Goodman®

Air Conditioning & Heating

GMVM96 / GCVM96

ComfortNet™-Compatible, Multi-Position, Modulating Variable-Speed Gas Furnace Up to 96% AFUE

ComfortNet™ CONTROL SYSTEM

Standard Features

- Aluminized-steel, dual-diameter tubular heat exchanger
- Stainless-steel secondary heat exchanger
- ComfortNet™ Communicating Systems compatible
- Self-calibrating, modulating gas valve operates with two-stage or single-stage thermostats
- Efficient and quiet variable-speed circulator motor
- Furnace control board with self-diagnostics and provisions for electronic air cleaners and humidifiers
- Multiple continuous fan speed options for quiet air circulation
- Dual-certified for sealed combustion direct vent (2-pipe) or non-direct vent (1-pipe) applications
- Auto-Comfort and enhanced dehumidification modes provide energy savings and additional comfort during the cooling months
- Quiet variable-speed induced draft blower
- All models comply with California NOx emissions standards

Cabinet Features

- Cabinet air leakage (Q_{Leak}) ≤ 2%
- Fully insulated heavy-gauge steel cabinet with durable baked-enamel finish
- Foil-faced insulation lines the heat exchanger section
- Designed for multi-position installation
- Airtight solid bottom for side-return applications and easy-cut tabs for effortless removal in bottom air-inlet applications
- Convenient left or right connection for gas and electric service
- Coil and furnace fit flush for most installations

Contents

Nomenclature 2
Product Specifications 3
Dimensions 4
Airflow Data 6
Wiring Diagrams 11
Thermostats 12
Accessories 12

LIFETIME HEAT EXCHANGER LIMITED WARRANTY* | 10 YEAR UNIT REPLACEMENT LIMITED WARRANTY* | 10 YEAR PARTS LIMITED WARRANTY*

* 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	V	M	96	060	4	C	X	A	A
1	2	3	4	5,6	7,8,9	10	11	12	13	14

Brand
- G Goodman® Brand or Distinctions™

Airflow Direction
- C Downflow/Horizontal
- D Dedicated Downflow
- H High Airflow
- K Dedicated Upflow
- M Upflow/Horizontal

Description/Motor
- V Two-Stage/Variable-speed
- H Two-Stage/Multi-speed
- S Single-Stage/Multi-speed
- E Two-Stage/High-Efficiency

SystemType
- C ComfortNet™ Communicating System
- M Modulating Furnace

AFUE
- 96 96%
- 95 95%
- 9 90%+
- 8 80%

MBTU/h
- 045: 45,000
- 060: 60,000
- 080: 80,000
- 100: 100,000
- 115: 115,000

Maximum CFM @ 0.5" ESP
- 3 1200
- 4 1600
- 5 2000

Cabinet Width
- A 14"
- B 17½"
- C 21"
- D 24½"

NOx
- N Natural Gas
- X Low NOx

Revisions
- A Initial Releases (Major & Minor)
- B 1st Revisions (Major & Minor)
- C 2nd Revisions

Specifications

	GMVM96 0603BX	GMVM96 0805CX	GMVM96 1005DX	GMVM96 1155DX	GCVM96 0604CX	GCVM96 0805DX	GCVM96 1005DX
Heating Capacity							
High Fire Input[1]	60,000	80,000	100,000	115,000	60,000	80,000	100,000
High Fire Output[1]	57,600	76,800	96,000	109,250	57,600	76,800	95,000
Low-Fire Steady-State Input[1]	30,000	40,000	50,000	57,500	30,000	40,000	50,000
Low-Fire Steady-State Output[1]	28,800	38,400	48,000	54,625	28,800	38,400	47,500
AFUE[2]	96	96	96	95	96	96	95
Tons AC @ 0.5” ESP	1.5-3.0	2.0-5.0	2.0-5.0	2.0-5.0	1.5-4.0	2.0-5.0	2.0-5.0
Temperature Rise Range (°F)	20-50	35-65	35-65	35-65	20-50	20-50	25-55
Circulator Blower							
Size (D x W)	10" X 8"	11" X 10"	11" X 10"	11" X 10"	10"X 10"	11" X 10"	11" X 10"
Horespower @ 1050 RPM	3/4	1	1	1	3/4	1	1
Speed	Variable	Variable	Variable	Variable	Variable	Variable	Variable
Vent Diameter[3]	2"	3"	3"	3"	2"	3"	3"
No. of Burners	3	4	5	5	3	4	5
Disposable Filter (in^2)	731	683	853	981	731	975	1,056
Electrical Data							
Min. Circuit Ampacity (amps)[4]	6.0	14.2	14.2	14.2	6.0	14.2	14.2
Max. Overcurrent Protection[5]	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Ship Weight (lbs)	135	145	170	170	139	165	170

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.

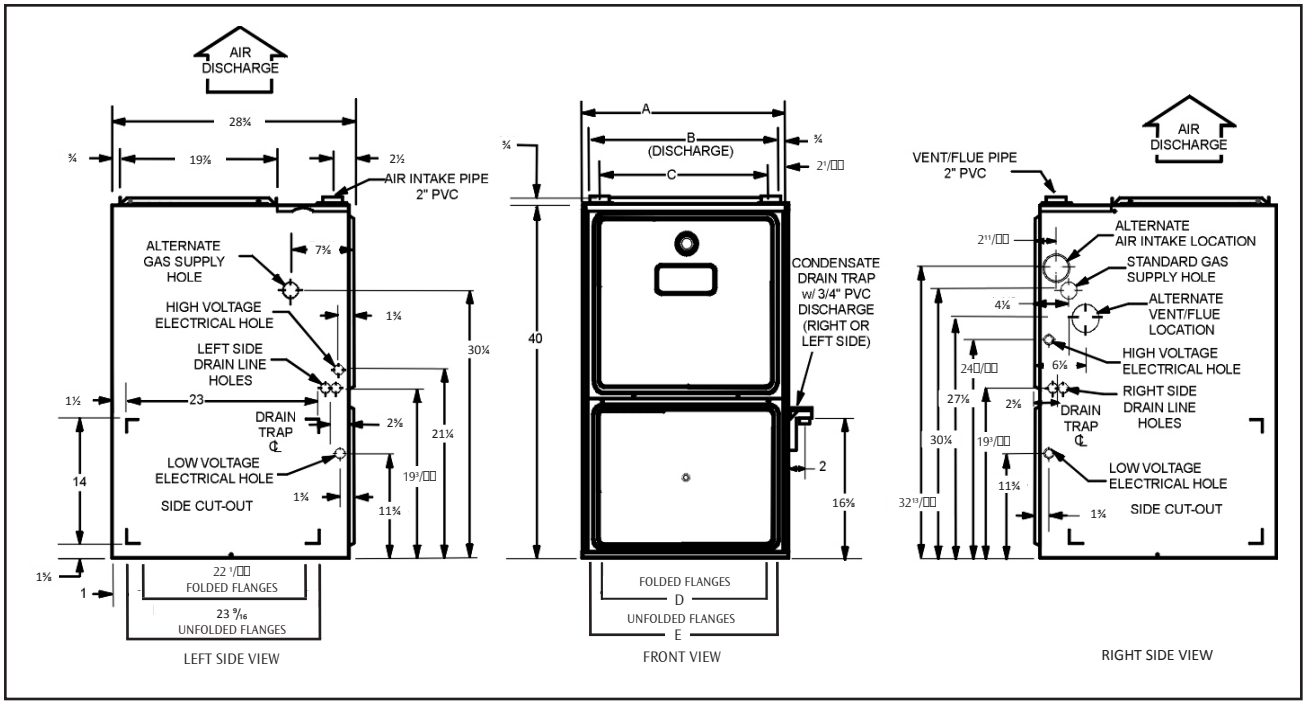
4 Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

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.

GMVM96 DIMENSIONS



MODEL	W	D	H
GMVM960603BX	17½”	28¾"	40¾"
GMVM960805CX	21"	28¾"	40¾"
GMVM961005DX	24½”	28¾"	40¾"
GMVM961155DX	24½”	28¾"	40¾"

A	B	C	D	E
17½”	16"	13⅛"	12⅛"	13⅝"
21"	19½”	16⅛"	16"	17½”
24½”	23"	20⅝"	19⅜"	20⅞"
24½”	23"	20⅝"	19⅜"	20⅞"

NOTES:

- 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.
- Line voltage wiring can enter through the right or left side of the furnace. Low-voltage wiring can enter through the right or left side of furnace.
- Conversion kits for high-altitude natural gas operation are available. Contact your Goodman distributor or dealer for details.
- Installer must supply following gas line fittings, according to which entrance is used:
  Left—Two 90º elbows, one close nipple, straight pipe
  Right—Straight pipe to reach gas valve
- For bottom return: Failure to unfold flanges may reduce airflow by up to 18%. This could result in performance and noise issues.

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

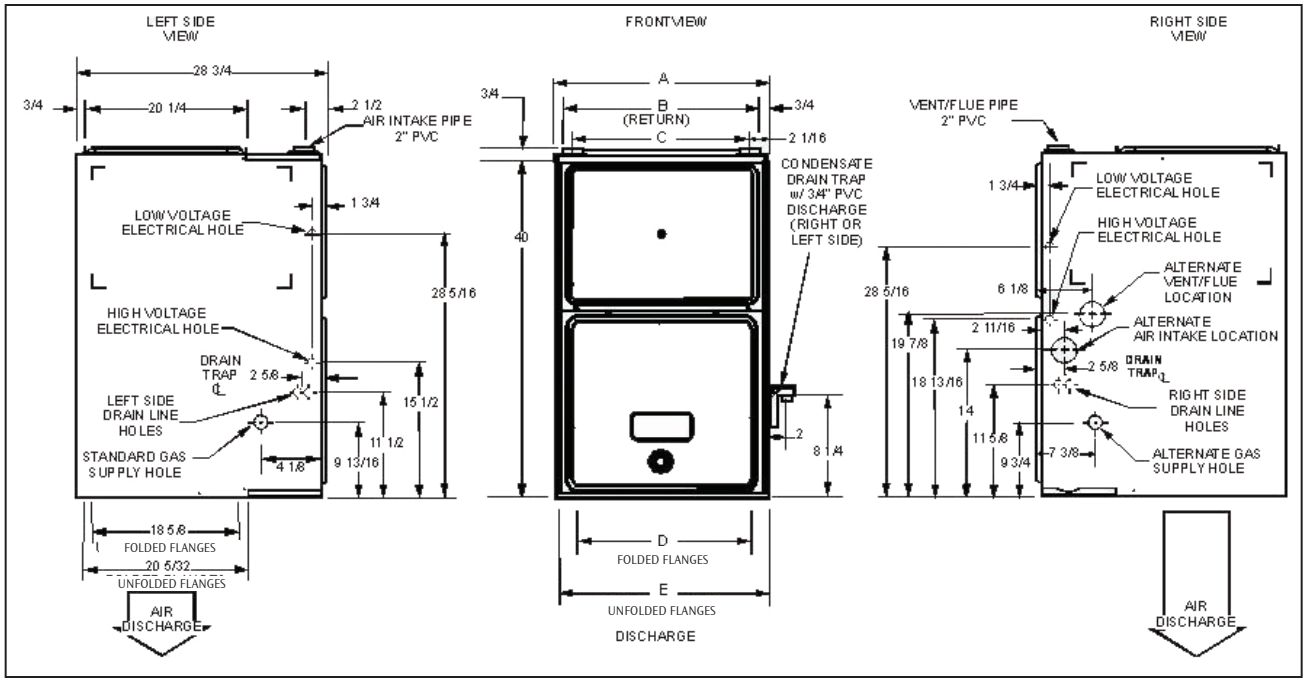
POSITION	SIDES	REAR	FRONT	BOTTOM	FLUE	TOP
Upflow	0”	0”	3”	C	0”	1”
Horizontal	6”	0”	3”	C	0”	6”

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

NOTES

- 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.

GCVM96 Dimensions



Model	W	D	H
GCVM960604CX	21"	28¾"	40¾"
GCVM960805DX	24½"	28¾"	40¾"
GCVM961005DX	24½"	28¾"	40¾"

A	B	C	D	E
21"	19½"	16⅛"	18"	19½"
24½"	23"	20⅝"	21½"	23"
24½"	23"	20⅝"	21½"	23"

Notes:

- 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.
- Line voltage wiring can enter through the right or left side of the furnace. Low-voltage wiring can enter through the right or left side of furnace.
- Conversion kits for high-altitude natural gas operation are available. Contact your Goodman distributor or dealer for details.
- Installer must supply following gas line fittings, according to which entrance is used:
  Left—Two 90º elbows, one close nipple, straight pipe
  Right—Straight pipe to reach gas valve
- For bottom return: Failure to unfold flanges may reduce airflow by up to 18%. This could result in performance and noise issues.

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.

Notes

- 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.

GMVM96 Airflow Data — Cooling Speeds

GMVM960603BX

High Stage			Low Stage		
Tap	Adjust	CFM*	Tap	Adjust	CFM*
A	Minus(-)	567	A	Minus(-)	351
	Normal	630		Normal	390
	Plus (+)	693		Plus (+)	429
B	Minus(-)	720	B	Minus(-)	495
	Normal	800		Normal	550
	Plus (+)	880		Plus (+)	605
C	Minus(-)	900	C	Minus(-)	612
	Normal	1000		Normal	680
	Plus (+)	1100		Plus (+)	748
D	Minus(-)	1089	D	Minus(-)	720
	Normal	1210		Normal	800
	Plus (+)	1331		Plus (+)	880

* @ .1" - .8" w.c. ESP

GVMV960805CX

High Stage			Low Stage		
Tap	Adjust	CFM*	Tap	Adjust	CFM*
A	Minus(-)	747	A	Minus(-)	486
	Normal	830		Normal	540
	Plus (+)	913		Plus (+)	594
B	Minus(-)	981	B	Minus(-)	675
	Normal	1090		Normal	750
	Plus (+)	1199		Plus (+)	825
C	Minus(-)	1314	C	Minus(-)	882
	Normal	1460		Normal	980
	Plus (+)	1606		Plus (+)	1078
D	Minus(-)	1620	D	Minus(-)	1089
	Normal	1800		Normal	1210
	Plus (+)	1980		Plus (+)	1331

* @ .1" - .8" w.c. ESP

GMVM961005DX

High Stage			Low Stage		
Tap	Adjust	CFM*	Tap	Adjust	CFM*
A	Minus(-)	711	A	Minus(-)	459
	Normal	790		Normal	510
	Plus (+)	869		Plus (+)	561
B	Minus(-)	990	B	Minus(-)	639
	Normal	1100		Normal	710
	Plus (+)	1210		Plus (+)	781
C	Minus(-)	1269	C	Minus(-)	819
	Normal	1410		Normal	910
	Plus (+)	1551		Plus (+)	1001
D	Minus(-)	1647	D	Minus(-)	1044
	Normal	1830		Normal	1160
	Plus (+)	2013		Plus (+)	1276

* @ .1" - .8" w.c. ESP

GMVM961155DX

High Stage			Low Stage		
Tap	Adjust	CFM*	Tap	Adjust	CFM*
A	Minus(-)	711	A	Minus(-)	459
	Normal	790		Normal	510
	Plus (+)	869		Plus (+)	561
B	Minus(-)	990	B	Minus(-)	639
	Normal	1100		Normal	710
	Plus (+)	1210		Plus (+)	781
C	Minus(-)	1269	C	Minus(-)	819
	Normal	1410		Normal	910
	Plus (+)	1551		Plus (+)	1001
D	Minus(-)	1647	D	Minus(-)	1044
	Normal	1830		Normal	1160
	Plus (+)	2013		Plus (+)	1276

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.
- Operation is recommended below .5” w.c. ESP in heating mode. Operating CFM between .5” and .8” w.c. is tabulated for cooling purposes only.

GMVM96 Airflow Data — Heating Speeds

GMVM960603BX
(Rise Range: 20 - 50°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	855	62
Normal	950	56
Plus (+)	1,045	51
Minus(-)	945	56
Normal	1,050	51
Plus (+)	1,155	46
Minus(-)	1,053	50
Normal	1,170	45
Plus (+)	1,287	41
Minus(-)	1,143	46
Normal	1,270	42
Plus (+)	1,397	38

* @ .1" - .5" w.c. ESP

GMVM960805CX
(Rise Range: 35 - 65°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,440	49
Normal	1,600	44
Plus (+)	1,760	40
Minus(-)	1,521	47
Normal	1,690	42
Plus (+)	1,859	38
Minus(-)	1,620	44
Normal	1,800	39
Plus (+)	1,980	36
Minus(-)	1,701	42
Normal	1,890	37
Plus (+)	2,079	34

* @ .1" - .5" w.c. ESP

GMVM961005DX
(Rise Range: 35 - 65°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,629	54
Normal	1,810	49
Plus (+)	1,991	44
Minus(-)	1,665	53
Normal	1,850	48
Plus (+)	2,035	43
Minus(-)	1,701	52
Normal	1,890	47
Plus (+)	2,079	43
Minus(-)	1,746	51
Normal	1,940	46
Plus (+)	2,134	41

* @ .1" - .5" w.c. ESP

GMVM961155DX
(Rise Range: 35 - 65°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,629	62
Normal	1,810	56
Plus (+)	1,991	51
Minus(-)	1,665	60
Normal	1,850	54
Plus (+)	2,035	49
Minus(-)	1,701	59
Normal	1,890	53
Plus (+)	2,079	48
Minus(-)	1,746	58
Normal	1,940	52
Plus (+)	2,134	47

* @ .1" - .5" w.c. ESP

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.
- Operation is recommended below .5” w.c. ESP in heating mode. Operating CFM between .5” and .8” w.c. is tabulated for cooling purposes only.
- High-fire CFM shown. CFM will vary proportionally with the gas valve BTU/H input.

GCVM96 Airflow Data — Cooling Speeds

GCVM960604CX

High- or Single Stage			Low Stage		
Cooling Speed Tap	Adjust Tap	CFM *	Cooling Speed Tap	Adjust Tap	CFM *
A	Minus(-)	594	A	Minus(-)	333
	Normal	660		Normal	370
	Plus (+)	726		Plus (+)	407
B	Minus(-)	774	B	Minus(-)	486
	Normal	860		Normal	540
	Plus (+)	946		Plus (+)	594
C	Minus(-)	1035	C	Minus(-)	711
	Normal	1150		Normal	790
	Plus (+)	1265		Plus (+)	869
D	Minus(-)	1323	D	Minus(-)	882
	Normal	1470		Normal	980
	Plus (+)	1617		Plus (+)	1078

GCVM960805DX

High- or Single Stage			Low Stage		
Cooling Speed Tap	Adjust Tap	CFM *	Cooling Speed Tap	Adjust Tap	CFM *
A	Minus(-)	810	A	Minus(-)	477
	Normal	900		Normal	530
	Plus (+)	990		Plus (+)	583
B	Minus(-)	990	B	Minus(-)	657
	Normal	1100		Normal	730
	Plus (+)	1210		Plus (+)	803
C	Minus(-)	1287	C	Minus(-)	837
	Normal	1430		Normal	930
	Plus (+)	1573		Plus (+)	1023
D	Minus(-)	1692	D	Minus(-)	1098
	Normal	1880		Normal	1220
	Plus (+)	2068		Plus (+)	1342

* @ .1” - .8” w.c. ESP

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.
- Operation is recommended below .5” w.c. ESP in heating mode. Operating CFM between .5” and .8” w.c. is tabulated for cooling purposes only.

GCVM961005DX

High- or Single Stage			Low Stage		
Cooling Speed Tap	Adjust Tap	CFM *	Cooling Speed Tap	Adjust Tap	CFM *
A	Minus(-)	702	A	Minus(-)	450
	Normal	780		Normal	500
	Plus (+)	858		Plus (+)	550
B	Minus(-)	963	B	Minus(-)	666
	Normal	1070		Normal	740
	Plus (+)	1177		Plus (+)	814
C	Minus(-)	1242	C	Minus(-)	828
	Normal	1380		Normal	920
	Plus (+)	1518		Plus (+)	1012
D	Minus(-)	1602	D	Minus(-)	1044
	Normal	1780		Normal	1160
	Plus (+)	1958		Plus (+)	1276

* @ .1” - .8” w.c. ESP

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.
- Operation is recommended below .5” w.c. ESP in heating mode. Operating CFM between .5” and .8” w.c. is tabulated for cooling purposes only.

GCVM96 Airflow Data — Heating Speeds

GCVM960604CX
ACVM960604CX
(Rise Range: 20 - 50°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,098	48
Normal	1,220	44
Plus (+)	1,342	40
Minus(-)	1,206	44
Normal	1,340	40
Plus (+)	1,474	36
Minus(-)	1,314	40
Normal	1,460	36
Plus (+)	1,606	33
Minus(-)	1,431	37
Normal	1,590	33
Plus (+)	1,749	30

* @ .1" - .5" w.c. ESP

GCVM960805DX
ACVM960805DX
(Rise Range: 20 - 50°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,440	49
Normal	1,600	44
Plus (+)	1,760	40
Minus(-)	1,539	46
Normal	1,710	41
Plus (+)	1,881	38
Minus(-)	1,620	44
Normal	1,800	39
Plus (+)	1,980	36
Minus(-)	1,719	41
Normal	1,910	37
Plus (+)	2,101	34

* @ .1" - .5" w.c. ESP

GCVM961005DX
(Rise Range: 25 - 55°F)

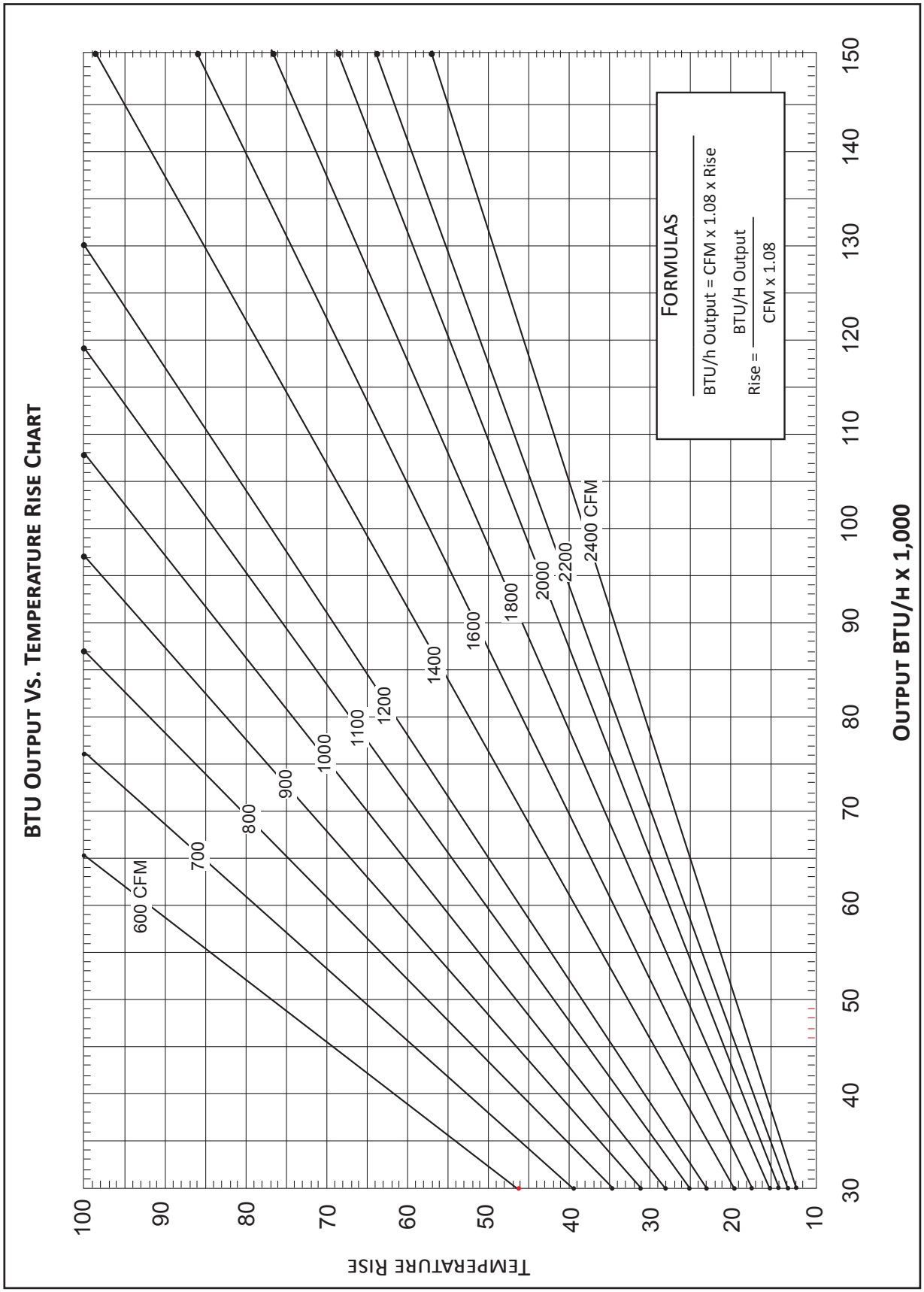
Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,557	56
Normal	1,730	51
Plus (+)	1,903	46
Minus(-)	1,593	55
Normal	1,770	49
Plus (+)	1,947	45
Minus(-)	1,656	53
Normal	1,840	48
Plus (+)	2,024	43
Minus(-)	1,683	52
Normal	1,870	47
Plus (+)	2,057	43

* @ .1" - .5" w.c. ESP

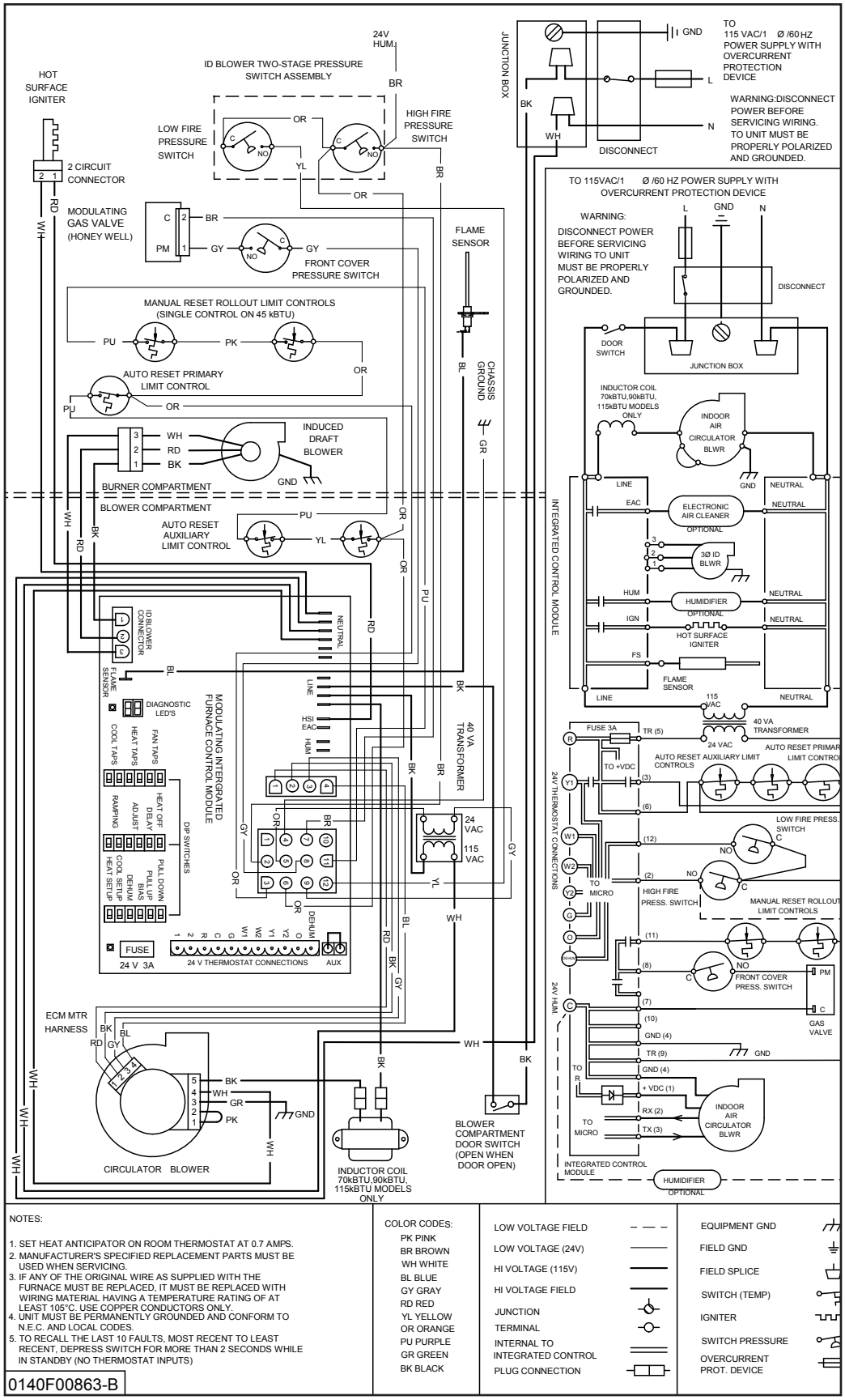
Notes

- 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.
- Operation is recommended below .5” w.c. ESP in heating mode. Operating CFM between .5” and .8” w.c. is tabulated for cooling purposes only.
- High-fire CFM shown. CFM will vary proportionally with the gas valve BTU/H input.

Temperature Rise Range Chart



WIRING DIAGRAM



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 10 FAULTS, MOST RECENT TO LEAST RECENT, DEPRESS SWITCH FOR MORE THAN 2 SECONDS WHILE IN STANDBY (NO THERMOSTAT INPUTS)

0140F00863-B

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

LOW VOLTAGE FIELD
LOW VOLTAGE (24V)
HI VOLTAGE (115V)
HI VOLTAGE FIELD
JUNCTION
TERMINAL
INTERNAL TO INTEGRATED CONTROL
PLUG CONNECTION
EQUIPMENT GND
FIELD GND
FIELD SPLICE
SWITCH (TEMP)
IGNITER
SWITCH PRESSURE
OVERCURRENT PROT. DEVICE

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 or the unit for the most up-to-date wiring.

Accessories

Model	Description	GMVM96 0603BX	GMVM96 0805CX	GMVM96 1005DX	GMVM96 1155DX	GCVM96 0604CX	GCVM96 0805DX	GCVM96 1005DX
LPKM0D060UF	LP Conversion Kits	√						
LPKM0D080UF			√					
LPKM0D100UF				√				
LPKM0D115UF					√			
LPKM0D060CF						√		
LPKM0D080CF							√	
LPKM0D100CF								√
EFR01	External Filter Rack	√	√	√	√	√	√	√
DCVK-20	Horizontal/Vertical Concentric Vent Kit (2”)	√	√	√	---	√	---	---
DCVK-30	Horizontal/Vertical Concentric Vent Kit (3”)	√	√	√	√	√	√	√
CFB21	Downflow Floor Base	---	---	---	---	√	---	---
CFB24	Downflow Floor Base	---	---	---	---	---	√	√
0170K00000S	Flush-mount vent kit	√	√	√	√	√	√	√

Notes

√ Indicates available for this model

- For installation in Canada, gas furnaces are certified only to 4,500’.

Thermostats

CTK03 ComfortNet-compatible Control
(See ComfortNet website (www.comfortnet1.com) for details.)

CTK02 ComfortNet-compatible Control
(See ComfortNet website (www.comfortnet1.com) for details.)

CTK01 ComfortNet-compatible Control
(See ComfortNet website (www.comfortnet1.com) for details.)

Goodman Manufacturing Company, L.P., reserves the right to discontinue, or change at any time, specifications or designs without notice or without incurring obligations. © 2013 • Goodman Manufacturing Company, L.P. • Houston, Texas • Printed in the USA.