



Air Conditioning & Heating

GMEC96

**TWO-STAGE,
MULT-SPEED ECM GAS FURNACE
UP TO 96% AFUE**

HEATING INPUT: 30,000–120,000 BTU/H



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 Low NOx emissions standards

Cabinet Features

- Designed for multi-position installation — upflow, 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

Contents

Nomenclature 2
 Product Specifications 3
 Dimensions 4
 Airflow Specifications 6
 Wiring Diagram 9
 Accessories 10
 Thermostats 10



* Complete warranty details available from your local dealer or at 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.



NOMENCLATURE

	G	M	E	C	96	060	3	B	N	A	A
	1	2	3	4	5,6	7,8,9	10	11	12	13	14
Brand G - Goodman											Minor Revision A - Initial Release B - 1st Revision
Configuration M - Upflow/Horizontal C - Downflow/Horizontal											Major Revision A - Initial Release B - 1st Revision
Motor V - Variable Speed ECM / ComfortNet E - Multi-Speed ECM S - Single Speed											NOx N - Low NOx
Gas Valve M - Modulating C - 2 Stage S - Single Stage											Cabinet Width B - 17.5" C - 21" D - 24.5"
AFUE 92 - 92% AFUE 96 - 96% AFUE 97 - 97% AFUE											Maximum CFM 2 - 800 CFM 3 - 1200 CFM 4 - 1600 CFM 5 - 2000 CFM
MBTU/h 040 - 40,000 BTU/h 060 - 60,000 BTU/h 120 - 120,000 BTU/h											

SPECIFICATIONS

	GMEC96 0302BNA	GMEC96 0402BNA	GMEC96 0603BNA	GMEC96 0803CNA	GMEC96 1004CNA	GMEC96 1205DNA
Heating Data						
High Fire Input ¹	30,000	40,000	60,000	80,000	100,000	120,000
High Fire Output ¹	28,800	38,400	57,600	76,800	96,000	115,200
Low-Fire Steady-State Input ¹	21,000	28,000	42,000	56,000	70,000	84,000
Low-Fire Steady-State Output ¹	20,160	26,880	40,320	53,760	67,200	80,640
AFUE ²	96	96	96	96	96	96
Temperature Rise Range (°F)	-	20 - 50	20 - 50	35 - 65	35 - 65	35 - 65
Vent Diameter ³	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"
No. of Burners	2	2	3	4	5	6
Circulator Blower						
Available AC @ 0.5" ESP	1.5 - 2	1.5 - 3	1.5 - 3	1.5 - 3	1.5 - 4	3 - 5
Size (D x W)	10" x 8"	10" x 8"	11" x 8"	11" x 8"	11" x 10"	11" x 11"
Horsepower @ 1075 RPM	½	½	½	½	1	1
Speed	5	5	5	5	5	5
Filter Size (in²)						
Permanent	366	341	512	683	1,067	1,024
Disposable	183	171	256	341	533	512
Electrical Data						
Min. Circuit Ampacity ⁴	8	8	8	8	13.3	13.3
Max. Overcurrent Device (amps) ⁵	15	15	15	15	15	15
Shipping Weight (lbs)						
	111	112	115	118	140	154

¹ Natural Gas BTU/h

² DOE AFUE based upon Isolated Combustion System (ICS)

³ 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.

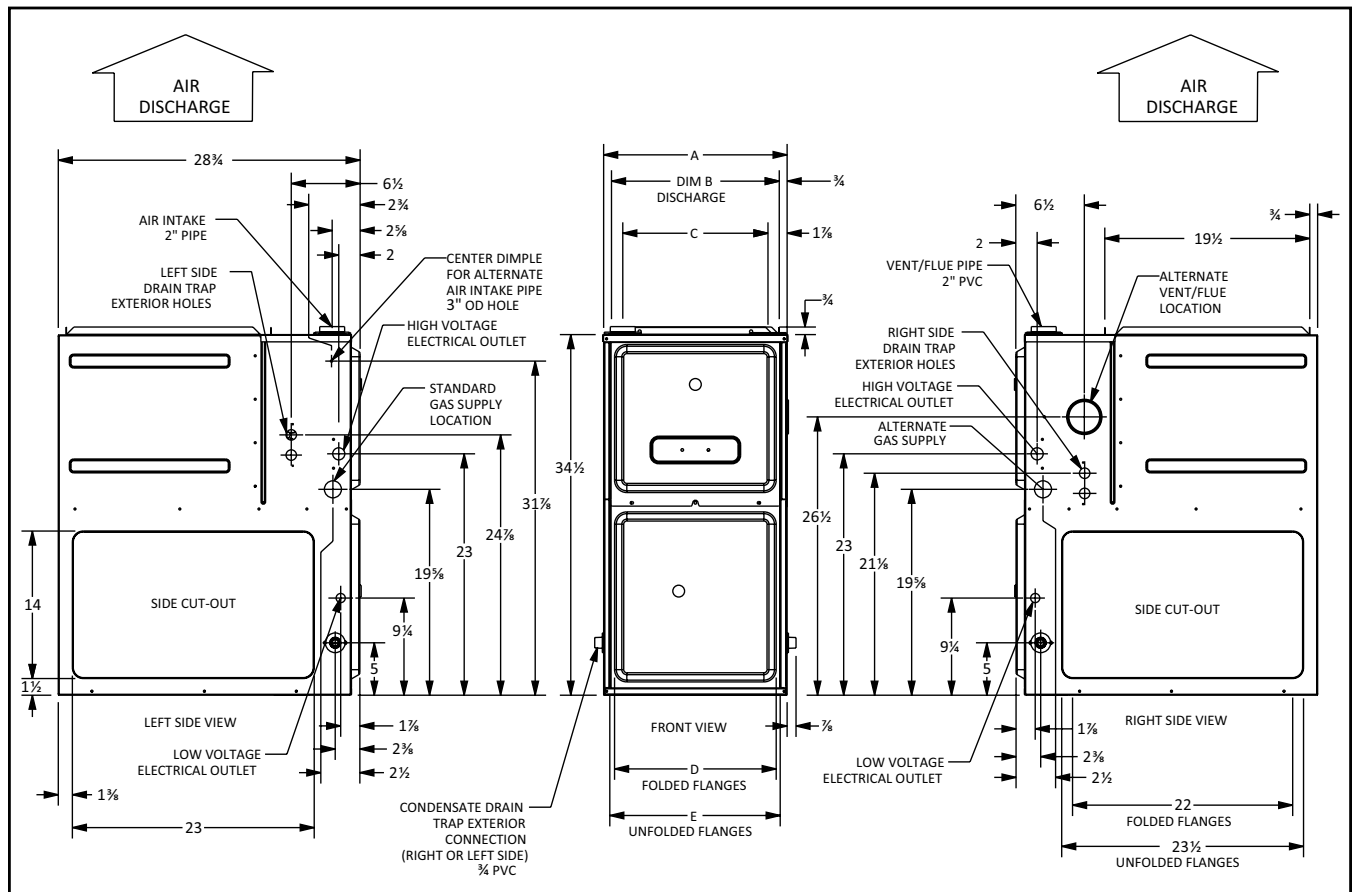
⁴ Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

⁵ 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.

GMEC96 DIMENSIONS



MODEL	A	B	C	D	E
GMEC960302BNA	17 1/2"	16"	13 3/8"	12 1/8"	13 3/8"
GMEC960402BNA	17 1/2"	16"	13 3/8"	12 1/8"	13 3/8"
GMEC960603BNA	17 1/2"	16"	13 3/8"	12 1/8"	13 3/8"
GMEC960803BNA	17 1/2"	16"	13 3/8"	12 1/8"	13 3/8"
GMEC961004CNA	21"	19 1/2"	17 3/8"	16"	17 1/2"
GMEC961205DNA	24 1/2"	23"	20 3/8"	19 3/8"	20 3/8"

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

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

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

GMEC96 AIRFLOW DATA

GMEC960302BNA

DIP SWITCH SETTING			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8						
			CFM	Rise	CFM	Rise	CFM	Rise	CFM	CFM						
FACTORY SETTING	All DIP Switch Positions	G	T1	870		658		548		469		413		349	293	N/A
	All DIP Switch Positions	W1	T1	870	21	658	28	548	34	469	40	413	45	349	293	N/A
	All DIP Switch Positions	W2	T2	885	30	821	32	755	35	684	39	621	43	557	508	461
	OFF OFF OFF	Ylo	T3	874		697		612		533		470		414	361	303
		Y	T5	1146		1097		1049		1002		941		895	846	787
	ON OFF OFF	Ylo	T3	874		697		612		533		470		414	361	303
		Y	T4	928		868		810		743		670		614	560	505
	ON ON OFF	Ylo	T4	928		868		810		743		670		614	560	505
		Y	T5	1146		1097		1049		1002		941		895	846	787
	OFF ON OFF	Ylo	T4	928		868		810		743		670		614	560	505
		Y	T1	870		658		548		469		413		349	293	N/A
	OFF OFF ON	Ylo	T4	928		868		810		743		670		614	560	505
		Y	T2	885		821		755		684		621		557	508	461
	OFF ON ON	Ylo	T3	874		697		612		533		470		414	361	303
		Y	T5	1146		1097		1049		1002		941		895	846	787
	ON OFF ON	Ylo	T2	885		821		755		684		621		557	508	461
Y		T5	1146		1097		1049		1002		941		895	846	787	
ON ON ON	Ylo	T2	885		821		755		684		621		557	508	461	
	Y	T3	874		697		612		533		470		414	361	303	

GMEC960402BNA

DIP SWITCH SETTING			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8						
			CFM	Rise	CFM	Rise	CFM	Rise	CFM	CFM						
FACTORY SETTING	All DIP Switch Positions	G	T1	847		694		611		535		471		415	357	313
	All DIP Switch Positions	W1	T1	847	29	694	36	611	41	535	47	471	53	415	357	313
	All DIP Switch Positions	W2	T2	989	36	932	38	882	40	819	43	773	46	695	650	586
	OFF OFF OFF	Ylo	T3	856		667		546		466		413		357	302	N/A
		Y	T5	1143		1095		1046		996		946		890	834	778
	ON OFF OFF	Ylo	T3	856		667		546		466		413		357	302	N/A
		Y	T4	960		898		840		780		711		659	596	547
	ON ON OFF	Ylo	T4	960		898		840		780		711		659	596	547
		Y	T5	1143		1095		1046		996		946		890	834	778
	OFF ON OFF	Ylo	T4	960		898		840		780		711		659	596	547
		Y	T1	847		694		611		535		471		415	357	313
	OFF OFF ON	Ylo	T4	960		898		840		780		711		659	596	547
		Y	T2	989		932		882		819		773		695	650	586
	OFF ON ON	Ylo	T3	856		667		546		466		413		357	302	N/A
		Y	T5	1143		1095		1046		996		946		890	834	778
	ON OFF ON	Ylo	T2	989		932		882		819		773		695	650	586
Y		T5	1143		1095		1046		996		946		890	834	778	
ON ON ON	Ylo	T2	989		932		882		819		773		695	650	586	
	Y	T3	856		667		546		466		413		357	302	N/A	

NOTES

- 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.
- Do not operate above .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

GMEC96 AIRFLOW DATA (CONT.)

GMEC960603BNA

FACTORY SETTING	DIP SWITCH SETTING		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8					
			CFM	Rise	CFM	Rise	CFM	Rise	CFM	CFM					
All DIP Switch Positions	G	T1	894		846		780		720		660		603	554	505
	W1	T1	894	42	846	44	780	48	720	52	660	57	603	554	505
All DIP Switch Positions	W2	T2	1328	40	1287	41	1249	43	1215	44	1170	46	1131	1085	1046
OFF OFF OFF	Ylo	T3	782		629		547		469		396		333	N/A	N/A
	Y	T5	1236		1189		1149		1101		1066		1017	969	928
ON OFF OFF	Ylo	T3	782		629		547		469		396		333	N/A	N/A
	Y	T4	1149		1104		1057		1017		963		918	865	822
ON ON OFF	Ylo	T4	1149		1104		1057		1017		963		918	865	822
	Y	T5	1236		1189		1149		1101		1066		1017	969	928
OFF ON OFF	Ylo	T4	1149		1104		1057		1017		963		918	865	822
	Y	T1	894		846		780		720		660		603	554	505
OFF OFF ON	Ylo	T4	1149		1104		1057		1017		963		918	865	822
	Y	T2	1328		1287		1249		1215		1170		1131	1085	1046
OFF ON ON	Ylo	T3	782		629		547		469		396		333	N/A	N/A
	Y	T5	1236		1189		1149		1101		1066		1017	969	928
ON OFF ON	Ylo	T2	1328		1287		1249		1215		1170		1131	1085	1046
	Y	T5	1236		1189		1149		1101		1066		1017	969	928
ON ON ON	Ylo	T2	1328		1287		1249		1215		1170		1131	1085	1046
	Y	T3	782		629		547		469		396		333	N/A	N/A

GMEC960803BNA

FACTORY SETTING	DIP SWITCH SETTING		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8					
			CFM	Rise	CFM	Rise	CFM	Rise	CFM	CFM					
All DIP Switch Positions	G	T1	1221		1172		1128		1087		1049		1005	959	922
	W1	T1	1221	41	1172	42	1128	44	1087	46	1049	47	1005	959	922
All DIP Switch Positions	W2	T2	1311	54	1293	55	1249	57	1203	59	1172	61	1122	1088	1041
OFF OFF OFF	Ylo	T3	750		644		569		507		442		388	328	N/A
	Y	T5	1111		1068		1025		984		941		885	N/A	801
ON OFF OFF	Ylo	T3	750		644		569		507		442		388	328	N/A
	Y	T4	894		842		784		726		682		618	562	519
ON ON OFF	Ylo	T4	894		842		784		726		682		618	562	519
	Y	T5	1111		1068		1025		984		941		885	N/A	801
OFF ON OFF	Ylo	T4	894		842		784		726		682		618	562	519
	Y	T1	1221		1172		1128		1087		1049		1005	959	922
OFF OFF ON	Ylo	T4	894		842		784		726		682		618	562	519
	Y	T2	1311		1293		1249		1203		1172		1122	1088	1041
OFF ON ON	Ylo	T3	750		644		569		507		442		388	328	N/A
	Y	T5	1111		1068		1025		984		941		885	N/A	801
ON OFF ON	Ylo	T2	1311		1293		1249		1203		1172		1122	1088	1041
	Y	T5	1111		1068		1025		984		941		885	N/A	801
ON ON ON	Ylo	T2	1311		1293		1249		1203		1172		1122	1088	1041
	Y	T3	750		644		569		507		442		388	328	N/A

NOTES

- 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.
- Do not operate above .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

GMEC96 AIRFLOW DATA (CONT.)

GMEC961004CN

FACTORY SETTING	DIP SWITCH SETTING		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
All DIP Switch Positions	G	T1	1522		1464		1402		1338		1280		1230	1167	1101
	W1	T1	1522	41	1464	43	1402	44	1338	47	1280	49	1230	1167	1101
All DIP Switch Positions	W2	T2	1861	48	1803	49	1749	51	1698	52	1653	54	1594	1549	1504
	Ylo	T3	1004		890		805		710		620		553	474	406
OFF OFF OFF	Y	T5	1772		1713		1662		1609		1540		1498	1452	1399
	Ylo	T3	1004		890		805		710		620		553	474	406
ON OFF OFF	Y	T4	1312		1235		1170		1101		1037		962	880	820
	Ylo	T4	1312		1235		1170		1101		1037		962	880	820
ON ON OFF	Y	T5	1772		1713		1662		1609		1540		1498	1452	1399
	Ylo	T4	1312		1235		1170		1101		1037		962	880	820
OFF ON OFF	Y	T1	1522		1464		1402		1338		1280		1230	1167	1101
	Ylo	T4	1312		1235		1170		1101		1037		962	880	820
OFF OFF ON	Y	T2	1861		1803		1749		1698		1653		1594	1549	1504
	Ylo	T3	1004		890		805		710		620		553	474	406
OFF ON ON	Y	T5	1772		1713		1662		1609		1540		1498	1452	1399
	Ylo	T2	1861		1803		1749		1698		1653		1594	1549	1504
ON OFF ON	Y	T5	1772		1713		1662		1609		1540		1498	1452	1399
	Ylo	T2	1861		1803		1749		1698		1653		1594	1549	1504
ON ON ON	Y	T3	1004		890		805		710		620		553	474	406
	Ylo	T2	1861		1803		1749		1698		1653		1594	1549	1504

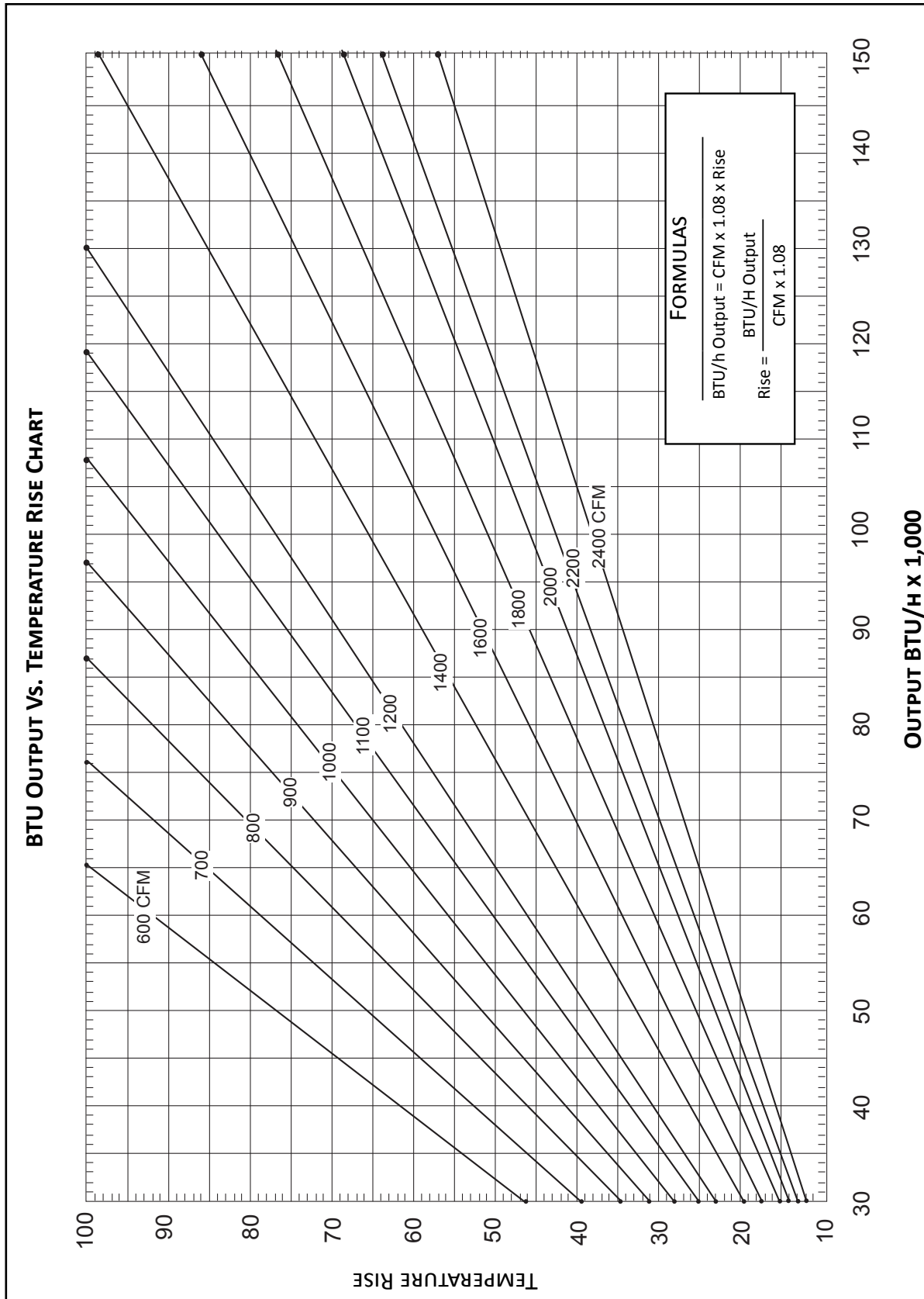
GMEC961205DN

FACTORY SETTING	DIP SWITCH SETTING		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
All DIP Switch Positions	G	T1	1796		1753		1697		1645		1589		1536	1478	1425
	W1	T1	1796	42	1753	43	1697	44	1645	45	1589	47	1536	1478	1425
All DIP Switch Positions	W2	T2	2211	48	2162	49	2122	50	2076	51	2029	53	1986	1984	1942
	Ylo	T3	1106		1017		946		855		764		681	605	N/A
OFF OFF OFF	Y	T5	1683		1628		1565		1511		1445		1387	1340	1276
	Ylo	T3	1106		1017		946		855		764		681	605	N/A
ON OFF OFF	Y	T4	1399		1327		1259		1185		1118		1051	980	913
	Ylo	T4	1399		1327		1259		1185		1118		1051	980	913
ON ON OFF	Y	T5	1683		1628		1565		1511		1445		1387	1340	1276
	Ylo	T4	1399		1327		1259		1185		1118		1051	980	913
OFF ON OFF	Y	T1	1796		1753		1697		1645		1589		1536	1478	1425
	Ylo	T4	1399		1327		1259		1185		1118		1051	980	913
OFF OFF ON	Y	T2	2211		2162		2122		2076		2029		1986	1984	1942
	Ylo	T3	1106		1017		946		855		764		681	605	N/A
OFF ON ON	Y	T5	1683		1628		1565		1511		1445		1387	1340	1276
	Ylo	T2	2211		2162		2122		2076		2029		1986	1984	1942
ON OFF ON	Y	T5	1683		1628		1565		1511		1445		1387	1340	1276
	Ylo	T2	2211		2162		2122		2076		2029		1986	1984	1942
ON ON ON	Y	T3	1106		1017		946		855		764		681	605	N/A
	Ylo	T2	2211		2162		2122		2076		2029		1986	1984	1942

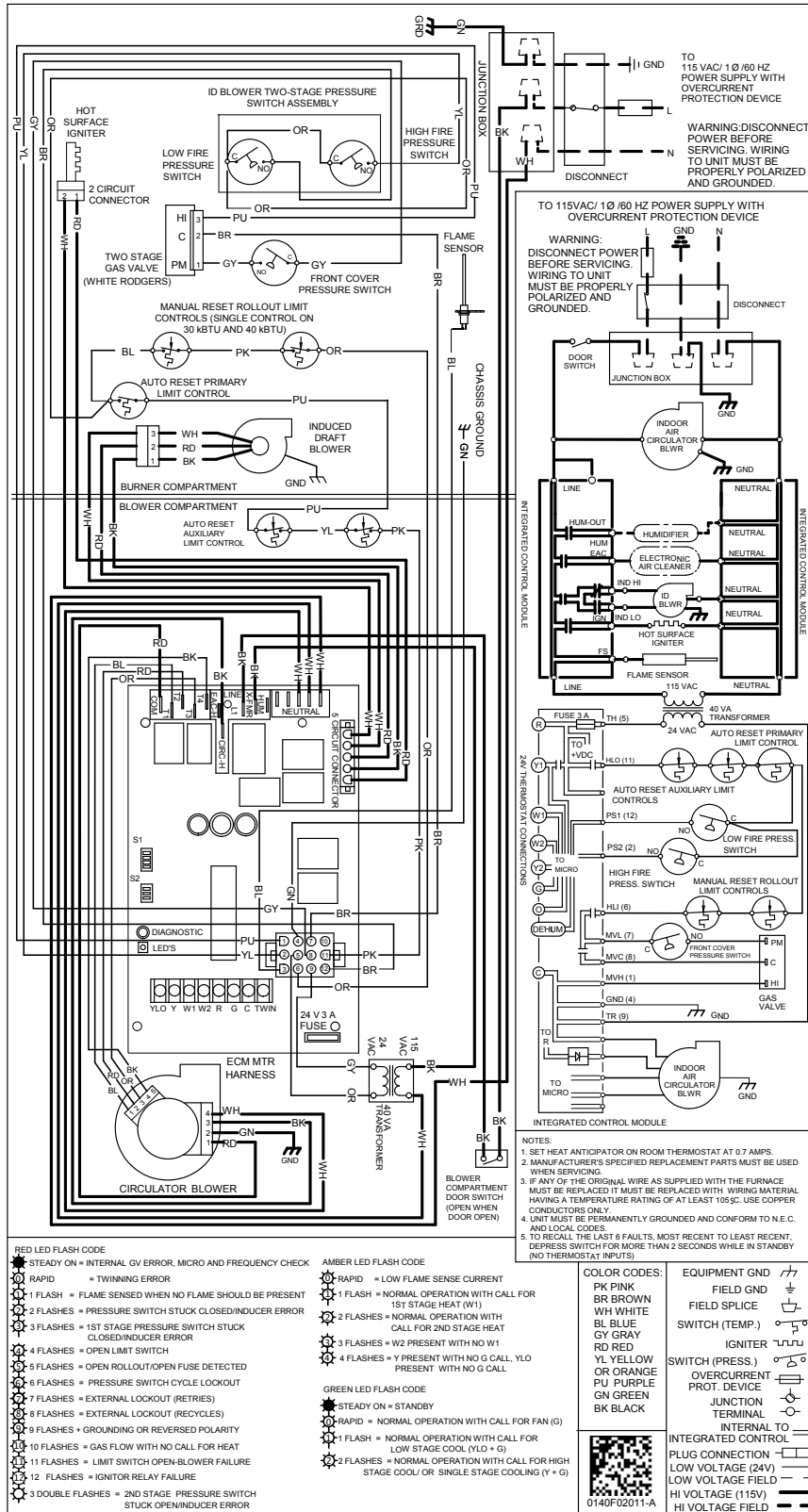
NOTES

- 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.
- Do not operate above .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

TEMPERATURE RISE RANGE CHART



WIRING DIAGRAM



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.

WARNING

ACCESSORIES

MODEL	DESCRIPTION	GMEC96 0302BNA	GMEC96 0402BNA	GMEC96 0603BNA	GMEC96 0803CNA	GMEC96 1004CNA	GMEC96 1205DNA
CVENT-2	Concentric Vent Kit (2")	√	√	√	√	√	√
CVENT-3	Concentric Vent Kit (3")	√	√	√	√	√	√
RF000142	Drain Kit -Horizontal Left Vertical Flue	√	√	√	√	√	√
EFR01	External Filter Rack with 16"x25" Permanent Filter	TBD	TBD	TBD	TBD	TBD	TBD
0170K00000S	Flush Mount Vent Kit - 3" or 2"	√	√	√	√	√	√
0170K00001S	Flush Mount Vent Kit - 2"	√	√	√	√	√	√
AFE18-60A	Fossil Fuel (Duel Fuel) Kit	√	√	√	√	√	√
	High-Altitude Natural Gas Kit	TBD	TBD	TBD	TBD	TBD	TBD
	High-Altitude Pressure Switch	TBD	TBD	TBD	TBD	TBD	TBD
	High-Altitude LP Gas Kit	TBD	TBD	TBD	TBD	TBD	TBD
LPLP03	Low LP Gas Pressure Switch	√	√	√	√	√	√
LPM-08	LP Conversion Kits (Gas Valve)	√	√	√	√	√	√

NOTES

NOTES