



## RH SERIES AIR COOLED HEAT PUMP UNITS

SPECIFICATIONS Rated in Accordance with ARI Standard 210/240		RH254F			
PERFORMANCE		Rated with Optional Air Handler Model			VCH/HCH254
		Rated CFM			8,000
	COOLING	Total BTUH			224,300
		Sensible BTUH			170,800
		EER			9.0
	HEATING	Total BTUH			233,700
COP			3.3		
ELECTRICAL	SERVICE	Voltage-Phase-Hz	208/230-3-60	460-3-60	380/415-3-50
	COMPRESSOR	(Qty) Type — Nom. Tons	(2) Hermetic — 10		
		RLA (ea)	34.6	17.3	17.3
		LRA (ea)	193	97	97
		IPLV	9.2		
	Standard Capacity Reduction % Full load — (Optional)		100-50-0 — (NA)		
	CONDENSER FAN MOTOR(S)	Horse Power — (Qty)	1 — (2)		
		FLA (ea)	6.2	3.1	2.2
		Total CFM	11,600		
	UNIT	RLA	81.6	40.8	39.0
Unit Minimum Circuit Ampacity		91	46	44	
Max. Time Delay Fuse or HACR Breaker		110	60	60	
PHYSICAL DATA	CONDENSER COIL Alum. Fins on Copper Tubes	Face Area (sq.ft.)	33.4		
		Rows Deep — Fins per Inch	4 — 12		
		(Qty) — Suction Line OD In.	(2) — 1 3/8		
		(Qty) — Liquid Line OD In.	(2) — 1/2		
	WEIGHTS	Unit (lbs)	1,300		
		Shipping Weight (lbs)	1,400		

### Cooling Rating 95°F Air on Outdoor Coil

Rated With Air Handler Model	CFM		Entering Air to Indoor Coil								
			75°F DB			80°F DB			85°F DB		
			63°F WB	67°F WB	71°F WB	63°F WB	67°F WB	71°F WB	63°F WB	67°F WB	71°F WB
VCH254 or HCH254	6000	TOTAL BTUH	205,900	221,000	235,500	209,100	221,900	237,100	219,100	224,100	238,000
		SENS BTUH	151,200	125,500	99,300	182,200	157,600	131,000	208,700	188,600	163,200
		WATTS INPUT	21,250	21,930	22,680	21,420	21,990	22,770	21,890	22,200	22,820
		LVG DB/WB	52.1/51.1	56.0/55.3	60.0/59.7	52.4/50.9	56.1/55.3	60.2/59.6	53.4/50.3	56.4/55.2	60.3/59.5
	7000	TOTAL BTUH	212,200	226,400	240,800	217,200	227,900	242,600	230,500	231,900	243,900
		SENS BTUH	164,200	133,800	103,500	199,700	171,100	140,200	219,500	208,500	177,800
		WATTS INPUT	21,490	22,200	22,950	21,830	22,300	23,050	22,470	22,600	23,130
		LVG DB/WB	53.7/52.7	57.6/56.9	61.6/60.8	54.1/52.4	57.8/56.9	61.8/61.2	56.5/51.7	57.9/56.7	61.9/61.1
	8000	TOTAL BTUH	216,400	230,600	245,000	225,900	232,800	240,900	239,900	240,000	249,000
		SENS BTUH	176,100	141,700	107,400	215,100	183,700	149,000	228,400	228,600	191,300
		WATTS INPUT	21,780	22,420	23,160	22,220	22,540	23,260	22,990	23,000	23,390
		LVG DB/WB	55.0/53.9	58.9/58.1	62.8/62.4	55.6/53.5	59.1/58.0	63.1/62.6	59.0/52.8	59.0/57.7	63.3/62.3

Note: Above performance data gives gross evaporator capacity with 25' refrigerant lines and full condenser operation at 60 HZ.

Correction Factor Multiplier for Other Ambients					
Temperature	95°F	100°F	105°F	110°F	115°F
Total Capacity	1.00	.98	.95	.91	.87
Sensible Capacity	1.00	.99	.97	.95	.93
Watts	1.00	1.03	1.05	1.08	1.11
Gross EER	1.00	.95	.90	.84	.78

50 HZ Application and Performance Multipliers		
Capacity	At 60 HZ Evaporator CFM	At 50HZ Evaporator CFM
Total	0.91	0.88
Sensible	0.95	.086
Watts	0.85	.083

Notes: 50HZ evaporator CFM is 0.83 times full rated CFM shown above.

Applied Research  
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## Heating Ratings

### 70°F Air on Coil of Indoor Air Handler Model VCH254 or HCH254

CFM	Capacity	Ambient Air on Outdoor Coil °F							
		10	17	20	30	40	47	50	60
8,000	BTUH	104,000	124,400	133,500	164,700	197,500	222,100	231,000	273,700
	Watts	13,180	14,090	14,480	15,810	17,160	18,190	18,570	20,560

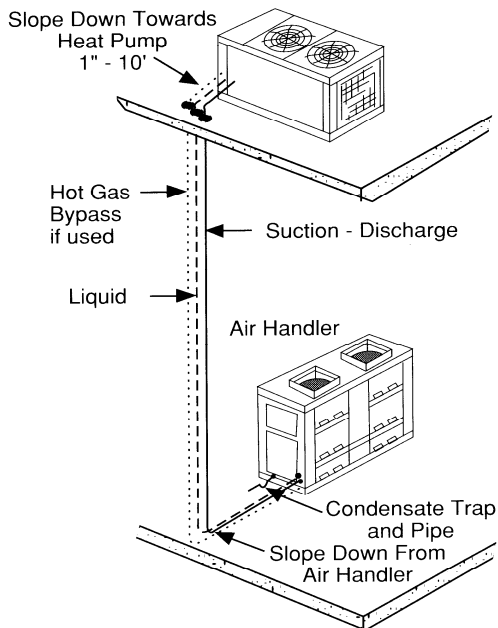
Note: Heating capacities are gross capacities. For net capacities, multiply blower BHP required times 2545 BTU per BHP and add to BTUH in table. Add blower BHP times 746 Watts per BHP to Watts for total power consumption. Refer to Air Handler specification for blower BHP.

Heating Capacity Correction Multiplier To be applied to rated heating capacity to determine capacity at other than rated CFM.	CFM	Multiplier
	- 10%	0.985
	Rated	1.00
	+ 10%	1.015

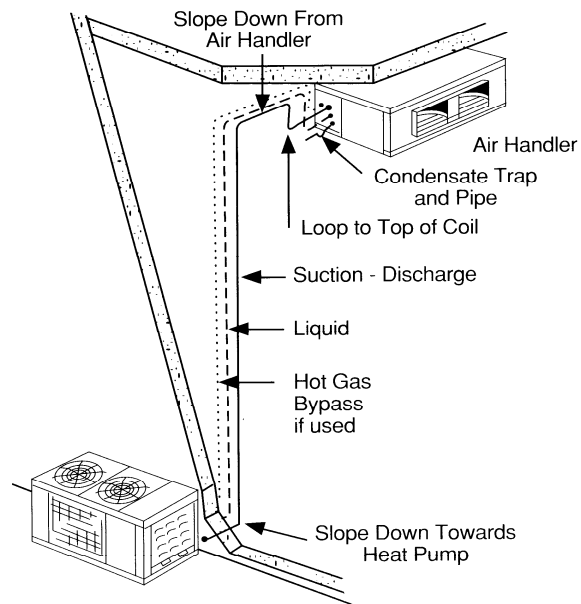
Recommended Refrigerant Line Sizes — Inches O.D.						
Equivalent Line Length — Feet						
0 to 25			26 to 50		51 to 75	
Suction	Liquid	Hot Gas Bypass	Suction	Liquid	Suction	Liquid
1 3/8	1 3/8	1/2 1/2	1 3/8	1 3/8	5/8	5/8
		3/4 NA	1 3/8	1 3/8	1 3/8	1 3/8
					5/8	5/8

- Notes:
- Line lengths are equivalent, including all fittings. Use long radius ells only.
  - Line sizes are for both vertical and horizontal runs.
  - Over 75 equivalent feet, **consult factory** for sizing recommendations.
  - Liquid line sizes are designed to minimize system refrigerant charge.
  - Hot gas bypass is typically used with the welded hermetic compressor only with an equivalent line length of 25 feet or less.
  - When condensing unit is above air handler, trap suction line at base and every 20 feet of vertical rise. Consult ASHRAE Refrigeration Handbook.

### Heat Pump Above Air Handler

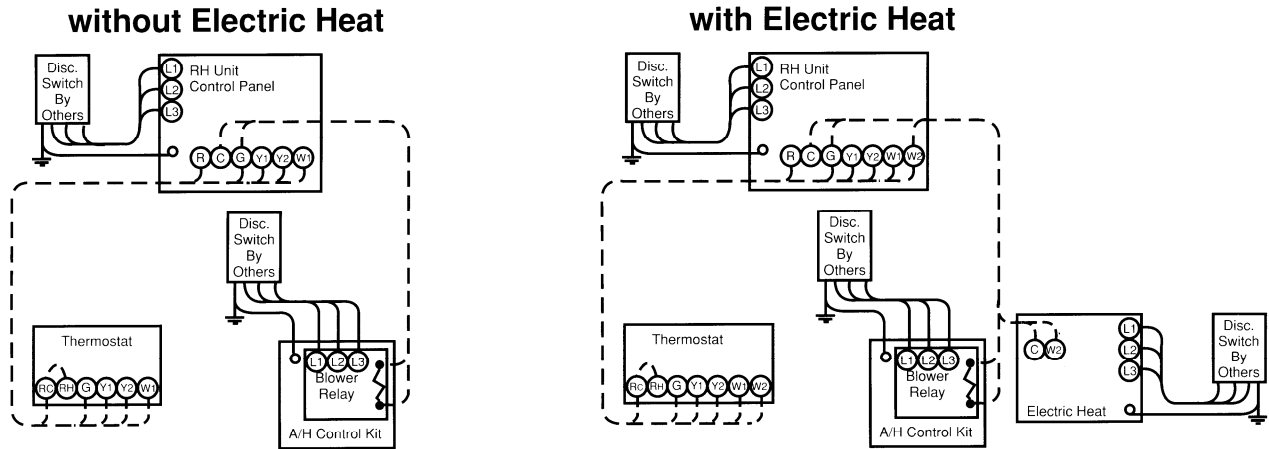


### Heat Pump Below Air Handler



**Field Piping:** One of the most critical considerations in the installation of a split system heat pump is the proper sizing of piping so that oil will freely circulate with the refrigerant and not be trapped. In order to assure oil being carried upward in a vertical riser along with the refrigerant vapor, a velocity of 1,000 FPM must be maintained. Proper sizing is particularly important in a heat pump system because the discharge pipe on the heating cycle becomes the suction pipe in cooling and line velocities will be different in each cycle. Experience indicated 75 **equivalent** feet of pipe as the maximum practical length on heat pump installations. Pump down solenoids can not be used with heat pumps. When the air handler is installed above the compressor the vertical line must be properly sized to carry oil. The above tabulation indicates proper sizing. Each refrigerant line run underground in a chase should be insulated with 3/4" minimum thickness closed cell foamed plastic insulation. Each line must be insulated separately.

## Typical Field Wiring



**Notes:**

All field wiring shall conform to N.E.C. and local codes

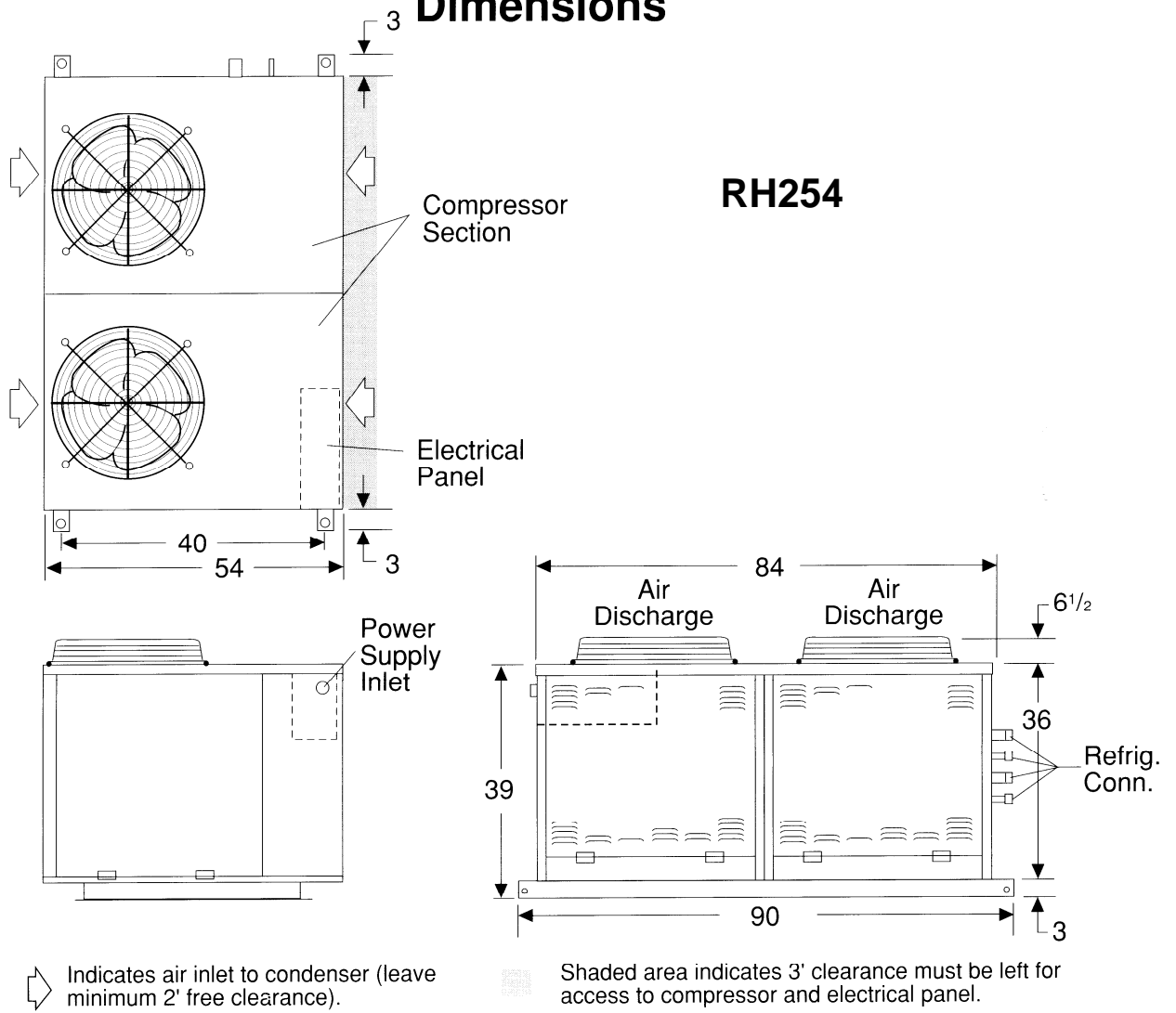
Line voltage power source \_\_\_\_\_

24 volt control circuit - - - - -

**Field Wiring**  
 The power distribution system should be sized based on the minimum circuit ampacities in this specification sheet. The heat pumps and air handlers should be fused in accordance with the maximum fuse sizes.  
 Disconnects may be optionally mounted by the factory or may be furnished and installed by the contractor. Time delay fuses should be used.  
 All field installed control wiring must be adequate to assure 24 volts to all controls.

# Dimensions

## RH254



Specifications subject to change without notice.



**Installation Code and Annual Inspections:**

All installations and service of ADDISON equipment must be performed by a contractor qualified in the installation and service of equipment sold and supplied by Addison and conform to all requirements set forth in the ADDISON manuals and all applicable governmental authorities pertaining to the installation, service and operation of the equipment. To help facilitate optimum performance and safety, Addison recommends that a qualified contractor annually inspect your ADDISON equipment and perform service where necessary, using only replacement parts sold and supplied by ADDISON.

**Further Information:** Applications, engineering and detailed guidance on systems design, installation and equipment performance is available through ADDISON representatives. Please contact us for any further information you may require, including the Installation, Operation and Service Manual.

**These products are not for residential use.**

**This document is intended to assist licensed professionals in the exercise of their professional judgment.**



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