



Air Conditioning & Heating

HEATING INPUT: 30,000–120,000 BTU/H

# GMEC96

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



### 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

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\* 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.



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

**SPECIFICATIONS**

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

<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.

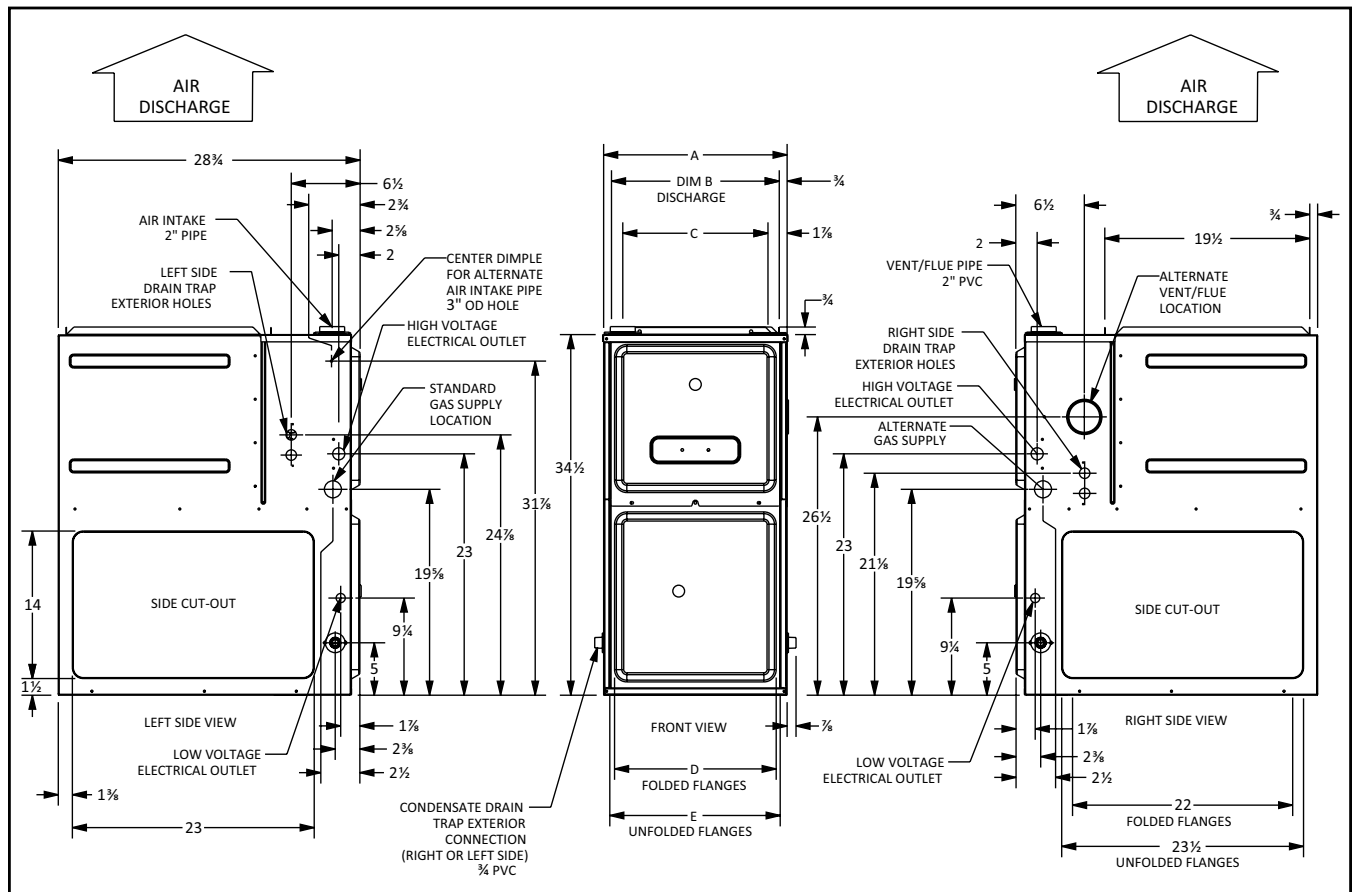
<sup>4</sup> Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

<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.

# GMEC96 DIMENSIONS



MODEL	A	B	C	D	E
GMEC960302BNA	17½"	16"	13⅞"	12⅞"	13⅞"
GMEC960402BNA	17½"	16"	13⅞"	12⅞"	13⅞"
GMEC960603BNA	17½"	16"	13⅞"	12⅞"	13⅞"
GMEC960803BNA	17½"	16"	13⅞"	12⅞"	13⅞"
GMEC961004CNA	21"	19½"	17⅞"	16"	17½"
GMEC961205DNA	24½"	23"	20⅞"	19⅞"	20⅞"

## 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

GMEC960302BN – DIP SWITCH SETTING									
COOLING		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Switch Bank 2		CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM
Switch 1 2 3	G	870	658	548	469	413	349	293	N/A
**OFF OFF OFF	Ylo	874	697	612	533	470	414	361	303
	Y	1146	1097	1049	1002	941	895	846	787
ON OFF OFF	Ylo	874	697	612	533	470	414	361	303
	Y	928	868	810	743	670	614	560	505
ON ON OFF	Ylo	928	868	810	743	670	614	560	505
	Y	1146	1097	1049	1002	941	895	846	787
OFF ON OFF	Ylo	928	868	810	743	670	614	560	505
	Y	870	658	548	469	413	349	293	N/A
OFF OFF ON	Ylo	928	868	810	743	670	614	560	505
	Y	885	821	755	684	621	557	508	461
OFF ON ON	Ylo	874	697	612	533	470	414	361	303
	Y	1146	1097	1049	1002	941	895	846	787
ON OFF ON	Ylo	885	821	755	684	621	557	508	461
	Y	1146	1097	1049	1002	941	895	846	787
ON ON ON	Ylo	885	821	755	684	621	557	508	461
	Y	874	697	612	533	470	414	361	303

### HEATING

Switch Bank 3	Static	0.1		0.2		0.3		0.4		0.5		0.6	0.7	0.8
Switch 1 2		CFM	Rise	CFM	Rise	CFM	Rise	CFM	Rise	CFM	Rise	CFM	CFM	CFM
**OFF OFF	W1	870	21	658	28	548	34	469	40	413	45	349	293	N/A
	W2	885	30	821	32	755	35	684	39	621	43	557	508	461
ON OFF	W1	874	21	697	27	612	31	533	35	470	40	414	361	303
	W2	885	30	821	32	755	35	684	39	621	43	557	508	461
ON ON	W1	874	21	697	27	612	31	533	35	470	40	414	361	303
	W2	928	29	868	31	810	33	743	36	670	40	614	560	505
OFF ON	W1	928	20	868	22	810	23	743	25	670	28	614	560	505
	W2	1146	23	1097	24	1049	25	1002	27	941	28	895	846	787

\*\*Factory Default

#### 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.
- INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.

# AMEC96 AIRFLOW DATA (CONT.)

## 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	Rise	CFM	Rise	CFM	Rise	CFM	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	

## GMEC960603BNA

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	Rise	CFM	CFM	CFM
FACTORY SETTING	All DIP Switch Positions	G	T1	894		846		780		720		660		603	554	505
	All DIP Switch Positions	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	

**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.
- INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.

# AMEC96 AIRFLOW DATA (CONT.)

## GMEC960803BNA

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		
FACTORY SETTING	All DIP Switch Positions	G	T1	1221		1172		1128		1087		1049		1005	959	922
	All DIP Switch Positions	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	

## GMEC961004CN

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

**NOTES**

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- For most jobs, about 400 CFM per ton when cooling is desirable.
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# AMEC96 AIRFLOW DATA (CONT.)

## AMEC961205DN

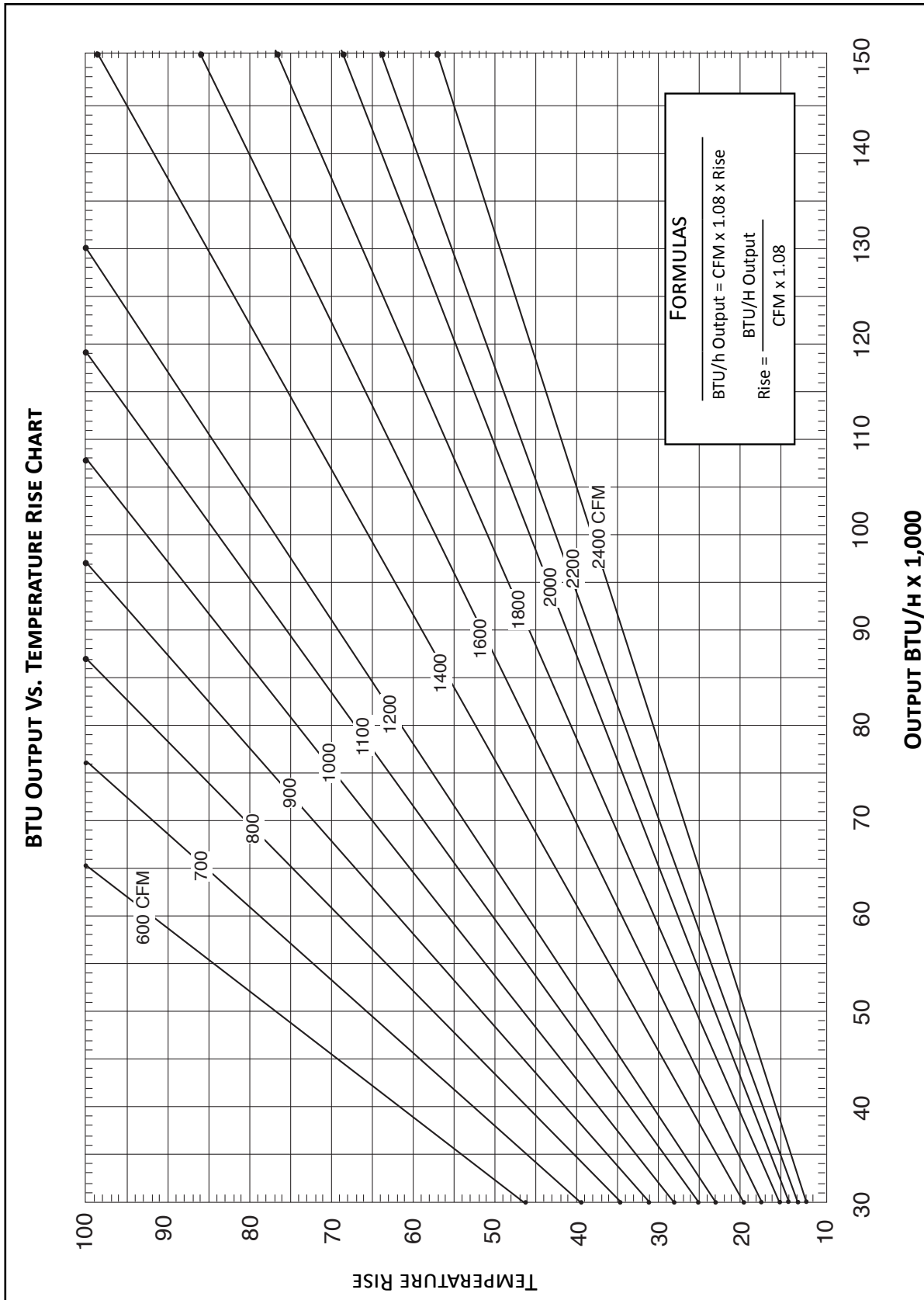
DIP SWITCH SETTING			0.1		0.2		0.3		0.4		0.5		0.6	0.7	0.8	
			CFM	Rise	CFM	Rise	CFM	Rise	CFM	Rise	CFM	Rise	CFM	CFM	CFM	
FACTORY SETTING	All DIP Switch Positions	G	T1	1796		1753		1697		1645		1589		1536	1478	1425
	All DIP Switch Positions	W1	T1	1796	42	1753	43	1697	44	1645	45	1589	47	1536	1478	1425
	All DIP Switch Positions	W2	T2	2211	48	2162	49	2122	50	2076	51	2029	53	1986	1984	1942
	OFF OFF OFF	Ylo	T3	1106		1017		946		855		764		681	605	N/A
		Y	T5	1683		1628		1565		1511		1445		1387	1340	1276
	ON OFF OFF	Ylo	T3	1106		1017		946		855		764		681	605	N/A
		Y	T4	1399		1327		1259		1185		1118		1051	980	913
	ON ON OFF	Ylo	T4	1399		1327		1259		1185		1118		1051	980	913
		Y	T5	1683		1628		1565		1511		1445		1387	1340	1276
	OFF ON OFF	Ylo	T4	1399		1327		1259		1185		1118		1051	980	913
		Y	T1	1796		1753		1697		1645		1589		1536	1478	1425
	OFF OFF ON	Ylo	T4	1399		1327		1259		1185		1118		1051	980	913
		Y	T2	2211		2162		2122		2076		2029		1986	1984	1942
	OFF ON ON	Ylo	T3	1106		1017		946		855		764		681	605	N/A
		Y	T5	1683		1628		1565		1511		1445		1387	1340	1276
	ON OFF ON	Ylo	T2	2211		2162		2122		2076		2029		1986	1984	1942
Y		T5	1683		1628		1565		1511		1445		1387	1340	1276	
ON ON ON	Ylo	T2	2211		2162		2122		2076		2029		1986	1984	1942	
	Y	T3	1106		1017		946		855		764		681	605	N/A	

**NOTES**

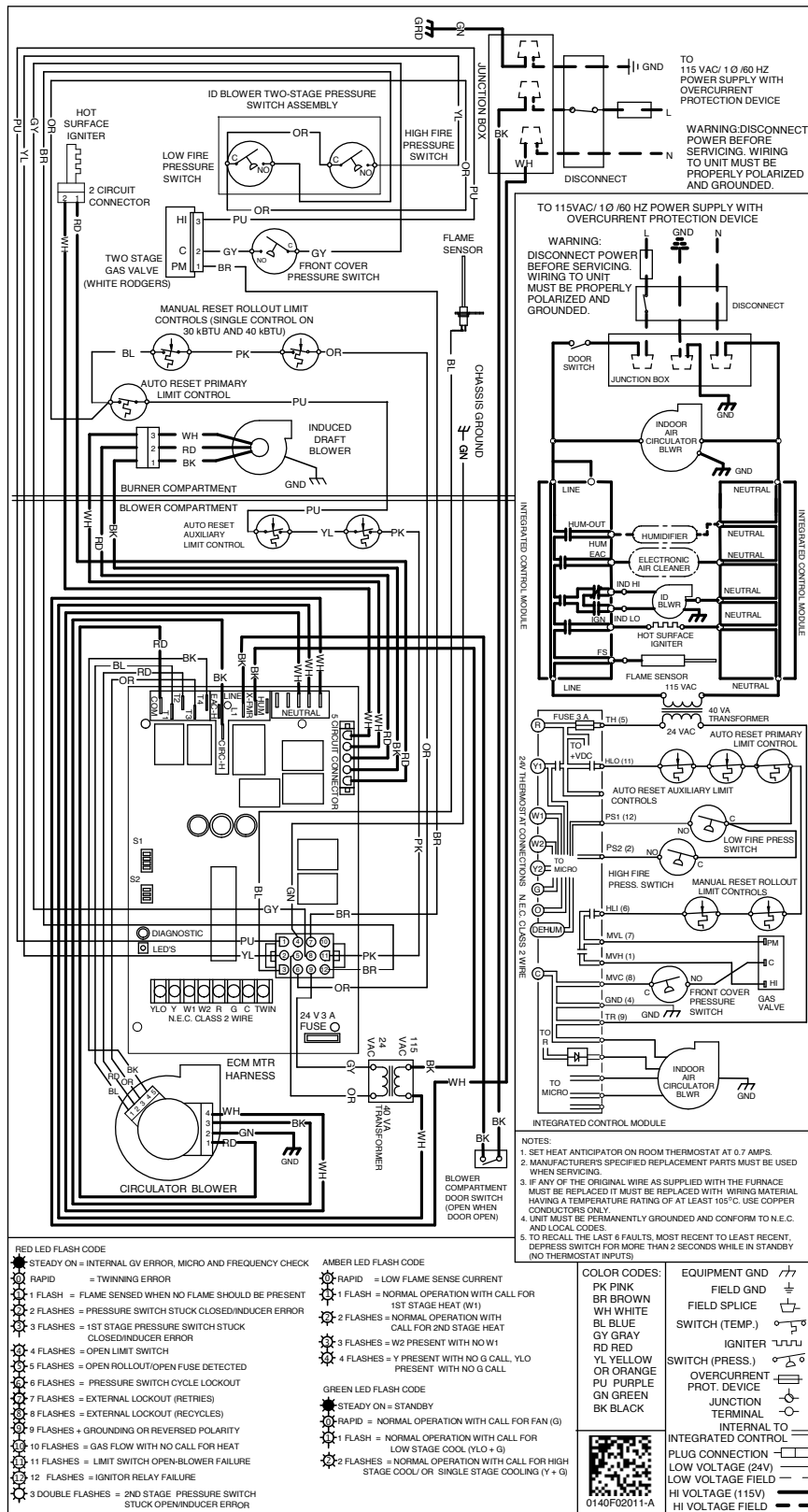
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# TEMPERATURE RISE RANGE CHART



# WIRING DIAGRAM (GMEC96\*\*\*\*\*AA)

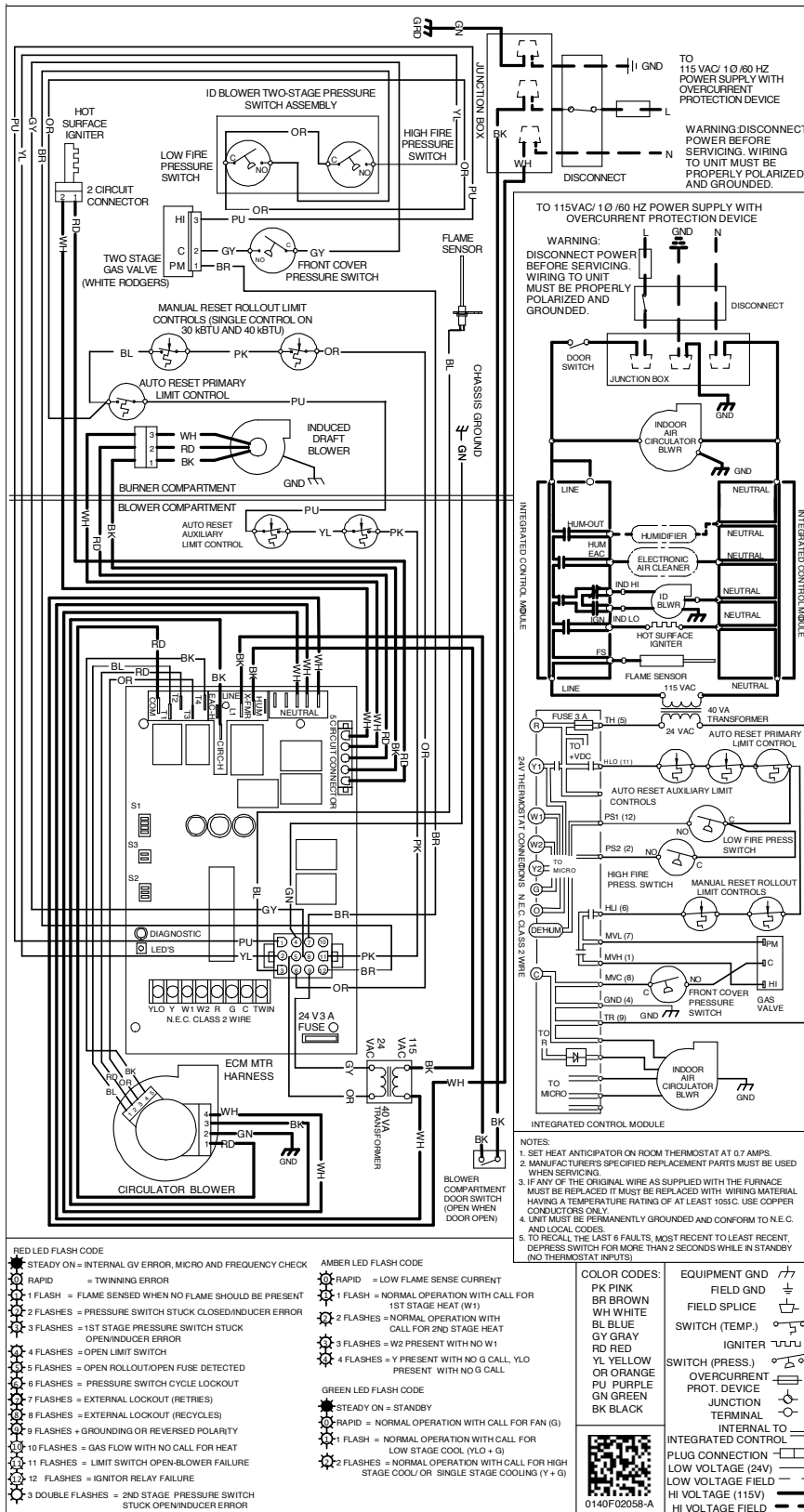


**High Voltage:** Disconnect all power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury, or death.

**WARNING**

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

# WIRING DIAGRAM (GMEC96\*\*\*\*\*AB)



**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**

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

**ACCESSORIES**

MODEL	DESCRIPTION	GMEC96 0302BNA	GMEC96 0402BNA	GMEC96 0603BNA	GMEC96 0803BNA	GMEC96 1004CNA	GMEC96 1205DNA
CVENT-2	Concentric Vent Kit (2")	√	√	√	√	√	√
CVENT-3	Concentric Vent Kit (3")	√	√	√	√	√	√
RF000142	Drain Kit -Horizontal Left Vertical Flue	√	√	√	√	√	√
EFR02	External Filter Rack with 16"x25" Permanent Filter	√	√	√	√	√	---
0170K00000S	Flush Mount Vent Kit - 3" or 2"	√	√	√	√	√	√
0170K00001S	Flush Mount Vent Kit - 2"	√	√	√	√	√	√
AFE18-60A	Fossil Fuel (Duel Fuel) Kit	√	√	√	√	√	√
HASFK	High-Altitude Natural Gas Kit	N/A	HASFK-1	HASFK-1	HASFK-2	HASFK-2	HASFK-3
HASFK	High-Altitude LP Gas Kit	N/A	HASFK-1	HASFK-1	HASFK-2	HASFK-2	HASFK-2
LPLP03	Low LP Gas Pressure Switch	√	√	√	√	√	√
LPM-08	LP Conversion Kits	---	√	√	√	√	√
LPM-30	LP Conversion Kit	√	---	---	---	---	---