	314	375	439
Cooling 290	CFM	1160	1160	1160	1160	1160		
CFM/Ton	Watts	168	220	275	334	395		

<sup>(a)</sup> Factory Setting

## Heating and Cooling Airflow Tables

**Table 9. S9V2C100U4VSAB Heating Airflow**

<b>S9V2C100U4VSAB Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter</b>				<b>1st Stage Capacity = 63,700 2nd Stage Capacity = 98,000</b>				
<b>Heating</b>	<b>Airflow Setting</b>	<b>Target Airflow</b>		<b>External Static Pressure</b>				
				<b>0.1</b>	<b>0.3</b>	<b>0.5</b>	<b>0.7</b>	<b>0.9</b>
Heating 1st Stage	Low	1146	CFM	1191	1199	1208	1216	1224
			Temp. Rise	50	49	49	49	49
			Watts	133	192	251	310	369
	Medium Low	1280	CFM	1314	1304	1294	1284	1274
			Temp. Rise	45	45	45	46	46
			Watts	173	235	297	359	421
	Medium	1359	CFM	1478	1466	1453	1441	1428
			Temp. Rise	40	40	40	40	40
			Watts	243	304	364	425	485
	High <sup>(a)</sup>	1446	CFM	1498	1511	1524	1537	1550
			Temp. Rise	39	39	39	39	38
			Watts	264	330	397	464	531
Heating 2nd Stage	Low	1450	CFM	1480	1488	1496	1503	1511
			Temp. Rise	60	60	60	60	60
			Watts	244	312	380	449	517
	Medium Low	1620	CFM	1658	1656	1654	1652	1650
			Temp. Rise	54	54	54	54	55
			Watts	330	408	486	564	642
	Medium	1720	CFM	1869	1857	1846	1811	1714
			Temp. Rise	48	48	49	49	52
			Watts	471	549	628	677	695
	High <sup>(a)</sup>	1830	CFM	1959	1919	1879	1811	1714
			Temp. Rise	46	47	48	49	52
			Watts	540	600	660	677	695

<sup>(a)</sup> Factory Setting.

**Table 10. S9V2C100D4VSAB Heating Airflow**

<b>S9V2C100D4VSAB Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter</b>				<b>1st Stage Capacity = 63,950 2nd Stage Capacity = 95,833</b>				
<b>Heating</b>	<b>Airflow Setting</b>	<b>Target Airflow</b>		<b>External Static Pressure</b>				
				<b>0.1</b>	<b>0.3</b>	<b>0.5</b>	<b>0.7</b>	<b>0.9</b>
Heating 1st Stage	Low	1080	CFM	1068	1048	1029	1009	989
			Temp. Rise	55	57	60	63	66
			Watts	101	151	201	251	301
	Medium Low	1166	CFM	1158	1113	1068	1023	978
			Temp. Rise	51	53	55	57	59
			Watts	115	172	229	285	342
	Medium <sup>(a)</sup>	1318	CFM	1326	1272	1218	1164	1111
			Temp. Rise	46	48	50	51	53
			Watts	153	206	259	312	365
	High	1361	CFM	1312	1270	1229	1188	1147
			Temp. Rise	46	47	47	48	49
			Watts	166	221	276	331	387
Heating 2nd Stage	Low	1500	CFM	1514	1478	1441	1404	1367
			Temp. Rise	58	60	61	63	64
			Watts	223	297	370	443	516
	Medium Low	1620	CFM	1620	1588	1556	1523	1491
			Temp. Rise	55	56	57	58	59
			Watts	276	345	415	484	553
	Medium <sup>(a)</sup>	1830	CFM	1768	1746	1724	1702	1620
			Temp. Rise	50	51	52	53	53
			Watts	372	446	520	594	668
	High	1890	CFM	1810	1783	1756	1729	1702
			Temp. Rise	49	50	51	52	52
			Watts	405	476	548	677	695

<sup>(a)</sup> Factory Setting.



# Heating and Cooling Airflow Tables

**Table 11. S9V2C100U4VSAB / S9V2C100D4VSAB Cooling Airflow**

S9V2C100U4VSAB / S9V2C100D4VSAB Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
Cooling	Unit Outdoor	Airflow Setting (CFM/ton)		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Cooling	2.5 Ton	Cooling 450	CFM	1125	1125	1125	1125	1125
		CFM/Ton	Watts	123	178	236	296	360
		Cooling 420	CFM	1050	1050	1050	1050	1050
		CFM/Ton	Watts	104	156	210	268	329
		Cooling 400	CFM	1000	1000	1000	1000	1000
		CFM/Ton	Watts	93	142	195	251	309
		Cooling 370	CFM	925	925	925	925	925
		CFM/Ton	Watts	77	123	173	226	282
		Cooling 350	CFM	875	875	875	875	875
		CFM/Ton	Watts	68	112	160	211	265
		Cooling 330	CFM	825	825	825	825	825
		CFM/Ton	Watts	60	102	147	196	249
Cooling 310	CFM	775	775	775	775	775		
CFM/Ton	Watts	52	92	135	183	234		
Cooling 290	CFM	725	725	725	725	725		
CFM/Ton	Watts	45	83	125	170	220		
Cooling	3.0 Ton	Cooling 450	CFM	1350	1350	1350	1350	1350
		CFM/Ton	Watts	194	259	326	396	468
		Cooling 420	CFM	1260	1260	1260	1260	1260
		CFM/Ton	Watts	163	224	287	353	422
		Cooling 400	CFM	1200	1200	1200	1200	1200
		CFM/Ton	Watts	144	202	263	327	393
		Cooling 370	CFM	1110	1110	1110	1110	1110
		CFM/Ton	Watts	119	173	231	291	354
		Cooling 350	CFM	1050	1050	1050	1050	1050
		CFM/Ton	Watts	104	156	210	268	329
		Cooling 330	CFM	990	990	990	990	990
		CFM/Ton	Watts	91	140	192	247	306
Cooling 310	CFM	930	930	930	930	930		
CFM/Ton	Watts	78	125	174	228	284		
Cooling 290	CFM	870	870	870	870	870		
CFM/Ton	Watts	67	111	158	209	264		
Cooling	3.5 Ton	Cooling 450	CFM	1575	1575	1575	1575	1575
		CFM/Ton	Watts	289	363	440	519	600
		Cooling 420	CFM	1470	1470	1470	1470	1470
		CFM/Ton	Watts	241	311	383	458	535
		Cooling 400	CFM	1400	1400	1400	1400	1400
		CFM/Ton	Watts	213	280	349	421	495
		Cooling 370	CFM	1295	1295	1295	1295	1295
		CFM/Ton	Watts	175	237	302	369	439
		Cooling 350	CFM	1225	1225	1225	1225	1225
		CFM/Ton	Watts	152	211	273	338	405
		Cooling 330	CFM	1155	1155	1155	1155	1155
		CFM/Ton	Watts	131	187	247	308	373
Cooling 310	CFM	1085	1085	1085	1085	1085		
CFM/Ton	Watts	113	166	222	281	343		
Cooling 290	CFM	1015	1015	1015	1015	1015		
CFM/Ton	Watts	96	146	199	256	315		
Cooling	4.0 Ton <sup>(a)</sup>	Cooling 450	CFM	1800	1800	1800	1800	1714
		CFM/Ton	Watts	410	494	580	669	695
		Cooling 420	CFM	1680	1680	1680	1680	1680
		CFM/Ton	Watts	342	420	502	585	671
		Cooling 400	CFM	1600	1600	1600	1600	1600
		CFM/Ton	Watts	301	376	454	534	617
		Cooling 370	CFM	1480	1480	1480	1480	1480
		CFM/Ton	Watts	246	316	388	464	541
		Cooling 350	CFM	1400	1400	1400	1400	1400
		CFM/Ton <sup>(a)</sup>	Watts	213	280	349	421	495
		Cooling 330	CFM	1320	1320	1320	1320	1320
		CFM/Ton	Watts	183	247	313	381	452
Cooling 310	CFM	1240	1240	1240	1240	1240		
CFM/Ton	Watts	157	216	279	344	412		
Cooling 290	CFM	1160	1160	1160	1160	1160		
CFM/Ton	Watts	133	189	248	310	375		

<sup>(a)</sup> Factory Setting



## Heating and Cooling Airflow Tables

**Table 12. S9V2D120U5VSAB Heating Airflow**

<b>S9V2D120U5VSAB Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter</b>								
				<b>1st Stage Capacity = 76,668</b>				
				<b>2nd Stage Capacity = 113,145</b>				
<b>Heating</b>	<b>Airflow Setting</b>	<b>Target Airflow</b>		<b>External Static Pressure</b>				
				<b>0.1</b>	<b>0.3</b>	<b>0.5</b>	<b>0.7</b>	<b>0.9</b>
Heating 1st Stage	Low	1123	CFM	1138	1158	1178	1198	1218
			Temp. Rise	61	60	59	58	57
			Watts	115	176	236	297	358
	Medium Low	1332	CFM	1371	1383	1394	1406	1417
			Temp. Rise	51	50	50	49	49
			Watts	182	251	320	389	457
	Medium <sup>(a)</sup>	1404	CFM	1440	1450	1461	1471	1482
			Temp. Rise	48	48	48	47	47
			Watts	208	283	357	431	505
	High	1620	CFM	1669	1674	1680	1685	1691
			Temp. Rise	42	42	41	41	41
			Watts	315	388	460	533	605
Heating 2nd Stage	Low	1560	CFM	1654	1637	1621	1604	1587
			Temp. Rise	65	66	67	67	68
			Watts	291	360	430	499	568
	Medium Low	1850	CFM	1980	1951	1922	1893	1864
			Temp. Rise	55	56	57	58	58
			Watts	456	539	621	704	787
	Medium <sup>(a)</sup>	1950	CFM	2075	2037	1999	1961	1923
			Temp. Rise	52	53	54	55	56
			Watts	527	611	696	781	865
	High	2250	CFM	2280	2197	2114	2032	1949
			Temp. Rise	48	50	52	54	56
			Watts	795	819	842	865	888

<sup>(a)</sup> Factory Setting.



# Heating and Cooling Airflow Tables

**Table 13. S9V2D120U5VSAB Cooling Airflow**

S9V2D120U5VSAB Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
Cooling	Unit Outdoor	Airflow Setting (CFM/ton)	External Static Pressure					
				0.1	0.3	0.5	0.7	0.9
Cooling	3.5 Ton	Cooling 450 CFM/Ton	CFM	1575	1575	1575	1575	1575
			Watts	248	316	387	461	537
		Cooling 420 CFM/Ton	CFM	1470	1470	1470	1470	1470
			Watts	206	270	337	407	479
		Cooling 400 CFM/Ton	CFM	1400	1400	1400	1400	1400
			Watts	181	243	307	374	443
		Cooling 370 CFM/Ton	CFM	1295	1295	1295	1295	1295
			Watts	148	205	265	328	393
		Cooling 350 CFM/Ton	CFM	1225	1225	1225	1225	1225
			Watts	128	182	240	300	363
		Cooling 330 CFM/Ton	CFM	1155	1155	1155	1155	1155
			Watts	111	162	217	274	335
		Cooling 310 CFM/Ton	CFM	1085	1085	1085	1085	1085
			Watts	95	143	195	250	309
	Cooling 290 CFM/Ton	CFM	1015	1015	1015	1015	1015	
		Watts	80	126	176	228	285	
Cooling	4.0 Ton	Cooling 450 CFM/Ton	CFM	1800	1800	1800	1800	1800
			Watts	356	433	514	597	682
		Cooling 420 CFM/Ton	CFM	1680	1680	1680	1680	1680
			Watts	295	368	443	521	601
		Cooling 400 CFM/Ton	CFM	1600	1600	1600	1600	1600
			Watts	258	328	400	475	552
		Cooling 370 CFM/Ton	CFM	1480	1480	1480	1480	1480
			Watts	210	274	342	412	484
		Cooling 350 CFM/Ton	CFM	1400	1400	1400	1400	1400
			Watts	181	243	307	374	443
		Cooling 330 CFM/Ton	CFM	1320	1320	1320	1320	1320
			Watts	155	213	274	338	405
		Cooling 310 CFM/Ton	CFM	1240	1240	1240	1240	1240
			Watts	132	187	245	306	369
	Cooling 290 CFM/Ton	CFM	1160	1160	1160	1160	1160	
		Watts	112	163	218	276	337	
Cooling	4.5 Ton	Cooling 450 CFM/Ton	CFM	2025	2025	2025	2025	2025
			Watts	492	579	669	761	855
		Cooling 420 CFM/Ton	CFM	1890	1890	1890	1890	1890
			Watts	406	488	572	659	747
		Cooling 400 CFM/Ton	CFM	1800	1800	1800	1800	1800
			Watts	356	433	514	597	682
		Cooling 370 CFM/Ton	CFM	1665	1665	1665	1665	1665
			Watts	288	360	435	512	592
		Cooling 350 CFM/Ton	CFM	1575	1575	1575	1575	1575
			Watts	248	316	387	461	537
		Cooling 330 CFM/Ton	CFM	1485	1485	1485	1485	1485
			Watts	212	277	344	414	487
		Cooling 310 CFM/Ton	CFM	1395	1395	1395	1395	1395
			Watts	180	241	305	371	440
	Cooling 290 CFM/Ton	CFM	1305	1305	1305	1305	1305	
		Watts	151	208	269	332	398	
Cooling	5.0 Ton <sup>(a)</sup>	Cooling 450 CFM/Ton	CFM	2250	2250	2250	2188	2103
			Watts	659	756	856	900	922
		Cooling 420 CFM/Ton	CFM	2100	2100	2100	2100	2100
			Watts	544	634	728	823	920
		Cooling 400 CFM/Ton	CFM	2000	2000	2000	2000	2000
			Watts	475	561	650	741	834
		Cooling 370 CFM/Ton	CFM	1850	1850	1850	1850	1850
			Watts	383	463	546	631	717
		Cooling 350 CFM/Ton <sup>(a)</sup>	CFM	1750	1750	1750	1750	1750
			Watts	329	405	484	564	647
		Cooling 330 CFM/Ton	CFM	1650	1650	1650	1650	1650
			Watts	281	352	427	503	582
		Cooling 310 CFM/Ton	CFM	1550	1550	1550	1550	1550
			Watts	237	305	375	448	523
	Cooling 290 CFM/Ton	CFM	1450	1450	1450	1450	1450	
		Watts	199	262	328	397	468	

<sup>(a)</sup> Factory Setting



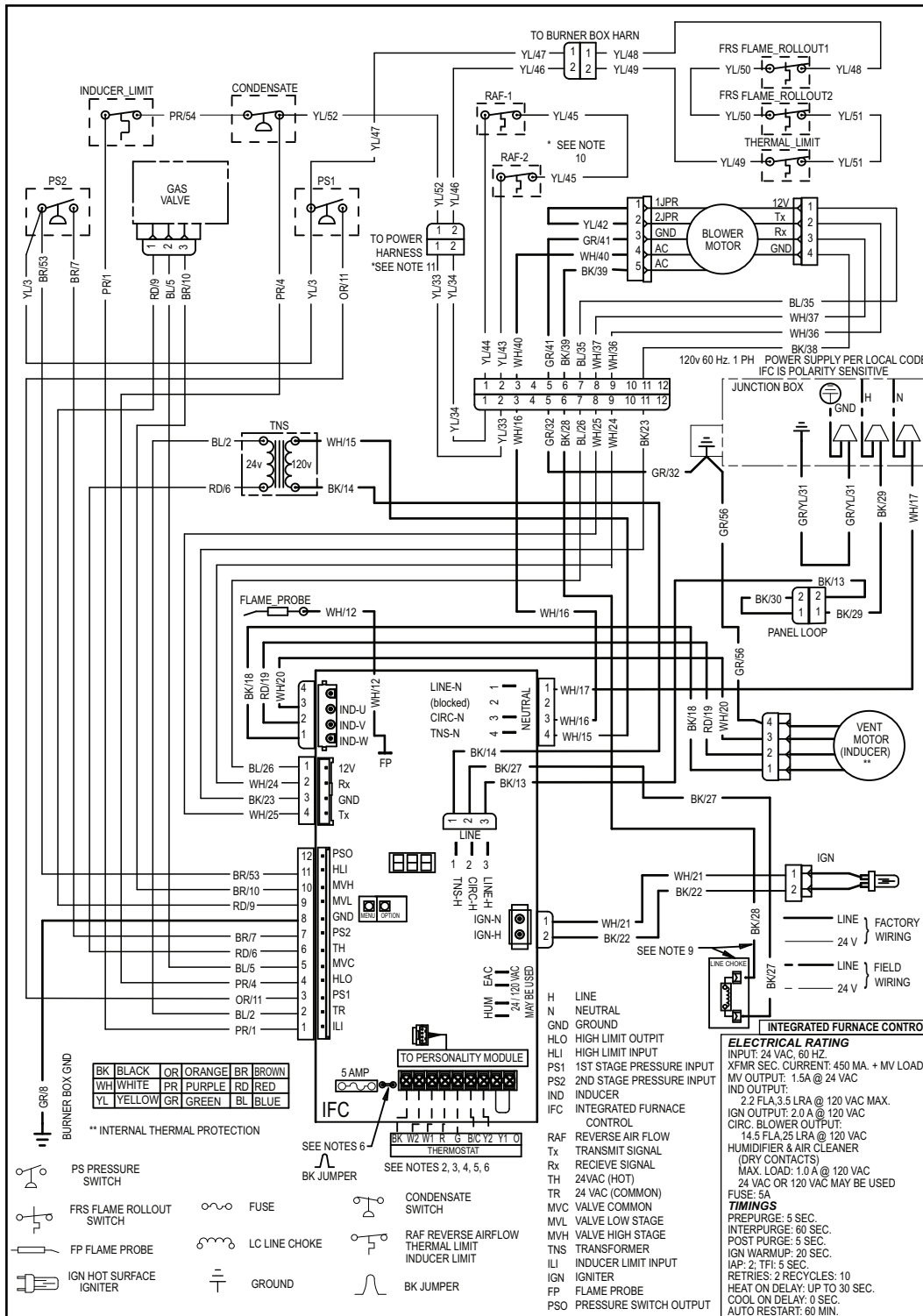
# Maximum Vent Length Table

Model	Maximum Total Equivalent Length in Feet for Vent and Inlet Air (See Notes)	
	2 inch or 2.5 inch Pipe	3 inch or 4 inch Pipe
Altitude 0–2,000 Feet		
S9V2B040U3VS, S9V2B060U3VS	200	200
S9V2B080U4VS, S9V2B080D4VS	100	200
S9V2C100U4VS, S9V2C100D4VS	50	200
S9V2D120U5VS	Note 1	200
Altitude 2,001–5,400 Feet		
S9V2B040U3VS, S9V2B060U3VS	200	200
S9V2B080U4VS, S9V2B080D4VS	80	120
S9V2C100U4VS, S9V2C100D4VS	50	150
S9V2D120U5VS	Note 1	200
Altitude 5,401–7,800 Feet		
S9V2B040U3VS, S9V2B060U3VS	100	150
S9V2B080U4VS, S9V2B080D4VS	50	70
S9V2C100U4VS, S9V2C100D4VS	Note 1	100
S9V2D120U5VS	Note 1	100
Altitude 7,801–10,100 Feet		
S9V2B040U3VS, S9V2B060U3VS	50	90
S9V2B080U4VS, S9V2B080D4VS	Note 1	50
S9V2C100U4VS, S9V2C100D4VS	Note 1	50
S9V2D120U5VS	Note 1	50

**Notes:**

1. Not allowed
2. For PolyPro® by Duravent, Z-DENS by Novaflex Group, InnoFlue® by Centrotherm, and Polyflue™ manufactured modular venting systems that are in the approved vent pipe material table, fitting equivalent vent lengths may be different from what is shown in Note 6. Refer to the venting system manufacturer’s installation instruction for appropriate venting diameters and equivalent lengths.
3. Minimum vent length for all models: 15' equivalent.
4. DO NOT MIX PIPE DIAMETERS IN THE SAME LENGTH OF PIPE OUTSIDE THE FURNACE CABINET (Except adapters at the top of the furnace). If different inlet and vent pipe sizes are used, the vent pipe must adhere to the maximum length limit shown in the table above (See note 7 below for exception). The inlet pipe can be of a larger diameter, but never smaller than the vent pipe.
5. MAXIMUM PIPE LENGTHS MUST NOT BE EXCEEDED! THE LENGTH SHOWN IS NOT A COMBINED TOTAL, IT IS THE MAXIMUM LENGTH OF EACH (Vent or Inlet air pipes).
6. One SHORT radius 90° elbow is equivalent to 10' of 4" pipe, 10' of 3" pipe, or 8' of 2" pipe. One LONG radius elbow is equivalent to 6' of 4" pipe, 7' of 3" pipe, or 5' of 2" pipe. Two 45° elbows equal one 90° LONG elbow. One MITERED elbow is equivalent to 12' of 3" pipe or 12' of 2" pipe.
7. The termination tee or bend must be included in the total number of elbows. If the BAYAIR30AVENTA or BAYAIR30CNVENT termination kit is used, the equivalent length of pipe is 5 feet. For BAYVENT200B and BAYVENTCN200B the equivalent length is 0 feet.
8. For Canadian applications, venting systems must meet ULC-S636 requirements.
9. The INLET AIR of one pipe systems require the installation of a minimum of one 90° elbow (to prevent dust and debris from falling straight into the furnace).

# S9V2-VS Wiring Diagram



**NOTES:**

1. IF ANY OF THE ORIGINAL WIRING AS SUPPLIED WITH THIS FURNACE MUST BE REPLACED, IT MUST BE WITH WIRE HAVING A TEMPERATURE RATING OF AT LEAST 105°C. WIRES 12, 48, 49, 50, AND 51 REQUIRE A TEMPERATURE RATING OF AT LEAST 250°C.
2. FOR PROPER AIRFLOW IN COOLING/HEAT PUMP MODE, "Y1" MUST BE CONNECTED TO THE THERMOSTAT FOR SINGLE STAGE UNITS. FOR TWO STAGE UNITS, "Y1" AND "Y2" MUST BE CONNECTED TO THE THERMOSTAT.
3. FOR SINGLE STAGE THERMOSTATS, JUMPER "W1" AND "W2" TERMINALS. SECOND STAGE HEATING WILL BE ENERGIZED ONCE THE INTER-STAGE DELAY HAS EXPIRED. "HT2" WILL BE SHOWN ON SEVEN SEGMENT DISPLAY AT ALL TIMES.
4. FOR HEAT PUMP SYSTEMS, "Y1" AND "O" TERMINALS MUST BE CONNECTED TO THE ROOM THERMOSTAT. FOR TWO STAGE UNITS, "Y1", "Y2", AND "O" TERMINALS MUST ALL BE CONNECTED TO THE ROOM THERMOSTAT.
5. FOR TWO STAGE SYSTEMS, USE "Y1" FOR LOW SPEED AND "Y2" FOR HIGH SPEED CONNECTION TO THE LOW-VOLTAGE TERMINAL BLOCK. SINGLE STAGE SYSTEMS USE "Y1" FOR THE CONNECTION TO THE LOW-VOLTAGE TERMINAL BLOCK.
6. THE "BK" JUMPER MUST BE CUT WHEN APPLYING AN AIRFLOW COMMAND TO THE "BK" TERMINAL SUCH AS PULSE WIDTH MODULATION.
7. SEE INDOOR MOTOR AIRFLOW SELECTION CHART, LOCATED IN THE INTEGRATED FURNACE CONTROL MENU & OPTIONS SETTINGS TO SET AIRFLOW AND COOLING OFF DELAYS.
8. CORRECT PERSONALITY MODULE IS REQUIRED FOR PROPER FURNACE OPERATION. PERSONALITY MODULE IS SPECIFIC TO EACH MODEL & SERIAL NUMBER, AND IS TO REMAIN WITHIN ITS ORIGINAL UNIT.
9. LINE CHOKE AND WIRE BK/28 ONLY USED ON MODELS WITH 3/4 AND 1 HP MOTORS.
10. DOWNFLOW MODELS USE ONLY ONE REVERSE AIRFLOW SWITCH.
11. CONNECTION MAY OR MAY NOT BE PRESENT.

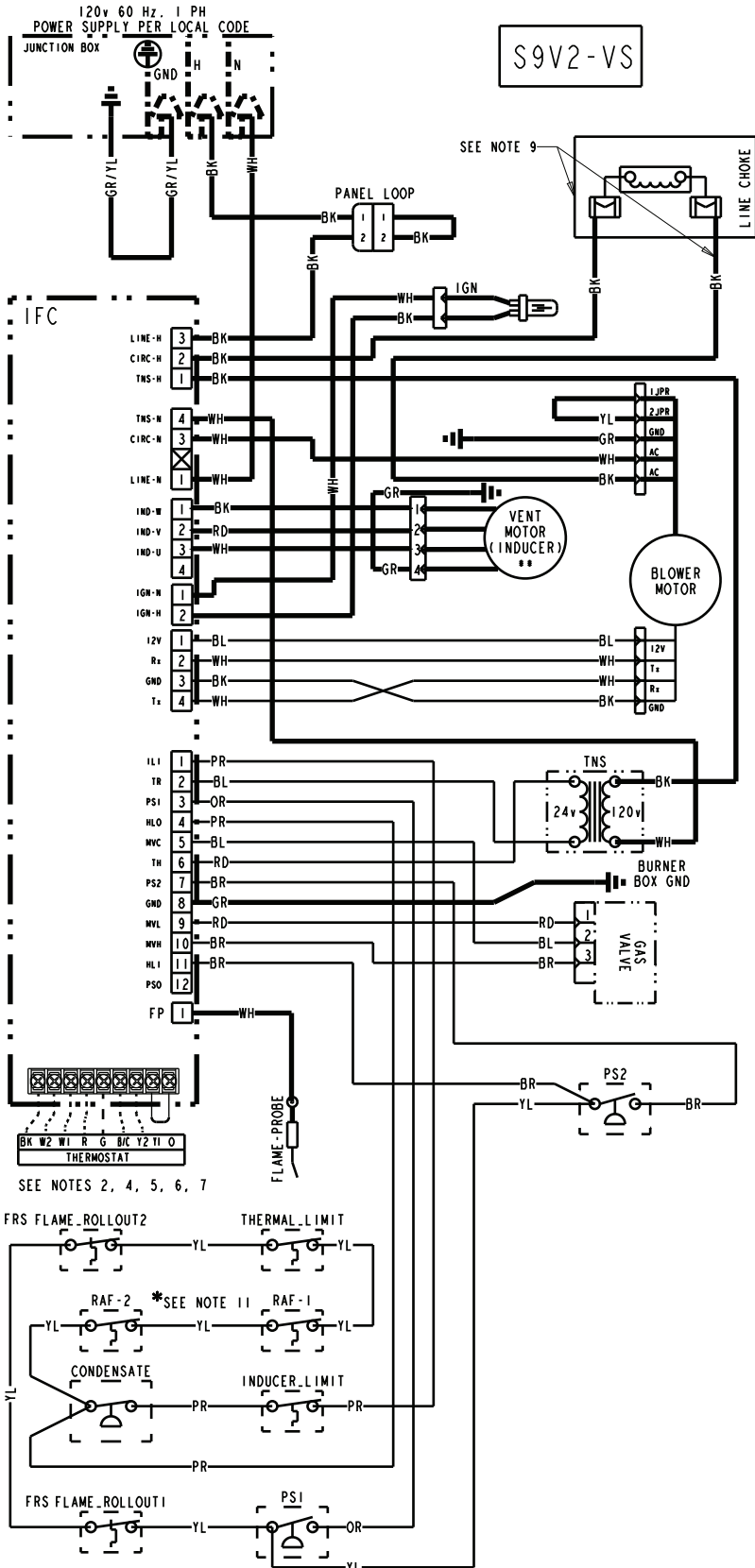
**S9V2-VS**

Variable Speed (3-Phase) Inducer w/ ECM Blower Motor			
Status Codes	Code	Description	Meaning
<b>OU</b>	<b>OU</b>	Outdoor Unit	<b>E04</b> Open Thermal Limit, Rollout Switch, or Reverse Airflow Switch
<b>IDL</b>	<b>IDL</b>	Blower Constant Fan Airflow Multiplier %	<b>E05</b> Flame detected, should not be present
<b>HL1</b>	<b>CP</b>	Cooling (CFM/Ton)	<b>E06</b> Voltage reversed polarity or Bad Grounding
<b>HL1</b>	<b>CPH</b>	Heat Pump Heating (CFM/Ton)	<b>E63</b> (1) Igniter relay fails, (2) Igniter open
<b>HL1</b>	<b>HOD</b>	Heat Off Delay (sec)	<b>E71</b> 1st stage gas valve (MVL) is energized when it should be off
<b>HL2</b>	<b>ISD</b>	Inter-Stage Delay (sec)	<b>E72</b> Redundant Relay (HLO output) Energized when it should NOT be
<b>HL2</b>	<b>9HC</b>	Gas Heating CFM 2nd Stage (1st Stage is not adjustable) (Airflow x10)	<b>E08</b> Flame current is low, but still strong enough to allow operation.
<b>HL2</b>	<b>HL2</b>	Learning Routine	<b>E09</b> Open Inducer Limit Switch or Condensate Switch
<b>HL2</b>	<b>HL2</b>	Airflow (followed by Airflow times 10)	<b>E10</b> Inducer Motor no communication response, could be communication failure between two micro-controllers.
<b>HL2</b>	<b>HL2</b>	Continuous Fan	<b>E11</b> (1) 2nd stage gas valve energized when it should NOT be (2) 2nd stage gas valve not energized when it should be (3) 1st stage gas valve not energized when it should be (4) Redundant relay (HLO output) not energized when it should be
<b>HL2</b>	<b>E01</b>	Loss of the IRQ/other internal failures	<b>E12</b> Open fuse
<b>HL2</b>	<b>E21</b>	Retry exceeded (Failed to est flame)	<b>E13</b> Blower HP/OEM ID
<b>HL2</b>	<b>E22</b>	Recycles exceeded (loss of established flame) or 10X PS1 open	<b>E14</b> No PM and local copy bad
<b>HL2</b>	<b>E23</b>	1st Stage Gas Valve not energized when it should be exceeded after 10 times	<b>E15</b> Both of Unit Data File in PM and local Unit Data File are Corrupt
<b>HL2</b>	<b>E24</b>	Redundant Relay (HLO output) Not Energized when it should be exceeded after 10 times	<b>E17</b> Blower motor no communication response
<b>HL2</b>	<b>E31</b>	Shorted Pressure Switch, 1st Stage	<b>E18</b> Blower communication failure on the control
<b>HL2</b>	<b>E32</b>	Open Pressure Switch, 1st Stage	
<b>HL2</b>	<b>E33</b>	Shorted Pressure Switch, 2nd Stage	
<b>HL2</b>	<b>E34</b>	Open Pressure Switch, 2nd Stage	
<b>HL2</b>	<b>E34</b>	Open Pressure Switch, 2nd Stage	



D346055P01

# S9V2-VS Wiring Diagram



S9V2-VS

- PS PRESSURE SWITCH
- FRS FLAME ROLLOUT SWITCH
- FP FLAME PROBE
- IGN HOT SURFACE IGNITER
- FUSE
- LC LINE CHOKE
- GROUND
- CONDENSATE SWITCH
- RAF REVERSE AIR FLOW, THERMAL INDUCER LIMIT, LIMIT
- BK JUMPER
- \*\*** INTERNAL THERMAL PROTECTION

- LINE } FACTORY WIRING
- 24 V }
- LINE } FIELD WIRING
- 24 V }

BK	BLACK	GR	GREEN
WH	WHITE	BR	BROWN
YL	YELLOW	RD	RED
OR	ORANGE	BL	BLUE
PR	PURPLE	GR/YL	GREEN W/ YELLOW STRIPE

- H LINE
- N NEUTRAL
- GND GROUND
- HLO HIGH LIMIT OUTPUT
- HLI HIGH LIMIT INPUT
- PS1 1ST STAGE PRESSURE INPUT
- PS2 2ND STAGE PRESSURE INPUT
- IND INDUCER
- IFC INTEGRATED FURNACE CONTROL
- RAF REVERSE AIR FLOW
- Tx TRANSMIT SIGNAL
- Rx RECEIVE SIGNAL
- TH 24VAC (HOT)
- TR 24VAC (COMMON)
- MVC VALVE COMMON
- MVL VALVE LOW STAGE
- MVH VALVE HIGH STAGE
- ILI INDUCER LIMIT INPUT
- IGN IGNITER
- FP FLAME PROBE
- PSO PRESSURE SWITCH OUTPUT

### INTEGRATED FURNACE CONTROL

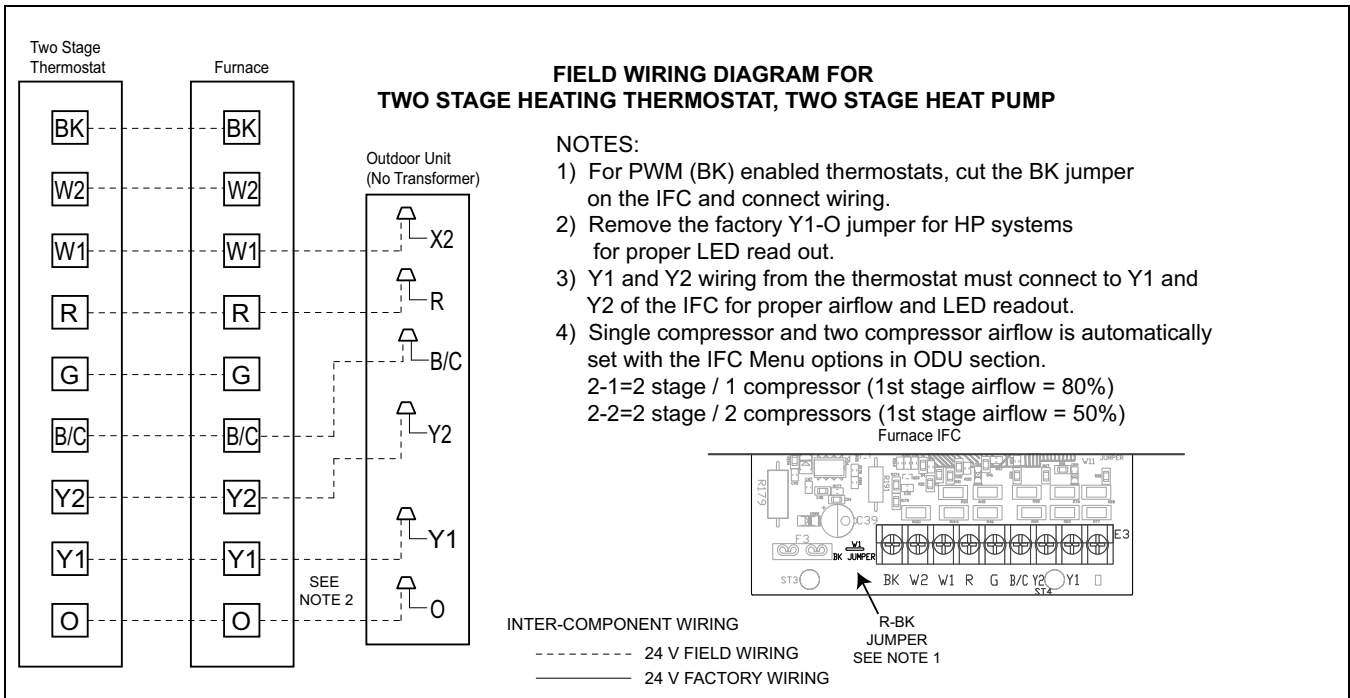
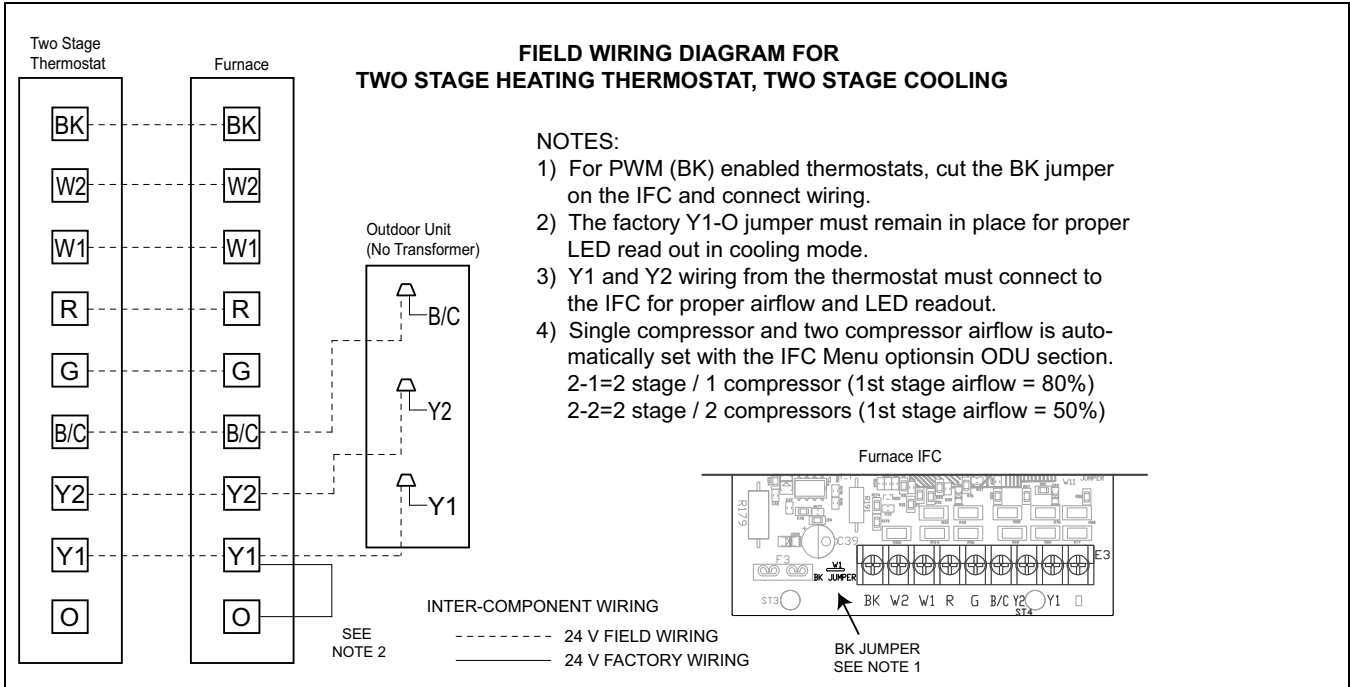
**ELECTRICAL RATING**  
 INPUT: 24 VAC, 60 HZ.  
 XFMR SEC. CURRENT: 450 MA. + MV LOAD  
 MV OUTPUT: 1.5A @ 24 VAC  
 IND OUTPUT: 2.2 FLA, 3.5 LRA @ 120 VAC MAX.  
 IGN OUTPUT: 2.0 A @ 120 VAC  
 CIRC. BLOWER OUTPUT: 14.5 FLA, 25 LRA @ 120 VAC  
 HUMIDIFIER & AIR CLEANER  
 MAX. LOAD: 1.0 A @ 120 VAC  
 FUSE: 5A

**TIMINGS**  
 PREPURGE: 0 SEC.  
 INTERPURGE: 60 SEC.  
 POST PURGE: 5 SEC.  
 IGN WARMUP: 20 SEC.  
 IAP: 2; TFI: 5 SEC.  
 RETRIES: 2 RECYCLES: 10  
 HEAT ON DELAY: UP TO 30 SEC.  
 COOL ON DELAY: 0 SEC.  
 AUTO RESTART: 60 MIN.  
 AUTO RESTART PURGE: 60 SEC.

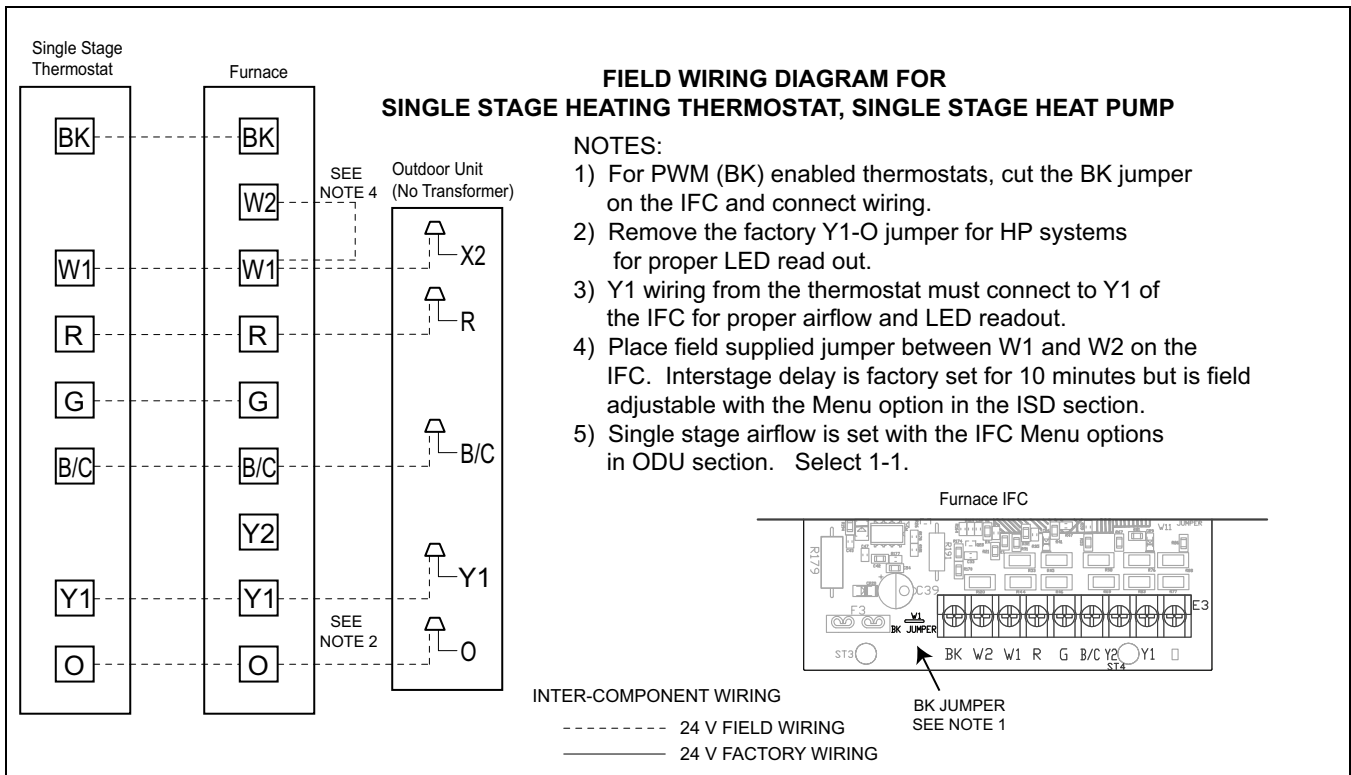
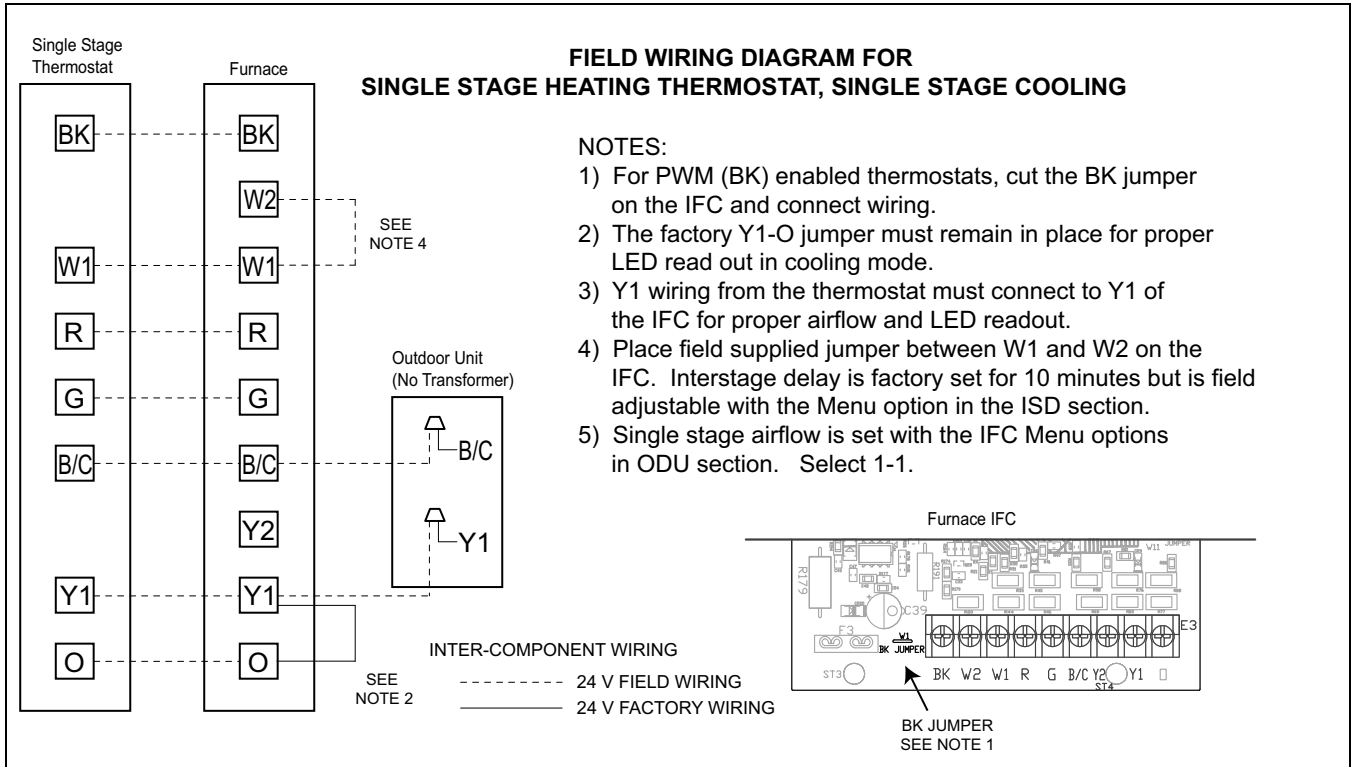
# Electrical Connections

Make wiring connections to the unit as indicated on enclosed wiring diagram. As with all gas appliances using electrical power, this furnace shall be connected into a permanently live electric circuit. It is recommended that furnace be provided with a separate "circuit protection device" electric circuit. The furnace must be electrically grounded in accordance with local codes or in the absence of local codes with the National Electrical Code, ANSI/NFPA 70 or CSA C22.1 Electrical Code, if an external electrical source is utilized. **The integrated furnace control is polarity sensitive.** The hot leg of the 120V power supply must be connected to the black power lead as indicated on the wiring diagram. Refer to the SERVICE FACTS literature and unit wiring diagram attached to furnace.

## Field Wiring

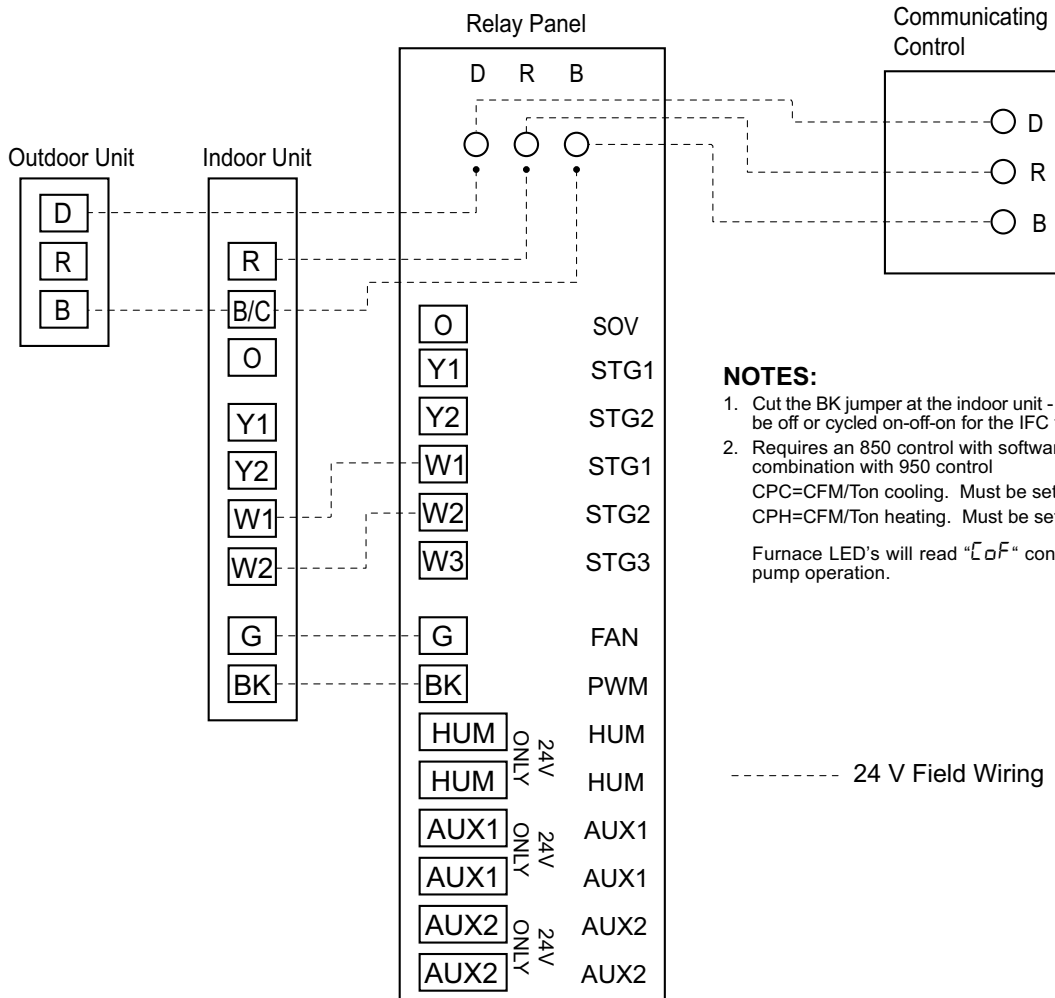


# Electrical Connections





**COMMUNICATING CONTROLS WITH NON-COMMUNICATING S9V2 FURNACE AND COMMUNICATING VS COOLING/HP**



**NOTES:**

1. Cut the BK jumper at the indoor unit - After cutting the jumper, power must be off or cycled on-off-on for the IFC to work properly
2. Requires an 850 control with software version 3.0+ or 1050. Not a valid combination with 950 control  
CPC=CFM/Ton cooling. Must be set to 400.  
CPH=CFM/Ton heating. Must be set to 400.

Furnace LED's will read "□ F" continuous fan during cooling and heat pump operation.

----- 24 V Field Wiring