



Air Conditioning & Heating

GMSS96 / GCSS96

**SINGLE-STAGE
MULTI-SPEED GAS FURNACE
UP TO 96% AFUE**

HEATING INPUT: 40,000–120,000 BTU/H



Standard Features

- Heavy-duty aluminized-steel tubular heat exchanger
- Stainless-steel secondary heat exchanger
- Single-stage gas valve
- Durable Silicon Nitride igniter
- Quiet single-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
- All models comply with California Low NOx emissions standards

Cabinet Features

- Designed for multi-position installation —
GMSS96: upflow, horizontal left or right
GCSS96: downflow, 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.....	5
Airflow Specifications.....	7
Wiring Diagram.....	10
Accessories.....	11



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

SPECIFICATIONS - GMSS96

	GMSS96 0402BNA	GMSS96 0603BNA	GMSS96 0803BNA	GMSS96 0804CNA	GMSS96 0805CNA	GMSS96 1005CNA	GMSS96 1205DNA
Heating Data							
High Fire Input ¹	40,000	60,000	80,000	80,000	80,000	100,000	120,000
High Fire Output ¹	38,400	57,600	76,800	76,800	76,800	96,000	115,200
AFUE ²	96	96	96	96	96	96	96
Temperature Rise Range (°F)	25 - 55	35 - 65	35 - 65	25 - 55	25 - 55	30 - 60	35 - 65
Vent Diameter ³	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"	3"
No. of Burners	2	3	4	4	4	5	6
Circulator Blower							
Available AC @ 0.5" ESP	1.5 - 2	1.5 - 3	1.5 - 3	1.5 - 4	3 - 5	3 - 5	3 - 5
Size (D x W)	10" x 8"	10" x 8"	10" x 8"	10" x 10"	11" x 10"	11" x 10"	11" x 11"
Horsepower @ 1075 RPM	1/3	1/3	1/2	1/2	3/4	3/4	3/4
Speed	4	4	4	4	4	4	4
Filter Size (in²)							
Permanent	341	512	975	683	853	853	1,024
Disposable	171	256	488	341	427	427	512
Electrical Data							
Min. Circuit Ampacity ⁴	9.6	9.6	12.8	11.7	13.7	13.7	13.7
Max. Overcurrent Device (amps) ⁵	15	15	15	15	15	15	15
Shipping Weight (lbs)							
	111	114	116	139	140	142	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 1/2" 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.

SPECIFICATIONS - GCSS96

	GCSS96 0402BNA	GCSS96 0603BNA	GCSS96 0804CNA	GCSS96 1005CNA	GCSS96 1205DNA
Heating Data					
High Fire Input ¹	40,000	60,000	80,000	100,000	120,000
High Fire Output ¹	38,400	57,600	76,800	95,000	114,000
AFUE ²	96	96	96	95	95
Temperature Rise Range (°F)	25 - 55	35 - 65	35 - 65	40 - 70	45 - 75
Vent Diameter ³	2" - 3"	2" - 3"	2" - 3"	2" - 3"	3"
No. of Burners	2	3	4	5	6
Circulator Blower					
Available AC @ 0.5" ESP	1.5 - 3	1.5 - 3	2.5 - 4	3 - 5	3 - 5
Size (D x W)	10" x 8"	10" x 8"	10" x 10"	11" x 10"	11" x 11"
Horsepower @ 1075 RPM	1/3	1/3	1/2	3/4	3/4
Speed	4	4	4	4	4
Filter Size (in²)					
Permanent	427	512	683	768	844
Disposable	213	256	341	384	422
Electrical Data					
Min. Circuit Ampacity ⁴	9.6	9.6	11.7	13.7	13.7
Max. Overcurrent Device (amps) ⁵	15	15	15	15	15
Shipping Weight (lbs)					
	111	114	139	142	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.

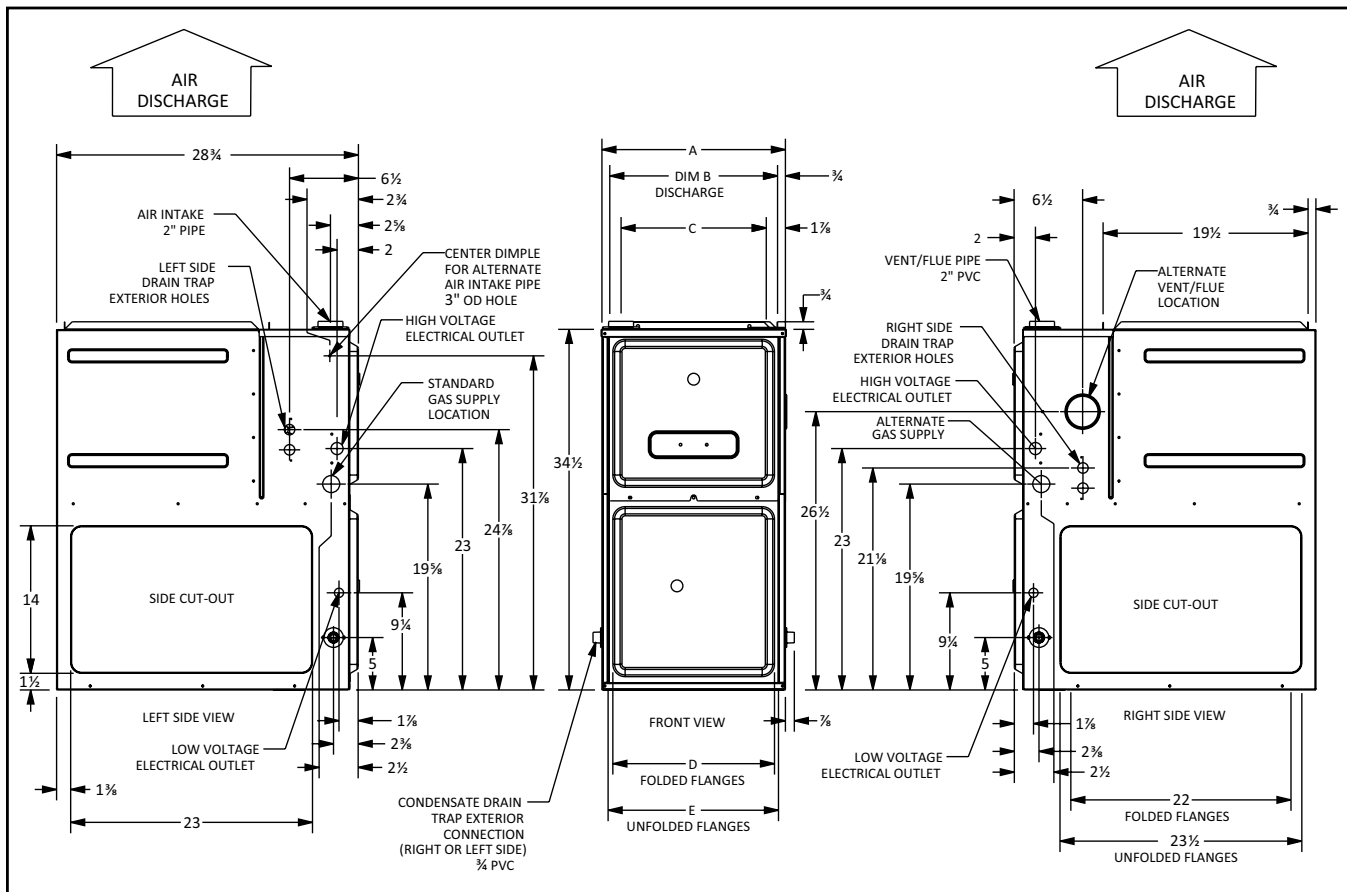
⁴ Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

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 1/2" 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.

GMSS96 DIMENSIONS



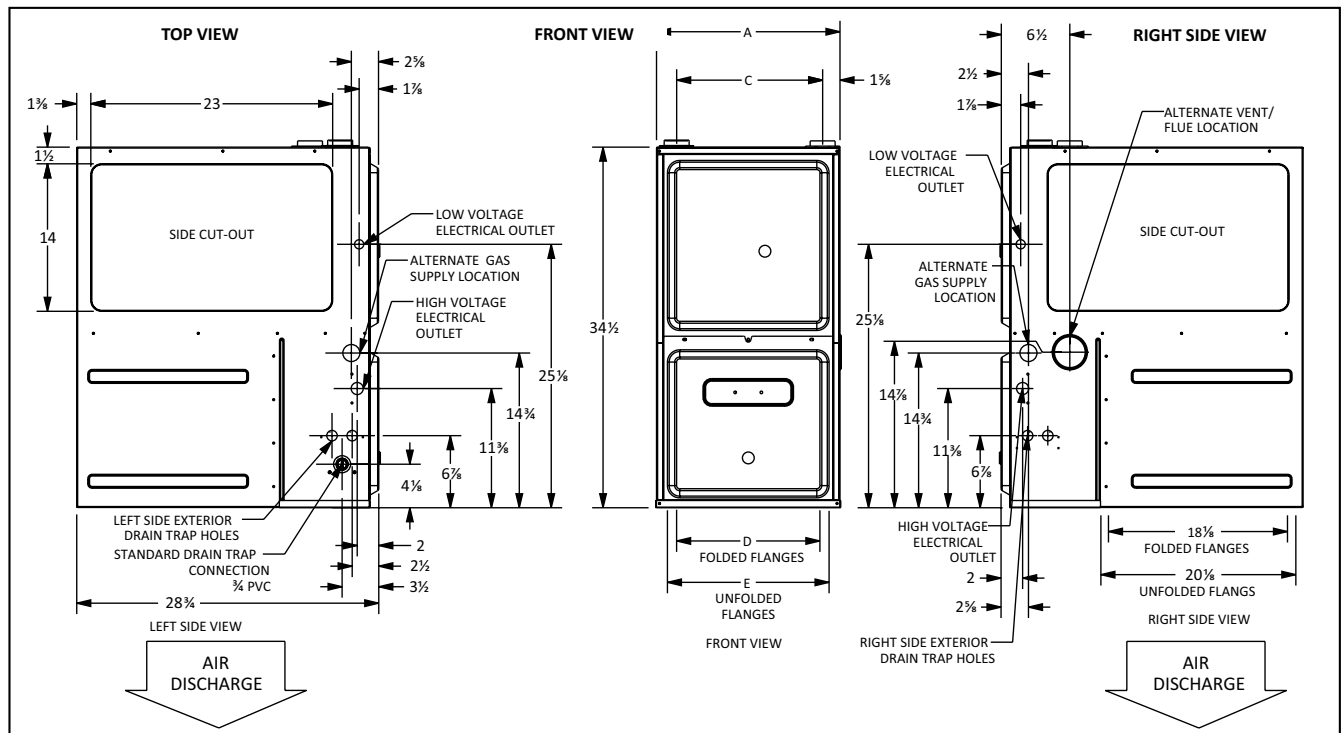
MODEL	A	B	C	D	E
GMSS960402BNA	17 1/2"	16"	13 3/8"	12 1/8"	13 3/8"
GMSS960603BNA	17 1/2"	16"	13 3/8"	12 1/8"	13 3/8"
GMSS960803BNA	17 1/2"	16"	13 3/8"	12 1/8"	13 3/8"
GMSS960804CNA	21"	19 1/2"	17 3/8"	16"	17 1/2"
GMSS960805CNA	21"	19 1/2"	17 3/8"	16"	17 1/2"
GMSS961005CNA	21"	19 1/2"	17 3/8"	16"	17 1/2"
GMSS961205DNA	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.

GCSS96 DIMENSIONS



MODEL	A	B	C	D	E
GCSS960402BNA	17 1/2"	14 3/8"	14"	14 1/2"	16"
GCSS960603BNA	17 1/2"	14 3/8"	14"	14 1/2"	16"
GCSS960804CNA	21"	18 1/8"	17 1/2"	18"	19 1/2"
GCSS961005CNA	21"	18 1/8"	17 1/2"	18"	19 1/2"
GCSS961205DNA	24 1/2"	21 3/8"	21"	21 1/2"	23"

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.

AIRFLOW DATA – GMSS96

(CFM & TEMPERATURE RISE VS. EXTERNAL STATIC PRESSURE)

MODEL	MOTOR SPEED	TONS AC ¹	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
GMSS96 0402BNA	High	3	1,478	N/A	1,418	25	1,354	26	1,290	28	1,208	29	1,129	1,040	930
	Med	2.5	1,299	27	1,265	28	1,225	29	1,167	30	1,112	32	1,033	949	841
	Med-Lo	2	1,081	33	1,064	33	1,039	34	997	36	945	38	886	819	722
	Low	1.5	966	37	951	37	925	38	892	40	861	41	808	750	666
GMSS96 0603BNA	High	3	1,432	37	1,374	39	1,319	40	1,237	43	1,157	46	1,063	958	854
	Med	2.5	1,289	41	1,250	43	1,204	44	1,142	47	1,066	50	981	897	789
	Med-Lo	2	1,080	49	1,057	50	1,022	52	980	54	926	58	861	785	700
	Low	1.5	967	55	945	56	919	58	879	61	844	63	789	712	632
GMSS96 0803BNA	High	3	1,620	44	1,561	46	1,478	48	1,401	51	1,322	54	1,239	1,150	1052
	Med	2.5	1,538	46	1,476	48	1,401	51	1,332	53	1,250	57	1,166	1,083	992
	Med-Lo	2	1,446	49	1,388	51	1,333	53	1,258	57	1,197	59	1,112	1,037	937
	Low	1.5	1,246	57	1,217	58	1,165	61	1,128	63	1,067	N/A	994	938	840
GMSS96 0804CNA	High	4	1,746	41	1,671	43	1,589	45	1,516	47	1,447	49	1,371	1,295	1,160
	Med	2.5	1,190	60	1,179	60	1,151	62	1,138	62	1,090	65	1,042	970	879
	Med-Lo	2	894	N/A	877	N/A	867	N/A	870	N/A	863	N/A	831	764	671
	Low	1.5	624	N/A	595	N/A	620	N/A	620	N/A	610	N/A	604	571	519
GMSS96 0805CNA	High	5	2,233	32	2,159	33	2,086	34	2,024	35	1,941	37	1,850	1,753	1,651
	Med	4	1,820	39	1,778	40	1,742	41	1,695	42	1,638	43	1,551	1,485	1,384
	Med-Lo	3.5	1,571	45	1,535	46	1,497	48	1,446	49	1,402	51	1,338	1,280	1,204
	Low	3	1,361	52	1,333	53	1,290	55	1,255	N/A	1,208	N/A	1,171	1,104	1,051
GMSS96 1005CNA	High	5	2,157	41	2,087	43	2,028	44	1,953	46	1,858	48	1,775	1,661	1,558
	Med	4	1,907	47	1,852	48	1,800	49	1,738	51	1,675	53	1,605	1,514	1,410
	Med-Lo	3.5	1,608	55	1,580	56	1,493	60	1,501	59	1,440	62	1,367	1,296	1,219
	Low	3	1,390	N/A	1,344	N/A	1,326	N/A	1,268	N/A	1,227	N/A	1,194	1,132	1,071
GMSS96 1205DNA	High	5	2,204	48	2,144	50	2,080	51	1,991	54	1,914	56	1,817	1,724	1,595
	Med	4	1,938	55	1,914	56	1,849	58	1,778	60	1,713	62	1,645	1,548	1,454
	Med-Lo	3.5	1,651	65	1,624	66	1,574	68	1,529	70	1,475	72	1,409	1,331	1,236
	Low	3	1,427	75	1,382	N/A	1,345	N/A	1,311	N/A	1,272	N/A	1,215	1,159	1,066

¹ at 0.5" ESP

NOTES

- CFM in chart is without filter(s). Filters do not ship with this furnace, but must be provided by the installer. If the furnace requires two return filters, this chart assumes both filters are installed.
- All furnaces ship as high-speed cooling and medium-speed heating. Installer must adjust blower cooling & heating 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.
- This chart is for information only. For satisfactory operation, external static pressure should not exceed value shown on the rating plate. The shaded area indicates ranges in excess of maximum static pressure allowed when heating.
- The above chart is for U.S. furnaces installed at 0-2000 feet. At higher altitudes, a properly derated unit will have approximately the same temperature rise at a particular CFM, while ESP at the CFM will be lower.

AIRFLOW DATA – GCSS96

(CFM & TEMPERATURE RISE VS. EXTERNAL STATIC PRESSURE)

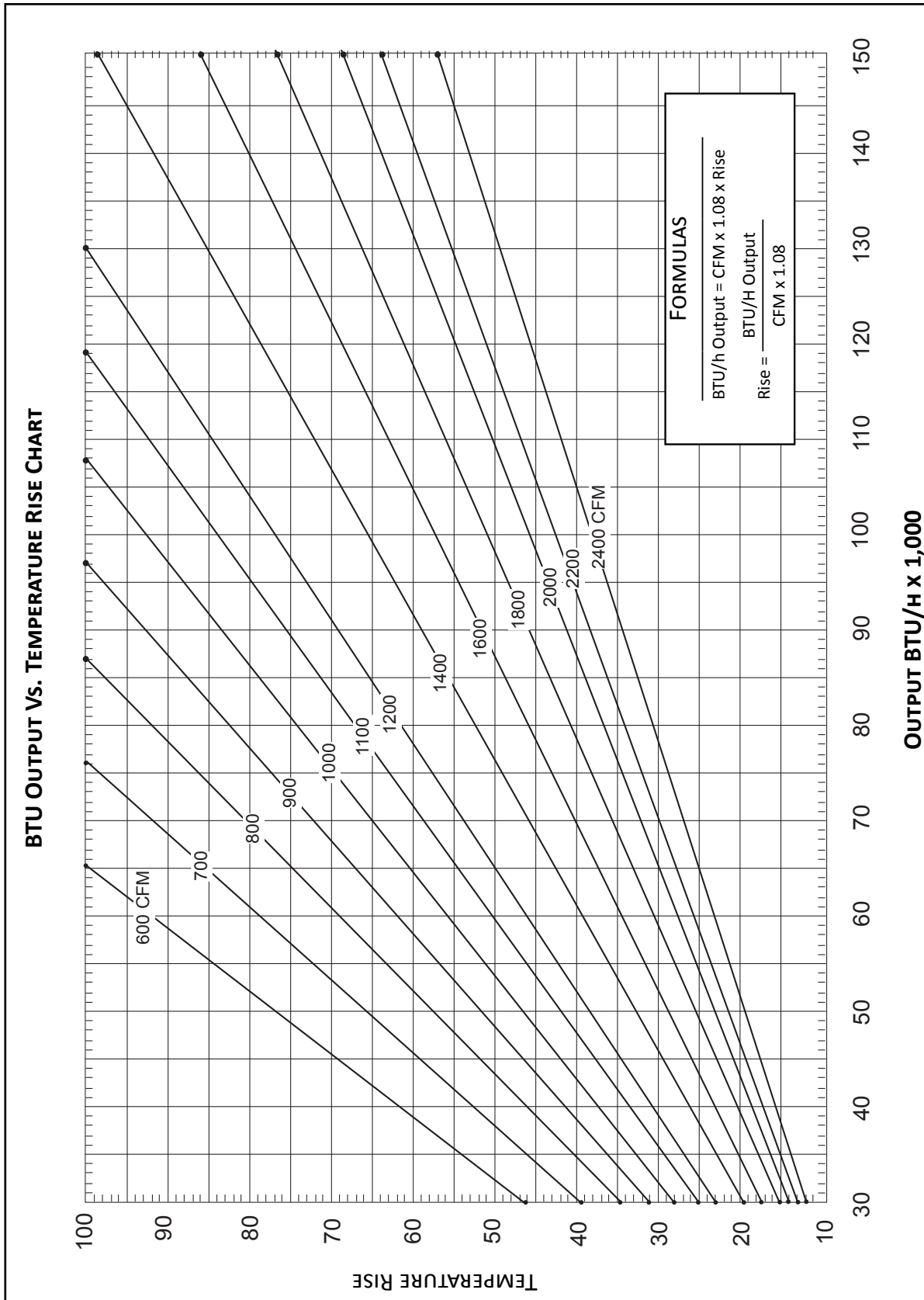
MODEL	MOTOR SPEED	TONS AC ¹	EXTERNAL STATIC PRESSURE, (INCHES WATER COLUMN)												
			0.1		0.2		0.3		0.4		0.5		0.6	0.7	0.8
			CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	CFM	CFM
GCSS96 0402BNA	High	3	1,425	25	1,345	26	1,271	28	1,198	30	1,138	31	1,051	945	864
	Med	2.5	1,254	28	1,218	29	1,155	31	1,107	32	1,040	34	952	869	761
	Med-Lo	2	1,082	33	1,051	34	1,007	35	965	37	910	39	841	770	660
	Low	1.5	889	40	872	41	829	43	815	44	765	46	711	659	585
GCSS96 0603BNA	High	3	1,348	40	1,283	42	1,217	44	1,151	46	1,086	49	1,014	931	844
	Med	2.5	1,188	45	1,139	47	1,098	49	1,039	51	986	54	916	834	758
	Med-Lo	2	1,015	53	985	54	945	56	909	59	858	62	804	733	655
	Low	1.5	821	65	814	N/A	788	N/A	765	N/A	720	N/A	677	640	564
GCSS96 0804CNA	High	4	1,736	41	1,613	44	1,578	45	1,498	47	1,409	50	1,314	1,226	1,119
	Med	3.5	1,657	43	1,583	45	1,501	47	1,441	49	1,366	52	1,282	1,173	1077
	Med-Lo	3	1,581	45	1,510	47	1,443	49	1,371	52	1,280	56	1,199	1,110	990
	Low	2.5	1,369	52	1,313	54	1,278	56	1,225	58	1,147	62	1,071	990	888
GCSS96 1005CNA	High	5	2,018	44	1,953	46	1,877	47	1,788	50	1,735	51	1,659	1,556	1,448
	Med	4	1,826	49	1,749	51	1,660	54	1,566	57	1,496	59	1,415	1,335	1,220
	Med-Lo	3.5	1,618	55	1,539	58	1,476	60	1,406	63	1,340	66	1,275	1,194	1,093
	Low	3	1,402	63	1,354	66	1,296	69	1,242	N/A	1,173	N/A	1,108	1,042	965
GCSS96 1205DNA	High	5	2,123	50	2,053	52	2,000	53	1,916	56	1,832	58	1,739	1,646	1,561
	Med	4	1,912	56	1,844	58	1,770	60	1,708	62	1,619	66	1,543	1,436	1,349
	Med-Lo	3.5	1,684	63	1,622	66	1,578	68	1,503	71	1,442	74	1,374	1,302	1,204
	Low	3	1,493	71	1,436	74	1,371	N/A	1,319	N/A	1,264	N/A	1,208	1,153	1,061

¹ at 0.5" ESP

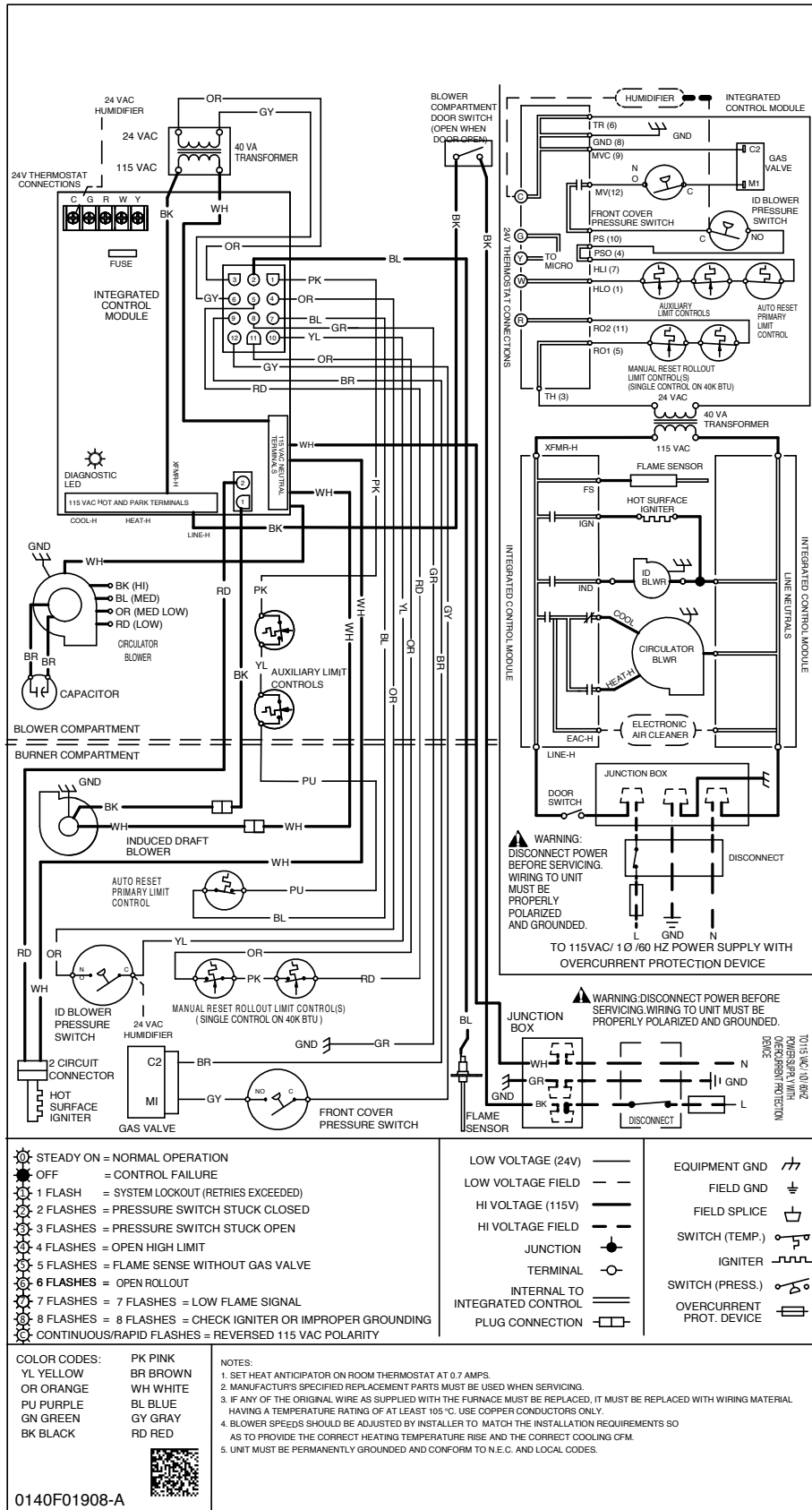
NOTES

- CFM in chart is without filter(s). Filters do not ship with this furnace, but must be provided by the installer. If the furnace requires two return filters, this chart assumes both filters are installed.
- All furnaces ship as high-speed cooling and medium-speed heating. Installer must adjust blower cooling & heating 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.
- This chart is for information only. For satisfactory operation, external static pressure should not exceed value shown on the rating plate. The shaded area indicates ranges in excess of maximum static pressure allowed when heating.
- The above chart is for U.S. furnaces installed at 0-2000 feet. At higher altitudes, a properly derated unit will have approximately the same temperature rise at a particular CFM, while ESP at the CFM will be lower.

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

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

ACCESSORIES – GMSS96 / GCSS96

MODEL	DESCRIPTION	GMSS96 0402BNA	GMSS96 0603BNA	GMSS96 0803BNA	GMSS96 0804CNA	GMSS96 0805CNA	GMSS96 1005CNA	GMSS96 1205DNA
CVENT-2	Concentric Vent Kit (2")	√	√	√	√	√	√	---
CVENT-3	Concentric Vent Kit (3")	√	√	√	√	√	√	√
CFSB17	Downflow Sub-Base 17.5"	---	---	---	---	---	---	---
CFSB21	Downflow Sub-Base 21"	---	---	---	---	---	---	---
CFSB24	Downflow Sub-Base 24"	---	---	---	---	---	---	---
RF000142	Drain Kit -Horizontal Left Vertical Flue	√	√	√	√	√	√	√
EFR01	External Filter Rack with 16"x25" Permanent Filter	TBD	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	TBD
	High-Altitude Pressure Switch	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	High-Altitude LP Gas Kit	TBD	TBD	TBD	TBD	TBD	TBD	TBD
LPLP03	Low LP Gas Pressure Switch	√	√	√	√	√	√	√
LPM-07	LP Conversion Kits (Gas Valve)	√	√	√	√	√	√	√
FTK04	Twinning Kit	√	√	√	√	√	√	√

MODEL	DESCRIPTION	GCSS96 0402BNA	GCSS96 0603BNA	GCSS96 0804CNA	GCSS96 1005CNA	GCSS96 1205DNA
CVENT-2	Concentric Vent Kit (2")	√	√	√	√	---
CVENT-3	Concentric Vent Kit (3")	√	√	√	√	√
CFSB17	Downflow Sub-Base 17.5"	√	√	---	---	---
CFSB21	Downflow Sub-Base 21"	---	---	√	√	---
CFSB24	Downflow Sub-Base 24"	---	---	---	---	√
RF000142	Drain Kit -Horizontal Left Vertical Flue	---	---	---	---	---
EFR01	External Filter Rack with 16"x25" Permanent Filter	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
	High-Altitude Pressure Switch	TBD	TBD	TBD	TBD	TBD
	High-Altitude LP Gas Kit	TBD	TBD	TBD	TBD	TBD
LPLP03	Low LP Gas Pressure Switch	√	√	√	√	√
LPM-07	LP Conversion Kits (Gas Valve)	√	√	√	√	√
FTK04	Twinning Kit	√	√	√	√	√

NOTES