



**PA4A**  
**14 SEER SPLIT-SYSTEM**  
**AIR CONDITIONER**  
**WITH R-410A REFRIGERANT**  
**1-1/2 - 5 TONS (018-060)**

# Product Data

## FEATURES AND BENEFITS

### REFRIGERATION CIRCUIT

- Copeland compressors on all models
- Filter-Drier supplied with every unit for field installation
- Copper tube / aluminum fin coil
- 4 & 5 ton models have 2-row coil for reduced height

### EASY TO INSTALL AND SERVICE

- Easy Access service valves on all models
- External high and low refrigerant service ports
- Only two screws to access control panel
- Factory charged with R-410A refrigerant

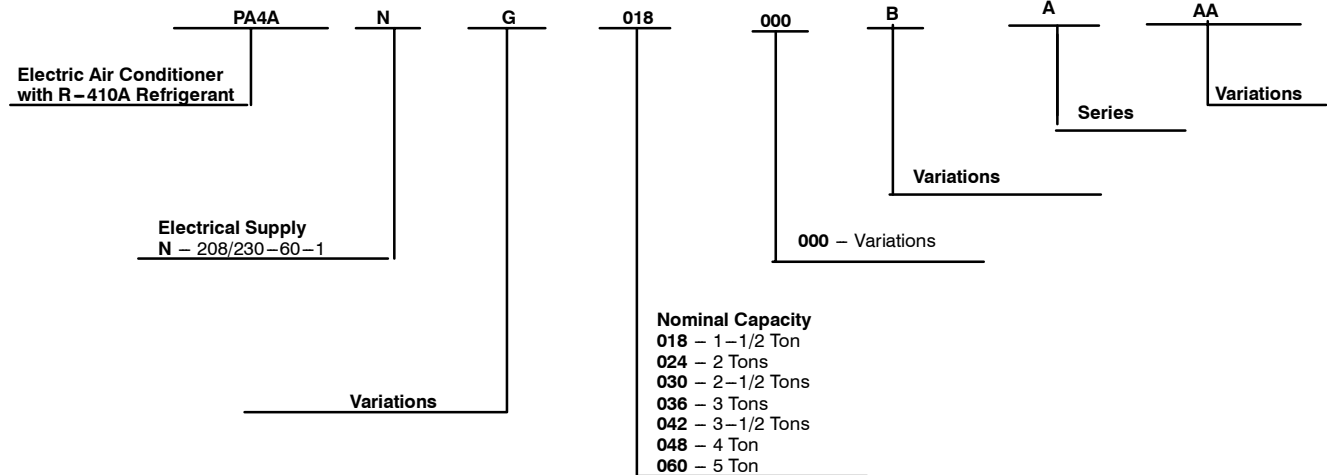
### BUILT TO LAST

- Baked-on powder coat finish over galvanized steel
- Post-painted (black) coil fins
- Coated cabinet screws
- Coated inlet grille with 2" spacing standard, alternate models available with 3/8" grille spacing for extra protection

### WARRANTY:

- 5 year limited compressor, coil, and parts warranties

## PRODUCT NUMBER NOMENCLATURE



# PHYSICAL DATA

UNIT SIZE SERIES	018	024	030	036	042	048	060
Operating Weight lb (kg)	171 (77.6)	185 (83.9)	188 (85.3)	191 (86.6)	243 (110.2)	247 (112.0)	295 (133.8)
Shipping Weight lb (kg)	199 (90.3)	214 (97.1)	217 (98.4)	225 (102.1)	278 (126.1)	280 (127.0)	330 (149.7)
Compressor Type	Scroll						
REFRIGERANT	R-410A						
Control	TXV (Hard Shutoff)						
Charge lb (kg)	5.7 (2.6)	7.25 (3.3)	7.1 (3.2)	7.25 (7.25)	10.4 (4.7)	11 (5.0)	13.9 (6.3)
COND FAN	Propeller Type, Direct Drive						
Air Discharge	Vertical						
Air Qty (CFM)	2235	2615	3170	3800		4050	
Motor HP	1/12	1/10	1/5			1/4	
Motor RPM	800	1100		800			
COND COIL							
Face Area (Sq ft)	19.40	23.71	23.71	22.63	30.18	20.12	30.18
Fins per In.	25					20	
Rows	1					2	
Circuits	3	4		5	7		
VALVE CONNECT. (In. ID)							
Vapor	5/8		3/4		7/8		
Liquid	3/8						
REFRIGERANT TUBES* (In. OD)							
Vapor (0-50 Ft Tube Length)	5/8		3/4		7/8		1-1/8
Vapor (Max Diameter for long-Line applications)	3/4		7/8		1-1/8		1-1/8
Liquid (0-50 Ft Tube Length)	3/8						
Liquid (For Long-Line applications)	3/8						

\* For tubing sets between 80 and 200 ft. horizontal or 20 ft. vertical differential, consult the Longline Guideline.

**Note:** See unit Installation Instruction for proper installation.

## VAPOR LINE SIZING AND COOLING CAPACITY LOSS R-410A 1-STAGE AIR CONDITIONER APPLICATIONS

**LONG LINE APPLICATION:** An application is considered “Long line” when the total equivalent tubing length exceeds 80 ft (24.4 m) or when there is more than 20 ft (6.1 m) vertical separation between indoor and outdoor units. These applications require additional accessories and system modifications for reliable system operation. The maximum allowable total equivalent length is 250 ft. (76.2 m). The maximum vertical separation is 200 ft (76.2 m)

when outdoor unit is above indoor unit, and 50 ft (15.2 m) when the outdoor unit is below the indoor unit. Refer to Accessory Usage Guideline below for required accessories. See Long-Line Application Guideline for required piping and system modifications. Also, refer to the table below for the acceptable vapor tube diameters based on the total length to minimize the cooling capacity loss.

Unit Nominal Size (Btuh)	Acceptable Vapor Line Diameters (In. OD)	Cooling Capacity Loss (%)										
		Total Equivalent Line Length (ft)										
		Standard Application			Long Line Application Requires Accessories							
		25	50	80	80+	100	125	150	175	200	225	250
18000 1 Stage R-410A AC	1/2	1	2	4	4	5	6	7	8	10	11	12
	5/8	0	1	1	1	2	2	2	3	3	3	4
24000 1 Stage R-410A AC	5/8	1	1	2	2	3	3	4	4	5	6	6
	3/4	0	1	1	1	1	1	1	2	2	2	2
	7/8	0	0	0	0	1	1	1	1	1	1	1
30000 1 Stage R-410A AC	5/8	1	2	3	3	4	5	6	7	8	9	9
	3/4	0	1	1	1	1	2	2	3	3	3	4
	7/8	0	0	1	1	1	1	1	1	1	2	2
36000 1 Stage R-410A AC	5/8	1	3	4	4	5	7	8	9	11	12	13
	3/4	1	1	2	2	2	3	3	3	4	4	5
	7/8	0	1	1	1	1	1	2	2	2	2	3
42000 1 Stage R-410A AC	3/4	1	1	2	2	3	3	4	5	5	6	7
	7/8	0	1	1	1	1	2	2	2	3	3	3
	1 1/8	0	0	0	0	0	1	1	1	1	1	1
48000 1 Stage R-410A AC	3/4	1	2	3	3	3	4	5	6	7	8	8
	7/8	0	1	1	1	2	2	3	3	3	4	4
	1 1/8	0	0	0	0	1	1	1	1	1	1	1
60000 1 Stage R-410A AC	3/4	1	3	4	4	5	6	8	9	10	11	13
	7/8	1	1	2	2	3	3	4	4	5	6	6
	1 1/8	0	0	1	1	1	1	1	1	1	2	2

Standard Length = 80 ft. (24.4 m) or less total equivalent length

Applications in this area are long line. Accessories are required as shown recommended on Long Line Application Guidelines

Applications in this area may have height restrictions that limit allowable total equivalent length, when outdoor unit is below indoor unit. See Long Line Application Guidelines

# ACCESSORIES

KIT NUMBER	DESCRIPTION	018	024	030	036	042	048	060
KAFT0101AAA	FREEZE THERMOSTAT	X	X	X	X	X	X	X
KAATD0101TDR	TIME DELAY RELAY	X	X	X	X	X	X	X
KAAWS0101AAA	WINTER START	X	X	X	X	X	X	X
KSALA0301410	LOW AMBIENT PSW	X	X	X	X	X	X	X
KSALA0601AAA	MOTORMASTER 230V	X	X	X	X	X	X	X
HC32GE234	MOTOR FAN BALL BEARING	X						
HC34GE239	MOTOR FAN BALL BEARING		X	X				
HC40GE226	MOTOR FAN BALL BEARING				X		X	
HC38GE219	MOTOR FAN BALL BEARING					X		
HC40GE228	MOTOR FAN BALL BEARING							X
KSAS1701AAA	HARD START (CAP / RELAY)	X	X	X	X	X	X	X
KSACY0101AAA	CYCLE PROTECTOR	X	X	X	X	X	X	X
KSASF0101AAA	SUPPORT FEET	X	X	X	X	X	X	X
KAACS0201PTC	START ASSIST PTC	X	X	X	X	X	X	X
KAACH1201AAA	CRANKCASE HTR					X	X	X
KAACH1401AAA	CRANKCASE HTR	X	X	X	X			
KSATX0201PUR	TXV R-410A HSO	X	X	X				
KSATX0301PUR	TXV R-410A HSO				X	X		
KSATX0401PUR	TXV R-410A HSO						X	
KSATX0501PUR	TXV R-410A HSO							X
KSASH0601COP	SOUND HOOD	X	X	X	X	X	X	
KSASH2101COP	SOUND HOOD							X
KAALP0301PUR	LOW PRESSURE SWITCH	X	X	X	X	X	X	X
KAHI0401PUR	HIGH PRESSURE SWITCH	X	X	X	X	X	X	X
KAAL50201LLS	SOLENOID VALVE	X	X	X	X	X	X	X

x = Accessory

## ACCESSORY USAGE GUIDELINE

ACCESSORY	REQUIRED FOR LOW AMBIENT COOLING APPLICATIONS (Below 55°F / 22.8°C)	REQUIRED FOR LONG LINE APPLICATIONS* (Over 80 Ft./24.4 m)	REQUIRED FOR SEA COAST APPLICATIONS (Within 2 miles/3.2 km)
<b>Compressor Start Assist Capacitor and Relay</b>	Yes	Yes	No
<b>Crankcase Heater</b>	Yes	Yes	No
<b>Evaporator Freeze Thermostat</b>	Yes	No	No
<b>Liquid Line Solenoid Valve</b>	No	See Long-Line Application Guideline	No
<b>Low Ambient Kit (Pressure Switch)</b>	Yes	No	No
<b>Support Feet</b>	Recommended	No	Recommended

\* For tubing line sets between 80 and 200 ft. (24.4 and 76.2 m) and/or 20 ft. (6.1 m) vertical differential, refer to Residential Split-System Longline Application Guideline.

† Required for Low Ambient Controller (full modulation feature) and MotorMaster® Control only.

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## Accessory Description and Usage (Listed Alphabetically)

### 1. Compressor Start Assist - Capacitor and Relay

Start capacitor and relay gives a "hard" boost to compressor motor at each start up.

#### Usage Guideline:

Required for reciprocating compressors in the following applications:

- Long line
- Low ambient cooling
- Hard shut off expansion valve on indoor coil
- Liquid line solenoid on indoor coil

Required for single-phase scroll compressors in the following applications:

- Long line
- Low ambient cooling

Suggested for all compressors in areas with a history of low voltage problems.

### 2. Compressor Start Assist — PTC Type

Solid state electrical device which gives a "soft" boost to the compressor at each start-up.

#### Usage Guideline:

Suggested in installations with marginal power supply.

### 3. Crankcase Heater

An electric resistance heater which mounts to the base of the compressor to keep the lubricant warm during off cycles. Improves compressor lubrication on restart and minimizes the chance of liquid slugging.

#### Usage Guideline:

- Required in low ambient cooling applications.
- Required in long line applications.

### 4. Cycle Protector

The cycle protector is designed to prevent compressor short cycling. This control provides an approximate 5-minute delay after power to the compressor has been interrupted for any reason, including power outage, protector control trip, thermostat jiggling, or normal cycling.

Suggested in all commercial applications.

### 5. Evaporator Freeze Thermostat

An SPST temperature actuated switch that stops unit operation when evaporator reaches freeze-up conditions.

#### Usage Guideline:

Required when low ambient kit has been added.

### 6. Low Ambient Pressure Switch Kit

A long life pressure switch which is mounted to outdoor unit service valve. It is designed to cycle the outdoor fan motor in order to maintain head pressure within normal operating limits (approximately 100 psig to 225 psig). The control will maintain working head pressure at low ambient temperatures down to 0°F/0°C when properly installed.

#### Usage Guideline:

A Low Ambient Pressure Switch or MotorMaster® Low Ambient Controller must be used when cooling operation is used at outdoor temperatures below 55°F (12.8°C).

Suggested for all commercial applications.

### 7. Support Feet

Four stick-on plastic feet that raise the unit 4 in. above the mounting pad. This allows sand, dirt, and other debris to be flushed from the unit base, minimizing corrosion.

#### Usage Guideline:

Suggested in the following applications:

- Coastal installations.
- Windy areas or where debris is normally circulating.
- Rooftop installations.
- For improved sound ratings.

### 8. Thermostatic Expansion Valve (TXV)

A modulating flow-control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator.

Kit includes valve, adapter tubes, and external equalizer tube. Hard shut off types are available.

**NOTE:** When using a hard shut off TXV with single phase reciprocating compressors, a Compressor Start Assist Capacitor and Relay is required.

#### Usage Guideline:

- Required to achieve ARI ratings in certain equipment combinations. Refer to combination ratings.
- Hard shut off TXV or LLS required in air conditioner long line applications.
- Required for use on all zoning systems.

### 9. Winter Start Control

This control is designed to alleviate nuisance opening of the low-pressure switch by bypassing it for the first 3 minutes of operation.

# ELECTRICAL DATA

UNIT SIZE – VOLTAGE, SERIES	V/PH	OPER VOLTS*		COMPR		FAN	MCA	MIN WIRE SIZE† 60° C	MIN WIRE SIZE† 75° C	MAX LENGTH (FT)‡ 60° C	MAX LENGTH (FT)‡ 75° C	MAX FUSE** or BREAKER AMPS
		MAX	MIN	LRA	RLA	FLA						
018	208–230/1	253	197	48	9.0	0.5	11.7	14	14	67	64	15
024				58	13.5	0.75	17.6	14	14	45	43	25
030				73	14.1	1.1	18.7	14	14	42	40	30
036				79	16.7	1.2	22.0	12	12	57	54	35
042				112	17.9	1.2	23.6	10	10	85	81	40
048				117	21.8	1.2	28.4	10	10	70	67	40
060				134	26.4	1.2	34.2	8	8	91	86	50

\* Permissible limits of the voltage range at which the unit will operate satisfactorily

† If wire is applied at ambient greater than 30°C (86°F), consult table 310–16 of the NEC (ANSI/NFPA 70). The ampacity of non-metallic-sheathed cable (NM), trade name ROMEX, shall be that of 60°C (140°F) conditions, per the NEC (ANSI/NFPA 70) Article 336–26. If other than uncoated (no-plated), 60 or 75°C (140 or 167°F) insulation, copper wire (solid wire for 10 AWG or smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the NEC (ANSI/NFPA 70).

‡ Length shown is as measured 1 way along wire path between unit and service panel for voltage drop not to exceed 2%.

\*\* Time–Delay fuse.

FLA – Full Load Amps

LRA – Locked Rotor Amps

MCA – Minimum Circuit Amps

RLA – Rated Load Amps

NOTE: Control circuit is 24–V on all units and requires external power source. Copper wire must be used from service disconnect to unit. All motors/compressors contain internal overload protection.

## A-WEIGHTED SOUND POWER (dBA)

UNIT SIZE	STANDARD RATING	TYPICAL OCTAVE BAND SPECTRUM (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
018	76	56.0	60.0	65.0	72.0	65.0	60.5	53.5
024	76	52.5	62.5	66.0	69.5	66.5	62.0	57.0
030	76	53.5	64.5	69.0	70.0	68.5	66.0	59.5
036	76	52.0	60.0	65.5	69.5	64.0	63.0	56.0
042	77	50.5	58.5	63.0	72.0	66.0	62.5	57.5
048	78	58.0	64.5	66.5	69.0	65.0	63.5	59.0
060	78	53.5	67.0	65.5	67.5	65.5	63.0	60.0

## CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE – SERIES	REQUIRED SUBCOOLING °F (°C)
018	10 (5.4)
024	11 (6.1)
030	8 (4.6)
036	10 (5.4)
042	12 (6.7)
048	9 (4.9)
060	9 (5.2)

## RECOMMENDED TUBE DIAMETERS

UNIT SIZE	TUBE LENGTH ft (m)*	LIQUID TUBE DIAMETER (In.)	VAPOR TUBE DIAMETER (In.)
018, 024	0 to 80 (0 to 24.38)	3/8	5/8
030, 036			3/4
042, 048			7/8
060			1 – 1/8

\* For tube set over 80 ft (24.38 m) horizontal and/or 20 ft (6.10 m) vertical differential, consult Residential Split System Long–Line Application Guidelines.



# RATINGS AND PERFORMANCE

Unit Size	Indoor Model	Total Cap. BTUH	Factory Supplied Enhancement	SEER		EER
				Standard Rating	TDR†	
018	*CAP**2414A**	18,000	TXV		14.00	11.5
	CAP**1814A**	17,800	TXV		13.50	11.20
	CAP**2417A**	18,000	TXV		14.00	11.50
	CNPF*2418A**	18,000	TXV		13.50	11.20
	CNPH*2417A**	18,000	TXV		13.50	11.20
	CNPV*1814A**	17,800	TXV		13.50	11.20
	CNPV*2414A**	18,000	TXV		14.00	11.50
	CNPV*2417A**	18,000	TXV		13.50	11.20
	CSPH*2412A**	18,000	TXV		14.00	11.50
	FF1ENP018	17,800	TDR&TXV	13.50		11.20
	FF1ENP024	18,000	TDR&TXV	13.50		11.20
	PF4MNA019	18,000	TDR&TXV	15.00		13.00
	PF4MNA025	18,300	TDR&TXV	15.00		13.00
	PF4MNA018	17,800	TDR&TXV	13.50		11.20
PF4MNA024	17,900	TDR&TXV	13.50		11.20	
024	*CAP**3014A**	24,000	TXV		14.00	11.50
	CAP**2414A**	23,600	TXV		14.00	11.50
	CAP**2417A**	23,600	TXV		14.00	11.50
	CAP**3017A**	24,000	TXV		14.00	11.50
	CNPF*2418A**	23,600	TXV		14.00	11.50
	CNPH*2417A**	23,600	TXV		14.00	11.50
	CNPH*3017A**	24,000	TXV		14.00	11.50
	CNPV*2414A**	23,600	TXV		14.00	11.50
	CNPV*2417A**	23,600	TXV		14.00	11.50
	CNPV*3014A**	24,000	TXV		14.00	11.50
	CNPV*3017A**	24,000	TXV		14.00	11.50
	CSPH*2412A**	23,600	TXV		14.00	11.50
	CSPH*3012A**	24,000	TXV		14.00	11.50
	FF1ENP024	23,400	TDR&TXV	13.50		11.20
	FF1ENP030	23,400	TDR&TXV	13.50		11.20
	PF4MNA025	23,800	TDR&TXV	15.00		12.50
PF4MNA031	24,000	TDR&TXV	15.00		13.00	
PF4MNA024	23,400	TDR&TXV	13.50		11.20	
PF4MNA030	23,600	TDR&TXV	14.00		11.50	
030	*CAP**3014A**	29,000	TXV		14.00	12.00
	CAP**3017A**	29,000	TXV		14.00	11.50
	CAP**3614A**	28,200	TXV		14.00	11.50
	CAP**3617A**	29,200	TXV		14.00	11.50
	CAP**3621A**	29,200	TXV		14.00	11.50
	CNPF*3618A**	29,200	TXV		14.00	11.50
	CNPH*3017A**	29,000	TXV		14.00	11.50
	CNPH*3617A**	29,200	TXV		14.00	11.50
	CNPV*3014A**	29,000	TXV		14.00	11.50
	CNPV*3017A**	29,000	TXV		14.00	11.50
	CNPV*3617A**	29,200	TXV		14.00	11.50
	CNPV*3621A**	29,200	TXV		14.00	11.50
	CSPH*3012A**	29,000	TXV		14.00	11.50
	CSPH*3612A**	29,200	TXV		14.00	11.50
	FF1ENP030	28,600	TDR&TXV	14.00		11.50
	FF1ENP036	29,200	TDR&TXV	14.00		11.50
PF4MNA037	29,600	TDR&TXV	15.00		12.50	
PF4MNA031	29,200	TDR&TXV	15.00		12.50	
PF4MNA030	28,800	TDR&TXV	14.00		11.50	
PF4MNA036	29,000	TDR&TXV	14.00		11.50	
036	*CAP**4221A**	35,800	TXV		14.00	11.5
	CAP**3614A**	35,000	TXV		14.00	11.50
	CAP**3617A**	35,400	TXV		14.00	11.50
	CAP**3621A**	35,400	TXV		14.00	11.50
	CAP**4224A**	35,800	TXV		14.00	11.50
	CNPF*3618A**	35,400	TXV		14.00	11.50
	CNPH*3617A**	35,400	TXV		14.00	11.50
	CNPH*4221A**	35,800	TXV		14.00	11.50
	CNPV*3617A**	35,400	TXV		14.00	11.50
	CNPV*3621A**	35,400	TXV		14.00	11.50
	CNPV*4221A**	35,800	TXV		14.00	11.50
	CSPH*3612A**	36,200	TXV		14.00	11.50
	CSPH*4212A**	36,600	TXV		14.00	11.50
	FF1ENP036	35,000	TDR&TXV	14.00		11.50
	PF4MNA037	36,000	TDR&TXV	15.00		12.00
	PF4MNA043	36,600	TDR&TXV	15.00		12.00
PF4MNA036	34,800	TDR&TXV	14.00		11.50	
PF4MNA042	36,000	TDR&TXV	14.00		11.50	

\* See notes on page 8

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# RATINGS AND PERFORMANCE (CONT.)

Unit Size	Indoor Model	Total Cap. BTUH	Factory Supplied Enhancement	SEER		EER
				Standard Rating	TDR†	
042	*CAP**4821A**	40,500	TXV		14.00	11.50
	CAP**4221A**	39,500	TXV		14.00	11.20
	CAP**4224A**	39,500	TXV		14.00	11.50
	CAP**4817A**	41,000	TXV		14.00	11.50
	CAP**4824A**	40,500	TXV		14.00	12.00
	CNPF*4818A**	40,000	TXV		14.00	11.95
	CNPH*4221A**	40,000	TXV		14.00	12.50
	CNPH*4821A**	40,500	TXV		14.00	11.50
	CNPV*4221A**	40,000	TXV		14.00	11.50
	CNPV*4821A**	40,500	TXV		14.00	11.50
	CNPV*4824A**	40,500	TXV		14.00	12.00
	CSPH*4212A**	40,500	TXV		14.00	11.50
	CSPH*4812A**	41,000	TXV		14.00	12.05
	PF4MNA043	40,500	TDR&TXV	14.50		12.00
	PF4MNA049	40,500	TDR&TXV	15.00		12.50
PF4MNA042	40,000	TDR&TXV	13.50		11.20	
PF4MNA048	41,000	TDR&TXV	14.00		11.50	
048	*CAP**6024A**	48,000	TXV		14.00	11.50
	CAP**4817A**	46,500	TXV		13.50	11.20
	CAP**4821A**	47,500	TXV		13.50	11.20
	CAP**4824A**	47,500	TXV		13.50	11.20
	CAP**6021A**	47,000	TXV		14.00	11.50
	CNPF*4818A**	46,500	TXV		13.50	11.20
	CNPH*4821A**	47,500	TXV		13.50	11.20
	CNPH*6024A**	48,000	TXV		14.00	11.50
	CNPV*4821A**	47,500	TXV		13.50	11.20
	CNPV*4824A**	47,500	TXV		13.50	11.20
	CNPV*6024A**	48,000	TXV		14.00	11.50
	CSPH*4812A**	47,000	TXV		13.50	11.20
	CSPH*6012A**	47,500	TXV		14.00	11.50
	PF4MNA049	48,500	TDR&TXV	14.50		12.00
	PF4MNA061	49,500	TDR&TXV	14.70		12.50
PF4MNA060	48,500	TDR&TXV	14.00		11.50	
PF4MNA048	47,500	TDR&TXV	13.50		11.20	
060	*CAP**6024A**	59,000	TXV		14.00	11.5
	CAP**6021A**	58,000	TXV		14.00	11.50
	CNPH*6024A**	58,500	TXV		14.00	11.50
	CNPV*6024A**	58,500	TXV		14.00	11.50
	CSPH*6012A**	59,000	TXV		14.00	11.50
	PF4MNA061	59,500	TDR&TXV	14.00		11.50
PF4MNA060	59,000	TDR&TXV	13.50		11.20	

\* Tested combination

† In most cases, only 1 method should be used to achieve TDR function. Using more than 1 method in a system may cause degradation in performance. Use either the accessory Time-Delay Relay KAATD0101TDR or a furnace equipped with TDR. Most Carrier furnaces are equipped with TDR.

**EER** — Energy Efficiency Ratio

**SEER** — Seasonal Energy Efficiency Ratio

**TDR** — Time-Delay Relay

**TXV** — Thermostatic Expansion Valve

**NOTES:**

1. Ratings are net values reflecting the effects of circulating fan motor heat. Supplemental electric heat is not included.
2. Tested outdoor/indoor combinations have been tested in accordance with DOE test procedures for central air conditioners. Ratings for other combinations are determined under DOE computer simulation procedures.
3. Determine actual CFM values obtainable for your system by referring to fan performance data in fan coil or furnace coil literature.
4. Do not apply with capillary tube coils as performance and reliability are significantly affected.





# DETAILED COOLING CAPACITIES# (CONT.)

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																		
		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125			
		CFM	EWB	Capacity MBtu/h		Total Sys-tem KW**	Capacity MBtu/h		Total System KW**	Capacity MBtu/h		Total System KW**	Capacity MBtu/h		Total System KW**	Capacity MBtu/h		Total System KW**		
Total	Sens†			Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†						
<b>PA4ANG030 Outdoor Section With CAP**3014A** Indoor Section</b>																				
	72 (22.2)		34.45	17.52	1.98	32.96	16.97	2.19	31.38	16.38	2.43	29.70	15.77	2.69	27.90	15.12	2.98	25.90	14.41	3.29
<b>875</b>	67 (19.4)		31.35	21.43	1.98	29.98	20.86	2.19	28.53	20.27	2.43	26.98	19.65	2.69	25.32	18.99	2.97	23.50	18.28	3.29
	63†† (17.2)		29.13	20.73	1.98	27.84	20.16	2.20	26.47	19.56	2.43	25.02	18.94	2.69	23.45	18.27	2.97	21.72	17.55	3.28
	62 (16.7)		28.63	25.33	1.98	27.39	24.75	2.19	26.10	24.15	2.43	24.74	23.49	2.69	23.36	23.36	2.97	21.98	21.98	3.29
	57 (13.9)		27.79	27.79	1.98	26.80	26.80	2.19	25.74	25.74	2.43	24.61	24.61	2.69	23.37	23.37	2.97	21.98	21.98	3.29
<b>1000</b>	72 (22.2)		35.09	18.37	2.02	33.53	17.80	2.24	31.88	17.21	2.47	30.14	16.59	2.73	28.26	15.93	3.02	26.19	15.21	3.34
	67 (19.4)		31.95	22.78	2.02	30.51	22.21	2.24	29.00	21.61	2.47	27.40	20.98	2.73	25.69	20.31	3.02	23.80	19.58	3.33
	63†† (17.2)		29.69	22.00	2.03	28.34	21.42	2.24	26.92	20.82	2.48	25.42	20.18	2.73	23.79	19.50	3.02	22.02	18.76	3.33
	62 (16.7)		29.30	27.18	2.02	28.05	26.57	2.23	26.73	26.73	2.47	25.55	25.55	2.73	24.22	24.22	3.02	22.74	22.74	3.33
<b>1125</b>	57 (13.9)		28.96	28.96	2.02	27.89	27.89	2.23	26.76	26.76	2.47	25.55	25.55	2.73	24.22	24.22	3.02	22.75	22.75	3.33
	72 (22.2)		35.55	19.16	2.07	33.94	18.59	2.28	32.23	17.98	2.52	30.44	17.35	2.78	28.51	16.69	3.07	26.38	15.95	3.38
	67 (19.4)		32.39	24.07	2.07	30.91	23.49	2.28	29.36	22.89	2.52	27.71	22.25	2.78	25.95	21.57	3.07	24.03	20.81	3.38
	63†† (17.2)		30.11	23.21	2.08	28.73	22.63	2.29	27.27	22.01	2.52	25.72	21.36	2.78	24.05	20.67	3.06	22.24	19.90	3.37
<b>1125</b>	62 (16.7)		29.94	29.71	2.07	28.80	28.80	2.28	27.60	27.60	2.52	26.31	26.31	2.78	24.91	24.91	3.07	23.36	23.36	3.38
	57 (13.9)		29.92	29.92	2.07	28.80	28.80	2.28	27.60	27.60	2.52	26.31	26.31	2.78	24.91	24.91	3.06	23.36	23.36	3.38

Cooling Indoor Model	Capacity	Power
*CAP**3014A**	1.00	1.00
CAP**3014A**	0.99	0.95
CAP**3017A**	1.00	1.04
CAP**3017A**	0.99	0.95
CAP**3017A**	0.99	0.92
CAP**3614A**	0.97	1.01
CAP**3614A**	0.96	0.92
CAP**3617A**	1.01	1.05
CAP**3617A**	0.99	0.92
CAP**3621A**	1.00	0.92
CAP**3621A**	1.01	1.05
CAP**3621A**	1.00	0.92
CAP**3621A**	1.01	1.05
CAP**3621A**	1.00	0.92
CAP**3621A**	1.00	1.04
CAP**3621A**	1.00	0.92
CAP**3621A**	1.01	1.05
CAP**3621A**	1.00	0.96
CAP**3621A**	1.00	0.92
CAP**3621A**	1.00	0.96
CAP**3621A**	1.00	1.04
CAP**3621A**	0.99	0.95
CAP**3621A**	1.00	0.96
CAP**3621A**	1.00	0.92
CAP**3621A**	1.01	1.05
CAP**3621A**	1.00	0.92
CAP**3621A**	1.00	0.96
CAP**3621A**	1.00	1.03
CAP**3621A**	1.01	1.05
CAP**3621A**	1.02	0.98
CAP**3621A**	1.01	0.97
CAP**3621A**	0.99	1.04
CAP**3621A**	1.00	1.04

Cooling Indoor Model	Capacity	Power
*CAP**3014A**	1.00	1.00
CAP**3014A**	0.99	0.95
CAP**3017A**	1.00	1.04
CAP**3017A**	0.99	0.95
CAP**3017A**	0.99	0.92
CAP**3614A**	0.97	1.01
CAP**3614A**	0.96	0.92
CAP**3617A**	1.01	1.05
CAP**3617A**	0.99	0.92
CAP**3621A**	1.00	0.92
CAP**3621A**	1.01	1.05
CAP**3621A**	1.00	0.92
CAP**3621A**	1.01	1.05
CAP**3621A**	1.00	0.92
CAP**3621A**	1.00	1.04
CAP**3621A**	1.01	1.05
CAP**3621A**	0.99	0.95
CAP**3621A**	1.00	0.96
CAP**3621A**	1.00	0.92
CAP**3621A**	1.01	1.05
CAP**3621A**	1.00	0.92
CAP**3621A**	1.00	0.96
CAP**3621A**	1.00	1.03
CAP**3621A**	1.01	1.05
CAP**3621A**	1.02	0.98
CAP**3621A**	1.01	0.97
CAP**3621A**	0.99	1.04
CAP**3621A**	1.00	1.04

See notes on pg. 19



PA4A



# DETAILED COOLING CAPACITIES# (CONT.)

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																					
		75 (23.9)				85 (29.4)				95 (35)				105 (40.6)				115 (46.1)				125	
		CFM	EWB	Capacity MBtu/h		Total System KW**	Capacity MBtu/h		Total System KW**	Capacity MBtu/h		Total System KW**	Capacity MBtu/h		Total System KW**	Capacity MBtu/h		Total System KW**	Capacity MBtu/h		Total System KW**		
Total	Sens†			Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†			
<b>PA4ANG042 Outdoor Section With CAP**4821A** Indoor Section</b>																							
	72 (22.2)		48.69	25.39	2.57	24.54	2.93	44.08	23.66	3.33	41.59	22.75	3.79	38.92	21.78	4.34	36.24	20.83	4.88				
	67 (19.4)		44.08	31.05	2.60	30.19	2.95	39.82	29.30	3.35	37.54	28.38	3.81	35.09	27.40	4.39	32.52	26.39	4.98				
<b>1225</b>	63†† (17.2)		40.81	29.96	2.63	29.12	2.97	36.93	28.25	3.33	34.80	27.33	3.76	32.48	26.33	4.31	29.91	25.24	4.87				
	62 (16.7)		40.13	36.73	2.61	38.27	2.96	36.35	34.93	3.35	34.37	34.37	3.81	32.57	32.57	4.40	30.57	30.57	5.00				
	57 (13.9)		39.17	39.17	2.61	37.67	2.96	36.09	36.09	3.35	34.41	34.41	3.81	32.57	32.57	4.40	30.57	30.57	5.00				
	72 (22.2)		49.63	26.67	2.62	47.28	2.98	44.82	24.91	3.38	42.24	23.98	3.84	39.47	23.00	4.38	36.72	22.04	4.90				
	67 (19.4)		44.93	33.07	2.65	42.75	3.00	40.50	31.29	3.40	38.13	30.36	3.86	35.60	29.36	4.43	32.98	28.33	5.02				
<b>1400</b>	63†† (17.2)		41.58	31.84	2.69	39.61	3.02	37.56	30.11	3.39	35.36	29.17	3.82	32.96	28.16	4.36	30.34	27.04	4.92				
	62 (16.7)		41.12	39.45	2.66	39.26	3.01	37.52	37.52	3.41	35.73	35.73	3.87	33.77	33.77	4.46	31.68	31.68	5.04				
	57 (13.9)		40.82	40.82	2.66	39.21	3.01	37.52	37.52	3.41	35.73	35.73	3.87	33.77	33.77	4.46	31.68	31.68	5.04				
	72 (22.2)		50.34	27.87	2.68	47.90	3.03	45.37	26.08	3.43	42.70	25.14	3.88	39.87	24.16	4.42	37.06	23.19	4.91				
	67 (19.4)		45.57	34.99	2.70	43.33	3.05	41.05	33.21	3.45	38.58	32.24	3.92	35.99	31.22	4.48	33.34	30.16	5.07				
<b>1575</b>	63†† (17.2)		42.17	33.64	2.75	40.15	3.08	38.04	31.88	3.45	35.78	30.92	3.88	33.33	29.88	4.41	30.69	28.72	4.98				
	62 (16.7)		42.20	42.20	2.71	40.50	3.06	38.71	38.71	3.46	36.82	36.82	3.92	34.75	34.75	4.50	32.59	32.59	5.08				
	57 (13.9)		42.20	42.20	2.71	40.50	3.06	38.72	38.72	3.46	36.82	36.82	3.92	34.76	34.76	4.50	32.59	32.59	5.08				

Cooling Indoor Model	Capacity	Power
PF4MNA048	1.01	1.01

See notes on pg. 19

Cooling Indoor Model	Capacity	Power
CNPH*4221A**	0.98	0.94
CNPH*4821A**	1.00	1.00
CNPH*4821A**	0.99	0.95
CNPH*4821A**	0.99	0.95
CNPV*4221A**	0.99	0.99
CNPV*4221A**	0.98	0.93
CNPV*4221A**	1.00	0.92
CNPV*4221A**	0.98	0.94
CNPV*4821A**	1.00	1.00
CNPV*4821A**	0.99	0.95
CNPV*4821A**	1.01	0.97
CNPV*4824A**	1.00	0.96
CNPV*4824A**	0.99	0.95
CNPV*4824A**	1.01	0.93
CSPH*4212A**	1.00	1.00
CSPH*4212A**	0.99	0.95
CSPH*4212A**	0.99	0.95
CSPH*4812A**	1.01	0.97
CSPH*4812A**	0.99	0.86
CSPH*4812A**	0.99	0.95
PF4MNA043	1.00	0.96
PF4MNA049	1.00	0.92
PF4MNA042	0.99	1.01

Cooling Indoor Model	Capacity	Power
*CAP**4821A**	1.00	1.00
CAP**4221A**	0.98	1.00
CAP**4221A**	0.96	0.96
CAP**4221A**	0.99	0.99
CAP**4221A**	0.99	0.99
CAP**4221A**	0.99	0.95
CAP**4224A**	0.98	0.98
CAP**4224A**	0.99	0.93
CAP**4224A**	0.99	0.95
CAP**4224A**	0.99	0.95
CAP**4817A**	1.01	1.01
CAP**4817A**	0.99	0.91
CAP**4817A**	1.01	0.97
CAP**4821A**	0.99	0.86
CAP**4821A**	0.99	0.86
CAP**4821A**	0.99	0.95
CAP**4824A**	1.00	0.96
CAP**4824A**	0.98	0.85
CAP**4824A**	1.01	0.88
CNPF*4818A**	0.99	0.95
CNPH*4221A**	0.99	0.91
CNPH*4221A**	0.99	0.95
CNPH*4221A**	0.98	0.85



PA4A

**DETAILED COOLING CAPACITIES# (CONT.)**

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																					
		75 (23.9)				85 (29.4)				95 (35)				105 (40.6)				115 (46.1)				125	
		CFM	EWB	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**		
Total	Sens†			Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†			
<b>PA4ANG048 Outdoor Section With CAP**6024A** Indoor Section</b>																							
	72 (22.2)		70.52	35.66	3.97	67.20	34.44	4.38	63.70	33.16	4.83	59.99	31.83	5.32	55.97	30.41	5.86	51.51	28.86	6.45			
	67 (19.4)		64.33	43.73	3.92	61.31	42.51	4.33	58.13	41.24	4.78	54.75	39.90	5.27	51.12	38.49	5.82	47.11	36.95	6.40			
<b>1750</b>	63†† (17.2)		59.90	42.37	3.91	57.16	41.17	4.31	54.25	39.92	4.77	51.16	38.60	5.26	47.82	37.21	5.80	44.12	35.68	6.39			
	62 (16.7)		58.81	51.78	3.87	56.12	50.54	4.28	53.31	49.24	4.73	50.40	47.81	5.23	47.55	47.55	5.78	44.50	44.50	6.38			
	57 (13.9)		57.17	57.17	3.86	55.01	55.01	4.27	52.72	52.72	4.73	50.25	50.25	5.23	47.55	47.55	5.78	44.50	44.50	6.38			
	72 (22.2)		71.76	37.38	4.07	68.29	36.13	4.48	64.63	34.83	4.93	60.76	33.48	5.43	56.59	32.03	5.96	51.97	30.46	6.55			
<b>2000</b>	67 (19.4)		65.49	46.49	4.02	62.33	45.24	4.43	59.00	43.94	4.88	55.50	42.59	5.37	51.73	41.15	5.92	47.58	39.56	6.50			
	63†† (17.2)		61.01	44.95	4.01	58.13	43.73	4.42	55.10	42.46	4.87	51.89	41.12	5.36	48.42	39.69	5.91	44.60	38.11	6.49			
	62 (16.7)		60.13	55.51	3.98	57.39	54.17	4.38	54.66	54.66	4.84	52.02	52.02	5.34	49.12	49.12	5.89	45.84	45.84	6.48			
	57 (13.9)		59.48	59.48	3.97	57.15	57.15	4.38	54.68	54.68	4.84	52.03	52.03	5.34	49.12	49.12	5.89	45.85	45.85	6.48			
	72 (22.2)		72.67	38.99	4.17	69.08	37.73	4.58	65.29	36.41	5.03	61.30	35.03	5.52	57.00	33.57	6.06	52.25	31.97	6.64			
<b>2250</b>	67 (19.4)		66.34	49.11	4.12	63.07	47.85	4.53	59.64	46.53	4.98	56.04	45.15	5.47	52.17	43.66	6.01	47.92	42.01	6.60			
	63†† (17.2)		61.82	47.40	4.11	58.86	46.17	4.52	55.73	44.87	4.97	52.42	43.51	5.46	48.86	42.03	6.01	44.95	40.38	6.59			
	62 (16.7)		61.32	61.32	4.08	58.90	58.90	4.49	56.27	56.27	4.95	53.45	53.45	5.45	50.38	50.38	6.00	46.91	46.91	6.59			
	57 (13.9)		61.37	61.37	4.08	58.90	58.90	4.49	56.27	56.27	4.95	53.46	53.46	5.45	50.38	50.38	6.00	46.92	46.92	6.59			

Cooling Indoor Model	Capacity	Power
*CAP**6024A**	1.00	1.00
CAP**6021A**	0.98	0.98
CAP**6021A**	0.93	0.93
CAP**6024A**	0.98	0.94
CAP**6024A**	0.98	0.94
CNP**6024A**	0.99	0.99
CNP**6024A**	0.94	0.94
CNP**6024A**	0.94	0.90
CNP**6024A**	0.94	0.90
CNP**6024A**	0.97	0.97
CNP**6024A**	0.97	0.93
CNP**6024A**	0.98	0.94
CNPV**6024A**	0.99	0.99
CNPV**6024A**	0.94	0.90
CNPV**6024A**	0.94	0.90
CNPV**6024A**	0.97	0.93
CNPV**6024A**	0.98	0.94
CNPV**6024A**	0.97	0.93
CSPH**6012A**	1.00	1.00
CSPH**6012A**	0.95	0.95
CSPH**6012A**	0.95	0.91
CSPH**6012A**	0.95	0.91
CSPH**6012A**	0.98	0.98
CSPH**6012A**	0.98	0.94

Cooling Indoor Model	Capacity	Power
CSPH*6012A**	0.98	0.94
PF4MNA061	1.01	1.01
PF4MNA060	1.00	1.03

See notes on pg. 19



## SYSTEM DESIGN

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01-in. wc.
2. Minimum outdoor operating air temperature without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature is 115°F (46.1°C).
4. For reliable operation, unit should be level in all horizontal planes.
5. Maximum elevation of indoor coil above or below base of outdoor unit is: indoor coil above = 80 ft (24.38 m), indoor coil below = 200 ft (60.96).
6. For interconnecting refrigerant tube lengths greater than 80 ft (24.38 m) horizontal or 20 ft (6.10 m) vertical differential, consult Residential Split System Long-Line Application Guideline available from equipment distributor.
7. Crankcase heater required when interconnecting refrigerant tube length exceeds 80 ft (24.38 m).
8. If any refrigerant tubing is buried, provide a minimum 6 in (152.4 mm) vertical rise to the valve connections at the unit. Refrigerant tubing lengths up to 36 in (914.4 mm) may be buried without further consideration.
9. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.