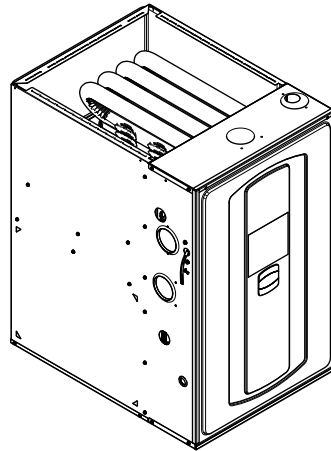


# Submittal

## Upflow / Horizontal Left/Right Single Stage Condensing Gas Fired Furnace 120,000 BTUH

Upflow, Convertible to  
Horizontal Right or  
Horizontal Left  
S9X1D120U5PSBA  
S9B1D120U5PSAA



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



# Product Specifications

MODEL	S9X1D120U5PSBA <sup>(a)</sup> S9B1D120U5PSAA
<b>TYPE</b>	Upflow/Horizontal
<b>RATINGS <sup>(b)</sup></b>	
Input BTUH	120,000
Capacity BTUH (ICS) <sup>(c)</sup> <sup>(d)</sup>	113,400
Temp. Rise (Min.-Max.)	40-70
AFUE (%) S9X1 / S9B1 <sup>(d)</sup>	95.0 / 92.1
Return Air Temp. (Min. - Max.)	45°F - 80°F
<b>BLOWER DRIVE</b>	DIRECT
Diameter — Width (In.)	11 X 10
No. Used	1
Speeds (No.) <sup>(e)</sup>	9
CFM vs. in. w.g.	See Fan Performance Table
Motor HP	1
RPM	1075
Volts/Ph/Hz	120 / 1 / 60
FLA	10.6
<b>COMBUSTION FAN — Type</b>	Centrifugal
Drive — No. Speeds	Direct - 1
Motor HP — RPM	3300
Volts/Ph/Hz	120 / 1 / 60
FLA	0.66
<b>FILTER — Furnished?</b>	No
Type recommended	High Velocity
Hi Vel. (No.-Size-Thk.)	1 — 24x25 — 1 in.
<b>VENT PIPE DIAMETER — Min (in.)</b> <sup>(f)</sup> <sup>(g)</sup>	3 Round
<b>HEAT EXCHANGER</b>	
Type — Fired	409 Stainless Steel
— Unfired	29-4C Stainless Steel

MODEL	S9X1D120U5PSBA <sup>(a)</sup> S9B1D120U5PSAA
Gauge (Fired)	20
<b>ORIFICES — Main</b>	
Nat. Gas Qty. — Drill Size	6 - 45
LP Gas Qty. — Drill Size	6- 56
<b>GAS VALVE</b>	Redundant - One Stage
<b>PILOT SAFETY DEVICE</b>	
Type	120 V SiNi Igniter
<b>BURNERS — Type</b>	Multiport Inshot
Number	6
<b>POWER CONN. — V/Ph/Hz <sup>(h)</sup></b>	120 / 1 / 60
Ampacity (In Amps)	14.1
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 24-1/2 x 28-3/4
Crated (In.)	35-1/2 x 26-1/2 x 30-7/8
<b>WEIGHT</b>	
Shipping (Lbs.)/Net (Lbs.)	167/156

- <sup>(a)</sup> Meets Energy Star
- <sup>(b)</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>(c)</sup> Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.
- <sup>(d)</sup> Based on U.S. government standard tests.
- <sup>(e)</sup> 9 Speed constant torque ECM blower motor
- <sup>(f)</sup> Refer to the Vent Length Table in the Installer's Guide.
- <sup>(g)</sup> All furnace models have a vent outlet diameter that equals 2 in.
- <sup>(h)</sup> The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

# Airflow tables

Furnace Airflow (CFM) Vs. External Static Pressure (in. W.C.)							
Model	Tap		0.1	0.3	0.5	0.7	0.9
<b>S9X1D120U5PSBA</b> <b>S9B1D120U5PSAA</b>	1	SCFM	707	443	179	-	-
		Watts	46	55	64	-	-
	2	SCFM	1344	1218	1092	966	840
		Watts	163	183	202	222	241
	3	SCFM	1532	1419	1307	1195	1083
		Watts	225	247	268	290	312
	4	SCFM	1584	1477	1370	1263	1156
		Watts	247	270	292	315	338
	5	SCFM	1915	1818	1722	1625	1529
		Watts	401	428	454	480	506
	6	SCFM	2104	2016	1927	1839	1750
		Watts	525	553	582	610	639
	7	SCFM	2132	2045	1958	1870	1783
		Watts	546	575	604	633	662
	8	SCFM	2410	2328	2247	2165	2084
		Watts	833	868	903	937	972
	9	SCFM	2472	2401	2329	2257	2186
		Watts	909	944	979	1013	1048

## CFM Versus Temperature Rise

Table 2. Heating Table – Upflow

CFM VS. TEMPERATURE RISE													
MODEL													
	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
S9X1D120U5PSBA S9B1D120U5PSAA					67	65	60	55	54	51	48	44	41

# 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. S9X1 also contains dry contacts for EAC and HUM.

## ENERGY EFFICIENT OPERATION

S9X1 Furnace is certified by the manufacturer to leak 1% (1.4% for S9B1) or less of nominal air conditioning CFM delivered when pressurized to .5" water column with all inlets, outlets, and drains sealed.

## AIR DELIVERY

The 9 tap constant torque ECM 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

## **UP TO 96.0% AFUE ON S9X1 FURNACE 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**

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

5 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 (1.4% for S9B1)

Open vestibule design provides a full 34" high open vestibule

## **DIMENSIONS**

Width is industry standard: 24.5"

Depth remains approximately 28"

Cabinet is 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 on S9X1 models

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 conversion 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

## About Trane and American Standard Heating and Air Conditioning

Trane and American Standard create comfortable, energy efficient indoor environments for residential applications. For more information, please visit [www.trane.com](http://www.trane.com) or [www.americanstandardair.com](http://www.americanstandardair.com).



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