



Air Conditioning & Heating

# GC9C96

HEATING INPUT: 40,000–100,000 BTU/H

**TWO-STAGE, MULTI-SPEED**

**ECM GAS FURNACE**

**UP TO 96% AFUE**



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### Standard Features

- Energy-efficient, multi-speed ECM blower motor
- Heavy-duty, aluminized-steel tubular heat exchanger
- Stainless-steel secondary heat exchanger
- Two-stage gas valve provides quiet, economical heating
- Durable Silicon Nitride igniter
- Quiet two-speed induced draft blower
- Self-diagnostic control board with constant memory fault code history output to a LED
- Color-coded low-voltage terminals with provisions for electronic air cleaner and humidifier
- Low continuous fan speed options offer quiet air circulation
- All models comply with California 40 ng/J Low NOx emissions standard
- Can no longer be installed in California’s South Coast Air Quality Management District (SCAQMD) on or after October 1, 2019.
- AHRI Certified; ETL Listed

### Cabinet Features

- Designed for multi-position installation — down flow, horizontal left or right
- Certified for direct vent (2-pipe) or non-direct vent (1-pipe)
- Easy-to-install top venting with optional side venting
- Convenient left or right connection for gas and electrical service
- Cabinet air leakage ( $Q_{Leak} \leq 2\%$ )
- Heavy-gauge steel cabinet with durable finish
- Fully insulated heat exchanger and blower section
- Airtight solid bottom or side return with easy-cut tabs for effortless removal in bottom air-inlet applications

**LIFETIME**  
HEAT EXCHANGER  
LIMITED WARRANTY\*

**10 YEAR**  
REPLACEMENT  
LIMITED WARRANTY\*

**10 YEAR**  
PARTS  
LIMITED WARRANTY\*



COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV GL  
■ ISO 9001 ■

COMPANY WITH  
ENVIRONMENTAL SYSTEM  
CERTIFIED BY DNV GL  
■ ISO 14001 ■



\* Complete warranty details available from your local dealer or at [www.goodmanmfg.com](http://www.goodmanmfg.com). To receive the Lifetime Heat Exchanger Limited Warranty (good for as long as you own your home), 10-Year Unit Replacement Limited Warranty and 10-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Québec.

	<b>G</b>	<b>C</b>	<b>9</b>	<b>C</b>	<b>96</b>	<b>040</b>	<b>4</b>	<b>C</b>	<b>*</b>	<b>**</b>	
	1	2	3	4	5,6	7,8,9	10	11	12	13,14	
<b>BRAND</b>	G- Goodman® Brand										<b>ENGINEERING</b>
<b>CONFIGURATION</b>	M- Upflow/Horizontal C- Downflow/Horizontal										Major/Minor Revisions A - Initial Release B - 1st Revision
<b>MOTOR</b>	9 - Nine Speed ECM										<b>NOX</b>
<b>GAS VALVE</b>	C- 2 Stage										N = > 40 NG/J NOx X = < 40 NG/J NOx
<b>AFUE</b>	80- 80% AFUE    92- 92% AFUE 96- 96% AFUE    97- 97% AFUE										<b>CABINET WIDTH</b>
											A- 14"    C- 21" B- 17½"    D- 24½"
											<b>MAXIMUM CFM</b>
											3- 1200 CFM    4- 1600 CFM 5- 2000 CFM
											<b>MBTU/h</b>
											030- 30,000 BTU/h    080- 80,000 BTU/h 040- 40,000 BTU/h    100- 100,000 BTU/h 060- 60,000 BTU/h    120- 120,000 BTU/h

	GC9C96 0403BNA	GC9C96 0603BNA	GC9C96 0803BNA	GC9C96 1005CNA
<b>HEATING DATA</b>				
High Fire Input <sup>1</sup>	40,000	60,000	80,000	100,000
High Fire Output <sup>1</sup>	38,400	57,600	76,800	96,000
Low-Fire Input <sup>1</sup>	28,000	42,000	56,000	70,000
Low-Fire Output <sup>1</sup>	26,880	40,320	53,760	67,200
AFUE <sup>2</sup>	96	96	96	96
Temp. Rise Range (°F)	25- 55	25- 55	40- 70	35- 65
Vent Diameter <sup>3</sup>	2"- 3"	2"- 3"	2"- 3"	2"- 3"
No. of Burners	2	3	4	5
<b>CIRCULATOR BLOWER</b>				
Available AC @ 0.5" ESP	1.5- 3	1.5- 3	1.5- 3	3- 5
Size (D x W)	10" x 8"	11" x 8"	11" x 8"	11" x 10"
Horsepower @ 1075 RPM	1/2	1/2	1/2	1
Speed	9	9	9	9
<b>ELECTRICAL DATA</b>				
Min. Circuit Ampacity <sup>4</sup>	8	8	8	13.3
Max. Overcurrent (amps) <sup>5</sup>	15	15	15	20
<b>SHIPPING WEIGHT (LBS)</b>				
	112	115	118	140

<sup>1</sup> Natural Gas BTU/h

<sup>2</sup> DOE AFUE based upon Isolated Combustion System (ICS)

<sup>3</sup> Installer must supply one or two PVC pipes: one for combustion air (optional) and one for the flue outlet (required). Vent pipe must be either 2" or 3" in diameter, depending upon furnace input, number of elbows, length of run and installation (1 or 2 pipes). The optional Combustion Air Pipe is dependent on installation/code requirements and must be 2" or 3" diameter PVC.

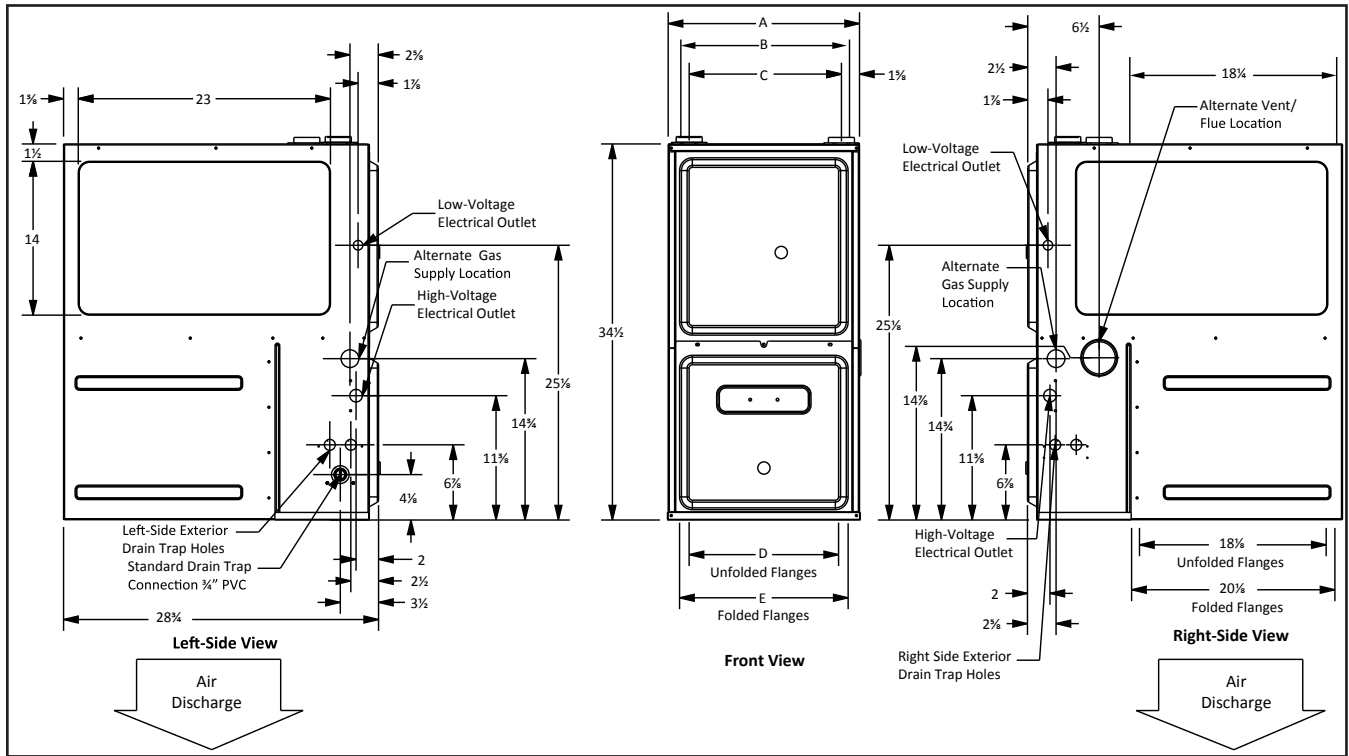
<sup>4</sup> Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

<sup>5</sup> Maximum Overcurrent Protection Device refers to maximum recommended fuse or circuit breaker size. May use fuses or HACR-type circuit breakers of the same size as noted.

**NOTES**

- All furnaces are manufactured for use on 115 VAC, 60 Hz, single-phase electrical supply.
- Gas Service Connection ½" FPT
- Important: Size fuses and wires properly and make electrical connections in accordance with the National Electrical Code and/or all existing local codes.
- For bottom return: Failure to unfold flanges may reduce airflow by up to 18%. This could result in performance and noise issues.
- For servicing or cleaning, a 24" front clearance is required. Unit connections (electrical, flue and drain) may necessitate greater clearances than the minimum clearances listed above. In all cases, accessibility clearance must take precedence over clearances from the enclosure where accessibility clearances are greater.

**DIMENSIONS**



MODEL	AIR DISCHARGE			AIR RETURN	
	A	B	C	D	E
GC9C960403BNA	17 1/2"	16"	13 7/8"	12 1/8"	13 5/8"
GC9C960603BNA	17 1/2"	16"	13 7/8"	12 1/8"	13 5/8"
GC9C960803BNA	17 1/2"	16"	13 7/8"	12 1/8"	13 5/8"
GC9C961005CNA	21"	19 1/2"	17 3/8"	16"	17 1/2"

**MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS**

POSITION	SIDES	REAR	FRONT	BOTTOM	FLUE	TOP
Downflow	0"	0"	3"	NC	0"	1"
Horizontal	6"	0"	3"	C	0"	6"

C = If placed on combustible floor, the floor MUST be wood ONLY.

NC = For installation on non-combustible floors only. A combustible floor sub-base must be used for installations on combustible flooring.

LOW STAGE COOLING AIFLOW										
MODEL	THER-MOSTAT CALL	TAP #	EXTERNAL STATIC PRESSURE, (INCHES WATER COLUMN)							
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
			CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM
*C9C96 0403BN	Y/Y1	F01	727	677	623	565	510	455	403	351
		F02	923	882	841	798	752	704	660	614
		F03	632	574	510	448	388	332	277	234
		F04^	878	839	797	751	701	653	607	561
		F05	1106	1076	1044	1010	974	939	899	860
		F06	1188	1156	1123	1091	1062	1029	998	964
		F07	1237	1205	1174	1145	1115	1081	1050	1016
		F08	1281	1252	1222	1195	1163	1134	1104	1071
		F09	1382	1354	1327	1302	1276	1246	1219	1190
*C9C96 0603BN	Y/Y1	F01	1167	1118	1069	1022	974	928	877	833
		F02	1332	1289	1245	1200	1160	1120	1081	1036
		F03	680	609	532	460	397	337	252	201
		F04^	903	839	783	719	661	601	546	497
		F05	1248	1204	1159	1113	1071	1028	983	943
		F06	963	907	852	803	745	689	639	587
		F07	1393	1348	1309	1267	1230	1189	1152	1116
		F08	1450	1407	1366	1330	1290	1251	1221	1186
		F09	1468	1436	1393	1359	1323	1285	1248	1210
*C9C96 0803BN	Y/Y1	F01	1167	1124	1087	1040	995	954	916	869
		F02	1317	1277	1240	1201	1161	1122	1081	1045
		F03	733	669	606	543	482	424	372	300
		F04^	1217	1174	1130	1086	1045	1003	962	925
		F05	1300	1263	1225	1186	1142	1099	1062	1023
		F06	919	872	820	764	711	658	605	553
		F07	1126	1085	1042	998	953	910	866	824
		F08	1375	1341	1301	1264	1226	1189	1154	1118
		F09	1440	1402	1366	1330	1295	1260	1224	1187
*C9C96 1005CN	Y/Y1	F01	1366	1307	1248	1188	1130	1069	1007	938
		F02	1833	1785	1736	1688	1640	1593	1543	1497
		F03	1295	1230	1168	1105	1044	981	911	843
		F04^	1634	1578	1525	1471	1416	1363	1311	1265
		F05	2028	1994	1937	1899	1863	1814	1769	1724
		F06	1773	1721	1671	1621	1571	1521	1470	1421
		F07	1908	1860	1813	1766	1720	1672	1624	1578
		F08	1965	1919	1873	1829	1783	1736	1688	1643
		F09	2096	2053	2014	1973	1931	1890	1849	1803

## NOTES

- ^ DEFAULT SPEED
- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.

GC9C96 HIGH STAGE COOLING AIRFLOW DATA

HIGH STAGE COOLING AIFLOW										
MODEL	THER-MOSTAT CALL	TAP #	EXTERNAL STATIC PRESSURE, (INCHES WATER COLUMN)							
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
			CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM
*C9C96 0403BN	Y2	F01	727	677	623	565	510	455	403	351
		F02	923	882	841	798	752	704	660	614
		F03	632	574	510	448	388	332	277	234
		F04	878	839	797	751	701	653	607	561
		F05^	1106	1076	1044	1010	974	939	899	860
		F06	1188	1156	1123	1091	1062	1029	998	964
		F07	1237	1205	1174	1145	1115	1081	1050	1016
		F08	1281	1252	1222	1195	1163	1134	1104	1071
		F09	1382	1354	1327	1302	1276	1246	1219	1190
*C9C96 0603BN	Y2	F01	1167	1118	1069	1022	974	928	877	833
		F02	1332	1289	1245	1200	1160	1120	1081	1036
		F03	680	609	532	460	397	337	252	201
		F04	903	839	783	719	661	601	546	497
		F05^	1248	1204	1159	1113	1071	1028	983	943
		F06	963	907	852	803	745	689	639	587
		F07	1393	1348	1309	1267	1230	1189	1152	1116
		F08	1450	1407	1366	1330	1290	1251	1221	1186
		F09	1468	1436	1393	1359	1323	1285	1248	1210
*C9C96 0803BN	Y2	F01	1167	1124	1087	1040	995	954	916	869
		F02	1317	1277	1240	1201	1161	1122	1081	1045
		F03	733	669	606	543	482	424	372	300
		F04	1217	1174	1130	1086	1045	1003	962	925
		F05^	1300	1263	1225	1186	1142	1099	1062	1023
		F06	919	872	820	764	711	658	605	553
		F07	1126	1085	1042	998	953	910	866	824
		F08	1375	1341	1301	1264	1226	1189	1154	1118
		F09	1440	1402	1366	1330	1295	1260	1224	1187
*C9C96 1005CN	Y2	F01	1366	1307	1248	1188	1130	1069	1007	938
		F02	1833	1785	1736	1688	1640	1593	1543	1497
		F03	1295	1230	1168	1105	1044	981	911	843
		F04	1634	1578	1525	1471	1416	1363	1311	1265
		F05^	2028	1994	1937	1899	1863	1814	1769	1724
		F06	1773	1721	1671	1621	1571	1521	1470	1421
		F07	1908	1860	1813	1766	1720	1672	1624	1578
		F08	1965	1919	1873	1829	1783	1736	1688	1643
		F09	2096	2053	2014	1973	1931	1890	1849	1803

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CIRCULATION AIFLOW										
MODEL	THER- MOSTAT CALL	TAP #	EXTERNAL STATIC PRESSURE, (INCHES WATER COLUMN)							
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
			CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM
*C9C96 0403BN	G	F01	727	677	623	565	510	455	403	351
		F02	923	882	841	798	752	704	660	614
		F03	632	574	510	448	388	332	277	234
		F04	878	839	797	751	701	653	607	561
		F05	1106	1076	1044	1010	974	939	899	860
		F06	1188	1156	1123	1091	1062	1029	998	964
		F07	1237	1205	1174	1145	1115	1081	1050	1016
		F08	1281	1252	1222	1195	1163	1134	1104	1071
		F09	1382	1354	1327	1302	1276	1246	1219	1190
*C9C96 0603BN	G	F01	1167	1118	1069	1022	974	928	877	833
		F02	1332	1289	1245	1200	1160	1120	1081	1036
		F03	680	609	532	460	397	337	252	201
		F04	903	839	783	719	661	601	546	497
		F05	1248	1204	1159	1113	1071	1028	983	943
		F06	963	907	852	803	745	689	639	587
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		F08	1450	1407	1366	1330	1290	1251	1221	1186
		F09	1468	1436	1393	1359	1323	1285	1248	1210
*C9C96 0803BN	G	F01	1167	1124	1087	1040	995	954	916	869
		F02	1317	1277	1240	1201	1161	1122	1081	1045
		F03	733	669	606	543	482	424	372	300
		F04	1217	1174	1130	1086	1045	1003	962	925
		F05	1300	1263	1225	1186	1142	1099	1062	1023
		F06	919	872	820	764	711	658	605	553
		F07	1126	1085	1042	998	953	910	866	824
		F08	1375	1341	1301	1264	1226	1189	1154	1118
		F09	1440	1402	1366	1330	1295	1260	1224	1187
*C9C96 1005CN	G	F01	1366	1307	1248	1188	1130	1069	1007	938
		F02	1833	1785	1736	1688	1640	1593	1543	1497
		F03	1295	1230	1168	1105	1044	981	911	843
		F04	1634	1578	1525	1471	1416	1363	1311	1265
		F05	2028	1994	1937	1899	1863	1814	1769	1724
		F06	1773	1721	1671	1621	1571	1521	1470	1421
		F07	1908	1860	1813	1766	1720	1672	1624	1578
		F08	1965	1919	1873	1829	1783	1736	1688	1643
		F09	2096	2053	2014	1973	1931	1890	1849	1803

## NOTES

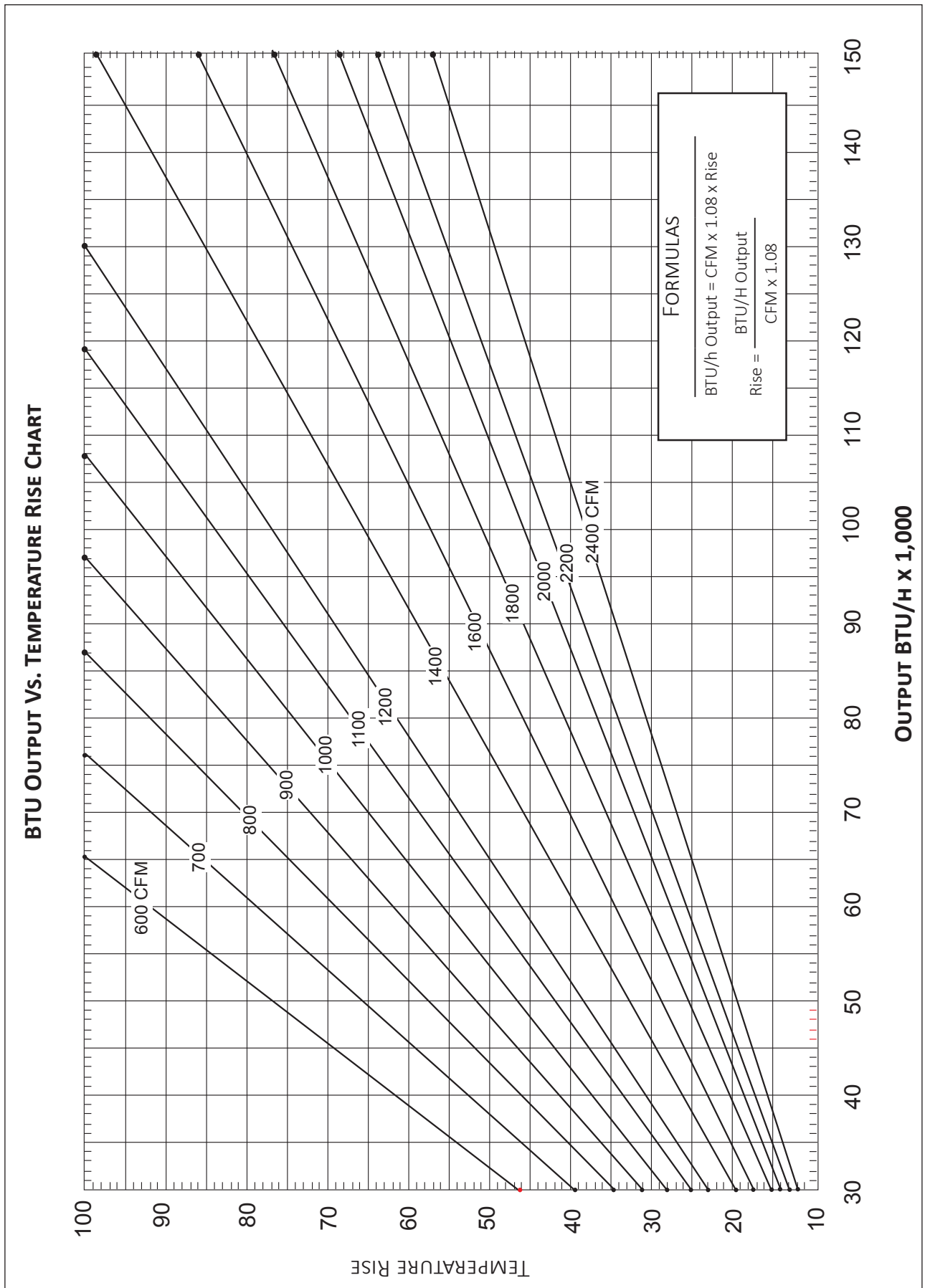
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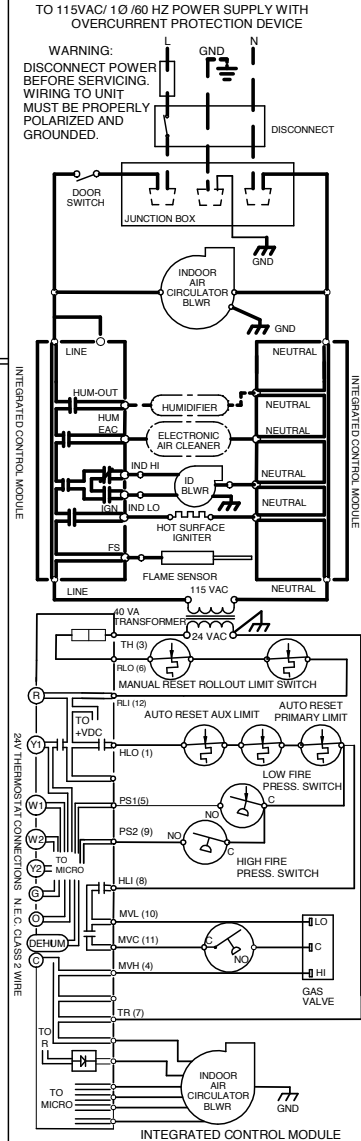
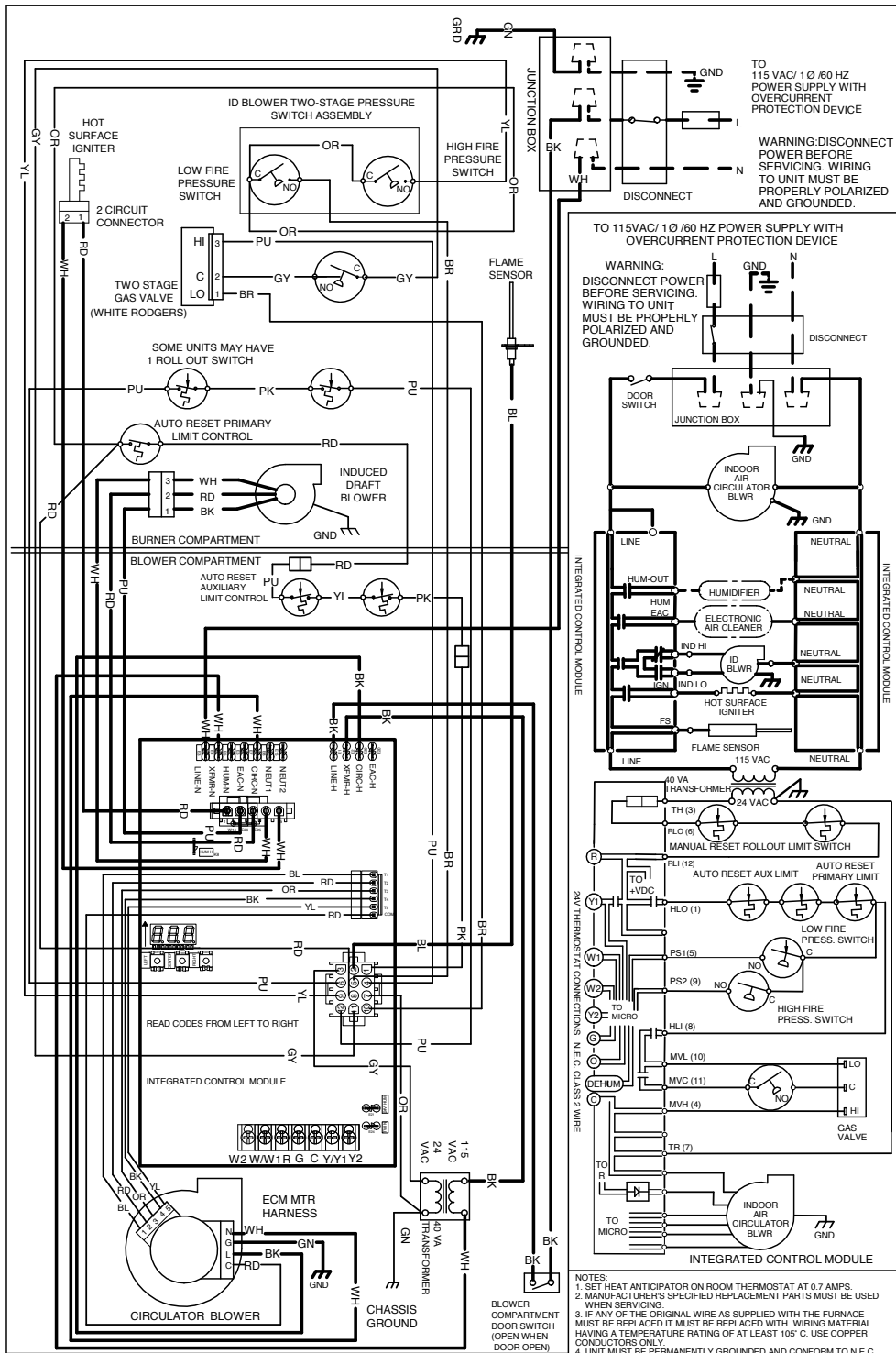
HEATING AIRFLOW																TEMP RANGE LOW	TEMP RANGE HIGH
MODEL	THER-MOSTAT CALL	TAP #	EXTERNAL STATIC PRESSURE, (INCHES WATER COLUMN)														
			0.1		0.2		0.3		0.4		0.5		0.6	0.7	0.8		
			CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	CFM	CFM		
*C9C96 0403BN	W/W1	F01^	727	34	677	37	623	40	565	44	510	49	455	403	351	20-50	25-55
		F03^^	632	N/A	574	N/A	510	N/A	448	N/A	388	N/A	332	277	234		
		F04	878	28	839	30	797	31	751	33	701	36	653	607	561		
	W2	F02^	923	39	882	40	841	42	798	45	752	47	704	660	614		
		F04	878	41	839	42	797	45	751	47	701	51	653	607	561		
		F05	1106	32	1076	33	1044	34	1010	35	974	37	939	899	860		
*C9C96 0603BN	W/W1	F01^	1167	32	1118	33	1069	35	1022	37	974	38	928	877	833	20-50	25-55
		F03^^	680	N/A	609	N/A	532	N/A	460	N/A	397	N/A	337	252	201		
		F04	903	N/A	839	N/A	783	N/A	719	N/A	661	N/A	601	546	497		
	W2	F02^	1332	40	1289	41	1245	43	1200	44	1160	46	1120	1081	1036		
		F04^^	903	N/A	839	N/A	783	N/A	719	N/A	661	N/A	601	546	497		
		F05	1248	43	1204	44	1159	46	1113	48	1071	50	1028	983	943		
*C9C96 0803BN	W/W1	F01^	1167	43	1124	44	1087	46	1040	48	995	50	954	916	869	30-60	40-70
		F03^^	733	N/A	669	N/A	606	N/A	543	N/A	482	N/A	424	372	300		
		F04	1217	41	1174	42	1130	44	1086	46	1045	48	1003	962	925		
	W2	F02^	1317	54	1277	56	1240	57	1201	59	1161	61	1122	1081	1045		
		F04	1217	58	1174	61	1130	63	1086	65	1045	68	1003	962	925		
		F05	1300	55	1263	56	1225	58	1186	60	1142	62	1099	1062	1023		
*C9C96 1005CN	W/W1	F01^	1366	46	1307	48	1248	50	1188	52	1130	55	1069	1007	938	30- 60	35-65
		F03^^	1295	48	1230	51	1168	53	1105	56	1044	58	981	911	843		
		F04	1634	N/A	1578	N/A	1525	N/A	1471	N/A	1416	N/A	1363	1311	1265		
	W2	F02^	1833	48	1785	50	1736	51	1688	53	1640	54	1593	1543	1497		
		F04^^	1634	54	1578	56	1525	58	1471	60	1416	62	1363	1311	1265		
		F05	2028	44	1994	45	1937	46	1899	47	1863	48	1814	1769	1724		

**NOTES**

- ^ DEFAULT SPEED
- ^^NOT RECOMMENDED FOR HEATING
- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.







**NOTES:**  
 1. SET HEAT ANTICIPATOR ON ROOM THERMOSTAT AT 0.7 AMPS.  
 2. MANUFACTURER'S SPECIFIED REPLACEMENT PARTS MUST BE USED WHEN SERVICING.  
 3. IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE FURNACE MUST BE REPLACED IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105° C. USE COPPER CONDUCTORS ONLY.  
 4. UNIT MUST BE PERMANENTLY GROUNDED AND CONFORM TO N.E.C. AND LOCAL CODES.  
 5. TO RECALL THE LAST 6 FAULTS, MOST RECENT TO LEAST RECENT, DEPRESS SWITCH FOR MORE THAN 2 SECONDS WHILE IN STANDBY (NO THERMOSTAT INPUTS).

Status	Seven Segment Display		
	Seg#	Seg#	Seg#
Internal Faults or IRQ Loss			
Lockout Due to Excessive Retries Recycle			0
Low Stage Pressure Switch Stuck Closed			1
Low Stage Pressure Switch Open			2
Open High Limit Switch			3
Flame Detected When no Flame Should be			4
Open Fuse			5
Low Flame Signal			6
Ignitor Relay Fault			L
High Stage Pressure Switch Stuck Closed			8
High Stage Pressure Switch Open			9
Reversed Line Polarity or Grounding Error			A
Internal Gas Valve Error			b
External Gas Valve Error			C
Open Rollout Switch		1	1
Ignitor Open			N
Inducer Relay Error			I
TWIN Error			H
GROUNDING ERROR		1	0

**COLOR CODES:**  
 PK PINK  
 BR BROWN  
 WH WHITE  
 BL BLUE  
 GY GRAY  
 RD RED  
 YL YELLOW  
 OR ORANGE  
 PU PURPLE  
 GN GREEN  
 BK BLACK

**EQUIPMENT GND**

**FIELD GND**

**FIELD SPLICE**

**SWITCH (TEMP.)**

**IGNITER**

**SWITCH (PRESS.)**

**OVERCURRENT PROT. DEVICE**

**JUNCTION**

**TERMINAL**

**INTERNAL TO INTEGRATED CONTROL**

**PLUG CONNECTION**

**LOW VOLTAGE (24V)**

**LOW VOLTAGE FIELD**

**HI VOLTAGE (115V)**

**HI VOLTAGE FIELD**

**0140F02839-A**

**WARNING**  
 High Voltage: Disconnect all power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury, or death.

Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

MODEL	DESCRIPTION	GC9C96 0403BNA	GC9C96 0603BNA	GC9C96 0803BNA	GC9C96 1005CNA
72950	Concentric Vent Kit (2")	√	√	√	√
72951	Concentric Vent Kit (3")	√	√	√	√
CFSB17	Downflow Sub-Base 17.5"	√	√	√	—
CFSB21	Downflow Sub-Base 21"	—	—	—	√
RF000142	Drain Kit-Horizontal Left Vertical Flue	√	√	√	√
0170K00000S	Flush Mount Vent Kit- 3" or 2"	√	√	√	√
0170K00001S	Flush Mount Vent Kit- 2"	√	√	√	√
AFE18-60A	Fossil Fuel (Dual Fuel) Kit	√	√	√	√
HASFK	High-Altitude Natural Gas Kit	HASFK-1	HASFK-1	HASFK-2	HASFK-2
HASFK	High-Altitude LP Gas Kit	TBD	TBD	TBD	TBD
0270F05405	Horizontal Drain Tubing Kit	√	√	√	√
LPLP03	Low LP Gas Pressure Switch	√	√	√	√
LPM-08	LP Conversion Kits	√	√	√	√

