

# A97MV

97% Modulating  
Variable Speed  
Gas Furnace

## Product Specifications

Form No. A97MV-100 (01-2013)



Communicating Thermostat enabled



### WARRANTY

- 10 year limited parts warranty / lifetime heat exchanger warranty available. See limited warranty document for details.

### CONFIGURATIONS

- Upflow / Horizontal
- Downflow

### HEAT EXCHANGER DESIGN

- 409 stainless steel primary heat exchanger with crimped no-weld construction
- AL 29-4C stainless steel secondary heat exchanger

### CABINET DESIGN

- Compact 33" height
- Standardized widths for easy coil fit

### AIR DELIVERY SYSTEM

- ECM™ variable speed blower motor
- Easily removable slide out blower design

### CONTROLS

- Communicating control enabled
- Modulating gas valve
- Thermostat flexibility:
  - works with the Comfort Sync T-Stat or a conventional 24V T-Stat
- Self diagnostics saves last 10 fault codes regardless of power interruption

### VENTING

- Category 4 direct vent appliance (2 pipe only)

### INSTALLATION FEATURES

- Left or right utility connections
- Zero step horizontal conversion
- Removable floor base for bottom return air



Most Efficient  
**2013**  
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## Model Number Guide

Brand	AFUE	Config	Stages	Blower	BTUH Input	Cabinet Width	Nom. CFM x 100	Heat Exch. Code	Major Revision
A	97	U S	M	V	110	C	20	S	- 01

A = Armstrong Air/AirEase	97 = 97% Efficiency	U = Upflow/Horizontal D = Downflow	<b>S = Communicating Enabled</b>	M = Modulation	V = Variable Speed	Heating Input x 1000	C = Cabinet Width	20 = Nom. CFM x 100	S = Stainless steel Heat Exchanger	- 01 = Major Revision
									08 = 2 Ton add on cooling 12 = 3 Ton add on cooling 16 = 4 Ton add on cooling 20 = 5 Ton add on cooling	A = 14.5" width B = 17.5" width C = 21.0" width D = 24.5" width

## Physical and Electrical Data

	Model	Input (Btuh)	Output * (Btuh)	AFUE (ICS)	Nominal* Cooling Capacity	Gas Inlet (in.)	Volts-Hertz-Phase	Max. Time Delay Breaker or Fuse	Nominal F.L.A.	Trans. (V.A.)	Approx. Shipping Weight (lbs.)
Upflow / Horizontal	A97USMV070B12S	66,000	64,000	97.0%	3 Tons	1/2	120-60-1	15	7.7	40	138
	A97USMV090C12S	88,000	85,000	97.0%	3 Tons	1/2	120-60-1	15	7.7	40	155
	A97USMV090C16S	88,000	85,000	97.0%	4 Tons	1/2	120-60-1	15	10.1	40	165
	A97USMV090C20S	88,000	85,000	97.0%	5 Tons	1/2	120-60-1	20	12.8	40	165
	A97USMV110C20S	110,000	106,000	97.0%	5 Tons	1/2	120-60-1	20	12.8	40	175
	A97USMV135D20S	132,000	127,000	97.0%	5 Tons	1/2	120-60-1	20	12.8	40	190
Downflow	A97DSMV070B12S	66,000	64,000	97.0%	3 Tons	1/2	120-60-1	15	7.7	40	140
	A97DSMV090C16S	88,000	85,000	97.0%	4 Tons	1/2	120-60-1	15	10.1	40	165
	A97DSMV090C20S	88,000	85,000	97.0%	5 Tons	1/2	120-60-1	20	12.8	40	165
	A97DSMV110C20S	110,000	107,000	97.0%	5 Tons	1/2	120-60-1	20	12.8	40	174

Note: For vent length and clearances to combustibles, please reference installation instructions.

\* At full capacity

**Blower Performance Data** **BOTTOM INLET**

	Model	Motor Size (hp)	Blower Size	Temp Rise F°	Heating CFM @ 0" - 0.5" w.c.				Cooling Stages	Speed Adjustment	Cooling CFM @ 0" - 0.8" w.c.				
					**	40% Input	70% Input	100% Input			Low	Medium Low	Medium High	High Default	
Upflow / Horizontal	A97USMV070B12S	1/2 HP	10 x 9	50 - 80 Max. Input	+15%	538	833	1128	2nd Stage	+10%	862	1063	1218	1369	
					+7.5%	496	772	1048		Default	810	962	1130	1269	
					Default	453	710	967		-10%	707	841	1007	1140	
				35 - 65 Min. Input	+10%	604	740	843	971	1st Stage	+10%	604	740	843	971
					Default	558	668	770	855		Default	558	668	770	855
					-10%	504	603	683	793		-10%	504	603	683	793
	A97USMV090C12S	1/2 HP	10 x 9	60 - 90 Max. Input	+15%	734	1014	1295	2nd Stage	+10%	879	1040	1212	1362	
					+7.5%	697	953	1209		Default	803	946	1104	1246	
					Default	660	891	1122		-10%	721	842	972	1117	
				35 - 65 Min. Input	+10%	626	710	832	952	1st Stage	+10%	626	710	832	952
					Default	569	672	764	862		Default	569	672	764	862
					-10%	524	612	687	785		-10%	524	612	687	785
	A97USMV090C16S	3/4 HP	11 x 11	50 - 80 Max. Input	+15%	835	1234	1633	2nd Stage	+10%	1168	1379	1583	1771	
					+7.5%	776	1155	1534		Default	1079	1267	1444	1645	
					Default	716	1075	1434		-10%	938	1148	1324	1469	
				35 - 65 Min. Input	+10%	843	1007	1159	1315	1st Stage	+10%	843	1007	1159	1315
					Default	780	915	1047	1190		Default	780	915	1047	1190
					-10%	693	838	959	1070		-10%	693	838	959	1070
	A97USMV090C20S	1 HP	11 x 11	50 - 80 Max. Input	+15%	665	1159	1653	2nd Stage	+10%	1385	1593	1818	2019	
					+7.5%	618	1085	1553		Default	1226	1463	1647	1884	
					Default	571	1012	1453		-10%	1063	1320	1504	1675	
				35 - 65 Min. Input	+10%	933	1054	1274	1466	1st Stage	+10%	933	1054	1274	1466
					Default	836	978	1121	1336		Default	836	978	1121	1336
					-10%	740	868	1010	1152		-10%	740	868	1010	1152
A97USMV110C20S	1 HP	11 x 11	50 - 80 Max. Input	+15%	861	1424	1988	2nd Stage	+10%	1312	1560	1744	1955		
				+7.5%	825	1349	1874		Default	1219	1405	1569	1796		
				Default	789	1274	1759		-10%	1075	1272	1428	1634		
			35 - 65 Min. Input	+10%	937	1064	1247	1407	1st Stage	+10%	937	1064	1247	1407	
				Default	864	972	1146	1282		Default	864	972	1146	1282	
				-10%	790	888	1025	1167		-10%	790	888	1025	1167	
A97USMV135D20S	1 HP	11 x 11	55 - 85 Max. Input	+15%	1033	1534	2035	2nd Stage	+10%	1353	1567	1751	1994		
				+7.5%	957	1426	1895		Default	1202	1448	1616	1828		
				Default	881	1317	1754		-10%	1080	1290	1472	1668		
			35 - 65 Min. Input	+10%	935	1074	1260	1450	1st Stage	+10%	935	1074	1260	1450	
				Default	834	983	1116	1306		Default	834	983	1116	1306	
				-10%	732	867	1023	1145		-10%	732	867	1023	1145	

Note: \*\* See installation instructions for proper blower set up

**Blower Performance Data SIDE INLET**

	Model	Motor Size (hp)	Blower Size	Temp Rise F°	Heating CFM @ 0" - 0.5" w.c.				Cooling Stages	Speed Adjust-ment	Cooling CFM @ 0" - 0.8" w.c.			
					**	40% Input	70% Input	100% Input			Low	Medium Low	Medium High	High Default
Upflow / Horizontal	A97USMV070B12S	1/2 HP	10 x 9	50 - 80 Max. Input	+15%	531	812	1093	2nd Stage	+10%	840	1054	1208	1357
					+7.5%	490	756	1022		Default	752	946	1130	1231
					Default	449	700	951		-10%	688	805	991	1114
				35 - 65 Min. Input	+10%	593	706	805	959					
					Default	543	642	729	824					
					-10%	503	584	665	720					
	A97USMV090C12S	1/2 HP	10 x 9	60 - 90 Max. Input	+15%	702	971	1240	2nd Stage	+10%	843	1017	1168	1300
					+7.5%	673	926	1178		Default	772	912	1054	1193
					Default	644	880	1116		-10%	698	799	946	1111
				35 - 65 Min. Input	+10%	610	707	797	921					
					Default	561	643	718	811					
					-10%	526	605	667	729					
	A97USMV090C16S	3/4 HP	11 x 11	50 - 80 Max. Input	+15%	812	1204	1595	2nd Stage	+10%	1140	1341	1526	1728
					+7.5%	759	1127	1495		Default	1043	1235	1398	1566
					Default	706	1051	1395		-10%	913	1124	1279	1402
				35 - 65 Min. Input	+10%	823	1009	1135	1292					
					Default	758	882	1026	1151					
					-10%	684	816	928	1068					
	A97USMV090C20S	1 HP	11 x 11	50 - 80 Max. Input	+15%	684	1136	1588	2nd Stage	+10%	1335	1559	1719	1986
					+7.5%	623	1059	1496		Default	1173	1433	1568	1811
					Default	562	983	1403		-10%	1049	1283	1451	1603
				35 - 65 Min. Input	+10%	911	1043	1227	1434					
					Default	805	960	1087	1296					
					-10%	700	840	991	1115					
A97USMV110C20S	1 HP	11 x 11	50 - 80 Max. Input	+15%	733	1194	1747	2nd Stage	+10%	1270	1519	1712	1899	
				+7.5%	708	1139	1657		Default	1170	1363	1555	1774	
				Default	683	1085	1566		-10%	1059	1218	1401	1581	
			35 - 65 Min. Input	+10%	918	1053	1198	1366						
				Default	820	964	1095	1231						
				-10%	722	852	987	1116						
A97USMV135D20S	1 HP	11 x 11	55 - 85 Max. Input	+15%	1010	1505	2001	2nd Stage	+10%	1337	1550	1720	1974	
				+7.5%	923	1398	1873		Default	1194	1416	1608	1781	
				Default	836	1290	1744		-10%	1076	1282	1437	1628	
			35 - 65 Min. Input	+10%	938	1070	1236	1418						
				Default	837	985	1114	1296						
				-10%	736	870	1010	1139						

**Blower Performance Data SIDE INLET with return air base**

	Model	Motor Size (hp)	Blower Size	Temp Rise F°	Heating CFM @ 0" - 0.5" w.c.				Cooling Stages	Speed Adjust-ment	Cooling CFM @ 0" - 0.8" w.c.			
					**	40% Input	70% Input	100% Input			Low	Medium Low	Medium High	High Default
Upflow / Horizontal	A97USMV070B12S	1/2 HP	10 x 9	50 - 80 Max. Input	+15%	519	805	1091	2nd Stage	+10%	857	1049	1206	1354
					+7.5%	480	751	1021		Default	791	946	1093	1255
					Default	441	696	951		-10%	722	845	987	1131
				35 - 65 Min. Input	+10%	596	717	816	950					
					Default	521	657	755	840					
					-10%	494	597	672	747					
	A97USMV090C12S	1/2 HP	10 x 9	60 - 90 Max. Input	+15%	721	988	1254	2nd Stage	+10%	852	999	1166	1305
					+7.5%	679	923	1167		Default	776	907	1050	1206
					Default	637	858	1079		-10%	712	802	947	1074
				35 - 65 Min. Input	+10%	605	715	812	934					
					Default	571	662	735	820					
					-10%	530	602	673	725					

Note: \*\* See installation instructions for proper blower set up

**Blower Performance Data SIDE INLET with return air base** (Continued from previous page)

	Model	Motor Size (hp)	Blower Size	Temp Rise F°	Heating CFM @ 0" - 0.5" w.c.				Cooling Stages	Speed Adjust-ment	Cooling CFM @ 0" - 0.8" w.c.			
					**	40% Input	70% Input	100% Input			Low	Medium Low	Medium High	High Default
Upflow / Horizontal	A97USMV090C16S	3/4 HP	11 x 11	50 - 80 Max. Input	+15%	828	1213	1597	2nd Stage	+10%	1162	1360	1533	1742
					+7.5%	766	1132	1499		Default	1064	1240	1400	1594
					Default	703	1052	1401		-10%	928	1133	1298	1441
				35 - 65 Min. Input	+10%	844	955	1124	1280					
					Default	775	910	1011	1173					
					-10%	695	816	932	1045					
	A97USMV090C20S	1 HP	11 x 11	60 - 90 Max. Input	+15%	686	1138	1589	2nd Stage	+10%	1329	1560	1740	1982
					+7.5%	626	1060	1494		Default	1177	1414	1586	1807
					Default	566	983	1399		-10%	1044	1261	1432	1619
				35 - 65 Min. Input	+10%	913	1037	1230	1415					
					Default	827	953	1088	1278					
					-10%	741	855	995	1117					
	A97USMV110C20S	1 HP	11 x 11	50 - 80 Max. Input	+15%	893	1419	1945	2nd Stage	+10%	1268	1487	1726	1913
					+7.5%	814	1329	1843		Default	1158	1369	1568	1764
					Default	736	1238	1741		-10%	1030	1224	1393	1575
				35 - 65 Min. Input	+10%	918	1022	1205	1371					
Default					839	955	1084	1235						
-10%					760	865	984	1109						
A97USMV135D20S	1 HP	11 x 11	50 - 80 Max. Input	+15%	992	1487	1983	2nd Stage	+10%	1303	1536	1687	1975	
				+7.5%	907	1382	1858		Default	1164	1380	1584	1762	
				Default	822	1277	1732		-10%	1065	1252	1404	1604	
			35 - 65 Min. Input	+10%	918	1061	1214	1382						
				Default	829	960	1091	1265						
				-10%	739	858	991	1116						

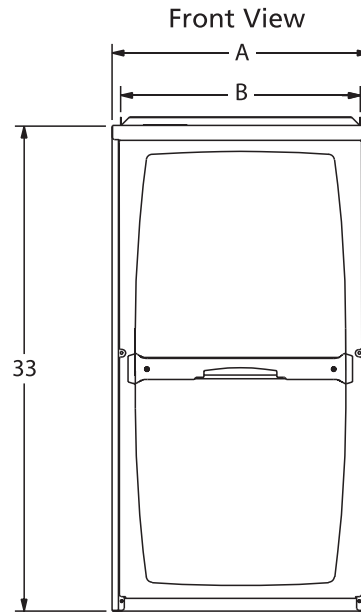
**Blower Performance Data RETURN INLET**

	Model	Motor Size (hp)	Blower Size	Temp Rise F°	Heating CFM @ 0" - 0.5" w.c.				Cooling Stages	Speed Adjust-ment	Cooling CFM @ 0" - 0.8" w.c.			
					**	40% Input	70% Input	100% Input			Low	Medium Low	Medium High	High Default
Downflow	A97DSMV070B12S	1/2 HP	10 x 9	50 - 80 Max. Input	+15%	543	830	1118	2nd Stage	+10%	910	1075	1232	1366
					+7.5%	516	778	1041		Default	846	963	1126	1267
					Default	489	726	963		-10%	759	889	986	1154
				35 - 65 Min. Input	+10%	625	788	890	998					
					Default	573	711	830	894					
					-10%	520	619	714	822					
	A97DSMV090C16S	1/2 HP	10 x 9	60 - 90 Max. Input	+15%	756	1033	1309	2nd Stage	+10%	924	1083	1218	1386
					+7.5%	713	971	1230		Default	835	1000	1136	1259
					Default	669	910	1150		-10%	751	890	1028	1145
				35 - 65 Min. Input	+10%	610	771	902	1035					
					Default	549	690	808	923					
					-10%	466	623	721	812					
	A97DSMV090C20S	1 HP	11 x 11	50 - 80 Max. Input	+15%	728	1176	1625	2nd Stage	+10%	1337	1601	1752	1982
					+7.5%	673	1092	1512		Default	1225	1449	1629	1830
					Default	618	1009	1399		-10%	1119	1269	1448	1664
				35 - 65 Min. Input	+10%	956	1114	1265	1449					
Default					855	1004	1148	1286						
-10%					753	888	1063	1172						
A97DSMV110C20S	1 HP	11 x 11	50 - 80 Max. Input	+15%	906	1475	2045	2nd Stage	+10%	1337	1583	1792	2011	
				+7.5%	835	1380	1926		Default	1222	1440	1629	1867	
				Default	764	1285	1807		-10%	1098	1273	1473	1678	
			35 - 65 Min. Input	+10%	922	1093	1264	1442						
				Default	830	965	1129	1289						
				-10%	738	860	1034	1156						

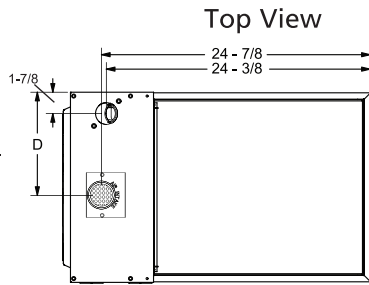
Note: \*\* See installation instructions for proper blower set up

Dimensions (in.)

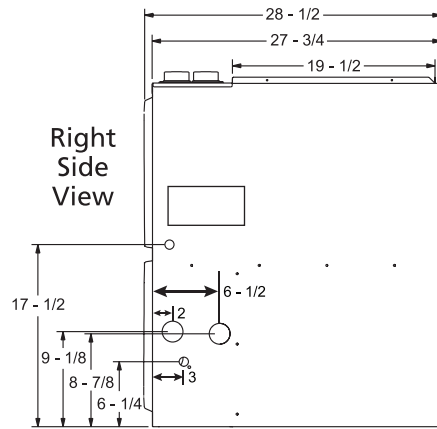
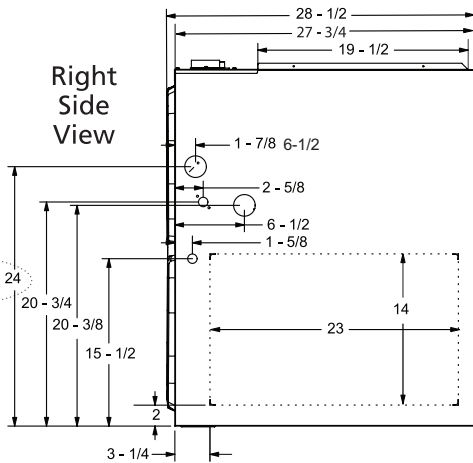
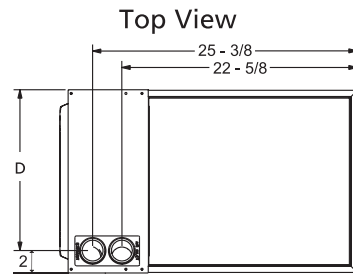
	Model	A	B	C	D
Upflow/Horizontal	A97USMV070B12S	17-1/2	16-3/8	16	7-5/8
	A97USMV090C12S	21	19-7/8	19-1/2	9-3/8
	A97USMV090C16S	21	19-7/8	19-1/2	9-3/8
	A97USMV090C20S	21	19-7/8	19-1/2	9-3/8
	A97USMV110C20S	21	19-7/8	19-1/2	9-3/8
	A97USMV135D20S	24-1/2	23-3/8	23	11-1/8
Downflow	A97DSMV070B12S	17-1/2	16-3/8	16	15-1/2
	A97DSMV090C16S	21	19-7/8	19-1/2	19
	A97DSMV090C20S	21	19-7/8	19-1/2	19
	A97DSMV110C20S	21	19-7/8	19-1/2	19



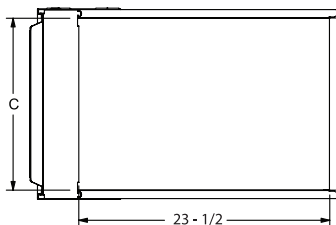
Upflow / Horizontal



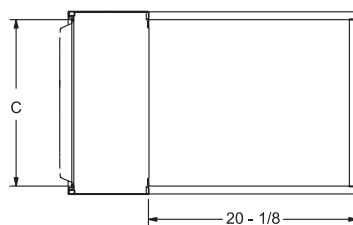
Downflow



Bottom View



Bottom View



## Accessory List

Catalog Number	Description
External Filter Rack kits	
1.841018	1 pack (16 x 25)
1.841039	10 pack (16 x 25)
Natural to LP kits	
68W77	Modulating 97% (includes gas valve)
Return Air Base	
68W62	17.5" B Width
68W63	21.0" C Width
68W64	24.5" D Width
Downflow Combustible Flooring Base	
11M60	17.5" B Width
11M61	21.0" C Width
Night Service Kits	
89W52	Modulating
Horizontal Suspension Kit	
51W10	80% & 90% Kit
Flush Mount Termination (90% Furnaces only) US Only	
51W11	2" & 3" Vent Version
Concentric Vent Kit (90% Furnaces only) US Only	
71M80	1-1/2" Vent Version
69M29	2" Vent Version
60L46	3" Vent Version

For vent length and clearances to combustibles, please reference installation instructions.

**SUBJECT TO CHANGE**  
All specifications and illustrations subject  
to change without notice and without  
incurring obligations.

