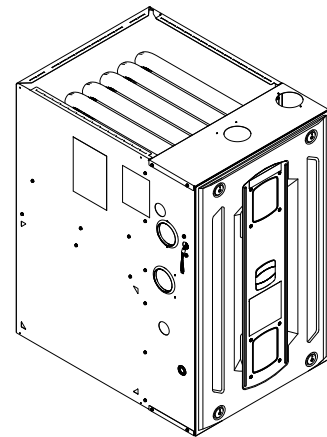


# Submittal

## Upflow/ Horizontal Left/Right Two Stage Condensing Gas Fired Furnace 60,000 BTUH

Upflow, Convertible to  
Horizontal Right or  
Horizontal Left  
S9V2B060U3PSBA



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

TAG: \_\_\_\_\_

### ▲ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

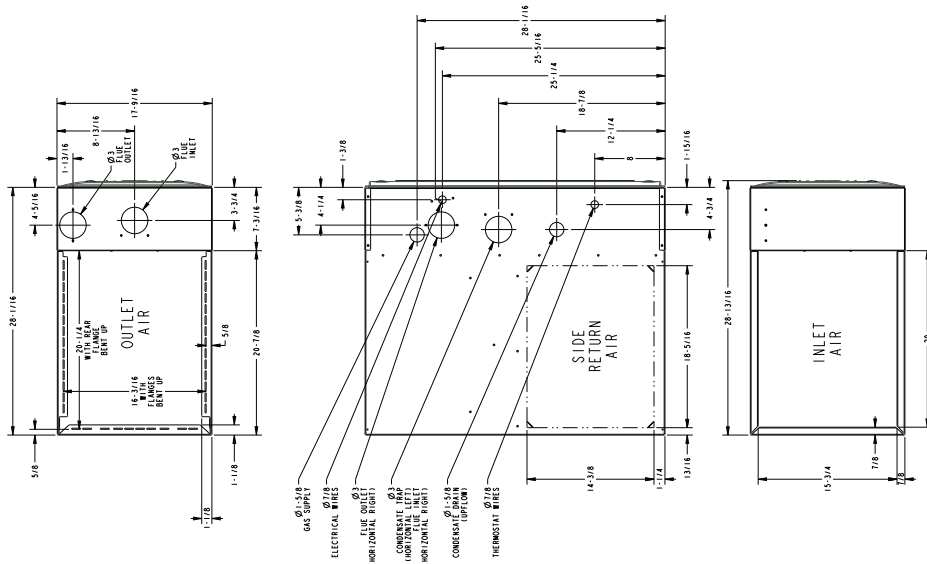
March 2017

S9V2B060U3-SUB-1A-EN

 Ingersoll Rand.

# Outline Drawings

## Upflow Furnace B Size Cabinet



# Product Specification

MODEL	S9V2B060U3PSBA
<b>TYPE</b>	Upflow/Horizontal
<b>RATINGS</b> <sup>(a)</sup>	
1st Stage Input BTUH (ICS)	39,000
1st Stage Capacity BTUH	37,830
2nd Stage Input BTUH	60,000
2nd Stage Capacity BTUH (ICS) <sup>(b)(c)</sup>	58,200
1st Stage Temp. Rise (Min.-Max.)	25 - 55
2nd Stage Temp. Rise (Min.-Max.)	35 - 65
AFUE (%)	96.0
<b>BLOWER DRIVE</b>	DIRECT
Diameter — Width (In.)	11 X 8
No. Used	1
Speeds (No.)	Variable
CFM vs. in. w.g.	See Fan Performance Table
Motor HP	1/2
RPM	Variable
Volts/Ph/Hz	120 / 1 / 60
FLA	5.7
<b>COMBUSTION FAN — Type</b>	Centrifugal
Drive — No. Speeds	Direct - 2
Motor HP — RPM	3300/2600
Volts/Ph/Hz	120 / 1 / 60
FLA	0.66
<b>FILTER — Furnished?</b>	No
Type recommended	High Velocity
Hi Vel. (No.-Size-Thk.)	1 — 16x25 — 1 in.
<b>VENT PIPE DIAMETER — Min (in.)</b> <sup>(d) (e)</sup>	2 Round
<b>HEAT EXCHANGER</b>	

MODEL	S9V2B060U3PSBA
Type — Fired	409 Stainless Steel
— Unfired	29-4C Stainless Steel
Gauge (Fired)	20
<b>ORIFICES — Main</b>	
Nat. Gas Qty. — Drill Size	3 - 45
LP Gas Qty. — Drill Size	3 - 56
<b>GAS VALVE</b>	Redundant - Two Stage
<b>PILOT SAFETY DEVICE</b>	
Type	120 V SiNi Igniter
<b>BURNERS — Type</b>	Multiport Inshot
Number	3
<b>POWER CONN. — V/Ph/Hz</b> <sup>(f)</sup>	120 / 1 / 60
Ampacity (In Amps)	7.9
Max. Overcurrent Protection (Amps)	15
<b>PIPE CONN. SIZE (in.)</b>	1/2
<b>DIMENSIONS</b>	H x W x D
Uncrated (In.)	34 x 17-1/2 x 28-3/4
Crated (In.)	35-1/2 x 19-1/2 x 30-7/8
<b>WEIGHT</b>	
Shipping (Lbs.)/Net (Lbs.)	127/119

<sup>(a)</sup> 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.

<sup>(b)</sup> Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3 — latest edition.

<sup>(c)</sup> Based on U.S. government standard tests.

<sup>(d)</sup> Refer to the Vent Length Table in the Installer's Guide.

<sup>(e)</sup> All S9V2 furnace models have a vent outlet diameter that equals 2 in.

<sup>(f)</sup> The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

# Heating and Cooling Airflow Tables

S9V2B060U3PSBA

Table 1. S9V2B060U3PSBA Heating Airflow

S9V2B060U3PSBA Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
				1st Stage Capacity = 37,830 2nd Stage Capacity = 58,200				
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	632	CFM	673	675	677	679	681
			Temp. Rise	52	52	52	52	52
			Watts	47	83	120	156	193
	Medium Low (a)	814	CFM	850	827	804	780	757
			Temp. Rise	41	42	43	44	45
			Watts	82	120	157	195	232
	Medium	893	CFM	901	903	905	907	909
			Temp. Rise	39	39	39	39	39
			Watts	106	144	181	219	256
	High	1153	CFM	1131	1121	1112	1102	1093
			Temp. Rise	32	31	31	31	31
			Watts	209	250	291	332	373
Heating 2nd Stage	Low	800	CFM	850	844	838	833	827
			Temp. Rise	63	63	64	64	65
			Watts	75	120	165	210	255
	Medium Low (a)	1030	CFM	1072	1061	1049	1038	1027
			Temp. Rise	50	50	51	52	52
			Watts	147	196	244	293	341
	Medium	1130	CFM	1115	1127	1138	1149	1160
			Temp. Rise	48	48	48	47	47
			Watts	193	246	300	354	408
	High	1460	CFM	1382	1336	1289	1243	1196
			Temp. Rise	39	40	42	43	45
			Watts	382	400	418	435	453

(a) Factory Setting.

S9V2B060U3PSBA / S9V2B060D3PSBA

Table 2. S9V2B060U3PSBA / S9V2B060D3PSBA Cooling Airflow

S9V2B060U3PSBA / S9V2B060D3PSBA 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/Ton	CFM	675	675	675	675	675
			Watts	46	81	121	165	212
		Cooling 420 CFM/Ton	CFM	630	630	630	630	630
			Watts	40	72	111	153	200
		Cooling 400 CFM/Ton	CFM	600	600	600	600	600
			Watts	36	67	105	146	192
		Cooling 370 CFM/Ton	CFM	555	555	555	555	555
			Watts	30	60	96	137	182
		Cooling 350 CFM/Ton	CFM	525	525	525	525	525
			Watts	27	56	91	131	175
		Cooling 330 CFM/Ton	CFM	495	495	495	495	495
			Watts	24	52	86	126	170
		Cooling 310 CFM/Ton	CFM	465	465	465	465	465
			Watts	21	48	82	121	164
		Cooling 290 CFM/Ton	CFM	435	435	435	435	435
			Watts	19	45	78	116	160
Cooling	2.0 Ton	Cooling 450 CFM/Ton	CFM	900	900	900	900	900
			Watts	92	135	184	236	291
		Cooling 420 CFM/Ton	CFM	840	840	840	840	840
			Watts	78	118	164	214	267
		Cooling 400 CFM/Ton	CFM	800	800	800	800	800
			Watts	69	108	153	201	253
		Cooling 370 CFM/Ton	CFM	740	740	740	740	740
			Watts	57	94	136	183	232
		Cooling 350 CFM/Ton	CFM	700	700	700	700	700
			Watts	50	86	126	171	220
		Cooling 330 CFM/Ton	CFM	660	660	660	660	660
			Watts	44	78	117	161	208
		Cooling 310 CFM/Ton	CFM	620	620	620	620	620
			Watts	38	71	109	151	197
		Cooling 290 CFM/Ton	CFM	580	580	580	580	580
			Watts	33	64	101	142	187
Cooling	2.5 Ton	Cooling 450 CFM/Ton	CFM	1125	1125	1125	1125	1125
			Watts	164	216	273	334	399
		Cooling 420 CFM/Ton	CFM	1050	1050	1050	1050	1050

# Heating and Cooling Airflow Tables

**Table 2. S9V2B060U3PSBA / S9V2B060D3PSBA Cooling Airflow (continued)**

S9V2B060U3PSBA / S9V2B060D3PSBA 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
			Watts	137	186	240	298	359
		Cooling 400 CFM/Ton	CFM	1000	1000	1000	1000	1000
			Watts	121	168	220	276	335
		Cooling 370 CFM/Ton	CFM	925	925	925	925	925
			Watts	99	143	192	245	302
		Cooling 350 CFM/Ton	CFM	875	875	875	875	875
			Watts	86	128	175	227	281
		Cooling 330 CFM/Ton	CFM	825	825	825	825	825
			Watts	74	115	160	209	262
		Cooling 310 CFM/Ton	CFM	775	775	775	775	775
			Watts	64	102	146	193	244
		Cooling 290 CFM/Ton	CFM	725	725	725	725	725
			Watts	54	91	133	178	228
		Cooling	3.0 Ton <sup>(a)</sup>	Cooling 450 CFM/Ton	CFM	1350	1350	1350
Watts	267				329	395	431	452
Cooling 420 CFM/Ton	CFM			1260	1260	1260	1260	1218
	Watts			222	279	342	409	452
Cooling 400 CFM/Ton	CFM			1200	1200	1200	1200	1200
	Watts			195	250	310	374	441
Cooling 370 CFM/Ton	CFM			1110	1110	1110	1110	1110
	Watts			158	210	266	327	390
Cooling 350 CFM/Ton <sup>(a)</sup>	CFM			1050	1050	1050	1050	1050
	Watts			137	186	240	298	359
Cooling 330 CFM/Ton	CFM			990	990	990	990	990
	Watts			118	164	216	272	330
Cooling 310 CFM/Ton	CFM			930	930	930	930	930
	Watts			100	145	194	247	304
Cooling 290 CFM/Ton	CFM	870	870	870	870	870		
	Watts	85	127	174	225	279		

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

# 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

## **96.0% 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**

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

7 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

## **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 aluminized steel

Integrated rail system for easy access if required

Reduces or eliminates need for baffles

## **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





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