



Air Conditioning & Heating

**NOMINAL COOLING CAPACITY: 18,000 TO 36,000 BTU/H**

**NOMINAL HEATING CAPACITY: 18,000 TO 36,000 BTU/H**

# GSZ13LL

## ENERGY-EFFICIENT R-410A

### 13 SEER SPLIT SYSTEM HEAT PUMP

### 1½ TO 3 TONS



#### Contents

Nomenclature .....	2
Product Specifications .....	3
Expanded Cooling Data .....	4
Expanded Heating Data .....	12
AHRI Ratings .....	13
Wiring Diagram .....	14
Dimensions .....	15
Accessories .....	16

#### Standard Features

- R-410A chlorine-free refrigerant
- High-efficiency scroll compressor
- SmartShift® technology to ensure quiet reliable defrost
- Bi-flow liquid line filter drier and piston assembly (must be field-installed)
- Factory-installed suction-line accumulator
- Factory-installed compressor crankcase heater
- Factory-installed high-capacity muffler
- High- and low-pressure switches
- Service valves with sweat connections and easy access to gauge ports
- Copper tube/enhanced aluminum fin coil
- Fully charged for 15' of tubing length
- Contactor with lug connection
- Ground lug connection
- AHRI Certified; ETL Listed

#### Cabinet Features

- Goodman® brand louvered sound control top design
- Steel louver coil guard
- Heavy-gauge galvanized-steel cabinet
- Attractive Architectural Gray powder-paint finish with 500-hour salt-spray approval
- Top and side maintenance access
- When properly anchored, meets the 2010 Florida Building Code unit integrity requirements for hurricane-type winds (Anchor bracket kits available.)



\* Complete warranty details available from your local dealer or at [www.goodmanmfg.com](http://www.goodmanmfg.com). To receive the 10-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Quebec.

NOMENCLATURE

	<b>G</b>	<b>S</b>	<b>Z</b>	<b>13</b>	<b>036</b>	<b>1</b>	<b>A</b>	<b>A</b>	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4,5</b>	<b>6,7,8</b>	<b>9</b>	<b>10</b>	<b>11</b>	
<b>Brand</b>	Goodman® (Standard Feature Set Models)						<b>Engineering *</b>		
							Minor Revision		
<b>Product Category</b>	Split System					<b>Engineering *</b>			
						Major Revision			
<b>Unit Type</b>	Condenser R-410A					<b>Electrical</b>			
	Heat Pump R-410A					1 208/230 V, 1 Phase, 60 Hz			
						2 220/240 V, 1 Phase, 50 Hz			
<b>Efficiency</b>	13 SEER						<b>Nominal Capacity</b>		
	14 SEER						018 1½ Tons 036 3 Tons		
	16 SEER						019 1½ Tons 037 3 Tons		
							024 2 Tons 042 3½ Tons		
							025 2 Tons 048 4 Tons		
							030 2½ Tons 060 5 Tons		
							031 2½ Tons		

\* Neither used for order entry or inventory management.



**SPECIFICATIONS**

	<b>GSZ13 0191A*</b>	<b>GSZ13 0251B*</b>	<b>GSZ13 0311A*</b>	<b>GSZ13 0371A*</b>
<b>NOMINAL CAPACITIES</b>				
Cooling (BTU/h)	18,000	24,000	30,000	36,000
Heating (BTU/h)	18,000	24,000	30,000	36,000
Decibels	71	73	72	74
<b>COMPRESSOR</b>				
RLA	9.0	13.5	14.1	16.7
LRA	48.0	58.3	73.0	79.0
Type	Scroll	Scroll	Scroll	Scroll
<b>CONDENSER FAN MOTOR</b>				
Horsepower	1/8	1/8	1/8	1/4
FLA	0.70	0.70	0.70	1.50
<b>REFRIGERATION SYSTEM</b>				
<b>REFRIGERANT LINE SIZE<sup>1</sup></b>				
Liquid Line Size ("O.D.)	3/8"	3/8"	3/8"	3/8"
Suction Line Size ("O.D.)	3/4"	3/4"	3/4"	7/8"
<b>REFRIGERANT CONNECTION SIZE</b>				
Liquid Valve Size ("O.D.)	3/8"	3/8"	3/8"	3/8"
Suction Valve Size ("O.D.)	3/4"	3/4"	3/4"	3/4"
Valve Connection Type	Sweat	Sweat	Sweat	Sweat
Refrigerant Charge	119	104	124	122
Shipped with Orifice Size	None	None	None	None
<b>ELECTRICAL DATA</b>				
Volts / Hz / Phase	208/230-60-1	208/230-60-1	208/230-60-1	208/230-60-1
Minimum Circuit Ampacity <sup>2</sup>	12	17.5	18.3	22.4
Max. Overcurrent Protection <sup>3</sup>	20	30	30	35
Min / Max Volts	197 / 253	197 / 253	197 / 253	197 / 253
Electrical Conduit Size	1/2" or 3/4"	1/2" or 3/4"	1/2" or 3/4"	1/2" or 3/4"
<b>SHIP WEIGHT (LBS)</b>				
	198	162	202	182

<sup>1</sup> Tested and rated in accordance with AHRI Standard 210/240

<sup>2</sup> Wire size should be determined in accordance with National Electrical Codes; extensive wire runs will require larger wire sizes

<sup>3</sup> Must use time-delay fuses or HACR-type circuit breakers of the same size as noted.

**NOTES**

- Always check the rating plate for electrical data on the unit being installed.
- Installer will need to supply 3/8" to 1 1/8" adapters for suction line connections.
- Unit is charged with refrigerant for 15' of 3/8" liquid line. System charge must be adjusted per Installation Instructions Final Charge Procedure.
- Installation of these units requires the specified TXV Kit to be installed on the indoor coil. THE SPECIFIED TXV IS DETERMINED BY THE OUTDOOR UNIT NOT THE INDOOR COIL.



















**EXPANDED HEATING DATA**

**GSZ130191A\* + ARUF18B14\*\***

	OUTDOOR AMBIENT TEMPERATURE																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	21.6	20.5	19.3	18.0	17.2	16.7	15.5	14.3	13.1	12.1	11.1	10.5	10.1	9.1	8.0	7.0	6.0	4.9
T/R	33.4	31.6	29.7	27.8	26.5	25.7	23.9	22.0	20.2	18.6	17.2	16.2	15.6	14.0	12.4	10.8	9.2	7.6
kW	1.49	1.46	1.42	1.39	1.37	1.35	1.32	1.28	1.47	1.43	1.39	1.37	1.35	1.31	1.27	1.23	1.18	1.14
Amps	8.1	7.5	7.0	6.5	6.3	6.1	5.7	5.4	5.2	4.9	4.6	4.5	4.4	4.2	3.9	3.6	3.3	2.9
COP	4.24	4.11	3.96	3.80	3.68	3.61	3.44	3.26	2.60	2.47	2.34	2.25	2.19	2.03	1.86	1.67	1.48	1.26
EER	14.5	14.0	13.5	13.0	12.6	12.3	11.8	11.1	8.9	8.4	8.0	7.7	7.5	6.9	6.4	5.7	5.1	4.3
HI PR	423	405	390	373	364	357	343	329	316	301	289	282	277	267	257	246	237	229
LO PR	144	134	125	115	109	104	96	86	77	69	61	56	54	46	40	33	29	23

**GSZ130251B\* + ARUF24B14\*\***

	OUTDOOR AMBIENT TEMPERATURE																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	28.9	27.4	25.8	24.1	23.0	22.3	20.7	19.1	16.8	15.5	14.3	13.5	13.0	11.7	10.3	9.0	7.7	6.3
T/R	33.5	31.7	29.8	27.9	26.6	25.8	24.0	22.1	19.5	18.0	16.5	15.6	15.0	13.5	12.0	10.4	8.9	7.3
kW	1.99	1.94	1.89	1.85	1.82	1.80	1.75	1.71	1.96	1.91	1.85	1.82	1.80	1.74	1.69	1.63	1.57	1.52
Amps	10.8	9.9	9.3	8.7	8.3	8.1	7.6	7.2	6.9	6.5	6.2	6.0	5.9	5.6	5.1	4.8	4.4	3.9
COP	4.26	4.13	3.98	3.82	3.70	3.63	3.46	3.28	2.51	2.38	2.26	2.17	2.12	1.96	1.80	1.62	1.43	1.21
EER	14.6	14.1	13.6	13.1	12.7	12.4	11.8	11.2	8.6	8.1	7.7	7.4	7.2	6.7	6.1	5.5	4.9	4.1
HI PR	426	408	393	375	367	360	346	332	318	303	291	284	279	269	258	248	239	231
LO PR	132	123	115	106	100	96	88	79	71	63	56	52	50	42	36	31	27	21

**GSZ130311A\* + ARUF30B14\*\***

	OUTDOOR AMBIENT TEMPERATURE																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	33.9	32.1	30.2	28.3	27.0	26.2	24.3	22.4	20.6	19.0	17.5	16.5	15.9	14.3	12.6	11.0	9.4	7.7
T/R	31.4	29.8	28.0	26.2	25.0	24.2	22.5	20.8	19.0	17.6	16.2	15.3	14.7	13.2	11.7	10.2	8.7	7.1
kW	2.13	2.08	2.03	1.98	1.95	1.93	1.88	1.83	2.11	2.05	1.99	1.95	1.93	1.87	1.81	1.75	1.69	1.63
Amps	11.6	10.7	9.9	9.3	8.9	8.7	8.2	7.7	7.4	7.0	6.6	6.5	6.4	6.0	5.5	5.2	4.7	4.1
COP	4.65	4.51	4.35	4.17	4.05	3.97	3.78	3.58	2.86	2.71	2.57	2.47	2.41	2.23	2.04	1.84	1.63	1.38
EER	15.9	15.4	14.9	14.3	13.8	13.5	12.9	12.2	9.8	9.3	8.8	8.5	8.2	7.6	7.0	6.3	5.6	4.7
HI PR	389	373	358	343	335	328	316	303	290	277	266	260	255	245	236	226	218	210
LO PR	130	120	113	103	98	94	87	77	70	62	55	51	49	41	36	30	26	21

**GSZ130371A\* + ARUF36C14\*\***

	OUTDOOR AMBIENT TEMPERATURE																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	42.7	40.5	38.1	35.6	34.0	32.9	30.6	28.2	25.9	23.9	22.0	20.8	20.0	18.0	15.9	13.9	11.9	9.7
T/R	33.0	31.2	29.4	27.5	26.2	25.4	23.6	21.8	20.0	18.5	17.0	16.0	15.5	13.9	12.3	10.7	9.1	7.5
kW	2.72	2.65	2.59	2.52	2.49	2.46	2.40	2.33	2.68	2.61	2.53	2.49	2.46	2.38	2.30	2.23	2.15	2.08
Amps	14.8	13.6	12.7	11.8	11.4	11.1	10.4	9.9	9.4	8.9	8.4	8.2	8.1	7.6	7.0	6.6	6.0	5.3
COP	4.60	4.46	4.31	4.13	4.00	3.92	3.74	3.54	2.83	2.69	2.55	2.45	2.39	2.21	2.02	1.82	1.61	1.37
EER	15.7	15.3	14.7	14.1	13.7	13.4	12.8	12.1	9.7	9.2	8.7	8.4	8.2	7.6	6.9	6.2	5.5	4.7
HI PR	407	390	375	358	350	343	330	317	303	290	278	272	267	257	247	237	228	220
LO PR	134	124	116	107	101	97	89	79	72	64	56	52	50	43	37	31	27	21

Calculations are based on nominal CFM and 70 °F indoor dry bulb.

Amps = Outdoor unit amps (comp.+fan)  
kW = Total system power

# AHRI RATINGS

OUTDOOR UNIT	INDOOR UNITS COILS/AIR HANDLERS	COOLING CAPACITY (BTU/H)				TVA RATINGS <sup>3</sup>		HEATING CAPACITY (BTU/H)			CFM	AHRI #
		TOTAL	SENS.	SEER <sup>1</sup>	EER <sup>2</sup>	TOTAL	SENS.	Hi	HSPF <sup>4</sup>	Low		
GSZ13 0191A*	ACNF24XX16D*+TXV	17,400	12,400	13.00	11.00	16,100	12,700	17,200	7.70	10,500	600	5492289
	ARPT18B14A*	17,400	12,400	13.00	11.00	16,100	12,700	17,200	7.70	10,000	570	5492233
	ARPT24B14A*	17,400	12,400	13.00	11.00	16,100	12,700	17,200	7.70	10,000	570	5492234
	ARUF18B14A*	17,400	12,400	13.00	11.00	16,100	12,700	17,200	7.70	10,500	600	5492231
	ARUF18B14A*+TXV	17,400	12,400	13.00	11.00	16,100	12,700	17,200	7.70	10,400	600	5492232
	ARUF24B14C*+TXV	17,400	12,400	13.00	11.00	16,100	12,700	17,200	7.70	10,400	600	7084848
	AWUF18XX16B*+TXV	17,400	12,400	13.00	11.00	16,100	12,700	17,000	7.70	10,700	625	5492290
	AWUF24XX16B*+TXV	18,000	12,900	13.00	11.00	16,700	13,200	17,000	7.70	10,700	675	5497143
GSZ13 0251A*	ACNF24XX16D*+TXV	23,400	17,600	13.00	11.00	21,600	17,300	23,000	7.70	13,300	800	5492485
	ACNF30XX16D*+TXV	23,600	17,800	13.00	11.00	21,800	17,500	23,000	7.70	14,000	860	5492487
	ARUF24B14C*+TXV	23,000	17,300	13.00	11.00	21,200	17,000	21,600	7.70	13,600	800	7084840
	ARUF30B14A*+TXV	23,000	17,300	13.00	11.00	21,200	17,000	21,600	7.70	13,600	775	5492263
	AWUF24XX16B*+TXV	22,800	17,200	13.00	11.00	21,200	16,900	20,800	7.70	13,700	800	5492491
	AWUF30XX16B*+TXV	23,400	17,600	13.00	11.00	21,600	17,300	20,600	7.70	13,500	800	5492494
GSZ13 0311A*	ACNF30XX16D*+TXV	27,000	20,400	13.00	10.80	25,000	20,200	26,000	7.70	16,700	860	5492496
	ARPT36C14A*	28,400	21,400	13.00	10.90	26,200	21,400	27,000	8.00	16,600	985	5492240
	ARUF36C14B*	27,400	20,600	13.00	11.00	25,400	20,600	27,000	7.80	16,400	950	5649400
	ARUF36C14B*+TXV	28,000	21,200	13.00	11.00	26,000	21,000	27,000	8.00	16,400	950	5647195
	AWUF30XX16B*+TXV	27,600	20,800	13.00	11.00	25,600	20,800	25,800	7.70	16,500	1,000	5492501
	AWUF36XX16B*+TXV	28,000	21,200	13.00	11.00	26,000	21,000	25,800	8.00	16,500	1,020	5492291
	AWUF37XX16B*+TXV	28,200	21,200	13.00	11.00	26,200	21,200	25,800	8.00	16,200	950	5492265
GSZ13 0371A*	ARPT36C14A*	33,000	25,000	13.00	11.00	30,600	24,400	33,000	8.00	20,800	1,170	5492244
	ARPT36D14A*	35,000	26,600	13.50	11.50	32,400	26,000	32,200	8.00	20,600	1,085	5492245
	ARPT42D14A*	33,600	25,600	13.50	11.50	31,200	24,800	32,200	8.00	20,800	1,175	5492246
	ARUF42C14A*+TXV	33,600	25,600	13.00	11.00	31,200	24,800	34,000	8.00	20,800	1,000	5492248
	AWUF37XX16B*+TXV	34,000	25,800	13.00	11.00	31,400	25,200	34,000	8.00	20,200	1,150	5492268
	ARUF36C14B*+TXV	33,000	25,000	13.00	11.00	30,600	24,400	33,000	8.00	20,800	1,200	5647199

<sup>1</sup> Seasonal Energy Efficiency Ratio; Certified per ARI 210/240 @ 80°F/ 67°F/ 95°F

<sup>2</sup> Energy Efficiency Ratio @ 80°F/ 67°F/ 95°F

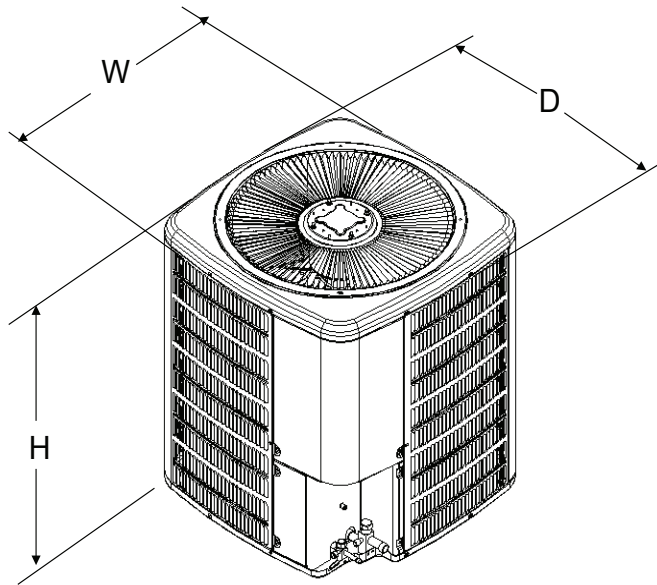
<sup>3</sup> TVA Rating: BTU/h @ 75°F/ 63°F - 95°F

<sup>4</sup> HSPF = Heating Seasonal Performance Factor

**NOTES**

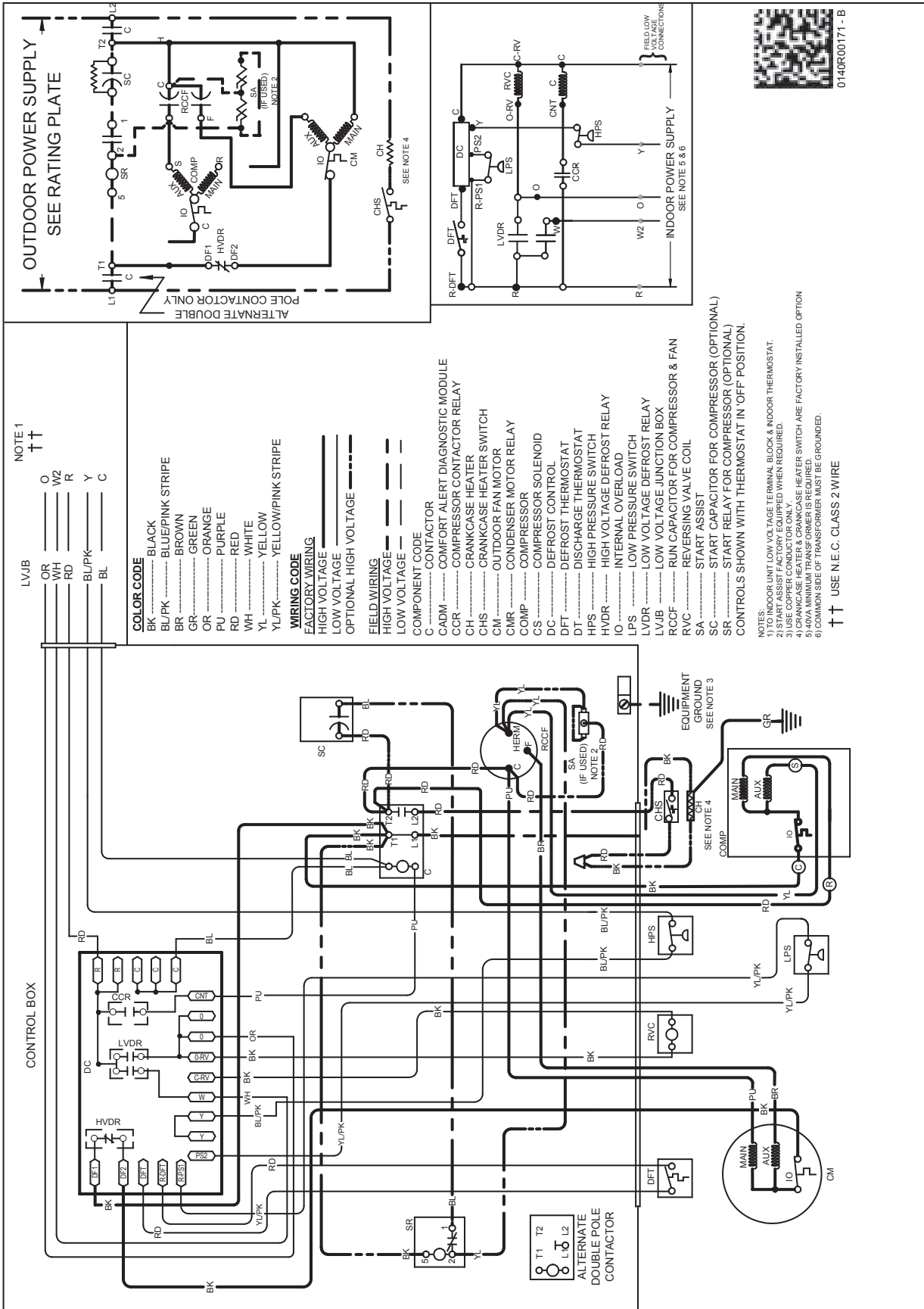
- Always check the S&R plate for electrical data on the unit being installed.
- When matching outdoor unit to indoor unit, use the piston supplied with the outdoor unit or that specified on the piston kit chart supplied with the indoor unit.
- EEP - Order from Service Dept. Part No. B13707-38 or new Solid State Board B13707-35S. Part No. B13707-38 is not interchangeable with B13707-35S. The Goodman Gas Furnace contains the EEP cooling time delay

DIMENSIONS



MODEL	DIMENSIONS		
	W"	D"	H"
GSZ130191A	26	26	32¼
GSZ130251B	26	26	32¼
GSZ130311A	26	26	32¼
GSZ130371A	29	29	32¼

# WIRING DIAGRAM



0140R00171 - B

**WARNING**

**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.

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

**ACCESSORIES**

MODEL #	DESCRIPTION	GSZ13 019	GSZ13 025	GSZ13 031	GSZ13 037
0130R00000S	Low-pressure Switch Kit	X	X	X	X
ABK-20	Anchor Bracket Kit <sup>0</sup>	X	X	X	X
ASC-01	Anti-Short Cycle Kit	X	X	X	X
AFE18-60A	All-fuel Kit	X	X	X	X
CSR-U-1	Hard-start Kit	X	X	X	X
FSK01A <sup>1</sup>	Freeze Protection Kit	X	X	X	X
LAKT01	Low-Ambient Kit	X	X	X	X
OT18-60A <sup>2</sup>	Outdoor Thermostat	X	X	X	X
OT/EHR18-60	Emergency Heat Relay kit	X	X	X	X
TX2N4 <sup>3</sup>	TXV Kit	X			
TX2N4A <sup>3</sup>	TXV Kit	X	X		
TX3N4 <sup>3</sup>	TXV Kit			X	X

<sup>0</sup> Contains 20 brackets; four brackets needed to anchor unit to pad

<sup>1</sup> Installed on indoor coil

<sup>2</sup> Required for heat pump applications where ambient temperatures fall below 0°F with 50% or higher relative humidity.

<sup>3</sup> Condensing units and heat pumps with reciprocating compressors require the use of start-assist components when used in conjunction with an indoor coil using a non-bleed thermal expansion valve refrigerant metering device or liquid line solenoid kit. The TXV should always be sized based on the tonnage of the outdoor unit.