



Air Conditioning & Heating

# GMES96-U

HEATING INPUT: 40,000–80,000 BTU/H

ULTRA LOW NOX, SINGLE-STAGE,  
MULTI-SPEED ECM GAS FURNACE  
UP TO 96% AFUE



### Contents

Nomenclature.....	2
Product Specifications.....	3
Dimensions.....	4
Airflow Specifications.....	5
Accessories.....	5
Wiring Diagram.....	6

### Standard Features

- Heavy-duty stainless-steel tubular heat exchanger
- Super-ferritic Stainless-steel secondary heat exchanger
- Single-stage gas valve
- Durable Silicon Nitride igniter
- Quiet multi-speed induced draft blower
- Self-diagnostic control board with constant memory fault code history output to a LED
- All models comply with California 14 ng/J ultra Low NOx emissions standard
- For installation in California’s South Coast Air Quality Management District (SCAQMD) only.
- AHRI Certified; ETL Listed

### Cabinet Features

- Designed for multi-position installation — GMES96: 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 — GMES96: upflow models only
- Convenient left or right connection for gas and electrical service
- Cabinet air leakage ( $Q_{Leak} \leq 1.4\%$ )
- 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 UNIT  
REPLACEMENT  
LIMITED  
WARRANTY\*

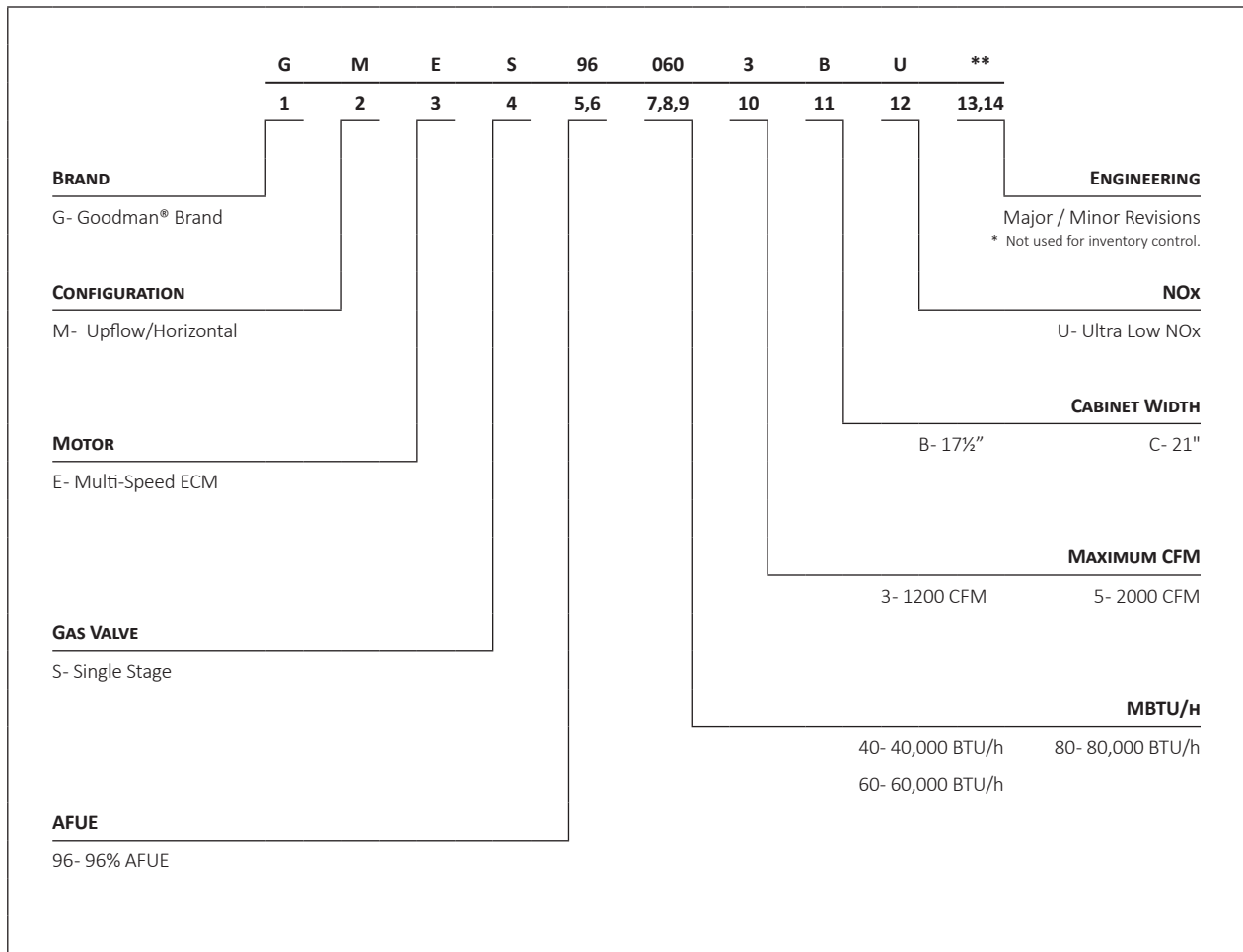
10 PARTS  
LIMITED  
WARRANTY\*



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.amana-hac.com](http://www.amana-hac.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.



	GMES96 0403BU	GMES96 0603BU	GMES96 0805CU
<b>HEATING DATA</b>			
High Fire Input <sup>1</sup>	40,000	60,000	80,000
High Fire Output <sup>1</sup>	38,400	57,600	76,800
AFUE <sup>2</sup>	96	96	96
Temperature Rise Range (°F)	15- 45	30- 60	30- 60
Vent Diameter <sup>3</sup>	2" - 3"	2" - 3"	2" - 3"
No. of Burners Ports	2	3	4
<b>CIRCULATOR BLOWER</b>			
Available AC @ 0.5" ESP	1.5- 3	1.5- 3	2.5- 5
Size (D x W)	10" x 8"	11" x 8"	11" x 10"
Horsepower @ 1075 RPM	½	½	1
Speed	5	5	5
<b>FILTER SIZE (IN<sup>2</sup>) (QTY)</b>	(1) 16 x 25 (side or bottom)	(1) 16 x 25 (side or bottom)	(1) 20 x 25 (bottom) or (2) 16 x 25 (side)
<b>ELECTRICAL DATA</b>			
Min. Circuit Ampacity <sup>4</sup>	10.8	10.8	16.1
Max. Overcurrent Device (amps) <sup>5</sup>	15	15	20
<b>SHIPPING WEIGHT (LBS)</b>	115	120	145

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

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

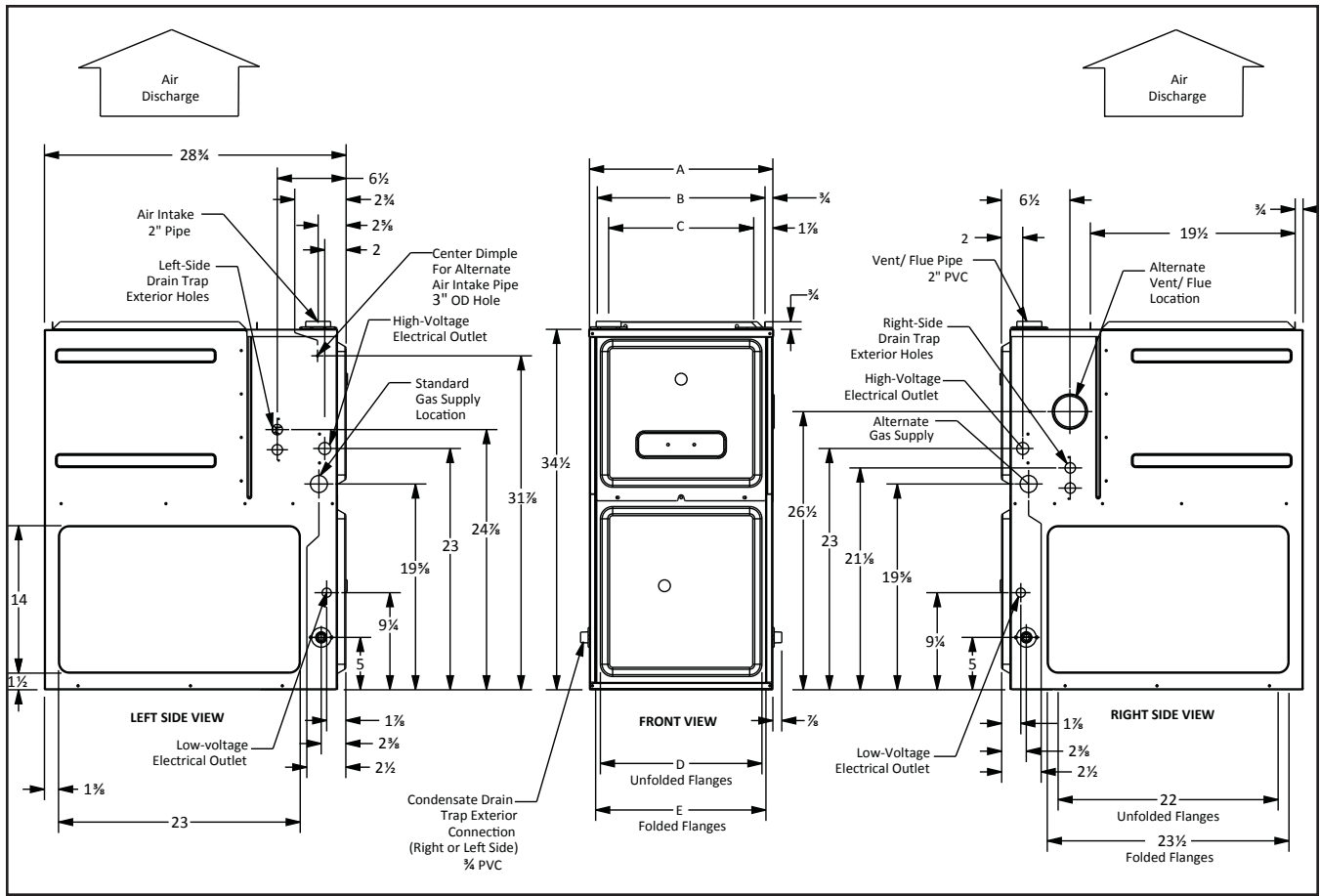
<sup>3</sup> Installer must supply one or two PVC pipes: one for combustion air (optional) and one for the flue outlet (required). Vent pipe must be either 2" or 3" in diameter, depending upon furnace input, number of elbows, length of run and installation (1 or 2 pipes). The optional Combustion Air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



MODEL	W	D	H
GMES960403BU	17 1/2"	28 7/8"	34 1/2"
GMES960603BU	17 1/2"	28 7/8"	34 1/2"
GMES960805CU	21"	28 7/8"	34 1/2"

	AIR DISCHARGE			AIR RETURN	
	A	B	C	D	E
GMES960403BU	17 1/2"	16"	13 7/8"	12 1/8"	13 5/8"
GMES960603BU	17 1/2"	16"	13 7/8"	12 1/8"	13 5/8"
GMES960805CU	21"	19 1/2"	17 7/8"	16"	17 1/2"

**MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS**

POSITION	SIDES	REAR	FRONT	BOTTOM	FLUE	TOP
Upflow	0"	0"	1"	C	0"	1"
Horizontal	6"	0"	AL	C	0"	4"

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

(CFM & TEMPERATURE RISE VS. EXTERNAL STATIC PRESSURE)

MODEL	WIRE COLOR	FUNCTION	TONS AC <sup>1</sup>	EXTERNAL STATIC PRESSURE, (INCHES WATER COLUMN)													
				0.1		0.2		0.3		0.4		0.5		0.6	0.7	0.8	0.9
				CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	CFM	CFM	CFM
GMES96 0403BU	Red	High-Cool	3	1350	NA	1310	NA	1273	NA	1234	NA	1198	NA	1156	1117	1078	1044
	Blue	Med Hi-Heat	2.5	1247	29	1212	30	1167	31	1129	32	1087	33	1043	997	952	916
	Brown	Med Low	2	1151	31	1107	32	1067	35	1021	35	977	36	928	880	835	799
	Black	Low	1.5	922	39	870	41	819	43	763	NA	704	NA	643	592	539	490
	Orange	Fan Only	1	779	NA	661	NA	588	NA	516	NA	455	NA	394	352	N/A	N/A
GMES96 0603BU	Red	High-Cool	3	1364	NA	1332	NA	1285	NA	1246	NA	1206	NA	1170	1127	1083	1065
	Blue	Med Hi-Heat	2.5	1259	42	1214	44	1175	45	1135	47	1091	49	1053	1008	957	914
	Brown	Med Low	2	1165	46	1121	48	1073	50	1033	52	984	54	929	876	832	796
	Black	Low	1.5	936	57	884	60	829	NA	770	NA	706	NA	645	593	539	492
	Orange	Fan only	1	815	NA	665	NA	596	NA	517	NA	451	NA	396	345	Na	NA
GMES96 0805CU	Red	High-Cool	5	2298	NA	2260	NA	2222	NA	2182	NA	2149	NA	2114	2087	2022	1889
	Blue	Med Hi-Heat	4	1701	42	1641	43	1600	45	1548	46	1502	47	1454	1411	1366	1319
	Brown	Med Low	3.5	1575	45	1528	47	1478	48	1426	50	1373	52	1323	1272	1220	1165
	Black	Low	2.5	1302	55	1257	60	1187	NA	1126	NA	1063	NA	1004	936	871	829
	Orange	Fan only	1.5	1056	NA	981	NA	915	NA	842	NA	764	NA	683	604	540	484

<sup>1</sup> 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 data for 0.6" w.c. to 0.8" w.c. is shown for air conditioning purposes only.
- 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.

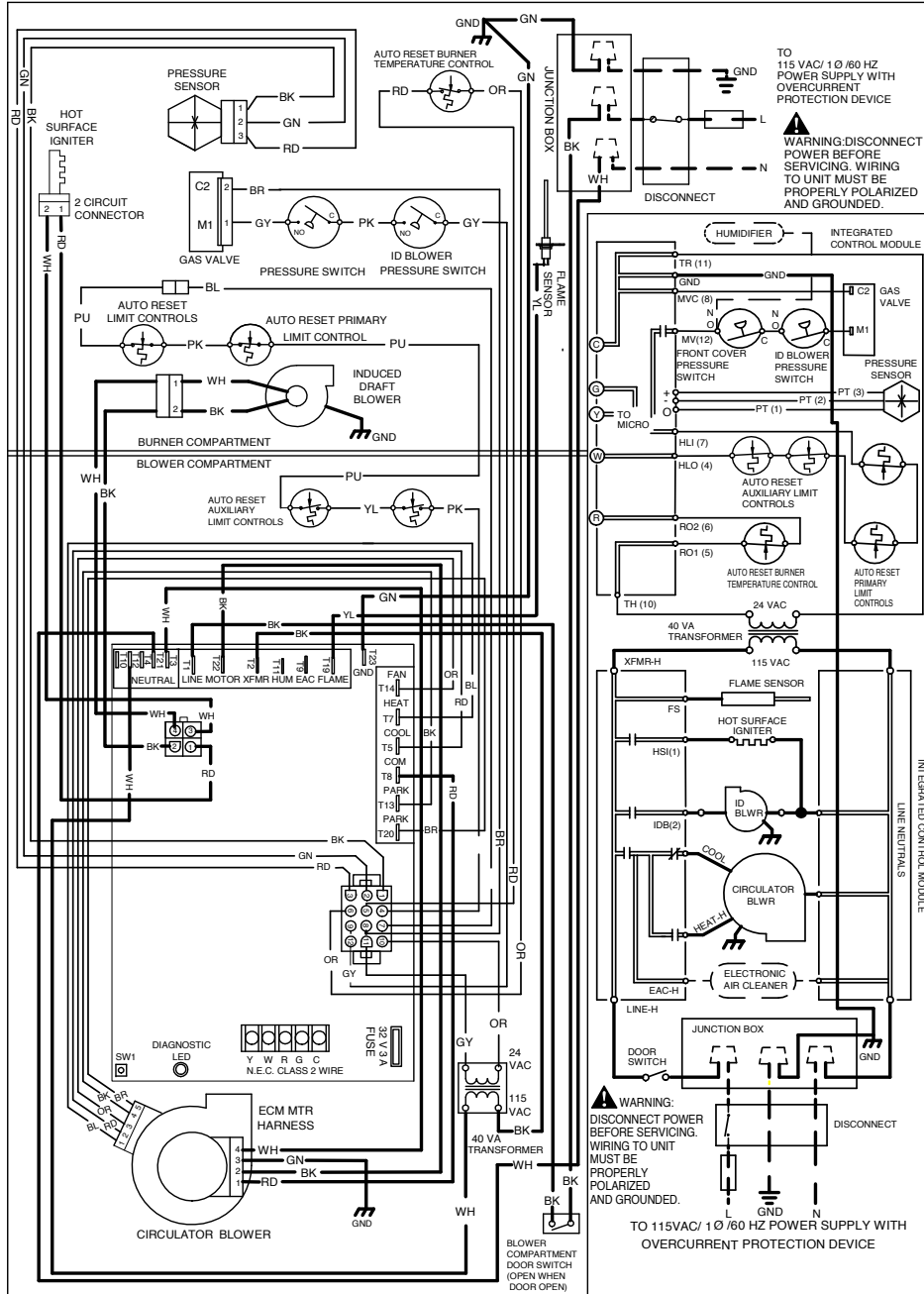
**MINIMUM FILTER SIZES**

	GMES96 0403BU	GMES96 0603BU	GMES96 0805CU
Filter Size (in <sup>2</sup> ) (Qty)	(1) 16 x 25 (side or bottom)		(1) 20 x 25 (bottom) or (2) 16 x 25 (side)

Note: Other size filters of equal or greater dimensions may be used. Filters may also be centrally located.

**ACCESSORIES**

MODEL	DESCRIPTION	GMES96 0403BU	GMES96 0603BU	GMES96 0805CU
CVENT-2	Concentric Vent Kit (2")	√	√	√
CVENT-3	Concentric Vent Kit (3")	√	√	√
RF000142	Drain Kit-Horizontal Left Vertical Flue	√	√	√
EFRO2	External Filter Rack with 16"x25" Permanent Filter	√	√	---
0170K00000S	Flush Mount Vent Kit- 3" or 2"	√	√	√
0170K00001S	Flush Mount Vent Kit- 2"	√	√	√



LED ACTIVITY	RED	AMBER	GREEN
STEADY ON	CONTROL FAULT DETECTED HARD LOCKOUT	OEM TEST MODE	STANDBY NORMAL OPERATION NO THERMOSTAT REQUESTS
RAPID FLASH	REVERSED LINE VOLTAGE POLARITY	FIELD TEST MODE	CLEAR ERROR HISTORY
1 FLASH	SYSTEM LOCKOUT - RETRIES EXCEEDED	LOW FLAME SENSE	CALL FOR HEATING
2 FLASHES	PS NULL ERROR: INCONSISTENT READING WITH INDUCER OFF	ID PLUG FAILURE	CALL FOR COOLING
3 FLASHES	PS NULL ERROR: INCONSISTENT READING WITH INDUCER ON	CONTROL FUSE OPEN	CONTINUOUS FAN OPERATION
4 FLASHES	HIGH LIMIT SWITCH OPEN	---	---
5 FLASHES	FLAME PRESENT WITH GAS VALVE OFF	---	---
6 FLASHES	AUXILIARY LIMIT OPEN	---	---
7 FLASHES	GAS VALVE CIRCUIT SHORTED	---	---
OFF NO LED ACTIVITY	NO 24 VAC POWER TO CONTROL		

NOTES:

1. SET HEAT ANTICIPATOR ON ROOM THERMOSTAT AT 0.7 AMPS.
2. MANUFACTURE'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. BLOWER SPEEDS SHOULD BE ADJUSTED BY INSTALLER TO MATCH THE INSTALLATION REQUIREMENTS SO AS TO PROVIDE THE CORRECT HEATING TEMPERATURE RISE AND THE CORRECT COOLING CFM.
5. UNIT MUST BE PERMANENTLY GROUNDED AND CONFORM TO N.E.C. AND LOCAL CODES.

LOW VOLTAGE (24V) ———

LOW VOLTAGE FIELD ———

HI VOLTAGE (115V) ———

HI VOLTAGE FIELD ———

JUNCTION TERMINAL —●—

OUTPUT INTERNAL TO INTEGRATED CONTROL —○—

PLUG CONNECTION —□—

EQUIPMENT GND

FIELD GND

FIELD SPICE

SWITCH (TEMP.)

IGNITER

SWITCH (PRESS.)

OVERCURRENT PROT. DEVICE

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

0140F02069-D

**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.

