

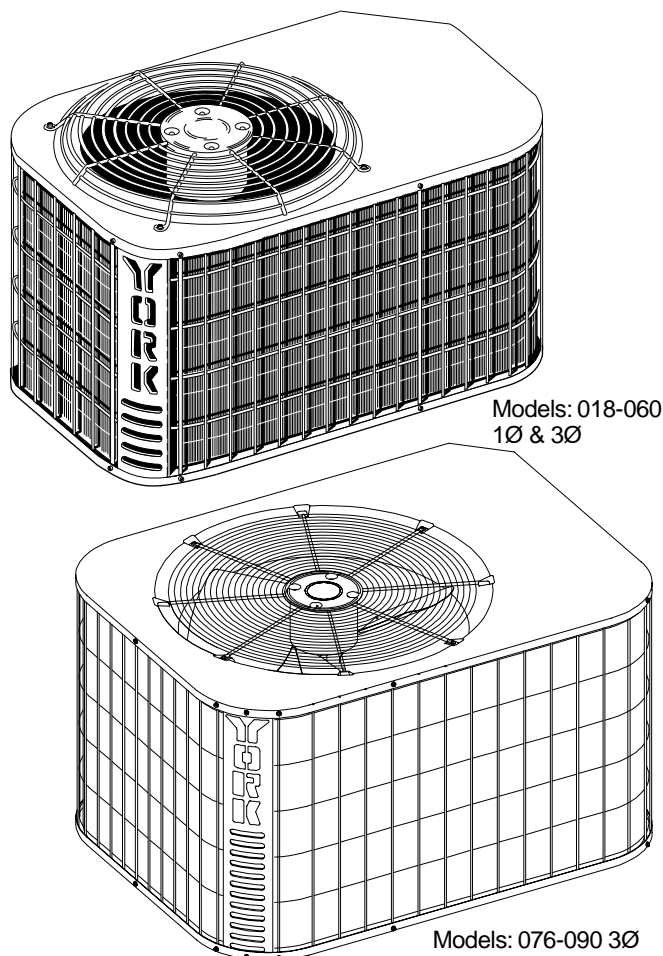


## TECHNICAL SPECIFICATIONS

### SPLIT-SYSTEM CONDENSING UNITS

#### "HRA" Series

**H\*RA018 thru H\*RA090 (1Ø and 3Ø)**  
**Nominal Capacity: 18 thru 90 MBH**  
**Nominal Efficiency: 10 Seer**



## DESCRIPTION

The HRA Series condensing unit is the outdoor part of a versatile system of air conditioning. It is designed to be custom-matched with one of UPG's complete line of evaporator sections, each designed to serve a specific function. 1 & 3 Ø Matching Air Handlers are available for upflow, downflow or horizontal applications to provide a complete system. 1 & 3 Ø Electric Heaters are available if required. Add-On coils are available for use with upflow, downflow or horizontal furnaces and air handlers.

## FEATURES

- **QUALITY CONDENSER COILS** - The coil is constructed of copper tube and hardened black coated aluminum fins for durability and long lasting efficient operation. The decorative 2" X 4" grille backed by the black coated fins, enhances appearance and protects the unit.
- **PROTECTED COMPRESSOR** - The compressor is internally protected against high pressure and temperature. This is accomplished by the simultaneous operation of high pressure relief valve and a temperature sensor which protects the compressor if undesirable operating conditions occur. A liquid line filter-drier further protects the compressor.
- **DURABLE FINISH** - Cabinet is made of pre-painted steel. The pre-treated flat galvanized steel provides a better paint to steel bond, which resists corrosion and rust creep. Special primer formulas and glossy earth tone finish insure less fading when exposed to sunlight.

- **LOWER INSTALLED COST** - Installation time and costs are reduced by easy power and control wiring connections. Discharge line heat exchanger knockouts are provided, if required. Available in sweat connect models only. The unit contains enough refrigerant for matching indoor coils and 15 feet of interconnecting piping. The small base dimension means less space is required on the ground or roof.
- **TOP DISCHARGE** - The warm air from the top mounted fan is blown up away from the structure and any landscaping. This allows compact location on multi-unit applications.
- **LOW OPERATING SOUND LEVEL** - The upward air flow carries the normal operating noise up away from the living area. The rigid top panel effectively isolates any motor sound. Isolator mounted compressor and the rippled fins of the condenser coil muffle the normal fan motor and compressor operating sounds.
- **LOW MAINTENANCE** - Long life permanently lubricated motor- bearings need no annual servicing.
- **EASY SERVICE ACCESS** - Fully exposed refrigerant connections, a single panel covering the electrical controls and the molex plug in the control box connecting the condenser fan, make for easy servicing of the unit.
- **SECURED SERVICE VALVES** - Secured re-usable service valves are provided on both the liquid and vapor sweat connections for ease of evacuating and charging.

**COOLING CAPACITY - With Air Handler Coils**

UNIT MODEL	AIR HANDLER			COIL <sup>5</sup> MODEL	COOLING						
	MODEL	ELECTRIC <sup>4</sup> HEAT KW	W		RATED CFM	NET MBH		KW	SEER	SEER/ TXV <sup>1</sup>	EER
						TOTAL	SENS.				
<b>1 Ø HRA / NAH and GFD</b>											
H1RA018S06	N1AHB0806	2,5,8,10	17	G2FD024S17	650	19.0	14.1	1.90	10.5	--	9.80
H1RA024S06	N1AHB0806	2,5,8,10	17	G2FD024S17	850	24.4	18.1	2.60	10.5	--	9.55
	N1AHB0806	5,8,10,15,18	17	G2FD030S17	850	25.0	18.5	2.60	10.6	--	9.65
H2RA030S06	N1AHB1206	5,8,10,15,18	17	G2FD030S17	1025	29.0	21.5	3.10	10.3	--	9.45
	N1AHB1206	5,8,10,15,20	17	G2FD036S17	1025	30.0	22.2	3.10	10.5	--	9.65
H2RA036S06	N1AHB1206	5,8,10,15,18	17	G2FD036S17	1200	33.8	25.0	3.70	10.0	--	9.20
	N1AHB1206	5,8,10,15,18	17	G2FD046S17	1250	34.4	25.5	3.70	10.5	--	9.30
H1RA042S06	N1AHC1606	5,8,10,15,20	21	G2FD042S21	1400	39.5	29.2	4.40	10.0	--	9.00
	N1AHC1606	5,8,10,15,20	21	G2FD048S21	1450	41.0	30.3	4.50	10.1	--	9.15
H1RA048S06	N1AHC1606	5,8,10,15,20	21	G2FD048S21	1600	46.0	34.0	4.80	10.1	--	9.50
	N1AHD2006	8,10,15,20,25,30	24	G2FD060S24	1650	47.0	34.8	4.80	10.4	--	9.70
H2RA060S06	N1AHD2006	8,10,15,20,25,30	24	G2FD060S24	1850	56.5	41.8	5.80	10.6	--	9.70
<b>3 Ø HRA / NAH and GFD</b>											
H1RA036S25,46	N1AHB1206,46	5,8,10,15,18	17	G2FD036S17	1250	33.8	25.0	3.70	10.0	--	9.20
	N1AHC1606,46	5,8,10,15,20	21	G2FD048S21	1600	46.0	34.0	4.80	10.1	--	9.50
H1RA048S25,46	N1AHD2006,46	8,10,15,20,25,(29),30	24	G2FD048S24	1650	46.0	34.0	4.80	10.1	--	9.50
	N1AHD2006,46	8,10,15,20,25,(29),30	24	G2FD060S24	1600	47.0	34.8	4.80	10.4	--	9.70
H1RA060S25,46	N1AHD2006,46	8,10,15,20,25,(29),30	24	G2FD060S24	2000	56.5	41.8	5.80	10.6	--	9.70

UNIT MODEL	AIR HANDLER			COIL MODEL	COOLING						
	MODEL <sup>2</sup>	ELECTRIC <sup>4,6</sup> HEAT KW	W		RATED CFM	NET MBH		KW	SEER	SEER/ TXV <sup>1</sup>	EER
						TOTAL	SENS.				
<b>HRA with F2RP/ RC/ FP/FC (1 &amp; 3 Ø)</b>											
H1RA018	F2RC024	5, 7.5, 10	18	--	650	17.4	12.9	1.93	10.0	--	9.00
	F2RP024	5, 7.5, 10	18	--	650	17.4	12.9	1.93	10.0	--	9.00
H1RA024	F2RP024	5, 7.5, 10	18	--	800	23.4	17.3	2.60	10.0	--	9.00
	F2RP030	5, 7.5, 10, 15	18	--	800	23.6	17.5	2.59	10.0	--	9.10
H2RA030	F2RP/RC030	5, 7.5, 10, 15	21	--	1000	28.4	21.0	2.98	10.5	--	9.52
	F2RC036	5, 7.5, 10**, 15**	21	--	1000	29.0	21.5	3.05	10.0	--	9.50
H2RA036	F2RP036	5, 7.5, 10**, 15**	21	--	1250	34.0	25.2	3.66	10.2	--	9.30
	F2RP042	5, 7.5, 10, 15	21	--	1250	34.0	25.2	3.70	10.15	--	9.20
H1RA042	F2RP042	5, 7.5, 10, 15	21	--	1400	39.0	28.9	4.41	--	10.0	8.85
	F2RP048	5, 7.5, 10, 15	21	--	1400	40.5	30.0	4.40	10.0	--	9.21
H1RA048	F2FP048	5, 7.5, 10**, 15**, 20, 25	24	--	1600	45.5	33.7	4.97	10.0	--	9.15
	F2FP060			--	1600	46.5	34.4	4.79	10.0	--	9.70
H2RA060	F2FP060	5, 7.5, 10**, 15**, 20, 25	24	--	1800	56.0	41.4	5.89	10.5	--	9.50
<b>3 Ø HRA W/K* EU090</b>											
H1RA076S25,46	K4EU090	10, 16, 26, 36	22	--	2600	73.5	--	7.30	--	--	10.0
H1RA090S25,46	K4EU090	10, 16, 26, 36	22	--	3250	53.8/88.1	--	5.59/9.75	--	11.5	9.63/9.04

Certified in accordance with the Unitary Small Equipment certification program, which is based on ARI Standard 210/240.

Cooling MBH based on 80°F entering air temperature, 50% RH, and rated air flow.

KW includes compressor, outdoor fan and indoor blower motor watts. Add-on coils include 365 watts/1000 CFM for blower motor.

EER (Energy Efficiency Ratio) is the total cooling output in BTU's at a 95°F outdoor ambient divided by the total electric power in watt-hours at those conditions.

SEER (Seasonal Energy Efficiency Ratio) is the total cooling output in BTU's during a normal annual usage period for cooling divided by the total electric power input in watt-hours during the same period.

<sup>1</sup>TXV = Thermal Expansion Valve kit required. Use 1TV700 series kit.

<sup>2</sup>To meet R=4.2 insulation requirements, substitute F2FP for F2RP, and F2FC for F2RC models. All ratings remain the same.

<sup>3</sup>P3HU, P3DN, P3DH and P3UR furnaces and F2RP / F2RC air handlers have B.O.D. standard.

<sup>4</sup>Single phase units require single phase 2HK heaters — Three phase units require three phase 2HK heaters. (29) indicates 460 volt use only.

<sup>5</sup>G2FD coils available with a factory installed horizontal drain pan. See price pages for specific model number.

<sup>6</sup>2HS045 series electric heaters must be used with K4EU fan coil model.

\* Field transition may be required.

\*\*Single piece air handlers only approved for 10 & 15 KW 3Ø heater applications.

— = Not Applicable.

**COOLING CAPACITY - 1 & 3 Ø HRA / Upflow, Downflow, and Horizontal Furnaces and Coils**

UNIT MODEL	FURNACE		COIL <sup>5</sup> MODEL	RATED CFM	COOLING					
	CFM RANGE (Min.—Max.)	W			NET MBH		KW	SEER	SEER/TXV <sup>1</sup>	EER
					TOTAL	SENS.				
H1RA018	800 — 1200	14,17	G1UA024S14,17	650	18.0	13.3	1.96	10.0	—	9.20
		14	G1UA030S14		19.0	14.1	1.94	10.5		9.80
		14,17	G2FD024S14,17		19.0	14.1	1.94	10.5		9.80
		14	G2FD035S14		19.4	14.4	1.96	10.5		9.90
		17	G2FD030S17		19.4	14.4	1.96	10.5		9.90
		*	G1HD024		18.5	13.7	1.90	10.5		10.00
H1RA024	800 — 1200	14,17	G1UA024S14,17	850	23.8	17.6	2.60	10.0	—	9.15
		14	G1UA030S14		24.4	18.1	2.55	10.5		9.55
		17,21	G1UA036S17,21		25.0	18.5	2.79	10.0		8.95
		17	G1NA030S17H		23.6	17.5	2.62	10.0		9.00
		14,17	G2FD024S14,17		24.4	18.1	2.55	10.5		9.55
		14	G2FD035S14		25.0	18.5	2.59	10.6		9.65
		17	G2FD030S17		25.0	18.5	2.59	10.6		9.65
		17	G2FD036S17		25.6	18.9	2.64	10.7		9.70
		*	G1NF024SOF		23.6	17.5	2.62	10.0		9.00
		*	G1HD024		23.2	17.2	2.64	10.0		8.80
		*	G1HD036		24.4	18.1	2.49	10.6		9.80
		H2RA030	1000 — 1400		17,21	G1UA036S17,21	1025	29.0		21.5
17	G1NA030S17K			29.4	21.7	3.19		10.0	9.20	
17	G2FD030S17			29.0	21.5	3.07		10.3	9.45	
14	G2FD035S14			29.0	21.5	3.07		10.3	9.45	
17,21	G2FD036S17,21			30.0	22.2	3.11		10.5	9.65	
*	G1NF024SOF			29.4	21.8	3.20		10.0	9.20	
*	G1HD036			29.6	21.9	3.10		10.5	9.55	
H2RA036	1200 — 1600	14,17,21	G1UA036S14,17,21	1250	33.6	24.9	3.69	10.0	—	9.10
		17	G1UA048S17		35.0	25.9	3.72	10.3		9.40
		21,24	G1UA048S21,24		36.0	26.6	3.83	10.4		9.40
		17	G1NA036S17J		34.4	25.5	3.74	10.0		9.20
		21	G1NA036S21C		34.4	25.5	3.70	10.0		9.30
		14	G2FD035S14		33.4	24.7	3.67	10.0		9.10
		17,21	G2FD036S17,21		33.8	25.0	3.67	10.0		9.20
		21	G2FD042S21		34.4	25.5	3.70	10.15		9.30
		17	G2FD046S17		34.4	25.5	3.70	10.15		9.30
		*	G1NF036SOF		35.0	25.9	3.80	10.05		9.20
		*	G1HD036		34.4	25.5	3.87	10.0		8.90
		*	G1HD048		34.2	25.3	3.89	10.0		8.95
H1RA042	1400 — 2000	17	G1UA048S17	1400	40.8	30.2	4.43	10.0	—	9.20
		21	G1UA048S21,24		41.0	30.3	4.43	10.0		9.25
		21,24	G1UA060S21,24		42.0	31.1	4.44	10.0		9.45
		21	G1NA048S21D		40.5	30.0	4.43	10.0		9.15
		17	G2FD046S17		40.0	29.6	4.42	10.0		9.05
		21	G2FD042S21		39.5	29.2	4.39	10.0		9.00
		21,24	G2FD048S21,24		41.0	30.3	4.48	10.1		9.15
		24	G2FD060S24		42.0	31.1	4.42	10.1		9.50
		*	G1NF048SOF		40.5	30.0	4.43	10.0		9.15
		**	G1HD048		40.5	30.0	4.48	10.0		9.05
H1RA048	1600 — 2000	17	G1UA048S17	1600	45.3	33.5	4.71	10.0	—	9.61
		21,24	G1UA048S21,24		45.5	33.7	4.81	10.0		9.45
		21,24	G1UA060S21,24		47.0	34.8	4.85	10.4		9.70
		21	G1NA048S21D		46.5	34.4	4.89	10.0		9.50
		17	G2FD046S17		44.5	32.9	4.86	10.0		9.15
		21,24	G2FD048S21,24		46.0	34.0	4.84	10.1		9.50
		24	G2FD060S24		47.0	34.8	4.85	10.4		9.70
		*	G1NF048SOF		46.5	34.4	4.87	10.0		9.55
		*	G1HD048		45.5	33.7	4.79	10.0		9.50
		*	G1HD060		46.5	34.4	4.82	10.2		9.65
H2RA060	1850 — 2000	21,24	G1UA060S21,24	1850	56.0	41.4	5.77	10.6	—	9.70
		24	G2FD060S24		58.5	43.3	5.71	10.0		10.25
		*	G1NF060SOF		56.5	41.8	5.82	10.6		9.70
		*	G1HD060		56.0	41.4	5.99	10.0		9.35
H1RA076	2500 — 3000	35	G2FD090S35	3200	73.5	52.9	7.35	—	—	10.00
H1RA090	2500 — 3000	35	G2FD090S35	4000	90.0	64.8	9.63	—	—	9.35

See Notes on Page 2

Note: (1) indicates single stage compressor operation. (2) indicates dual compressor operation.

## COOLING PERFORMANCE

MODEL	SUCT. T/P @ COMPR.		AIR TEMP ON CONDENSER						MODEL	SUCT. T/P @ COMPR.		AIR TEMP ON CONDENSER					
			75°F		95°F		115°F					75°F		95°F		115°F	
	TEMP.	PSIG	MBH	KW	MBH	KW	MBH	KW		TEMP.	PSIG	MBH	KW	MBH	KW	MBH	KW
H1RA018	35	61.5	16.2	1.66	13.1	1.84	11.0	1.96	H1RA048	35	61.5	39.9	4.18	32.3	4.63	27.0	4.94
	40	68.5	17.7	1.67	14.9	1.88	12.8	2.04		40	68.5	43.6	4.21	36.7	4.73	31.4	5.14
	45	76.0	19.3	1.69	16.7	1.92	14.2	2.11		45	76.0	47.6	4.26	41.1	4.84	34.9	5.32
	50	84.0	20.8	1.70	18.5	1.96	15.9	2.18		50	84.0	51.1	4.28	45.5	4.94	39.0	5.48
H1RA024	35	61.5	21.0	2.23	17.0	2.46	14.2	2.63	H1RA060	35	61.5	49.7	4.85	44.1	5.83	38.5	7.04
	40	68.5	22.9	2.24	19.3	2.52	16.5	2.74		40	68.5	54.3	4.89	48.5	5.84	42.6	7.05
	45	76.0	25.0	2.27	21.6	2.58	18.3	2.83		45	76.0	58.7	4.97	52.7	5.95	46.6	7.17
	50	84.0	26.8	2.28	23.9	2.63	20.5	2.92		50	84.0	63.0	5.02	57.2	6.08	50.5	6.81
H2RA030	35	61.5	25.1	2.68	20.3	2.97	17.0	3.17	H1RA076	35	61.5	77.4	5.06	63.4	6.08	50.6	7.35
	40	68.5	27.4	2.70	23.1	3.04	19.7	3.30		40	68.5	84.5	5.21	69.2	6.23	55.4	7.49
	45	76.0	29.9	2.74	25.8	3.10	21.9	3.41		45	76.0	91.8	5.37	75.3	6.38	60.3	7.64
	50	84.0	32.1	2.75	28.6	3.17	24.5	3.51		50	84.0	99.4	5.54	81.7	6.55	65.6	7.80
H2RA036	35	61.5	30.5	3.28	24.7	3.64	20.6	3.88	H1RA090	35	61.5	84.0	8.28	72.9	9.11	61.7	9.87
	40	68.5	33.3	3.31	28.1	3.72	24.0	4.04		40	68.5	92.5	8.50	80.8	9.41	68.9	10.26
	45	76.0	36.4	3.35	31.4	3.80	26.7	4.18		45	76.0	101.3	8.73	89.0	9.72	76.5	10.66
	50	84.0	39.1	3.36	34.8	3.88	29.9	4.31		50	84.0	110.4	8.95	97.5	10.03	84.4	11.08
H2RA042	35	61.5	35.8	3.83	28.9	4.25	24.2	4.53									
	40	68.5	39.1	3.86	32.9	4.34	28.2	4.72									
	45	76.0	42.6	3.90	36.8	4.53	31.3	4.87									
	50	84.0	45.8	3.93	40.8	4.63	35.0	5.03									

- NOTES: 1. For condensing unit only. Does not include effect of evaporator motor power or heat.  
 2. Performance based on 15° superheat and 15° sub-cooling at condensing unit.  
 a. Increase capacity 1% for each 2° increase in sub-cooling.  
 b. Decrease capacity 1% for each 2° decrease in sub-cooling.  
 3. Sub-cooling in excess of 20° may result in excessively high condensing temperature with air on condenser above 115°. Maximum recommended condensing temperature is 140°F.

## SOUND RATINGS

UNIT MODEL HRA	SOUND RATINGS BELS
018	7.6
024	7.8
030	8.2
036	8.2
042	8.2
048	8.2
060	8.0
076	--
090	9.0



CERTIFICATION APPLIES ONLY  
WHEN THE COMPLETE  
SYSTEM IS LISTED WITH ARI



## ACCESSORIES

Refer to Price Manual for specific model numbers.

**Compressor Blanket** - Designed to further reduce the normal operating sound .

**Hard Start Kit (Single Phase Units)** - provides required starting torque for use with thermal expansion valve.

**Thermal Expansion Valve** - (1TV0701, 1TV0702, 1TV0703) Available to increase efficiency when installed. Mounts to indoor coil to regulate refrigerent flow for maximum heat transfer.

**Room Thermostats** - One of the following thermostats may be used with these systems:

2ET07700324 - Programmable electronic, One Stage Heat / One Stage Cool, Manual change over, rectangular thermostat with built-in anti-short cycle protection.

2TH07700124 - One Stage Heat / One Stage Cool, Manual changeover, non-programmable vertical thermostat.

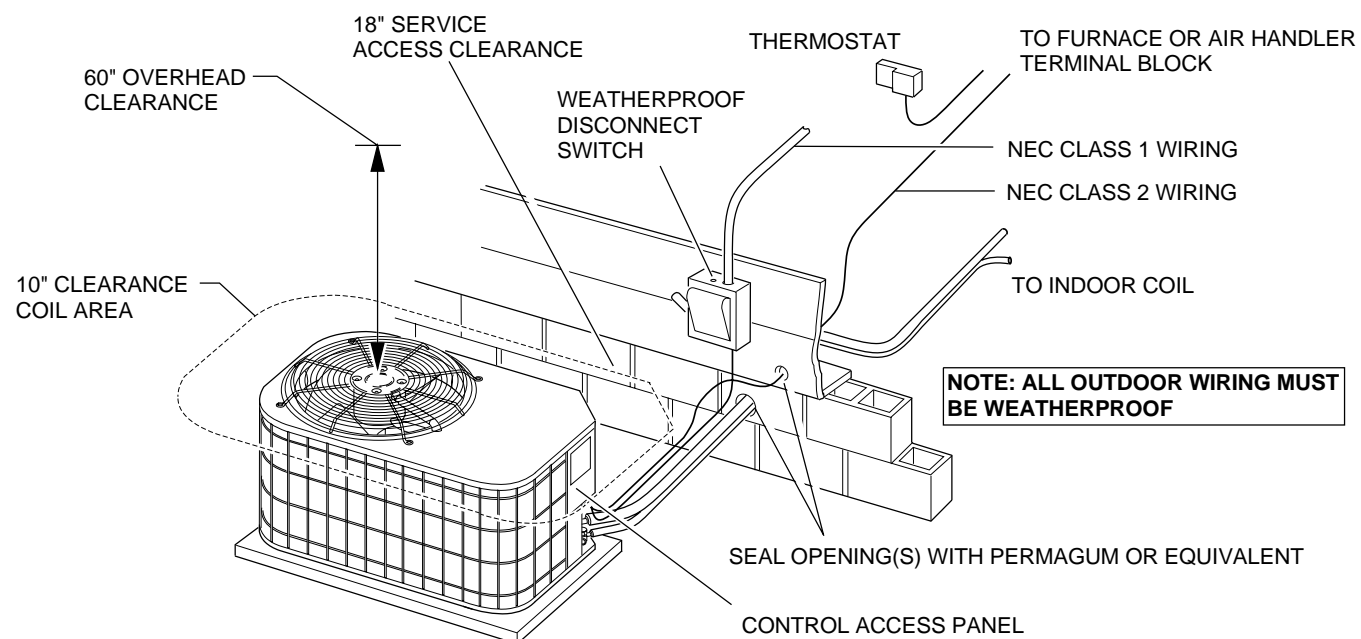
2TH07701024 - One Stage Heat / One Stage Cool, manual changeover, non-programmable rectangular thermostat.

2TH04701224 - Two stage cool, manual changeover, non-programmable thermostat.

2TH04701024 - Two stage heat, two stage cool, auto or manual changeover, non-programmable thermostat.

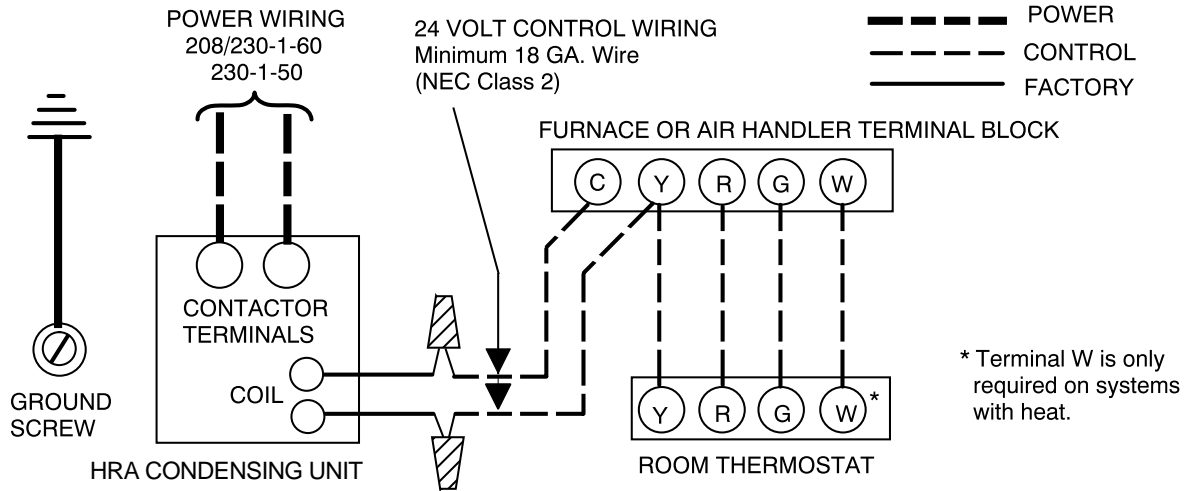
2ET07700424 - Two stage heat, two stage cool, programmable electronic (5+1+1), auto or manual changeover.

## TYPICAL INSTALLATION - H\*RA018 THRU 090 - (Single & Three Ø Units)



## TYPICAL FIELD WIRING - H\*RA018 THRU 060 - (Single Ø Units)

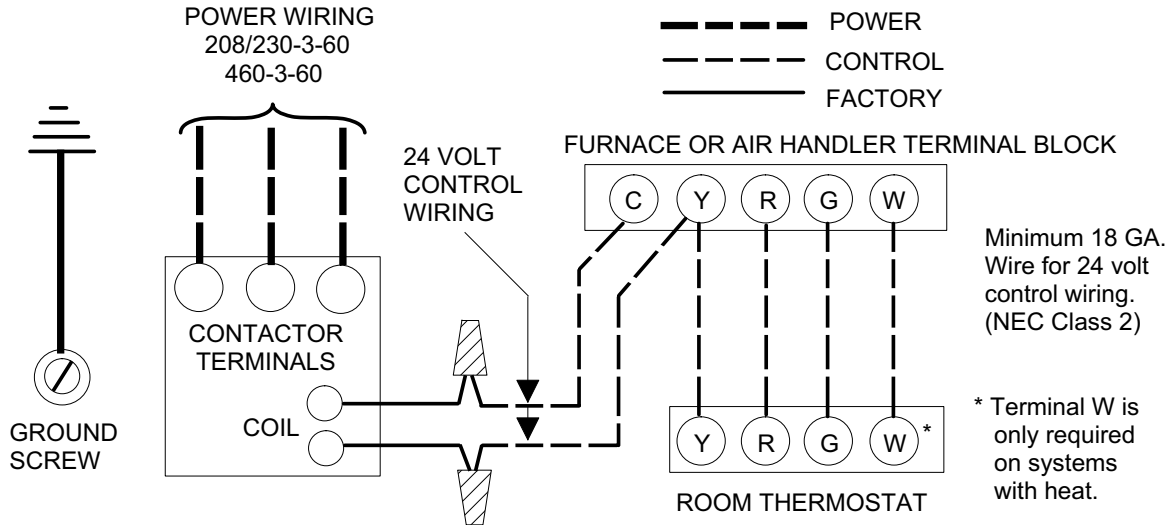
ALL FIELD WIRING TO BE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE (NEC) AND/OR LOCAL CODES



ALL OUTDOOR WIRING MUST BE WEATHERPROOF. USE COPPER CONDUCTORS ONLY.

## TYPICAL FIELD WIRING - H\*RA036, 048 & 060 - (Three Ø Units)

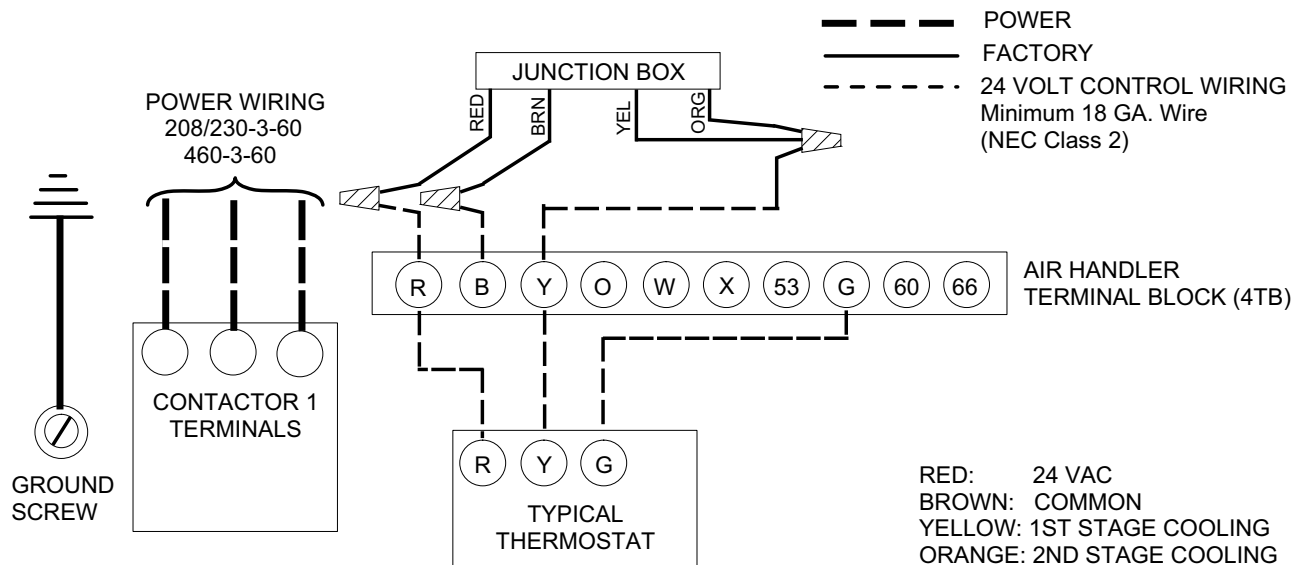
ALL FIELD WIRING TO BE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE (NEC) AND/OR LOCAL CODES



ALL OUTDOOR WIRING MUST BE WEATHERPROOF. USE COPPER CONDUCTORS ONLY.

## TYPICAL FIELD WIRING - 3 Ø Units (076 & 090)

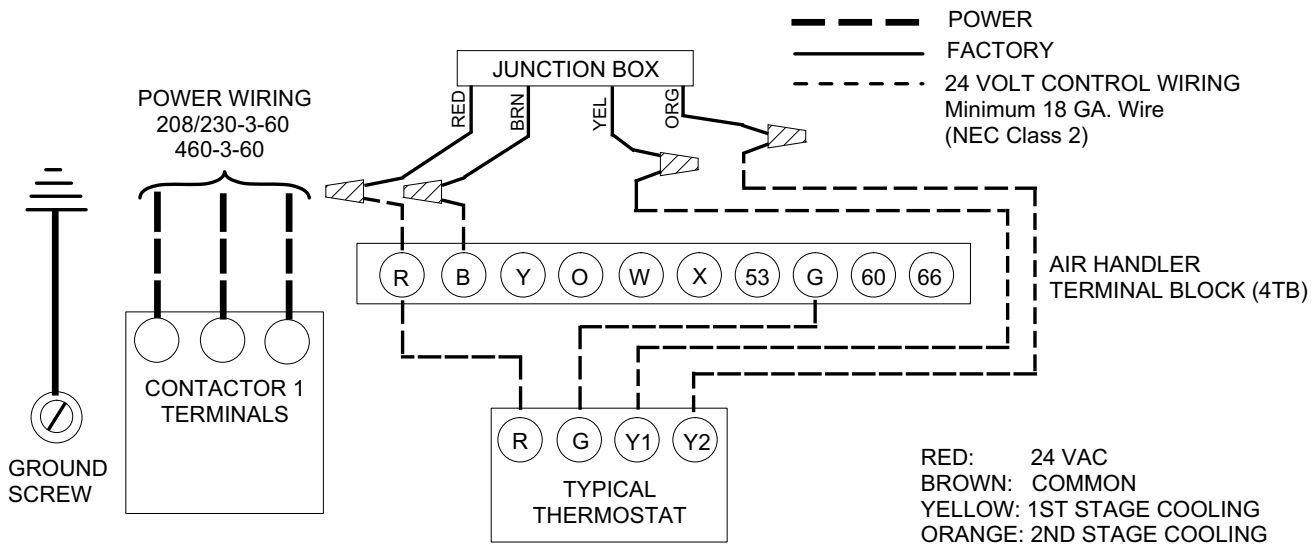
ALL FIELD WIRING TO BE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE (NEC) AND/OR LOCAL CODES



ALL OUTDOOR WIRING MUST BE WEATHERPROOF. USE COPPER CONDUCTORS ONLY.

## TYPICAL FIELD WIRING - 3 Ø - 2 Stage 090 Model

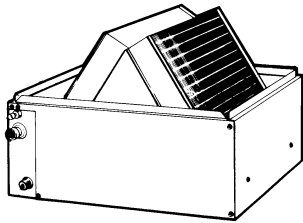
ALL FIELD WIRING TO BE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE (NEC) AND/OR LOCAL CODES



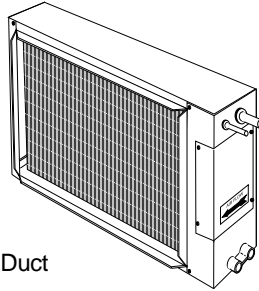
ALL OUTDOOR WIRING MUST BE WEATHERPROOF. USE COPPER CONDUCTORS ONLY.

# MATCHING INDOOR COMPONENTS

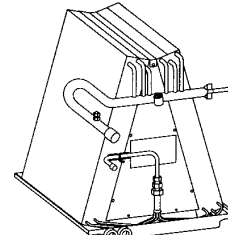
## Add-On Coils - For Furnace Application



G1UA  
Upflow

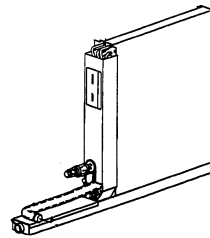
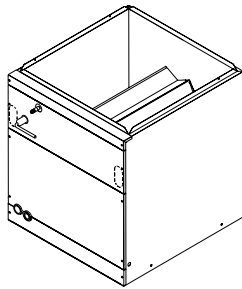


G1HD  
Horizontal Duct



G1NA  
Upflow

G2FD\*  
MULTI-POSITION  
(Upflow, Horizontal,  
and Downflow)

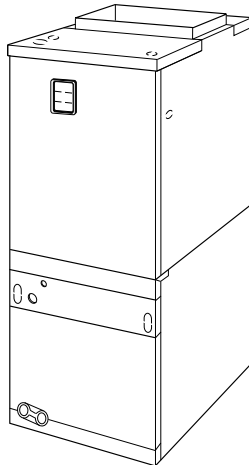


G1NF  
Outdoor  
Furnace  
Coil

\* Available with factory installed horizontal drain pan.

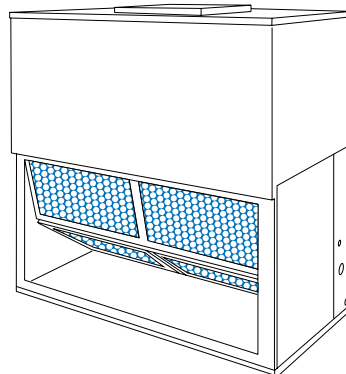
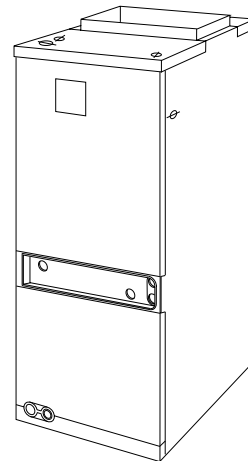
## Air Handlers - For Non-Furnace Application

N1AH or N1VS  
MODULAR BLOWER  
(Upflow, Horizontal,  
and Downflow)



G2FD\*  
Coil

F2RP / FP or  
F2RC / FC  
Fan Coil Units  
(Upflow  
Horizontal)



K\*EU  
Light Commercial  
Applications

\* Available with factory installed horizontal drain pan.



Heating and Air Conditioning

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